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TRANSPORTATION SOLUTIONS LIMITED

**1830 Wrigley Road  
(Jedburgh Plains)**

# **Transportation Impact Study**

Paradigm Transportation Solutions Limited

2025-09  
240708



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# Project Summary

**Project Number:**

240708

## 1830 Wrigley Road (Jedburgh Plains) Transportation Impact Study

**Date and Version:**

2025-09

1.0.0

**Client:****J-AAR Materials Limited**

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# Executive Summary

## Content

J-AAR Materials Limited retained Paradigm Transportation Solutions Limited to prepare this Transportation Impact Study for a proposed aggregate extraction pit at 1830 Wrigley Road in the Township of North Dumfries.

The purpose of this study is to estimate the transportation impact(s) of the proposed development on the adjacent transportation network and identify how those impacts, if any, might be mitigated. This study includes an analysis of existing traffic conditions, a description of the proposed development, estimates of future traffic volumes and operations, and any recommendations to mitigate traffic impacts, if identified.

## Development Concept

The subject site is on the north side of Wrigley Road between Scott Street and Reidsville Road. The property owner is proposing to operate an aggregate extraction pit on the site with a maximum annual extraction limit of 1,000,000 tonnes. Vehicle access is proposed via the existing all-moves driveway connection to the site.

## Findings

Based on the analyses contained herein, the findings of this report are as follows:

- ▶ Under existing conditions, the study intersections (Wrigley Road and Reidsville Road, Wrigley Road and Dumfries Road, Wrigley Road and Spragues Road, Greenfield Road and Reidsville Road, and Greenfield Road and Dumfries Road) are operating at acceptable levels of service and within capacity. There are no critical movements.
- ▶ Under 2030 background traffic conditions (that is, without the development of the subject site) the study intersections are forecast to generally operate at acceptable levels of service and within capacity, with the following noted:
  - In the AM peak hour, the eastbound shared left-turn/right-turn movement on Wrigley Road at Spragues Road is forecast to operate at LOS F, with a delay of 55 seconds, and a v/c ratio of 0.85. This does not technically meet the



criteria for a critical movement because the delay is not greater than 55 seconds.

- ▶ Development of the site is estimated to generate 14 trips in the weekday AM peak hour and 14 trips in the weekday PM peak hour. This represents a conservative estimate assuming a maximum annual extraction limit of 1,000,000 tonnes.
- ▶ Under 2030 total traffic conditions (that is, with the development of the subject site) the study intersections are forecast to generally operate at acceptable levels of service and within capacity, with the following noted:
  - In the AM peak hour, the eastbound approach at Wrigley Road and Spragues Road is forecast to operate at LOS F, with a delay of 60 seconds, and a v/c ratio of 0.89.
- ▶ The site driveway location provides sufficient stopping and intersection sight distance for single-unit trucks at a design speed of 90 km/h, based on the guidance and methodologies published by the Transportation Association of Canada (TAC); and
- ▶ An eastbound left-turn lane is not warranted on Wrigley Road at the site driveway.

## Conclusions

Based on the findings of this study it is concluded that development of the subject site is forecast to have a negligible impact on traffic operations in the study area.

The analyses in this study indicate the eastbound approach at Wrigley Road and Spragues Road is forecast to operate at the threshold of a critical movement under 2030 background conditions. Under 2030 total traffic conditions, with site generated traffic representing only a 1.4% increase in traffic volumes (five vehicles) on the approach, the approach is forecast to operate with a delay of 60 seconds, but still within capacity. These analyses are considered conservative because they assume the maximum annual extraction limit of 1,000,000 tonnes.

## Recommendations

Based on the conclusions of this study it is recommended the site be considered for approval with no requirement for off-site transportation network improvements.

Independent of the development, it is recommended the Region of Waterloo monitor traffic volumes and operations at Wrigley Road and Spragues Road.



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# 1 Introduction

## 1.1 Overview

J-AAR Materials Limited retained Paradigm Transportation Solutions Limited to prepare this Transportation Impact Study for a proposed aggregate extraction pit at 1830 Wrigley Road in the Township of North Dumfries. **Figure 1.1** illustrates the site location.

## 1.2 Purpose and Scope

The purpose of this study is to estimate the transportation impact(s) of the proposed development on the adjacent transportation network and identify how those impacts, if any, might be mitigated.

The scope of this study, developed in consultation with the Township of North Dumfries and Region of Waterloo via e-mail in February 2025, includes:

- ▶ An assessment of existing traffic volumes and operations at:
  - Wrigley Road and Reidsville Road;
  - Wrigley Road and Dumfries Road
  - Wrigley Road and Spragues Road
  - Greenfield Road and Reidsville Road; and
  - Greenfield Road and Dumfries Road.
- ▶ Estimates of future traffic volumes (with and without the proposed development) at a horizon year five years from the date of the study;
- ▶ Estimates of the trips generated by the proposed development;
- ▶ Analyses of the impacts of the future traffic volumes on the intersections noted above;
- ▶ The identification of remedial measures, if necessary, to support the proposed development.

**Appendix A** contains the pre-study consultation material submitted to the Township and Region. This study has been carried out in general accordance with the Region of Waterloo *Transportation Impact Study Guidelines*<sup>1</sup> and comments and direction provided during pre-study consultation.

<sup>1</sup> Region of Waterloo, *Transportation Impact Study Guidelines*, (Kitchener: Region of Waterloo, 2014).





Image Source: SnazzyMaps, licensed under creative commons (<https://snazzymaps.com/>)



1830 Wrigley Road (Jedburgh Plains) TIS  
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## Site Location

Figure 1.1

## 2 Existing Conditions

### 2.1 Road Characteristics

The main study roads comprise Wrigley Road, Reidsville Road, Dumfries Road, Spragues Road, and Greenfield Road. Each road is described as follows:

- ▶ **Wrigley Road (Regional Road 49)** is an east-west regional road with a two-lane rural cross-section comprising one travel lane per direction. The road operates with a posted speed limit of 80 km/h. The segment of Wrigley Road between Dumfries Road and Spragues Road is part of the Region's cycling network and features paved shoulders.
- ▶ **Reidsville Road** is a north-south local road with a two-lane rural cross-section comprising one travel lane per direction. The road operates with a posted speed limit of 60 km/h.
- ▶ **Dumfries Road (Regional Road 47)** is a north-south regional road with a two-lane rural cross-section comprising one travel lane per direction. The speed limit is not posted and is assumed to be 80 km/h. The segment of Dumfries Road from Wrigley Road to Cedar Creek Road is part of the Region's cycling network and features paved shoulders for the entire length.
- ▶ **Spragues Road (Regional Road 75)** is a north-south regional road with a two-lane rural cross-section comprising one travel lane per direction. The speed limit is not posted and is assumed to be 80 km/h. Spragues Road forms part of the Cambridge Cross Town Trail and paved shoulders are provided on both sides of the road south of Wrigley Road.
- ▶ **Greenfield Road** is an east-west local road with a two-lane rural cross-section comprising one travel lane per direction. The speed limit is not posted and is assumed to be 80 km/h.

**Figure 2.1** illustrates the existing lane configurations and traffic control at the study intersection.

#### 2.1.1 Truck Restrictions

Heavy truck restrictions are in place on the segment of Reidsville Road between Wrigley Road and Greenfield Road, and on Greenfield Road east of Dumfries Road. None of these restrictions are time-based requiring all non-local heavy truck traffic to use alternate routes. These restrictions are enforced through Township of North Dumfries By-law Number 2559-13. **Figure 2.1** illustrates the location of heavy truck restriction signs observed in the field.



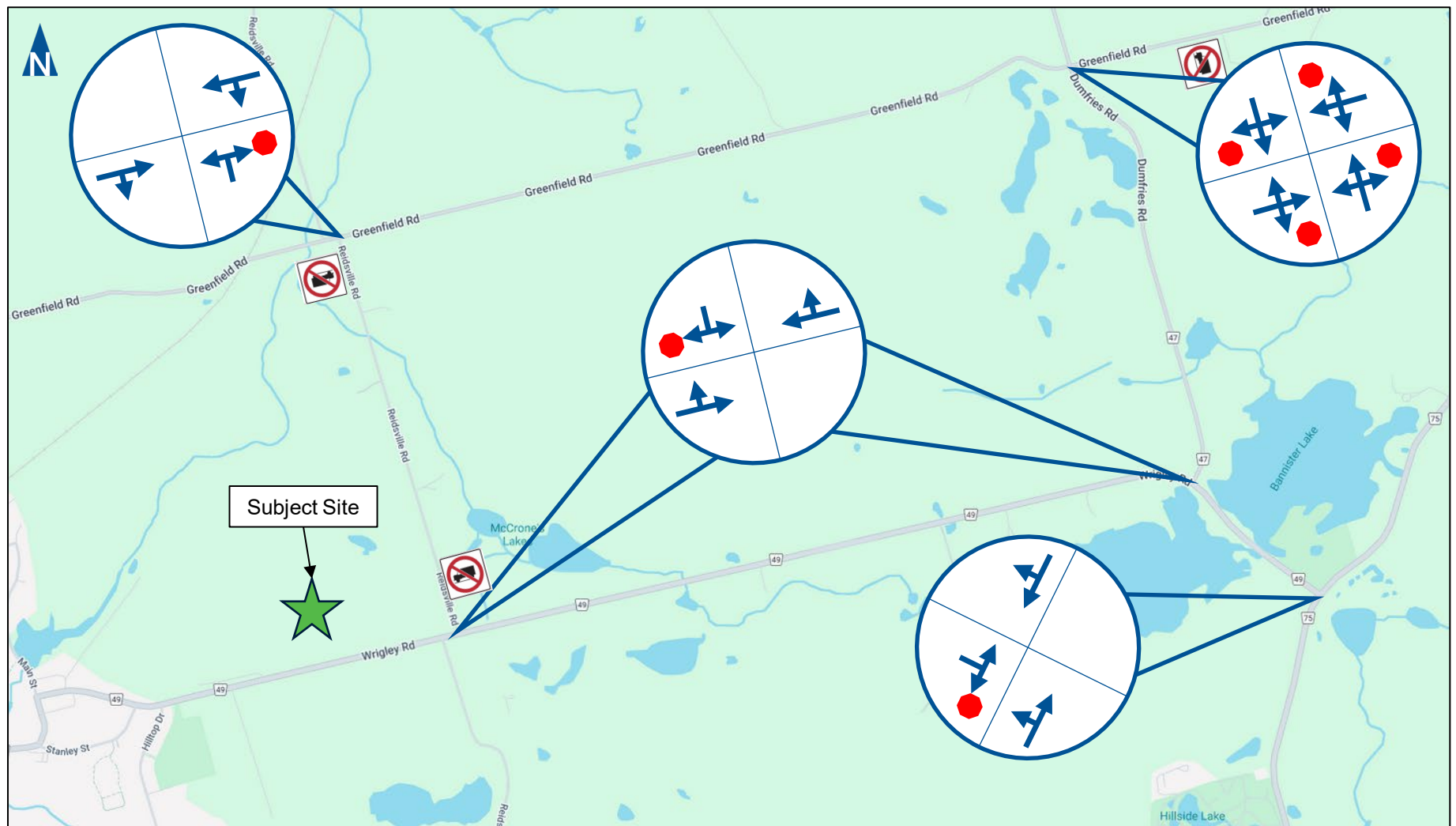


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## Existing Lane Configurations and Traffic Control

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Figure 2.1

## 2.2 Traffic Volumes

To assess intersection operations, turning movement counts (TMCs) are used to quantify the movement of vehicles through an intersection or roadway segment. Existing traffic data at an intersection or a road section forms the foundation for the operational analyses. The TMCs are usually conducted in such a manner to identify the peak periods at an intersection or road segment. This ensures the level of service analyses is conducted under worst-case operating conditions.

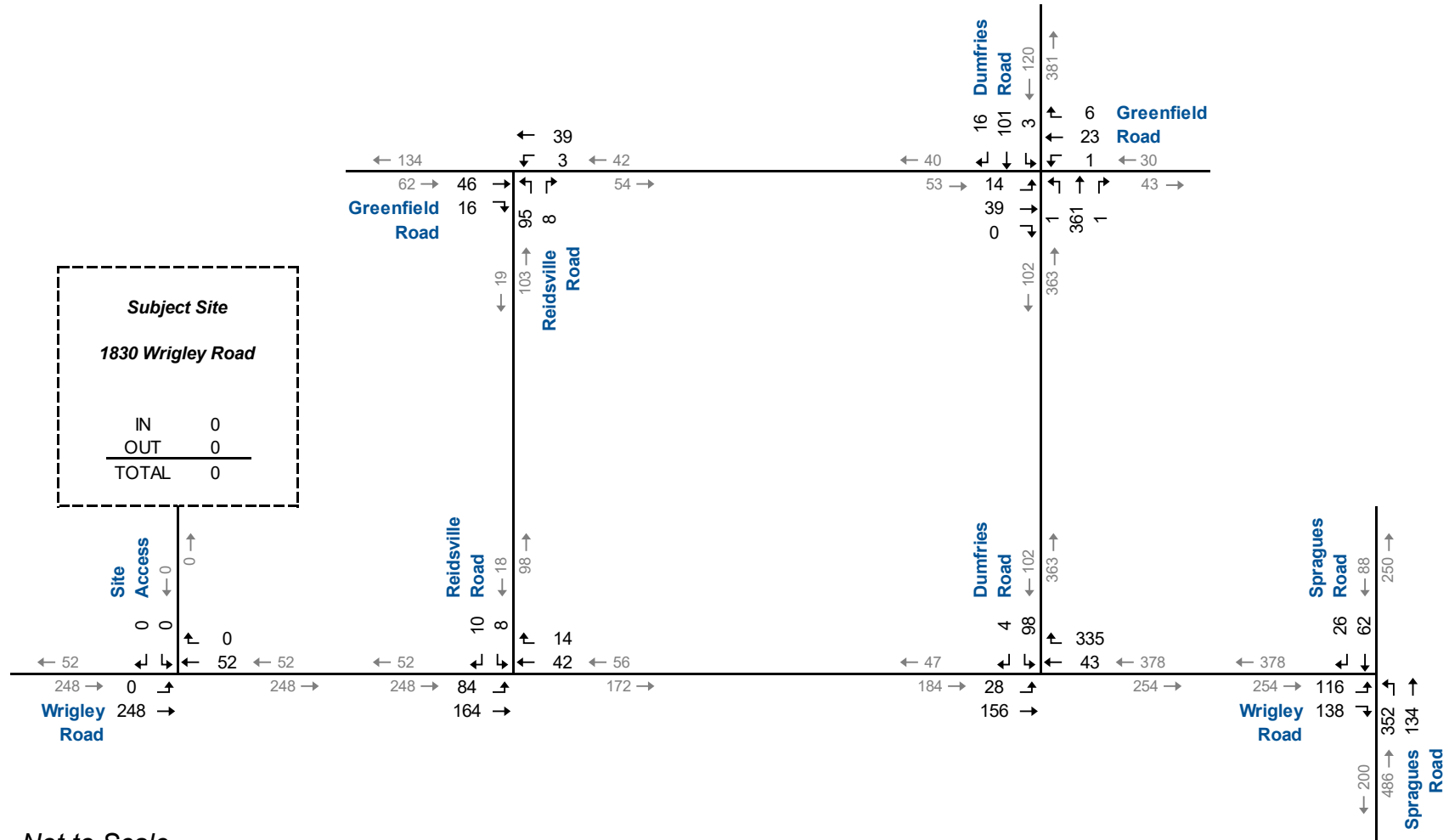
Paradigm conducted eight-hour turning movement counts (TMCs) at the study intersections on Tuesday February 11, 2024 from 6:00 AM to 9:00 AM, 11:30 AM to 1:30 PM, and 3:00 PM to 6:00 PM. All vehicle, pedestrian, and cyclist movements were recorded in 15-minute intervals and vehicles classified by type. **Appendix B** contains the comprehensive turning movement count data.

**Figure 2.2** and **Figure 2.3** illustrate the existing traffic volumes in the weekday AM peak hour and weekday PM peak hour, respectively. Traffic volumes have not been balanced except on Wrigley Road between Spragues Road and Dumfries Road, and on Dumfries Road between Wrigley Road and Greenfield Road have been balanced because these three intersections share common peak hours, and lack significant traffic generators between them which could contribute to volume imbalances.





# AM Peak Hour



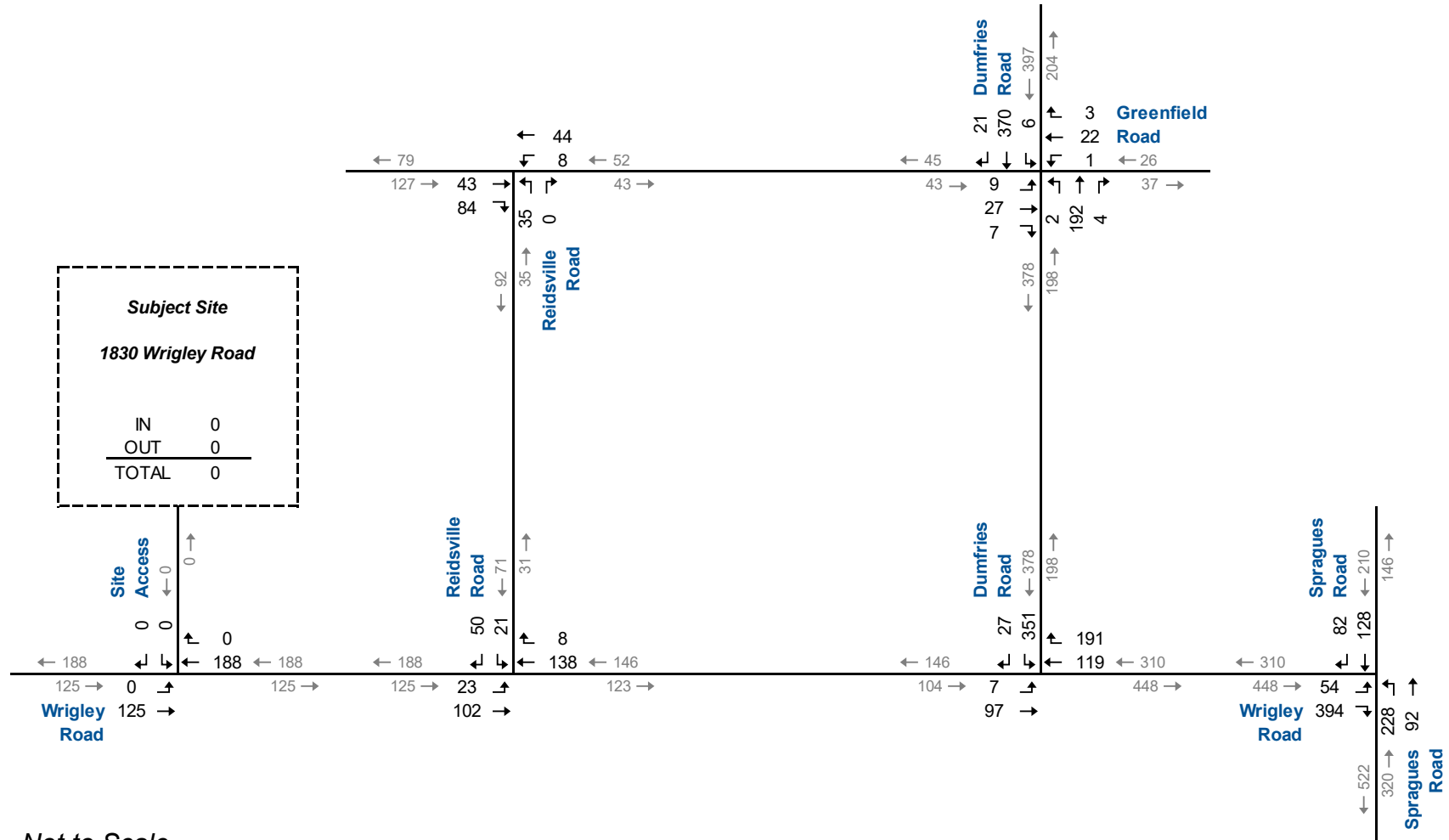
Not to Scale



## Existing Traffic Volumes AM Peak Hour



# PM Peak Hour



Not to Scale



## Existing Traffic Volumes PM Peak Hour

## 2.3 Traffic Operations

Intersection level of service (LOS) is a recognized method of quantifying the average delay experienced by drivers at intersections. It is based on the delay experienced by individual vehicles executing the various movements. The delay is related to the number of vehicles intending to make a particular movement, compared to the estimated capacity for that movement. The capacity is based on several criteria related to opposing traffic flows, intersection geometry, and at signalized intersections, signal timing.

The highest possible rating is LOS A, under which the average total delay is equal or less than 10.0 seconds per vehicle. When the average delay exceeds 80 seconds for signalized intersections, 50 seconds for unsignalized intersections or when the volume to capacity ratio is greater than 1.00, the movement is classed as LOS F, and remedial measures are usually implemented if they are feasible.

The Region of Waterloo *Transportation Impact Study Guidelines* define critical intersections as those where the average control delay per vehicle is greater than 55 seconds for signalized intersections, or 35 seconds for unsignalized intersections. Both delays correspond to LOS E.<sup>2</sup>

Critical movements, regardless of intersection control type, are defined as those where:

- ▶ The average control delay for an individual movement is greater than 55 seconds;
- ▶ The estimated 95th percentile queue length for an exclusive movement exceeds the available lane storage;
- ▶ The estimated 95th percentile queue length for an individual movement blocks an existing access;
- ▶ Exclusive turning lanes are inaccessible because of queue lengths in adjacent through lanes; and/or
- ▶ Poor quality of service for non-auto modes.<sup>3</sup>

Operations of the study intersections have been modelled and analyzed using Synchro 11, which implements the methodologies of

<sup>2</sup> Region of Waterloo, *Transportation Impact Study Guidelines*, (Kitchener: Region of Waterloo, 2014), 12.

<sup>3</sup> Region of Waterloo, *Transportation Impact Study Guidelines*, (Kitchener: Region of Waterloo, 2014), 12.



the Highway Capacity Manual (HCM). The model reflects the following parameters:

- ▶ Existing lane geometry and traffic control;
- ▶ Saturation flow rates and peak hour factors as defined in the Region of Waterloo *Transportation Impact Study Requirements for Capacity Analysis, Roundabouts, and Signal Warrants*,<sup>4</sup>
- ▶ Heavy vehicle percentages, and pedestrian volumes, as extracted from the turning movement counts; and
- ▶ Synchro default values for all other inputs.

The analysis considers three separate measures of performance:

- ▶ The level of service (LOS) and average delay for each turning movement, measured in seconds (s);
- ▶ The volume to capacity (v/c) ratio for each movement; and
- ▶ The 95th percentile queue length, in metres (m).

**Table 2.1** summarizes the base year level of service conditions. The results indicate the study intersections are operating with acceptable levels of service and within capacity. **Appendix C** contains the detailed Synchro reports.

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<sup>4</sup> Region of Waterloo, *Transportation Impact Studies (TIS), Requirements for Capacity Analysis, Roundabouts, Signal Warrants*, (Kitchener: Region of Waterloo, n.d.).



**TABLE 2.1: EXISTING TRAFFIC OPERATIONS**

| Analysis Period | Intersection                  | Control Type | MOE             | Direction/Movement/Approach |             |            |          |            |             |            |            |             |             |             |              |            |            |             |             |            | Overall |
|-----------------|-------------------------------|--------------|-----------------|-----------------------------|-------------|------------|----------|------------|-------------|------------|------------|-------------|-------------|-------------|--------------|------------|------------|-------------|-------------|------------|---------|
|                 |                               |              |                 | Eastbound                   |             |            |          | Westbound  |             |            |            | Northbound  |             |             |              | Southbound |            |             |             |            |         |
|                 |                               |              |                 | Left                        | Through     | Right      | Approach | Left       | Through     | Right      | Approach   | Left        | Through     | Right       | Approach     | Left       | Through    | Right       | Approach    |            |         |
| AM Peak Hour    | Wrigley Rd & Reidsville Rd    | TWSC         | LOS Delay V/C Q | A 7 0.05 2                  | A 0 0.00 0  | > > > >    | A 2 0    | > > > >    | A 0 0.00 0  | A 0 0.00 0 | A 0 0      | > > > >     | A 6 0.23 7  | A 10 0.11 3 | A 10 0.02 1  | > > > >    | > > > >    | A 10 0.00 0 |             |            |         |
|                 | Wrigley Rd & Dumfries Rd      | TWSC         | LOS Delay V/C Q | A 8 0.02 1                  | A 0 0.00 0  | > > > >    | A 1 0    | > > > >    | A 0 0.00 0  | A 0 0.00 0 | A 0 0      | > > > >     | B 13 0.18 5 |             |              | > > > >    | > > > >    | B 13 0.00 0 |             |            |         |
|                 | Spragues Rd & Wrigley Rd      | TWSC         | LOS Delay V/C Q | D 31 0.66 34                |             | > > > >    | D 31 0   |            |             |            |            | A 8 0.23 7  | A 0 0.00 0  |             |              | A 0 0.00 0 | A 0 0.00 0 | A 0 0.00 0  |             |            |         |
|                 | Reidsville Rd & Greenfield Rd | TWSC         | LOS Delay V/C Q |                             | A 0 0.00 0  | A 0 0.00 0 | A 0 0    | A 7 0.00 0 | A 0 0.00 0  |            | A 0 0      | A 10 0.11 3 |             | > > > >     | A 10 0       |            |            |             |             |            |         |
|                 | Dumfries Rd & Greenfield Rd   | TWSC         | LOS Delay V/C Q | < < < <                     | B 14 0.12 3 | > > > >    | B 14 0   | < < < <    | B 12 0.06 2 | > > > >    | B 12 0     | A 7 0.00 0  | A 0 0.00 0  | A 0 0.00 0  | A 0 0        | A 8 0.00 0 | A 0 0.00 0 | A 0 0.00 0  | A 0 0.00 0  |            |         |
| PM Peak Hour    | Wrigley Rd & Reidsville Rd    | TWSC         | LOS Delay V/C Q | A 8 0.02 0                  | A 0 0.00 0  | > > > >    | A 1 0    |            |             |            | A 0 0.00 0 |             |             |             | A 10 0.09 2  |            | > > > >    | > > > >     | A 10 0.00 0 |            |         |
|                 | Wrigley Rd & Dumfries Rd      | TWSC         | LOS Delay V/C Q | A 8 0.01 0                  | A 0 0.00 0  | > > > >    | A 0 0    |            |             |            | A 0 0.00 0 |             |             |             | C 17 0.56 26 |            | > > > >    | > > > >     | C 17 0.00 0 |            |         |
|                 | Spragues Rd & Wrigley Rd      | TWSC         | LOS Delay V/C Q | C 18 0.62 32                |             | > > > >    | C 18 0   |            |             |            |            | A 8 0.17 4  | A 0 0.00 0  |             | A 6 0        |            | A 0 0.00 0 | A 0 0.00 0  | A 0 0.00 0  |            |         |
|                 | Reidsville Rd & Greenfield Rd | TWSC         | LOS Delay V/C Q |                             | A 0 0.00 0  | A 0 0.00 0 | A 0 0    | A 8 0.01 0 | A 0 0.00 0  |            | A 1 0      | A 9 0.04 1  |             | > > > >     | A 9 0        |            |            |             |             |            |         |
|                 | Dumfries Rd & Greenfield Rd   | TWSC         | LOS Delay V/C Q | < < < <                     | B 14 0.10 2 | > > > >    | B 14 0   | < < < <    | B 14 0.06 2 | > > > >    | B 14 0     | A 8 0.00 0  | A 0 0.00 0  | A 0 0.00 0  | A 0 0        | A 8 0.01 0 | A 0 0.00 0 | A 0 0.00 0  | A 0 0.00 0  | A 0 0.00 0 |         |

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

TWSC - Two-Way Stop Control

&lt;/&gt; - Shared with through movement



## 3 Site Description and Development Concept

### 3.1 Site Description

The subject site is on the north side of Wrigley Road between Scott Street and Reidsville Road. The property owner is proposing to operate an aggregate extraction pit on the site with a maximum annual extraction limit of 1,000,000 tonnes. Vehicle access is proposed via the existing all-moves driveway connection to the site near the east property line. **Figure 3.1** illustrates the conceptual site plan.

### 3.2 Sight Distance Assessment

The Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads*<sup>5</sup> (most recently published in 2017) defines minimum sight distance criteria based on the design speed of a road; generally 10 km/h above the posted speed limit. TAC defines the following parameters for the assessment of sight distance:

- ▶ Object Height (Vehicle tail or brake light) – 0.60 metres;
- ▶ Driver Eye Height – 1.80 metres; and
- ▶ Top of Car – 1.30 metres.

The sight distance assessments completed for this study reflect a design speed of 90 km/h, which is 10 km/h above the posted speed limit on Wrigley Road (80 km/h). **Table 3.1** summarizes the minimum recommended sight distances defined by TAC at a design speed of 90 km/h for heavy single unit trucks, representative of the expected vehicles entering and exiting the site.

Paradigm staff conducted a site visit in March 2025 to estimate the available sight distance at the proposed connection to Wrigley Road. The measurements for intersection sight distance were taken 4.4 metres from the existing edge of pavement, representing the position of a driver performing a turning movement from the subject site. The measurements for stopping sight distance were taken from the centre of the respective westbound and eastbound travel lanes on Wrigley Road. **Table 3.2** summarizes the field measurements. The findings of the assessment indicate the driveway location meets the minimum sight distances defined by TAC.

<sup>5</sup> TAC, "Intersections," chap. 9 in *Geometric Design Guide for Canadian Roads*, (Ottawa: TAC, 2017).



**TABLE 3.1: TAC MINIMUM SIGHT DISTANCES**

| Sight Distance Measurement                                         | Minimum Sight Distance<br>(90 km/h Design Speed) |
|--------------------------------------------------------------------|--------------------------------------------------|
| Minimum Stopping Sight Distance                                    | 160 metres                                       |
| Intersection Sight Distance<br>(Left Turn from Stop) <sup>1</sup>  | 240 metres                                       |
| Intersection Sight Distance<br>(Right Turn from Stop) <sup>2</sup> | 215 metres                                       |
| Intersection Sight Distance<br>(Left Turn from Major Road)         | 165 metres                                       |

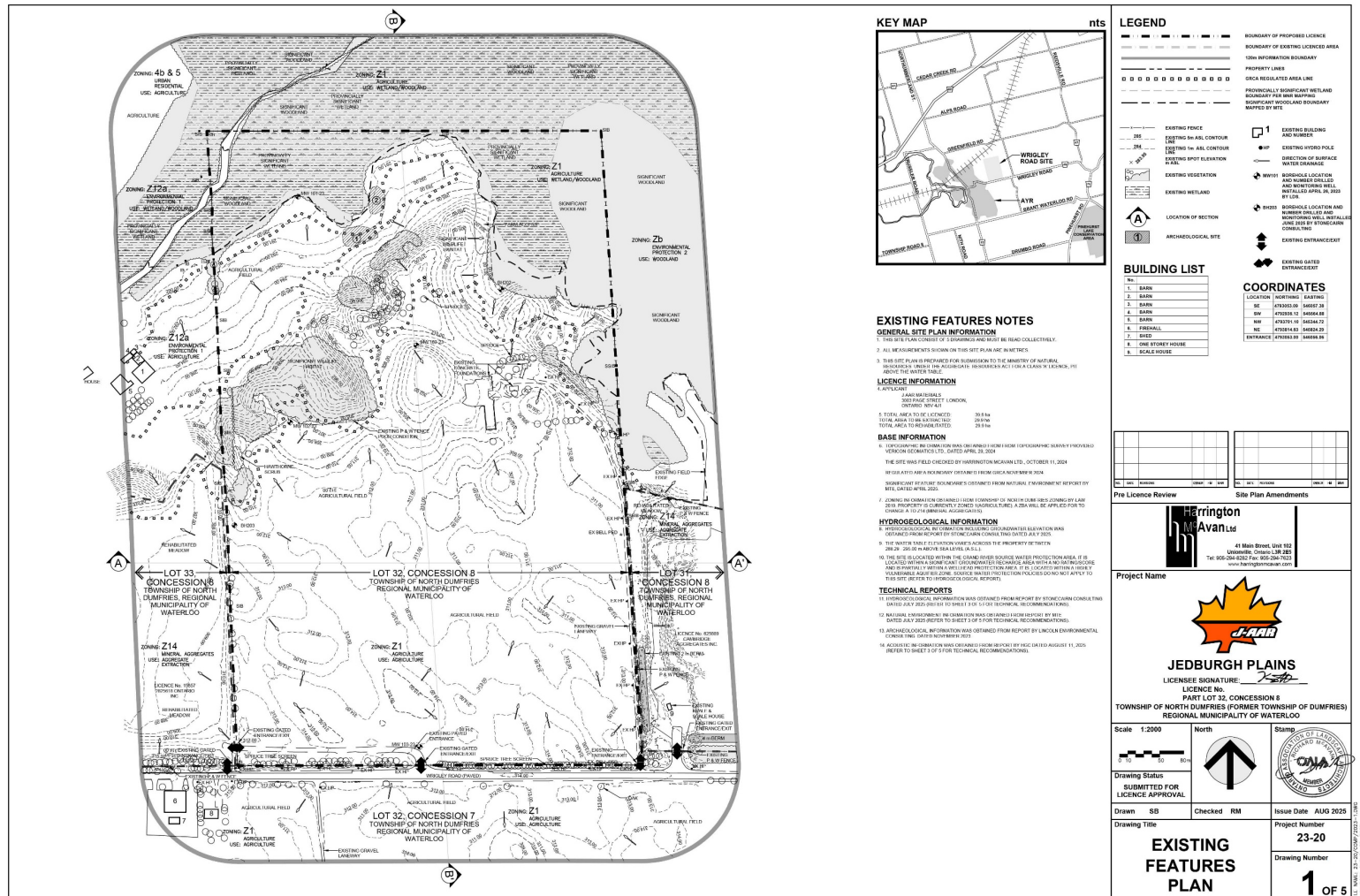
Notes:

1. Intersection sight distance for the left-turn from stop condition represents the distance for a motorist on the minor road facing in either direction.
2. Intersection sight distance for the right-turn from stop condition represents the distance for a motorist on the minor road facing to the left.

**TABLE 3.2: MEASURED (OBSERVED) SIGHT DISTANCES**

| Sight Distance Measurement                                 | Observed Sight Distance                                                                     | Meets Sight<br>Distance Guidance |
|------------------------------------------------------------|---------------------------------------------------------------------------------------------|----------------------------------|
| Minimum Stopping Sight Distance<br>(Westbound)             | >160 metres                                                                                 | Yes                              |
| Minimum Stopping Sight Distance<br>(Eastbound)             | >160 metres                                                                                 | Yes                              |
| Intersection Sight Distance<br>(Left Turn from Stop)       | >275 metres (facing west)<br>Unobstructed to 501 Scott<br>Street (North Dumfries Fire Hall) | Yes                              |
|                                                            | >275 metres (facing east)<br>Unobstructed to Reidsville Road                                | Yes                              |
| Intersection Sight Distance<br>(Right Turn from Stop)      | >275 metres (facing east)<br>Unobstructed to Reidsville Road                                | Yes                              |
| Intersection Sight Distance<br>(Left Turn from Major Road) | >275 metres (facing east)<br>Unobstructed to Reidsville Road                                | Yes                              |





No



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## Conceptual Site Plan

Figure 3.1

## 4 Future Conditions

### 4.1 Horizon Years

The assessment of future traffic conditions reflects an analysis year of 2030, representative of five years from the date of study. This is consistent with the terms of reference established for this study and the Region of Waterloo *Transportation Impact Study Guidelines* for developments generating less than 500 peak hour direction trips.<sup>6</sup>

### 4.2 Future Road Network Improvements

During pre-study consultation, Region and Township staff confirmed there were no planned intersection or road improvements to any of the intersections or roads in the study area. Subsequent review of the Region of Waterloo *Transportation Master Plan* also did not identify any planned road network improvements in the study area up to 2041.<sup>7</sup>

### 4.3 Forecast Background Traffic

The future background traffic volumes in the study area are assumed to comprise general background growth and specific traffic generated by approved or in-stream developments.

General background traffic has been estimated by applying a per annum growth rate of 1.5% to all traffic volumes in the study area. This growth rate is consistent with that used in the Transportation Impact Study for a proposed residential development at 1940 Wrigley Road.<sup>8</sup> Estimated traffic volumes related to this development have been included in the background traffic volumes.

**Figure 4.1**, and **Figure 4.2** illustrate the estimated 2030 background traffic volumes in the weekday AM peak hour weekday PM peak hour, respectively.

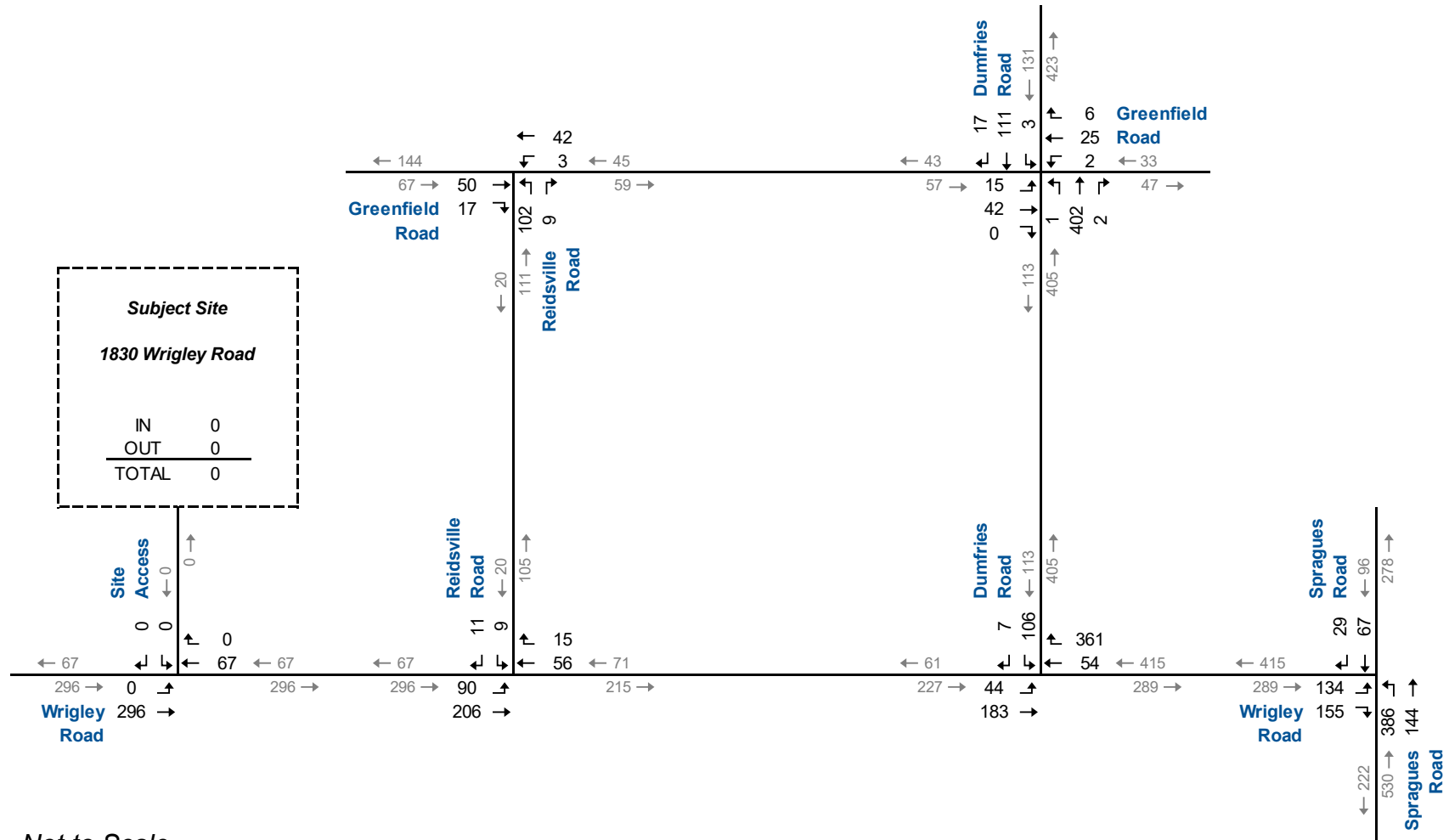
<sup>6</sup> Region of Waterloo, *Transportation Impact Study Guidelines*, (Kitchener: Region of Waterloo, 2014), 7.

<sup>7</sup> Region of Waterloo, "New Strategies," chap. 5 in *Moving Forward – 2018 Transportation Master Plan*, (Kitchener: Region of Waterloo, 2018), 8.

<sup>8</sup> Paradigm Transportation Solutions Limited, *1940 Wrigley Road, Ayr, Transportation Impact Study*, (Cambridge: PTSL, 2023).



### AM Peak Hour



*Not to Scale*

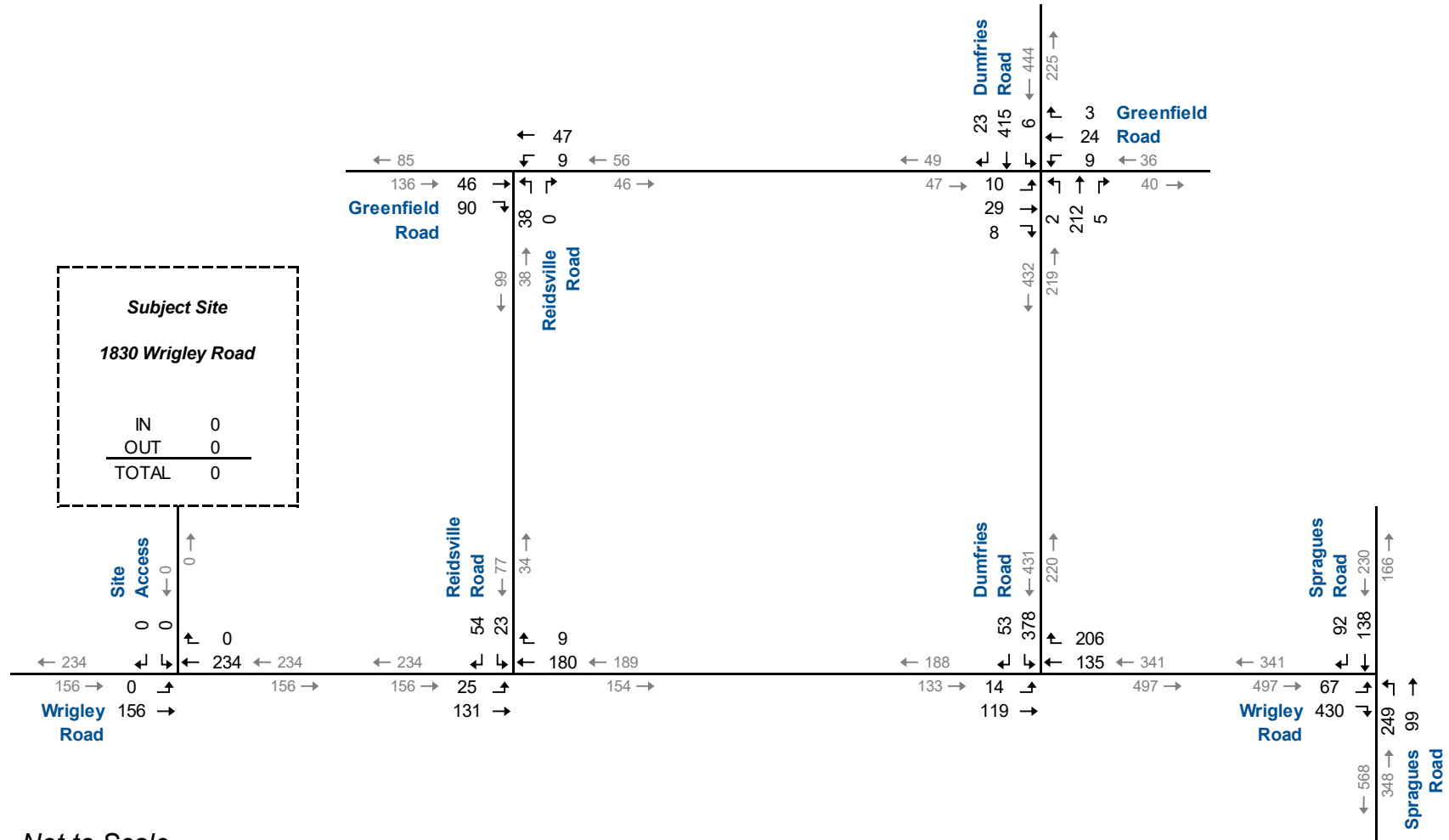


## 2030 Background Traffic Volumes AM Peak Hour

### Figure 4.1



# PM Peak Hour



Not to Scale



## 2030 Background Traffic Volumes PM Peak Hour

## 4.4 Site Traffic Forecasts

The estimated trip generation for the site is based on a first principles approach related to the operation of the site. These include the following:

- ▶ The maximum annual amount of extraction from the pit is expected to be 1,000,000 tonnes per year.
- ▶ The transfer of material will typically occur between 6 AM and 7 PM on weekdays (except holidays), and 6 AM to noon on Saturdays.
- ▶ The site will operate approximately 300 days per year.
- ▶ Traffic generated by the site is directly related to the weight of the trucks being loaded at the site. It is estimated that tri-axle trailers will be transporting approximately 41.5 tonnes of material per trip, on average.
- ▶ The transfer of material from the site is anticipated to be continuous throughout the entire day of operation with no peaking trips.

**Table 4.1** summarizes the trip generation calculations, which estimate the pit will generate approximately seven new truck trips per hour (14 two-way trips) in both the weekday AM peak hour and weekday PM peak hour. This represents a conservative estimate assuming a maximum annual extraction limit of 1,000,000 tonnes.

**TABLE 4.1: ESTIMATED TRIP GENERATION**

| Criteria                                                    | Assumption            |
|-------------------------------------------------------------|-----------------------|
| Annual Rate of Extraction                                   | 1,000,000 tonnes/year |
| Operating Days per Year                                     | 300 days              |
| Average Extraction per Day                                  | 3,333 tonnes/day      |
| Average Load per Truck                                      | 41.5 tonnes/truck     |
| Average Number of Trucks per Day                            | 80.3 trucks           |
| Operating Hours per Weekday                                 | 13 hours/day          |
| Average Number of Loads per Hour                            | 7 loads/hour          |
| <b>Estimated Trip Generation<br/>(Truck trips per hour)</b> | <b>7</b>              |



#### 4.4.1 Trip Distribution

The estimated trip distribution is based on the existing travel patterns documented in the turning movement count data and the posted heavy truck restrictions on the study road network. For the purposes of this study, use of existing travel patterns is intended to show the general preference for one route over another. Specific route choice will ultimately depend on the destination of the raw materials extracted from the site.

**Table 4.2** summarizes the estimated trip distribution. **Figure 4.3** and **Figure 4.4**, illustrates the site generated traffic estimates for the weekday AM peak hour and weekday PM peak hour, respectively.

**TABLE 4.2: ESTIMATED TRIP DISTRIBUTION**

| Origin/Destination      | AM Peak Hour |             | PM Peak Hour |             |
|-------------------------|--------------|-------------|--------------|-------------|
|                         | In           | Out         | In           | Out         |
| North via Spragues Road | 10%          | 25%         | 20%          | 15%         |
| North via Dumfries Road | 15%          | 45%         | 35%          | 20%         |
| South via Spragues Road | 50%          | 25%         | 30%          | 50%         |
| West via Wrigley Road   | 25%          | 5%          | 15%          | 15%         |
| <b>Total</b>            | <b>100%</b>  | <b>100%</b> | <b>100%</b>  | <b>100%</b> |

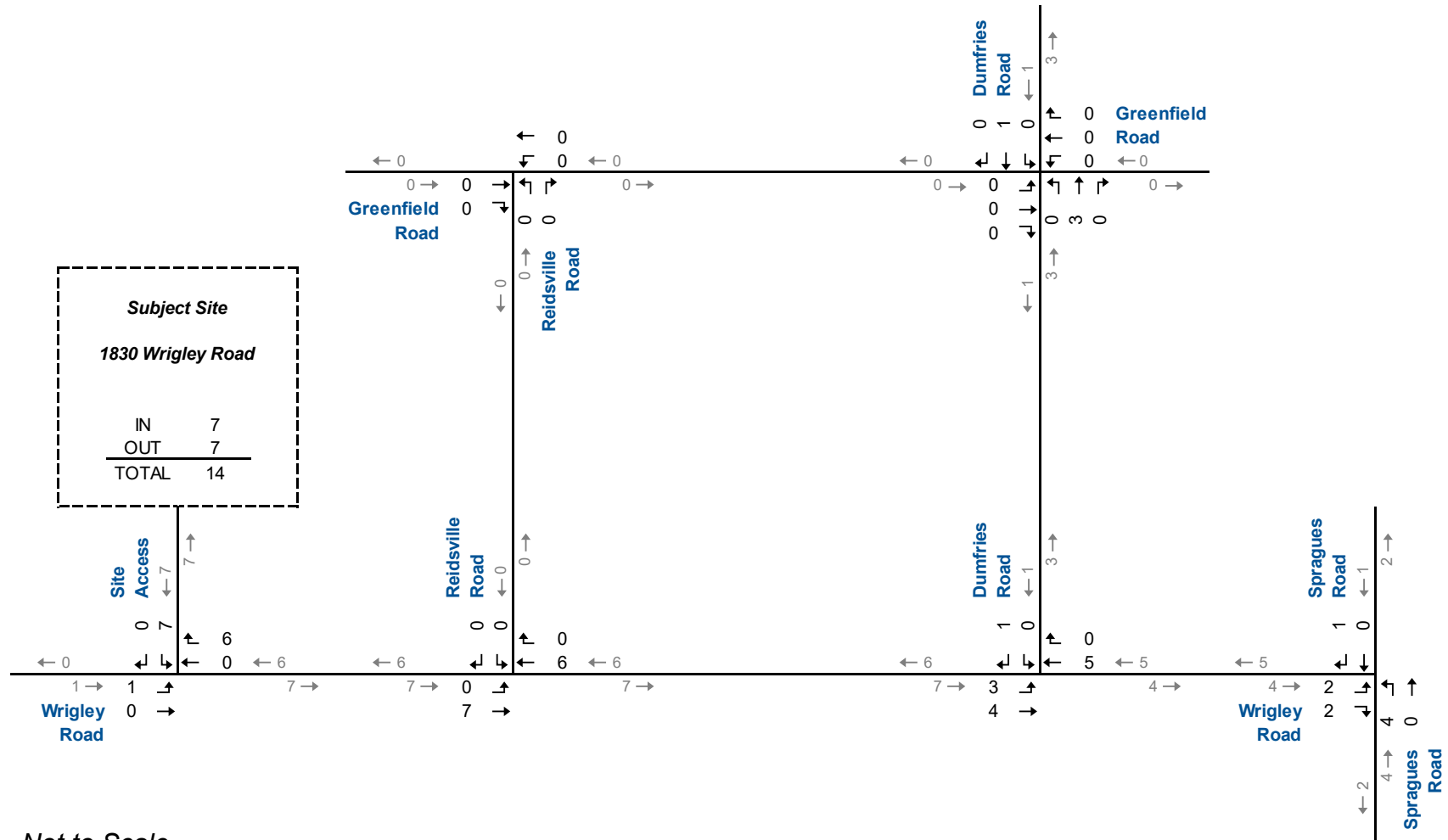
#### 4.5 Future Total Traffic

**Figure 4.5** and **Figure 4.6** illustrate the estimated 2030 total traffic volumes in the weekday AM peak hour and weekday PM peak hour, respectively. These represent the summation of the site-generated traffic volumes and background traffic volumes.





AM Peak Hour



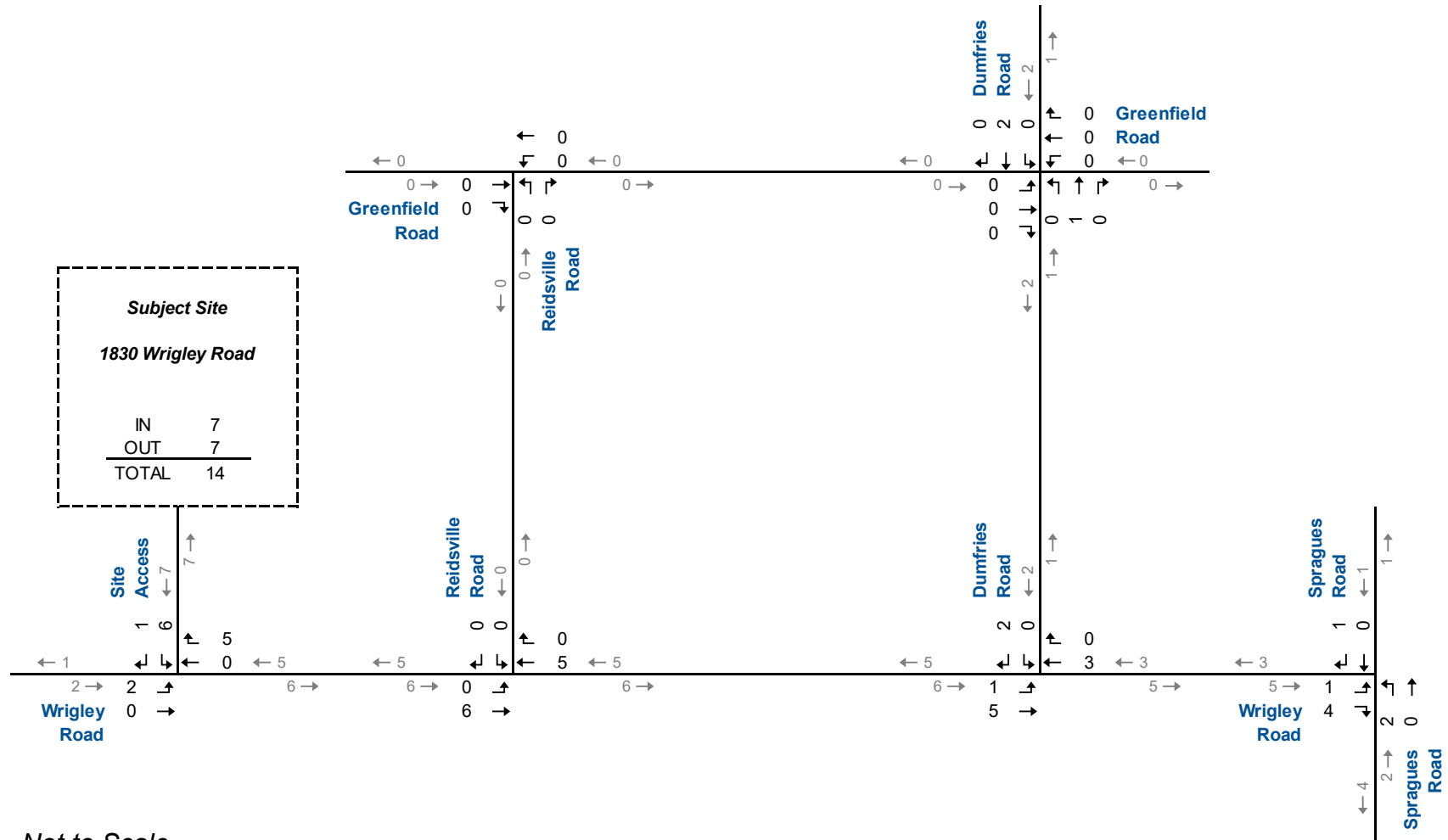
Not to Scale



## Site Generated Traffic Volumes AM Peak Hour



PM Peak Hour



Not to Scale



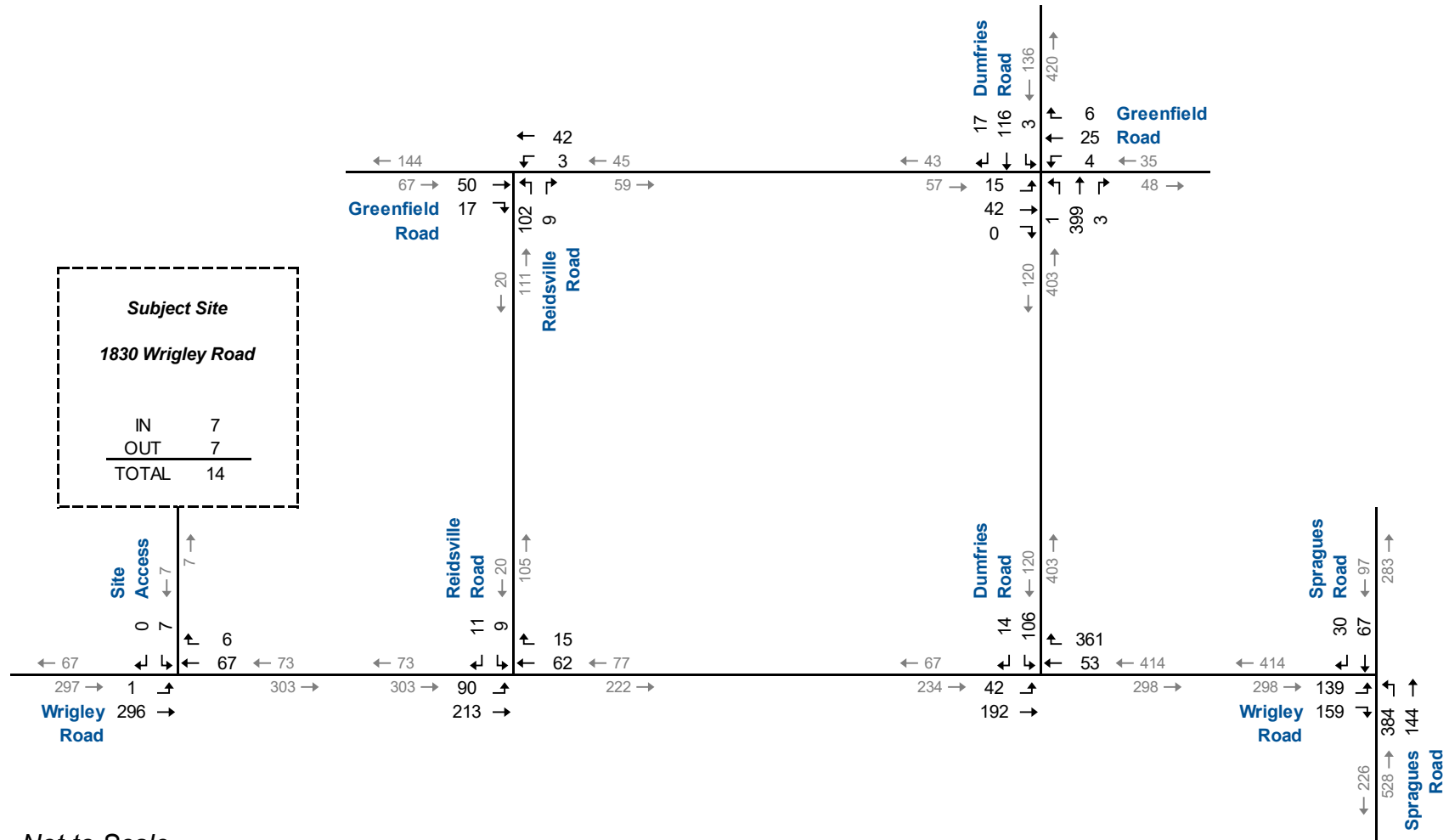
## Site Generated Traffic Volumes PM Peak Hour

1830 Wrigley Road (Jedburgh Plains) TIS  
240708

Figure 4.4



AM Peak Hour

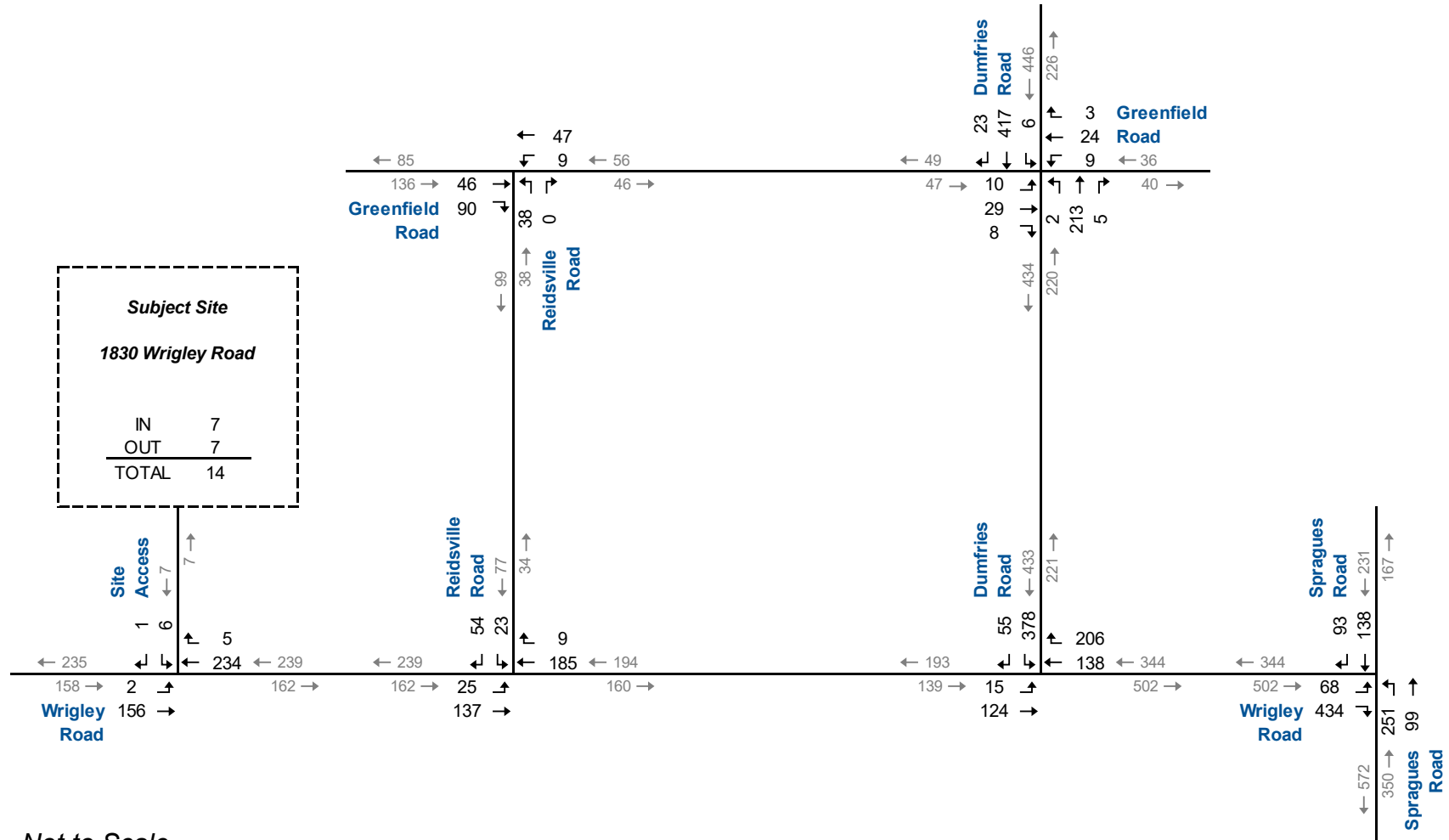


2030 Total Traffic Volumes  
AM Peak Hour





# PM Peak Hour



Not to Scale



## 2030 Total Traffic Volumes PM Peak Hour

## 5 Traffic Operations Assessment

### 5.1 Background Traffic Operations

The analysis of 2030 background traffic conditions uses the same methodology as existing traffic conditions. **Table 5.1** summarize the estimated level of service conditions under 2030 background traffic conditions.

The results of the analysis indicate all study intersections are estimated to operate under acceptable levels of service and within capacity. In the AM peak hour, the eastbound shared left-turn/right-turn movement on Wrigley Road at Spragues Road is forecast to operate at LOS F, with a delay of 55 seconds, and a v/c ratio of 0.85; however, this does not meet the criteria for a critical movement since the delay is not greater than 55 seconds.

**Appendix D** contains the detailed Synchro reports.

### 5.2 Total Traffic Operations

The analysis of 2030 total traffic conditions uses the same methodology as existing and background traffic conditions. The driveway to the subject site is assumed to comprise one inbound lane and one outbound lane, consistent with the existing driveway to the site. Heavy vehicle percentages throughout the study area have been updated to account for the truck volumes generated by the aggregate pit. **Table 5.2** summarizes the estimated level of service conditions under 2030 total traffic conditions.

The results of the analysis indicate all study intersections are forecast to operate at acceptable levels of service and within capacity, except for the eastbound approach at Wrigley Road and Spragues Road. In the AM peak hour, this approach is forecast to operate at LOS F, with a delay of 60 seconds, and a v/c ratio of 0.89. This represents a net increase of 5 seconds of delay, and a net increase in the v/c ratio of 0.04 as compared to 2030 background traffic conditions.

**Appendix E** contains the detailed Synchro reports.



**TABLE 5.1: 2030 BACKGROUND TRAFFIC OPERATIONS**

| Analysis Period | Intersection                  | Control Type | MOE             | Direction/Movement/Approach |             |            |          |            |             |         |             |             |            |             |             |            |            |              |             | Overall |        |
|-----------------|-------------------------------|--------------|-----------------|-----------------------------|-------------|------------|----------|------------|-------------|---------|-------------|-------------|------------|-------------|-------------|------------|------------|--------------|-------------|---------|--------|
|                 |                               |              |                 | Eastbound                   |             |            |          | Westbound  |             |         |             | Northbound  |            |             |             | Southbound |            |              |             |         |        |
|                 |                               |              |                 | Left                        | Through     | Right      | Approach | Left       | Through     | Right   | Approach    | Left        | Through    | Right       | Approach    | Left       | Through    | Right        | Approach    |         |        |
| AM Peak Hour    | Wrigley Rd & Reidsville Rd    | TWSC         | LOS Delay V/C Q | A 8 0.06 2                  | A 0 0.00 0  | > > > >    | A 2 0    | > > > >    | A 0 0.00 0  | A 0 0   | > > > >     | A 6 0.26 8  | A 0 0.00 0 | > > > >     | A 10 0.12 3 | A 9 0.00 0 | A 0 0.00 0 | A 0 0.00 0   | B 10 0.03 1 | > > > > | B 10 0 |
|                 | Wrigley Rd & Dumfries Rd      | TWSC         | LOS Delay V/C Q | A 8 0.04 1                  | A 0 0.00 0  | > > > >    | A 2 0    | > > > >    | A 0 0.00 0  | A 0 0   | > > > >     | A 0 0.23 7  | A 0 0.00 0 | > > > >     | A 10 0.00 0 | A 0 0.00 0 | A 0 0.00 0 | B 14 0.23 7  | > > > >     | B 14 0  |        |
|                 | Spragues Rd & Wrigley Rd      | TWSC         | LOS Delay V/C Q | F 55 0.85 58                | > > > >     | > > > >    | F 55 0   | > > > >    | > > > >     | > > > > | A 8 0.26 8  | A 0 0.00 0  | > > > >    | A 6 0.00 0  | A 0 0.00 0  | A 0 0.00 0 | A 0 0.00 0 | > > > >      | A 0 0       |         |        |
|                 | Reidsville Rd & Greenfield Rd | TWSC         | LOS Delay V/C Q | > > > >                     | A 0 0.00 0  | A 0 0.00 0 | A 0 0    | A 7 0.00 0 | A 0 0.00 0  | A 0 0   | A 10 0.12 3 | > > > >     | > > > >    | A 10 0.00 0 | A 9 0.00 0  | A 0 0.00 0 | A 0 0.00 0 | > > > >      | > > > >     |         |        |
|                 | Dumfries Rd & Greenfield Rd   | TWSC         | LOS Delay V/C Q | < < < <                     | B 15 0.13 4 | > > > >    | B 15 0   | < < < <    | B 13 0.07 2 | > > > > | A 8 0.00 0  | A 0 0.00 0  | A 0 0.00 0 | A 0 0       | A 9 0.00 0  | A 0 0.00 0 | A 0 0.00 0 | A 0 0.00 0   | > > > >     | A 0 0   |        |
| PM Peak Hour    | Wrigley Rd & Reidsville Rd    | TWSC         | LOS Delay V/C Q | A 8 0.02 1                  | A 0 0.00 0  | > > > >    | A 1 0    | > > > >    | A 0 0.00 0  | A 0 0   | > > > >     | A 6 0.20 6  | A 0 0.00 0 | > > > >     | A 10 0.05 1 | A 8 0.01 0 | A 0 0.00 0 | A 0 0.00 0   | B 10 0.10 2 | > > > > | B 10 0 |
|                 | Wrigley Rd & Dumfries Rd      | TWSC         | LOS Delay V/C Q | A 8 0.01 0                  | A 0 0.00 0  | > > > >    | A 1 0    | > > > >    | A 0 0.00 0  | A 0 0   | > > > >     | A 0 0.68 40 | A 0 0.00 0 | > > > >     | A 10 0.00 0 | A 0 0.00 0 | A 0 0.00 0 | C 23 0.68 40 | > > > >     | C 23 0  |        |
|                 | Spragues Rd & Wrigley Rd      | TWSC         | LOS Delay V/C Q | C 24 0.74 49                | > > > >     | > > > >    | C 24 0   | > > > >    | > > > >     | > > > > | A 8 0.20 6  | A 0 0.00 0  | > > > >    | A 6 0.00 0  | A 0 0.00 0  | A 0 0.00 0 | A 0 0.00 0 | > > > >      | A 0 0       |         |        |
|                 | Reidsville Rd & Greenfield Rd | TWSC         | LOS Delay V/C Q | > > > >                     | A 0 0.00 0  | A 0 0.00 0 | A 0 0    | A 8 0.01 0 | A 0 0.00 0  | A 0 0   | A 10 0.05 1 | > > > >     | > > > >    | A 10 0.00 0 | A 8 0.01 0  | A 0 0.00 0 | A 0 0.00 0 | > > > >      | > > > >     |         |        |
|                 | Dumfries Rd & Greenfield Rd   | TWSC         | LOS Delay V/C Q | < < < <                     | C 16 0.12 3 | > > > >    | C 16 0   | < < < <    | B 15 0.08 2 | > > > > | A 8 0.00 0  | A 0 0.00 0  | A 0 0.00 0 | A 0 0       | A 8 0.01 0  | A 0 0.00 0 | A 0 0.00 0 | A 0 0.00 0   | > > > >     | A 0 0   |        |

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

TWSC - Two-Way Stop Control

&lt;/&gt; - Shared with through movement



**TABLE 5.2: 2030 TOTAL TRAFFIC OPERATIONS**

| Analysis Period | Intersection                  | Control Type | MOE             | Direction/Movement/Approach |             |            |          |            |             |            |          |             |            |            |          |              |            |            |          |         |
|-----------------|-------------------------------|--------------|-----------------|-----------------------------|-------------|------------|----------|------------|-------------|------------|----------|-------------|------------|------------|----------|--------------|------------|------------|----------|---------|
|                 |                               |              |                 | Eastbound                   |             |            |          | Westbound  |             |            |          | Northbound  |            |            |          | Southbound   |            |            |          | Overall |
|                 |                               |              |                 | Left                        | Through     | Right      | Approach | Left       | Through     | Right      | Approach | Left        | Through    | Right      | Approach | Left         | Through    | Right      | Approach |         |
| AM Peak Hour    | Wrigley Rd & Reidsville Rd    | TWSC         | LOS Delay V/C Q | A 8 0.06 2                  | A 0 0.00 0  |            | A 2      |            | A 0 0.00 0  | A 0 0.00 0 | A 0      |             |            |            |          | B 10 0.03 1  |            | > > > >    | B 10     |         |
|                 | Wrigley Rd & Dumfries Rd      | TWSC         | LOS Delay V/C Q | A 8 0.04 1                  | A 0 0.00 0  |            | A 2      |            | A 0 0.00 0  | A 0 0.00 0 | A 0      |             |            |            |          | B 14 0.23 7  |            | > > > >    | B 14     |         |
|                 | Spragues Rd & Wrigley Rd      | TWSC         | LOS Delay V/C Q | F 60 0.89 64                |             | > > > >    | F 60     |            |             |            |          | A 8 0.26 8  | A 0 0.00 0 |            | A 6      |              | A 0 0.00 0 | A 0 0.00 0 | A 0      |         |
|                 | Reidsville Rd & Greenfield Rd | TWSC         | LOS Delay V/C Q |                             | A 0 0.00 0  | A 0 0.00 0 | A 0      | A 7 0.00 0 | A 0 0.00 0  |            | A 0      | A 10 0.12 3 |            | > > > >    | A 10     |              |            |            |          |         |
|                 | Dumfries Rd & Greenfield Rd   | TWSC         | LOS Delay V/C Q | < < < <                     | B 15 0.13 4 | > > > >    | B 15     | < < < <    | B 13 0.07 2 | > > > >    | B 13     | A 8 0.00 0  | A 0 0.00 0 | A 0 0.00 0 | A 0      | A 9 0.00 0   | A 0 0.00 0 | A 0 0.00 0 | A 0      |         |
|                 | Wrigley Rd & Site Access      | TWSC         | LOS Delay V/C Q | A 8 0.00 0                  | A 0 0.00 0  |            | A 0      |            | A 0 0.00 0  | A 0 0.00 0 | A 0      |             |            |            |          | B 13 0.01 0  |            | > > > >    | B 13     |         |
| PM Peak Hour    | Wrigley Rd & Reidsville Rd    | TWSC         | LOS Delay V/C Q | A 8 0.02 1                  | A 0 0.00 0  |            | A 1      |            | A 0 0.00 0  | A 0 0.00 0 | A 0      |             |            |            |          | B 10 0.10 2  |            | > > > >    | B 10     |         |
|                 | Wrigley Rd & Dumfries Rd      | TWSC         | LOS Delay V/C Q | A 8 0.01 0                  | A 0 0.00 0  |            | A 1      |            | A 0 0.00 0  | A 0 0.00 0 | A 0      |             |            |            |          | C 23 0.70 42 |            | > > > >    | C 23     |         |
|                 | Spragues Rd & Wrigley Rd      | TWSC         | LOS Delay V/C Q | C 24 0.74 50                |             | > > > >    | C 24     |            |             |            |          | A 8 0.19 5  | A 0 0.00 0 |            | A 6      |              | A 0 0.00 0 | A 0 0.00 0 | A 0      |         |
|                 | Reidsville Rd & Greenfield Rd | TWSC         | LOS Delay V/C Q |                             | A 0 0.00 0  | A 0 0.00 0 | A 0      | A 8 0.01 0 | A 0 0.00 0  |            | A 1      | A 10 0.05 1 |            | > > > >    | A 10     |              |            |            |          |         |
|                 | Dumfries Rd & Greenfield Rd   | TWSC         | LOS Delay V/C Q | < < < <                     | C 16 0.12 3 | > > > >    | C 16     | < < < <    | C 16 0.10 2 | > > > >    | C 16     | A 8 0.00 0  | A 0 0.00 0 | A 0 0.00 0 | A 0      | A 8 0.01 0   | A 0 0.00 0 | A 0 0.00 0 | A 0      |         |
|                 | Wrigley Rd & Site Access      | TWSC         | LOS Delay V/C Q | A 9 0.00 0                  | A 0 0.00 0  |            | A 0      |            | A 0 0.00 0  | A 0 0.00 0 | A 0      |             |            |            |          | B 13 0.01 0  |            | > > > >    | B 13     |         |

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

TWSC - Two-Way Stop Control

&lt;/&gt; - Shared with through movement



## 5.3 Remedial Measures

The analyses presented in **Section 5.1** and **Section 5.2** indicate development of the subject site is forecast to have a negligible impact on traffic operations in the study area. All intersections are forecast to operate at acceptable levels of service except for the eastbound approach on Wrigley Road at Spragues Road. This approach is forecast to operate with a delay of 60 seconds in the AM peak hour, despite the site contributing only five new trips to this approach (an increase of 1.4% compared to 2030 background conditions).

This operational condition reflects a combination of the northbound left-turn volume from Spragues Road onto Wrigley Road and the shared lane configuration between eastbound left-turn and eastbound right-turn movements from Wrigley Road. With northbound left-turn volumes equal to approximately six per minute (or one every 10 seconds) in the AM peak hour, eastbound left-turning traffic from Wrigley Road is provided limited gaps to enter Spragues Road. Any delays to eastbound left-turning vehicles at the front of the vehicle queue are then imparted onto all other eastbound vehicles on the approach.

The reader is cautioned that the analyses reflected in this report are considered a conservative representation of traffic operations because, the pavement width of the eastbound approach does permit right-turning vehicles to by-pass queued left-turning vehicles; although this requires vehicles to traverse the paved shoulder. This activity was observed on the turning movement count video recordings during both the AM peak hour and PM peak hour.

Because the forecast delay of 55 seconds is at the critical threshold (55 seconds) under background conditions, it is recommended the Region monitor traffic operations at the intersection to determine the need for intersection improvements, independent of the proposed aggregate pit.

### 5.3.1 Auxiliary Left-Turn Lanes

Exclusive left-turn lanes provide a dedicated lane for left-turning vehicles to complete their movement. The Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads* states, “when the number of left-turning vehicles at intersections is such that it creates a hazard and reduces capacity, consideration should be given to the provision of a separate left-turn lane.”<sup>9</sup>

<sup>9</sup> Transportation Association of Canada, “Left-Turn Lanes,” chap. 9.17 in *Geometric Design Guide for Canadian Roads*, (Ottawa: TAC, 2017), 122.



The Ministry of Transportation's (MTO) *Design Supplement*<sup>10</sup> to the Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads*<sup>11</sup> contains the warrants for left-turn lanes. For two-lane roads, the warrant is based on a combination of the advancing and opposing design hour volumes, the design speed of the road, and the percentage of left-turning vehicles in the advancing volume. Left-turn lanes are typically not warranted where the left-turning volume is less than 5% of the advancing volume.

The assessment is based on 2030 total traffic volumes, which represent the worst-case traffic volume conditions analyzed in this study. Where a left-turn lane percentage falls between the range of available nomographs, Paradigm has analyzed both the lower and upper bound. For example, for a left-turn percentage of 12%, Paradigm has used the nomographs for both 10% and 15%.

**Appendix F** contains the left-turn warrant worksheets, based on a design speed of 90 km/h, and indicate an eastbound left-turn lane is not warranted on Wrigley Road at the site driveway.

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<sup>10</sup> Ministry of Transportation, Ontario, *Design Supplement for the TAC Geometric Design Guide for Canadian Roads, Appendix 9A for Section 9.17 (Left-Turn Lanes)*, (Toronto: MTO, 2017).

<sup>11</sup> Transportation Association of Canada, "Left-Turn Lanes," chap 9.17 in *Geometric Design Guide for Canadian Roads*, (Ottawa: TAC, 2017), 122-152.



## 6 Conclusions and Recommendations

### 6.1 Findings

Based on the analyses contained herein, the findings of this report are as follows:

- ▶ Under existing conditions, the study intersections (Wrigley Road and Reidsville Road, Wrigley Road and Dumfries Road, Wrigley Road and Spragues Road, Greenfield Road and Reidsville Road, and Greenfield Road and Dumfries Road) are operating at acceptable levels of service and within capacity. There are no critical movements.
- ▶ Under 2030 background traffic conditions (that is, without the development of the subject site) the study intersections are forecast to generally operate at acceptable levels of service and within capacity, with the following noted:
  - In the AM peak hour, the eastbound shared left-turn/right-turn movement on Wrigley Road at Spragues Road is forecast to operate at LOS F, with a delay of 55 seconds, and a v/c ratio of 0.85. This does not technically meet the criteria for a critical movement because the delay is not greater than 55 seconds.
- ▶ Development of the site is estimated to generate 14 trips in the weekday AM peak hour and 14 trips in the weekday PM peak hour. This represents a conservative estimate assuming a maximum annual extraction limit of 1,000,000 tonnes.
- ▶ Under 2030 total traffic conditions (that is, with the development of the subject site) the study intersections are forecast to generally operate at acceptable levels of service and within capacity, with the following noted:
  - In the AM peak hour, the eastbound approach at Wrigley Road and Spragues Road is forecast to operate at LOS F, with a delay of 60 seconds, and a v/c ratio of 0.89.
- ▶ The site driveway location provides sufficient stopping and intersection sight distance for single-unit trucks at a design speed of 90 km/h, based on the guidance and methodologies published by the Transportation Association of Canada (TAC); and
- ▶ An eastbound left-turn lane is not warranted on Wrigley Road at the site driveway.



## 6.2 Conclusions

Based on the findings of this study it is concluded that development of the subject site is forecast to have a negligible impact on traffic operations in the study area.

The analyses in this study indicate the eastbound approach at Wrigley Road and Spragues Road is forecast to operate at the threshold of a critical movement under 2030 background conditions. Under 2030 total traffic conditions, with site generated traffic representing only a 1.4% increase in traffic volumes (five vehicles) on the approach, the approach is forecast to operate with a delay of 60 seconds, but still within capacity. These analyses are considered conservative because they assume the maximum annual extraction limit of 1,000,000 tonnes.

## 6.3 Recommendations

Based on the conclusions of this study it is recommended the site be considered for approval with no requirement for off-site transportation network improvements.

Independent of the development, it is recommended the Region of Waterloo monitor traffic volumes and operations at Wrigley Road and Spragues Road.



# Appendix A

## Pre-Study Consultation Notes



**1830 Wrigley Road, Ayr**  
**PRE-STUDY CONFERENCE FORM**

| Items                | Description                                                                                                                        | Details                                                                                                                                                                                                                                                    |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ISSUES</b>        |                                                                                                                                    |                                                                                                                                                                                                                                                            |
| 1                    | List any issues expected that may impact the content or recommendations of the subject Transportation Impact Study.                | <ul style="list-style-type: none"> <li>To be determined</li> </ul>                                                                                                                                                                                         |
| <b>INTRODUCTION</b>  |                                                                                                                                    |                                                                                                                                                                                                                                                            |
| 2                    | Nature of application (Attach a drawing)                                                                                           | <ul style="list-style-type: none"> <li>Zoning By-law Amendment</li> </ul>                                                                                                                                                                                  |
| 3                    | TIS process, and relevant policies, procedures and approvals                                                                       | <ul style="list-style-type: none"> <li>Region of Waterloo Guidelines for the Preparation of Transportation Impact Studies</li> <li>Region of Waterloo Transportation Impact Studies Requirements for Capacity Analysis, Roundabouts, Turn Lanes</li> </ul> |
| 4                    | Public Meeting                                                                                                                     | <ul style="list-style-type: none"> <li>To be determined</li> </ul>                                                                                                                                                                                         |
| <b>CONTEXT</b>       |                                                                                                                                    |                                                                                                                                                                                                                                                            |
| 5                    | Study intersections<br>Note: the consultant is responsible to identify any further intersections impacted as the study progresses. | <ul style="list-style-type: none"> <li>Wrigley Road and Reidsville Road</li> <li>Wrigley Road and Dumfries Road</li> <li>Wrigley Road and Spragues Road</li> <li>Greenfield Road and Reidsville Road</li> <li>Greenfield Road and Dumfries Road</li> </ul> |
| 6                    | Size and number of phases of development                                                                                           | <ul style="list-style-type: none"> <li>Aggregate pit with a maximum tonnage limit of 1,000,000 tonnes per year</li> </ul>                                                                                                                                  |
| 7                    | Planned transportation system improvements                                                                                         | <ul style="list-style-type: none"> <li>None identified in 2018 Region of Waterloo TMP</li> </ul>                                                                                                                                                           |
| <b>TRAVEL DEMAND</b> |                                                                                                                                    |                                                                                                                                                                                                                                                            |
| 8                    | Horizon Years                                                                                                                      | <ul style="list-style-type: none"> <li>Five years from date of study</li> </ul>                                                                                                                                                                            |
| 9                    | Peak Hour Determination                                                                                                            | <ul style="list-style-type: none"> <li>weekday AM peak hour of adjacent roadway</li> <li>weekday PM peak hour of adjacent roadway</li> </ul>                                                                                                               |
| 10                   | Background Traffic                                                                                                                 | <ul style="list-style-type: none"> <li>ROW travel demand forecasts</li> <li>Approved and pending approval development applications               <ul style="list-style-type: none"> <li>1940 Wrigley Road</li> </ul> </li> </ul>                           |
| 11                   | Trip Generation                                                                                                                    | <ul style="list-style-type: none"> <li>First principles based on hours of operation, annual tonnage limit.</li> </ul>                                                                                                                                      |

| Items                 | Description                                     | Details                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12                    | Trip Reductions (TDM, internal, pass-by)        | <ul style="list-style-type: none"> <li>• Not Applicable</li> </ul>                                                                                                                                                                                                                                                                                                                                       |
| 13                    | Trip distribution and assignment                | <ul style="list-style-type: none"> <li>• Haul route east along Wrigley Road then north along Dumfries Road or north/south along Spragues Road.</li> <li>• Local traffic patterns</li> </ul>                                                                                                                                                                                                              |
| EVALUATION OF IMPACTS |                                                 |                                                                                                                                                                                                                                                                                                                                                                                                          |
| 14                    | Traffic impact analysis (use approved software) | <ul style="list-style-type: none"> <li>• Unsignalized intersections</li> <li>• Left turn warrant analysis</li> <li>• Signal warrant analysis</li> <li>• LOS, v/c, delay, queuing</li> <li>• ROW saturation flow rates</li> </ul>                                                                                                                                                                         |
| 15                    | Roundabout feasibility (use approved software)  | <ul style="list-style-type: none"> <li>• Not applicable</li> </ul>                                                                                                                                                                                                                                                                                                                                       |
| 16                    | Transit assessment                              | <ul style="list-style-type: none"> <li>• Not applicable</li> </ul>                                                                                                                                                                                                                                                                                                                                       |
| 17                    | Pedestrian assessment                           | <ul style="list-style-type: none"> <li>• Existing network</li> <li>• Future network connectivity</li> </ul>                                                                                                                                                                                                                                                                                              |
| 18                    | Cycling assessment                              | <ul style="list-style-type: none"> <li>• Existing network</li> <li>• Future network connectivity</li> </ul>                                                                                                                                                                                                                                                                                              |
| 19                    | Safety analysis                                 | <ul style="list-style-type: none"> <li>• No required</li> </ul>                                                                                                                                                                                                                                                                                                                                          |
| 20                    | Site access and circulation                     | <ul style="list-style-type: none"> <li>• Not applicable</li> </ul>                                                                                                                                                                                                                                                                                                                                       |
| 21                    | Submission format                               | <ul style="list-style-type: none"> <li>• Three hard copies of main report including appendices (other than analysis results/output e.g. Synchro reports)</li> <li>• Minimum one original hard copy must be sealed by a professional engineer</li> <li>• Electronic copy of complete report and all appendices</li> <li>• Electronic copy of operational analysis files (e.g. Synchro, Arcady)</li> </ul> |

# Appendix B

## Turning Movement Count Data





Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
519-896-3163 cbowness@pts1.com

Count Name: Dumfries Road & Greensville  
Road  
Site Code: 240708  
Start Date: 02/11/2025  
Page No: 1

## Turning Movement Data

| Start Time    | Greenfield Road Eastbound |      |       |        |      |            | Greenfield Road Westbound |      |       |        |      |            | Dumfries Road Northbound |      |       |        |      |            | Dumfries Road Southbound |      |       |        |      |            | Int. Total |
|---------------|---------------------------|------|-------|--------|------|------------|---------------------------|------|-------|--------|------|------------|--------------------------|------|-------|--------|------|------------|--------------------------|------|-------|--------|------|------------|------------|
|               | Left                      | Thru | Right | U-Turn | Peds | App. Total | Left                      | Thru | Right | U-Turn | Peds | App. Total | Left                     | Thru | Right | U-Turn | Peds | App. Total | Left                     | Thru | Right | U-Turn | Peds | App. Total |            |
| 6:00 AM       | 1                         | 5    | 0     | 0      | 0    | 6          | 0                         | 1    | 0     | 0      | 0    | 1          | 0                        | 54   | 0     | 0      | 0    | 54         | 0                        | 15   | 2     | 0      | 0    | 17         | 78         |
| 6:15 AM       | 0                         | 2    | 0     | 0      | 0    | 2          | 0                         | 0    | 2     | 0      | 0    | 2          | 0                        | 62   | 0     | 0      | 0    | 62         | 0                        | 19   | 0     | 0      | 0    | 19         | 85         |
| 6:30 AM       | 1                         | 2    | 0     | 0      | 0    | 3          | 0                         | 5    | 1     | 0      | 0    | 6          | 0                        | 71   | 0     | 0      | 0    | 71         | 0                        | 16   | 0     | 0      | 0    | 16         | 96         |
| 6:45 AM       | 2                         | 2    | 1     | 0      | 0    | 5          | 0                         | 5    | 1     | 0      | 0    | 6          | 0                        | 81   | 0     | 0      | 0    | 81         | 0                        | 26   | 4     | 0      | 0    | 30         | 122        |
| Hourly Total  | 4                         | 11   | 1     | 0      | 0    | 16         | 0                         | 11   | 4     | 0      | 0    | 15         | 0                        | 268  | 0     | 0      | 0    | 268        | 0                        | 76   | 6     | 0      | 0    | 82         | 381        |
| 7:00 AM       | 0                         | 1    | 1     | 0      | 0    | 2          | 0                         | 3    | 1     | 0      | 0    | 4          | 1                        | 71   | 0     | 0      | 0    | 72         | 1                        | 27   | 2     | 0      | 0    | 30         | 108        |
| 7:15 AM       | 2                         | 6    | 0     | 0      | 0    | 8          | 0                         | 6    | 1     | 0      | 0    | 7          | 0                        | 87   | 1     | 0      | 0    | 88         | 0                        | 25   | 3     | 0      | 0    | 28         | 131        |
| 7:30 AM       | 2                         | 14   | 0     | 0      | 0    | 16         | 1                         | 5    | 1     | 0      | 0    | 7          | 0                        | 131  | 0     | 0      | 0    | 131        | 2                        | 33   | 6     | 0      | 0    | 41         | 195        |
| 7:45 AM       | 7                         | 9    | 0     | 0      | 0    | 16         | 0                         | 1    | 1     | 0      | 0    | 2          | 0                        | 67   | 0     | 0      | 0    | 67         | 1                        | 28   | 3     | 0      | 0    | 32         | 117        |
| Hourly Total  | 11                        | 30   | 1     | 0      | 0    | 42         | 1                         | 15   | 4     | 0      | 0    | 20         | 1                        | 356  | 1     | 0      | 0    | 358        | 4                        | 113  | 14    | 0      | 0    | 131        | 551        |
| 8:00 AM       | 3                         | 10   | 0     | 0      | 0    | 13         | 0                         | 11   | 3     | 0      | 0    | 14         | 1                        | 75   | 0     | 0      | 0    | 76         | 0                        | 15   | 4     | 0      | 0    | 19         | 122        |
| 8:15 AM       | 1                         | 4    | 1     | 0      | 0    | 6          | 1                         | 10   | 2     | 0      | 0    | 13         | 1                        | 61   | 1     | 0      | 0    | 63         | 1                        | 31   | 2     | 0      | 0    | 34         | 116        |
| 8:30 AM       | 3                         | 2    | 1     | 0      | 0    | 6          | 1                         | 3    | 4     | 0      | 0    | 8          | 2                        | 73   | 0     | 0      | 0    | 75         | 0                        | 29   | 1     | 0      | 0    | 30         | 119        |
| 8:45 AM       | 1                         | 4    | 2     | 0      | 0    | 7          | 2                         | 4    | 0     | 0      | 0    | 6          | 1                        | 41   | 0     | 0      | 0    | 42         | 2                        | 34   | 5     | 0      | 0    | 41         | 96         |
| Hourly Total  | 8                         | 20   | 4     | 0      | 0    | 32         | 4                         | 28   | 9     | 0      | 0    | 41         | 5                        | 250  | 1     | 0      | 0    | 256        | 3                        | 109  | 12    | 0      | 0    | 124        | 453        |
| *** BREAK *** | -                         | -    | -     | -      | -    | -          | -                         | -    | -     | -      | -    | -          | -                        | -    | -     | -      | -    | -          | -                        | -    | -     | -      | -    | -          | -          |
| 11:30 AM      | 1                         | 4    | 1     | 0      | 0    | 6          | 1                         | 4    | 2     | 0      | 0    | 7          | 2                        | 24   | 1     | 0      | 0    | 27         | 1                        | 23   | 7     | 0      | 0    | 31         | 71         |
| 11:45 AM      | 9                         | 7    | 1     | 0      | 0    | 17         | 0                         | 6    | 0     | 0      | 0    | 6          | 1                        | 24   | 1     | 0      | 0    | 26         | 0                        | 23   | 2     | 0      | 0    | 25         | 74         |
| Hourly Total  | 10                        | 11   | 2     | 0      | 0    | 23         | 1                         | 10   | 2     | 0      | 0    | 13         | 3                        | 48   | 2     | 0      | 0    | 53         | 1                        | 46   | 9     | 0      | 0    | 56         | 145        |
| 12:00 PM      | 3                         | 8    | 1     | 0      | 0    | 12         | 0                         | 8    | 1     | 0      | 0    | 9          | 0                        | 20   | 0     | 0      | 0    | 20         | 1                        | 22   | 5     | 0      | 0    | 28         | 69         |
| 12:15 PM      | 3                         | 4    | 1     | 0      | 0    | 8          | 0                         | 3    | 0     | 0      | 0    | 3          | 1                        | 36   | 0     | 0      | 0    | 37         | 0                        | 27   | 6     | 0      | 0    | 33         | 81         |
| 12:30 PM      | 3                         | 1    | 2     | 0      | 0    | 6          | 0                         | 6    | 1     | 0      | 0    | 7          | 0                        | 36   | 1     | 0      | 0    | 37         | 1                        | 21   | 1     | 0      | 0    | 23         | 73         |
| 12:45 PM      | 4                         | 7    | 1     | 0      | 0    | 12         | 2                         | 5    | 2     | 0      | 0    | 9          | 0                        | 20   | 1     | 0      | 0    | 21         | 1                        | 36   | 4     | 0      | 0    | 41         | 83         |
| Hourly Total  | 13                        | 20   | 5     | 0      | 0    | 38         | 2                         | 22   | 4     | 0      | 0    | 28         | 1                        | 112  | 2     | 0      | 0    | 115        | 3                        | 106  | 16    | 0      | 0    | 125        | 306        |
| 1:00 PM       | 3                         | 4    | 1     | 0      | 0    | 8          | 0                         | 5    | 0     | 0      | 0    | 5          | 2                        | 29   | 0     | 0      | 0    | 31         | 1                        | 20   | 3     | 0      | 0    | 24         | 68         |
| 1:15 PM       | 4                         | 10   | 1     | 0      | 0    | 15         | 1                         | 3    | 0     | 0      | 0    | 4          | 2                        | 17   | 1     | 0      | 0    | 20         | 0                        | 28   | 6     | 0      | 0    | 34         | 73         |
| *** BREAK *** | -                         | -    | -     | -      | -    | -          | -                         | -    | -     | -      | -    | -          | -                        | -    | -     | -      | -    | -          | -                        | -    | -     | -      | -    | -          | -          |
| Hourly Total  | 7                         | 14   | 2     | 0      | 0    | 23         | 1                         | 8    | 0     | 0      | 0    | 9          | 4                        | 46   | 1     | 0      | 0    | 51         | 1                        | 48   | 9     | 0      | 0    | 58         | 141        |
| 3:00 PM       | 3                         | 3    | 1     | 0      | 0    | 7          | 0                         | 10   | 0     | 0      | 0    | 10         | 0                        | 21   | 0     | 0      | 0    | 21         | 0                        | 41   | 2     | 0      | 0    | 43         | 81         |
| 3:15 PM       | 7                         | 3    | 1     | 0      | 0    | 11         | 1                         | 7    | 0     | 0      | 0    | 8          | 2                        | 36   | 0     | 0      | 0    | 38         | 0                        | 56   | 0     | 0      | 0    | 56         | 113        |
| 3:30 PM       | 2                         | 9    | 0     | 0      | 0    | 11         | 0                         | 6    | 1     | 0      | 0    | 7          | 1                        | 46   | 0     | 0      | 0    | 47         | 1                        | 71   | 4     | 0      | 0    | 76         | 141        |
| 3:45 PM       | 4                         | 6    | 0     | 0      | 0    | 10         | 0                         | 7    | 0     | 0      | 0    | 7          | 0                        | 42   | 6     | 0      | 0    | 48         | 1                        | 55   | 3     | 0      | 0    | 59         | 124        |
| Hourly Total  | 16                        | 21   | 2     | 0      | 0    | 39         | 1                         | 30   | 1     | 0      | 0    | 32         | 3                        | 145  | 6     | 0      | 0    | 154        | 2                        | 223  | 9     | 0      | 0    | 234        | 459        |
| 4:00 PM       | 3                         | 4    | 0     | 0      | 0    | 7          | 0                         | 8    | 1     | 0      | 0    | 9          | 0                        | 35   | 1     | 0      | 0    | 36         | 0                        | 94   | 2     | 0      | 0    | 96         | 148        |
| 4:15 PM       | 2                         | 3    | 1     | 0      | 0    | 6          | 0                         | 5    | 1     | 0      | 0    | 6          | 0                        | 49   | 0     | 0      | 0    | 49         | 1                        | 87   | 7     | 0      | 0    | 95         | 156        |

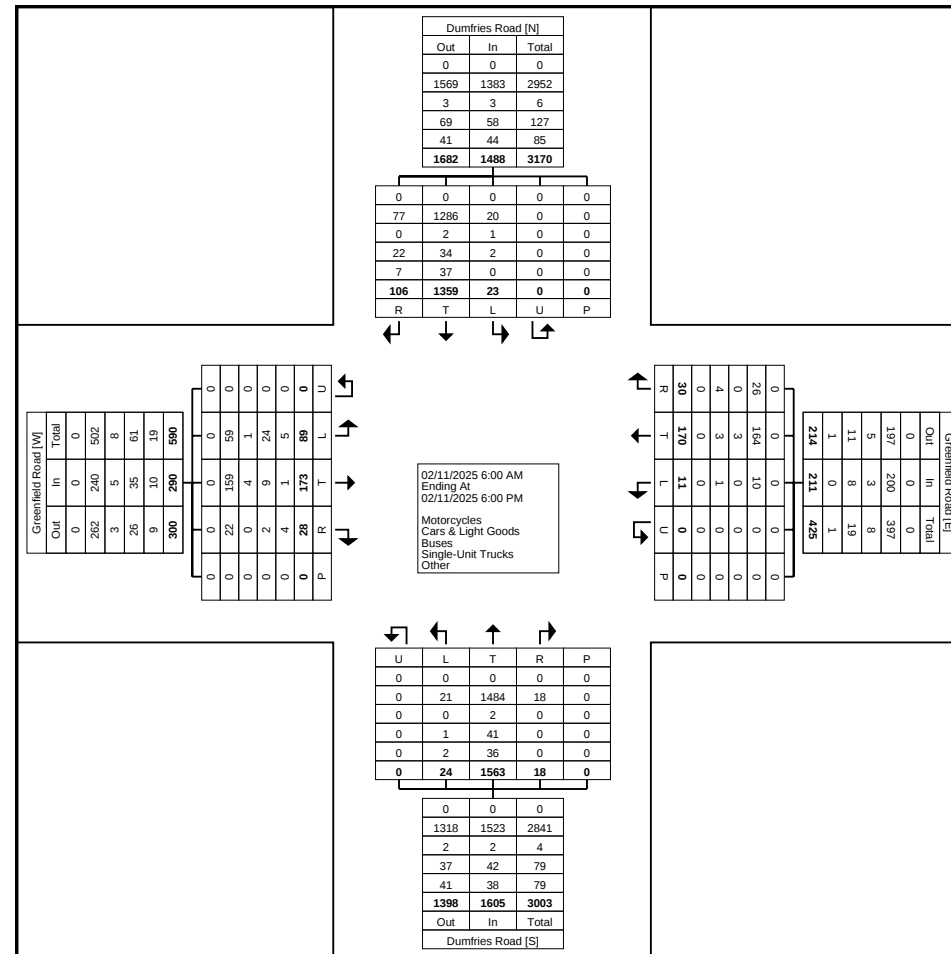
|                         |      |      |      |     |   |      |      |      |      |     |   |      |      |      |       |     |   |      |      |      |      |     |   |      |      |
|-------------------------|------|------|------|-----|---|------|------|------|------|-----|---|------|------|------|-------|-----|---|------|------|------|------|-----|---|------|------|
| 4:30 PM                 | 2    | 7    | 0    | 0   | 0 | 9    | 0    | 5    | 0    | 0   | 0 | 5    | 2    | 51   | 1     | 0   | 0 | 54   | 1    | 96   | 5    | 0   | 0 | 102  | 170  |
| 4:45 PM                 | 1    | 8    | 1    | 0   | 0 | 10   | 0    | 8    | 0    | 0   | 0 | 8    | 0    | 47   | 2     | 0   | 0 | 49   | 2    | 69   | 4    | 0   | 0 | 75   | 142  |
| Hourly Total            | 8    | 22   | 2    | 0   | 0 | 32   | 0    | 26   | 2    | 0   | 0 | 28   | 2    | 182  | 4     | 0   | 0 | 188  | 4    | 346  | 18   | 0   | 0 | 368  | 616  |
| 5:00 PM                 | 4    | 9    | 4    | 0   | 0 | 17   | 1    | 4    | 2    | 0   | 0 | 7    | 0    | 42   | 1     | 0   | 0 | 43   | 2    | 103  | 5    | 0   | 0 | 110  | 177  |
| 5:15 PM                 | 1    | 3    | 3    | 0   | 0 | 7    | 0    | 5    | 1    | 0   | 0 | 6    | 2    | 39   | 0     | 0   | 0 | 41   | 2    | 89   | 3    | 0   | 0 | 94   | 148  |
| 5:30 PM                 | 2    | 9    | 1    | 0   | 0 | 12   | 0    | 8    | 1    | 0   | 0 | 9    | 3    | 48   | 0     | 0   | 0 | 51   | 0    | 59   | 2    | 0   | 0 | 61   | 133  |
| 5:45 PM                 | 5    | 3    | 1    | 0   | 0 | 9    | 0    | 3    | 0    | 0   | 0 | 3    | 0    | 27   | 0     | 0   | 0 | 27   | 1    | 41   | 3    | 0   | 0 | 45   | 84   |
| Hourly Total            | 12   | 24   | 9    | 0   | 0 | 45   | 1    | 20   | 4    | 0   | 0 | 25   | 5    | 156  | 1     | 0   | 0 | 162  | 5    | 292  | 13   | 0   | 0 | 310  | 542  |
| Grand Total             | 89   | 173  | 28   | 0   | 0 | 290  | 11   | 170  | 30   | 0   | 0 | 211  | 24   | 1563 | 18    | 0   | 0 | 1605 | 23   | 1359 | 106  | 0   | 0 | 1488 | 3594 |
| Approach %              | 30.7 | 59.7 | 9.7  | 0.0 | - | -    | 5.2  | 80.6 | 14.2 | 0.0 | - | -    | 1.5  | 97.4 | 1.1   | 0.0 | - | -    | 1.5  | 91.3 | 7.1  | 0.0 | - | -    | -    |
| Total %                 | 2.5  | 4.8  | 0.8  | 0.0 | - | 8.1  | 0.3  | 4.7  | 0.8  | 0.0 | - | 5.9  | 0.7  | 43.5 | 0.5   | 0.0 | - | 44.7 | 0.6  | 37.8 | 2.9  | 0.0 | - | 41.4 | -    |
| Motorcycles             | 0    | 0    | 0    | 0   | - | 0    | 0    | 0    | 0    | 0   | - | 0    | 0    | 0    | 0     | 0   | - | 0    | 0    | 0    | 0    | 0   | - | 0    | 0    |
| % Motorcycles           | 0.0  | 0.0  | 0.0  | -   | - | 0.0  | 0.0  | 0.0  | 0.0  | -   | - | 0.0  | 0.0  | 0.0  | 0.0   | -   | - | 0.0  | 0.0  | 0.0  | 0.0  | -   | - | 0.0  | 0.0  |
| Cars & Light Goods      | 59   | 159  | 22   | 0   | - | 240  | 10   | 164  | 26   | 0   | - | 200  | 21   | 1484 | 18    | 0   | - | 1523 | 20   | 1286 | 77   | 0   | - | 1383 | 3346 |
| % Cars & Light Goods    | 66.3 | 91.9 | 78.6 | -   | - | 82.8 | 90.9 | 96.5 | 86.7 | -   | - | 94.8 | 87.5 | 94.9 | 100.0 | -   | - | 94.9 | 87.0 | 94.6 | 72.6 | -   | - | 92.9 | 93.1 |
| Buses                   | 1    | 4    | 0    | 0   | - | 5    | 0    | 3    | 0    | 0   | - | 3    | 0    | 2    | 0     | 0   | - | 2    | 1    | 2    | 0    | 0   | - | 3    | 13   |
| % Buses                 | 1.1  | 2.3  | 0.0  | -   | - | 1.7  | 0.0  | 1.8  | 0.0  | -   | - | 1.4  | 0.0  | 0.1  | 0.0   | -   | - | 0.1  | 4.3  | 0.1  | 0.0  | -   | - | 0.2  | 0.4  |
| Single-Unit Trucks      | 24   | 9    | 2    | 0   | - | 35   | 1    | 3    | 4    | 0   | - | 8    | 1    | 41   | 0     | 0   | - | 42   | 2    | 34   | 22   | 0   | - | 58   | 143  |
| % Single-Unit Trucks    | 27.0 | 5.2  | 7.1  | -   | - | 12.1 | 9.1  | 1.8  | 13.3 | -   | - | 3.8  | 4.2  | 2.6  | 0.0   | -   | - | 2.6  | 8.7  | 2.5  | 20.8 | -   | - | 3.9  | 4.0  |
| Articulated Trucks      | 5    | 1    | 4    | 0   | - | 10   | 0    | 0    | 0    | 0   | - | 0    | 2    | 36   | 0     | 0   | - | 38   | 0    | 37   | 7    | 0   | - | 44   | 92   |
| % Articulated Trucks    | 5.6  | 0.6  | 14.3 | -   | - | 3.4  | 0.0  | 0.0  | 0.0  | -   | - | 0.0  | 8.3  | 2.3  | 0.0   | -   | - | 2.4  | 0.0  | 2.7  | 6.6  | -   | - | 3.0  | 2.6  |
| Bicycles on Road        | 0    | 0    | 0    | 0   | - | 0    | 0    | 0    | 0    | 0   | - | 0    | 0    | 0    | 0     | 0   | - | 0    | 0    | 0    | 0    | 0   | - | 0    | 0    |
| % Bicycles on Road      | 0.0  | 0.0  | 0.0  | -   | - | 0.0  | 0.0  | 0.0  | 0.0  | -   | - | 0.0  | 0.0  | 0.0  | 0.0   | -   | - | 0.0  | 0.0  | 0.0  | 0.0  | -   | - | 0.0  | 0.0  |
| Bicycles on Crosswalk   | -    | -    | -    | -   | 0 | -    | -    | -    | -    | -   | 0 | -    | -    | -    | -     | -   | 0 | -    | -    | -    | -    | 0   | - | -    | -    |
| % Bicycles on Crosswalk | -    | -    | -    | -   | - | -    | -    | -    | -    | -   | - | -    | -    | -    | -     | -   | - | -    | -    | -    | -    | -   | - | -    | -    |
| Pedestrians             | -    | -    | -    | -   | 0 | -    | -    | -    | -    | -   | 0 | -    | -    | -    | -     | -   | 0 | -    | -    | -    | -    | 0   | - | -    | -    |
| % Pedestrians           | -    | -    | -    | -   | - | -    | -    | -    | -    | -   | - | -    | -    | -    | -     | -   | - | -    | -    | -    | -    | -   | - | -    | -    |



Paradigm Transportation Solutions Limited  
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Count Name: Dumfries Road & Greenville  
Road  
Site Code: 240708  
Start Date: 02/11/2025  
Page No: 3



Turning Movement Data Plot

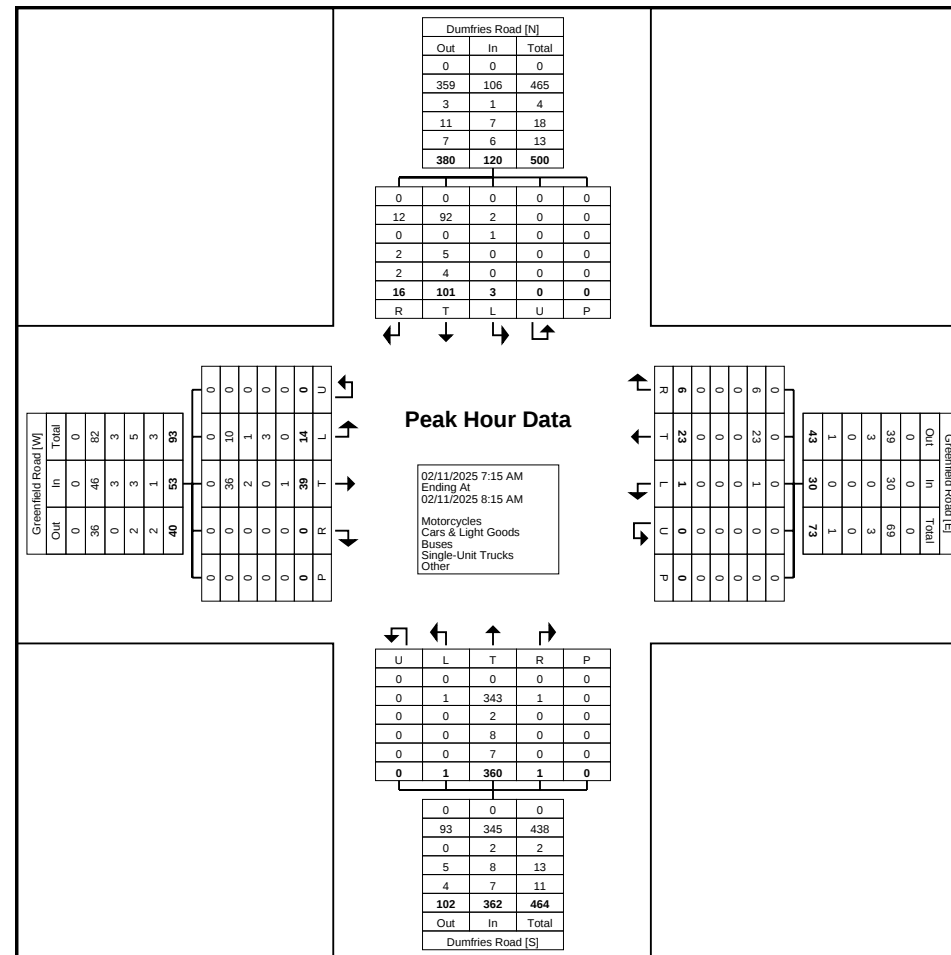
[illegible]



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Count Name: Dumfries Road & Greenville  
Road  
Site Code: 240708  
Start Date: 02/11/2025  
Page No: 5



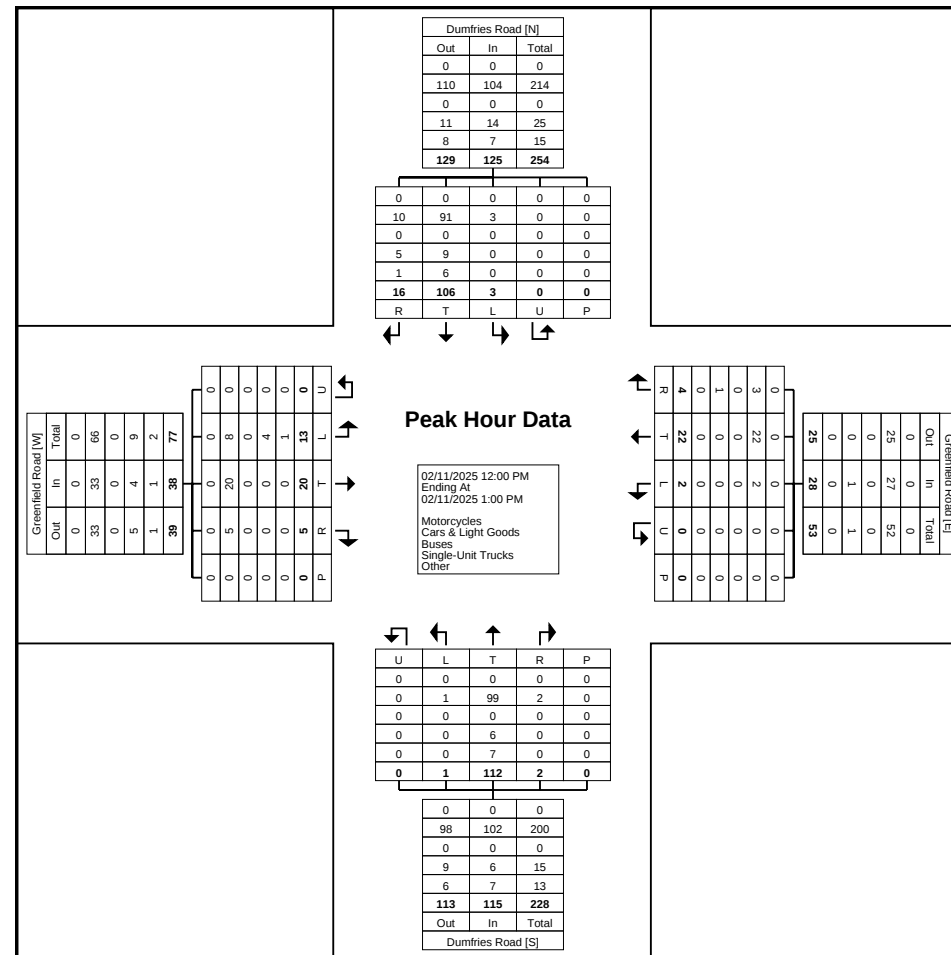
[illegible]



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Count Name: Dumfries Road & Greenville  
Road  
Site Code: 240708  
Start Date: 02/11/2025  
Page No: 7



Turning Movement Peak Hour Data Plot (12:00 PM)

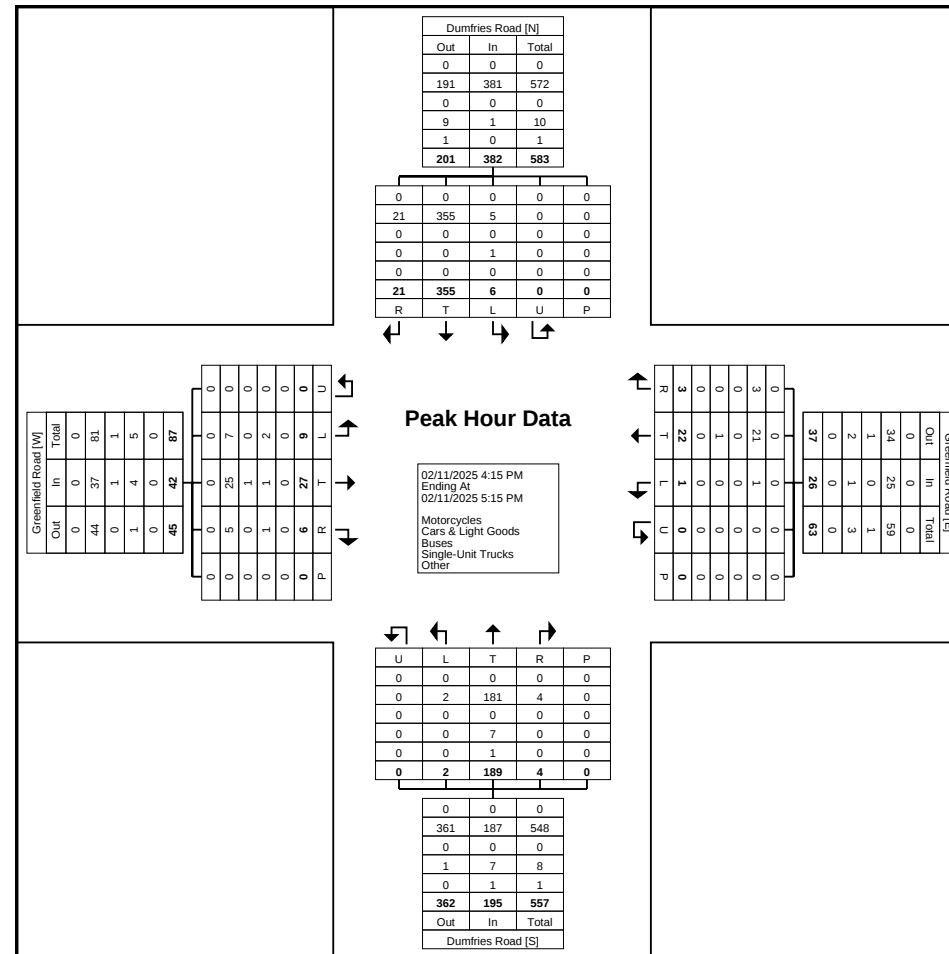
[illegible]



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Count Name: Dumfries Road & Greenville  
Road  
Site Code: 240708  
Start Date: 02/11/2025  
Page No: 9





Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
519-896-3163 cbowness@pts1.com

Count Name: Reidsville Road & Greensville Road  
Site Code: 240708  
Start Date: 02/11/2025  
Page No: 1

### Turning Movement Data

| Start Time    | Greensville Road Eastbound |       |        |      |            | Greensville Road Westbound |      |        |      |            | Reidsville Road Northbound |       |        |      |            | Int. Total |
|---------------|----------------------------|-------|--------|------|------------|----------------------------|------|--------|------|------------|----------------------------|-------|--------|------|------------|------------|
|               | Thru                       | Right | U-Turn | Peds | App. Total | Left                       | Thru | U-Turn | Peds | App. Total | Left                       | Right | U-Turn | Peds | App. Total |            |
| 6:00 AM       | 5                          | 0     | 0      | 0    | 5          | 0                          | 0    | 0      | 0    | 0          | 11                         | 0     | 0      | 0    | 11         | 16         |
| 6:15 AM       | 2                          | 2     | 0      | 0    | 4          | 0                          | 2    | 0      | 0    | 2          | 11                         | 0     | 0      | 0    | 11         | 17         |
| 6:30 AM       | 5                          | 1     | 0      | 0    | 6          | 0                          | 2    | 0      | 0    | 2          | 14                         | 0     | 0      | 0    | 14         | 22         |
| 6:45 AM       | 5                          | 2     | 0      | 0    | 7          | 0                          | 10   | 0      | 0    | 10         | 17                         | 0     | 0      | 0    | 17         | 34         |
| Hourly Total  | 17                         | 5     | 0      | 0    | 22         | 0                          | 14   | 0      | 0    | 14         | 53                         | 0     | 0      | 0    | 53         | 89         |
| 7:00 AM       | 4                          | 1     | 0      | 0    | 5          | 1                          | 3    | 0      | 0    | 4          | 20                         | 0     | 0      | 0    | 20         | 29         |
| 7:15 AM       | 9                          | 5     | 0      | 0    | 14         | 0                          | 9    | 0      | 0    | 9          | 27                         | 0     | 0      | 0    | 27         | 50         |
| 7:30 AM       | 15                         | 1     | 0      | 0    | 16         | 2                          | 11   | 0      | 0    | 13         | 23                         | 4     | 0      | 0    | 27         | 56         |
| 7:45 AM       | 14                         | 8     | 0      | 0    | 22         | 0                          | 4    | 0      | 0    | 4          | 27                         | 4     | 0      | 0    | 31         | 57         |
| Hourly Total  | 42                         | 15    | 0      | 0    | 57         | 3                          | 27   | 0      | 0    | 30         | 97                         | 8     | 0      | 0    | 105        | 192        |
| 8:00 AM       | 8                          | 2     | 0      | 0    | 10         | 1                          | 15   | 0      | 0    | 16         | 18                         | 0     | 0      | 0    | 18         | 44         |
| 8:15 AM       | 6                          | 5     | 0      | 0    | 11         | 0                          | 13   | 0      | 0    | 13         | 16                         | 0     | 0      | 0    | 16         | 40         |
| 8:30 AM       | 5                          | 4     | 0      | 0    | 9          | 0                          | 9    | 0      | 0    | 9          | 10                         | 1     | 0      | 0    | 11         | 29         |
| 8:45 AM       | 10                         | 2     | 0      | 0    | 12         | 0                          | 6    | 0      | 0    | 6          | 9                          | 0     | 0      | 0    | 9          | 27         |
| Hourly Total  | 29                         | 13    | 0      | 0    | 42         | 1                          | 43   | 0      | 0    | 44         | 53                         | 1     | 0      | 0    | 54         | 140        |
| *** BREAK *** | -                          | -     | -      | -    | -          | -                          | -    | -      | -    | -          | -                          | -     | -      | -    | -          | -          |
| 11:30 AM      | 9                          | 3     | 0      | 0    | 12         | 0                          | 15   | 0      | 0    | 15         | 4                          | 0     | 0      | 0    | 4          | 31         |
| 11:45 AM      | 12                         | 4     | 0      | 0    | 16         | 1                          | 7    | 0      | 0    | 8          | 4                          | 1     | 0      | 0    | 5          | 29         |
| Hourly Total  | 21                         | 7     | 0      | 0    | 28         | 1                          | 22   | 0      | 0    | 23         | 8                          | 1     | 0      | 0    | 9          | 60         |
| 12:00 PM      | 9                          | 7     | 0      | 0    | 16         | 0                          | 9    | 0      | 0    | 9          | 5                          | 1     | 0      | 0    | 6          | 31         |
| 12:15 PM      | 8                          | 6     | 0      | 0    | 14         | 1                          | 9    | 0      | 0    | 10         | 6                          | 0     | 0      | 0    | 6          | 30         |
| 12:30 PM      | 7                          | 6     | 0      | 0    | 13         | 1                          | 7    | 0      | 0    | 8          | 3                          | 1     | 0      | 0    | 4          | 25         |
| 12:45 PM      | 10                         | 6     | 0      | 0    | 16         | 0                          | 10   | 0      | 0    | 10         | 10                         | 0     | 0      | 0    | 10         | 36         |
| Hourly Total  | 34                         | 25    | 0      | 0    | 59         | 2                          | 35   | 0      | 0    | 37         | 24                         | 2     | 0      | 0    | 26         | 122        |
| 1:00 PM       | 11                         | 7     | 1      | 0    | 19         | 2                          | 6    | 0      | 0    | 8          | 2                          | 1     | 0      | 0    | 3          | 30         |
| 1:15 PM       | 11                         | 3     | 0      | 0    | 14         | 0                          | 8    | 0      | 0    | 8          | 8                          | 0     | 0      | 0    | 8          | 30         |
| *** BREAK *** | -                          | -     | -      | -    | -          | -                          | -    | -      | -    | -          | -                          | -     | -      | -    | -          | -          |
| Hourly Total  | 22                         | 10    | 1      | 0    | 33         | 2                          | 14   | 0      | 0    | 16         | 10                         | 1     | 0      | 0    | 11         | 60         |
| 3:00 PM       | 11                         | 8     | 0      | 0    | 19         | 0                          | 11   | 0      | 0    | 11         | 6                          | 0     | 0      | 0    | 6          | 36         |
| 3:15 PM       | 6                          | 14    | 0      | 0    | 20         | 2                          | 5    | 0      | 0    | 7          | 11                         | 1     | 0      | 0    | 12         | 39         |
| 3:30 PM       | 11                         | 13    | 0      | 0    | 24         | 2                          | 7    | 0      | 0    | 9          | 10                         | 3     | 0      | 0    | 13         | 46         |
| 3:45 PM       | 11                         | 23    | 0      | 0    | 34         | 1                          | 11   | 0      | 0    | 12         | 9                          | 0     | 0      | 0    | 9          | 55         |
| Hourly Total  | 39                         | 58    | 0      | 0    | 97         | 5                          | 34   | 0      | 0    | 39         | 36                         | 4     | 0      | 0    | 40         | 176        |
| 4:00 PM       | 7                          | 12    | 0      | 0    | 19         | 1                          | 8    | 0      | 0    | 9          | 10                         | 1     | 0      | 0    | 11         | 39         |
| 4:15 PM       | 6                          | 12    | 0      | 0    | 18         | 3                          | 11   | 0      | 0    | 14         | 10                         | 1     | 0      | 0    | 11         | 43         |
| 4:30 PM       | 10                         | 18    | 0      | 0    | 28         | 0                          | 9    | 0      | 0    | 9          | 10                         | 0     | 0      | 0    | 10         | 47         |

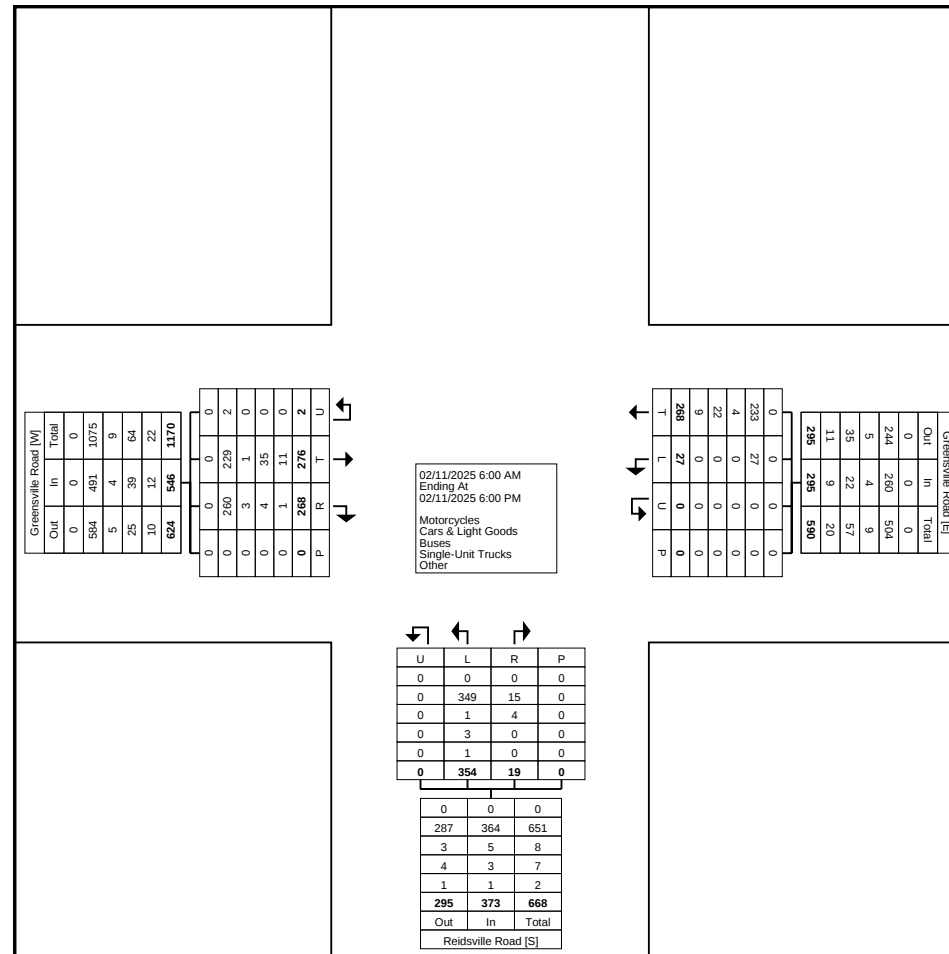
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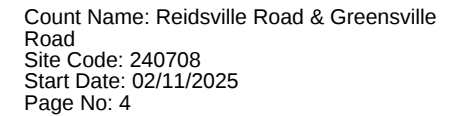
Paradigm Transportation Solutions Limited  
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519-896-3163 cbowness@ptsI.com

Count Name: Reidsville Road & Greenville Road  
Site Code: 240708  
Start Date: 02/11/2025  
Page No: 3



Turning Movement Data Plot



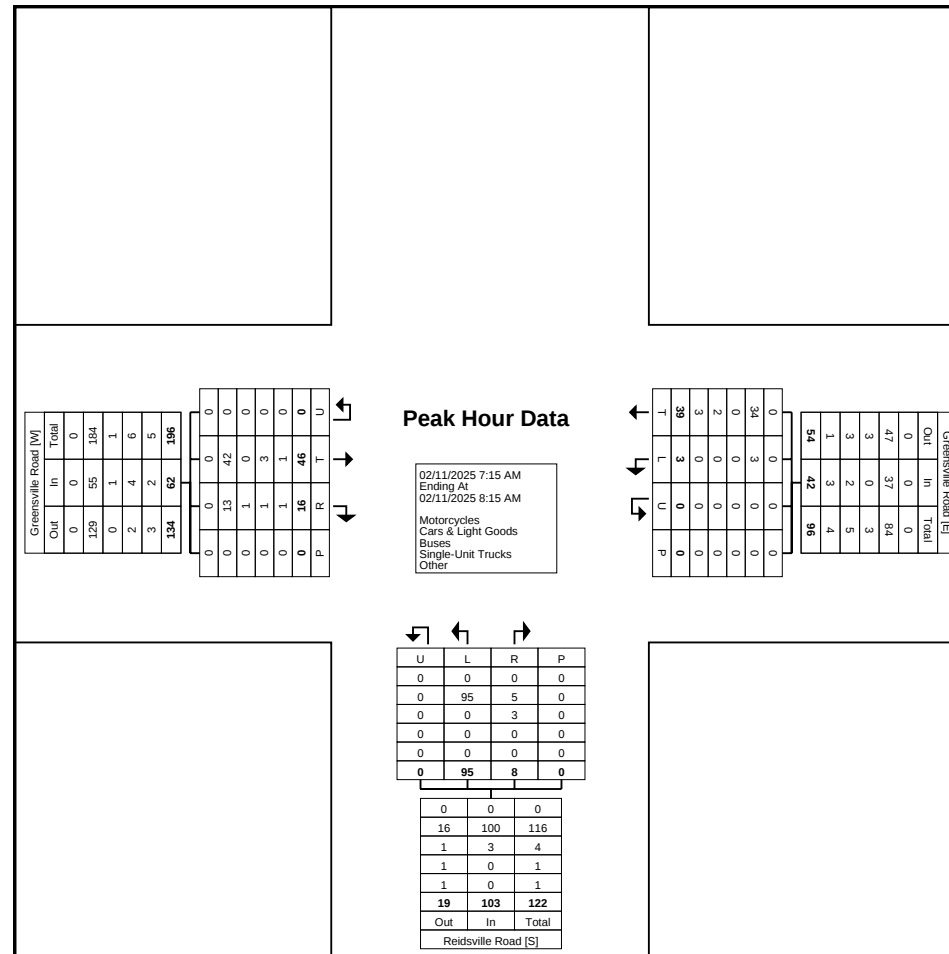
| Start Time              | Greensville Road<br>Eastbound |       |        |      |            | Greensville Road<br>Westbound |       |        |      |            | Reidsville Road<br>Northbound |       |        |      |            | Int. Total |
|-------------------------|-------------------------------|-------|--------|------|------------|-------------------------------|-------|--------|------|------------|-------------------------------|-------|--------|------|------------|------------|
|                         | Thru                          | Right | U-Turn | Peds | App. Total | Left                          | Thru  | U-Turn | Peds | App. Total | Left                          | Right | U-Turn | Peds | App. Total |            |
|                         |                               |       |        |      |            |                               |       |        |      |            |                               |       |        |      |            |            |
| 7:15 AM                 | 9                             | 5     | 0      | 0    | 14         | 0                             | 9     | 0      | 0    | 9          | 27                            | 0     | 0      | 0    | 27         | 50         |
| 7:30 AM                 | 15                            | 1     | 0      | 0    | 16         | 2                             | 11    | 0      | 0    | 13         | 23                            | 4     | 0      | 0    | 27         | 56         |
| 7:45 AM                 | 14                            | 8     | 0      | 0    | 22         | 0                             | 4     | 0      | 0    | 4          | 27                            | 4     | 0      | 0    | 31         | 57         |
| 8:00 AM                 | 8                             | 2     | 0      | 0    | 10         | 1                             | 15    | 0      | 0    | 16         | 18                            | 0     | 0      | 0    | 18         | 44         |
| Total                   | 46                            | 16    | 0      | 0    | 62         | 3                             | 39    | 0      | 0    | 42         | 95                            | 8     | 0      | 0    | 103        | 207        |
| Approach %              | 74.2                          | 25.8  | 0.0    | -    | -          | 7.1                           | 92.9  | 0.0    | -    | -          | 92.2                          | 7.8   | 0.0    | -    | -          | -          |
| Total %                 | 22.2                          | 7.7   | 0.0    | -    | 30.0       | 1.4                           | 18.8  | 0.0    | -    | 20.3       | 45.9                          | 3.9   | 0.0    | -    | 49.8       | -          |
| PHF                     | 0.767                         | 0.500 | 0.000  | -    | 0.705      | 0.375                         | 0.650 | 0.000  | -    | 0.656      | 0.880                         | 0.500 | 0.000  | -    | 0.831      | 0.908      |
| Motorcycles             | 0                             | 0     | 0      | -    | 0          | 0                             | 0     | 0      | -    | 0          | 0                             | 0     | 0      | -    | 0          | 0          |
| % Motorcycles           | 0.0                           | 0.0   | -      | -    | 0.0        | 0.0                           | 0.0   | -      | -    | 0.0        | 0.0                           | 0.0   | -      | -    | 0.0        | 0.0        |
| Cars & Light Goods      | 42                            | 13    | 0      | -    | 55         | 3                             | 34    | 0      | -    | 37         | 95                            | 5     | 0      | -    | 100        | 192        |
| % Cars & Light Goods    | 91.3                          | 81.3  | -      | -    | 88.7       | 100.0                         | 87.2  | -      | -    | 88.1       | 100.0                         | 62.5  | -      | -    | 97.1       | 92.8       |
| Buses                   | 0                             | 1     | 0      | -    | 1          | 0                             | 0     | 0      | -    | 0          | 0                             | 3     | 0      | -    | 3          | 4          |
| % Buses                 | 0.0                           | 6.3   | -      | -    | 1.6        | 0.0                           | 0.0   | -      | -    | 0.0        | 0.0                           | 37.5  | -      | -    | 2.9        | 1.9        |
| Single-Unit Trucks      | 3                             | 1     | 0      | -    | 4          | 0                             | 2     | 0      | -    | 2          | 0                             | 0     | 0      | -    | 0          | 6          |
| % Single-Unit Trucks    | 6.5                           | 6.3   | -      | -    | 6.5        | 0.0                           | 5.1   | -      | -    | 4.8        | 0.0                           | 0.0   | -      | -    | 0.0        | 2.9        |
| Articulated Trucks      | 1                             | 1     | 0      | -    | 2          | 0                             | 3     | 0      | -    | 3          | 0                             | 0     | 0      | -    | 0          | 5          |
| % Articulated Trucks    | 2.2                           | 6.3   | -      | -    | 3.2        | 0.0                           | 7.7   | -      | -    | 7.1        | 0.0                           | 0.0   | -      | -    | 0.0        | 2.4        |
| Bicycles on Road        | 0                             | 0     | 0      | -    | 0          | 0                             | 0     | 0      | -    | 0          | 0                             | 0     | 0      | -    | 0          | 0          |
| % Bicycles on Road      | 0.0                           | 0.0   | -      | -    | 0.0        | 0.0                           | 0.0   | -      | -    | 0.0        | 0.0                           | 0.0   | -      | -    | 0.0        | 0.0        |
| Bicycles on Crosswalk   | -                             | -     | -      | 0    | -          | -                             | -     | -      | 0    | -          | -                             | -     | -      | 0    | -          | -          |
| % Bicycles on Crosswalk | -                             | -     | -      | -    | -          | -                             | -     | -      | -    | -          | -                             | -     | -      | -    | -          | -          |
| Pedestrians             | -                             | -     | -      | 0    | -          | -                             | -     | -      | 0    | -          | -                             | -     | -      | 0    | -          | -          |
| % Pedestrians           | -                             | -     | -      | -    | -          | -                             | -     | -      | -    | -          | -                             | -     | -      | -    | -          | -          |



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Count Name: Reidsville Road & Greenville  
Road  
Site Code: 240708  
Start Date: 02/11/2025  
Page No: 5



Turning Movement Peak Hour Data Plot (7:15 AM)

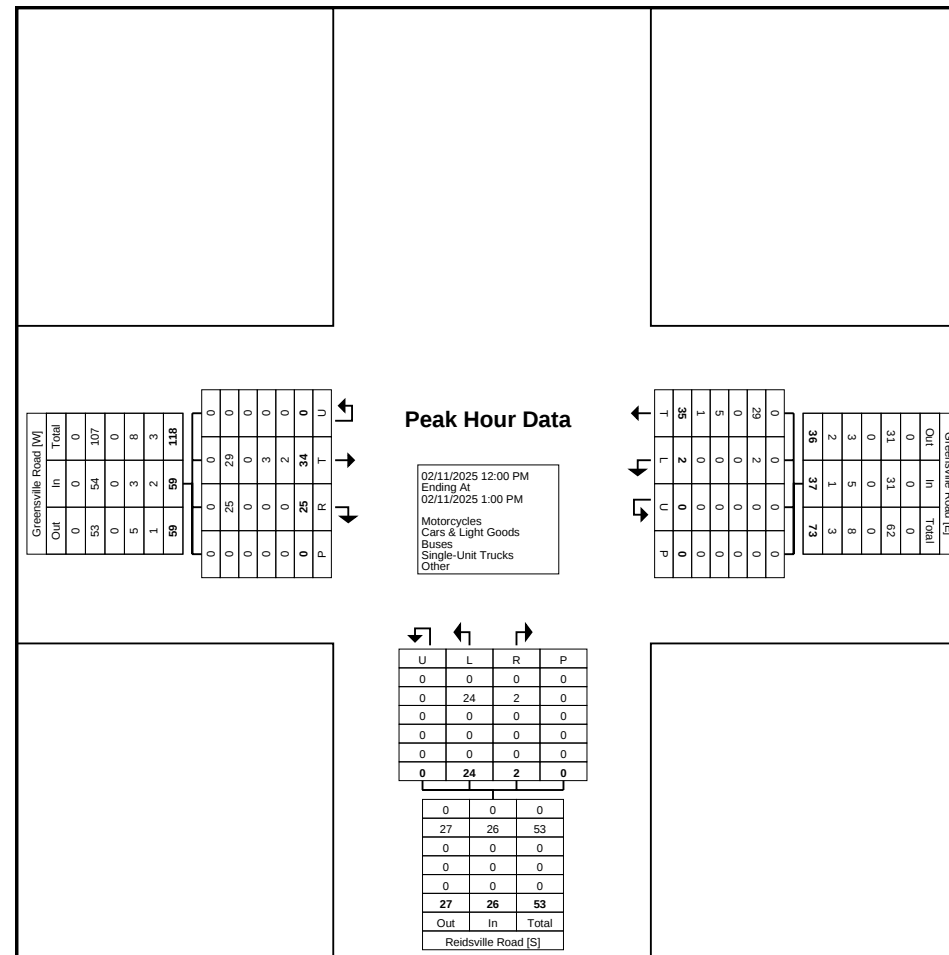
[illegible]



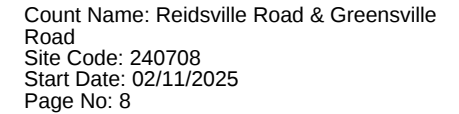
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Count Name: Reidsville Road & Greenville  
Road  
Site Code: 240708  
Start Date: 02/11/2025  
Page No: 7



Turning Movement Peak Hour Data Plot (12:00 PM)

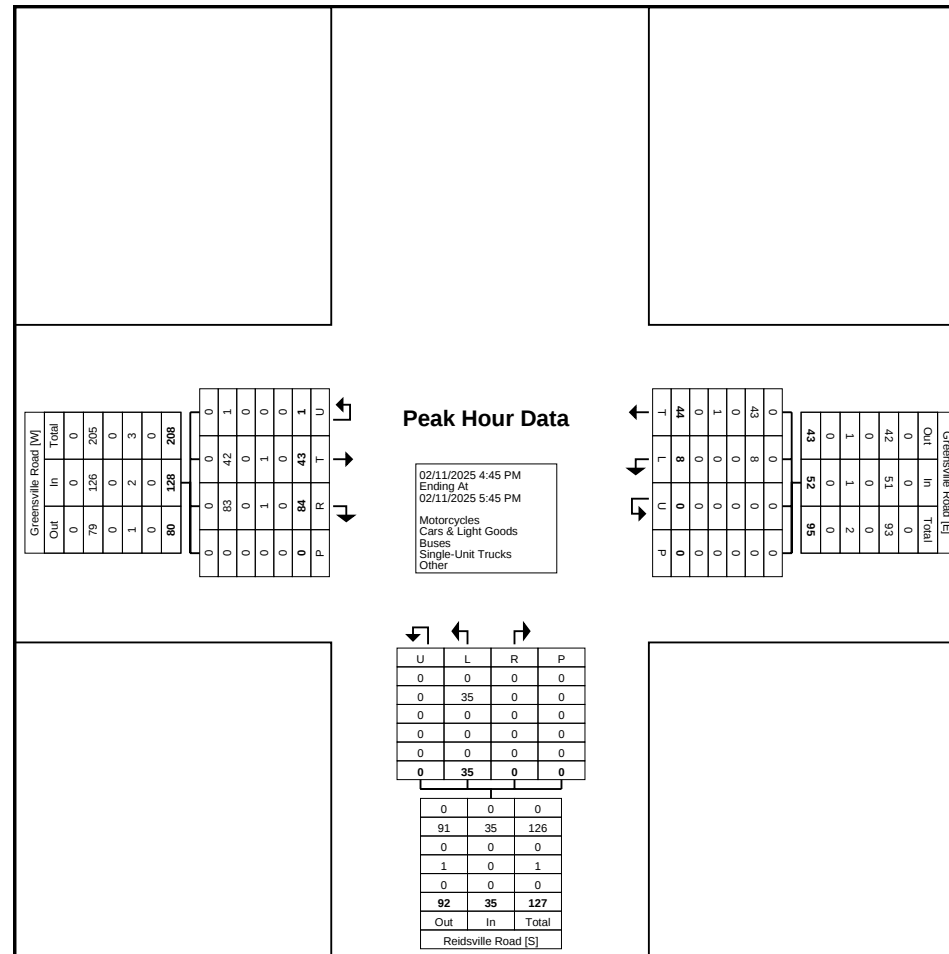
[illegible]



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Road  
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Page No: 9



Turning Movement Peak Hour Data Plot (4:45 PM)



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519-896-3163 cbowness@pts1.com

Count Name: Wrigley Road & Dumfries Road  
Site Code: 240708  
Start Date: 02/11/2025  
Page No: 1

### Turning Movement Data

| Start Time    | Wrigley Road<br>Eastbound |      |        |      |            | Wrigley Road<br>Westbound |       |        |      |            | Dumfries Road<br>Southbound |       |        |      |            | Int. Total |
|---------------|---------------------------|------|--------|------|------------|---------------------------|-------|--------|------|------------|-----------------------------|-------|--------|------|------------|------------|
|               | Left                      | Thru | U-Turn | Peds | App. Total | Thru                      | Right | U-Turn | Peds | App. Total | Left                        | Right | U-Turn | Peds | App. Total |            |
| 6:00 AM       | 1                         | 11   | 0      | 0    | 12         | 2                         | 53    | 0      | 0    | 55         | 14                          | 0     | 0      | 0    | 14         | 81         |
| 6:15 AM       | 2                         | 19   | 0      | 0    | 21         | 2                         | 63    | 0      | 0    | 65         | 17                          | 0     | 0      | 0    | 17         | 103        |
| 6:30 AM       | 3                         | 12   | 0      | 0    | 15         | 7                         | 72    | 0      | 0    | 79         | 17                          | 0     | 0      | 0    | 17         | 111        |
| 6:45 AM       | 4                         | 8    | 0      | 0    | 12         | 10                        | 73    | 0      | 0    | 83         | 25                          | 1     | 0      | 0    | 26         | 121        |
| Hourly Total  | 10                        | 50   | 0      | 0    | 60         | 21                        | 261   | 0      | 0    | 282        | 73                          | 1     | 0      | 0    | 74         | 416        |
| 7:00 AM       | 5                         | 15   | 0      | 0    | 20         | 5                         | 65    | 0      | 0    | 70         | 30                          | 0     | 0      | 0    | 30         | 120        |
| 7:15 AM       | 9                         | 24   | 0      | 0    | 33         | 9                         | 88    | 0      | 0    | 97         | 20                          | 0     | 0      | 0    | 20         | 150        |
| 7:30 AM       | 6                         | 44   | 0      | 0    | 50         | 7                         | 114   | 0      | 0    | 121        | 37                          | 2     | 0      | 0    | 39         | 210        |
| 7:45 AM       | 6                         | 38   | 0      | 0    | 44         | 18                        | 60    | 0      | 0    | 78         | 27                          | 1     | 0      | 0    | 28         | 150        |
| Hourly Total  | 26                        | 121  | 0      | 0    | 147        | 39                        | 327   | 0      | 0    | 366        | 114                         | 3     | 0      | 0    | 117        | 630        |
| 8:00 AM       | 7                         | 49   | 0      | 0    | 56         | 9                         | 73    | 0      | 0    | 82         | 14                          | 1     | 0      | 0    | 15         | 153        |
| 8:15 AM       | 3                         | 29   | 0      | 0    | 32         | 20                        | 56    | 0      | 0    | 76         | 24                          | 4     | 0      | 0    | 28         | 136        |
| 8:30 AM       | 4                         | 29   | 0      | 0    | 33         | 11                        | 65    | 0      | 0    | 76         | 27                          | 3     | 0      | 0    | 30         | 139        |
| 8:45 AM       | 4                         | 14   | 0      | 0    | 18         | 23                        | 35    | 0      | 0    | 58         | 35                          | 5     | 0      | 0    | 40         | 116        |
| Hourly Total  | 18                        | 121  | 0      | 0    | 139        | 63                        | 229   | 0      | 0    | 292        | 100                         | 13    | 0      | 0    | 113        | 544        |
| *** BREAK *** | -                         | -    | -      | -    | -          | -                         | -     | -      | -    | -          | -                           | -     | -      | -    | -          | -          |
| 11:30 AM      | 1                         | 12   | 0      | 0    | 13         | 11                        | 22    | 0      | 0    | 33         | 18                          | 2     | 0      | 0    | 20         | 66         |
| 11:45 AM      | 5                         | 9    | 0      | 0    | 14         | 8                         | 20    | 0      | 0    | 28         | 27                          | 1     | 0      | 0    | 28         | 70         |
| Hourly Total  | 6                         | 21   | 0      | 0    | 27         | 19                        | 42    | 0      | 0    | 61         | 45                          | 3     | 0      | 0    | 48         | 136        |
| 12:00 PM      | 3                         | 8    | 0      | 0    | 11         | 14                        | 22    | 0      | 0    | 36         | 23                          | 1     | 0      | 0    | 24         | 71         |
| 12:15 PM      | 1                         | 15   | 0      | 0    | 16         | 7                         | 33    | 0      | 0    | 40         | 22                          | 2     | 0      | 0    | 24         | 80         |
| 12:30 PM      | 7                         | 15   | 0      | 0    | 22         | 14                        | 30    | 0      | 0    | 44         | 20                          | 2     | 0      | 0    | 22         | 88         |
| 12:45 PM      | 2                         | 12   | 0      | 0    | 14         | 18                        | 18    | 0      | 0    | 36         | 37                          | 4     | 0      | 0    | 41         | 91         |
| Hourly Total  | 13                        | 50   | 0      | 0    | 63         | 53                        | 103   | 0      | 0    | 156        | 102                         | 9     | 0      | 0    | 111        | 330        |
| 1:00 PM       | 4                         | 12   | 0      | 0    | 16         | 14                        | 26    | 0      | 0    | 40         | 19                          | 2     | 0      | 0    | 21         | 77         |
| 1:15 PM       | 3                         | 8    | 0      | 0    | 11         | 13                        | 20    | 0      | 0    | 33         | 28                          | 1     | 0      | 0    | 29         | 73         |
| *** BREAK *** | -                         | -    | -      | -    | -          | -                         | -     | -      | -    | -          | -                           | -     | -      | -    | -          | -          |
| Hourly Total  | 7                         | 20   | 0      | 0    | 27         | 27                        | 46    | 0      | 0    | 73         | 47                          | 3     | 0      | 0    | 50         | 150        |
| 3:00 PM       | 2                         | 12   | 0      | 0    | 14         | 33                        | 20    | 0      | 0    | 53         | 38                          | 6     | 0      | 0    | 44         | 111        |
| 3:15 PM       | 5                         | 16   | 0      | 0    | 21         | 28                        | 30    | 0      | 0    | 58         | 52                          | 5     | 0      | 0    | 57         | 136        |
| 3:30 PM       | 1                         | 18   | 0      | 0    | 19         | 21                        | 50    | 0      | 0    | 71         | 63                          | 3     | 0      | 0    | 66         | 156        |
| 3:45 PM       | 6                         | 18   | 0      | 0    | 24         | 20                        | 46    | 0      | 0    | 66         | 58                          | 2     | 0      | 0    | 60         | 150        |
| Hourly Total  | 14                        | 64   | 0      | 0    | 78         | 102                       | 146   | 0      | 0    | 248        | 211                         | 16    | 0      | 0    | 227        | 553        |
| 4:00 PM       | 4                         | 37   | 0      | 0    | 41         | 31                        | 29    | 0      | 0    | 60         | 72                          | 8     | 0      | 0    | 80         | 181        |
| 4:15 PM       | 2                         | 29   | 0      | 0    | 31         | 28                        | 45    | 0      | 0    | 73         | 94                          | 5     | 0      | 0    | 99         | 203        |
| 4:30 PM       | 2                         | 23   | 0      | 0    | 25         | 36                        | 53    | 0      | 0    | 89         | 86                          | 5     | 0      | 0    | 91         | 205        |

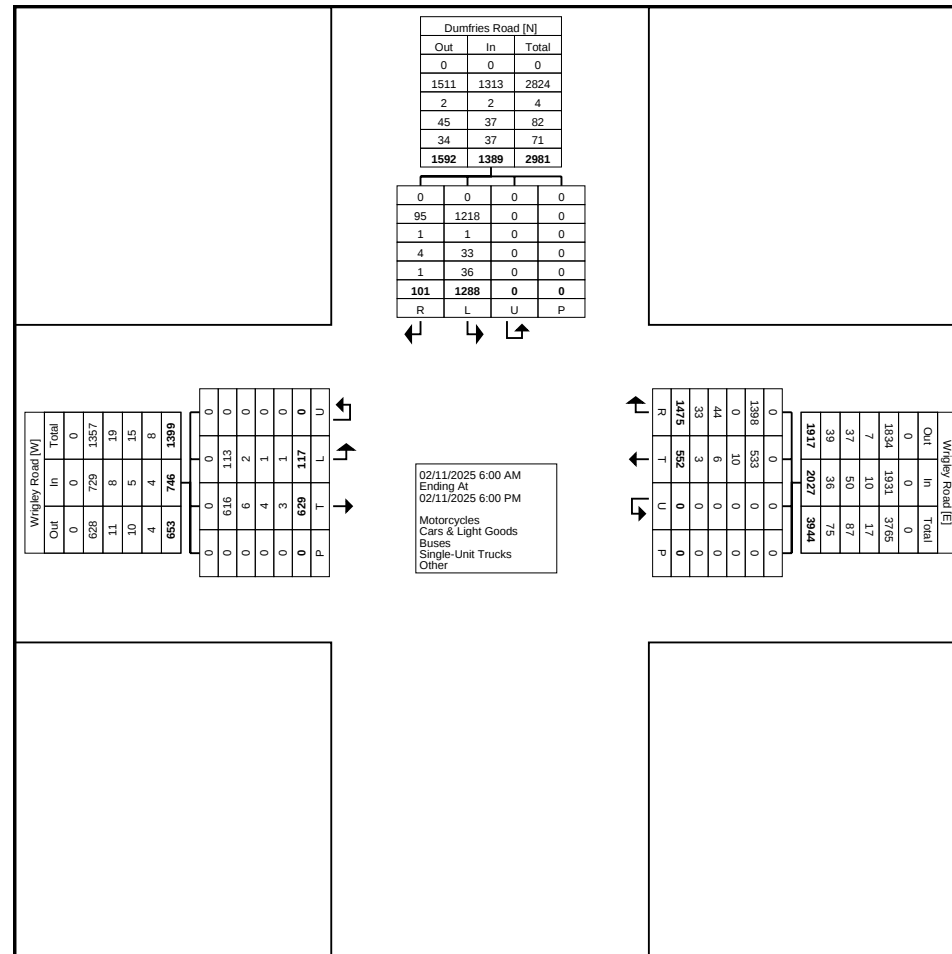
[illegible]



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Site Code: 240708  
Start Date: 02/11/2025  
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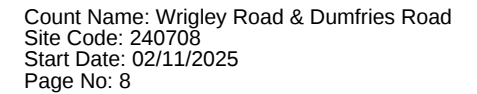
Turning Movement Data Plot

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### Turning Movement Peak Hour Data Plot (7:15 AM)

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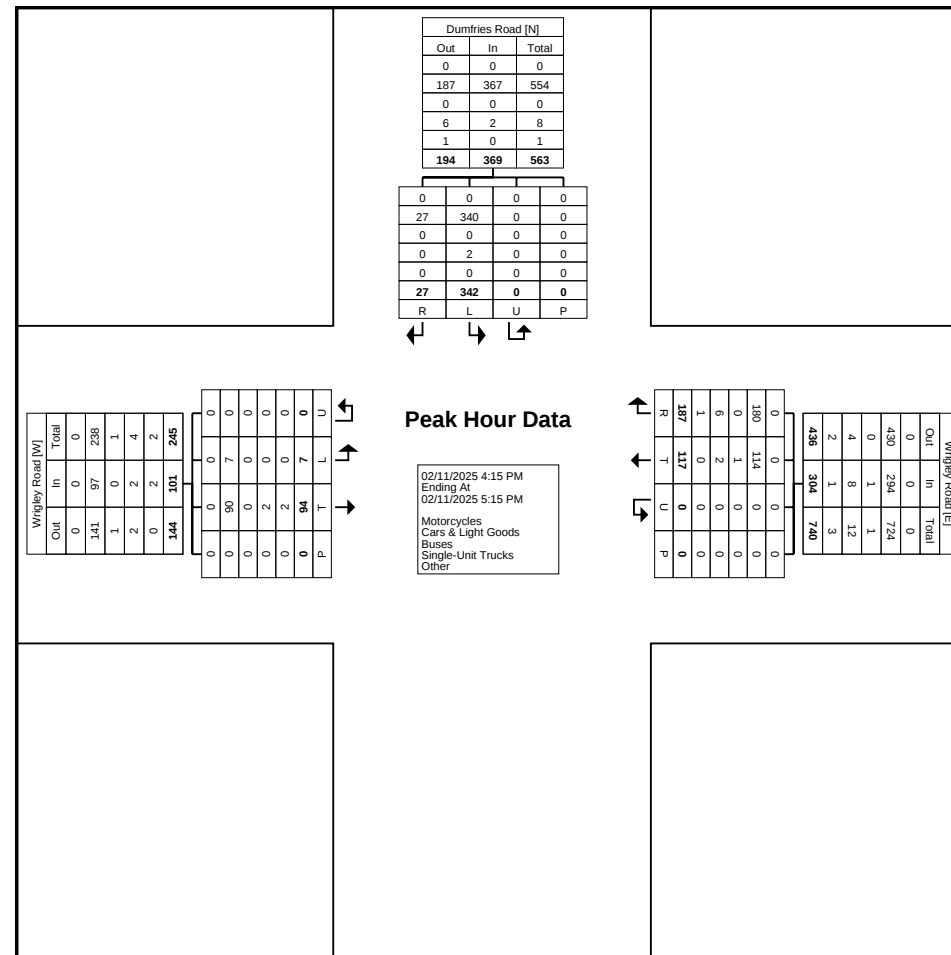
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Count Name: Wrigley Road & Dumfries Road  
Site Code: 240708  
Start Date: 02/11/2025  
Page No: 9



Turning Movement Peak Hour Data Plot (4:15 PM)



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Count Name: Wrigley Road & Reidsville Road  
Site Code: 240708  
Start Date: 02/11/2025  
Page No: 1

## Turning Movement Data

| Start Time    | Wrigley Road Eastbound |      |        |      |            | Wrigley Road Westbound |       |        |      |            | Reidsville Road Southbound |       |        |      |            | Int. Total |
|---------------|------------------------|------|--------|------|------------|------------------------|-------|--------|------|------------|----------------------------|-------|--------|------|------------|------------|
|               | Left                   | Thru | U-Turn | Peds | App. Total | Thru                   | Right | U-Turn | Peds | App. Total | Left                       | Right | U-Turn | Peds | App. Total |            |
| 6:00 AM       | 7                      | 13   | 0      | 0    | 20         | 0                      | 2     | 0      | 0    | 2          | 0                          | 0     | 0      | 0    | 0          | 22         |
| 6:15 AM       | 10                     | 17   | 0      | 0    | 27         | 0                      | 3     | 0      | 0    | 3          | 1                          | 1     | 0      | 0    | 2          | 32         |
| 6:30 AM       | 13                     | 12   | 0      | 0    | 25         | 6                      | 1     | 0      | 0    | 7          | 0                          | 1     | 0      | 0    | 1          | 33         |
| 6:45 AM       | 13                     | 10   | 0      | 0    | 23         | 10                     | 2     | 0      | 0    | 12         | 1                          | 1     | 0      | 0    | 2          | 37         |
| Hourly Total  | 43                     | 52   | 0      | 0    | 95         | 16                     | 8     | 0      | 0    | 24         | 2                          | 3     | 0      | 0    | 5          | 124        |
| 7:00 AM       | 19                     | 17   | 0      | 0    | 36         | 4                      | 2     | 0      | 0    | 6          | 0                          | 1     | 0      | 0    | 1          | 43         |
| 7:15 AM       | 26                     | 33   | 0      | 0    | 59         | 8                      | 4     | 0      | 0    | 12         | 3                          | 2     | 0      | 0    | 5          | 76         |
| 7:30 AM       | 18                     | 41   | 0      | 0    | 59         | 7                      | 3     | 0      | 0    | 10         | 1                          | 1     | 0      | 0    | 2          | 71         |
| 7:45 AM       | 25                     | 50   | 0      | 0    | 75         | 20                     | 3     | 0      | 0    | 23         | 2                          | 5     | 0      | 0    | 7          | 105        |
| Hourly Total  | 88                     | 141  | 0      | 0    | 229        | 39                     | 12    | 0      | 0    | 51         | 6                          | 9     | 0      | 0    | 15         | 295        |
| 8:00 AM       | 15                     | 40   | 0      | 0    | 55         | 7                      | 4     | 0      | 0    | 11         | 2                          | 2     | 0      | 0    | 4          | 70         |
| 8:15 AM       | 14                     | 28   | 0      | 0    | 42         | 22                     | 3     | 0      | 0    | 25         | 0                          | 3     | 0      | 0    | 3          | 70         |
| 8:30 AM       | 7                      | 28   | 0      | 0    | 35         | 14                     | 2     | 0      | 0    | 16         | 1                          | 1     | 0      | 0    | 2          | 53         |
| 8:45 AM       | 8                      | 17   | 0      | 0    | 25         | 20                     | 2     | 0      | 0    | 22         | 1                          | 3     | 0      | 0    | 4          | 51         |
| Hourly Total  | 44                     | 113  | 0      | 0    | 157        | 63                     | 11    | 0      | 0    | 74         | 4                          | 9     | 0      | 0    | 13         | 244        |
| *** BREAK *** | -                      | -    | -      | -    | -          | -                      | -     | -      | -    | -          | -                          | -     | -      | -    | -          | -          |
| 11:30 AM      | 3                      | 11   | 0      | 0    | 14         | 10                     | 1     | 0      | 0    | 11         | 2                          | 1     | 0      | 0    | 3          | 28         |
| 11:45 AM      | 4                      | 13   | 0      | 0    | 17         | 11                     | 1     | 0      | 0    | 12         | 1                          | 2     | 0      | 0    | 3          | 32         |
| Hourly Total  | 7                      | 24   | 0      | 0    | 31         | 21                     | 2     | 0      | 0    | 23         | 3                          | 3     | 0      | 0    | 6          | 60         |
| 12:00 PM      | 6                      | 7    | 0      | 0    | 13         | 12                     | 0     | 0      | 0    | 12         | 1                          | 7     | 0      | 0    | 8          | 33         |
| 12:15 PM      | 6                      | 19   | 0      | 0    | 25         | 10                     | 0     | 0      | 0    | 10         | 1                          | 5     | 0      | 0    | 6          | 41         |
| 12:30 PM      | 4                      | 16   | 0      | 0    | 20         | 15                     | 1     | 0      | 0    | 16         | 1                          | 7     | 0      | 0    | 8          | 44         |
| 12:45 PM      | 6                      | 13   | 0      | 0    | 19         | 18                     | 4     | 0      | 0    | 22         | 2                          | 3     | 0      | 0    | 5          | 46         |
| Hourly Total  | 22                     | 55   | 0      | 0    | 77         | 55                     | 5     | 0      | 0    | 60         | 5                          | 22    | 0      | 0    | 27         | 164        |
| 1:00 PM       | 3                      | 11   | 0      | 0    | 14         | 16                     | 0     | 0      | 0    | 16         | 4                          | 4     | 0      | 0    | 8          | 38         |
| 1:15 PM       | 6                      | 10   | 0      | 0    | 16         | 11                     | 2     | 0      | 0    | 13         | 1                          | 2     | 0      | 0    | 3          | 32         |
| *** BREAK *** | -                      | -    | -      | -    | -          | -                      | -     | -      | -    | -          | -                          | -     | -      | -    | -          | -          |
| Hourly Total  | 9                      | 21   | 0      | 0    | 30         | 27                     | 2     | 0      | 0    | 29         | 5                          | 6     | 0      | 0    | 11         | 70         |
| 3:00 PM       | 6                      | 15   | 0      | 0    | 21         | 28                     | 0     | 0      | 0    | 28         | 2                          | 8     | 0      | 0    | 10         | 59         |
| 3:15 PM       | 7                      | 15   | 0      | 0    | 22         | 34                     | 6     | 0      | 0    | 40         | 2                          | 11    | 0      | 0    | 13         | 75         |
| 3:30 PM       | 6                      | 15   | 0      | 0    | 21         | 19                     | 5     | 0      | 0    | 24         | 5                          | 11    | 0      | 0    | 16         | 61         |
| 3:45 PM       | 9                      | 21   | 0      | 0    | 30         | 17                     | 0     | 0      | 0    | 17         | 4                          | 15    | 0      | 0    | 19         | 66         |
| Hourly Total  | 28                     | 66   | 0      | 0    | 94         | 98                     | 11    | 0      | 0    | 109        | 13                         | 45    | 0      | 0    | 58         | 261        |
| 4:00 PM       | 8                      | 38   | 0      | 0    | 46         | 33                     | 2     | 0      | 0    | 35         | 5                          | 11    | 0      | 0    | 16         | 97         |
| 4:15 PM       | 7                      | 31   | 0      | 0    | 38         | 35                     | 3     | 0      | 0    | 38         | 3                          | 13    | 0      | 0    | 16         | 92         |
| 4:30 PM       | 6                      | 18   | 0      | 0    | 24         | 35                     | 3     | 0      | 0    | 38         | 7                          | 12    | 0      | 0    | 19         | 81         |

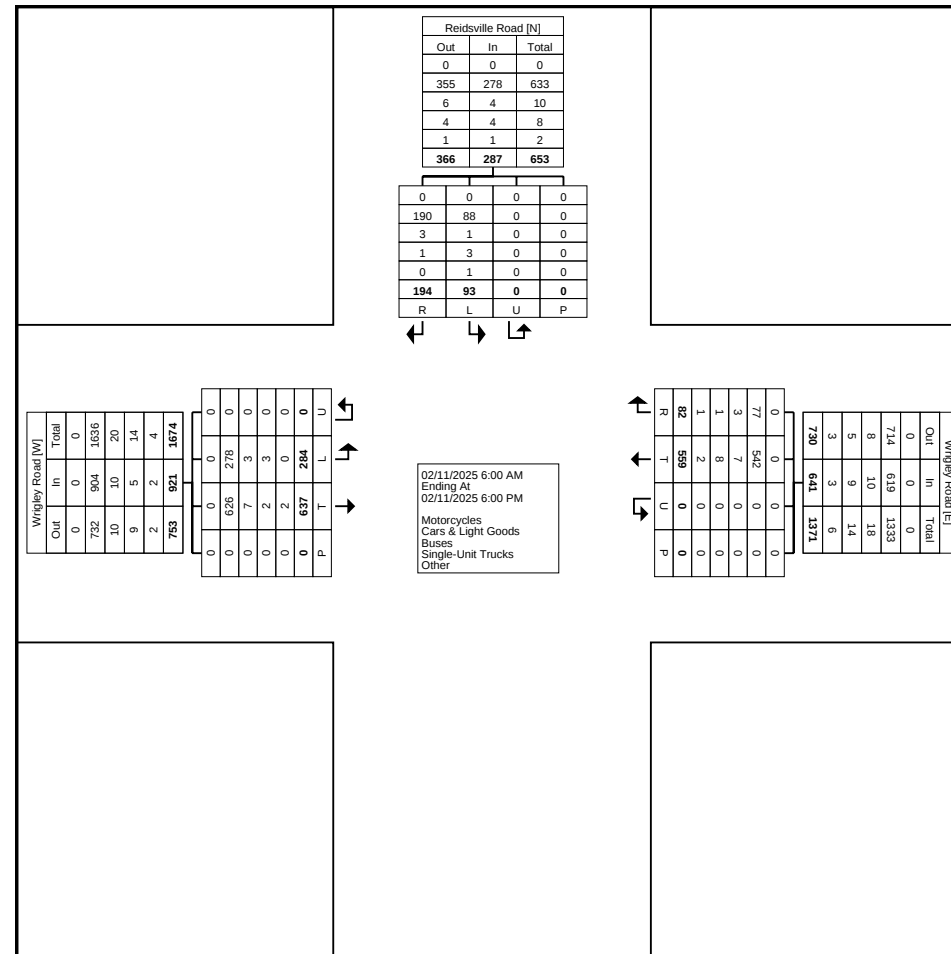
[illegible]



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Site Code: 240708  
Start Date: 02/11/2025  
Page No: 3



Turning Movement Data Plot

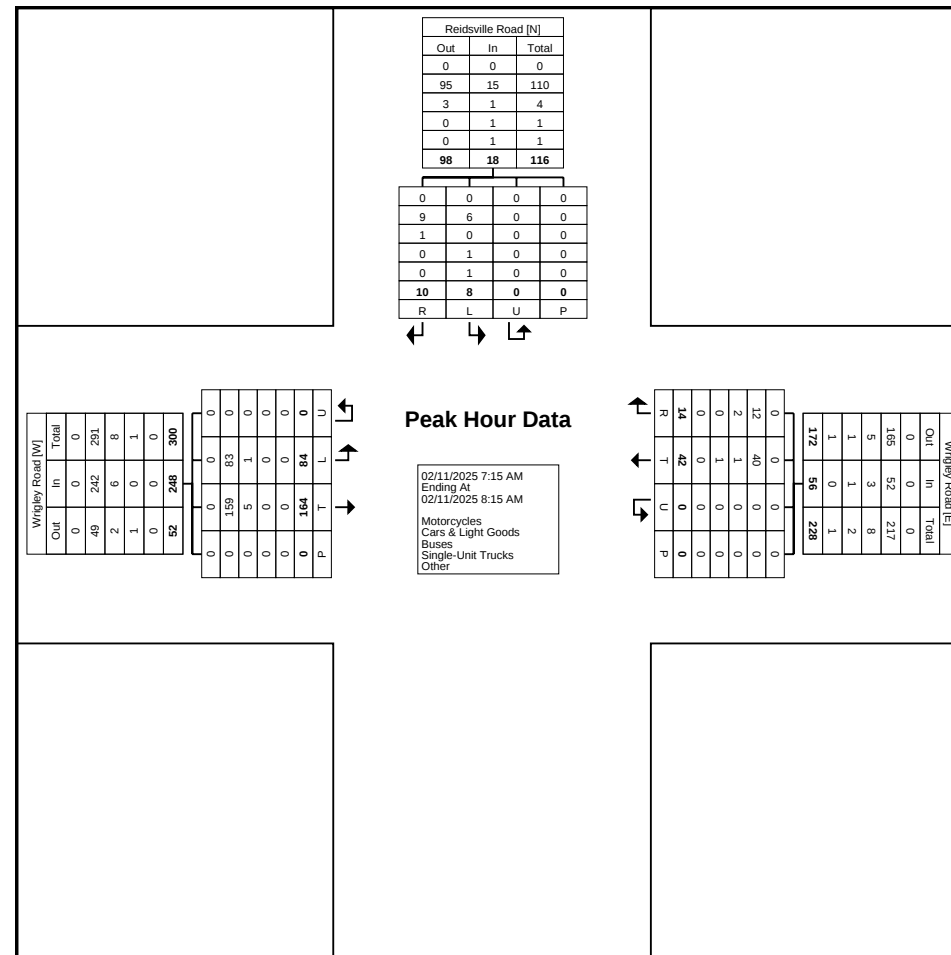
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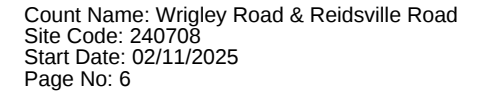
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Count Name: Wrigley Road & Reidsville Road  
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Page No: 5



Turning Movement Peak Hour Data Plot (7:15 AM)

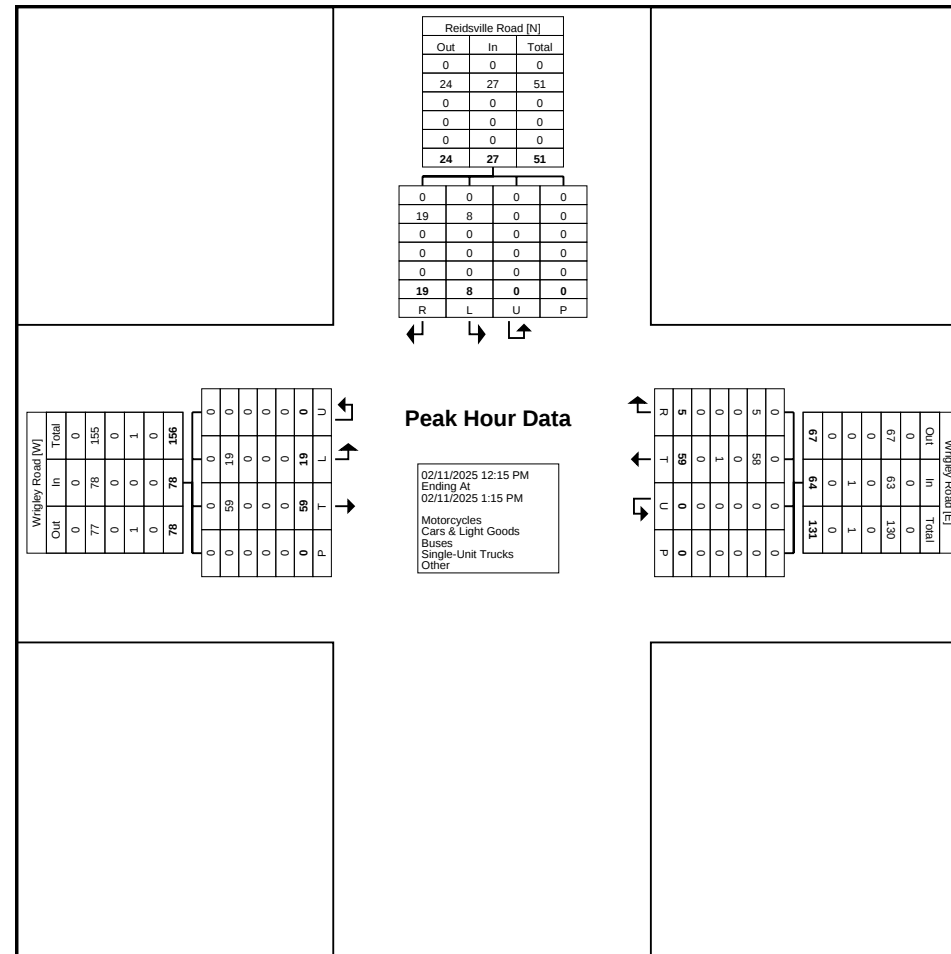




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Turning Movement Peak Hour Data Plot (12:15 PM)

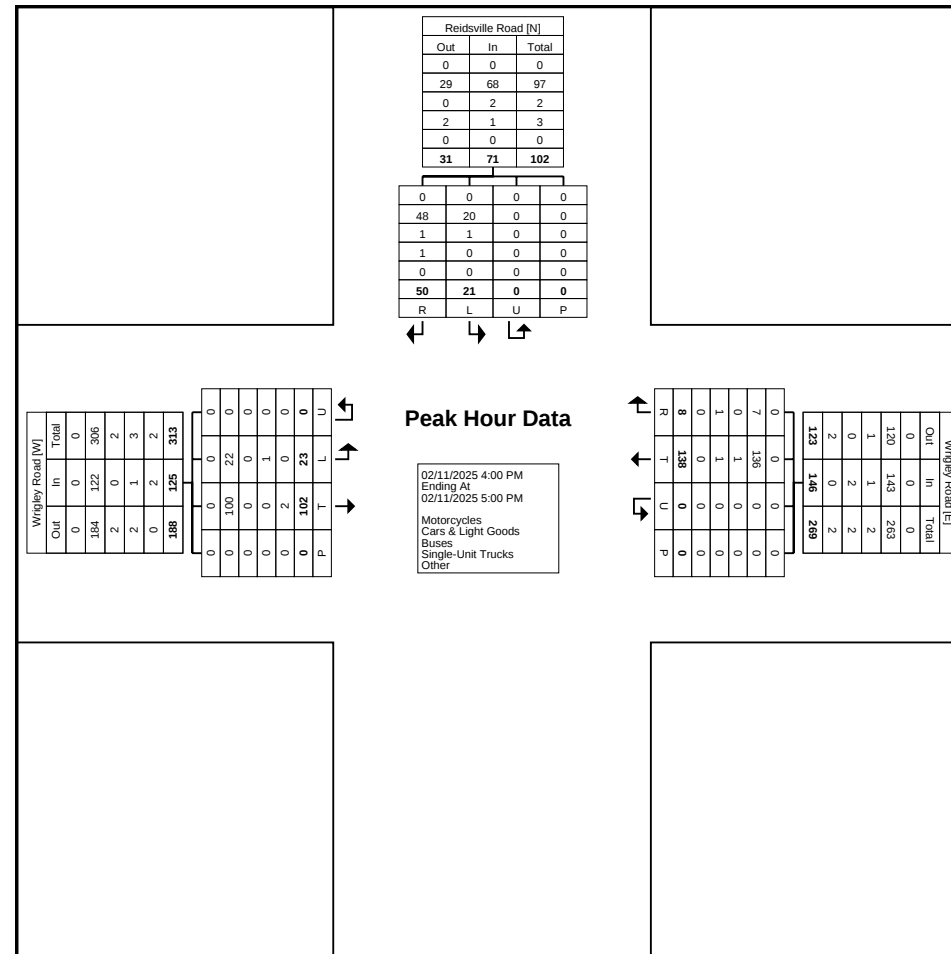
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Turning Movement Peak Hour Data Plot (4:00 PM)



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Site Code: 240708  
Start Date: 02/11/2025  
Page No: 1

## Turning Movement Data

| Start Time    | Wrigley Road<br>Eastbound |       |        |      |            | Spragues Road<br>Northbound |      |        |      |            | Spragues Road<br>Southbound |       |        |      |            | Int. Total |
|---------------|---------------------------|-------|--------|------|------------|-----------------------------|------|--------|------|------------|-----------------------------|-------|--------|------|------------|------------|
|               | Left                      | Right | U-Turn | Peds | App. Total | Left                        | Thru | U-Turn | Peds | App. Total | Thru                        | Right | U-Turn | Peds | App. Total |            |
| 6:00 AM       | 9                         | 16    | 0      | 0    | 25         | 54                          | 10   | 0      | 0    | 64         | 8                           | 0     | 0      | 0    | 8          | 97         |
| 6:15 AM       | 15                        | 23    | 0      | 0    | 38         | 67                          | 20   | 0      | 0    | 87         | 7                           | 1     | 0      | 0    | 8          | 133        |
| 6:30 AM       | 7                         | 21    | 0      | 0    | 28         | 70                          | 25   | 0      | 0    | 95         | 10                          | 6     | 0      | 0    | 16         | 139        |
| 6:45 AM       | 8                         | 24    | 0      | 0    | 32         | 75                          | 31   | 0      | 0    | 106        | 13                          | 8     | 0      | 0    | 21         | 159        |
| Hourly Total  | 39                        | 84    | 0      | 0    | 123        | 266                         | 86   | 0      | 0    | 352        | 38                          | 15    | 0      | 0    | 53         | 528        |
| 7:00 AM       | 11                        | 31    | 0      | 0    | 42         | 72                          | 16   | 0      | 0    | 88         | 14                          | 4     | 0      | 0    | 18         | 148        |
| 7:15 AM       | 16                        | 32    | 0      | 0    | 48         | 98                          | 37   | 0      | 0    | 135        | 10                          | 6     | 0      | 0    | 16         | 199        |
| 7:30 AM       | 28                        | 44    | 0      | 0    | 72         | 103                         | 28   | 0      | 0    | 131        | 9                           | 5     | 0      | 0    | 14         | 217        |
| 7:45 AM       | 36                        | 36    | 0      | 0    | 72         | 68                          | 34   | 0      | 0    | 102        | 27                          | 11    | 0      | 0    | 38         | 212        |
| Hourly Total  | 91                        | 143   | 0      | 0    | 234        | 341                         | 115  | 0      | 0    | 456        | 60                          | 26    | 0      | 0    | 86         | 776        |
| 8:00 AM       | 36                        | 26    | 0      | 0    | 62         | 80                          | 35   | 0      | 0    | 115        | 16                          | 3     | 0      | 0    | 19         | 196        |
| 8:15 AM       | 28                        | 21    | 0      | 0    | 49         | 59                          | 23   | 0      | 0    | 82         | 18                          | 15    | 0      | 0    | 33         | 164        |
| 8:30 AM       | 16                        | 42    | 0      | 0    | 58         | 71                          | 33   | 0      | 0    | 104        | 14                          | 6     | 0      | 0    | 20         | 182        |
| 8:45 AM       | 13                        | 38    | 0      | 0    | 51         | 45                          | 26   | 0      | 0    | 71         | 17                          | 14    | 0      | 0    | 31         | 153        |
| Hourly Total  | 93                        | 127   | 0      | 0    | 220        | 255                         | 117  | 0      | 0    | 372        | 65                          | 38    | 0      | 0    | 103        | 695        |
| *** BREAK *** | -                         | -     | -      | -    | -          | -                           | -    | -      | -    | -          | -                           | -     | -      | -    | -          | -          |
| 11:30 AM      | 11                        | 20    | 0      | 0    | 31         | 23                          | 16   | 0      | 0    | 39         | 15                          | 7     | 0      | 0    | 22         | 92         |
| 11:45 AM      | 9                         | 27    | 0      | 0    | 36         | 24                          | 17   | 0      | 0    | 41         | 9                           | 5     | 0      | 0    | 14         | 91         |
| Hourly Total  | 20                        | 47    | 0      | 0    | 67         | 47                          | 33   | 0      | 0    | 80         | 24                          | 12    | 0      | 0    | 36         | 183        |
| 12:00 PM      | 4                         | 27    | 0      | 0    | 31         | 24                          | 15   | 0      | 0    | 39         | 18                          | 9     | 0      | 0    | 27         | 97         |
| 12:15 PM      | 11                        | 24    | 0      | 0    | 35         | 38                          | 17   | 0      | 0    | 55         | 11                          | 4     | 0      | 0    | 15         | 105        |
| 12:30 PM      | 11                        | 24    | 0      | 0    | 35         | 35                          | 12   | 0      | 0    | 47         | 14                          | 11    | 0      | 0    | 25         | 107        |
| 12:45 PM      | 10                        | 38    | 0      | 0    | 48         | 21                          | 16   | 0      | 0    | 37         | 18                          | 11    | 0      | 0    | 29         | 114        |
| Hourly Total  | 36                        | 113   | 0      | 0    | 149        | 118                         | 60   | 0      | 0    | 178        | 61                          | 35    | 0      | 0    | 96         | 423        |
| 1:00 PM       | 8                         | 26    | 0      | 0    | 34         | 28                          | 19   | 0      | 0    | 47         | 17                          | 15    | 0      | 0    | 32         | 113        |
| 1:15 PM       | 6                         | 31    | 0      | 0    | 37         | 26                          | 11   | 0      | 0    | 37         | 15                          | 8     | 0      | 0    | 23         | 97         |
| *** BREAK *** | -                         | -     | -      | -    | -          | -                           | -    | -      | -    | -          | -                           | -     | -      | -    | -          | -          |
| Hourly Total  | 14                        | 57    | 0      | 0    | 71         | 54                          | 30   | 0      | 0    | 84         | 32                          | 23    | 0      | 0    | 55         | 210        |
| 3:00 PM       | 9                         | 44    | 0      | 0    | 53         | 33                          | 20   | 0      | 0    | 53         | 24                          | 21    | 0      | 0    | 45         | 151        |
| 3:15 PM       | 9                         | 55    | 0      | 0    | 64         | 31                          | 26   | 0      | 0    | 57         | 36                          | 27    | 0      | 0    | 63         | 184        |
| 3:30 PM       | 13                        | 63    | 0      | 0    | 76         | 62                          | 17   | 0      | 0    | 79         | 23                          | 11    | 0      | 0    | 34         | 189        |
| 3:45 PM       | 9                         | 68    | 0      | 0    | 77         | 48                          | 19   | 0      | 0    | 67         | 31                          | 16    | 0      | 0    | 47         | 191        |
| Hourly Total  | 40                        | 230   | 0      | 0    | 270        | 174                         | 82   | 0      | 0    | 256        | 114                         | 75    | 0      | 0    | 189        | 715        |
| 4:00 PM       | 19                        | 89    | 0      | 0    | 108        | 40                          | 25   | 0      | 0    | 65         | 22                          | 21    | 0      | 0    | 43         | 216        |
| 4:15 PM       | 20                        | 104   | 0      | 0    | 124        | 56                          | 23   | 0      | 0    | 79         | 39                          | 18    | 0      | 0    | 57         | 260        |
| 4:30 PM       | 13                        | 98    | 0      | 0    | 111        | 62                          | 25   | 0      | 0    | 87         | 29                          | 31    | 0      | 0    | 60         | 258        |

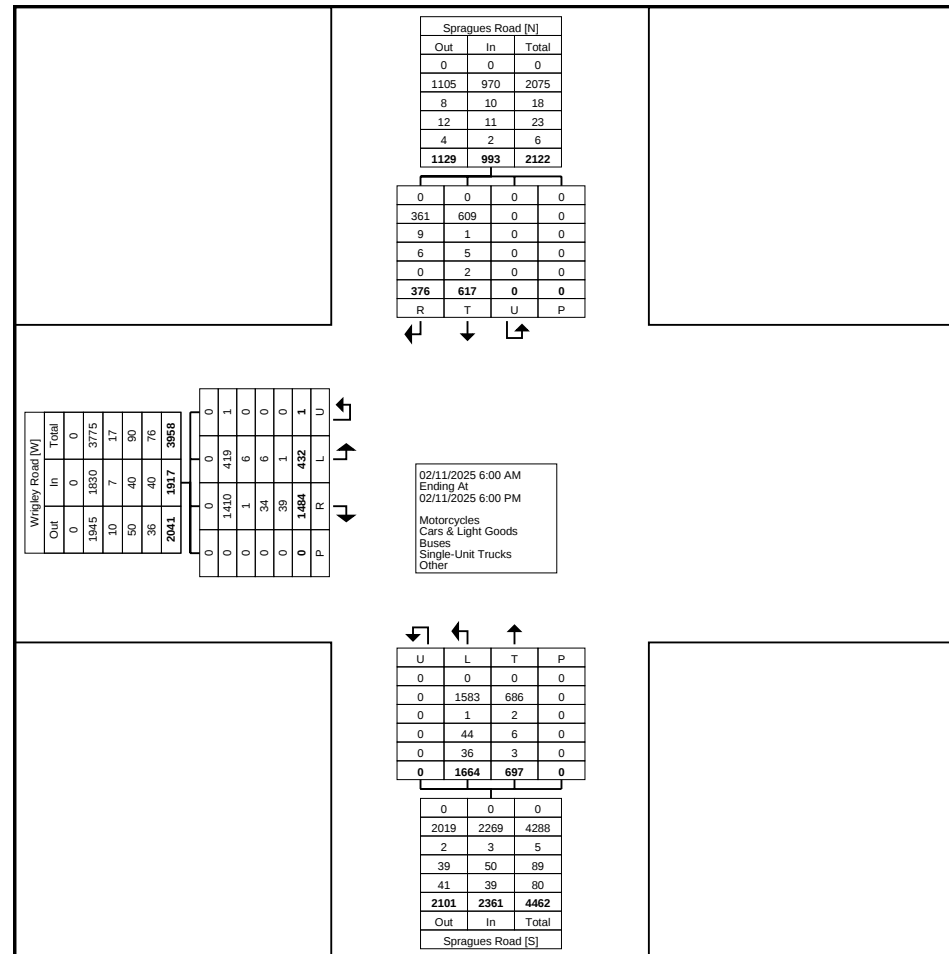
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Turning Movement Data Plot

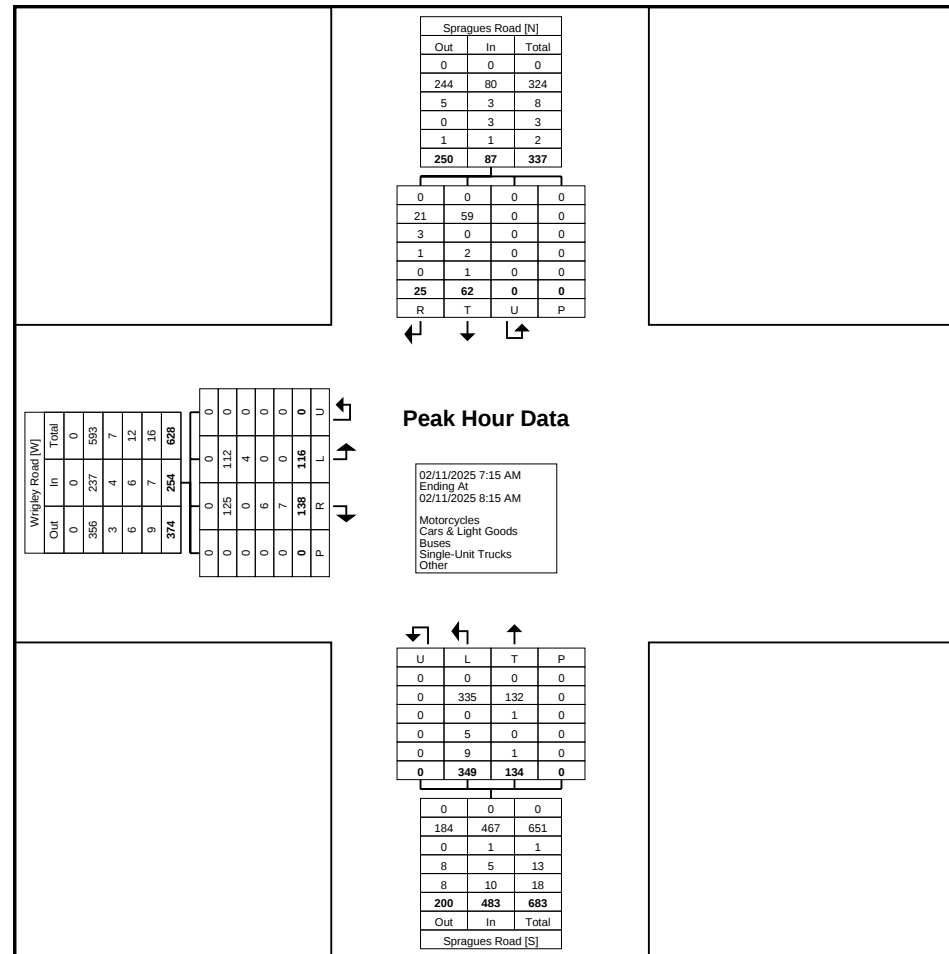
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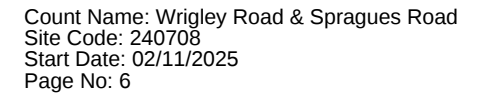
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Page No: 5



Turning Movement Peak Hour Data Plot (7:15 AM)

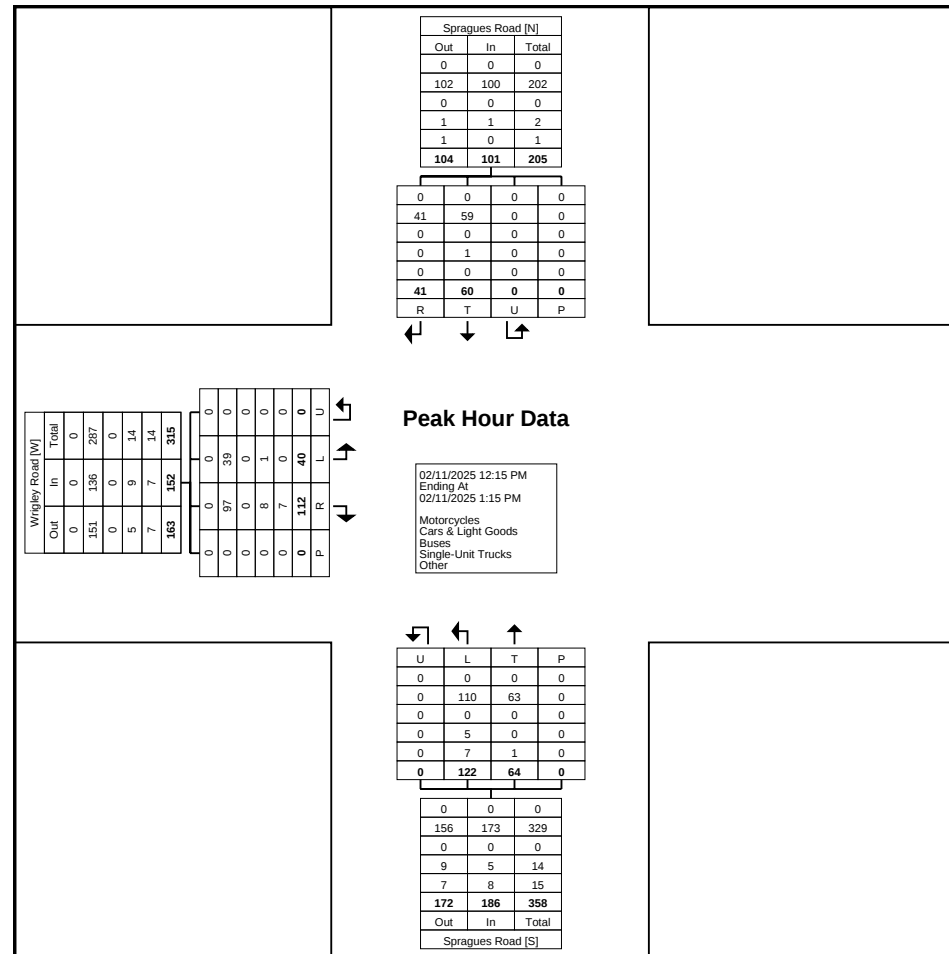




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Count Name: Wrigley Road & Spragues Road  
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Turning Movement Peak Hour Data Plot (12:15 PM)

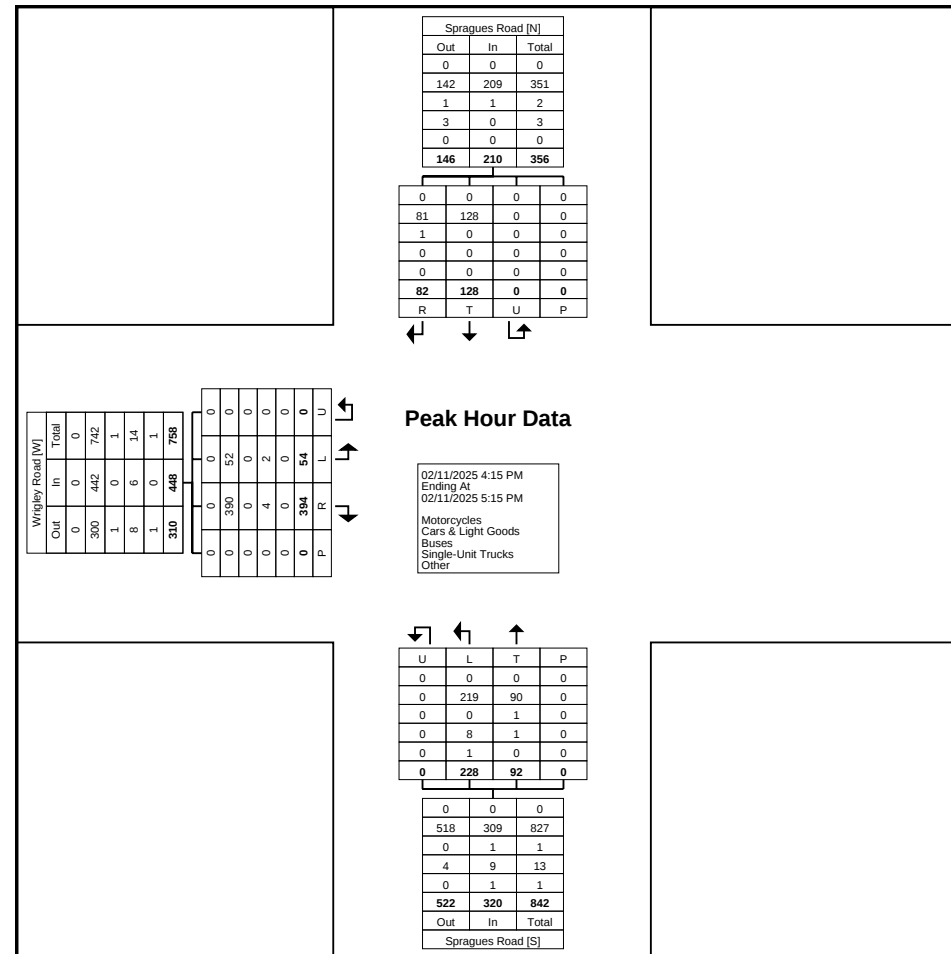
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Page No: 9



Turning Movement Peak Hour Data Plot (4:15 PM)

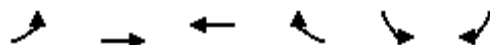
# Appendix C

## Existing Conditions Traffic Operations Reports



Lanes, Volumes, Timings  
1: Wrigley Rd & Reidsville Rd

Base: AM Peak Hour



| Lane Group                        | EBL          | EBT                                                                               | WBT                                                                               | WBR                    | SBL                                                                               | SBR   |
|-----------------------------------|--------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------------------|-------|
| Lane Configurations               |              |  |  |                        |  |       |
| Traffic Volume (vph)              | 84           | 164                                                                               | 42                                                                                | 14                     | 8                                                                                 | 10    |
| Future Volume (vph)               | 84           | 164                                                                               | 42                                                                                | 14                     | 8                                                                                 | 10    |
| Ideal Flow (vphpl)                | 1650         | 1650                                                                              | 1650                                                                              | 1650                   | 1765                                                                              | 1765  |
| Lane Util. Factor                 | 1.00         | 1.00                                                                              | 1.00                                                                              | 1.00                   | 1.00                                                                              | 1.00  |
| Frt                               |              |                                                                                   | 0.966                                                                             |                        | 0.925                                                                             |       |
| Flt Protected                     |              | 0.983                                                                             |                                                                                   |                        | 0.978                                                                             |       |
| Satd. Flow (prot)                 | 0            | 1585                                                                              | 1486                                                                              | 0                      | 1513                                                                              | 0     |
| Flt Permitted                     |              | 0.983                                                                             |                                                                                   |                        | 0.978                                                                             |       |
| Satd. Flow (perm)                 | 0            | 1585                                                                              | 1486                                                                              | 0                      | 1513                                                                              | 0     |
| Link Speed (k/h)                  |              | 80                                                                                | 80                                                                                |                        | 80                                                                                |       |
| Link Distance (m)                 |              | 912.8                                                                             | 2934.3                                                                            |                        | 1632.0                                                                            |       |
| Travel Time (s)                   |              | 41.1                                                                              | 132.0                                                                             |                        | 73.4                                                                              |       |
| Peak Hour Factor                  | 1.00         | 1.00                                                                              | 1.00                                                                              | 1.00                   | 1.00                                                                              | 1.00  |
| Heavy Vehicles (%)                | 1%           | 3%                                                                                | 5%                                                                                | 14%                    | 0%                                                                                | 10%   |
| Adj. Flow (vph)                   | 84           | 164                                                                               | 42                                                                                | 14                     | 8                                                                                 | 10    |
| Shared Lane Traffic (%)           |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Lane Group Flow (vph)             | 0            | 248                                                                               | 56                                                                                | 0                      | 18                                                                                | 0     |
| Enter Blocked Intersection        | No           | No                                                                                | No                                                                                | No                     | No                                                                                | No    |
| Lane Alignment                    | Left         | Left                                                                              | Left                                                                              | Right                  | Left                                                                              | Right |
| Median Width(m)                   |              | 0.0                                                                               | 0.0                                                                               |                        | 3.6                                                                               |       |
| Link Offset(m)                    |              | 0.0                                                                               | 0.0                                                                               |                        | 0.0                                                                               |       |
| Crosswalk Width(m)                |              | 4.8                                                                               | 4.8                                                                               |                        | 4.8                                                                               |       |
| Two way Left Turn Lane            |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Headway Factor                    | 1.20         | 1.20                                                                              | 1.20                                                                              | 1.20                   | 1.10                                                                              | 1.10  |
| Turning Speed (k/h)               | 25           |                                                                                   |                                                                                   | 15                     | 25                                                                                | 15    |
| Sign Control                      |              | Free                                                                              | Free                                                                              |                        | Stop                                                                              |       |
| Intersection Summary              |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Area Type:                        | Other        |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Control Type:                     | Unsignalized |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Intersection Capacity Utilization | 32.0%        |                                                                                   |                                                                                   | ICU Level of Service A |                                                                                   |       |
| Analysis Period (min)             | 15           |                                                                                   |                                                                                   |                        |                                                                                   |       |

HCM 6th TWSC  
1: Wrigley Rd & Reidsville Rd

Base: AM Peak Hour

Intersection

Int Delay, s/veh 2.5

| Movement                 | EBL  | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR  |
|--------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |      |  |  |      |  |      |
| Traffic Vol, veh/h       | 84   | 164                                                                               | 42                                                                                | 14   | 8                                                                                 | 10   |
| Future Vol, veh/h        | 84   | 164                                                                               | 42                                                                                | 14   | 8                                                                                 | 10   |
| 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         | 100  | 100                                                                               | 100                                                                               | 100  | 100                                                                               | 100  |
| Heavy Vehicles, %        | 1    | 3                                                                                 | 5                                                                                 | 14   | 0                                                                                 | 10   |
| Mvmt Flow                | 84   | 164                                                                               | 42                                                                                | 14   | 8                                                                                 | 10   |

| Major/Minor          | Major1 | Major2 | Minor2     |
|----------------------|--------|--------|------------|
| Conflicting Flow All | 56     | 0      | 0 381 49   |
| Stage 1              | -      | -      | - 49 -     |
| Stage 2              | -      | -      | - 332 -    |
| Critical Hdwy        | 4.11   | -      | - 6.4 6.3  |
| Critical Hdwy Stg 1  | -      | -      | - 5.4 -    |
| Critical Hdwy Stg 2  | -      | -      | - 5.4 -    |
| Follow-up Hdwy       | 2.209  | -      | - 3.5 3.39 |
| Pot Cap-1 Maneuver   | 1555   | -      | - 625 997  |
| Stage 1              | -      | -      | - 979 -    |
| Stage 2              | -      | -      | - 731 -    |
| Platoon blocked, %   | -      | -      | -          |
| Mov Cap-1 Maneuver   | 1555   | -      | - 588 997  |
| Mov Cap-2 Maneuver   | -      | -      | - 588 -    |
| Stage 1              | -      | -      | - 921 -    |
| Stage 2              | -      | -      | - 731 -    |

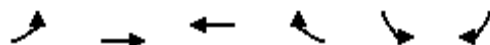
| Approach             | EB  | WB | SB  |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 2.5 | 0  | 9.8 |
| HCM LOS              |     |    | A   |

| Minor Lane/Major Mvmt | EBL   | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h)      | 1555  | -   | -   | -   | 762   |
| HCM Lane V/C Ratio    | 0.054 | -   | -   | -   | 0.024 |
| HCM Control Delay (s) | 7.4   | 0   | -   | -   | 9.8   |
| HCM Lane LOS          | A     | A   | -   | -   | A     |
| HCM 95th %tile Q(veh) | 0.2   | -   | -   | -   | 0.1   |

# Lanes, Volumes, Timings

## 2: Wrigley Rd & Dumfries Rd

Base: AM Peak Hour



| Lane Group                        | EBL          | EBT                                                                               | WBT                                                                               | WBR                    | SBL                                                                               | SBR   |
|-----------------------------------|--------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------------------|-------|
| Lane Configurations               |              |  |  |                        |  |       |
| Traffic Volume (vph)              | 28           | 156                                                                               | 43                                                                                | 335                    | 98                                                                                | 4     |
| Future Volume (vph)               | 28           | 156                                                                               | 43                                                                                | 335                    | 98                                                                                | 4     |
| Ideal Flow (vphpl)                | 1650         | 1650                                                                              | 1650                                                                              | 1650                   | 1765                                                                              | 1765  |
| Lane Util. Factor                 | 1.00         | 1.00                                                                              | 1.00                                                                              | 1.00                   | 1.00                                                                              | 1.00  |
| Frt                               |              |                                                                                   | 0.880                                                                             |                        | 0.995                                                                             |       |
| Flt Protected                     |              | 0.992                                                                             |                                                                                   |                        | 0.954                                                                             |       |
| Satd. Flow (prot)                 | 0            | 1567                                                                              | 1392                                                                              | 0                      | 1528                                                                              | 0     |
| Flt Permitted                     |              | 0.992                                                                             |                                                                                   |                        | 0.954                                                                             |       |
| Satd. Flow (perm)                 | 0            | 1567                                                                              | 1392                                                                              | 0                      | 1528                                                                              | 0     |
| Link Speed (k/h)                  |              | 80                                                                                | 80                                                                                |                        | 80                                                                                |       |
| Link Distance (m)                 |              | 2934.3                                                                            | 673.3                                                                             |                        | 1737.5                                                                            |       |
| Travel Time (s)                   |              | 132.0                                                                             | 30.3                                                                              |                        | 78.2                                                                              |       |
| Peak Hour Factor                  | 1.00         | 1.00                                                                              | 1.00                                                                              | 1.00                   | 1.00                                                                              | 1.00  |
| Heavy Vehicles (%)                | 7%           | 4%                                                                                | 7%                                                                                | 4%                     | 9%                                                                                | 25%   |
| Adj. Flow (vph)                   | 28           | 156                                                                               | 43                                                                                | 335                    | 98                                                                                | 4     |
| Shared Lane Traffic (%)           |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Lane Group Flow (vph)             | 0            | 184                                                                               | 378                                                                               | 0                      | 102                                                                               | 0     |
| Enter Blocked Intersection        | No           | No                                                                                | No                                                                                | No                     | No                                                                                | No    |
| Lane Alignment                    | Left         | Left                                                                              | Left                                                                              | Right                  | Left                                                                              | Right |
| Median Width(m)                   |              | 0.0                                                                               | 0.0                                                                               |                        | 3.6                                                                               |       |
| Link Offset(m)                    |              | 0.0                                                                               | 0.0                                                                               |                        | 0.0                                                                               |       |
| Crosswalk Width(m)                |              | 4.8                                                                               | 4.8                                                                               |                        | 4.8                                                                               |       |
| Two way Left Turn Lane            |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Headway Factor                    | 1.20         | 1.20                                                                              | 1.20                                                                              | 1.20                   | 1.10                                                                              | 1.10  |
| Turning Speed (k/h)               | 25           |                                                                                   |                                                                                   | 15                     | 25                                                                                | 15    |
| Sign Control                      |              | Free                                                                              | Free                                                                              |                        | Stop                                                                              |       |
| Intersection Summary              |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Area Type:                        | Other        |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Control Type:                     | Unsignalized |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Intersection Capacity Utilization | 49.7%        |                                                                                   |                                                                                   | ICU Level of Service A |                                                                                   |       |
| Analysis Period (min)             | 15           |                                                                                   |                                                                                   |                        |                                                                                   |       |

HCM 6th TWSC  
2: Wrigley Rd & Dumfries Rd

Base: AM Peak Hour

Intersection

Int Delay, s/veh 2.3

| Movement                 | EBL  | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR  |
|--------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |      |  |  |      |  |      |
| Traffic Vol, veh/h       | 28   | 156                                                                               | 43                                                                                | 335  | 98                                                                                | 4    |
| Future Vol, veh/h        | 28   | 156                                                                               | 43                                                                                | 335  | 98                                                                                | 4    |
| 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         | 100  | 100                                                                               | 100                                                                               | 100  | 100                                                                               | 100  |
| Heavy Vehicles, %        | 7    | 4                                                                                 | 7                                                                                 | 4    | 9                                                                                 | 25   |
| Mvmt Flow                | 28   | 156                                                                               | 43                                                                                | 335  | 98                                                                                | 4    |

| Major/Minor          | Major1 | Major2 | Minor2          |
|----------------------|--------|--------|-----------------|
| Conflicting Flow All | 378    | 0      | 0 423 211       |
| Stage 1              | -      | -      | - - 211 -       |
| Stage 2              | -      | -      | - - 212 -       |
| Critical Hdwy        | 4.17   | -      | - - 6.49 6.45   |
| Critical Hdwy Stg 1  | -      | -      | - - 5.49 -      |
| Critical Hdwy Stg 2  | -      | -      | - - 5.49 -      |
| Follow-up Hdwy       | 2.263  | -      | - - 3.581 3.525 |
| Pot Cap-1 Maneuver   | 1154   | -      | - - 574 775     |
| Stage 1              | -      | -      | - - 808 -       |
| Stage 2              | -      | -      | - - 807 -       |
| Platoon blocked, %   |        | -      | - -             |
| Mov Cap-1 Maneuver   | 1154   | -      | - - 559 775     |
| Mov Cap-2 Maneuver   | -      | -      | - - 559 -       |
| Stage 1              | -      | -      | - - 786 -       |
| Stage 2              | -      | -      | - - 807 -       |

| Approach             | EB  | WB | SB   |
|----------------------|-----|----|------|
| HCM Control Delay, s | 1.2 | 0  | 12.8 |
| HCM LOS              |     |    | B    |

| Minor Lane/Major Mvmt | EBL   | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h)      | 1154  | -   | -   | -   | 565   |
| HCM Lane V/C Ratio    | 0.024 | -   | -   | -   | 0.181 |
| HCM Control Delay (s) | 8.2   | 0   | -   | -   | 12.8  |
| HCM Lane LOS          | A     | A   | -   | -   | B     |
| HCM 95th %tile Q(veh) | 0.1   | -   | -   | -   | 0.7   |

Lanes, Volumes, Timings  
3: Spragues Rd & Wrigley Rd

Base: AM Peak Hour

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group                        | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Traffic Volume (vph)              | 116                                                                               | 138                                                                               | 352                                                                               | 134                                                                               | 62                                                                                | 26                                                                                |
| Future Volume (vph)               | 116                                                                               | 138                                                                               | 352                                                                               | 134                                                                               | 62                                                                                | 26                                                                                |
| Ideal Flow (vphpl)                | 1650                                                                              | 1650                                                                              | 1650                                                                              | 1650                                                                              | 1765                                                                              | 1765                                                                              |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Frt                               | 0.927                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.960                                                                             |                                                                                   |
| Flt Protected                     | 0.978                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.965                                                                             |                                                                                   |
| Satd. Flow (prot)                 | 1408                                                                              | 0                                                                                 | 0                                                                                 | 1543                                                                              | 1565                                                                              | 0                                                                                 |
| Flt Permitted                     | 0.978                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.965                                                                             |                                                                                   |
| Satd. Flow (perm)                 | 1408                                                                              | 0                                                                                 | 0                                                                                 | 1543                                                                              | 1565                                                                              | 0                                                                                 |
| Link Speed (k/h)                  | 80                                                                                |                                                                                   |                                                                                   |                                                                                   | 80                                                                                | 80                                                                                |
| Link Distance (m)                 | 673.3                                                                             |                                                                                   |                                                                                   |                                                                                   | 285.9                                                                             | 309.3                                                                             |
| Travel Time (s)                   | 30.3                                                                              |                                                                                   |                                                                                   |                                                                                   | 12.9                                                                              | 13.9                                                                              |
| Peak Hour Factor                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Heavy Vehicles (%)                | 3%                                                                                | 9%                                                                                | 4%                                                                                | 1%                                                                                | 5%                                                                                | 16%                                                                               |
| Adj. Flow (vph)                   | 116                                                                               | 138                                                                               | 352                                                                               | 134                                                                               | 62                                                                                | 26                                                                                |
| Shared Lane Traffic (%)           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)             | 254                                                                               | 0                                                                                 | 0                                                                                 | 486                                                                               | 88                                                                                | 0                                                                                 |
| Enter Blocked Intersection        | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                |
| Lane Alignment                    | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Left                                                                              | Right                                                                             |
| Median Width(m)                   | 3.6                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |
| Link Offset(m)                    | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |
| Crosswalk Width(m)                | 4.8                                                                               |                                                                                   |                                                                                   |                                                                                   | 4.8                                                                               | 4.8                                                                               |
| Two way Left Turn Lane            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Headway Factor                    | 1.20                                                                              | 1.20                                                                              | 1.20                                                                              | 1.20                                                                              | 1.10                                                                              | 1.10                                                                              |
| Turning Speed (k/h)               | 25                                                                                | 15                                                                                | 25                                                                                |                                                                                   |                                                                                   | 15                                                                                |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Area Type:                        | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Control Type:                     | Unsignalized                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization | 61.0%                                                                             |                                                                                   |                                                                                   | ICU Level of Service B                                                            |                                                                                   |                                                                                   |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM 6th TWSC 3: Spragues Rd & Wrigley Rd

Base: AM Peak Hour

## Intersection

Int Delay, s/veh 12.9

## Movement EBL EBR NBL NBT SBT SBR

Lane Configurations 

Traffic Vol, veh/h 116 138 352 134 62 26

Future Vol, veh/h 116 138 352 134 62 26

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 100 100 100 100 100 100

Heavy Vehicles, % 3 9 4 1 5 16

Mvmt Flow 116 138 352 134 62 26

## Major/Minor Minor2 Major1 Major2

Conflicting Flow All 913 75 88 0 - 0

Stage 1 75 - - - - -

Stage 2 838 - - - - -

Critical Hdwy 6.43 6.29 4.14 - - -

Critical Hdwy Stg 1 5.43 - - - - -

Critical Hdwy Stg 2 5.43 - - - - -

Follow-up Hdwy 3.527 3.381 2.236 - - -

Pot Cap-1 Maneuver 302 967 1495 - - -

Stage 1 945 - - - - -

Stage 2 423 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 225 967 1495 - - -

Mov Cap-2 Maneuver 225 - - - - -

Stage 1 705 - - - - -

Stage 2 423 - - - - -

## Approach EB NB SB

HCM Control Delay, s 30.6 5.9 0

HCM LOS D

## Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 1495 - 386 - -

HCM Lane V/C Ratio 0.235 - 0.658 - -

HCM Control Delay (s) 8.1 0 30.6 - -

HCM Lane LOS A A D - -

HCM 95th %tile Q(veh) 0.9 - 4.5 - -

Lanes, Volumes, Timings  
4: Reidsville Rd & Greenfield Rd

Base: AM Peak Hour

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group                        | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBR                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Traffic Volume (vph)              | 46                                                                                | 16                                                                                | 3                                                                                 | 39                                                                                | 95                                                                                | 8                                                                                 |
| Future Volume (vph)               | 46                                                                                | 16                                                                                | 3                                                                                 | 39                                                                                | 95                                                                                | 8                                                                                 |
| Ideal Flow (vphpl)                | 1650                                                                              | 1650                                                                              | 1650                                                                              | 1650                                                                              | 1765                                                                              | 1765                                                                              |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Frt                               | 0.965                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.990                                                                             |                                                                                   |
| Flt Protected                     |                                                                                   |                                                                                   |                                                                                   | 0.996                                                                             | 0.956                                                                             |                                                                                   |
| Satd. Flow (prot)                 | 1427                                                                              | 0                                                                                 | 0                                                                                 | 1466                                                                              | 1623                                                                              | 0                                                                                 |
| Flt Permitted                     |                                                                                   |                                                                                   |                                                                                   | 0.996                                                                             | 0.956                                                                             |                                                                                   |
| Satd. Flow (perm)                 | 1427                                                                              | 0                                                                                 | 0                                                                                 | 1466                                                                              | 1623                                                                              | 0                                                                                 |
| Link Speed (k/h)                  | 80                                                                                |                                                                                   |                                                                                   | 80                                                                                | 80                                                                                |                                                                                   |
| Link Distance (m)                 | 456.6                                                                             |                                                                                   |                                                                                   | 2951.9                                                                            | 1632.0                                                                            |                                                                                   |
| Travel Time (s)                   | 20.5                                                                              |                                                                                   |                                                                                   | 132.8                                                                             | 73.4                                                                              |                                                                                   |
| Peak Hour Factor                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Heavy Vehicles (%)                | 9%                                                                                | 19%                                                                               | 0%                                                                                | 13%                                                                               | 0%                                                                                | 38%                                                                               |
| Adj. Flow (vph)                   | 46                                                                                | 16                                                                                | 3                                                                                 | 39                                                                                | 95                                                                                | 8                                                                                 |
| Shared Lane Traffic (%)           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)             | 62                                                                                | 0                                                                                 | 0                                                                                 | 42                                                                                | 103                                                                               | 0                                                                                 |
| Enter Blocked Intersection        | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                |
| Lane Alignment                    | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Left                                                                              | Right                                                                             |
| Median Width(m)                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 3.6                                                                               |                                                                                   |
| Link Offset(m)                    | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Crosswalk Width(m)                | 4.8                                                                               |                                                                                   |                                                                                   | 4.8                                                                               | 4.8                                                                               |                                                                                   |
| Two way Left Turn Lane            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Headway Factor                    | 1.20                                                                              | 1.20                                                                              | 1.20                                                                              | 1.20                                                                              | 1.10                                                                              | 1.10                                                                              |
| Turning Speed (k/h)               |                                                                                   | 15                                                                                | 25                                                                                |                                                                                   | 25                                                                                | 15                                                                                |
| Sign Control                      | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              | Stop                                                                              |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Area Type:                        | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Control Type:                     | Unsignalized                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization | 18.1%                                                                             |                                                                                   |                                                                                   | ICU Level of Service A                                                            |                                                                                   |                                                                                   |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

HCM 6th TWSC  
4: Reidsville Rd & Greenfield Rd

Base: AM Peak Hour

Intersection

Int Delay, s/veh 4.8

| Movement                 | EBT                                                                               | EBR  | WBL  | WBT                                                                               | NBL                                                                               | NBR  |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 46                                                                                | 16   | 3    | 39                                                                                | 95                                                                                | 8    |
| Future Vol, veh/h        | 46                                                                                | 16   | 3    | 39                                                                                | 95                                                                                | 8    |
| 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         | 100                                                                               | 100  | 100  | 100                                                                               | 100                                                                               | 100  |
| Heavy Vehicles, %        | 9                                                                                 | 19   | 0    | 13                                                                                | 0                                                                                 | 38   |
| Mvmt Flow                | 46                                                                                | 16   | 3    | 39                                                                                | 95                                                                                | 8    |

| Major/Minor          | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0      | 0      | 62     |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | 4.1    |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | 2.2    |
| Pot Cap-1 Maneuver   | -      | -      | 1554   |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | 1554   |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | EB | WB  | NB  |
|----------------------|----|-----|-----|
| HCM Control Delay, s | 0  | 0.5 | 9.5 |
| HCM LOS              |    |     | A   |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL   | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h)      | 904   | -   | -   | 1554  | -   |
| HCM Lane V/C Ratio    | 0.114 | -   | -   | 0.002 | -   |
| HCM Control Delay (s) | 9.5   | -   | -   | 7.3   | 0   |
| HCM Lane LOS          | A     | -   | -   | A     | A   |
| HCM 95th %tile Q(veh) | 0.4   | -   | -   | 0     | -   |

Lanes, Volumes, Timings  
5: Dumfries Rd & Greenfield Rd

Base: AM Peak Hour

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                        | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (vph)              | 14                                                                                | 39                                                                                | 0                                                                                 | 1                                                                                 | 23                                                                                | 6                                                                                 | 1                                                                                  | 361                                                                                 | 1                                                                                   | 3                                                                                   | 101                                                                                 | 16                                                                                  |
| Future Volume (vph)               | 14                                                                                | 39                                                                                | 0                                                                                 | 1                                                                                 | 23                                                                                | 6                                                                                 | 1                                                                                  | 361                                                                                 | 1                                                                                   | 3                                                                                   | 101                                                                                 | 16                                                                                  |
| Ideal Flow (vphpl)                | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                               | 1550                                                                                | 1550                                                                                | 1550                                                                                | 1550                                                                                | 1550                                                                                |
| 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                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.973                                                                             |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 0.982                                                                               |                                                                                     |
| Flt Protected                     |                                                                                   | 0.987                                                                             |                                                                                   |                                                                                   | 0.998                                                                             |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Satd. Flow (prot)                 | 0                                                                                 | 1347                                                                              | 0                                                                                 | 0                                                                                 | 1505                                                                              | 0                                                                                 | 0                                                                                  | 1477                                                                                | 0                                                                                   | 0                                                                                   | 1361                                                                                | 0                                                                                   |
| Flt Permitted                     |                                                                                   | 0.987                                                                             |                                                                                   |                                                                                   | 0.998                                                                             |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Satd. Flow (perm)                 | 0                                                                                 | 1347                                                                              | 0                                                                                 | 0                                                                                 | 1505                                                                              | 0                                                                                 | 0                                                                                  | 1477                                                                                | 0                                                                                   | 0                                                                                   | 1361                                                                                | 0                                                                                   |
| Link Speed (k/h)                  |                                                                                   | 80                                                                                |                                                                                   |                                                                                   | 80                                                                                |                                                                                   |                                                                                    | 80                                                                                  |                                                                                     |                                                                                     | 80                                                                                  |                                                                                     |
| Link Distance (m)                 |                                                                                   | 2951.9                                                                            |                                                                                   |                                                                                   | 592.0                                                                             |                                                                                   |                                                                                    | 1737.5                                                                              |                                                                                     |                                                                                     | 801.6                                                                               |                                                                                     |
| Travel Time (s)                   |                                                                                   | 132.8                                                                             |                                                                                   |                                                                                   | 26.6                                                                              |                                                                                   |                                                                                    | 78.2                                                                                |                                                                                     |                                                                                     | 36.1                                                                                |                                                                                     |
| Peak Hour 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                                                                                |
| Heavy Vehicles (%)                | 29%                                                                               | 8%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                 | 5%                                                                                  | 0%                                                                                  | 33%                                                                                 | 9%                                                                                  | 25%                                                                                 |
| Adj. Flow (vph)                   | 14                                                                                | 39                                                                                | 0                                                                                 | 1                                                                                 | 23                                                                                | 6                                                                                 | 1                                                                                  | 361                                                                                 | 1                                                                                   | 3                                                                                   | 101                                                                                 | 16                                                                                  |
| Shared Lane Traffic (%)           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)             | 0                                                                                 | 53                                                                                | 0                                                                                 | 0                                                                                 | 30                                                                                | 0                                                                                 | 0                                                                                  | 363                                                                                 | 0                                                                                   | 0                                                                                   | 120                                                                                 | 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                    | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                               | 1.29                                                                                | 1.29                                                                                | 1.29                                                                                | 1.29                                                                                | 1.29                                                                                |
| Turning Speed (k/h)               | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                 |                                                                                     | 15                                                                                  | 25                                                                                  |                                                                                     | 15                                                                                  |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                    | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Area Type:                        | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Type:                     | Unsignalized                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization | 40.7%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| ICU Level of Service A            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

HCM 6th TWSC  
5: Dumfries Rd & Greenfield Rd

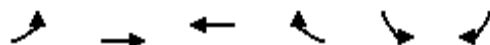
Base: AM Peak Hour

| Intersection             |        |                                                                                   |        |       |                                                                                   |        |      |                                                                                   |        |       |                                                                                     |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|--------|------|-----------------------------------------------------------------------------------|--------|-------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 2      |                                                                                   |        |       |                                                                                   |        |      |                                                                                   |        |       |                                                                                     |      |
| Movement                 | EBL    | EBT                                                                               | EBR    | WBL   | WBT                                                                               | WBR    | NBL  | NBT                                                                               | NBR    | SBL   | SBT                                                                                 | SBR  |
| Lane Configurations      |        |  |        |       |  |        |      |  |        |       |  |      |
| Traffic Vol, veh/h       | 14     | 39                                                                                | 0      | 1     | 23                                                                                | 6      | 1    | 361                                                                               | 1      | 3     | 101                                                                                 | 16   |
| Future Vol, veh/h        | 14     | 39                                                                                | 0      | 1     | 23                                                                                | 6      | 1    | 361                                                                               | 1      | 3     | 101                                                                                 | 16   |
| 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         | 100    | 100                                                                               | 100    | 100   | 100                                                                               | 100    | 100  | 100                                                                               | 100    | 100   | 100                                                                                 | 100  |
| Heavy Vehicles, %        | 29     | 8                                                                                 | 0      | 0     | 0                                                                                 | 0      | 0    | 5                                                                                 | 0      | 33    | 9                                                                                   | 25   |
| Mvmt Flow                | 14     | 39                                                                                | 0      | 1     | 23                                                                                | 6      | 1    | 361                                                                               | 1      | 3     | 101                                                                                 | 16   |
|                          |        |                                                                                   |        |       |                                                                                   |        |      |                                                                                   |        |       |                                                                                     |      |
| Major/Minor              | Minor2 |                                                                                   | Minor1 |       |                                                                                   | Major1 |      |                                                                                   | Major2 |       |                                                                                     |      |
| Conflicting Flow All     | 493    | 479                                                                               | 109    | 499   | 487                                                                               | 362    | 117  | 0                                                                                 | 0      | 362   | 0                                                                                   | 0    |
| Stage 1                  | 115    | 115                                                                               | -      | 364   | 364                                                                               | -      | -    | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 378    | 364                                                                               | -      | 135   | 123                                                                               | -      | -    | -                                                                                 | -      | -     | -                                                                                   | -    |
| Critical Hdwy            | 7.39   | 6.58                                                                              | 6.2    | 7.1   | 6.5                                                                               | 6.2    | 4.1  | -                                                                                 | -      | 4.43  | -                                                                                   | -    |
| Critical Hdwy Stg 1      | 6.39   | 5.58                                                                              | -      | 6.1   | 5.5                                                                               | -      | -    | -                                                                                 | -      | -     | -                                                                                   | -    |
| Critical Hdwy Stg 2      | 6.39   | 5.58                                                                              | -      | 6.1   | 5.5                                                                               | -      | -    | -                                                                                 | -      | -     | -                                                                                   | -    |
| Follow-up Hdwy           | 3.761  | 4.072                                                                             | 3.3    | 3.5   | 4                                                                                 | 3.3    | 2.2  | -                                                                                 | -      | 2.497 | -                                                                                   | -    |
| Pot Cap-1 Maneuver       | 445    | 477                                                                               | 950    | 485   | 484                                                                               | 687    | 1484 | -                                                                                 | -      | 1044  | -                                                                                   | -    |
| Stage 1                  | 828    | 789                                                                               | -      | 659   | 627                                                                               | -      | -    | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 592    | 613                                                                               | -      | 873   | 798                                                                               | -      | -    | -                                                                                 | -      | -     | -                                                                                   | -    |
| Platoon blocked, %       |        |                                                                                   |        |       |                                                                                   |        |      | -                                                                                 | -      |       | -                                                                                   | -    |
| Mov Cap-1 Maneuver       | 424    | 475                                                                               | 950    | 453   | 482                                                                               | 687    | 1484 | -                                                                                 | -      | 1044  | -                                                                                   | -    |
| Mov Cap-2 Maneuver       | 424    | 475                                                                               | -      | 453   | 482                                                                               | -      | -    | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 1                  | 827    | 787                                                                               | -      | 658   | 626                                                                               | -      | -    | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 565    | 612                                                                               | -      | 827   | 796                                                                               | -      | -    | -                                                                                 | -      | -     | -                                                                                   | -    |
|                          |        |                                                                                   |        |       |                                                                                   |        |      |                                                                                   |        |       |                                                                                     |      |
|                          |        |                                                                                   |        |       |                                                                                   |        |      |                                                                                   |        |       |                                                                                     |      |
| Approach                 | EB     |                                                                                   | WB     |       |                                                                                   | NB     |      |                                                                                   | SB     |       |                                                                                     |      |
| HCM Control Delay, s     | 13.8   |                                                                                   | 12.5   |       |                                                                                   | 0      |      |                                                                                   | 0.2    |       |                                                                                     |      |
| HCM LOS                  | B      |                                                                                   | B      |       |                                                                                   |        |      |                                                                                   |        |       |                                                                                     |      |
|                          |        |                                                                                   |        |       |                                                                                   |        |      |                                                                                   |        |       |                                                                                     |      |
| Minor Lane/Major Mvmt    | NBL    | NBT                                                                               | NBR    | EBLn1 | WBLn1                                                                             | SBL    | SBT  | SBR                                                                               |        |       |                                                                                     |      |
| Capacity (veh/h)         | 1484   | -                                                                                 | -      | 460   | 511                                                                               | 1044   | -    | -                                                                                 |        |       |                                                                                     |      |
| HCM Lane V/C Ratio       | 0.001  | -                                                                                 | -      | 0.115 | 0.059                                                                             | 0.003  | -    | -                                                                                 |        |       |                                                                                     |      |
| HCM Control Delay (s)    | 7.4    | 0                                                                                 | -      | 13.8  | 12.5                                                                              | 8.5    | 0    | -                                                                                 |        |       |                                                                                     |      |
| HCM Lane LOS             | A      | A                                                                                 | -      | B     | B                                                                                 | A      | A    | -                                                                                 |        |       |                                                                                     |      |
| HCM 95th %tile Q(veh)    | 0      | -                                                                                 | -      | 0.4   | 0.2                                                                               | 0      | -    | -                                                                                 |        |       |                                                                                     |      |

# Lanes, Volumes, Timings

## 1: Wrigley Rd & Reidsville Rd

Base: PM Peak Hour



| Lane Group                                                     | EBL  | EBT                                                                               | WBT                                                                               | WBR   | SBL                                                                               | SBR   |
|----------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------|-------|
| Lane Configurations                                            |      |  |  |       |  |       |
| Traffic Volume (vph)                                           | 23   | 102                                                                               | 138                                                                               | 8     | 21                                                                                | 50    |
| Future Volume (vph)                                            | 23   | 102                                                                               | 138                                                                               | 8     | 21                                                                                | 50    |
| Ideal Flow (vphpl)                                             | 1650 | 1650                                                                              | 1650                                                                              | 1650  | 1765                                                                              | 1765  |
| Lane Util. Factor                                              | 1.00 | 1.00                                                                              | 1.00                                                                              | 1.00  | 1.00                                                                              | 1.00  |
| Frt                                                            |      |                                                                                   | 0.993                                                                             |       | 0.905                                                                             |       |
| Flt Protected                                                  |      | 0.991                                                                             |                                                                                   |       | 0.985                                                                             |       |
| Satd. Flow (prot)                                              | 0    | 1597                                                                              | 1612                                                                              | 0     | 1509                                                                              | 0     |
| Flt Permitted                                                  |      | 0.991                                                                             |                                                                                   |       | 0.985                                                                             |       |
| Satd. Flow (perm)                                              | 0    | 1597                                                                              | 1612                                                                              | 0     | 1509                                                                              | 0     |
| Link Speed (k/h)                                               |      | 80                                                                                | 80                                                                                |       | 80                                                                                |       |
| Link Distance (m)                                              |      | 912.8                                                                             | 2934.3                                                                            |       | 1632.0                                                                            |       |
| Travel Time (s)                                                |      | 41.1                                                                              | 132.0                                                                             |       | 73.4                                                                              |       |
| Peak Hour Factor                                               | 1.00 | 1.00                                                                              | 1.00                                                                              | 1.00  | 1.00                                                                              | 1.00  |
| Heavy Vehicles (%)                                             | 4%   | 2%                                                                                | 1%                                                                                | 13%   | 5%                                                                                | 4%    |
| Adj. Flow (vph)                                                | 23   | 102                                                                               | 138                                                                               | 8     | 21                                                                                | 50    |
| Shared Lane Traffic (%)                                        |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Lane Group Flow (vph)                                          | 0    | 125                                                                               | 146                                                                               | 0     | 71                                                                                | 0     |
| Enter Blocked Intersection                                     | No   | No                                                                                | No                                                                                | No    | No                                                                                | No    |
| Lane Alignment                                                 | Left | Left                                                                              | Left                                                                              | Right | Left                                                                              | Right |
| Median Width(m)                                                |      | 0.0                                                                               | 0.0                                                                               |       | 3.6                                                                               |       |
| Link Offset(m)                                                 |      | 0.0                                                                               | 0.0                                                                               |       | 0.0                                                                               |       |
| Crosswalk Width(m)                                             |      | 4.8                                                                               | 4.8                                                                               |       | 4.8                                                                               |       |
| Two way Left Turn Lane                                         |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Headway Factor                                                 | 1.20 | 1.20                                                                              | 1.20                                                                              | 1.20  | 1.10                                                                              | 1.10  |
| Turning Speed (k/h)                                            | 25   |                                                                                   |                                                                                   | 15    | 25                                                                                | 15    |
| Sign Control                                                   |      | Free                                                                              | Free                                                                              |       | Stop                                                                              |       |
| Intersection Summary                                           |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Area Type: Other                                               |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Control Type: Unsignalized                                     |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Intersection Capacity Utilization 31.1% ICU Level of Service A |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Analysis Period (min) 15                                       |      |                                                                                   |                                                                                   |       |                                                                                   |       |

HCM 6th TWSC  
1: Wrigley Rd & Reidsville Rd

Base: PM Peak Hour

Intersection

Int Delay, s/veh 2.5

| Movement                 | EBL  | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR  |
|--------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |      |  |  |      |  |      |
| Traffic Vol, veh/h       | 23   | 102                                                                               | 138                                                                               | 8    | 21                                                                                | 50   |
| Future Vol, veh/h        | 23   | 102                                                                               | 138                                                                               | 8    | 21                                                                                | 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         | 100  | 100                                                                               | 100                                                                               | 100  | 100                                                                               | 100  |
| Heavy Vehicles, %        | 4    | 2                                                                                 | 1                                                                                 | 13   | 5                                                                                 | 4    |
| Mvmt Flow                | 23   | 102                                                                               | 138                                                                               | 8    | 21                                                                                | 50   |

| Major/Minor          | Major1 | Major2 | Minor2        |
|----------------------|--------|--------|---------------|
| Conflicting Flow All | 146    | 0      | 0 290 142     |
| Stage 1              | -      | -      | - 142 -       |
| Stage 2              | -      | -      | - 148 -       |
| Critical Hdwy        | 4.14   | -      | - 6.45 6.24   |
| Critical Hdwy Stg 1  | -      | -      | - 5.45 -      |
| Critical Hdwy Stg 2  | -      | -      | - 5.45 -      |
| Follow-up Hdwy       | 2.236  | -      | - 3.545 3.336 |
| Pot Cap-1 Maneuver   | 1424   | -      | - 694 900     |
| Stage 1              | -      | -      | - 878 -       |
| Stage 2              | -      | -      | - 872 -       |
| Platoon blocked, %   | -      | -      | -             |
| Mov Cap-1 Maneuver   | 1424   | -      | - 682 900     |
| Mov Cap-2 Maneuver   | -      | -      | - 682 -       |
| Stage 1              | -      | -      | - 863 -       |
| Stage 2              | -      | -      | - 872 -       |

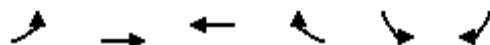
| Approach             | EB  | WB | SB  |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 1.4 | 0  | 9.8 |
| HCM LOS              |     |    | A   |

| Minor Lane/Major Mvmt | EBL   | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h)      | 1424  | -   | -   | -   | 822   |
| HCM Lane V/C Ratio    | 0.016 | -   | -   | -   | 0.086 |
| HCM Control Delay (s) | 7.6   | 0   | -   | -   | 9.8   |
| HCM Lane LOS          | A     | A   | -   | -   | A     |
| HCM 95th %tile Q(veh) | 0     | -   | -   | -   | 0.3   |

# Lanes, Volumes, Timings

## 2: Wrigley Rd & Dumfries Rd

Base: PM Peak Hour



| Lane Group                        | EBL          | EBT                                                                               | WBT                                                                               | WBR                    | SBL                                                                               | SBR   |
|-----------------------------------|--------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------------------|-------|
| Lane Configurations               |              |  |  |                        |  |       |
| Traffic Volume (vph)              | 7            | 97                                                                                | 119                                                                               | 191                    | 351                                                                               | 27    |
| Future Volume (vph)               | 7            | 97                                                                                | 119                                                                               | 191                    | 351                                                                               | 27    |
| Ideal Flow (vphpl)                | 1650         | 1650                                                                              | 1650                                                                              | 1650                   | 1765                                                                              | 1765  |
| Lane Util. Factor                 | 1.00         | 1.00                                                                              | 1.00                                                                              | 1.00                   | 1.00                                                                              | 1.00  |
| Frt                               |              |                                                                                   | 0.917                                                                             |                        | 0.990                                                                             |       |
| Flt Protected                     |              | 0.997                                                                             |                                                                                   |                        | 0.956                                                                             |       |
| Satd. Flow (prot)                 | 0            | 1586                                                                              | 1460                                                                              | 0                      | 1655                                                                              | 0     |
| Flt Permitted                     |              | 0.997                                                                             |                                                                                   |                        | 0.956                                                                             |       |
| Satd. Flow (perm)                 | 0            | 1586                                                                              | 1460                                                                              | 0                      | 1655                                                                              | 0     |
| Link Speed (k/h)                  |              | 80                                                                                | 80                                                                                |                        | 80                                                                                |       |
| Link Distance (m)                 |              | 2934.3                                                                            | 673.3                                                                             |                        | 1737.5                                                                            |       |
| Travel Time (s)                   |              | 132.0                                                                             | 30.3                                                                              |                        | 78.2                                                                              |       |
| Peak Hour Factor                  | 1.00         | 1.00                                                                              | 1.00                                                                              | 1.00                   | 1.00                                                                              | 1.00  |
| Heavy Vehicles (%)                | 0%           | 4%                                                                                | 3%                                                                                | 4%                     | 1%                                                                                | 0%    |
| Adj. Flow (vph)                   | 7            | 97                                                                                | 119                                                                               | 191                    | 351                                                                               | 27    |
| Shared Lane Traffic (%)           |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Lane Group Flow (vph)             | 0            | 104                                                                               | 310                                                                               | 0                      | 378                                                                               | 0     |
| Enter Blocked Intersection        | No           | No                                                                                | No                                                                                | No                     | No                                                                                | No    |
| Lane Alignment                    | Left         | Left                                                                              | Left                                                                              | Right                  | Left                                                                              | Right |
| Median Width(m)                   |              | 0.0                                                                               | 0.0                                                                               |                        | 3.6                                                                               |       |
| Link Offset(m)                    |              | 0.0                                                                               | 0.0                                                                               |                        | 0.0                                                                               |       |
| Crosswalk Width(m)                |              | 4.8                                                                               | 4.8                                                                               |                        | 4.8                                                                               |       |
| Two way Left Turn Lane            |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Headway Factor                    | 1.20         | 1.20                                                                              | 1.20                                                                              | 1.20                   | 1.10                                                                              | 1.10  |
| Turning Speed (k/h)               | 25           |                                                                                   |                                                                                   | 15                     | 25                                                                                | 15    |
| Sign Control                      |              | Free                                                                              | Free                                                                              |                        | Stop                                                                              |       |
| Intersection Summary              |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Area Type:                        | Other        |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Control Type:                     | Unsignalized |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Intersection Capacity Utilization | 50.1%        |                                                                                   |                                                                                   | ICU Level of Service A |                                                                                   |       |
| Analysis Period (min)             | 15           |                                                                                   |                                                                                   |                        |                                                                                   |       |

HCM 6th TWSC  
2: Wrigley Rd & Dumfries Rd

Base: PM Peak Hour

Intersection

Int Delay, s/veh 8.1

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations 

Traffic Vol, veh/h 7 97 119 191 351 27

Future Vol, veh/h 7 97 119 191 351 27

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 100 100 100 100 100 100

Heavy Vehicles, % 0 4 3 4 1 0

Mvmt Flow 7 97 119 191 351 27

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 310 0 - 0 326 215

Stage 1 - - - - 215 -

Stage 2 - - - - 111 -

Critical Hdwy 4.1 - - - 6.41 6.2

Critical Hdwy Stg 1 - - - - 5.41 -

Critical Hdwy Stg 2 - - - - 5.41 -

Follow-up Hdwy 2.2 - - - 3.509 3.3

Pot Cap-1 Maneuver 1262 - - - 670 830

Stage 1 - - - - 823 -

Stage 2 - - - - 916 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1262 - - - 666 830

Mov Cap-2 Maneuver - - - - 666 -

Stage 1 - - - - 818 -

Stage 2 - - - - 916 -

Approach EB WB SB

HCM Control Delay, s 0.5 0 16.9

HCM LOS C

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 1262 - - - 676

HCM Lane V/C Ratio 0.006 - - - 0.559

HCM Control Delay (s) 7.9 0 - - 16.9

HCM Lane LOS A A - - C

HCM 95th %tile Q(veh) 0 - - - 3.5

Lanes, Volumes, Timings  
3: Spragues Rd & Wrigley Rd

Base: PM Peak Hour

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group                        | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Traffic Volume (vph)              | 54                                                                                | 394                                                                               | 228                                                                               | 92                                                                                | 128                                                                               | 82                                                                                |
| Future Volume (vph)               | 54                                                                                | 394                                                                               | 228                                                                               | 92                                                                                | 128                                                                               | 82                                                                                |
| Ideal Flow (vphpl)                | 1650                                                                              | 1650                                                                              | 1650                                                                              | 1650                                                                              | 1765                                                                              | 1765                                                                              |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Frt                               | 0.881                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.947                                                                             |                                                                                   |
| Flt Protected                     | 0.994                                                                             |                                                                                   |                                                                                   | 0.966                                                                             |                                                                                   |                                                                                   |
| Satd. Flow (prot)                 | 1426                                                                              | 0                                                                                 | 0                                                                                 | 1541                                                                              | 1665                                                                              | 0                                                                                 |
| Flt Permitted                     | 0.994                                                                             |                                                                                   |                                                                                   | 0.966                                                                             |                                                                                   |                                                                                   |
| Satd. Flow (perm)                 | 1426                                                                              | 0                                                                                 | 0                                                                                 | 1541                                                                              | 1665                                                                              | 0                                                                                 |
| Link Speed (k/h)                  | 80                                                                                |                                                                                   |                                                                                   | 80                                                                                | 80                                                                                |                                                                                   |
| Link Distance (m)                 | 673.3                                                                             |                                                                                   |                                                                                   | 285.9                                                                             | 309.3                                                                             |                                                                                   |
| Travel Time (s)                   | 30.3                                                                              |                                                                                   |                                                                                   | 12.9                                                                              | 13.9                                                                              |                                                                                   |
| Peak Hour Factor                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Heavy Vehicles (%)                | 4%                                                                                | 1%                                                                                | 4%                                                                                | 2%                                                                                | 0%                                                                                | 1%                                                                                |
| Adj. Flow (vph)                   | 54                                                                                | 394                                                                               | 228                                                                               | 92                                                                                | 128                                                                               | 82                                                                                |
| Shared Lane Traffic (%)           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)             | 448                                                                               | 0                                                                                 | 0                                                                                 | 320                                                                               | 210                                                                               | 0                                                                                 |
| Enter Blocked Intersection        | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                |
| Lane Alignment                    | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Left                                                                              | Right                                                                             |
| Median Width(m)                   | 3.6                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Link Offset(m)                    | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Crosswalk Width(m)                | 4.8                                                                               |                                                                                   |                                                                                   | 4.8                                                                               | 4.8                                                                               |                                                                                   |
| Two way Left Turn Lane            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Headway Factor                    | 1.20                                                                              | 1.20                                                                              | 1.20                                                                              | 1.20                                                                              | 1.10                                                                              | 1.10                                                                              |
| Turning Speed (k/h)               | 25                                                                                | 15                                                                                | 25                                                                                |                                                                                   |                                                                                   | 15                                                                                |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Area Type:                        | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Control Type:                     | Unsignalized                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization | 74.2%                                                                             |                                                                                   |                                                                                   | ICU Level of Service D                                                            |                                                                                   |                                                                                   |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

HCM 6th TWSC  
3: Spragues Rd & Wrigley Rd

Base: PM Peak Hour

| Intersection             |                                                                                   |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 10                                                                                |      |      |                                                                                   |                                                                                   |      |
| Movement                 | EBL                                                                               | EBR  | NBL  | NBT                                                                               | SBT                                                                               | SBR  |
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 54                                                                                | 394  | 228  | 92                                                                                | 128                                                                               | 82   |
| Future Vol, veh/h        | 54                                                                                | 394  | 228  | 92                                                                                | 128                                                                               | 82   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 100                                                                               | 100  | 100  | 100                                                                               | 100                                                                               | 100  |
| Heavy Vehicles, %        | 4                                                                                 | 1    | 4    | 2                                                                                 | 0                                                                                 | 1    |
| Mvmt Flow                | 54                                                                                | 394  | 228  | 92                                                                                | 128                                                                               | 82   |

| Major/Minor          | Minor2 | Major1 | Major2 |   |   |   |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 717    | 169    | 210    | 0 | - | 0 |
| Stage 1              | 169    | -      | -      | - | - | - |
| Stage 2              | 548    | -      | -      | - | - | - |
| Critical Hdwy        | 6.44   | 6.21   | 4.14   | - | - | - |
| Critical Hdwy Stg 1  | 5.44   | -      | -      | - | - | - |
| Critical Hdwy Stg 2  | 5.44   | -      | -      | - | - | - |
| Follow-up Hdwy       | 3.536  | 3.309  | 2.236  | - | - | - |
| Pot Cap-1 Maneuver   | 393    | 878    | 1349   | - | - | - |
| Stage 1              | 856    | -      | -      | - | - | - |
| Stage 2              | 575    | -      | -      | - | - | - |
| Platoon blocked, %   |        |        |        | - | - | - |
| Mov Cap-1 Maneuver   | 323    | 878    | 1349   | - | - | - |
| Mov Cap-2 Maneuver   | 323    | -      | -      | - | - | - |
| Stage 1              | 704    | -      | -      | - | - | - |
| Stage 2              | 575    | -      | -      | - | - | - |

| Approach             | EB   | NB  | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 17.6 | 5.9 | 0  |
| HCM LOS              | C    |     |    |

| Minor Lane/Major Mvmt | NBL   | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h)      | 1349  | -   | 727   | -   | -   |
| HCM Lane V/C Ratio    | 0.169 | -   | 0.616 | -   | -   |
| HCM Control Delay (s) | 8.2   | 0   | 17.6  | -   | -   |
| HCM Lane LOS          | A     | A   | C     | -   | -   |
| HCM 95th %tile Q(veh) | 0.6   | -   | 4.3   | -   | -   |

Lanes, Volumes, Timings  
4: Reidsville Rd & Greenfield Rd

Base: PM Peak Hour

|                                   |              |       |      |                        |        |       |
|-----------------------------------|--------------|-------|------|------------------------|--------|-------|
|                                   | →            | ↘     | ↙    | ←                      | ↖      | ↗     |
| Lane Group                        | EBT          | EBR   | WBL  | WBT                    | NBL    | NBR   |
| Lane Configurations               | ↰            |       |      | ↱                      | ↰      | ↱     |
| Traffic Volume (vph)              | 43           | 84    | 8    | 44                     | 35     | 0     |
| Future Volume (vph)               | 43           | 84    | 8    | 44                     | 35     | 0     |
| Ideal Flow (vphpl)                | 1650         | 1650  | 1650 | 1650                   | 1765   | 1765  |
| Lane Util. Factor                 | 1.00         | 1.00  | 1.00 | 1.00                   | 1.00   | 1.00  |
| Frt                               | 0.911        |       |      |                        |        |       |
| Flt Protected                     |              |       |      | 0.992                  | 0.950  |       |
| Satd. Flow (prot)                 | 1483         | 0     | 0    | 1610                   | 1677   | 0     |
| Flt Permitted                     |              |       |      | 0.992                  | 0.950  |       |
| Satd. Flow (perm)                 | 1483         | 0     | 0    | 1610                   | 1677   | 0     |
| Link Speed (k/h)                  | 80           |       |      | 80                     | 80     |       |
| Link Distance (m)                 | 456.6        |       |      | 2951.9                 | 1632.0 |       |
| Travel Time (s)                   | 20.5         |       |      | 132.8                  | 73.4   |       |
| Peak Hour Factor                  | 1.00         | 1.00  | 1.00 | 1.00                   | 1.00   | 1.00  |
| Heavy Vehicles (%)                | 2%           | 1%    | 0%   | 2%                     | 0%     | 0%    |
| Adj. Flow (vph)                   | 43           | 84    | 8    | 44                     | 35     | 0     |
| Shared Lane Traffic (%)           |              |       |      |                        |        |       |
| Lane Group Flow (vph)             | 127          | 0     | 0    | 52                     | 35     | 0     |
| Enter Blocked Intersection        | No           | No    | No   | No                     | No     | No    |
| Lane Alignment                    | Left         | Right | Left | Left                   | Left   | Right |
| Median Width(m)                   | 0.0          |       |      | 0.0                    | 3.6    |       |
| Link Offset(m)                    | 0.0          |       |      | 0.0                    | 0.0    |       |
| Crosswalk Width(m)                | 4.8          |       |      | 4.8                    | 4.8    |       |
| Two way Left Turn Lane            |              |       |      |                        |        |       |
| Headway Factor                    | 1.20         | 1.20  | 1.20 | 1.20                   | 1.10   | 1.10  |
| Turning Speed (k/h)               |              | 15    | 25   |                        | 25     | 15    |
| Sign Control                      | Free         |       |      | Free                   | Stop   |       |
| Intersection Summary              |              |       |      |                        |        |       |
| Area Type:                        | Other        |       |      |                        |        |       |
| Control Type:                     | Unsignalized |       |      |                        |        |       |
| Intersection Capacity Utilization | 20.5%        |       |      | ICU Level of Service A |        |       |
| Analysis Period (min)             | 15           |       |      |                        |        |       |

HCM 6th TWSC  
4: Reidsville Rd & Greenfield Rd

Base: PM Peak Hour

Intersection

Int Delay, s/veh 1.8

| Movement                 | EBT                                                                               | EBR  | WBL  | WBT                                                                               | NBL                                                                               | NBR  |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 43                                                                                | 84   | 8    | 44                                                                                | 35                                                                                | 0    |
| Future Vol, veh/h        | 43                                                                                | 84   | 8    | 44                                                                                | 35                                                                                | 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         | 100                                                                               | 100  | 100  | 100                                                                               | 100                                                                               | 100  |
| Heavy Vehicles, %        | 2                                                                                 | 1    | 0    | 2                                                                                 | 0                                                                                 | 0    |
| Mvmt Flow                | 43                                                                                | 84   | 8    | 44                                                                                | 35                                                                                | 0    |

| Major/Minor          | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0      | 0      | 127    |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | 4.1    |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | 2.2    |
| Pot Cap-1 Maneuver   | -      | -      | 1472   |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | 1472   |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | EB | WB  | NB  |
|----------------------|----|-----|-----|
| HCM Control Delay, s | 0  | 1.1 | 9.4 |
| HCM LOS              |    |     | A   |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL   | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h)      | 847   | -   | -   | 1472  | -   |
| HCM Lane V/C Ratio    | 0.041 | -   | -   | 0.005 | -   |
| HCM Control Delay (s) | 9.4   | -   | -   | 7.5   | 0   |
| HCM Lane LOS          | A     | -   | -   | A     | A   |
| HCM 95th %tile Q(veh) | 0.1   | -   | -   | 0     | -   |

Lanes, Volumes, Timings  
5: Dumfries Rd & Greenfield Rd

Base: PM Peak Hour

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                        | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (vph)              | 9                                                                                 | 27                                                                                | 7                                                                                 | 1                                                                                 | 22                                                                                | 3                                                                                 | 2                                                                                  | 192                                                                                 | 4                                                                                   | 6                                                                                   | 370                                                                                 | 21                                                                                  |
| Future Volume (vph)               | 9                                                                                 | 27                                                                                | 7                                                                                 | 1                                                                                 | 22                                                                                | 3                                                                                 | 2                                                                                  | 192                                                                                 | 4                                                                                   | 6                                                                                   | 370                                                                                 | 21                                                                                  |
| Ideal Flow (vphpl)                | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                               | 1550                                                                                | 1550                                                                                | 1550                                                                                | 1550                                                                                | 1550                                                                                |
| 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                               |                                                                                   | 0.978                                                                             |                                                                                   |                                                                                   | 0.984                                                                             |                                                                                   |                                                                                    | 0.997                                                                               |                                                                                     |                                                                                     | 0.993                                                                               |                                                                                     |
| Flt Protected                     |                                                                                   | 0.990                                                                             |                                                                                   |                                                                                   | 0.998                                                                             |                                                                                   |                                                                                    | 0.999                                                                               |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Satd. Flow (prot)                 | 0                                                                                 | 1343                                                                              | 0                                                                                 | 0                                                                                 | 1460                                                                              | 0                                                                                 | 0                                                                                  | 1486                                                                                | 0                                                                                   | 0                                                                                   | 1534                                                                                | 0                                                                                   |
| Flt Permitted                     |                                                                                   | 0.990                                                                             |                                                                                   |                                                                                   | 0.998                                                                             |                                                                                   |                                                                                    | 0.999                                                                               |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Satd. Flow (perm)                 | 0                                                                                 | 1343                                                                              | 0                                                                                 | 0                                                                                 | 1460                                                                              | 0                                                                                 | 0                                                                                  | 1486                                                                                | 0                                                                                   | 0                                                                                   | 1534                                                                                | 0                                                                                   |
| Link Speed (k/h)                  |                                                                                   | 80                                                                                |                                                                                   |                                                                                   | 80                                                                                |                                                                                   |                                                                                    | 80                                                                                  |                                                                                     |                                                                                     | 80                                                                                  |                                                                                     |
| Link Distance (m)                 |                                                                                   | 2951.9                                                                            |                                                                                   |                                                                                   | 592.0                                                                             |                                                                                   |                                                                                    | 1737.5                                                                              |                                                                                     |                                                                                     | 801.6                                                                               |                                                                                     |
| Travel Time (s)                   |                                                                                   | 132.8                                                                             |                                                                                   |                                                                                   | 26.6                                                                              |                                                                                   |                                                                                    | 78.2                                                                                |                                                                                     |                                                                                     | 36.1                                                                                |                                                                                     |
| Peak Hour 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                                                                                |
| Heavy Vehicles (%)                | 22%                                                                               | 7%                                                                                | 17%                                                                               | 0%                                                                                | 5%                                                                                | 0%                                                                                | 0%                                                                                 | 4%                                                                                  | 0%                                                                                  | 17%                                                                                 | 0%                                                                                  | 0%                                                                                  |
| Adj. Flow (vph)                   | 9                                                                                 | 27                                                                                | 7                                                                                 | 1                                                                                 | 22                                                                                | 3                                                                                 | 2                                                                                  | 192                                                                                 | 4                                                                                   | 6                                                                                   | 370                                                                                 | 21                                                                                  |
| Shared Lane Traffic (%)           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)             | 0                                                                                 | 43                                                                                | 0                                                                                 | 0                                                                                 | 26                                                                                | 0                                                                                 | 0                                                                                  | 198                                                                                 | 0                                                                                   | 0                                                                                   | 397                                                                                 | 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                    | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                               | 1.29                                                                                | 1.29                                                                                | 1.29                                                                                | 1.29                                                                                | 1.29                                                                                |
| Turning Speed (k/h)               | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                 |                                                                                     | 15                                                                                  | 25                                                                                  |                                                                                     | 15                                                                                  |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                    | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Area Type:                        | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Type:                     | Unsignalized                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization | 43.9%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|                                   | ICU Level of Service A                                                            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

HCM 6th TWSC  
5: Dumfries Rd & Greenfield Rd

Base: PM Peak Hour

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 1.6  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 9    | 27   | 7    | 1    | 22   | 3    | 2    | 192  | 4    | 6    | 370  | 21   |
| Future Vol, veh/h        | 9    | 27   | 7    | 1    | 22   | 3    | 2    | 192  | 4    | 6    | 370  | 21   |
| 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         | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  |
| Heavy Vehicles, %        | 22   | 7    | 17   | 0    | 5    | 0    | 0    | 4    | 0    | 17   | 0    | 0    |
| Mvmt Flow                | 9    | 27   | 7    | 1    | 22   | 3    | 2    | 192  | 4    | 6    | 370  | 21   |

| Major/Minor          | Minor2 |       | Minor1 |     | Major1 |     | Major2 |   |   |       |   |   |
|----------------------|--------|-------|--------|-----|--------|-----|--------|---|---|-------|---|---|
| Conflicting Flow All | 604    | 593   | 381    | 608 | 601    | 194 | 391    | 0 | 0 | 196   | 0 | 0 |
| Stage 1              | 393    | 393   | -      | 198 | 198    | -   | -      | - | - | -     | - | - |
| Stage 2              | 211    | 200   | -      | 410 | 403    | -   | -      | - | - | -     | - | - |
| Critical Hdwy        | 7.32   | 6.57  | 6.37   | 7.1 | 6.55   | 6.2 | 4.1    | - | - | 4.27  | - | - |
| Critical Hdwy Stg 1  | 6.32   | 5.57  | -      | 6.1 | 5.55   | -   | -      | - | - | -     | - | - |
| Critical Hdwy Stg 2  | 6.32   | 5.57  | -      | 6.1 | 5.55   | -   | -      | - | - | -     | - | - |
| Follow-up Hdwy       | 3.698  | 4.063 | 3.453  | 3.5 | 4.045  | 3.3 | 2.2    | - | - | 2.353 | - | - |
| Pot Cap-1 Maneuver   | 383    | 412   | 634    | 411 | 410    | 853 | 1179   | - | - | 1292  | - | - |
| Stage 1              | 593    | 597   | -      | 808 | 732    | -   | -      | - | - | -     | - | - |
| Stage 2              | 748    | 726   | -      | 623 | 595    | -   | -      | - | - | -     | - | - |
| Platoon blocked, %   |        |       |        |     |        |     |        | - | - | -     | - | - |
| Mov Cap-1 Maneuver   | 364    | 409   | 634    | 383 | 407    | 853 | 1179   | - | - | 1292  | - | - |
| Mov Cap-2 Maneuver   | 364    | 409   | -      | 383 | 407    | -   | -      | - | - | -     | - | - |
| Stage 1              | 592    | 593   | -      | 806 | 731    | -   | -      | - | - | -     | - | - |
| Stage 2              | 721    | 725   | -      | 585 | 591    | -   | -      | - | - | -     | - | - |

| Approach             | EB   |  | WB   |  | NB  |  | SB  |  |
|----------------------|------|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 14.5 |  | 13.9 |  | 0.1 |  | 0.1 |  |
| HCM LOS              | B    |  | B    |  |     |  |     |  |

| Minor Lane/Major Mvmt | NBL   | NBT | NBR | EBLn1WBLn1 | SBL  | SBT   | SBR |
|-----------------------|-------|-----|-----|------------|------|-------|-----|
| Capacity (veh/h)      | 1179  | -   | -   | 422        | 432  | 1292  | -   |
| HCM Lane V/C Ratio    | 0.002 | -   | -   | 0.102      | 0.06 | 0.005 | -   |
| HCM Control Delay (s) | 8.1   | 0   | -   | 14.5       | 13.9 | 7.8   | 0   |
| HCM Lane LOS          | A     | A   | -   | B          | B    | A     | A   |
| HCM 95th %tile Q(veh) | 0     | -   | -   | 0.3        | 0.2  | 0     | -   |

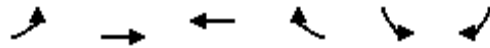
# Appendix D

## 2030 Background Traffic Operations Reports



Lanes, Volumes, Timings  
1: Wrigley Rd & Reidsville Rd

2030 Background: AM Peak Hour



| Lane Group                                                     | EBL  | EBT                                                                               | WBT                                                                               | WBR   | SBL                                                                               | SBR   |
|----------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------|-------|
| Lane Configurations                                            |      |  |  |       |  |       |
| Traffic Volume (vph)                                           | 90   | 206                                                                               | 56                                                                                | 15    | 9                                                                                 | 11    |
| Future Volume (vph)                                            | 90   | 206                                                                               | 56                                                                                | 15    | 9                                                                                 | 11    |
| Ideal Flow (vphpl)                                             | 1650 | 1650                                                                              | 1650                                                                              | 1650  | 1765                                                                              | 1765  |
| Lane Util. Factor                                              | 1.00 | 1.00                                                                              | 1.00                                                                              | 1.00  | 1.00                                                                              | 1.00  |
| Frt                                                            |      |                                                                                   | 0.971                                                                             |       | 0.926                                                                             |       |
| Flt Protected                                                  |      | 0.985                                                                             |                                                                                   |       | 0.978                                                                             |       |
| Satd. Flow (prot)                                              | 0    | 1587                                                                              | 1499                                                                              | 0     | 1515                                                                              | 0     |
| Flt Permitted                                                  |      | 0.985                                                                             |                                                                                   |       | 0.978                                                                             |       |
| Satd. Flow (perm)                                              | 0    | 1587                                                                              | 1499                                                                              | 0     | 1515                                                                              | 0     |
| Link Speed (k/h)                                               |      | 80                                                                                | 80                                                                                |       | 80                                                                                |       |
| Link Distance (m)                                              |      | 912.8                                                                             | 2934.3                                                                            |       | 1632.0                                                                            |       |
| Travel Time (s)                                                |      | 41.1                                                                              | 132.0                                                                             |       | 73.4                                                                              |       |
| Peak Hour Factor                                               | 1.00 | 1.00                                                                              | 1.00                                                                              | 1.00  | 1.00                                                                              | 1.00  |
| Heavy Vehicles (%)                                             | 1%   | 3%                                                                                | 5%                                                                                | 14%   | 0%                                                                                | 10%   |
| Adj. Flow (vph)                                                | 90   | 206                                                                               | 56                                                                                | 15    | 9                                                                                 | 11    |
| Shared Lane Traffic (%)                                        |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Lane Group Flow (vph)                                          | 0    | 296                                                                               | 71                                                                                | 0     | 20                                                                                | 0     |
| Enter Blocked Intersection                                     | No   | No                                                                                | No                                                                                | No    | No                                                                                | No    |
| Lane Alignment                                                 | Left | Left                                                                              | Left                                                                              | Right | Left                                                                              | Right |
| Median Width(m)                                                |      | 0.0                                                                               | 0.0                                                                               |       | 3.6                                                                               |       |
| Link Offset(m)                                                 |      | 0.0                                                                               | 0.0                                                                               |       | 0.0                                                                               |       |
| Crosswalk Width(m)                                             |      | 4.8                                                                               | 4.8                                                                               |       | 4.8                                                                               |       |
| Two way Left Turn Lane                                         |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Headway Factor                                                 | 1.20 | 1.20                                                                              | 1.20                                                                              | 1.20  | 1.10                                                                              | 1.10  |
| Turning Speed (k/h)                                            | 25   |                                                                                   |                                                                                   | 15    | 25                                                                                | 15    |
| Sign Control                                                   |      | Free                                                                              | Free                                                                              |       | Stop                                                                              |       |
| Intersection Summary                                           |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Area Type: Other                                               |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Control Type: Unsignalized                                     |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Intersection Capacity Utilization 34.9% ICU Level of Service A |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Analysis Period (min) 15                                       |      |                                                                                   |                                                                                   |       |                                                                                   |       |

HCM 6th TWSC  
1: Wrigley Rd & Reidsville Rd

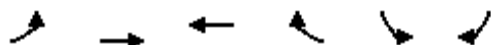
2030 Background: AM Peak Hour

| Intersection             |        |                                                                                   |                                                                                   |        |                                                                                   |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 2.3    |                                                                                   |                                                                                   |        |                                                                                   |      |
| Movement                 | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBL                                                                               | SBR  |
| Lane Configurations      |        |  |  |        |  |      |
| Traffic Vol, veh/h       | 90     | 206                                                                               | 56                                                                                | 15     | 9                                                                                 | 11   |
| Future Vol, veh/h        | 90     | 206                                                                               | 56                                                                                | 15     | 9                                                                                 | 11   |
| 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         | 100    | 100                                                                               | 100                                                                               | 100    | 100                                                                               | 100  |
| Heavy Vehicles, %        | 1      | 3                                                                                 | 5                                                                                 | 14     | 0                                                                                 | 10   |
| Mvmt Flow                | 90     | 206                                                                               | 56                                                                                | 15     | 9                                                                                 | 11   |
| Major/Minor              | Major1 | Major2                                                                            |                                                                                   | Minor2 |                                                                                   |      |
| Conflicting Flow All     | 71     | 0                                                                                 | -                                                                                 | 0      | 450                                                                               | 64   |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 64                                                                                | -    |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 386                                                                               | -    |
| Critical Hdwy            | 4.11   | -                                                                                 | -                                                                                 | -      | 6.4                                                                               | 6.3  |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -                                                                                 | -      | 5.4                                                                               | -    |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -                                                                                 | -      | 5.4                                                                               | -    |
| Follow-up Hdwy           | 2.209  | -                                                                                 | -                                                                                 | -      | 3.5                                                                               | 3.39 |
| Pot Cap-1 Maneuver       | 1536   | -                                                                                 | -                                                                                 | -      | 571                                                                               | 978  |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 964                                                                               | -    |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 691                                                                               | -    |
| Platoon blocked, %       |        | -                                                                                 | -                                                                                 | -      |                                                                                   |      |
| Mov Cap-1 Maneuver       | 1536   | -                                                                                 | -                                                                                 | -      | 533                                                                               | 978  |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -                                                                                 | -      | 533                                                                               | -    |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 900                                                                               | -    |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 691                                                                               | -    |
| Approach                 | EB     | WB                                                                                |                                                                                   | SB     |                                                                                   |      |
| HCM Control Delay, s     | 2.3    | 0                                                                                 |                                                                                   | 10.2   |                                                                                   |      |
| HCM LOS                  |        |                                                                                   |                                                                                   | B      |                                                                                   |      |
| Minor Lane/Major Mvmt    | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBLn1                                                                             |      |
| Capacity (veh/h)         | 1536   | -                                                                                 | -                                                                                 | -      | 711                                                                               |      |
| HCM Lane V/C Ratio       | 0.059  | -                                                                                 | -                                                                                 | -      | 0.028                                                                             |      |
| HCM Control Delay (s)    | 7.5    | 0                                                                                 | -                                                                                 | -      | 10.2                                                                              |      |
| HCM Lane LOS             | A      | A                                                                                 | -                                                                                 | -      | B                                                                                 |      |
| HCM 95th %tile Q(veh)    | 0.2    | -                                                                                 | -                                                                                 | -      | 0.1                                                                               |      |

## Lanes, Volumes, Timings

### 2: Wrigley Rd & Dumfries Rd

2030 Background: AM Peak Hour



| Lane Group                        | EBL          | EBT                                                                               | WBT                                                                               | WBR                    | SBL                                                                               | SBR   |
|-----------------------------------|--------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------------------|-------|
| Lane Configurations               |              |  |  |                        |  |       |
| Traffic Volume (vph)              | 44           | 183                                                                               | 54                                                                                | 361                    | 106                                                                               | 7     |
| Future Volume (vph)               | 44           | 183                                                                               | 54                                                                                | 361                    | 106                                                                               | 7     |
| Ideal Flow (vphpl)                | 1650         | 1650                                                                              | 1650                                                                              | 1650                   | 1765                                                                              | 1765  |
| Lane Util. Factor                 | 1.00         | 1.00                                                                              | 1.00                                                                              | 1.00                   | 1.00                                                                              | 1.00  |
| Frt                               |              |                                                                                   | 0.883                                                                             |                        | 0.992                                                                             |       |
| Flt Protected                     |              | 0.990                                                                             |                                                                                   |                        | 0.955                                                                             |       |
| Satd. Flow (prot)                 | 0            | 1562                                                                              | 1396                                                                              | 0                      | 1520                                                                              | 0     |
| Flt Permitted                     |              | 0.990                                                                             |                                                                                   |                        | 0.955                                                                             |       |
| Satd. Flow (perm)                 | 0            | 1562                                                                              | 1396                                                                              | 0                      | 1520                                                                              | 0     |
| Link Speed (k/h)                  |              | 80                                                                                | 80                                                                                |                        | 80                                                                                |       |
| Link Distance (m)                 |              | 2934.3                                                                            | 673.3                                                                             |                        | 1737.5                                                                            |       |
| Travel Time (s)                   |              | 132.0                                                                             | 30.3                                                                              |                        | 78.2                                                                              |       |
| Peak Hour Factor                  | 1.00         | 1.00                                                                              | 1.00                                                                              | 1.00                   | 1.00                                                                              | 1.00  |
| Heavy Vehicles (%)                | 7%           | 4%                                                                                | 7%                                                                                | 4%                     | 9%                                                                                | 25%   |
| Adj. Flow (vph)                   | 44           | 183                                                                               | 54                                                                                | 361                    | 106                                                                               | 7     |
| Shared Lane Traffic (%)           |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Lane Group Flow (vph)             | 0            | 227                                                                               | 415                                                                               | 0                      | 113                                                                               | 0     |
| Enter Blocked Intersection        | No           | No                                                                                | No                                                                                | No                     | No                                                                                | No    |
| Lane Alignment                    | Left         | Left                                                                              | Left                                                                              | Right                  | Left                                                                              | Right |
| Median Width(m)                   |              | 0.0                                                                               | 0.0                                                                               |                        | 3.6                                                                               |       |
| Link Offset(m)                    |              | 0.0                                                                               | 0.0                                                                               |                        | 0.0                                                                               |       |
| Crosswalk Width(m)                |              | 4.8                                                                               | 4.8                                                                               |                        | 4.8                                                                               |       |
| Two way Left Turn Lane            |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Headway Factor                    | 1.20         | 1.20                                                                              | 1.20                                                                              | 1.20                   | 1.10                                                                              | 1.10  |
| Turning Speed (k/h)               | 25           |                                                                                   |                                                                                   | 15                     | 25                                                                                | 15    |
| Sign Control                      |              | Free                                                                              | Free                                                                              |                        | Stop                                                                              |       |
| Intersection Summary              |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Area Type:                        | Other        |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Control Type:                     | Unsignalized |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Intersection Capacity Utilization | 59.6%        |                                                                                   |                                                                                   | ICU Level of Service B |                                                                                   |       |
| Analysis Period (min)             | 15           |                                                                                   |                                                                                   |                        |                                                                                   |       |

HCM 6th TWSC  
2: Wrigley Rd & Dumfries Rd

2030 Background: AM Peak Hour

| Intersection             |        |                                                                                   |                                                                                   |      |                                                                                   |       |
|--------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 2.6    |                                                                                   |                                                                                   |      |                                                                                   |       |
| Movement                 | EBL    | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR   |
| Lane Configurations      |        |  |  |      |  |       |
| Traffic Vol, veh/h       | 44     | 183                                                                               | 54                                                                                | 361  | 106                                                                               | 7     |
| Future Vol, veh/h        | 44     | 183                                                                               | 54                                                                                | 361  | 106                                                                               | 7     |
| 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         | 100    | 100                                                                               | 100                                                                               | 100  | 100                                                                               | 100   |
| Heavy Vehicles, %        | 7      | 4                                                                                 | 7                                                                                 | 4    | 9                                                                                 | 25    |
| Mvmt Flow                | 44     | 183                                                                               | 54                                                                                | 361  | 106                                                                               | 7     |
| Major/Minor              | Major1 | Major2                                                                            | Minor2                                                                            |      |                                                                                   |       |
| Conflicting Flow All     | 415    | 0                                                                                 | -                                                                                 | 0    | 506                                                                               | 235   |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -    | 235                                                                               | -     |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -    | 271                                                                               | -     |
| Critical Hdwy            | 4.17   | -                                                                                 | -                                                                                 | -    | 6.49                                                                              | 6.45  |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -                                                                                 | -    | 5.49                                                                              | -     |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -                                                                                 | -    | 5.49                                                                              | -     |
| Follow-up Hdwy           | 2.263  | -                                                                                 | -                                                                                 | -    | 3.581                                                                             | 3.525 |
| Pot Cap-1 Maneuver       | 1118   | -                                                                                 | -                                                                                 | -    | 514                                                                               | 750   |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -    | 788                                                                               | -     |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -    | 759                                                                               | -     |
| Platoon blocked, %       |        | -                                                                                 | -                                                                                 | -    |                                                                                   |       |
| Mov Cap-1 Maneuver       | 1118   | -                                                                                 | -                                                                                 | -    | 491                                                                               | 750   |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -                                                                                 | -    | 491                                                                               | -     |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -    | 753                                                                               | -     |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -    | 759                                                                               | -     |
| Approach                 | EB     | WB                                                                                |                                                                                   | SB   |                                                                                   |       |
| HCM Control Delay, s     | 1.6    | 0                                                                                 |                                                                                   | 14.2 |                                                                                   |       |
| HCM LOS                  |        |                                                                                   |                                                                                   | B    |                                                                                   |       |
| Minor Lane/Major Mvmt    | EBL    | EBT                                                                               | WBT                                                                               | WBR  | SBLn1                                                                             |       |
| Capacity (veh/h)         | 1118   | -                                                                                 | -                                                                                 | -    | 502                                                                               |       |
| HCM Lane V/C Ratio       | 0.039  | -                                                                                 | -                                                                                 | -    | 0.225                                                                             |       |
| HCM Control Delay (s)    | 8.4    | 0                                                                                 | -                                                                                 | -    | 14.2                                                                              |       |
| HCM Lane LOS             | A      | A                                                                                 | -                                                                                 | -    | B                                                                                 |       |
| HCM 95th %tile Q(veh)    | 0.1    | -                                                                                 | -                                                                                 | -    | 0.9                                                                               |       |

Lanes, Volumes, Timings  
3: Spragues Rd & Wrigley Rd

2030 Background: AM Peak Hour

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group                        | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Traffic Volume (vph)              | 134                                                                               | 155                                                                               | 386                                                                               | 144                                                                               | 67                                                                                | 29                                                                                |
| Future Volume (vph)               | 134                                                                               | 155                                                                               | 386                                                                               | 144                                                                               | 67                                                                                | 29                                                                                |
| Ideal Flow (vphpl)                | 1650                                                                              | 1650                                                                              | 1650                                                                              | 1650                                                                              | 1765                                                                              | 1765                                                                              |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Frt                               | 0.928                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.959                                                                             |                                                                                   |
| Flt Protected                     | 0.977                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.965                                                                             |                                                                                   |
| Satd. Flow (prot)                 | 1408                                                                              | 0                                                                                 | 0                                                                                 | 1543                                                                              | 1563                                                                              | 0                                                                                 |
| Flt Permitted                     | 0.977                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.965                                                                             |                                                                                   |
| Satd. Flow (perm)                 | 1408                                                                              | 0                                                                                 | 0                                                                                 | 1543                                                                              | 1563                                                                              | 0                                                                                 |
| Link Speed (k/h)                  | 80                                                                                |                                                                                   |                                                                                   |                                                                                   | 80                                                                                | 80                                                                                |
| Link Distance (m)                 | 673.3                                                                             |                                                                                   |                                                                                   |                                                                                   | 285.9                                                                             | 309.3                                                                             |
| Travel Time (s)                   | 30.3                                                                              |                                                                                   |                                                                                   |                                                                                   | 12.9                                                                              | 13.9                                                                              |
| Peak Hour Factor                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Heavy Vehicles (%)                | 3%                                                                                | 9%                                                                                | 4%                                                                                | 1%                                                                                | 5%                                                                                | 16%                                                                               |
| Adj. Flow (vph)                   | 134                                                                               | 155                                                                               | 386                                                                               | 144                                                                               | 67                                                                                | 29                                                                                |
| Shared Lane Traffic (%)           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)             | 289                                                                               | 0                                                                                 | 0                                                                                 | 530                                                                               | 96                                                                                | 0                                                                                 |
| Enter Blocked Intersection        | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                |
| Lane Alignment                    | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Left                                                                              | Right                                                                             |
| Median Width(m)                   | 3.6                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |
| Link Offset(m)                    | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |
| Crosswalk Width(m)                | 4.8                                                                               |                                                                                   |                                                                                   |                                                                                   | 4.8                                                                               | 4.8                                                                               |
| Two way Left Turn Lane            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Headway Factor                    | 1.20                                                                              | 1.20                                                                              | 1.20                                                                              | 1.20                                                                              | 1.10                                                                              | 1.10                                                                              |
| Turning Speed (k/h)               | 25                                                                                | 15                                                                                | 25                                                                                | 15                                                                                |                                                                                   |                                                                                   |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Area Type:                        | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Control Type:                     | Unsignalized                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization | 66.2%                                                                             |                                                                                   |                                                                                   | ICU Level of Service C                                                            |                                                                                   |                                                                                   |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

HCM 6th TWSC  
3: Spragues Rd & Wrigley Rd

2030 Background: AM Peak Hour

| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 20.8                                                                              |        |       |                                                                                   |                                                                                   |      |
| Movement                 | EBL                                                                               | EBR    | NBL   | NBT                                                                               | SBT                                                                               | SBR  |
| Lane Configurations      |  |        |       |  |  |      |
| Traffic Vol, veh/h       | 134                                                                               | 155    | 386   | 144                                                                               | 67                                                                                | 29   |
| Future Vol, veh/h        | 134                                                                               | 155    | 386   | 144                                                                               | 67                                                                                | 29   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop   | Free  | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -      | -     | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 100                                                                               | 100    | 100   | 100                                                                               | 100                                                                               | 100  |
| Heavy Vehicles, %        | 3                                                                                 | 9      | 4     | 1                                                                                 | 5                                                                                 | 16   |
| Mvmt Flow                | 134                                                                               | 155    | 386   | 144                                                                               | 67                                                                                | 29   |
| Major/Minor              | Minor2                                                                            | Major1 |       | Major2                                                                            |                                                                                   |      |
| Conflicting Flow All     | 998                                                                               | 82     | 96    | 0                                                                                 | -                                                                                 | 0    |
| Stage 1                  | 82                                                                                | -      | -     | -                                                                                 | -                                                                                 | -    |
| Stage 2                  | 916                                                                               | -      | -     | -                                                                                 | -                                                                                 | -    |
| Critical Hdwy            | 6.43                                                                              | 6.29   | 4.14  | -                                                                                 | -                                                                                 | -    |
| Critical Hdwy Stg 1      | 5.43                                                                              | -      | -     | -                                                                                 | -                                                                                 | -    |
| Critical Hdwy Stg 2      | 5.43                                                                              | -      | -     | -                                                                                 | -                                                                                 | -    |
| Follow-up Hdwy           | 3.527                                                                             | 3.381  | 2.236 | -                                                                                 | -                                                                                 | -    |
| Pot Cap-1 Maneuver       | 269                                                                               | 959    | 1485  | -                                                                                 | -                                                                                 | -    |
| Stage 1                  | 939                                                                               | -      | -     | -                                                                                 | -                                                                                 | -    |
| Stage 2                  | 388                                                                               | -      | -     | -                                                                                 | -                                                                                 | -    |
| Platoon blocked, %       |                                                                                   |        |       | -                                                                                 | -                                                                                 | -    |
| Mov Cap-1 Maneuver       | 193                                                                               | 959    | 1485  | -                                                                                 | -                                                                                 | -    |
| Mov Cap-2 Maneuver       | 193                                                                               | -      | -     | -                                                                                 | -                                                                                 | -    |
| Stage 1                  | 673                                                                               | -      | -     | -                                                                                 | -                                                                                 | -    |
| Stage 2                  | 388                                                                               | -      | -     | -                                                                                 | -                                                                                 | -    |
| Approach                 | EB                                                                                | NB     |       | SB                                                                                |                                                                                   |      |
| HCM Control Delay, s     | 54.9                                                                              | 6      |       | 0                                                                                 |                                                                                   |      |
| HCM LOS                  | F                                                                                 |        |       |                                                                                   |                                                                                   |      |
| Minor Lane/Major Mvmt    | NBL                                                                               | NBT    | EBLn1 | SBT                                                                               | SBR                                                                               |      |
| Capacity (veh/h)         | 1485                                                                              | -      | 338   | -                                                                                 | -                                                                                 |      |
| HCM Lane V/C Ratio       | 0.26                                                                              | -      | 0.855 | -                                                                                 | -                                                                                 |      |
| HCM Control Delay (s)    | 8.3                                                                               | 0      | 54.9  | -                                                                                 | -                                                                                 |      |
| HCM Lane LOS             | A                                                                                 | A      | F     | -                                                                                 | -                                                                                 |      |
| HCM 95th %tile Q(veh)    | 1                                                                                 | -      | 7.8   | -                                                                                 | -                                                                                 |      |

# Lanes, Volumes, Timings

## 4: Reidsville Rd & Greenfield Rd

2030 Background: AM Peak Hour

|                                   |              |       |      |                        |        |       |
|-----------------------------------|--------------|-------|------|------------------------|--------|-------|
|                                   | →            | ↘     | ↙    | ←                      | ↖      | ↗     |
| Lane Group                        | EBT          | EBR   | WBL  | WBT                    | NBL    | NBR   |
| Lane Configurations               | ↶            |       |      | ↷                      | ↶↷     |       |
| Traffic Volume (vph)              | 50           | 17    | 3    | 42                     | 102    | 9     |
| Future Volume (vph)               | 50           | 17    | 3    | 42                     | 102    | 9     |
| Ideal Flow (vphpl)                | 1650         | 1650  | 1650 | 1650                   | 1765   | 1765  |
| Lane Util. Factor                 | 1.00         | 1.00  | 1.00 | 1.00                   | 1.00   | 1.00  |
| Frt                               | 0.966        |       |      |                        | 0.989  |       |
| Flt Protected                     |              |       |      | 0.997                  | 0.956  |       |
| Satd. Flow (prot)                 | 1429         | 0     | 0    | 1467                   | 1619   | 0     |
| Flt Permitted                     |              |       |      | 0.997                  | 0.956  |       |
| Satd. Flow (perm)                 | 1429         | 0     | 0    | 1467                   | 1619   | 0     |
| Link Speed (k/h)                  | 80           |       |      | 80                     | 80     |       |
| Link Distance (m)                 | 456.6        |       |      | 2951.9                 | 1632.0 |       |
| Travel Time (s)                   | 20.5         |       |      | 132.8                  | 73.4   |       |
| Peak Hour Factor                  | 1.00         | 1.00  | 1.00 | 1.00                   | 1.00   | 1.00  |
| Heavy Vehicles (%)                | 9%           | 19%   | 0%   | 13%                    | 0%     | 38%   |
| Adj. Flow (vph)                   | 50           | 17    | 3    | 42                     | 102    | 9     |
| Shared Lane Traffic (%)           |              |       |      |                        |        |       |
| Lane Group Flow (vph)             | 67           | 0     | 0    | 45                     | 111    | 0     |
| Enter Blocked Intersection        | No           | No    | No   | No                     | No     | No    |
| Lane Alignment                    | Left         | Right | Left | Left                   | Left   | Right |
| Median Width(m)                   | 0.0          |       |      | 0.0                    | 3.6    |       |
| Link Offset(m)                    | 0.0          |       |      | 0.0                    | 0.0    |       |
| Crosswalk Width(m)                | 4.8          |       |      | 4.8                    | 4.8    |       |
| Two way Left Turn Lane            |              |       |      |                        |        |       |
| Headway Factor                    | 1.20         | 1.20  | 1.20 | 1.20                   | 1.10   | 1.10  |
| Turning Speed (k/h)               |              | 15    | 25   |                        | 25     | 15    |
| Sign Control                      | Free         |       |      | Free                   | Stop   |       |
| Intersection Summary              |              |       |      |                        |        |       |
| Area Type:                        | Other        |       |      |                        |        |       |
| Control Type:                     | Unsignalized |       |      |                        |        |       |
| Intersection Capacity Utilization | 18.7%        |       |      | ICU Level of Service A |        |       |
| Analysis Period (min)             | 15           |       |      |                        |        |       |

HCM 6th TWSC  
4: Reidsville Rd & Greenfield Rd

2030 Background: AM Peak Hour

Intersection

Int Delay, s/veh 4.9

| Movement                 | EBT                                                                               | EBR  | WBL  | WBT                                                                               | NBL                                                                               | NBR  |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 50                                                                                | 17   | 3    | 42                                                                                | 102                                                                               | 9    |
| Future Vol, veh/h        | 50                                                                                | 17   | 3    | 42                                                                                | 102                                                                               | 9    |
| 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         | 100                                                                               | 100  | 100  | 100                                                                               | 100                                                                               | 100  |
| Heavy Vehicles, %        | 9                                                                                 | 19   | 0    | 13                                                                                | 0                                                                                 | 38   |
| Mvmt Flow                | 50                                                                                | 17   | 3    | 42                                                                                | 102                                                                               | 9    |

| Major/Minor          | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0      | 0      | 67     |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | 4.1    |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | 2.2    |
| Pot Cap-1 Maneuver   | -      | -      | 1547   |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | 1547   |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | EB | WB  | NB  |
|----------------------|----|-----|-----|
| HCM Control Delay, s | 0  | 0.5 | 9.6 |
| HCM LOS              |    |     | A   |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL   | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h)      | 895   | -   | -   | 1547  | -   |
| HCM Lane V/C Ratio    | 0.124 | -   | -   | 0.002 | -   |
| HCM Control Delay (s) | 9.6   | -   | -   | 7.3   | 0   |
| HCM Lane LOS          | A     | -   | -   | A     | A   |
| HCM 95th %tile Q(veh) | 0.4   | -   | -   | 0     | -   |

Lanes, Volumes, Timings  
5: Dumfries Rd & Greenfield Rd

2030 Background: AM Peak Hour

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                        | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (vph)              | 15                                                                                | 42                                                                                | 0                                                                                 | 2                                                                                 | 25                                                                                | 6                                                                                 | 1                                                                                  | 402                                                                                 | 2                                                                                   | 3                                                                                   | 111                                                                                 | 17                                                                                  |
| Future Volume (vph)               | 15                                                                                | 42                                                                                | 0                                                                                 | 2                                                                                 | 25                                                                                | 6                                                                                 | 1                                                                                  | 402                                                                                 | 2                                                                                   | 3                                                                                   | 111                                                                                 | 17                                                                                  |
| Ideal Flow (vphpl)                | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                               | 1550                                                                                | 1550                                                                                | 1550                                                                                | 1550                                                                                | 1550                                                                                |
| 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                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.975                                                                             |                                                                                   |                                                                                    | 0.999                                                                               |                                                                                     |                                                                                     | 0.982                                                                               |                                                                                     |
| Flt Protected                     |                                                                                   | 0.987                                                                             |                                                                                   |                                                                                   | 0.997                                                                             |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Satd. Flow (prot)                 | 0                                                                                 | 1348                                                                              | 0                                                                                 | 0                                                                                 | 1507                                                                              | 0                                                                                 | 0                                                                                  | 1475                                                                                | 0                                                                                   | 0                                                                                   | 1362                                                                                | 0                                                                                   |
| Flt Permitted                     |                                                                                   | 0.987                                                                             |                                                                                   |                                                                                   | 0.997                                                                             |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Satd. Flow (perm)                 | 0                                                                                 | 1348                                                                              | 0                                                                                 | 0                                                                                 | 1507                                                                              | 0                                                                                 | 0                                                                                  | 1475                                                                                | 0                                                                                   | 0                                                                                   | 1362                                                                                | 0                                                                                   |
| Link Speed (k/h)                  |                                                                                   | 80                                                                                |                                                                                   |                                                                                   | 80                                                                                |                                                                                   |                                                                                    | 80                                                                                  |                                                                                     |                                                                                     | 80                                                                                  |                                                                                     |
| Link Distance (m)                 |                                                                                   | 2951.9                                                                            |                                                                                   |                                                                                   | 592.0                                                                             |                                                                                   |                                                                                    | 1737.5                                                                              |                                                                                     |                                                                                     | 801.6                                                                               |                                                                                     |
| Travel Time (s)                   |                                                                                   | 132.8                                                                             |                                                                                   |                                                                                   | 26.6                                                                              |                                                                                   |                                                                                    | 78.2                                                                                |                                                                                     |                                                                                     | 36.1                                                                                |                                                                                     |
| Peak Hour 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                                                                                |
| Heavy Vehicles (%)                | 29%                                                                               | 8%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                 | 5%                                                                                  | 0%                                                                                  | 33%                                                                                 | 9%                                                                                  | 25%                                                                                 |
| Adj. Flow (vph)                   | 15                                                                                | 42                                                                                | 0                                                                                 | 2                                                                                 | 25                                                                                | 6                                                                                 | 1                                                                                  | 402                                                                                 | 2                                                                                   | 3                                                                                   | 111                                                                                 | 17                                                                                  |
| Shared Lane Traffic (%)           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)             | 0                                                                                 | 57                                                                                | 0                                                                                 | 0                                                                                 | 33                                                                                | 0                                                                                 | 0                                                                                  | 405                                                                                 | 0                                                                                   | 0                                                                                   | 131                                                                                 | 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                    | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                               | 1.29                                                                                | 1.29                                                                                | 1.29                                                                                | 1.29                                                                                | 1.29                                                                                |
| Turning Speed (k/h)               | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                 |                                                                                     | 15                                                                                  | 25                                                                                  |                                                                                     | 15                                                                                  |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                    | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Area Type:                        | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Type:                     | Unsignalized                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization | 42.7%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service A                                                             |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

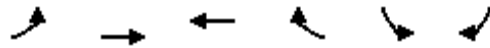
HCM 6th TWSC  
5: Dumfries Rd & Greenfield Rd

2030 Background: AM Peak Hour

| Intersection             |        |       |        |       |       |        |      |      |        |       |      |      |
|--------------------------|--------|-------|--------|-------|-------|--------|------|------|--------|-------|------|------|
| Int Delay, s/veh         | 2.1    |       |        |       |       |        |      |      |        |       |      |      |
| Movement                 | EBL    | EBT   | EBR    | WBL   | WBT   | WBR    | NBL  | NBT  | NBR    | SBL   | SBT  | SBR  |
| Lane Configurations      |        | ↕     |        |       | ↕     |        |      | ↕    |        |       | ↕    |      |
| Traffic Vol, veh/h       | 15     | 42    | 0      | 2     | 25    | 6      | 1    | 402  | 2      | 3     | 111  | 17   |
| Future Vol, veh/h        | 15     | 42    | 0      | 2     | 25    | 6      | 1    | 402  | 2      | 3     | 111  | 17   |
| 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         | 100    | 100   | 100    | 100   | 100   | 100    | 100  | 100  | 100    | 100   | 100  | 100  |
| Heavy Vehicles, %        | 29     | 8     | 0      | 0     | 0     | 0      | 0    | 5    | 0      | 33    | 9    | 25   |
| Mvmt Flow                | 15     | 42    | 0      | 2     | 25    | 6      | 1    | 402  | 2      | 3     | 111  | 17   |
|                          |        |       |        |       |       |        |      |      |        |       |      |      |
| Major/Minor              | Minor2 |       | Minor1 |       |       | Major1 |      |      | Major2 |       |      |      |
| Conflicting Flow All     | 547    | 532   | 120    | 552   | 539   | 403    | 128  | 0    | 0      | 404   | 0    | 0    |
| Stage 1                  | 126    | 126   | -      | 405   | 405   | -      | -    | -    | -      | -     | -    | -    |
| Stage 2                  | 421    | 406   | -      | 147   | 134   | -      | -    | -    | -      | -     | -    | -    |
| Critical Hdwy            | 7.39   | 6.58  | 6.2    | 7.1   | 6.5   | 6.2    | 4.1  | -    | -      | 4.43  | -    | -    |
| Critical Hdwy Stg 1      | 6.39   | 5.58  | -      | 6.1   | 5.5   | -      | -    | -    | -      | -     | -    | -    |
| Critical Hdwy Stg 2      | 6.39   | 5.58  | -      | 6.1   | 5.5   | -      | -    | -    | -      | -     | -    | -    |
| Follow-up Hdwy           | 3.761  | 4.072 | 3.3    | 3.5   | 4     | 3.3    | 2.2  | -    | -      | 2.497 | -    | -    |
| Pot Cap-1 Maneuver       | 409    | 445   | 937    | 447   | 452   | 652    | 1470 | -    | -      | 1006  | -    | -    |
| Stage 1                  | 817    | 780   | -      | 626   | 602   | -      | -    | -    | -      | -     | -    | -    |
| Stage 2                  | 560    | 588   | -      | 860   | 789   | -      | -    | -    | -      | -     | -    | -    |
| Platoon blocked, %       |        |       |        |       |       |        |      | -    | -      |       | -    | -    |
| Mov Cap-1 Maneuver       | 387    | 443   | 937    | 413   | 450   | 652    | 1470 | -    | -      | 1006  | -    | -    |
| Mov Cap-2 Maneuver       | 387    | 443   | -      | 413   | 450   | -      | -    | -    | -      | -     | -    | -    |
| Stage 1                  | 816    | 778   | -      | 625   | 601   | -      | -    | -    | -      | -     | -    | -    |
| Stage 2                  | 531    | 587   | -      | 811   | 787   | -      | -    | -    | -      | -     | -    | -    |
|                          |        |       |        |       |       |        |      |      |        |       |      |      |
|                          |        |       |        |       |       |        |      |      |        |       |      |      |
| Approach                 | EB     |       | WB     |       |       | NB     |      |      | SB     |       |      |      |
| HCM Control Delay, s     | 14.7   |       | 13.2   |       |       | 0      |      |      | 0.2    |       |      |      |
| HCM LOS                  | B      |       | B      |       |       |        |      |      |        |       |      |      |
|                          |        |       |        |       |       |        |      |      |        |       |      |      |
| Minor Lane/Major Mvmt    | NBL    | NBT   | NBR    | EBLn1 | WBLn1 | SBL    | SBT  | SBR  |        |       |      |      |
| Capacity (veh/h)         | 1470   | -     | -      | 427   | 474   | 1006   | -    | -    |        |       |      |      |
| HCM Lane V/C Ratio       | 0.001  | -     | -      | 0.133 | 0.07  | 0.003  | -    | -    |        |       |      |      |
| HCM Control Delay (s)    | 7.5    | 0     | -      | 14.7  | 13.2  | 8.6    | 0    | -    |        |       |      |      |
| HCM Lane LOS             | A      | A     | -      | B     | B     | A      | A    | -    |        |       |      |      |
| HCM 95th %tile Q(veh)    | 0      | -     | -      | 0.5   | 0.2   | 0      | -    | -    |        |       |      |      |

Lanes, Volumes, Timings  
1: Wrigley Rd & Reidsville Rd

2030 Background: PM Peak Hour



| Lane Group                        | EBL          | EBT                                                                               | WBT                                                                               | WBR                    | SBL                                                                               | SBR   |
|-----------------------------------|--------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------------------|-------|
| Lane Configurations               |              |  |  |                        |  |       |
| Traffic Volume (vph)              | 25           | 131                                                                               | 180                                                                               | 9                      | 23                                                                                | 54    |
| Future Volume (vph)               | 25           | 131                                                                               | 180                                                                               | 9                      | 23                                                                                | 54    |
| Ideal Flow (vphpl)                | 1650         | 1650                                                                              | 1650                                                                              | 1650                   | 1765                                                                              | 1765  |
| Lane Util. Factor                 | 1.00         | 1.00                                                                              | 1.00                                                                              | 1.00                   | 1.00                                                                              | 1.00  |
| Frt                               |              |                                                                                   | 0.994                                                                             |                        | 0.905                                                                             |       |
| Flt Protected                     |              | 0.992                                                                             |                                                                                   |                        | 0.985                                                                             |       |
| Satd. Flow (prot)                 | 0            | 1600                                                                              | 1615                                                                              | 0                      | 1509                                                                              | 0     |
| Flt Permitted                     |              | 0.992                                                                             |                                                                                   |                        | 0.985                                                                             |       |
| Satd. Flow (perm)                 | 0            | 1600                                                                              | 1615                                                                              | 0                      | 1509                                                                              | 0     |
| Link Speed (k/h)                  |              | 80                                                                                | 80                                                                                |                        | 80                                                                                |       |
| Link Distance (m)                 |              | 912.8                                                                             | 2934.3                                                                            |                        | 1632.0                                                                            |       |
| Travel Time (s)                   |              | 41.1                                                                              | 132.0                                                                             |                        | 73.4                                                                              |       |
| Peak Hour Factor                  | 1.00         | 1.00                                                                              | 1.00                                                                              | 1.00                   | 1.00                                                                              | 1.00  |
| Heavy Vehicles (%)                | 4%           | 2%                                                                                | 1%                                                                                | 13%                    | 5%                                                                                | 4%    |
| Adj. Flow (vph)                   | 25           | 131                                                                               | 180                                                                               | 9                      | 23                                                                                | 54    |
| Shared Lane Traffic (%)           |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Lane Group Flow (vph)             | 0            | 156                                                                               | 189                                                                               | 0                      | 77                                                                                | 0     |
| Enter Blocked Intersection        | No           | No                                                                                | No                                                                                | No                     | No                                                                                | No    |
| Lane Alignment                    | Left         | Left                                                                              | Left                                                                              | Right                  | Left                                                                              | Right |
| Median Width(m)                   |              | 0.0                                                                               | 0.0                                                                               |                        | 3.6                                                                               |       |
| Link Offset(m)                    |              | 0.0                                                                               | 0.0                                                                               |                        | 0.0                                                                               |       |
| Crosswalk Width(m)                |              | 4.8                                                                               | 4.8                                                                               |                        | 4.8                                                                               |       |
| Two way Left Turn Lane            |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Headway Factor                    | 1.20         | 1.20                                                                              | 1.20                                                                              | 1.20                   | 1.10                                                                              | 1.10  |
| Turning Speed (k/h)               | 25           |                                                                                   |                                                                                   | 15                     | 25                                                                                | 15    |
| Sign Control                      |              | Free                                                                              | Free                                                                              |                        | Stop                                                                              |       |
| Intersection Summary              |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Area Type:                        | Other        |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Control Type:                     | Unsignalized |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Intersection Capacity Utilization | 36.0%        |                                                                                   |                                                                                   | ICU Level of Service A |                                                                                   |       |
| Analysis Period (min)             | 15           |                                                                                   |                                                                                   |                        |                                                                                   |       |

HCM 6th TWSC  
1: Wrigley Rd & Reidsville Rd

2030 Background: PM Peak Hour

Intersection

Int Delay, s/veh 2.3

| Movement                 | EBL  | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR  |
|--------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |      |  |  |      |  |      |
| Traffic Vol, veh/h       | 25   | 131                                                                               | 180                                                                               | 9    | 23                                                                                | 54   |
| Future Vol, veh/h        | 25   | 131                                                                               | 180                                                                               | 9    | 23                                                                                | 54   |
| 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         | 100  | 100                                                                               | 100                                                                               | 100  | 100                                                                               | 100  |
| Heavy Vehicles, %        | 4    | 2                                                                                 | 1                                                                                 | 13   | 5                                                                                 | 4    |
| Mvmt Flow                | 25   | 131                                                                               | 180                                                                               | 9    | 23                                                                                | 54   |

| Major/Minor          | Major1 | Major2 | Minor2        |
|----------------------|--------|--------|---------------|
| Conflicting Flow All | 189    | 0      | 0 366 185     |
| Stage 1              | -      | -      | - 185 -       |
| Stage 2              | -      | -      | - 181 -       |
| Critical Hdwy        | 4.14   | -      | - 6.45 6.24   |
| Critical Hdwy Stg 1  | -      | -      | - 5.45 -      |
| Critical Hdwy Stg 2  | -      | -      | - 5.45 -      |
| Follow-up Hdwy       | 2.236  | -      | - 3.545 3.336 |
| Pot Cap-1 Maneuver   | 1373   | -      | - 628 852     |
| Stage 1              | -      | -      | - 839 -       |
| Stage 2              | -      | -      | - 843 -       |
| Platoon blocked, %   | -      | -      | -             |
| Mov Cap-1 Maneuver   | 1373   | -      | - 615 852     |
| Mov Cap-2 Maneuver   | -      | -      | - 615 -       |
| Stage 1              | -      | -      | - 822 -       |
| Stage 2              | -      | -      | - 843 -       |

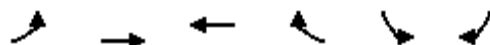
| Approach             | EB  | WB | SB   |
|----------------------|-----|----|------|
| HCM Control Delay, s | 1.2 | 0  | 10.2 |
| HCM LOS              |     |    | B    |

| Minor Lane/Major Mvmt | EBL   | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h)      | 1373  | -   | -   | -   | 764   |
| HCM Lane V/C Ratio    | 0.018 | -   | -   | -   | 0.101 |
| HCM Control Delay (s) | 7.7   | 0   | -   | -   | 10.2  |
| HCM Lane LOS          | A     | A   | -   | -   | B     |
| HCM 95th %tile Q(veh) | 0.1   | -   | -   | -   | 0.3   |

## Lanes, Volumes, Timings

### 2: Wrigley Rd & Dumfries Rd

2030 Background: PM Peak Hour



| Lane Group                                                     | EBL  | EBT                                                                               | WBT                                                                               | WBR   | SBL                                                                               | SBR   |
|----------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------|-------|
| Lane Configurations                                            |      |  |  |       |  |       |
| Traffic Volume (vph)                                           | 18   | 115                                                                               | 152                                                                               | 206   | 378                                                                               | 36    |
| Future Volume (vph)                                            | 18   | 115                                                                               | 152                                                                               | 206   | 378                                                                               | 36    |
| Ideal Flow (vphpl)                                             | 1650 | 1650                                                                              | 1650                                                                              | 1650  | 1765                                                                              | 1765  |
| Lane Util. Factor                                              | 1.00 | 1.00                                                                              | 1.00                                                                              | 1.00  | 1.00                                                                              | 1.00  |
| Frt                                                            |      |                                                                                   | 0.922                                                                             |       | 0.988                                                                             |       |
| Flt Protected                                                  |      | 0.993                                                                             |                                                                                   |       | 0.956                                                                             |       |
| Satd. Flow (prot)                                              | 0    | 1584                                                                              | 1469                                                                              | 0     | 1652                                                                              | 0     |
| Flt Permitted                                                  |      | 0.993                                                                             |                                                                                   |       | 0.956                                                                             |       |
| Satd. Flow (perm)                                              | 0    | 1584                                                                              | 1469                                                                              | 0     | 1652                                                                              | 0     |
| Link Speed (k/h)                                               |      | 80                                                                                | 80                                                                                |       | 80                                                                                |       |
| Link Distance (m)                                              |      | 2934.3                                                                            | 673.3                                                                             |       | 1737.5                                                                            |       |
| Travel Time (s)                                                |      | 132.0                                                                             | 30.3                                                                              |       | 78.2                                                                              |       |
| Peak Hour Factor                                               | 1.00 | 1.00                                                                              | 1.00                                                                              | 1.00  | 1.00                                                                              | 1.00  |
| Heavy Vehicles (%)                                             | 0%   | 4%                                                                                | 3%                                                                                | 4%    | 1%                                                                                | 0%    |
| Adj. Flow (vph)                                                | 18   | 115                                                                               | 152                                                                               | 206   | 378                                                                               | 36    |
| Shared Lane Traffic (%)                                        |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Lane Group Flow (vph)                                          | 0    | 133                                                                               | 358                                                                               | 0     | 414                                                                               | 0     |
| Enter Blocked Intersection                                     | No   | No                                                                                | No                                                                                | No    | No                                                                                | No    |
| Lane Alignment                                                 | Left | Left                                                                              | Left                                                                              | Right | Left                                                                              | Right |
| Median Width(m)                                                |      | 0.0                                                                               | 0.0                                                                               |       | 3.6                                                                               |       |
| Link Offset(m)                                                 |      | 0.0                                                                               | 0.0                                                                               |       | 0.0                                                                               |       |
| Crosswalk Width(m)                                             |      | 4.8                                                                               | 4.8                                                                               |       | 4.8                                                                               |       |
| Two way Left Turn Lane                                         |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Headway Factor                                                 | 1.20 | 1.20                                                                              | 1.20                                                                              | 1.20  | 1.10                                                                              | 1.10  |
| Turning Speed (k/h)                                            | 25   |                                                                                   |                                                                                   | 15    | 25                                                                                | 15    |
| Sign Control                                                   |      | Free                                                                              | Free                                                                              |       | Stop                                                                              |       |
| Intersection Summary                                           |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Area Type: Other                                               |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Control Type: Unsignalized                                     |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Intersection Capacity Utilization 56.1% ICU Level of Service B |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Analysis Period (min) 15                                       |      |                                                                                   |                                                                                   |       |                                                                                   |       |

HCM 6th TWSC  
2: Wrigley Rd & Dumfries Rd

2030 Background: PM Peak Hour

| Intersection             |        |                                                                                   |                                                                                   |        |                                                                                   |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 10.6   |                                                                                   |                                                                                   |        |                                                                                   |      |
| Movement                 | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBL                                                                               | SBR  |
| Lane Configurations      |        |  |  |        |  |      |
| Traffic Vol, veh/h       | 18     | 115                                                                               | 152                                                                               | 206    | 378                                                                               | 36   |
| Future Vol, veh/h        | 18     | 115                                                                               | 152                                                                               | 206    | 378                                                                               | 36   |
| 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         | 100    | 100                                                                               | 100                                                                               | 100    | 100                                                                               | 100  |
| Heavy Vehicles, %        | 0      | 4                                                                                 | 3                                                                                 | 4      | 1                                                                                 | 0    |
| Mvmt Flow                | 18     | 115                                                                               | 152                                                                               | 206    | 378                                                                               | 36   |
| Major/Minor              | Major1 | Major2                                                                            |                                                                                   | Minor2 |                                                                                   |      |
| Conflicting Flow All     | 358    | 0                                                                                 | -                                                                                 | 0      | 406                                                                               | 255  |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 255                                                                               | -    |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 151                                                                               | -    |
| Critical Hdwy            | 4.1    | -                                                                                 | -                                                                                 | -      | 6.41                                                                              | 6.2  |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -                                                                                 | -      | 5.41                                                                              | -    |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -                                                                                 | -      | 5.41                                                                              | -    |
| Follow-up Hdwy           | 2.2    | -                                                                                 | -                                                                                 | -      | 3.509                                                                             | 3.3  |
| Pot Cap-1 Maneuver       | 1212   | -                                                                                 | -                                                                                 | -      | 603                                                                               | 789  |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 790                                                                               | -    |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 879                                                                               | -    |
| Platoon blocked, %       |        | -                                                                                 | -                                                                                 | -      |                                                                                   |      |
| Mov Cap-1 Maneuver       | 1212   | -                                                                                 | -                                                                                 | -      | 593                                                                               | 789  |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -                                                                                 | -      | 593                                                                               | -    |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 777                                                                               | -    |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 879                                                                               | -    |
| Approach                 | EB     | WB                                                                                |                                                                                   | SB     |                                                                                   |      |
| HCM Control Delay, s     | 1.1    | 0                                                                                 |                                                                                   | 22.8   |                                                                                   |      |
| HCM LOS                  |        |                                                                                   |                                                                                   | C      |                                                                                   |      |
| Minor Lane/Major Mvmt    | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBLn1                                                                             |      |
| Capacity (veh/h)         | 1212   | -                                                                                 | -                                                                                 | -      | 606                                                                               |      |
| HCM Lane V/C Ratio       | 0.015  | -                                                                                 | -                                                                                 | -      | 0.683                                                                             |      |
| HCM Control Delay (s)    | 8      | 0                                                                                 | -                                                                                 | -      | 22.8                                                                              |      |
| HCM Lane LOS             | A      | A                                                                                 | -                                                                                 | -      | C                                                                                 |      |
| HCM 95th %tile Q(veh)    | 0      | -                                                                                 | -                                                                                 | -      | 5.3                                                                               |      |

Lanes, Volumes, Timings  
3: Spragues Rd & Wrigley Rd

2030 Background: PM Peak Hour

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group                        | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Traffic Volume (vph)              | 64                                                                                | 429                                                                               | 267                                                                               | 99                                                                                | 138                                                                               | 91                                                                                |
| Future Volume (vph)               | 64                                                                                | 429                                                                               | 267                                                                               | 99                                                                                | 138                                                                               | 91                                                                                |
| Ideal Flow (vphpl)                | 1650                                                                              | 1650                                                                              | 1650                                                                              | 1650                                                                              | 1765                                                                              | 1765                                                                              |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Frt                               | 0.883                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.946                                                                             |                                                                                   |
| Flt Protected                     | 0.994                                                                             |                                                                                   |                                                                                   | 0.965                                                                             |                                                                                   |                                                                                   |
| Satd. Flow (prot)                 | 1428                                                                              | 0                                                                                 | 0                                                                                 | 1539                                                                              | 1663                                                                              | 0                                                                                 |
| Flt Permitted                     | 0.994                                                                             |                                                                                   |                                                                                   | 0.965                                                                             |                                                                                   |                                                                                   |
| Satd. Flow (perm)                 | 1428                                                                              | 0                                                                                 | 0                                                                                 | 1539                                                                              | 1663                                                                              | 0                                                                                 |
| Link Speed (k/h)                  | 80                                                                                |                                                                                   |                                                                                   | 80                                                                                | 80                                                                                |                                                                                   |
| Link Distance (m)                 | 673.3                                                                             |                                                                                   |                                                                                   | 285.9                                                                             | 309.3                                                                             |                                                                                   |
| Travel Time (s)                   | 30.3                                                                              |                                                                                   |                                                                                   | 12.9                                                                              | 13.9                                                                              |                                                                                   |
| Peak Hour Factor                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Heavy Vehicles (%)                | 4%                                                                                | 1%                                                                                | 4%                                                                                | 2%                                                                                | 0%                                                                                | 1%                                                                                |
| Adj. Flow (vph)                   | 64                                                                                | 429                                                                               | 267                                                                               | 99                                                                                | 138                                                                               | 91                                                                                |
| Shared Lane Traffic (%)           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)             | 493                                                                               | 0                                                                                 | 0                                                                                 | 366                                                                               | 229                                                                               | 0                                                                                 |
| Enter Blocked Intersection        | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                |
| Lane Alignment                    | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Left                                                                              | Right                                                                             |
| Median Width(m)                   | 3.6                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Link Offset(m)                    | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Crosswalk Width(m)                | 4.8                                                                               |                                                                                   |                                                                                   | 4.8                                                                               | 4.8                                                                               |                                                                                   |
| Two way Left Turn Lane            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Headway Factor                    | 1.20                                                                              | 1.20                                                                              | 1.20                                                                              | 1.20                                                                              | 1.10                                                                              | 1.10                                                                              |
| Turning Speed (k/h)               | 25                                                                                | 15                                                                                | 25                                                                                |                                                                                   |                                                                                   | 15                                                                                |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Area Type:                        | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Control Type:                     | Unsignalized                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization | 81.4%                                                                             |                                                                                   |                                                                                   | ICU Level of Service D                                                            |                                                                                   |                                                                                   |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM 6th TWSC 3: Spragues Rd & Wrigley Rd

2030 Background: PM Peak Hour

| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 12.8                                                                              |        |       |                                                                                   |                                                                                   |      |
| Movement                 | EBL                                                                               | EBR    | NBL   | NBT                                                                               | SBT                                                                               | SBR  |
| Lane Configurations      |  |        |       |  |  |      |
| Traffic Vol, veh/h       | 64                                                                                | 429    | 267   | 99                                                                                | 138                                                                               | 91   |
| Future Vol, veh/h        | 64                                                                                | 429    | 267   | 99                                                                                | 138                                                                               | 91   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop   | Free  | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -      | -     | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 100                                                                               | 100    | 100   | 100                                                                               | 100                                                                               | 100  |
| Heavy Vehicles, %        | 4                                                                                 | 1      | 4     | 2                                                                                 | 0                                                                                 | 1    |
| Mvmt Flow                | 64                                                                                | 429    | 267   | 99                                                                                | 138                                                                               | 91   |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |      |
| Major/Minor              | Minor2                                                                            | Major1 |       | Major2                                                                            |                                                                                   |      |
| Conflicting Flow All     | 817                                                                               | 184    | 229   | 0                                                                                 | -                                                                                 | 0    |
| Stage 1                  | 184                                                                               | -      | -     | -                                                                                 | -                                                                                 | -    |
| Stage 2                  | 633                                                                               | -      | -     | -                                                                                 | -                                                                                 | -    |
| Critical Hdwy            | 6.44                                                                              | 6.21   | 4.14  | -                                                                                 | -                                                                                 | -    |
| Critical Hdwy Stg 1      | 5.44                                                                              | -      | -     | -                                                                                 | -                                                                                 | -    |
| Critical Hdwy Stg 2      | 5.44                                                                              | -      | -     | -                                                                                 | -                                                                                 | -    |
| Follow-up Hdwy           | 3.536                                                                             | 3.309  | 2.236 | -                                                                                 | -                                                                                 | -    |
| Pot Cap-1 Maneuver       | 343                                                                               | 861    | 1327  | -                                                                                 | -                                                                                 | -    |
| Stage 1                  | 843                                                                               | -      | -     | -                                                                                 | -                                                                                 | -    |
| Stage 2                  | 525                                                                               | -      | -     | -                                                                                 | -                                                                                 | -    |
| Platoon blocked, %       |                                                                                   |        |       | -                                                                                 | -                                                                                 | -    |
| Mov Cap-1 Maneuver       | 270                                                                               | 861    | 1327  | -                                                                                 | -                                                                                 | -    |
| Mov Cap-2 Maneuver       | 270                                                                               | -      | -     | -                                                                                 | -                                                                                 | -    |
| Stage 1                  | 663                                                                               | -      | -     | -                                                                                 | -                                                                                 | -    |
| Stage 2                  | 525                                                                               | -      | -     | -                                                                                 | -                                                                                 | -    |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |      |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |      |
| Approach                 | EB                                                                                | NB     |       | SB                                                                                |                                                                                   |      |
| HCM Control Delay, s     | 23.8                                                                              | 6.1    |       | 0                                                                                 |                                                                                   |      |
| HCM LOS                  | C                                                                                 |        |       |                                                                                   |                                                                                   |      |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |      |
| Minor Lane/Major Mvmt    | NBL                                                                               | NBT    | EBLn1 | SBT                                                                               | SBR                                                                               |      |
| Capacity (veh/h)         | 1327                                                                              | -      | 670   | -                                                                                 | -                                                                                 |      |
| HCM Lane V/C Ratio       | 0.201                                                                             | -      | 0.736 | -                                                                                 | -                                                                                 |      |
| HCM Control Delay (s)    | 8.4                                                                               | 0      | 23.8  | -                                                                                 | -                                                                                 |      |
| HCM Lane LOS             | A                                                                                 | A      | C     | -                                                                                 | -                                                                                 |      |
| HCM 95th %tile Q(veh)    | 0.8                                                                               | -      | 6.5   | -                                                                                 | -                                                                                 |      |

# Lanes, Volumes, Timings

## 4: Reidsville Rd & Greenfield Rd

2030 Background: PM Peak Hour

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |
| Lane Group                        | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBR                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Traffic Volume (vph)              | 46                                                                                | 90                                                                                | 9                                                                                 | 47                                                                                | 38                                                                                | 0                                                                                 |
| Future Volume (vph)               | 46                                                                                | 90                                                                                | 9                                                                                 | 47                                                                                | 38                                                                                | 0                                                                                 |
| Ideal Flow (vphpl)                | 1650                                                                              | 1650                                                                              | 1650                                                                              | 1650                                                                              | 1765                                                                              | 1765                                                                              |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Frt                               | 0.911                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flt Protected                     |                                                                                   |                                                                                   |                                                                                   | 0.992                                                                             | 0.950                                                                             |                                                                                   |
| Satd. Flow (prot)                 | 1483                                                                              | 0                                                                                 | 0                                                                                 | 1610                                                                              | 1677                                                                              | 0                                                                                 |
| Flt Permitted                     |                                                                                   |                                                                                   |                                                                                   | 0.992                                                                             | 0.950                                                                             |                                                                                   |
| Satd. Flow (perm)                 | 1483                                                                              | 0                                                                                 | 0                                                                                 | 1610                                                                              | 1677                                                                              | 0                                                                                 |
| Link Speed (k/h)                  | 80                                                                                |                                                                                   |                                                                                   | 80                                                                                | 80                                                                                |                                                                                   |
| Link Distance (m)                 | 456.6                                                                             |                                                                                   |                                                                                   | 2951.9                                                                            | 1632.0                                                                            |                                                                                   |
| Travel Time (s)                   | 20.5                                                                              |                                                                                   |                                                                                   | 132.8                                                                             | 73.4                                                                              |                                                                                   |
| Peak Hour Factor                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Heavy Vehicles (%)                | 2%                                                                                | 1%                                                                                | 0%                                                                                | 2%                                                                                | 0%                                                                                | 0%                                                                                |
| Adj. Flow (vph)                   | 46                                                                                | 90                                                                                | 9                                                                                 | 47                                                                                | 38                                                                                | 0                                                                                 |
| Shared Lane Traffic (%)           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)             | 136                                                                               | 0                                                                                 | 0                                                                                 | 56                                                                                | 38                                                                                | 0                                                                                 |
| Enter Blocked Intersection        | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                |
| Lane Alignment                    | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Left                                                                              | Right                                                                             |
| Median Width(m)                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 3.6                                                                               |                                                                                   |
| Link Offset(m)                    | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Crosswalk Width(m)                | 4.8                                                                               |                                                                                   |                                                                                   | 4.8                                                                               | 4.8                                                                               |                                                                                   |
| Two way Left Turn Lane            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Headway Factor                    | 1.20                                                                              | 1.20                                                                              | 1.20                                                                              | 1.20                                                                              | 1.10                                                                              | 1.10                                                                              |
| Turning Speed (k/h)               |                                                                                   | 15                                                                                | 25                                                                                |                                                                                   | 25                                                                                | 15                                                                                |
| Sign Control                      | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              | Stop                                                                              |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Area Type:                        | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Control Type:                     | Unsignalized                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization | 21.7%                                                                             |                                                                                   |                                                                                   | ICU Level of Service A                                                            |                                                                                   |                                                                                   |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

HCM 6th TWSC  
4: Reidsville Rd & Greenfield Rd

2030 Background: PM Peak Hour

Intersection

Int Delay, s/veh 1.9

| Movement                 | EBT                                                                               | EBR  | WBL  | WBT                                                                               | NBL                                                                               | NBR  |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 46                                                                                | 90   | 9    | 47                                                                                | 38                                                                                | 0    |
| Future Vol, veh/h        | 46                                                                                | 90   | 9    | 47                                                                                | 38                                                                                | 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         | 100                                                                               | 100  | 100  | 100                                                                               | 100                                                                               | 100  |
| Heavy Vehicles, %        | 2                                                                                 | 1    | 0    | 2                                                                                 | 0                                                                                 | 0    |
| Mvmt Flow                | 46                                                                                | 90   | 9    | 47                                                                                | 38                                                                                | 0    |

| Major/Minor          | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0      | 0      | 136    |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | 4.1    |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | 2.2    |
| Pot Cap-1 Maneuver   | -      | -      | 1461   |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | 1461   |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | EB | WB  | NB  |
|----------------------|----|-----|-----|
| HCM Control Delay, s | 0  | 1.2 | 9.5 |
| HCM LOS              |    |     | A   |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL   | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h)      | 835   | -   | -   | 1461  | -   |
| HCM Lane V/C Ratio    | 0.046 | -   | -   | 0.006 | -   |
| HCM Control Delay (s) | 9.5   | -   | -   | 7.5   | 0   |
| HCM Lane LOS          | A     | -   | -   | A     | A   |
| HCM 95th %tile Q(veh) | 0.1   | -   | -   | 0     | -   |

Lanes, Volumes, Timings  
5: Dumfries Rd & Greenfield Rd

2030 Background: PM Peak Hour

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                        | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (vph)              | 10                                                                                | 29                                                                                | 8                                                                                 | 3                                                                                 | 24                                                                                | 3                                                                                 | 2                                                                                  | 216                                                                                 | 5                                                                                   | 6                                                                                   | 404                                                                                 | 23                                                                                  |
| Future Volume (vph)               | 10                                                                                | 29                                                                                | 8                                                                                 | 3                                                                                 | 24                                                                                | 3                                                                                 | 2                                                                                  | 216                                                                                 | 5                                                                                   | 6                                                                                   | 404                                                                                 | 23                                                                                  |
| Ideal Flow (vphpl)                | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                               | 1550                                                                                | 1550                                                                                | 1550                                                                                | 1550                                                                                | 1550                                                                                |
| 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                               |                                                                                   | 0.977                                                                             |                                                                                   |                                                                                   | 0.986                                                                             |                                                                                   |                                                                                    | 0.997                                                                               |                                                                                     |                                                                                     | 0.993                                                                               |                                                                                     |
| Flt Protected                     |                                                                                   | 0.989                                                                             |                                                                                   |                                                                                   | 0.995                                                                             |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Satd. Flow (prot)                 | 0                                                                                 | 1338                                                                              | 0                                                                                 | 0                                                                                 | 1462                                                                              | 0                                                                                 | 0                                                                                  | 1488                                                                                | 0                                                                                   | 0                                                                                   | 1534                                                                                | 0                                                                                   |
| Flt Permitted                     |                                                                                   | 0.989                                                                             |                                                                                   |                                                                                   | 0.995                                                                             |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Satd. Flow (perm)                 | 0                                                                                 | 1338                                                                              | 0                                                                                 | 0                                                                                 | 1462                                                                              | 0                                                                                 | 0                                                                                  | 1488                                                                                | 0                                                                                   | 0                                                                                   | 1534                                                                                | 0                                                                                   |
| Link Speed (k/h)                  |                                                                                   | 80                                                                                |                                                                                   |                                                                                   | 80                                                                                |                                                                                   |                                                                                    | 80                                                                                  |                                                                                     |                                                                                     | 80                                                                                  |                                                                                     |
| Link Distance (m)                 |                                                                                   | 2951.9                                                                            |                                                                                   |                                                                                   | 592.0                                                                             |                                                                                   |                                                                                    | 1737.5                                                                              |                                                                                     |                                                                                     | 801.6                                                                               |                                                                                     |
| Travel Time (s)                   |                                                                                   | 132.8                                                                             |                                                                                   |                                                                                   | 26.6                                                                              |                                                                                   |                                                                                    | 78.2                                                                                |                                                                                     |                                                                                     | 36.1                                                                                |                                                                                     |
| Peak Hour 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                                                                                |
| Heavy Vehicles (%)                | 22%                                                                               | 7%                                                                                | 17%                                                                               | 0%                                                                                | 5%                                                                                | 0%                                                                                | 0%                                                                                 | 4%                                                                                  | 0%                                                                                  | 17%                                                                                 | 0%                                                                                  | 0%                                                                                  |
| Adj. Flow (vph)                   | 10                                                                                | 29                                                                                | 8                                                                                 | 3                                                                                 | 24                                                                                | 3                                                                                 | 2                                                                                  | 216                                                                                 | 5                                                                                   | 6                                                                                   | 404                                                                                 | 23                                                                                  |
| Shared Lane Traffic (%)           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)             | 0                                                                                 | 47                                                                                | 0                                                                                 | 0                                                                                 | 30                                                                                | 0                                                                                 | 0                                                                                  | 223                                                                                 | 0                                                                                   | 0                                                                                   | 433                                                                                 | 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                    | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                               | 1.29                                                                                | 1.29                                                                                | 1.29                                                                                | 1.29                                                                                | 1.29                                                                                |
| Turning Speed (k/h)               | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                 |                                                                                     | 15                                                                                  | 25                                                                                  |                                                                                     | 15                                                                                  |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                    | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Area Type:                        | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Type:                     | Unsignalized                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization | 44.7%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| ICU Level of Service A            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

HCM 6th TWSC  
5: Dumfries Rd & Greenfield Rd

2030 Background: PM Peak Hour

| Intersection             |        |                                                                                   |        |            |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|--------|------------|-----------------------------------------------------------------------------------|-------|--------|-----------------------------------------------------------------------------------|------|-------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 1.7    |                                                                                   |        |            |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Movement                 | EBL    | EBT                                                                               | EBR    | WBL        | WBT                                                                               | WBR   | NBL    | NBT                                                                               | NBR  | SBL   | SBT                                                                                 | SBR  |
| Lane Configurations      |        |  |        |            |  |       |        |  |      |       |  |      |
| Traffic Vol, veh/h       | 10     | 29                                                                                | 8      | 3          | 24                                                                                | 3     | 2      | 216                                                                               | 5    | 6     | 404                                                                                 | 23   |
| Future Vol, veh/h        | 10     | 29                                                                                | 8      | 3          | 24                                                                                | 3     | 2      | 216                                                                               | 5    | 6     | 404                                                                                 | 23   |
| 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         | 100    | 100                                                                               | 100    | 100        | 100                                                                               | 100   | 100    | 100                                                                               | 100  | 100   | 100                                                                                 | 100  |
| Heavy Vehicles, %        | 22     | 7                                                                                 | 17     | 0          | 5                                                                                 | 0     | 0      | 4                                                                                 | 0    | 17    | 0                                                                                   | 0    |
| Mvmt Flow                | 10     | 29                                                                                | 8      | 3          | 24                                                                                | 3     | 2      | 216                                                                               | 5    | 6     | 404                                                                                 | 23   |
|                          |        |                                                                                   |        |            |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Major/Minor              | Minor2 |                                                                                   | Minor1 |            | Major1                                                                            |       | Major2 |                                                                                   |      |       |                                                                                     |      |
| Conflicting Flow All     | 664    | 653                                                                               | 416    | 669        | 662                                                                               | 219   | 427    | 0                                                                                 | 0    | 221   | 0                                                                                   | 0    |
| Stage 1                  | 428    | 428                                                                               | -      | 223        | 223                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 236    | 225                                                                               | -      | 446        | 439                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Critical Hdwy            | 7.32   | 6.57                                                                              | 6.37   | 7.1        | 6.55                                                                              | 6.2   | 4.1    | -                                                                                 | -    | 4.27  | -                                                                                   | -    |
| Critical Hdwy Stg 1      | 6.32   | 5.57                                                                              | -      | 6.1        | 5.55                                                                              | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Critical Hdwy Stg 2      | 6.32   | 5.57                                                                              | -      | 6.1        | 5.55                                                                              | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Follow-up Hdwy           | 3.698  | 4.063                                                                             | 3.453  | 3.5        | 4.045                                                                             | 3.3   | 2.2    | -                                                                                 | -    | 2.353 | -                                                                                   | -    |
| Pot Cap-1 Maneuver       | 348    | 380                                                                               | 606    | 374        | 378                                                                               | 826   | 1143   | -                                                                                 | -    | 1264  | -                                                                                   | -    |
| Stage 1                  | 568    | 576                                                                               | -      | 784        | 713                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 724    | 708                                                                               | -      | 595        | 573                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Platoon blocked, %       |        |                                                                                   |        |            |                                                                                   |       |        | -                                                                                 | -    |       | -                                                                                   | -    |
| Mov Cap-1 Maneuver       | 328    | 377                                                                               | 606    | 345        | 375                                                                               | 826   | 1143   | -                                                                                 | -    | 1264  | -                                                                                   | -    |
| Mov Cap-2 Maneuver       | 328    | 377                                                                               | -      | 345        | 375                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 1                  | 567    | 573                                                                               | -      | 782        | 712                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 696    | 707                                                                               | -      | 554        | 570                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
|                          |        |                                                                                   |        |            |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Approach                 | EB     |                                                                                   | WB     |            | NB                                                                                |       | SB     |                                                                                   |      |       |                                                                                     |      |
| HCM Control Delay, s     | 15.5   |                                                                                   | 14.9   |            | 0.1                                                                               |       | 0.1    |                                                                                   |      |       |                                                                                     |      |
| HCM LOS                  | C      |                                                                                   | B      |            |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
|                          |        |                                                                                   |        |            |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Minor Lane/Major Mvmt    | NBL    | NBT                                                                               | NBR    | EBLn1WBLn1 | SBL                                                                               | SBT   | SBR    |                                                                                   |      |       |                                                                                     |      |
| Capacity (veh/h)         | 1143   | -                                                                                 | -      | 390        | 393                                                                               | 1264  | -      | -                                                                                 |      |       |                                                                                     |      |
| HCM Lane V/C Ratio       | 0.002  | -                                                                                 | -      | 0.121      | 0.076                                                                             | 0.005 | -      | -                                                                                 |      |       |                                                                                     |      |
| HCM Control Delay (s)    | 8.2    | 0                                                                                 | -      | 15.5       | 14.9                                                                              | 7.9   | 0      | -                                                                                 |      |       |                                                                                     |      |
| HCM Lane LOS             | A      | A                                                                                 | -      | C          | B                                                                                 | A     | A      | -                                                                                 |      |       |                                                                                     |      |
| HCM 95th %tile Q(veh)    | 0      | -                                                                                 | -      | 0.4        | 0.2                                                                               | 0     | -      | -                                                                                 |      |       |                                                                                     |      |

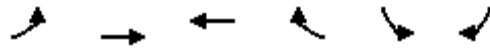
# Appendix E

## 2030 Total Traffic Operations Reports



Lanes, Volumes, Timings  
1: Wrigley Rd & Reidsville Rd

2030 Total: AM Peak Hour



| Lane Group                        | EBL          | EBT                                                                               | WBT                                                                               | WBR                    | SBL                                                                               | SBR   |
|-----------------------------------|--------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------------------|-------|
| Lane Configurations               |              |  |  |                        |  |       |
| Traffic Volume (vph)              | 90           | 213                                                                               | 62                                                                                | 15                     | 9                                                                                 | 11    |
| Future Volume (vph)               | 90           | 213                                                                               | 62                                                                                | 15                     | 9                                                                                 | 11    |
| Ideal Flow (vphpl)                | 1650         | 1650                                                                              | 1650                                                                              | 1650                   | 1765                                                                              | 1765  |
| Lane Util. Factor                 | 1.00         | 1.00                                                                              | 1.00                                                                              | 1.00                   | 1.00                                                                              | 1.00  |
| Frt                               |              |                                                                                   | 0.974                                                                             |                        | 0.926                                                                             |       |
| Flt Protected                     |              | 0.985                                                                             |                                                                                   |                        | 0.978                                                                             |       |
| Satd. Flow (prot)                 | 0            | 1555                                                                              | 1422                                                                              | 0                      | 1523                                                                              | 0     |
| Flt Permitted                     |              | 0.985                                                                             |                                                                                   |                        | 0.978                                                                             |       |
| Satd. Flow (perm)                 | 0            | 1555                                                                              | 1422                                                                              | 0                      | 1523                                                                              | 0     |
| Link Speed (k/h)                  |              | 80                                                                                | 80                                                                                |                        | 80                                                                                |       |
| Link Distance (m)                 |              | 786.9                                                                             | 2934.3                                                                            |                        | 1632.0                                                                            |       |
| Travel Time (s)                   |              | 35.4                                                                              | 132.0                                                                             |                        | 73.4                                                                              |       |
| Peak Hour Factor                  | 1.00         | 1.00                                                                              | 1.00                                                                              | 1.00                   | 1.00                                                                              | 1.00  |
| Heavy Vehicles (%)                | 1%           | 6%                                                                                | 13%                                                                               | 13%                    | 0%                                                                                | 9%    |
| Adj. Flow (vph)                   | 90           | 213                                                                               | 62                                                                                | 15                     | 9                                                                                 | 11    |
| Shared Lane Traffic (%)           |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Lane Group Flow (vph)             | 0            | 303                                                                               | 77                                                                                | 0                      | 20                                                                                | 0     |
| Enter Blocked Intersection        | No           | No                                                                                | No                                                                                | No                     | No                                                                                | No    |
| Lane Alignment                    | Left         | Left                                                                              | Left                                                                              | Right                  | Left                                                                              | Right |
| Median Width(m)                   |              | 0.0                                                                               | 0.0                                                                               |                        | 3.6                                                                               |       |
| Link Offset(m)                    |              | 0.0                                                                               | 0.0                                                                               |                        | 0.0                                                                               |       |
| Crosswalk Width(m)                |              | 4.8                                                                               | 4.8                                                                               |                        | 4.8                                                                               |       |
| Two way Left Turn Lane            |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Headway Factor                    | 1.20         | 1.20                                                                              | 1.20                                                                              | 1.20                   | 1.10                                                                              | 1.10  |
| Turning Speed (k/h)               | 25           |                                                                                   |                                                                                   | 15                     | 25                                                                                | 15    |
| Sign Control                      |              | Free                                                                              | Free                                                                              |                        | Stop                                                                              |       |
| Intersection Summary              |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Area Type:                        | Other        |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Control Type:                     | Unsignalized |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Intersection Capacity Utilization | 35.3%        |                                                                                   |                                                                                   | ICU Level of Service A |                                                                                   |       |
| Analysis Period (min)             | 15           |                                                                                   |                                                                                   |                        |                                                                                   |       |

HCM 6th TWSC  
1: Wrigley Rd & Reidsville Rd

2030 Total: AM Peak Hour

Intersection

Int Delay, s/veh 2.2

| Movement                 | EBL  | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR  |
|--------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |      |  |  |      |  |      |
| Traffic Vol, veh/h       | 90   | 213                                                                               | 62                                                                                | 15   | 9                                                                                 | 11   |
| Future Vol, veh/h        | 90   | 213                                                                               | 62                                                                                | 15   | 9                                                                                 | 11   |
| 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         | 100  | 100                                                                               | 100                                                                               | 100  | 100                                                                               | 100  |
| Heavy Vehicles, %        | 1    | 6                                                                                 | 13                                                                                | 13   | 0                                                                                 | 9    |
| Mvmt Flow                | 90   | 213                                                                               | 62                                                                                | 15   | 9                                                                                 | 11   |

| Major/Minor          | Major1 | Major2 | Minor2      |
|----------------------|--------|--------|-------------|
| Conflicting Flow All | 77     | 0      | 0 463 70    |
| Stage 1              | -      | -      | - 70 -      |
| Stage 2              | -      | -      | - 393 -     |
| Critical Hdwy        | 4.11   | -      | - 6.4 6.29  |
| Critical Hdwy Stg 1  | -      | -      | - 5.4 -     |
| Critical Hdwy Stg 2  | -      | -      | - 5.4 -     |
| Follow-up Hdwy       | 2.209  | -      | - 3.5 3.381 |
| Pot Cap-1 Maneuver   | 1528   | -      | - 561 974   |
| Stage 1              | -      | -      | - 958 -     |
| Stage 2              | -      | -      | - 686 -     |
| Platoon blocked, %   | -      | -      | -           |
| Mov Cap-1 Maneuver   | 1528   | -      | - 523 974   |
| Mov Cap-2 Maneuver   | -      | -      | - 523 -     |
| Stage 1              | -      | -      | - 894 -     |
| Stage 2              | -      | -      | - 686 -     |

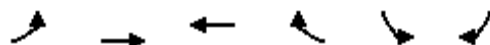
| Approach             | EB  | WB | SB   |
|----------------------|-----|----|------|
| HCM Control Delay, s | 2.2 | 0  | 10.3 |
| HCM LOS              |     |    | B    |

| Minor Lane/Major Mvmt | EBL   | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h)      | 1528  | -   | -   | -   | 702   |
| HCM Lane V/C Ratio    | 0.059 | -   | -   | -   | 0.028 |
| HCM Control Delay (s) | 7.5   | 0   | -   | -   | 10.3  |
| HCM Lane LOS          | A     | A   | -   | -   | B     |
| HCM 95th %tile Q(veh) | 0.2   | -   | -   | -   | 0.1   |

## Lanes, Volumes, Timings

### 2: Wrigley Rd & Dumfries Rd

2030 Total: AM Peak Hour



| Lane Group                        | EBL          | EBT                                                                               | WBT                                                                               | WBR                    | SBL                                                                               | SBR   |
|-----------------------------------|--------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------------------|-------|
| Lane Configurations               |              |  |  |                        |  |       |
| Traffic Volume (vph)              | 42           | 192                                                                               | 53                                                                                | 361                    | 106                                                                               | 14    |
| Future Volume (vph)               | 42           | 192                                                                               | 53                                                                                | 361                    | 106                                                                               | 14    |
| Ideal Flow (vphpl)                | 1650         | 1650                                                                              | 1650                                                                              | 1650                   | 1765                                                                              | 1765  |
| Lane Util. Factor                 | 1.00         | 1.00                                                                              | 1.00                                                                              | 1.00                   | 1.00                                                                              | 1.00  |
| Frt                               |              |                                                                                   | 0.882                                                                             |                        | 0.984                                                                             |       |
| Flt Protected                     |              | 0.991                                                                             |                                                                                   |                        | 0.958                                                                             |       |
| Satd. Flow (prot)                 | 0            | 1539                                                                              | 1381                                                                              | 0                      | 1531                                                                              | 0     |
| Flt Permitted                     |              | 0.991                                                                             |                                                                                   |                        | 0.958                                                                             |       |
| Satd. Flow (perm)                 | 0            | 1539                                                                              | 1381                                                                              | 0                      | 1531                                                                              | 0     |
| Link Speed (k/h)                  |              | 80                                                                                | 80                                                                                |                        | 80                                                                                |       |
| Link Distance (m)                 |              | 2934.3                                                                            | 673.3                                                                             |                        | 1737.5                                                                            |       |
| Travel Time (s)                   |              | 132.0                                                                             | 30.3                                                                              |                        | 78.2                                                                              |       |
| Peak Hour Factor                  | 1.00         | 1.00                                                                              | 1.00                                                                              | 1.00                   | 1.00                                                                              | 1.00  |
| Heavy Vehicles (%)                | 12%          | 5%                                                                                | 15%                                                                               | 4%                     | 8%                                                                                | 14%   |
| Adj. Flow (vph)                   | 42           | 192                                                                               | 53                                                                                | 361                    | 106                                                                               | 14    |
| Shared Lane Traffic (%)           |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Lane Group Flow (vph)             | 0            | 234                                                                               | 414                                                                               | 0                      | 120                                                                               | 0     |
| Enter Blocked Intersection        | No           | No                                                                                | No                                                                                | No                     | No                                                                                | No    |
| Lane Alignment                    | Left         | Left                                                                              | Left                                                                              | Right                  | Left                                                                              | Right |
| Median Width(m)                   |              | 0.0                                                                               | 0.0                                                                               |                        | 3.6                                                                               |       |
| Link Offset(m)                    |              | 0.0                                                                               | 0.0                                                                               |                        | 0.0                                                                               |       |
| Crosswalk Width(m)                |              | 4.8                                                                               | 4.8                                                                               |                        | 4.8                                                                               |       |
| Two way Left Turn Lane            |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Headway Factor                    | 1.20         | 1.20                                                                              | 1.20                                                                              | 1.20                   | 1.10                                                                              | 1.10  |
| Turning Speed (k/h)               | 25           |                                                                                   |                                                                                   | 15                     | 25                                                                                | 15    |
| Sign Control                      |              | Free                                                                              | Free                                                                              |                        | Stop                                                                              |       |
| Intersection Summary              |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Area Type:                        | Other        |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Control Type:                     | Unsignalized |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Intersection Capacity Utilization | 60.4%        |                                                                                   |                                                                                   | ICU Level of Service B |                                                                                   |       |
| Analysis Period (min)             | 15           |                                                                                   |                                                                                   |                        |                                                                                   |       |

HCM 6th TWSC  
2: Wrigley Rd & Dumfries Rd

2030 Total: AM Peak Hour

| Intersection             |        |                                                                                   |                                                                                   |        |                                                                                   |       |
|--------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 2.7    |                                                                                   |                                                                                   |        |                                                                                   |       |
| Movement                 | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBL                                                                               | SBR   |
| Lane Configurations      |        |  |  |        |  |       |
| Traffic Vol, veh/h       | 42     | 192                                                                               | 53                                                                                | 361    | 106                                                                               | 14    |
| Future Vol, veh/h        | 42     | 192                                                                               | 53                                                                                | 361    | 106                                                                               | 14    |
| 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         | 100    | 100                                                                               | 100                                                                               | 100    | 100                                                                               | 100   |
| Heavy Vehicles, %        | 12     | 5                                                                                 | 15                                                                                | 4      | 8                                                                                 | 14    |
| Mvmt Flow                | 42     | 192                                                                               | 53                                                                                | 361    | 106                                                                               | 14    |
| Major/Minor              | Major1 | Major2                                                                            |                                                                                   | Minor2 |                                                                                   |       |
| Conflicting Flow All     | 414    | 0                                                                                 | -                                                                                 | 0      | 510                                                                               | 234   |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 234                                                                               | -     |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 276                                                                               | -     |
| Critical Hdwy            | 4.22   | -                                                                                 | -                                                                                 | -      | 6.48                                                                              | 6.34  |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -                                                                                 | -      | 5.48                                                                              | -     |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -                                                                                 | -      | 5.48                                                                              | -     |
| Follow-up Hdwy           | 2.308  | -                                                                                 | -                                                                                 | -      | 3.572                                                                             | 3.426 |
| Pot Cap-1 Maneuver       | 1093   | -                                                                                 | -                                                                                 | -      | 513                                                                               | 776   |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 791                                                                               | -     |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 757                                                                               | -     |
| Platoon blocked, %       |        | -                                                                                 | -                                                                                 | -      |                                                                                   |       |
| Mov Cap-1 Maneuver       | 1093   | -                                                                                 | -                                                                                 | -      | 491                                                                               | 776   |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -                                                                                 | -      | 491                                                                               | -     |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 757                                                                               | -     |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 757                                                                               | -     |
| Approach                 | EB     | WB                                                                                |                                                                                   | SB     |                                                                                   |       |
| HCM Control Delay, s     | 1.5    | 0                                                                                 |                                                                                   | 14.1   |                                                                                   |       |
| HCM LOS                  |        |                                                                                   |                                                                                   | B      |                                                                                   |       |
| Minor Lane/Major Mvmt    | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBLn1                                                                             |       |
| Capacity (veh/h)         | 1093   | -                                                                                 | -                                                                                 | -      | 513                                                                               |       |
| HCM Lane V/C Ratio       | 0.038  | -                                                                                 | -                                                                                 | -      | 0.234                                                                             |       |
| HCM Control Delay (s)    | 8.4    | 0                                                                                 | -                                                                                 | -      | 14.1                                                                              |       |
| HCM Lane LOS             | A      | A                                                                                 | -                                                                                 | -      | B                                                                                 |       |
| HCM 95th %tile Q(veh)    | 0.1    | -                                                                                 | -                                                                                 | -      | 0.9                                                                               |       |

# Lanes, Volumes, Timings

## 3: Spragues Rd & Wrigley Rd

2030 Total: AM Peak Hour



| Lane Group                        | EBL                                                                               | EBR   | NBL  | NBT                                                                               | SBT                                                                               | SBR   |
|-----------------------------------|-----------------------------------------------------------------------------------|-------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| Lane Configurations               |  |       |      |  |  |       |
| Traffic Volume (vph)              | 139                                                                               | 159   | 384  | 144                                                                               | 67                                                                                | 30    |
| Future Volume (vph)               | 139                                                                               | 159   | 384  | 144                                                                               | 67                                                                                | 30    |
| Ideal Flow (vphpl)                | 1650                                                                              | 1650  | 1650 | 1650                                                                              | 1765                                                                              | 1765  |
| Lane Util. Factor                 | 1.00                                                                              | 1.00  | 1.00 | 1.00                                                                              | 1.00                                                                              | 1.00  |
| Frt                               | 0.928                                                                             |       |      |                                                                                   | 0.958                                                                             |       |
| Flt Protected                     | 0.977                                                                             |       |      | 0.965                                                                             |                                                                                   |       |
| Satd. Flow (prot)                 | 1402                                                                              | 0     | 0    | 1532                                                                              | 1565                                                                              | 0     |
| Flt Permitted                     | 0.977                                                                             |       |      | 0.965                                                                             |                                                                                   |       |
| Satd. Flow (perm)                 | 1402                                                                              | 0     | 0    | 1532                                                                              | 1565                                                                              | 0     |
| Link Speed (k/h)                  | 80                                                                                |       |      | 80                                                                                | 80                                                                                |       |
| Link Distance (m)                 | 673.3                                                                             |       |      | 285.9                                                                             | 309.3                                                                             |       |
| Travel Time (s)                   | 30.3                                                                              |       |      | 12.9                                                                              | 13.9                                                                              |       |
| Peak Hour Factor                  | 1.00                                                                              | 1.00  | 1.00 | 1.00                                                                              | 1.00                                                                              | 1.00  |
| Heavy Vehicles (%)                | 4%                                                                                | 9%    | 5%   | 1%                                                                                | 4%                                                                                | 17%   |
| Adj. Flow (vph)                   | 139                                                                               | 159   | 384  | 144                                                                               | 67                                                                                | 30    |
| Shared Lane Traffic (%)           |                                                                                   |       |      |                                                                                   |                                                                                   |       |
| Lane Group Flow (vph)             | 298                                                                               | 0     | 0    | 528                                                                               | 97                                                                                | 0     |
| Enter Blocked Intersection        | No                                                                                | No    | No   | No                                                                                | No                                                                                | No    |
| Lane Alignment                    | Left                                                                              | Right | Left | Left                                                                              | Left                                                                              | Right |
| Median Width(m)                   | 3.6                                                                               |       |      | 0.0                                                                               | 0.0                                                                               |       |
| Link Offset(m)                    | 0.0                                                                               |       |      | 0.0                                                                               | 0.0                                                                               |       |
| Crosswalk Width(m)                | 4.8                                                                               |       |      | 4.8                                                                               | 4.8                                                                               |       |
| Two way Left Turn Lane            |                                                                                   |       |      |                                                                                   |                                                                                   |       |
| Headway Factor                    | 1.20                                                                              | 1.20  | 1.20 | 1.20                                                                              | 1.10                                                                              | 1.10  |
| Turning Speed (k/h)               | 25                                                                                | 15    | 25   |                                                                                   |                                                                                   | 15    |
| Sign Control                      | Stop                                                                              |       |      | Free                                                                              | Free                                                                              |       |
| Intersection Summary              |                                                                                   |       |      |                                                                                   |                                                                                   |       |
| Area Type:                        | Other                                                                             |       |      |                                                                                   |                                                                                   |       |
| Control Type:                     | Unsignalized                                                                      |       |      |                                                                                   |                                                                                   |       |
| Intersection Capacity Utilization | 66.6%                                                                             |       |      | ICU Level of Service C                                                            |                                                                                   |       |
| Analysis Period (min)             | 15                                                                                |       |      |                                                                                   |                                                                                   |       |

HCM 6th TWSC  
3: Spragues Rd & Wrigley Rd

2030 Total: AM Peak Hour

Intersection

Int Delay, s/veh 22.9

| Movement                 | EBL                                                                               | EBR  | NBL  | NBT                                                                               | SBT                                                                               | SBR  |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 139                                                                               | 159  | 384  | 144                                                                               | 67                                                                                | 30   |
| Future Vol, veh/h        | 139                                                                               | 159  | 384  | 144                                                                               | 67                                                                                | 30   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 100                                                                               | 100  | 100  | 100                                                                               | 100                                                                               | 100  |
| Heavy Vehicles, %        | 4                                                                                 | 9    | 5    | 1                                                                                 | 4                                                                                 | 17   |
| Mvmt Flow                | 139                                                                               | 159  | 384  | 144                                                                               | 67                                                                                | 30   |

| Major/Minor          | Minor2 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 994    | 82     | 97     |
| Stage 1              | 82     | -      | -      |
| Stage 2              | 912    | -      | -      |
| Critical Hdwy        | 6.44   | 6.29   | 4.15   |
| Critical Hdwy Stg 1  | 5.44   | -      | -      |
| Critical Hdwy Stg 2  | 5.44   | -      | -      |
| Follow-up Hdwy       | 3.536  | 3.381  | 2.245  |
| Pot Cap-1 Maneuver   | 269    | 959    | 1478   |
| Stage 1              | 936    | -      | -      |
| Stage 2              | 388    | -      | -      |
| Platoon blocked, %   |        |        |        |
| Mov Cap-1 Maneuver   | 193    | 959    | 1478   |
| Mov Cap-2 Maneuver   | 193    | -      | -      |
| Stage 1              | 672    | -      | -      |
| Stage 2              | 388    | -      | -      |

| Approach             | EB   | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 60.4 | 6  | 0  |
| HCM LOS              | F    |    |    |

| Minor Lane/Major Mvmt | NBL  | NBT | EBLn1 | SBT | SBR |
|-----------------------|------|-----|-------|-----|-----|
| Capacity (veh/h)      | 1478 | -   | 336   | -   | -   |
| HCM Lane V/C Ratio    | 0.26 | -   | 0.887 | -   | -   |
| HCM Control Delay (s) | 8.3  | 0   | 60.4  | -   | -   |
| HCM Lane LOS          | A    | A   | F     | -   | -   |
| HCM 95th %tile Q(veh) | 1    | -   | 8.5   | -   | -   |

Lanes, Volumes, Timings  
4: Reidsville Rd & Greenfield Rd

2030 Total: AM Peak Hour

|                                   |              |       |      |                        |        |       |
|-----------------------------------|--------------|-------|------|------------------------|--------|-------|
|                                   | →            | ↘     | ↙    | ←                      | ↖      | ↗     |
| Lane Group                        | EBT          | EBR   | WBL  | WBT                    | NBL    | NBR   |
| Lane Configurations               | ↰            |       |      | ↱                      | ↘↗     |       |
| Traffic Volume (vph)              | 50           | 17    | 3    | 42                     | 102    | 9     |
| Future Volume (vph)               | 50           | 17    | 3    | 42                     | 102    | 9     |
| Ideal Flow (vphpl)                | 1650         | 1650  | 1650 | 1650                   | 1765   | 1765  |
| Lane Util. Factor                 | 1.00         | 1.00  | 1.00 | 1.00                   | 1.00   | 1.00  |
| Frt                               | 0.966        |       |      |                        | 0.989  |       |
| Flt Protected                     |              |       |      | 0.997                  | 0.956  |       |
| Satd. Flow (prot)                 | 1442         | 0     | 0    | 1479                   | 1625   | 0     |
| Flt Permitted                     |              |       |      | 0.997                  | 0.956  |       |
| Satd. Flow (perm)                 | 1442         | 0     | 0    | 1479                   | 1625   | 0     |
| Link Speed (k/h)                  | 80           |       |      | 80                     | 80     |       |
| Link Distance (m)                 | 456.6        |       |      | 2951.9                 | 1632.0 |       |
| Travel Time (s)                   | 20.5         |       |      | 132.8                  | 73.4   |       |
| Peak Hour Factor                  | 1.00         | 1.00  | 1.00 | 1.00                   | 1.00   | 1.00  |
| Heavy Vehicles (%)                | 8%           | 18%   | 0%   | 12%                    | 0%     | 33%   |
| Adj. Flow (vph)                   | 50           | 17    | 3    | 42                     | 102    | 9     |
| Shared Lane Traffic (%)           |              |       |      |                        |        |       |
| Lane Group Flow (vph)             | 67           | 0     | 0    | 45                     | 111    | 0     |
| Enter Blocked Intersection        | No           | No    | No   | No                     | No     | No    |
| Lane Alignment                    | Left         | Right | Left | Left                   | Left   | Right |
| Median Width(m)                   | 0.0          |       |      | 0.0                    | 3.6    |       |
| Link Offset(m)                    | 0.0          |       |      | 0.0                    | 0.0    |       |
| Crosswalk Width(m)                | 4.8          |       |      | 4.8                    | 4.8    |       |
| Two way Left Turn Lane            |              |       |      |                        |        |       |
| Headway Factor                    | 1.20         | 1.20  | 1.20 | 1.20                   | 1.10   | 1.10  |
| Turning Speed (k/h)               |              | 15    | 25   |                        | 25     | 15    |
| Sign Control                      | Free         |       |      | Free                   | Stop   |       |
| Intersection Summary              |              |       |      |                        |        |       |
| Area Type:                        | Other        |       |      |                        |        |       |
| Control Type:                     | Unsignalized |       |      |                        |        |       |
| Intersection Capacity Utilization | 18.7%        |       |      | ICU Level of Service A |        |       |
| Analysis Period (min)             | 15           |       |      |                        |        |       |

HCM 6th TWSC  
4: Reidsville Rd & Greenfield Rd

2030 Total: AM Peak Hour

| Intersection             |                                                                                   |      |        |                                                                                   |                                                                                   |       |
|--------------------------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 4.9                                                                               |      |        |                                                                                   |                                                                                   |       |
| Movement                 | EBT                                                                               | EBR  | WBL    | WBT                                                                               | NBL                                                                               | NBR   |
| Lane Configurations      |  |      |        |  |  |       |
| Traffic Vol, veh/h       | 50                                                                                | 17   | 3      | 42                                                                                | 102                                                                               | 9     |
| Future Vol, veh/h        | 50                                                                                | 17   | 3      | 42                                                                                | 102                                                                               | 9     |
| 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         | 100                                                                               | 100  | 100    | 100                                                                               | 100                                                                               | 100   |
| Heavy Vehicles, %        | 8                                                                                 | 18   | 0      | 12                                                                                | 0                                                                                 | 33    |
| Mvmt Flow                | 50                                                                                | 17   | 3      | 42                                                                                | 102                                                                               | 9     |
|                          |                                                                                   |      |        |                                                                                   |                                                                                   |       |
| Major/Minor              | Major1                                                                            |      | Major2 |                                                                                   | Minor1                                                                            |       |
| Conflicting Flow All     | 0                                                                                 | 0    | 67     | 0                                                                                 | 107                                                                               | 59    |
| Stage 1                  | -                                                                                 | -    | -      | -                                                                                 | 59                                                                                | -     |
| Stage 2                  | -                                                                                 | -    | -      | -                                                                                 | 48                                                                                | -     |
| Critical Hdwy            | -                                                                                 | -    | 4.1    | -                                                                                 | 6.4                                                                               | 6.53  |
| Critical Hdwy Stg 1      | -                                                                                 | -    | -      | -                                                                                 | 5.4                                                                               | -     |
| Critical Hdwy Stg 2      | -                                                                                 | -    | -      | -                                                                                 | 5.4                                                                               | -     |
| Follow-up Hdwy           | -                                                                                 | -    | 2.2    | -                                                                                 | 3.5                                                                               | 3.597 |
| Pot Cap-1 Maneuver       | -                                                                                 | -    | 1547   | -                                                                                 | 895                                                                               | 926   |
| Stage 1                  | -                                                                                 | -    | -      | -                                                                                 | 969                                                                               | -     |
| Stage 2                  | -                                                                                 | -    | -      | -                                                                                 | 980                                                                               | -     |
| Platoon blocked, %       | -                                                                                 | -    |        | -                                                                                 |                                                                                   |       |
| Mov Cap-1 Maneuver       | -                                                                                 | -    | 1547   | -                                                                                 | 893                                                                               | 926   |
| Mov Cap-2 Maneuver       | -                                                                                 | -    | -      | -                                                                                 | 893                                                                               | -     |
| Stage 1                  | -                                                                                 | -    | -      | -                                                                                 | 969                                                                               | -     |
| Stage 2                  | -                                                                                 | -    | -      | -                                                                                 | 978                                                                               | -     |
|                          |                                                                                   |      |        |                                                                                   |                                                                                   |       |
|                          |                                                                                   |      |        |                                                                                   |                                                                                   |       |
| Approach                 | EB                                                                                |      | WB     |                                                                                   | NB                                                                                |       |
| HCM Control Delay, s     | 0                                                                                 |      | 0.5    |                                                                                   | 9.6                                                                               |       |
| HCM LOS                  |                                                                                   |      |        |                                                                                   | A                                                                                 |       |
|                          |                                                                                   |      |        |                                                                                   |                                                                                   |       |
|                          |                                                                                   |      |        |                                                                                   |                                                                                   |       |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT  | EBR    | WBL                                                                               | WBT                                                                               |       |
| Capacity (veh/h)         | 896                                                                               | -    | -      | 1547                                                                              | -                                                                                 |       |
| HCM Lane V/C Ratio       | 0.124                                                                             | -    | -      | 0.002                                                                             | -                                                                                 |       |
| HCM Control Delay (s)    | 9.6                                                                               | -    | -      | 7.3                                                                               | 0                                                                                 |       |
| HCM Lane LOS             | A                                                                                 | -    | -      | A                                                                                 | A                                                                                 |       |
| HCM 95th %tile Q(veh)    | 0.4                                                                               | -    | -      | 0                                                                                 | -                                                                                 |       |

Lanes, Volumes, Timings  
5: Dumfries Rd & Greenfield Rd

2030 Total: AM Peak Hour

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                        | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (vph)              | 15                                                                                | 42                                                                                | 0                                                                                 | 4                                                                                 | 25                                                                                | 6                                                                                 | 1                                                                                  | 399                                                                                 | 3                                                                                   | 3                                                                                   | 116                                                                                 | 17                                                                                  |
| Future Volume (vph)               | 15                                                                                | 42                                                                                | 0                                                                                 | 4                                                                                 | 25                                                                                | 6                                                                                 | 1                                                                                  | 399                                                                                 | 3                                                                                   | 3                                                                                   | 116                                                                                 | 17                                                                                  |
| Ideal Flow (vphpl)                | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                               | 1550                                                                                | 1550                                                                                | 1550                                                                                | 1550                                                                                | 1550                                                                                |
| 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                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.977                                                                             |                                                                                   |                                                                                    | 0.999                                                                               |                                                                                     |                                                                                     | 0.983                                                                               |                                                                                     |
| Flt Protected                     |                                                                                   | 0.987                                                                             |                                                                                   |                                                                                   | 0.994                                                                             |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Satd. Flow (prot)                 | 0                                                                                 | 1363                                                                              | 0                                                                                 | 0                                                                                 | 1505                                                                              | 0                                                                                 | 0                                                                                  | 1475                                                                                | 0                                                                                   | 0                                                                                   | 1366                                                                                | 0                                                                                   |
| Flt Permitted                     |                                                                                   | 0.987                                                                             |                                                                                   |                                                                                   | 0.994                                                                             |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Satd. Flow (perm)                 | 0                                                                                 | 1363                                                                              | 0                                                                                 | 0                                                                                 | 1505                                                                              | 0                                                                                 | 0                                                                                  | 1475                                                                                | 0                                                                                   | 0                                                                                   | 1366                                                                                | 0                                                                                   |
| Link Speed (k/h)                  |                                                                                   | 80                                                                                |                                                                                   |                                                                                   | 80                                                                                |                                                                                   |                                                                                    | 80                                                                                  |                                                                                     |                                                                                     | 80                                                                                  |                                                                                     |
| Link Distance (m)                 |                                                                                   | 2951.9                                                                            |                                                                                   |                                                                                   | 592.0                                                                             |                                                                                   |                                                                                    | 1737.5                                                                              |                                                                                     |                                                                                     | 801.6                                                                               |                                                                                     |
| Travel Time (s)                   |                                                                                   | 132.8                                                                             |                                                                                   |                                                                                   | 26.6                                                                              |                                                                                   |                                                                                    | 78.2                                                                                |                                                                                     |                                                                                     | 36.1                                                                                |                                                                                     |
| Peak Hour 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                                                                                |
| Heavy Vehicles (%)                | 27%                                                                               | 7%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                 | 5%                                                                                  | 0%                                                                                  | 33%                                                                                 | 9%                                                                                  | 24%                                                                                 |
| Adj. Flow (vph)                   | 15                                                                                | 42                                                                                | 0                                                                                 | 4                                                                                 | 25                                                                                | 6                                                                                 | 1                                                                                  | 399                                                                                 | 3                                                                                   | 3                                                                                   | 116                                                                                 | 17                                                                                  |
| Shared Lane Traffic (%)           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)             | 0                                                                                 | 57                                                                                | 0                                                                                 | 0                                                                                 | 35                                                                                | 0                                                                                 | 0                                                                                  | 403                                                                                 | 0                                                                                   | 0                                                                                   | 136                                                                                 | 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                    | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                               | 1.29                                                                                | 1.29                                                                                | 1.29                                                                                | 1.29                                                                                | 1.29                                                                                |
| Turning Speed (k/h)               | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                 |                                                                                     | 15                                                                                  | 25                                                                                  |                                                                                     | 15                                                                                  |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                    | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Area Type:                        | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Type:                     | Unsignalized                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization | 40.3%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| ICU Level of Service A            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

HCM 6th TWSC  
5: Dumfries Rd & Greenfield Rd

2030 Total: AM Peak Hour

| Intersection             |        |                                                                                   |        |            |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|--------|------------|-----------------------------------------------------------------------------------|-------|--------|-----------------------------------------------------------------------------------|------|-------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 2.1    |                                                                                   |        |            |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Movement                 | EBL    | EBT                                                                               | EBR    | WBL        | WBT                                                                               | WBR   | NBL    | NBT                                                                               | NBR  | SBL   | SBT                                                                                 | SBR  |
| Lane Configurations      |        |  |        |            |  |       |        |  |      |       |  |      |
| Traffic Vol, veh/h       | 15     | 42                                                                                | 0      | 4          | 25                                                                                | 6     | 1      | 399                                                                               | 3    | 3     | 116                                                                                 | 17   |
| Future Vol, veh/h        | 15     | 42                                                                                | 0      | 4          | 25                                                                                | 6     | 1      | 399                                                                               | 3    | 3     | 116                                                                                 | 17   |
| 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         | 100    | 100                                                                               | 100    | 100        | 100                                                                               | 100   | 100    | 100                                                                               | 100  | 100   | 100                                                                                 | 100  |
| Heavy Vehicles, %        | 27     | 7                                                                                 | 0      | 0          | 0                                                                                 | 0     | 0      | 5                                                                                 | 0    | 33    | 9                                                                                   | 24   |
| Mvmt Flow                | 15     | 42                                                                                | 0      | 4          | 25                                                                                | 6     | 1      | 399                                                                               | 3    | 3     | 116                                                                                 | 17   |
|                          |        |                                                                                   |        |            |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Major/Minor              | Minor2 |                                                                                   | Minor1 |            | Major1                                                                            |       | Major2 |                                                                                   |      |       |                                                                                     |      |
| Conflicting Flow All     | 549    | 535                                                                               | 125    | 555        | 542                                                                               | 401   | 133    | 0                                                                                 | 0    | 402   | 0                                                                                   | 0    |
| Stage 1                  | 131    | 131                                                                               | -      | 403        | 403                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 418    | 404                                                                               | -      | 152        | 139                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Critical Hdwy            | 7.37   | 6.57                                                                              | 6.2    | 7.1        | 6.5                                                                               | 6.2   | 4.1    | -                                                                                 | -    | 4.43  | -                                                                                   | -    |
| Critical Hdwy Stg 1      | 6.37   | 5.57                                                                              | -      | 6.1        | 5.5                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Critical Hdwy Stg 2      | 6.37   | 5.57                                                                              | -      | 6.1        | 5.5                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Follow-up Hdwy           | 3.743  | 4.063                                                                             | 3.3    | 3.5        | 4                                                                                 | 3.3   | 2.2    | -                                                                                 | -    | 2.497 | -                                                                                   | -    |
| Pot Cap-1 Maneuver       | 410    | 445                                                                               | 931    | 445        | 450                                                                               | 653   | 1464   | -                                                                                 | -    | 1007  | -                                                                                   | -    |
| Stage 1                  | 816    | 778                                                                               | -      | 628        | 603                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 566    | 591                                                                               | -      | 855        | 785                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Platoon blocked, %       |        |                                                                                   |        |            |                                                                                   |       |        | -                                                                                 | -    |       | -                                                                                   | -    |
| Mov Cap-1 Maneuver       | 388    | 443                                                                               | 931    | 412        | 448                                                                               | 653   | 1464   | -                                                                                 | -    | 1007  | -                                                                                   | -    |
| Mov Cap-2 Maneuver       | 388    | 443                                                                               | -      | 412        | 448                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 1                  | 815    | 776                                                                               | -      | 627        | 602                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 537    | 590                                                                               | -      | 806        | 783                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
|                          |        |                                                                                   |        |            |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
|                          |        |                                                                                   |        |            |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Approach                 | EB     |                                                                                   | WB     |            | NB                                                                                |       | SB     |                                                                                   |      |       |                                                                                     |      |
| HCM Control Delay, s     | 14.7   |                                                                                   | 13.3   |            | 0                                                                                 |       | 0.2    |                                                                                   |      |       |                                                                                     |      |
| HCM LOS                  | B      |                                                                                   | B      |            |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
|                          |        |                                                                                   |        |            |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Minor Lane/Major Mvmt    | NBL    | NBT                                                                               | NBR    | EBLn1WBLn1 | SBL                                                                               | SBT   | SBR    |                                                                                   |      |       |                                                                                     |      |
| Capacity (veh/h)         | 1464   | -                                                                                 | -      | 427        | 469                                                                               | 1007  | -      | -                                                                                 |      |       |                                                                                     |      |
| HCM Lane V/C Ratio       | 0.001  | -                                                                                 | -      | 0.133      | 0.075                                                                             | 0.003 | -      | -                                                                                 |      |       |                                                                                     |      |
| HCM Control Delay (s)    | 7.5    | 0                                                                                 | -      | 14.7       | 13.3                                                                              | 8.6   | 0      | -                                                                                 |      |       |                                                                                     |      |
| HCM Lane LOS             | A      | A                                                                                 | -      | B          | B                                                                                 | A     | A      | -                                                                                 |      |       |                                                                                     |      |
| HCM 95th %tile Q(veh)    | 0      | -                                                                                 | -      | 0.5        | 0.2                                                                               | 0     | -      | -                                                                                 |      |       |                                                                                     |      |

Lanes, Volumes, Timings  
6: Wrigley Rd & Site Access

2030 Total: AM Peak Hour

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group                        | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR                                                                               | SBL                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |  |  |  |  |                                                                                   |
| Traffic Volume (vph)              | 1                                                                                 | 296                                                                               | 67                                                                                | 6                                                                                 | 7                                                                                 | 0                                                                                 |
| Future Volume (vph)               | 1                                                                                 | 296                                                                               | 67                                                                                | 6                                                                                 | 7                                                                                 | 0                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Storage Length (m)                | 0.0                                                                               |                                                                                   |                                                                                   | 15.0                                                                              | 0.0                                                                               | 0.0                                                                               |
| Storage Lanes                     | 0                                                                                 |                                                                                   |                                                                                   | 1                                                                                 | 1                                                                                 | 0                                                                                 |
| Taper Length (m)                  | 7.5                                                                               |                                                                                   |                                                                                   |                                                                                   | 7.5                                                                               |                                                                                   |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Frt                               |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                   |                                                                                   |
| Flt Protected                     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |
| Satd. Flow (prot)                 | 0                                                                                 | 1857                                                                              | 1827                                                                              | 808                                                                               | 902                                                                               | 0                                                                                 |
| Flt Permitted                     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |
| Satd. Flow (perm)                 | 0                                                                                 | 1857                                                                              | 1827                                                                              | 808                                                                               | 902                                                                               | 0                                                                                 |
| Link Speed (k/h)                  |                                                                                   | 80                                                                                | 80                                                                                |                                                                                   | 50                                                                                |                                                                                   |
| Link Distance (m)                 |                                                                                   | 125.9                                                                             | 786.9                                                                             |                                                                                   | 284.5                                                                             |                                                                                   |
| Travel Time (s)                   |                                                                                   | 5.7                                                                               | 35.4                                                                              |                                                                                   | 20.5                                                                              |                                                                                   |
| Peak Hour Factor                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Heavy Vehicles (%)                | 100%                                                                              | 2%                                                                                | 4%                                                                                | 100%                                                                              | 100%                                                                              | 0%                                                                                |
| Adj. Flow (vph)                   | 1                                                                                 | 296                                                                               | 67                                                                                | 6                                                                                 | 7                                                                                 | 0                                                                                 |
| Shared Lane Traffic (%)           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)             | 0                                                                                 | 297                                                                               | 67                                                                                | 6                                                                                 | 7                                                                                 | 0                                                                                 |
| Enter Blocked Intersection        | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                |
| Lane Alignment                    | Left                                                                              | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Right                                                                             |
| Median Width(m)                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   | 3.6                                                                               |                                                                                   |
| Link Offset(m)                    |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   |
| Crosswalk Width(m)                |                                                                                   | 4.8                                                                               | 4.8                                                                               |                                                                                   | 4.8                                                                               |                                                                                   |
| Two way Left Turn Lane            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Headway Factor                    | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Turning Speed (k/h)               | 25                                                                                |                                                                                   |                                                                                   | 15                                                                                | 25                                                                                | 15                                                                                |
| Sign Control                      |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   | Stop                                                                              |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Area Type:                        | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Control Type:                     | Unsignalized                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization | 26.4%                                                                             |                                                                                   |                                                                                   | ICU Level of Service A                                                            |                                                                                   |                                                                                   |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

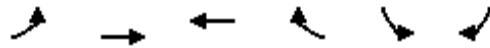
HCM 6th TWSC  
6: Wrigley Rd & Site Access

2030 Total: AM Peak Hour

| Intersection             |        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|--------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 0.2    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Movement                 | EBL    | EBT                                                                               | WBT                                                                               | WBR                                                                               | SBL                                                                               | SBR                                                                               |
| Lane Configurations      |        |  |  |  |  |  |
| Traffic Vol, veh/h       | 1      | 296                                                                               | 67                                                                                | 6                                                                                 | 7                                                                                 | 0                                                                                 |
| Future Vol, veh/h        | 1      | 296                                                                               | 67                                                                                | 6                                                                                 | 7                                                                                 | 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           | -      | -                                                                                 | -                                                                                 | 15                                                                                | 0                                                                                 | -                                                                                 |
| Veh in Median Storage, # | -      | 0                                                                                 | 0                                                                                 | -                                                                                 | 0                                                                                 | -                                                                                 |
| Grade, %                 | -      | 0                                                                                 | 0                                                                                 | -                                                                                 | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 100    | 100                                                                               | 100                                                                               | 100                                                                               | 100                                                                               | 100                                                                               |
| Heavy Vehicles, %        | 100    | 2                                                                                 | 4                                                                                 | 100                                                                               | 100                                                                               | 0                                                                                 |
| Mvmt Flow                | 1      | 296                                                                               | 67                                                                                | 6                                                                                 | 7                                                                                 | 0                                                                                 |
|                          |        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Major/Minor              | Major1 | Major2                                                                            |                                                                                   | Minor2                                                                            |                                                                                   |                                                                                   |
| Conflicting Flow All     | 73     | 0                                                                                 | -                                                                                 | 0                                                                                 | 365                                                                               | 67                                                                                |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -                                                                                 | 67                                                                                | -                                                                                 |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -                                                                                 | 298                                                                               | -                                                                                 |
| Critical Hdwy            | 5.1    | -                                                                                 | -                                                                                 | -                                                                                 | 7.4                                                                               | 6.2                                                                               |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -                                                                                 | -                                                                                 | 6.4                                                                               | -                                                                                 |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -                                                                                 | -                                                                                 | 6.4                                                                               | -                                                                                 |
| Follow-up Hdwy           | 3.1    | -                                                                                 | -                                                                                 | -                                                                                 | 4.4                                                                               | 3.3                                                                               |
| Pot Cap-1 Maneuver       | 1080   | -                                                                                 | -                                                                                 | -                                                                                 | 479                                                                               | 1002                                                                              |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -                                                                                 | 756                                                                               | -                                                                                 |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -                                                                                 | 575                                                                               | -                                                                                 |
| Platoon blocked, %       |        | -                                                                                 | -                                                                                 | -                                                                                 |                                                                                   |                                                                                   |
| Mov Cap-1 Maneuver       | 1080   | -                                                                                 | -                                                                                 | -                                                                                 | 479                                                                               | 1002                                                                              |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -                                                                                 | -                                                                                 | 479                                                                               | -                                                                                 |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -                                                                                 | 755                                                                               | -                                                                                 |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -                                                                                 | 575                                                                               | -                                                                                 |
|                          |        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|                          |        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach                 | EB     | WB                                                                                |                                                                                   | SB                                                                                |                                                                                   |                                                                                   |
| HCM Control Delay, s     | 0      | 0                                                                                 |                                                                                   | 12.6                                                                              |                                                                                   |                                                                                   |
| HCM LOS                  | B      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|                          |        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|                          |        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Minor Lane/Major Mvmt    | EBL    | EBT                                                                               | WBT                                                                               | WBR                                                                               | SBLn1                                                                             |                                                                                   |
| Capacity (veh/h)         | 1080   | -                                                                                 | -                                                                                 | -                                                                                 | 479                                                                               |                                                                                   |
| HCM Lane V/C Ratio       | 0.001  | -                                                                                 | -                                                                                 | -                                                                                 | 0.015                                                                             |                                                                                   |
| HCM Control Delay (s)    | 8.3    | 0                                                                                 | -                                                                                 | -                                                                                 | 12.6                                                                              |                                                                                   |
| HCM Lane LOS             | A      | A                                                                                 | -                                                                                 | -                                                                                 | B                                                                                 |                                                                                   |
| HCM 95th %tile Q(veh)    | 0      | -                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 |                                                                                   |

Lanes, Volumes, Timings  
1: Wrigley Rd & Reidsville Rd

2030 Total: PM Peak Hour



| Lane Group                        | EBL          | EBT                                                                               | WBT                                                                               | WBR                    | SBL                                                                               | SBR   |
|-----------------------------------|--------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------------------|-------|
| Lane Configurations               |              |  |  |                        |  |       |
| Traffic Volume (vph)              | 25           | 137                                                                               | 185                                                                               | 9                      | 23                                                                                | 54    |
| Future Volume (vph)               | 25           | 137                                                                               | 185                                                                               | 9                      | 23                                                                                | 54    |
| Ideal Flow (vphpl)                | 1650         | 1650                                                                              | 1650                                                                              | 1650                   | 1765                                                                              | 1765  |
| Lane Util. Factor                 | 1.00         | 1.00                                                                              | 1.00                                                                              | 1.00                   | 1.00                                                                              | 1.00  |
| Frt                               |              |                                                                                   | 0.994                                                                             |                        | 0.905                                                                             |       |
| Flt Protected                     |              | 0.992                                                                             |                                                                                   |                        | 0.985                                                                             |       |
| Satd. Flow (prot)                 | 0            | 1549                                                                              | 1572                                                                              | 0                      | 1513                                                                              | 0     |
| Flt Permitted                     |              | 0.992                                                                             |                                                                                   |                        | 0.985                                                                             |       |
| Satd. Flow (perm)                 | 0            | 1549                                                                              | 1572                                                                              | 0                      | 1513                                                                              | 0     |
| Link Speed (k/h)                  |              | 80                                                                                | 80                                                                                |                        | 80                                                                                |       |
| Link Distance (m)                 |              | 786.9                                                                             | 2934.3                                                                            |                        | 1632.0                                                                            |       |
| Travel Time (s)                   |              | 35.4                                                                              | 132.0                                                                             |                        | 73.4                                                                              |       |
| Peak Hour Factor                  | 1.00         | 1.00                                                                              | 1.00                                                                              | 1.00                   | 1.00                                                                              | 1.00  |
| Heavy Vehicles (%)                | 4%           | 6%                                                                                | 4%                                                                                | 11%                    | 4%                                                                                | 4%    |
| Adj. Flow (vph)                   | 25           | 137                                                                               | 185                                                                               | 9                      | 23                                                                                | 54    |
| Shared Lane Traffic (%)           |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Lane Group Flow (vph)             | 0            | 162                                                                               | 194                                                                               | 0                      | 77                                                                                | 0     |
| Enter Blocked Intersection        | No           | No                                                                                | No                                                                                | No                     | No                                                                                | No    |
| Lane Alignment                    | Left         | Left                                                                              | Left                                                                              | Right                  | Left                                                                              | Right |
| Median Width(m)                   |              | 0.0                                                                               | 0.0                                                                               |                        | 3.6                                                                               |       |
| Link Offset(m)                    |              | 0.0                                                                               | 0.0                                                                               |                        | 0.0                                                                               |       |
| Crosswalk Width(m)                |              | 4.8                                                                               | 4.8                                                                               |                        | 4.8                                                                               |       |
| Two way Left Turn Lane            |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Headway Factor                    | 1.20         | 1.20                                                                              | 1.20                                                                              | 1.20                   | 1.10                                                                              | 1.10  |
| Turning Speed (k/h)               | 25           |                                                                                   |                                                                                   | 15                     | 25                                                                                | 15    |
| Sign Control                      |              | Free                                                                              | Free                                                                              |                        | Stop                                                                              |       |
| Intersection Summary              |              |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Area Type:                        | Other        |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Control Type:                     | Unsignalized |                                                                                   |                                                                                   |                        |                                                                                   |       |
| Intersection Capacity Utilization | 36.7%        |                                                                                   |                                                                                   | ICU Level of Service A |                                                                                   |       |
| Analysis Period (min)             | 15           |                                                                                   |                                                                                   |                        |                                                                                   |       |

HCM 6th TWSC  
1: Wrigley Rd & Reidsville Rd

2030 Total: PM Peak Hour

Intersection

Int Delay, s/veh 2.3

| Movement                 | EBL  | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR  |
|--------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |      |  |  |      |  |      |
| Traffic Vol, veh/h       | 25   | 137                                                                               | 185                                                                               | 9    | 23                                                                                | 54   |
| Future Vol, veh/h        | 25   | 137                                                                               | 185                                                                               | 9    | 23                                                                                | 54   |
| 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         | 100  | 100                                                                               | 100                                                                               | 100  | 100                                                                               | 100  |
| Heavy Vehicles, %        | 4    | 6                                                                                 | 4                                                                                 | 11   | 4                                                                                 | 4    |
| Mvmt Flow                | 25   | 137                                                                               | 185                                                                               | 9    | 23                                                                                | 54   |

| Major/Minor          | Major1 | Major2 | Minor2        |
|----------------------|--------|--------|---------------|
| Conflicting Flow All | 194    | 0      | 0 377 190     |
| Stage 1              | -      | -      | - 190 -       |
| Stage 2              | -      | -      | - 187 -       |
| Critical Hdwy        | 4.14   | -      | - 6.44 6.24   |
| Critical Hdwy Stg 1  | -      | -      | - 5.44 -      |
| Critical Hdwy Stg 2  | -      | -      | - 5.44 -      |
| Follow-up Hdwy       | 2.236  | -      | - 3.536 3.336 |
| Pot Cap-1 Maneuver   | 1367   | -      | - 621 847     |
| Stage 1              | -      | -      | - 838 -       |
| Stage 2              | -      | -      | - 840 -       |
| Platoon blocked, %   | -      | -      | -             |
| Mov Cap-1 Maneuver   | 1367   | -      | - 609 847     |
| Mov Cap-2 Maneuver   | -      | -      | - 609 -       |
| Stage 1              | -      | -      | - 821 -       |
| Stage 2              | -      | -      | - 840 -       |

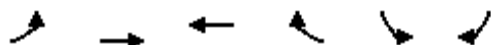
| Approach             | EB  | WB | SB   |
|----------------------|-----|----|------|
| HCM Control Delay, s | 1.2 | 0  | 10.3 |
| HCM LOS              |     |    | B    |

| Minor Lane/Major Mvmt | EBL   | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h)      | 1367  | -   | -   | -   | 758   |
| HCM Lane V/C Ratio    | 0.018 | -   | -   | -   | 0.102 |
| HCM Control Delay (s) | 7.7   | 0   | -   | -   | 10.3  |
| HCM Lane LOS          | A     | A   | -   | -   | B     |
| HCM 95th %tile Q(veh) | 0.1   | -   | -   | -   | 0.3   |

# Lanes, Volumes, Timings

## 2: Wrigley Rd & Dumfries Rd

2030 Total: PM Peak Hour



| Lane Group                                                     | EBL  | EBT                                                                               | WBT                                                                               | WBR   | SBL                                                                               | SBR   |
|----------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------|-------|
| Lane Configurations                                            |      |  |  |       |  |       |
| Traffic Volume (vph)                                           | 15   | 124                                                                               | 138                                                                               | 206   | 378                                                                               | 55    |
| Future Volume (vph)                                            | 15   | 124                                                                               | 138                                                                               | 206   | 378                                                                               | 55    |
| Ideal Flow (vphpl)                                             | 1650 | 1650                                                                              | 1650                                                                              | 1650  | 1765                                                                              | 1765  |
| Lane Util. Factor                                              | 1.00 | 1.00                                                                              | 1.00                                                                              | 1.00  | 1.00                                                                              | 1.00  |
| Frt                                                            |      |                                                                                   | 0.919                                                                             |       | 0.983                                                                             |       |
| Flt Protected                                                  |      | 0.995                                                                             |                                                                                   |       | 0.958                                                                             |       |
| Satd. Flow (prot)                                              | 0    | 1534                                                                              | 1466                                                                              | 0     | 1639                                                                              | 0     |
| Flt Permitted                                                  |      | 0.995                                                                             |                                                                                   |       | 0.958                                                                             |       |
| Satd. Flow (perm)                                              | 0    | 1534                                                                              | 1466                                                                              | 0     | 1639                                                                              | 0     |
| Link Speed (k/h)                                               |      | 80                                                                                | 80                                                                                |       | 80                                                                                |       |
| Link Distance (m)                                              |      | 2934.3                                                                            | 673.3                                                                             |       | 1737.5                                                                            |       |
| Travel Time (s)                                                |      | 132.0                                                                             | 30.3                                                                              |       | 78.2                                                                              |       |
| Peak Hour Factor                                               | 1.00 | 1.00                                                                              | 1.00                                                                              | 1.00  | 1.00                                                                              | 1.00  |
| Heavy Vehicles (%)                                             | 7%   | 7%                                                                                | 4%                                                                                | 3%    | 1%                                                                                | 4%    |
| Adj. Flow (vph)                                                | 15   | 124                                                                               | 138                                                                               | 206   | 378                                                                               | 55    |
| Shared Lane Traffic (%)                                        |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Lane Group Flow (vph)                                          | 0    | 139                                                                               | 344                                                                               | 0     | 433                                                                               | 0     |
| Enter Blocked Intersection                                     | No   | No                                                                                | No                                                                                | No    | No                                                                                | No    |
| Lane Alignment                                                 | Left | Left                                                                              | Left                                                                              | Right | Left                                                                              | Right |
| Median Width(m)                                                |      | 0.0                                                                               | 0.0                                                                               |       | 3.6                                                                               |       |
| Link Offset(m)                                                 |      | 0.0                                                                               | 0.0                                                                               |       | 0.0                                                                               |       |
| Crosswalk Width(m)                                             |      | 4.8                                                                               | 4.8                                                                               |       | 4.8                                                                               |       |
| Two way Left Turn Lane                                         |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Headway Factor                                                 | 1.20 | 1.20                                                                              | 1.20                                                                              | 1.20  | 1.10                                                                              | 1.10  |
| Turning Speed (k/h)                                            | 25   |                                                                                   |                                                                                   | 15    | 25                                                                                | 15    |
| Sign Control                                                   |      | Free                                                                              | Free                                                                              |       | Stop                                                                              |       |
| Intersection Summary                                           |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Area Type: Other                                               |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Control Type: Unsignalized                                     |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Intersection Capacity Utilization 55.7% ICU Level of Service B |      |                                                                                   |                                                                                   |       |                                                                                   |       |
| Analysis Period (min) 15                                       |      |                                                                                   |                                                                                   |       |                                                                                   |       |

HCM 6th TWSC  
2: Wrigley Rd & Dumfries Rd

2030 Total: PM Peak Hour

| Intersection             |        |                                                                                   |                                                                                   |        |                                                                                   |       |
|--------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 11     |                                                                                   |                                                                                   |        |                                                                                   |       |
| Movement                 | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBL                                                                               | SBR   |
| Lane Configurations      |        |  |  |        |  |       |
| Traffic Vol, veh/h       | 15     | 124                                                                               | 138                                                                               | 206    | 378                                                                               | 55    |
| Future Vol, veh/h        | 15     | 124                                                                               | 138                                                                               | 206    | 378                                                                               | 55    |
| 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         | 100    | 100                                                                               | 100                                                                               | 100    | 100                                                                               | 100   |
| Heavy Vehicles, %        | 7      | 7                                                                                 | 4                                                                                 | 3      | 1                                                                                 | 4     |
| Mvmt Flow                | 15     | 124                                                                               | 138                                                                               | 206    | 378                                                                               | 55    |
| Major/Minor              | Major1 | Major2                                                                            |                                                                                   | Minor2 |                                                                                   |       |
| Conflicting Flow All     | 344    | 0                                                                                 | -                                                                                 | 0      | 395                                                                               | 241   |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 241                                                                               | -     |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 154                                                                               | -     |
| Critical Hdwy            | 4.17   | -                                                                                 | -                                                                                 | -      | 6.41                                                                              | 6.24  |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -                                                                                 | -      | 5.41                                                                              | -     |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -                                                                                 | -      | 5.41                                                                              | -     |
| Follow-up Hdwy           | 2.263  | -                                                                                 | -                                                                                 | -      | 3.509                                                                             | 3.336 |
| Pot Cap-1 Maneuver       | 1188   | -                                                                                 | -                                                                                 | -      | 612                                                                               | 793   |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 801                                                                               | -     |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 877                                                                               | -     |
| Platoon blocked, %       |        | -                                                                                 | -                                                                                 | -      |                                                                                   |       |
| Mov Cap-1 Maneuver       | 1188   | -                                                                                 | -                                                                                 | -      | 603                                                                               | 793   |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -                                                                                 | -      | 603                                                                               | -     |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 790                                                                               | -     |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 877                                                                               | -     |
| Approach                 | EB     | WB                                                                                |                                                                                   | SB     |                                                                                   |       |
| HCM Control Delay, s     | 0.9    | 0                                                                                 |                                                                                   | 23     |                                                                                   |       |
| HCM LOS                  |        |                                                                                   |                                                                                   | C      |                                                                                   |       |
| Minor Lane/Major Mvmt    | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBLn1                                                                             |       |
| Capacity (veh/h)         | 1188   | -                                                                                 | -                                                                                 | -      | 622                                                                               |       |
| HCM Lane V/C Ratio       | 0.013  | -                                                                                 | -                                                                                 | -      | 0.696                                                                             |       |
| HCM Control Delay (s)    | 8.1    | 0                                                                                 | -                                                                                 | -      | 23                                                                                |       |
| HCM Lane LOS             | A      | A                                                                                 | -                                                                                 | -      | C                                                                                 |       |
| HCM 95th %tile Q(veh)    | 0      | -                                                                                 | -                                                                                 | -      | 5.6                                                                               |       |

Lanes, Volumes, Timings  
3: Spragues Rd & Wrigley Rd

2030 Total: PM Peak Hour

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group                        | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Traffic Volume (vph)              | 68                                                                                | 434                                                                               | 251                                                                               | 99                                                                                | 138                                                                               | 93                                                                                |
| Future Volume (vph)               | 68                                                                                | 434                                                                               | 251                                                                               | 99                                                                                | 138                                                                               | 93                                                                                |
| Ideal Flow (vphpl)                | 1650                                                                              | 1650                                                                              | 1650                                                                              | 1650                                                                              | 1765                                                                              | 1765                                                                              |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Frt                               | 0.883                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.946                                                                             |                                                                                   |
| Flt Protected                     | 0.993                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.965                                                                             |                                                                                   |
| Satd. Flow (prot)                 | 1415                                                                              | 0                                                                                 | 0                                                                                 | 1539                                                                              | 1656                                                                              | 0                                                                                 |
| Flt Permitted                     | 0.993                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.965                                                                             |                                                                                   |
| Satd. Flow (perm)                 | 1415                                                                              | 0                                                                                 | 0                                                                                 | 1539                                                                              | 1656                                                                              | 0                                                                                 |
| Link Speed (k/h)                  | 80                                                                                |                                                                                   |                                                                                   |                                                                                   | 80                                                                                | 80                                                                                |
| Link Distance (m)                 | 673.3                                                                             |                                                                                   |                                                                                   |                                                                                   | 285.9                                                                             | 309.3                                                                             |
| Travel Time (s)                   | 30.3                                                                              |                                                                                   |                                                                                   |                                                                                   | 12.9                                                                              | 13.9                                                                              |
| Peak Hour Factor                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Heavy Vehicles (%)                | 4%                                                                                | 2%                                                                                | 4%                                                                                | 2%                                                                                | 0%                                                                                | 2%                                                                                |
| Adj. Flow (vph)                   | 68                                                                                | 434                                                                               | 251                                                                               | 99                                                                                | 138                                                                               | 93                                                                                |
| Shared Lane Traffic (%)           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)             | 502                                                                               | 0                                                                                 | 0                                                                                 | 350                                                                               | 231                                                                               | 0                                                                                 |
| Enter Blocked Intersection        | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                |
| Lane Alignment                    | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Left                                                                              | Right                                                                             |
| Median Width(m)                   | 3.6                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |
| Link Offset(m)                    | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |
| Crosswalk Width(m)                | 4.8                                                                               |                                                                                   |                                                                                   |                                                                                   | 4.8                                                                               | 4.8                                                                               |
| Two way Left Turn Lane            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Headway Factor                    | 1.20                                                                              | 1.20                                                                              | 1.20                                                                              | 1.20                                                                              | 1.10                                                                              | 1.10                                                                              |
| Turning Speed (k/h)               | 25                                                                                | 15                                                                                | 25                                                                                |                                                                                   |                                                                                   | 15                                                                                |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Area Type:                        | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Control Type:                     | Unsignalized                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization | 81.1%                                                                             |                                                                                   |                                                                                   | ICU Level of Service D                                                            |                                                                                   |                                                                                   |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

HCM 6th TWSC  
3: Spragues Rd & Wrigley Rd

2030 Total: PM Peak Hour

Intersection

Int Delay, s/veh 13.2

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations 

Traffic Vol, veh/h 68 434 251 99 138 93

Future Vol, veh/h 68 434 251 99 138 93

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 100 100 100 100 100 100

Heavy Vehicles, % 4 2 4 2 0 2

Mvmt Flow 68 434 251 99 138 93

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 786 185 231 0 - 0

Stage 1 185 - - - - -

Stage 2 601 - - - - -

Critical Hdwy 6.44 6.22 4.14 - - -

Critical Hdwy Stg 1 5.44 - - - - -

Critical Hdwy Stg 2 5.44 - - - - -

Follow-up Hdwy 3.536 3.318 2.236 - - -

Pot Cap-1 Maneuver 358 857 1325 - - -

Stage 1 842 - - - - -

Stage 2 544 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 286 857 1325 - - -

Mov Cap-2 Maneuver 286 - - - - -

Stage 1 674 - - - - -

Stage 2 544 - - - - -

Approach EB NB SB

HCM Control Delay, s 24.2 6 0

HCM LOS C

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 1325 - 675 - -

HCM Lane V/C Ratio 0.189 - 0.744 - -

HCM Control Delay (s) 8.4 0 24.2 - -

HCM Lane LOS A A C - -

HCM 95th %tile Q(veh) 0.7 - 6.7 - -

Lanes, Volumes, Timings  
4: Reidsville Rd & Greenfield Rd

2030 Total: PM Peak Hour

|                                   |              |       |      |                        |        |       |
|-----------------------------------|--------------|-------|------|------------------------|--------|-------|
|                                   | →            | ↘     | ↙    | ←                      | ↖      | ↗     |
| Lane Group                        | EBT          | EBR   | WBL  | WBT                    | NBL    | NBR   |
| Lane Configurations               | ↰            |       |      | ↱                      | ↰      |       |
| Traffic Volume (vph)              | 46           | 90    | 9    | 47                     | 38     | 0     |
| Future Volume (vph)               | 46           | 90    | 9    | 47                     | 38     | 0     |
| Ideal Flow (vphpl)                | 1650         | 1650  | 1650 | 1650                   | 1765   | 1765  |
| Lane Util. Factor                 | 1.00         | 1.00  | 1.00 | 1.00                   | 1.00   | 1.00  |
| Frt                               | 0.911        |       |      |                        |        |       |
| Flt Protected                     |              |       |      | 0.992                  | 0.950  |       |
| Satd. Flow (prot)                 | 1483         | 0     | 0    | 1610                   | 1677   | 0     |
| Flt Permitted                     |              |       |      | 0.992                  | 0.950  |       |
| Satd. Flow (perm)                 | 1483         | 0     | 0    | 1610                   | 1677   | 0     |
| Link Speed (k/h)                  | 80           |       |      | 80                     | 80     |       |
| Link Distance (m)                 | 456.6        |       |      | 2951.9                 | 1632.0 |       |
| Travel Time (s)                   | 20.5         |       |      | 132.8                  | 73.4   |       |
| Peak Hour Factor                  | 1.00         | 1.00  | 1.00 | 1.00                   | 1.00   | 1.00  |
| Heavy Vehicles (%)                | 2%           | 1%    | 0%   | 2%                     | 0%     | 0%    |
| Adj. Flow (vph)                   | 46           | 90    | 9    | 47                     | 38     | 0     |
| Shared Lane Traffic (%)           |              |       |      |                        |        |       |
| Lane Group Flow (vph)             | 136          | 0     | 0    | 56                     | 38     | 0     |
| Enter Blocked Intersection        | No           | No    | No   | No                     | No     | No    |
| Lane Alignment                    | Left         | Right | Left | Left                   | Left   | Right |
| Median Width(m)                   | 0.0          |       |      | 0.0                    | 3.6    |       |
| Link Offset(m)                    | 0.0          |       |      | 0.0                    | 0.0    |       |
| Crosswalk Width(m)                | 4.8          |       |      | 4.8                    | 4.8    |       |
| Two way Left Turn Lane            |              |       |      |                        |        |       |
| Headway Factor                    | 1.20         | 1.20  | 1.20 | 1.20                   | 1.10   | 1.10  |
| Turning Speed (k/h)               |              | 15    | 25   |                        | 25     | 15    |
| Sign Control                      | Free         |       |      | Free                   | Stop   |       |
| Intersection Summary              |              |       |      |                        |        |       |
| Area Type:                        | Other        |       |      |                        |        |       |
| Control Type:                     | Unsignalized |       |      |                        |        |       |
| Intersection Capacity Utilization | 21.7%        |       |      | ICU Level of Service A |        |       |
| Analysis Period (min)             | 15           |       |      |                        |        |       |

HCM 6th TWSC  
4: Reidsville Rd & Greenfield Rd

2030 Total: PM Peak Hour

| Intersection             |                                                                                   |      |        |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 1.9                                                                               |      |        |                                                                                   |                                                                                   |      |
| Movement                 | EBT                                                                               | EBR  | WBL    | WBT                                                                               | NBL                                                                               | NBR  |
| Lane Configurations      |  |      |        |  |  |      |
| Traffic Vol, veh/h       | 46                                                                                | 90   | 9      | 47                                                                                | 38                                                                                | 0    |
| Future Vol, veh/h        | 46                                                                                | 90   | 9      | 47                                                                                | 38                                                                                | 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         | 100                                                                               | 100  | 100    | 100                                                                               | 100                                                                               | 100  |
| Heavy Vehicles, %        | 2                                                                                 | 1    | 0      | 2                                                                                 | 0                                                                                 | 0    |
| Mvmt Flow                | 46                                                                                | 90   | 9      | 47                                                                                | 38                                                                                | 0    |
|                          |                                                                                   |      |        |                                                                                   |                                                                                   |      |
| Major/Minor              | Major1                                                                            |      | Major2 |                                                                                   | Minor1                                                                            |      |
| Conflicting Flow All     | 0                                                                                 | 0    | 136    | 0                                                                                 | 156                                                                               | 91   |
| Stage 1                  | -                                                                                 | -    | -      | -                                                                                 | 91                                                                                | -    |
| Stage 2                  | -                                                                                 | -    | -      | -                                                                                 | 65                                                                                | -    |
| Critical Hdwy            | -                                                                                 | -    | 4.1    | -                                                                                 | 6.4                                                                               | 6.2  |
| Critical Hdwy Stg 1      | -                                                                                 | -    | -      | -                                                                                 | 5.4                                                                               | -    |
| Critical Hdwy Stg 2      | -                                                                                 | -    | -      | -                                                                                 | 5.4                                                                               | -    |
| Follow-up Hdwy           | -                                                                                 | -    | 2.2    | -                                                                                 | 3.5                                                                               | 3.3  |
| Pot Cap-1 Maneuver       | -                                                                                 | -    | 1461   | -                                                                                 | 840                                                                               | 972  |
| Stage 1                  | -                                                                                 | -    | -      | -                                                                                 | 938                                                                               | -    |
| Stage 2                  | -                                                                                 | -    | -      | -                                                                                 | 963                                                                               | -    |
| Platoon blocked, %       | -                                                                                 | -    |        | -                                                                                 |                                                                                   |      |
| Mov Cap-1 Maneuver       | -                                                                                 | -    | 1461   | -                                                                                 | 835                                                                               | 972  |
| Mov Cap-2 Maneuver       | -                                                                                 | -    | -      | -                                                                                 | 835                                                                               | -    |
| Stage 1                  | -                                                                                 | -    | -      | -                                                                                 | 938                                                                               | -    |
| Stage 2                  | -                                                                                 | -    | -      | -                                                                                 | 957                                                                               | -    |
|                          |                                                                                   |      |        |                                                                                   |                                                                                   |      |
|                          |                                                                                   |      |        |                                                                                   |                                                                                   |      |
| Approach                 | EB                                                                                |      | WB     |                                                                                   | NB                                                                                |      |
| HCM Control Delay, s     | 0                                                                                 |      | 1.2    |                                                                                   | 9.5                                                                               |      |
| HCM LOS                  |                                                                                   |      |        |                                                                                   | A                                                                                 |      |
|                          |                                                                                   |      |        |                                                                                   |                                                                                   |      |
|                          |                                                                                   |      |        |                                                                                   |                                                                                   |      |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT  | EBR    | WBL                                                                               | WBT                                                                               |      |
| Capacity (veh/h)         | 835                                                                               | -    | -      | 1461                                                                              | -                                                                                 |      |
| HCM Lane V/C Ratio       | 0.046                                                                             | -    | -      | 0.006                                                                             | -                                                                                 |      |
| HCM Control Delay (s)    | 9.5                                                                               | -    | -      | 7.5                                                                               | 0                                                                                 |      |
| HCM Lane LOS             | A                                                                                 | -    | -      | A                                                                                 | A                                                                                 |      |
| HCM 95th %tile Q(veh)    | 0.1                                                                               | -    | -      | 0                                                                                 | -                                                                                 |      |

Lanes, Volumes, Timings  
5: Dumfries Rd & Greenfield Rd

2030 Total: PM Peak Hour

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                        | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (vph)              | 10                                                                                | 29                                                                                | 8                                                                                 | 9                                                                                 | 24                                                                                | 3                                                                                 | 2                                                                                  | 213                                                                                 | 5                                                                                   | 6                                                                                   | 417                                                                                 | 23                                                                                  |
| Future Volume (vph)               | 10                                                                                | 29                                                                                | 8                                                                                 | 9                                                                                 | 24                                                                                | 3                                                                                 | 2                                                                                  | 213                                                                                 | 5                                                                                   | 6                                                                                   | 417                                                                                 | 23                                                                                  |
| Ideal Flow (vphpl)                | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                              | 1550                                                                               | 1550                                                                                | 1550                                                                                | 1550                                                                                | 1550                                                                                | 1550                                                                                |
| 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                               |                                                                                   | 0.977                                                                             |                                                                                   |                                                                                   | 0.989                                                                             |                                                                                   |                                                                                    | 0.997                                                                               |                                                                                     |                                                                                     | 0.993                                                                               |                                                                                     |
| Flt Protected                     |                                                                                   | 0.989                                                                             |                                                                                   |                                                                                   | 0.988                                                                             |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Satd. Flow (prot)                 | 0                                                                                 | 1352                                                                              | 0                                                                                 | 0                                                                                 | 1475                                                                              | 0                                                                                 | 0                                                                                  | 1488                                                                                | 0                                                                                   | 0                                                                                   | 1534                                                                                | 0                                                                                   |
| Flt Permitted                     |                                                                                   | 0.989                                                                             |                                                                                   |                                                                                   | 0.988                                                                             |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Satd. Flow (perm)                 | 0                                                                                 | 1352                                                                              | 0                                                                                 | 0                                                                                 | 1475                                                                              | 0                                                                                 | 0                                                                                  | 1488                                                                                | 0                                                                                   | 0                                                                                   | 1534                                                                                | 0                                                                                   |
| Link Speed (k/h)                  |                                                                                   | 80                                                                                |                                                                                   |                                                                                   | 80                                                                                |                                                                                   |                                                                                    | 80                                                                                  |                                                                                     |                                                                                     | 80                                                                                  |                                                                                     |
| Link Distance (m)                 |                                                                                   | 2951.9                                                                            |                                                                                   |                                                                                   | 592.0                                                                             |                                                                                   |                                                                                    | 1737.5                                                                              |                                                                                     |                                                                                     | 801.6                                                                               |                                                                                     |
| Travel Time (s)                   |                                                                                   | 132.8                                                                             |                                                                                   |                                                                                   | 26.6                                                                              |                                                                                   |                                                                                    | 78.2                                                                                |                                                                                     |                                                                                     | 36.1                                                                                |                                                                                     |
| Peak Hour 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                                                                                |
| Heavy Vehicles (%)                | 20%                                                                               | 7%                                                                                | 13%                                                                               | 0%                                                                                | 4%                                                                                | 0%                                                                                | 0%                                                                                 | 4%                                                                                  | 0%                                                                                  | 17%                                                                                 | 0%                                                                                  | 0%                                                                                  |
| Adj. Flow (vph)                   | 10                                                                                | 29                                                                                | 8                                                                                 | 9                                                                                 | 24                                                                                | 3                                                                                 | 2                                                                                  | 213                                                                                 | 5                                                                                   | 6                                                                                   | 417                                                                                 | 23                                                                                  |
| Shared Lane Traffic (%)           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)             | 0                                                                                 | 47                                                                                | 0                                                                                 | 0                                                                                 | 36                                                                                | 0                                                                                 | 0                                                                                  | 220                                                                                 | 0                                                                                   | 0                                                                                   | 446                                                                                 | 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                    | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                              | 1.29                                                                               | 1.29                                                                                | 1.29                                                                                | 1.29                                                                                | 1.29                                                                                | 1.29                                                                                |
| Turning Speed (k/h)               | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                 |                                                                                     | 15                                                                                  | 25                                                                                  |                                                                                     | 15                                                                                  |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                    | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Area Type:                        | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Type:                     | Unsignalized                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization | 43.9%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| ICU Level of Service A            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

HCM 6th TWSC  
5: Dumfries Rd & Greenfield Rd

2030 Total: PM Peak Hour

| Intersection             |        |       |        |       |       |        |      |      |        |       |      |      |
|--------------------------|--------|-------|--------|-------|-------|--------|------|------|--------|-------|------|------|
| Int Delay, s/veh         | 1.8    |       |        |       |       |        |      |      |        |       |      |      |
| Movement                 | EBL    | EBT   | EBR    | WBL   | WBT   | WBR    | NBL  | NBT  | NBR    | SBL   | SBT  | SBR  |
| Lane Configurations      |        | ↔     |        |       | ↔     |        |      | ↔    |        |       | ↔    |      |
| Traffic Vol, veh/h       | 10     | 29    | 8      | 9     | 24    | 3      | 2    | 213  | 5      | 6     | 417  | 23   |
| Future Vol, veh/h        | 10     | 29    | 8      | 9     | 24    | 3      | 2    | 213  | 5      | 6     | 417  | 23   |
| 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         | 100    | 100   | 100    | 100   | 100   | 100    | 100  | 100  | 100    | 100   | 100  | 100  |
| Heavy Vehicles, %        | 20     | 7     | 13     | 0     | 4     | 0      | 0    | 4    | 0      | 17    | 0    | 0    |
| Mvmt Flow                | 10     | 29    | 8      | 9     | 24    | 3      | 2    | 213  | 5      | 6     | 417  | 23   |
|                          |        |       |        |       |       |        |      |      |        |       |      |      |
| Major/Minor              | Minor2 |       | Minor1 |       |       | Major1 |      |      | Major2 |       |      |      |
| Conflicting Flow All     | 674    | 663   | 429    | 679   | 672   | 216    | 440  | 0    | 0      | 218   | 0    | 0    |
| Stage 1                  | 441    | 441   | -      | 220   | 220   | -      | -    | -    | -      | -     | -    | -    |
| Stage 2                  | 233    | 222   | -      | 459   | 452   | -      | -    | -    | -      | -     | -    | -    |
| Critical Hdwy            | 7.3    | 6.57  | 6.33   | 7.1   | 6.54  | 6.2    | 4.1  | -    | -      | 4.27  | -    | -    |
| Critical Hdwy Stg 1      | 6.3    | 5.57  | -      | 6.1   | 5.54  | -      | -    | -    | -      | -     | -    | -    |
| Critical Hdwy Stg 2      | 6.3    | 5.57  | -      | 6.1   | 5.54  | -      | -    | -    | -      | -     | -    | -    |
| Follow-up Hdwy           | 3.68   | 4.063 | 3.417  | 3.5   | 4.036 | 3.3    | 2.2  | -    | -      | 2.353 | -    | -    |
| Pot Cap-1 Maneuver       | 345    | 375   | 603    | 368   | 375   | 829    | 1131 | -    | -      | 1268  | -    | -    |
| Stage 1                  | 562    | 568   | -      | 787   | 717   | -      | -    | -    | -      | -     | -    | -    |
| Stage 2                  | 731    | 710   | -      | 586   | 567   | -      | -    | -    | -      | -     | -    | -    |
| Platoon blocked, %       |        |       |        |       |       |        |      | -    | -      |       | -    | -    |
| Mov Cap-1 Maneuver       | 325    | 372   | 603    | 339   | 372   | 829    | 1131 | -    | -      | 1268  | -    | -    |
| Mov Cap-2 Maneuver       | 325    | 372   | -      | 339   | 372   | -      | -    | -    | -      | -     | -    | -    |
| Stage 1                  | 561    | 565   | -      | 785   | 716   | -      | -    | -    | -      | -     | -    | -    |
| Stage 2                  | 703    | 709   | -      | 545   | 564   | -      | -    | -    | -      | -     | -    | -    |
|                          |        |       |        |       |       |        |      |      |        |       |      |      |
|                          |        |       |        |       |       |        |      |      |        |       |      |      |
| Approach                 | EB     |       | WB     |       |       | NB     |      |      | SB     |       |      |      |
| HCM Control Delay, s     | 15.6   |       | 15.5   |       |       | 0.1    |      |      | 0.1    |       |      |      |
| HCM LOS                  | C      |       | C      |       |       |        |      |      |        |       |      |      |
|                          |        |       |        |       |       |        |      |      |        |       |      |      |
| Minor Lane/Major Mvmt    | NBL    | NBT   | NBR    | EBLn1 | WBLn1 | SBL    | SBT  | SBR  |        |       |      |      |
| Capacity (veh/h)         | 1131   | -     | -      | 385   | 380   | 1268   | -    | -    |        |       |      |      |
| HCM Lane V/C Ratio       | 0.002  | -     | -      | 0.122 | 0.095 | 0.005  | -    | -    |        |       |      |      |
| HCM Control Delay (s)    | 8.2    | 0     | -      | 15.6  | 15.5  | 7.9    | 0    | -    |        |       |      |      |
| HCM Lane LOS             | A      | A     | -      | C     | C     | A      | A    | -    |        |       |      |      |
| HCM 95th %tile Q(veh)    | 0      | -     | -      | 0.4   | 0.3   | 0      | -    | -    |        |       |      |      |

Lanes, Volumes, Timings  
6: Wrigley Rd & Site Access

2030 Total: PM Peak Hour

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group                        | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR                                                                               | SBL                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |  |  |  |  |                                                                                   |
| Traffic Volume (vph)              | 2                                                                                 | 156                                                                               | 234                                                                               | 5                                                                                 | 6                                                                                 | 1                                                                                 |
| Future Volume (vph)               | 2                                                                                 | 156                                                                               | 234                                                                               | 5                                                                                 | 6                                                                                 | 1                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Storage Length (m)                | 0.0                                                                               |                                                                                   |                                                                                   | 15.0                                                                              | 0.0                                                                               | 0.0                                                                               |
| Storage Lanes                     | 0                                                                                 |                                                                                   |                                                                                   | 1                                                                                 | 1                                                                                 | 0                                                                                 |
| Taper Length (m)                  | 7.5                                                                               |                                                                                   |                                                                                   |                                                                                   | 7.5                                                                               |                                                                                   |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Frt                               |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             | 0.981                                                                             |                                                                                   |
| Flt Protected                     |                                                                                   | 0.999                                                                             |                                                                                   |                                                                                   | 0.959                                                                             |                                                                                   |
| Satd. Flow (prot)                 | 0                                                                                 | 1839                                                                              | 1863                                                                              | 808                                                                               | 894                                                                               | 0                                                                                 |
| Flt Permitted                     |                                                                                   | 0.999                                                                             |                                                                                   |                                                                                   | 0.959                                                                             |                                                                                   |
| Satd. Flow (perm)                 | 0                                                                                 | 1839                                                                              | 1863                                                                              | 808                                                                               | 894                                                                               | 0                                                                                 |
| Link Speed (k/h)                  |                                                                                   | 80                                                                                | 80                                                                                |                                                                                   | 50                                                                                |                                                                                   |
| Link Distance (m)                 |                                                                                   | 125.9                                                                             | 786.9                                                                             |                                                                                   | 284.5                                                                             |                                                                                   |
| Travel Time (s)                   |                                                                                   | 5.7                                                                               | 35.4                                                                              |                                                                                   | 20.5                                                                              |                                                                                   |
| Peak Hour Factor                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Heavy Vehicles (%)                | 100%                                                                              | 2%                                                                                | 2%                                                                                | 100%                                                                              | 100%                                                                              | 100%                                                                              |
| Adj. Flow (vph)                   | 2                                                                                 | 156                                                                               | 234                                                                               | 5                                                                                 | 6                                                                                 | 1                                                                                 |
| Shared Lane Traffic (%)           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)             | 0                                                                                 | 158                                                                               | 234                                                                               | 5                                                                                 | 7                                                                                 | 0                                                                                 |
| Enter Blocked Intersection        | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                |
| Lane Alignment                    | Left                                                                              | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Right                                                                             |
| Median Width(m)                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   | 3.6                                                                               |                                                                                   |
| Link Offset(m)                    |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   |
| Crosswalk Width(m)                |                                                                                   | 4.8                                                                               | 4.8                                                                               |                                                                                   | 4.8                                                                               |                                                                                   |
| Two way Left Turn Lane            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Headway Factor                    | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Turning Speed (k/h)               | 25                                                                                |                                                                                   |                                                                                   | 15                                                                                | 25                                                                                | 15                                                                                |
| Sign Control                      |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   | Stop                                                                              |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Area Type:                        | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Control Type:                     | Unsignalized                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization | 22.3%                                                                             |                                                                                   |                                                                                   | ICU Level of Service A                                                            |                                                                                   |                                                                                   |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

HCM 6th TWSC  
6: Wrigley Rd & Site Access

2030 Total: PM Peak Hour

| Intersection             |        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 0.3    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Movement                 | EBL    | EBT                                                                               | WBT                                                                               | WBR                                                                               | SBL                                                                               | SBR  |
| Lane Configurations      |        |  |  |  |  |      |
| Traffic Vol, veh/h       | 2      | 156                                                                               | 234                                                                               | 5                                                                                 | 6                                                                                 | 1    |
| Future Vol, veh/h        | 2      | 156                                                                               | 234                                                                               | 5                                                                                 | 6                                                                                 | 1    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Free   | Free                                                                              | Free                                                                              | Free                                                                              | Stop                                                                              | Stop |
| RT Channelized           | -      | None                                                                              | -                                                                                 | None                                                                              | -                                                                                 | None |
| Storage Length           | -      | -                                                                                 | -                                                                                 | 15                                                                                | 0                                                                                 | -    |
| Veh in Median Storage, # | -      | 0                                                                                 | 0                                                                                 | -                                                                                 | 0                                                                                 | -    |
| Grade, %                 | -      | 0                                                                                 | 0                                                                                 | -                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 100    | 100                                                                               | 100                                                                               | 100                                                                               | 100                                                                               | 100  |
| Heavy Vehicles, %        | 100    | 2                                                                                 | 2                                                                                 | 100                                                                               | 100                                                                               | 100  |
| Mvmt Flow                | 2      | 156                                                                               | 234                                                                               | 5                                                                                 | 6                                                                                 | 1    |
| Major/Minor              | Major1 | Major2                                                                            |                                                                                   | Minor2                                                                            |                                                                                   |      |
| Conflicting Flow All     | 239    | 0                                                                                 | -                                                                                 | 0                                                                                 | 394                                                                               | 234  |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -                                                                                 | 234                                                                               | -    |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -                                                                                 | 160                                                                               | -    |
| Critical Hdwy            | 5.1    | -                                                                                 | -                                                                                 | -                                                                                 | 7.4                                                                               | 7.2  |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -                                                                                 | -                                                                                 | 6.4                                                                               | -    |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -                                                                                 | -                                                                                 | 6.4                                                                               | -    |
| Follow-up Hdwy           | 3.1    | -                                                                                 | -                                                                                 | -                                                                                 | 4.4                                                                               | 4.2  |
| Pot Cap-1 Maneuver       | 916    | -                                                                                 | -                                                                                 | -                                                                                 | 459                                                                               | 613  |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -                                                                                 | 621                                                                               | -    |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -                                                                                 | 678                                                                               | -    |
| Platoon blocked, %       |        | -                                                                                 | -                                                                                 | -                                                                                 |                                                                                   |      |
| Mov Cap-1 Maneuver       | 916    | -                                                                                 | -                                                                                 | -                                                                                 | 458                                                                               | 613  |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -                                                                                 | -                                                                                 | 458                                                                               | -    |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -                                                                                 | 620                                                                               | -    |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -                                                                                 | 678                                                                               | -    |
| Approach                 | EB     | WB                                                                                |                                                                                   | SB                                                                                |                                                                                   |      |
| HCM Control Delay, s     | 0.1    | 0                                                                                 |                                                                                   | 12.7                                                                              |                                                                                   |      |
| HCM LOS                  |        |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |      |
| Minor Lane/Major Mvmt    | EBL    | EBT                                                                               | WBT                                                                               | WBR                                                                               | SBLn1                                                                             |      |
| Capacity (veh/h)         | 916    | -                                                                                 | -                                                                                 | -                                                                                 | 475                                                                               |      |
| HCM Lane V/C Ratio       | 0.002  | -                                                                                 | -                                                                                 | -                                                                                 | 0.015                                                                             |      |
| HCM Control Delay (s)    | 8.9    | 0                                                                                 | -                                                                                 | -                                                                                 | 12.7                                                                              |      |
| HCM Lane LOS             | A      | A                                                                                 | -                                                                                 | -                                                                                 | B                                                                                 |      |
| HCM 95th %tile Q(veh)    | 0      | -                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 |      |

# Appendix F

## Left-Turn Lane Warrants



