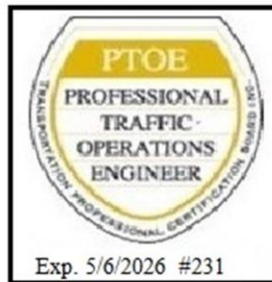




**Armen Hovannessian**  
Transportation Consulting

# QUICK QUACK CAR WASH NORTHRIDGE SHOPPING CENTER SALINAS CITY CALIFORNIA TRAFFIC ASSESSMENT REPORT APRIL 11, 2025



*Armen D. Hovannessian*

AHTC, Inc.

6520 PLATT AVENUE, #923

WEST HILLS, CA 91307

CONTACT@AHTRAFFIC.COM

(818) 438-2253

## Contents

|                                               |    |
|-----------------------------------------------|----|
| INTRODUCTION .....                            | 3  |
| PROJECT DESCRIPTION .....                     | 3  |
| Project Characteristics .....                 | 3  |
| Project Location .....                        | 3  |
| Project Site Plan .....                       | 3  |
| Project Site Vehicle Access.....              | 4  |
| PROJECT CONTEXT .....                         | 4  |
| Non-Vehicular Transportation System.....      | 5  |
| Pedestrian Facilities .....                   | 5  |
| Bicycle Facilities .....                      | 6  |
| Transit Services .....                        | 6  |
| Vehicular Transportation System.....          | 6  |
| Regional Freeway System .....                 | 6  |
| Area Roadway System.....                      | 6  |
| CEQA TRANSPORTATION IMPACT ANALYSIS .....     | 6  |
| LOCAL TRANSPORTATION ANALYSIS.....            | 7  |
| Operational Evaluation .....                  | 7  |
| Study Intersections .....                     | 7  |
| Traffic Volume Counts.....                    | 8  |
| Project Trip Generation.....                  | 9  |
| Project Trip Distribution and Assignment..... | 10 |
| Traffic Forecasts .....                       | 12 |
| Operational Analysis .....                    | 14 |
| Project Driveway Analysis.....                | 16 |
| Project Queuing Analysis .....                | 16 |
| Stop Sign Analysis .....                      | 17 |
| Summary and Recommended Actions.....          | 17 |

## Tables

|                                                                        |    |
|------------------------------------------------------------------------|----|
| Table 1 - Sidewalk Inventory .....                                     | 5  |
| Table 2 -Crosswalk, Curb Ramp & Pedestrian Push Button Inventory ..... | 5  |
| Table 3- Bicycle Facilities Inventory .....                            | 6  |
| Table 4 – Study Intersections.....                                     | 7  |
| Table 5 - Project Trip Generation.....                                 | 9  |
| Table 6 - Related Project List & Trip Generation .....                 | 12 |
| Table 7 - LOS at Signalized Intersection .....                         | 14 |

|                                                                                 |    |
|---------------------------------------------------------------------------------|----|
| Table 8 - LOS at Unsignalized Intersections .....                               | 15 |
| Table 9 - Comparison of Intersectional LOS & Delay for Various Conditions ..... | 15 |
| Table 10 - Frequency of Maximum Queue Length Location 1.....                    | 16 |
| Table 11 - Frequency of Maximum Queue Length Location 2.....                    | 17 |

## Figures

|                                                                                                      |    |
|------------------------------------------------------------------------------------------------------|----|
| Figure 1 – Project Area Map .....                                                                    | 3  |
| Figure 2 – Project Site Plan .....                                                                   | 4  |
| Figure 3 – ¼ Mile Radius Area Map.....                                                               | 4  |
| Figure 4 – Study Intersections Lane Configurations .....                                             | 8  |
| Figure 5 – Existing Traffic Volumes at Study Intersections .....                                     | 9  |
| Figure 6 – Project Trip Distribution Percentages .....                                               | 10 |
| Figure 7 - Project Trip Assignments (Without Pass-by Discount at Driveway) for AM/PM Peak Hours..... | 11 |
| Figure 8 – Existing Plus Project Traffic Volumes (Without Pass-by Discount at Driveway).....         | 11 |
| Figure 9 – Future Traffic Volumes Without Project .....                                              | 13 |
| Figure 10 – Future Traffic Volumes with Project (Without Pass-by Discount at Driveway) .....         | 13 |

## Appendix

|                                                                   |           |
|-------------------------------------------------------------------|-----------|
| <b>Appendix 1 – Manual Traffic Counts .....</b>                   | <b>18</b> |
| <b>Appendix 2 - Tables for LOS, Delays and Queue Lengths.....</b> | <b>19</b> |
| <b>Appendix 3 - (HCM) analysis worksheets.....</b>                | <b>23</b> |
| <b>Appendix 4 – Queueing Analysis Datasheets.....</b>             | <b>24</b> |
| <b>Appendix 5 – All-Way Stop Sign Analysis.....</b>               | <b>25</b> |

## INTRODUCTION

This traffic assessment study is prepared for the proposed Quick Quack car wash located at the Northridge Shopping Center in Salinas, California. The methodology and base assumptions used in the analysis were established based on discussions with the City of Salinas staff. This study evaluates the potential project-specific transportation effects of the proposed project. The analysis focuses on traditional mobility considerations as well as safety, sustainability, smart growth, and the reduction of greenhouse gas emissions.

## PROJECT DESCRIPTION

### Project Characteristics

The project proposes constructing an approximately 3,588 square feet one-tunnel automated Quick Quack Car Wash on a vacant lot of 69,374 square feet.

### Project Location

As illustrated in the project area map in Figure 1, the project is located north of Madrid Street West of N. Main Street.

Figure 1 – Project Area Map



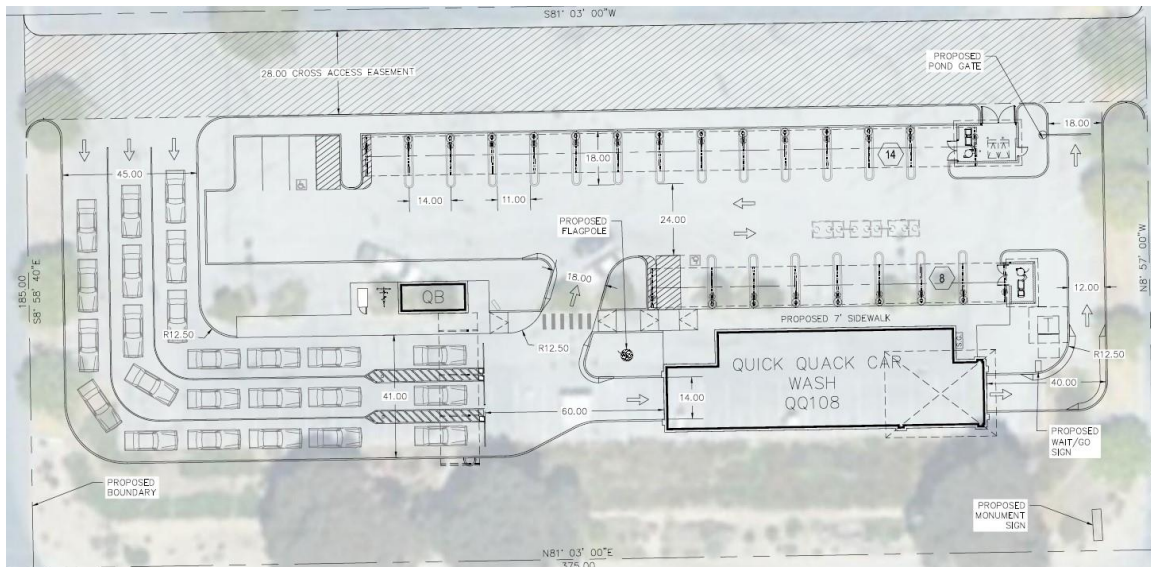
### Project Site Plan

Figure 2 illustrates the project site plan showing the proposed driveway on Madrid Street.



As shown in Figure 2, the project proposes to use the existing Northridge Shopping Center driveways to provide ingress and egress access to the project site.

*Figure 2 – Project Site Plan*



## PROJECT CONTEXT

A comprehensive analysis and an inventory of the existing transportation infrastructure and conditions within a ¼ mile radius of the project site, as shown in the aerial map in Figure 3, was collected. The collected data was analyzed to determine the roadway designations, classifications, and modal priorities.

Figure 3 – ¼ Mile Radius Area Map



The following describes the details of the transportation infrastructure in the vicinity of the project:

## Non-Vehicular Transportation System

A review of the project area to evaluate the effects of the project on the non-vehicular transportation system for Pedestrian Facilities, Bicycle Facilities, and Transit Services was conducted.

### Pedestrian Facilities

A review of the project area was conducted to evaluate the effects of the project on pedestrian activity within a ¼-mile radius of the project. As part of this analysis, we inventoried the existing sidewalks within 1,320 feet of the edge of the project site, as shown in Figure 3.

#### Sidewalks

A sidewalk inventory within the ¼ mile vicinity of the project was taken. The data collected for existing pedestrian sidewalks is listed in Table 1 below:

Table 1 - Sidewalk Inventory

| Street Name                                        | Street Side | Sidewalk Width | Condition |
|----------------------------------------------------|-------------|----------------|-----------|
| Madrid Street West of Main Street                  | NS & SS     | ~5 Feet        | Good      |
| Harden Pkwy East of North Main Street              | NS & SS     | ~5             | Good      |
| North Main Street North and South of Madrid Street | ES & WS     | ~5 Feet        | Good      |

### Crosswalks, Curb Ramps & Pedestrian Push Buttons

Within ¼ mile vicinity of the project site, pedestrian crosswalks, curb ramps and pedestrian push buttons are available at the following locations, shown in Table 2:

Table 2 -Crosswalk, Curb Ramp & Pedestrian Push Button Inventory

| Intersection Name         |                   | Control | Ped Push Button | Crosswalk Type        | Curb Ramp | Cond. |
|---------------------------|-------------------|---------|-----------------|-----------------------|-----------|-------|
| Madrid Street/Hardon Pkwy | North Main Street | Signal  | Yes             | North Leg Continental | Yes       | Good  |
|                           |                   |         |                 | South Leg Continental | Yes       | Good  |
|                           |                   |         |                 | East Leg Continental  | Yes       | Good  |
|                           |                   |         |                 | West Leg Continental  | Yes       | Good  |

## Bicycle Facilities

Within a ¼-mile radius of the project site bicycle facilities are installed at the following locations, as shown in Table 3:

Table 3- Bicycle Facilities Inventory

| Street Name               | Bicycle Facility | Condition |
|---------------------------|------------------|-----------|
| North Main Street         | Class 2          | Good      |
| Madrid Street/Hardon Pkwy | Class 2          | Good      |

## Transit Services

Transit services in the area are provided by Monterey-Salinas Transit. Currently, there are three bus lines 41, 48, and 95 that operate near the project site.

## Vehicular Transportation System

An assessment of the roadway system within ¼ mile radius of the project site was conducted. The assessment included the number of traffic lanes, direction of flow, and the presence of peak period travel lanes affecting roadway travel capacity, the presence of bicycle lanes, and any other significant street information.

## Regional Freeway System

The project area is served by US 101 Freeway. The project site is located east of US 101 Freeway. The segment of US 101 Freeway near the project site generally consists of a divided highway with two mixed-flow travel lanes in each direction. The nearest intersection with US 101 is located on Boronda Road.

## Area Roadway System

The project area is served by the following surrounding roadways:

- Madrid Street
- Harden Pkwy
- North Main Street

Madrid Street is a paved roadway with one traffic lane in each direction with bike lanes, curbs and gutters, and sidewalks west of North Main Street. There are left-turn pockets present at driveways and intersections.

Harden Pkwy is a paved roadway with two traffic lanes in each direction with bike lanes, curbs and gutters, and sidewalks east of North Main Street. There are left-turn pockets present at intersections.

North Main Street is a paved road with three traffic lanes in each direction with bike lanes, curbs and gutters, and sidewalks. There are left-turn pockets present at intersections.

## CEQA TRANSPORTATION IMPACT ANALYSIS

This analysis conforms to the requirements of Senate Bill 743 (SB 743) and is consistent with the California Environmental Quality Act (CEQA), requiring the use of Vehicle Miles Traveled (VMT) as the primary metric for evaluating a project's transportation impacts. The analysis refers

to the guidance provided by the California Governor's Office of Planning and Research (OPR) in the publication Transportation Impacts (SB 743) CEQA Guidelines Update and Technical Advisory, 2018. OPR's guidance for retail land uses, which the proposed car wash would be classified as, was applied. According to OPR, for retail uses, an increase in total regional VMT is considered a significant impact. However, OPR indicates that local-serving retail may generally be presumed to have a less than significant VMT impact and can generally be screened from further VMT analysis. Based on substantial research OPR determined that adding local-serving retail uses typically improves destination accessibility to customers, often reducing trip distances resulting in reduced vehicle miles traveled. This is caused by customers traveling shorter distances than they previously did.

Based on OPR's analysis, a retail project of 50,000 square feet or more should be considered a regional serving retail. The proposed square footage of the project is less than 50,000 square feet. Additionally, the project is a local serving car wash operation providing service to the local community similar to a small retail operation which would be far below OPR's regional serving retail threshold. Therefore, the project will have less than significant VMT impact.

## LOCAL TRANSPORTATION ANALYSIS

### Operational Evaluation

An operational evaluation of the project area was conducted to determine any project impact on access, safety, and circulation on the roadway network in the vicinity of the project.

### Study Intersections

After consultation with City of Salinas staff, it was determined that the following intersections would be analyzed and evaluated for operational assessment, as shown in Table 4 below:

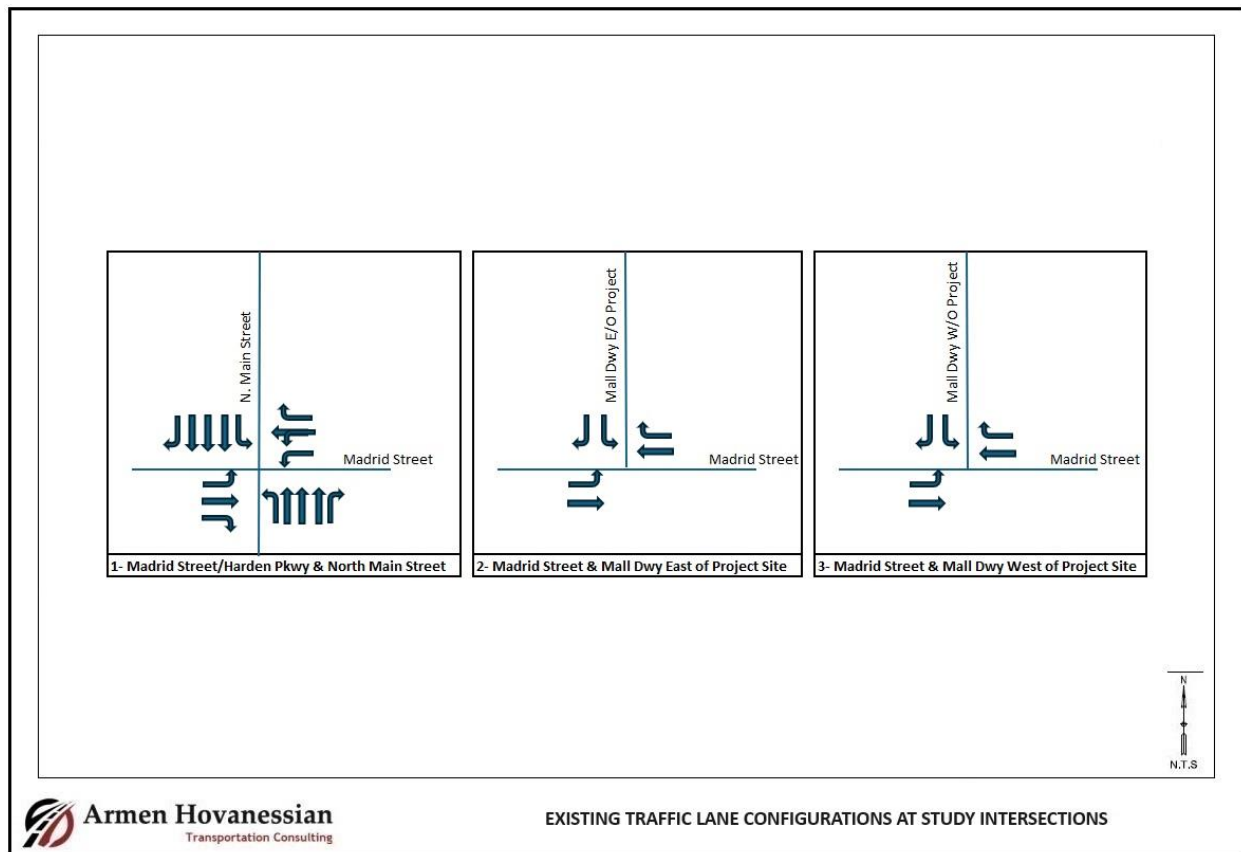
*Table 4 – Study Intersections*

| Intersection(s)                                      | Configuration | Existing Control          |
|------------------------------------------------------|---------------|---------------------------|
| Madrid Street & North Main Street                    | 4-legged      | Traffic Signal Control    |
| Madrid Street and Mall Driveway west of project site | 4-legged      | Partial Stop Sign Control |
| Madrid Street and Mall Driveway east of project site | 3-legged      | Partial Stop Sign Control |

Refer to Figure 4 below for a depiction of the configurations of traffic lanes at the approaches to the study intersections.



Figure 4 – Study Intersections Lane Configurations



## Traffic Volume Counts

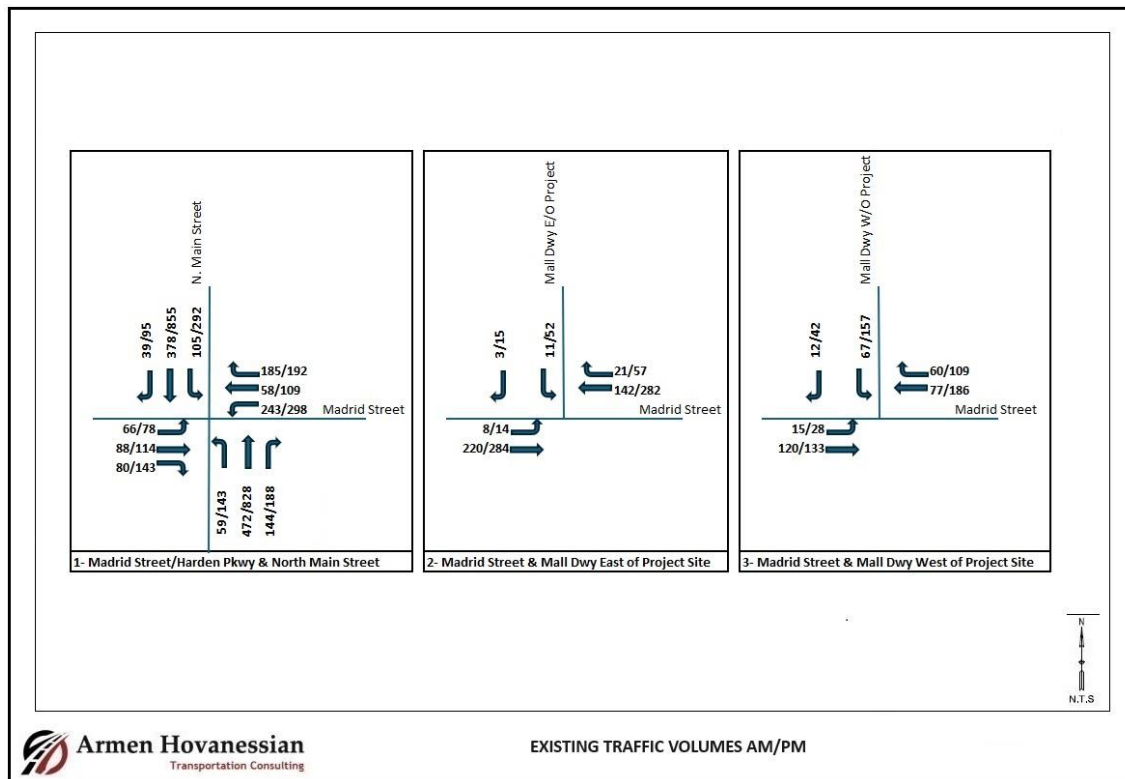
Existing traffic volume counts were obtained for vehicular turning movements at the following four intersections:

- Madrid Street and N. Main Street
- Madrid Street and Mall Driveway west of the project site
- Madrid Street and Mall Driveway east of the project site

Vehicular turning movement counts were conducted on Friday, February 21, 2025, and on Saturday, February 22, 2025, during the typical commuter hours of 7:00 AM to 10:00 AM and 3:00 PM to 6:00 PM, to obtain existing traffic volumes for the AM and PM peak hours. The traffic counts were higher on Friday compared to Saturday. Therefore, for the analysis the TIA will use the Friday traffic counts.

Please refer to Appendix 1 for the manual traffic counts, and Figure 5 below for Existing (AM/PM Peak) Traffic Volumes for an illustration of the AM and PM peak-hour turning movement counts used for the study intersections.

Figure 5 – Existing Traffic Volumes at Study Intersections



## Project Trip Generation

Institute of Transportation Engineers (ITE), Trip Generation Manual, 11th Edition, Automated Car Wash ITE Code 948 rates were used to estimate the project trip generation. This analysis includes weekday AM and PM peak hours rates. Due to lack of available rates for the AM peak hour and daily rate for ITE Code 948, the TIA will use the same ratio for the AM and PM peak hour rates for Self-service Car Wash ITE Code 947 as a similar use to generate the AM peak hour and daily rates for ITE Code 948.

This analysis incorporates potential pass-by trips discount into the trip generation, distribution, and assignment using ITE, Trip Generation Manual, 11th Edition. Due to lack of pass-by rates for an automated car wash, the TIA will use Gasoline Station ITE Code 944 as a similar use to generate the pass-by discount rates.

As shown in the project trip generation Table 5 below, the project is forecasted to generate 30 AM, 34 PM net new trips after applying the pass-by trips discounts for a service station as similar use.

Table 5 - Project Trip Generation

|                                                  | Land Use (ITE Code)      | Size | Unit    | AM Peak Hour Trips |             |           |           | PM Peak Hour Trips |             |           |           | Daily Trips |       |
|--------------------------------------------------|--------------------------|------|---------|--------------------|-------------|-----------|-----------|--------------------|-------------|-----------|-----------|-------------|-------|
|                                                  |                          |      |         | Rate               | Total       | In        | Out       | Rate               | Total       | In        | Out       | Rate        | Total |
| Proposed                                         | Automated Car Wash (948) | 1    | Tunnel  | 77.50              | Split<br>78 | 50%<br>39 | 50%<br>39 | 77.50              | Split<br>78 | 50%<br>39 | 50%<br>39 |             | 0     |
|                                                  | Pass-by Trip Discounts   |      |         |                    |             |           |           |                    |             |           |           |             |       |
|                                                  | Gasoline Station         | 1    | Station | 63%                | -48         | -24       | -24       | 57%                | -44         | -22       | -22       |             | 0     |
|                                                  | Total                    |      |         |                    | -48         | -24       | -24       |                    | -44         | -22       | -22       |             | 0     |
|                                                  | Total New Trips          |      |         |                    | 30          | 15        | 15        |                    | 34          | 17        | 17        |             | 0     |
| NET INCREASE/DECREASE TRIPS                      |                          |      |         |                    | 30          | 15        | 15        |                    | 34          | 17        | 17        |             | 0     |
| Source: ITE Trip Generation Manual, 11th Edition |                          |      |         |                    |             |           |           |                    |             |           |           |             |       |

## Project Trip Distribution and Assignment

Trip distribution assumptions are used to determine the origin and destination of new vehicle trips associated with the project. The geographic distribution of project trips is based on the functional classification of streets in the vicinity, the magnitude of traffic volumes, as well as local knowledge of the roadway network. Based on the project trip generation, shown in Table 5, and the regional trip distribution assumptions, a proposed study area for the traffic analysis was derived. The location and the number of the intersections to be analyzed were reviewed and approved by the city staff. Refer to Figures 6, 7, and 8 below for illustrations showing the Project's Trip Distributions and Assignments at the study intersections.

Figure 6 – Project Trip Distribution Percentages

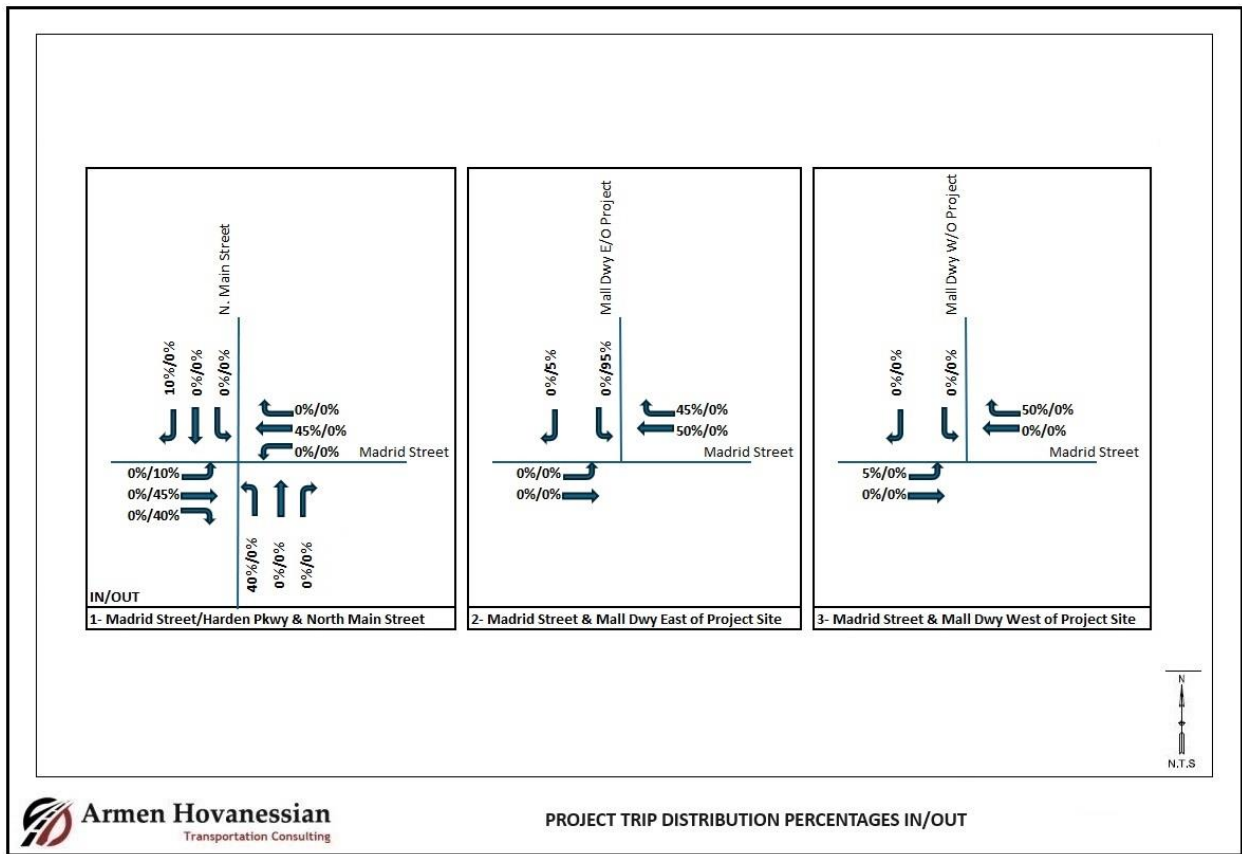


Figure 7 - Project Trip Assignments (Without Pass-by Discount at Driveway) for AM/PM Peak Hours

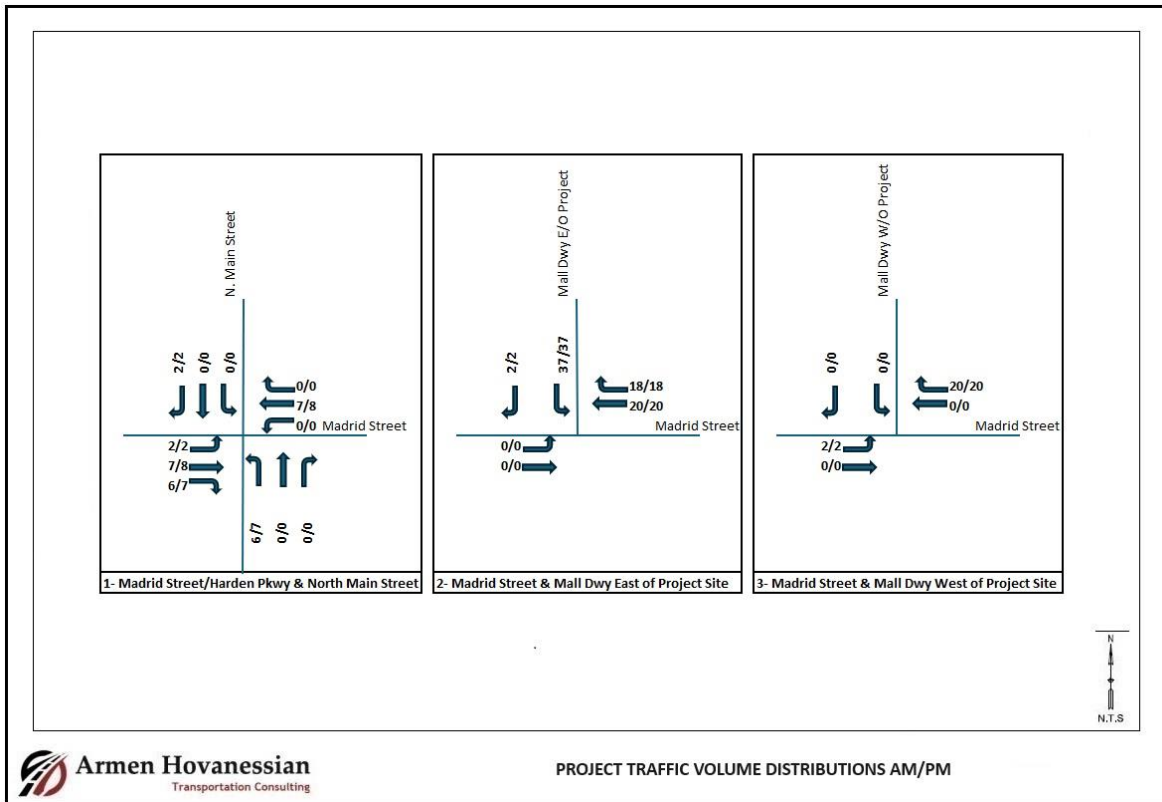
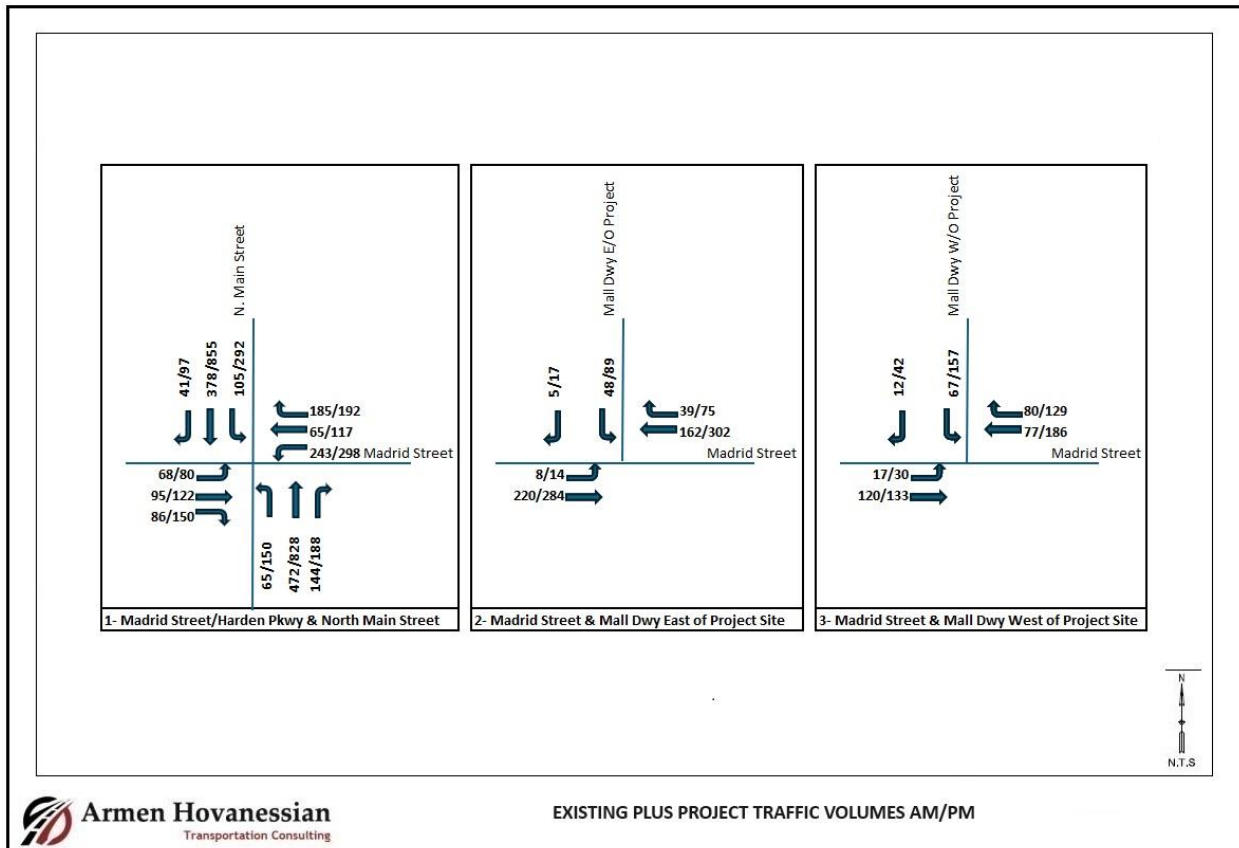


Figure 8 – Existing Plus Project Traffic Volumes (Without Pass-by Discount at Driveway)





## Traffic Forecasts

In general, future peak hour traffic projections for the study intersections are estimated to include future growth due to (1) related projects within ¼ to ½ mile of the project site and (2) ambient traffic growth. In this analysis the related projects within one (1) mile of the project site were included.

## Related Projects

To understand the relative traffic impacts for the projected year of completion, this traffic study analyzed potential traffic trips due to the development of related projects in the area. One (1) such related project for a proposed Raising Cane restaurant was identified by the city staff. The related project trip generation is shown in Table 6 below:

Table 6 - Related Project List & Trip Generation

| Project Number                                   | Project Name | Location                   | Land Use                                       | Size | Unit | AM Peak Hour Trips |       |     | PM Peak Hour Trips |       |       | Daily Trips |     |        |       |
|--------------------------------------------------|--------------|----------------------------|------------------------------------------------|------|------|--------------------|-------|-----|--------------------|-------|-------|-------------|-----|--------|-------|
|                                                  |              |                            |                                                |      |      | Rate               | Total | In  | Out                | Rate  | Total | In          | Out | Rate   | Total |
| 1                                                | Raising Cane | Northridge Shopping Center | Fast Food Restaurant with Drive-Through Window | 3.26 | KSF  | 50.57              | Split | 52% | 48%                | 50.94 | Split | 51%         | 49% | 467.48 | 1524  |
|                                                  |              |                            |                                                |      |      |                    | 166   | 86  | 80                 |       | 167   | 85          | 82  |        |       |
| Total New Trips                                  |              |                            |                                                |      |      |                    | 166   | 86  | 80                 |       | 167   | 85          | 82  |        | 1524  |
| Source: ITE Trip Generation Manual, 11th Edition |              |                            |                                                |      |      |                    |       |     |                    |       |       |             |     |        |       |

## Ambient Traffic Growth

To account for the future ambient traffic growth from intensification of existing developments, the existing traffic volumes were increased by an ambient growth rate of 1% per year to the anticipated year of completion 2029. These values were used to forecast future traffic volumes without and with project traffic volumes as shown in Figures 9 and 10.

Figure 9 – Future Traffic Volumes Without Project

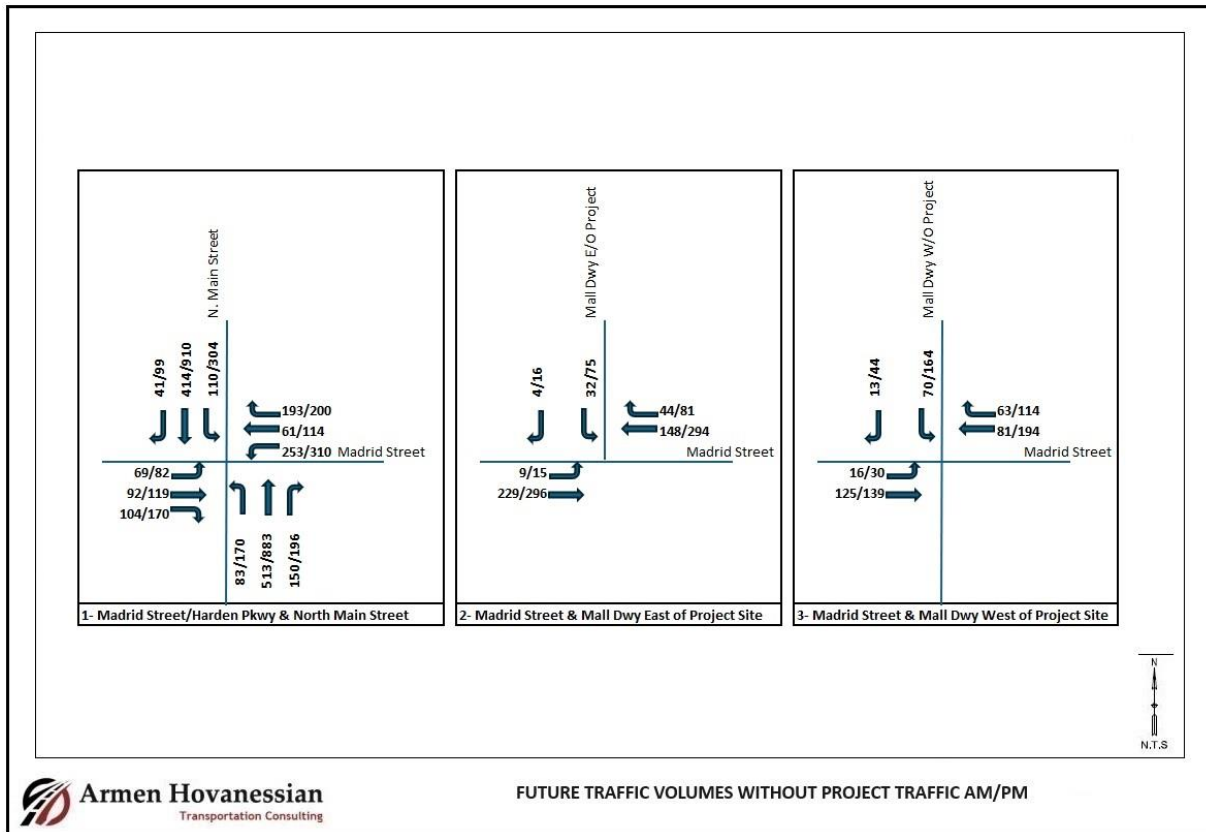
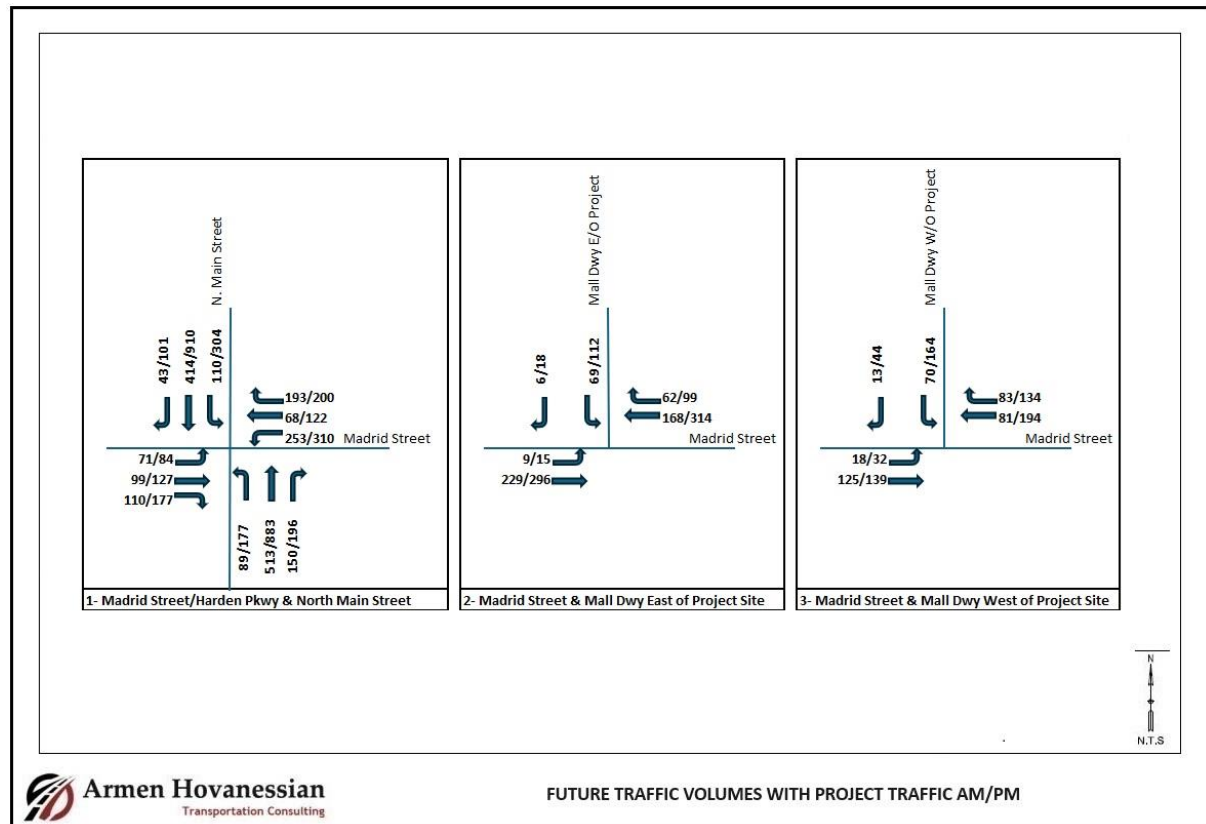


Figure 10 – Future Traffic Volumes with Project (Without Pass-by Discount at Driveway)



## Operational Analysis

Operational analyses of vehicle delays, levels of service, and queueing were conducted at the study intersections for the following conditions:

- 1) Existing Traffic Conditions
- 2) Existing Plus Project Traffic Conditions
- 3) Future Without Project Traffic Conditions
- 4) Future Plus Project Traffic Conditions

## Delay and Queueing Methodology

### Signalized Intersections

For signalized intersections, the Highway Capacity Manual (HCM) operations methodology for performing signalized intersection capacity analysis is used. This method relies on the determination of a delay or Level of Service (LOS) at each of the study intersections by first determining their corresponding average control delay per vehicle. Control delay includes initial deceleration delay, queue move-up time, stopped delay and final acceleration delay. It is a measure of driver discomfort, frustration, fuel consumption and lost travel time.

LOS varies from at best LOS A (free flow/excellent) to at worst LOS of F (stop-and-go/failure). Shown below, in Table 7, are the LOS categories and their corresponding HCM average control delay ranges for signalized intersections.

Table 7 - LOS at Signalized Intersection

| Level of Service | Average Control Delay per Vehicle (Sec/Veh) | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A                | 0 to 10.00                                  | LOS A describes operations with a control delay of 10 s/veh or less. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable, or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.                                                                                                 |
| B                | 10.01 to 20.00                              | LOS B describes operations with control delay between 10 and 20 s/veh. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable, or the cycle length is short. More vehicles stop than with LOS A.                                                                                                                                                                                                                     |
| C                | 20.01 to 35.00                              | LOS C describes operations with control delay between 20 and 35 s/veh. This level is typically assigned when progression is favorable, or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping. |
| D                | 35.01 to 55.00                              | LOS D describes operations with control delay between 35 and 55 s/veh. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective, or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.                                                                                                                                                                                             |
| E                | 55.01 to 80.00                              | LOS E describes operations with control delay between 55 and 80 s/veh. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.                                                                                                                                                                                                                               |
| F                | Over 80.00                                  | LOS F describes operations with control delay exceeding 80 s/veh. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.                                                                                                                                                                                                                                    |

## Unsignalized Intersections

This analysis utilizes the Highway Capacity Manual (HCM) methodologies for performing stop-controlled intersection capacity analyses. For stop-controlled intersection analysis, LOS is calculated for each movement of the intersection and the most critical LOS (i.e., the movement with highest delay) is the one that represents the effectiveness of that intersection. The LOS thresholds for stop-controlled intersections differ from those for signalized intersections to reflect different driver expectations. Table 8 below shows the LOS categories and their most common corresponding HCM average control delay ranges for stop-controlled intersections.

Table 8 - LOS at Unsignalized Intersections

| Level of Service | Average Control Delay per Vehicle (Sec/Veh) |
|------------------|---------------------------------------------|
| <b>A</b>         | 0 to 10.00                                  |
| <b>B</b>         | Over 10 to 15                               |
| <b>C</b>         | Over 15 to 25                               |
| <b>D</b>         | Over 25 to 35                               |
| <b>E</b>         | Over 35 to 50                               |
| <b>F</b>         | Over 50                                     |

## Level of Service and Queueing Analysis

The results of the operational analyses for each study intersection are provided in tables in Appendix 2 to summarize LOS, Delays and Queue Lengths for each traffic movement for the following traffic conditions:

- Existing
- Existing plus project
- Future without project
- Future with project

Please refer to Appendix 3 for the (HCM) analysis worksheets for the analyzed intersections.

Table 9 below provides a comparison of the intersectional LOS and Delay analysis for the aforementioned traffic conditions.

Table 9 - Comparison of Intersectional LOS & Delay for Various Conditions

| Summary of Delay and Level of Service |                                               |           |          |     |                 |     |        |     |               |     |
|---------------------------------------|-----------------------------------------------|-----------|----------|-----|-----------------|-----|--------|-----|---------------|-----|
| #                                     | Intersection                                  | Peak Hour | Existing |     | Existing + Proj |     | Future |     | Future + Proj |     |
|                                       |                                               |           | Delay    | LOS | Delay           | LOS | Delay  | LOS | Delay         | LOS |
| 1                                     | Madrid Street/Harden Pkwy & North Main Street | AM        | 39.4     | D   | 39.8            | D   | 40     | D   | 40.5          | D   |
|                                       |                                               | PM        | 49.1     | D   | 49.6            | D   | 51.5   | D   | 52            | D   |
| 2                                     | Madrid Street & Mall Dwy East of Project Site | AM        | 0.5      | A   | 1.4             | A   | 1      | A   | 1.9           | A   |
|                                       |                                               | PM        | 1.5      | A   | 2.3             | A   | 2      | A   | 2.9           | A   |
| 3                                     | Madrid Street & Mall Dwy West of Project Site | AM        | 2.6      | A   | 2.6             | A   | 2.7    | A   | 2.7           | A   |
|                                       |                                               | PM        | 4.5      | A   | 4.5             | A   | 4.7    | A   | 4.7           | A   |

## Project Driveway Analysis

The project driveway was analyzed utilizing the HCM methodologies for performing stop-controlled intersection capacity analyses (Appendix 3). The use of the existing shopping mall driveways will not create any adverse traffic impacts to the access and circulation in the project area.

## Project Queuing Analysis

In order to determine queueing of the car wash traffic, extensive surveys by observation of queue lengths were conducted at two similar Quick Quack Car Wash locations in the City of Rocklin; 1- 4830 Sierra College Boulevard and 2- 6071 Sanford Ranch Road. The data was collected between 7 AM to 7 PM on Friday August 30, 2024, in 5-minute intervals at both locations. Please refer to Appendix 4 for survey data sheets.

The surveyed car wash locations provided 2 queue lanes at the gates prior to entering the carwash tunnel. The observation of the queue lengths is as follows:

**Location 1- 4830 Sierra College Boulevard:** The maximum observed queue lengths were limited to 4 vehicles per queue line for a 5-minute interval. Only 3 occasions of 4 car queue lengths were observed during the 12-hour observation period. Only 9 occasions of 4 car queue lengths were observed during the 12-hour observation period. Table 10 provides the percentage frequency of the maximum queue length for the inner and the outer lanes.

Table 10 - Frequency of Maximum Queue Length Location 1

| 4830 Sierra College Boulevard |                      |                       | 4830 Sierra College Boulevard |                      |                       |
|-------------------------------|----------------------|-----------------------|-------------------------------|----------------------|-----------------------|
| Friday 8/30/2024              |                      |                       | Friday 8/30/2024              |                      |                       |
| Number of Vehicles in Queue   | Occurrence Frequency | Inner Lane Percentage | Number of Vehicles in Queue   | Occurrence Frequency | Outer Lane Percentage |
| 0                             | 41                   | 28%                   | 0                             | 1                    | 1%                    |
| 1                             | 81                   | 56%                   | 1                             | 86                   | 60%                   |
| 2                             | 20                   | 14%                   | 2                             | 43                   | 30%                   |
| 3                             | 2                    | 1%                    | 3                             | 11                   | 8%                    |
| 4                             | 0                    | 0%                    | 4                             | 3                    | 2%                    |
| 5                             | 0                    | 0%                    | 5                             | 0                    | 0%                    |
| Total                         | 144                  | 100%                  | Total                         | 144                  | 100%                  |

As shown in Table 9, the maximum queue lengths for the inner and the outer lanes are limited to 4 vehicles 100% and 98% of the time, respectively.

**Location 2- 6071 Sanford Ranch Road:** The maximum observed queue lengths were limited to 5 vehicles per queue line for a 5-minute interval. One occasion of 5 car queue lengths were observed during the 12-hour observation period. Nine occasions of 4 car queue lengths were observed during the 12-hour observation period. Table 11 provides the percentage frequency of the maximum queue length for the inner and the outer lanes.



Table 11 - Frequency of Maximum Queue Length Location 2

| 6071 Sanford Ranch Road     |                      |                       | 6071 Sanford Ranch Road     |                      |                       |
|-----------------------------|----------------------|-----------------------|-----------------------------|----------------------|-----------------------|
| Friday 8/30/2024            |                      |                       | Friday 8/30/2024            |                      |                       |
| Number of Vehicles in Queue | Occurrence Frequency | Inner Lane Percentage | Number of Vehicles in Queue | Occurrence Frequency | Outer Lane Percentage |
| 0                           | 60                   | 42%                   | 0                           | 58                   | 40%                   |
| 1                           | 52                   | 36%                   | 1                           | 24                   | 17%                   |
| 2                           | 26                   | 18%                   | 2                           | 37                   | 26%                   |
| 3                           | 5                    | 3%                    | 3                           | 16                   | 11%                   |
| 4                           | 1                    | 1%                    | 4                           | 8                    | 6%                    |
| 5                           | 0                    | 0%                    | 5                           | 1                    | 1%                    |
| <b>Total</b>                | <b>144</b>           | <b>100%</b>           | <b>Total</b>                | <b>144</b>           | <b>100%</b>           |

As shown in Table 10, the maximum queue lengths for the inner and the outer lanes are limited to 5 vehicles 99% and 93% of the time, respectively.

As shown in the project site plan in Figure 2, the project is designed to provide 3 queue lanes totaling approximately 360 feet with capacity to accommodate 18 vehicles. Based on the field observation of similar operations, the proposed project queueing demand would not exceed the queueing capacity provided by the proposed project.

### Stop Sign Analysis

An analysis for all-way stop sign control was conducted to determine if the installation of all-way stop sign control would meet the guidelines at the intersection of Madrid Street and the existing driveways to the Northridge Shopping Center east and west of the project site. The analysis revealed that the warrants for the installation of all-way stop signs were not met. Please refer to Appendix 5 for a copy of the guidelines.

### Summary and Recommended Actions

The project does not have major adverse effects on access, safety, and circulation in the roadway system within the project area due to very low traffic generation.

## **Appendix 1 – Manual Traffic Counts**

# CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : MainSt\_MadridSt-HardenPkwY\_02-21-25

Site Code : 00000000

Start Date : 2/21/2025

Page No : 1

## Groups Printed- Vehicles

|             | Main Street<br>Southbound |      |       | Harden Parkway<br>Westbound |      |       | Main Street<br>Northbound |      |       | Madrid Street<br>Eastbound |      |       |            |
|-------------|---------------------------|------|-------|-----------------------------|------|-------|---------------------------|------|-------|----------------------------|------|-------|------------|
| Start Time  | Left                      | Thru | Right | Left                        | Thru | Right | Left                      | Thru | Right | Left                       | Thru | Right | Int. Total |
| 07:00 AM    | 16                        | 48   | 4     | 33                          | 5    | 35    | 11                        | 70   | 5     | 20                         | 15   | 11    | 273        |
| 07:15 AM    | 22                        | 51   | 3     | 40                          | 11   | 38    | 13                        | 70   | 19    | 18                         | 19   | 8     | 312        |
| 07:30 AM    | 29                        | 71   | 5     | 66                          | 10   | 64    | 9                         | 80   | 35    | 12                         | 26   | 16    | 423        |
| 07:45 AM    | 25                        | 123  | 10    | 92                          | 7    | 62    | 13                        | 115  | 37    | 19                         | 36   | 20    | 559        |
| Total       | 92                        | 293  | 22    | 231                         | 33   | 199   | 46                        | 335  | 96    | 69                         | 96   | 55    | 1567       |
| 08:00 AM    | 25                        | 86   | 9     | 56                          | 15   | 51    | 15                        | 129  | 26    | 12                         | 15   | 22    | 461        |
| 08:15 AM    | 22                        | 84   | 7     | 57                          | 19   | 38    | 15                        | 115  | 41    | 17                         | 20   | 20    | 455        |
| 08:30 AM    | 33                        | 85   | 13    | 38                          | 17   | 34    | 16                        | 113  | 40    | 18                         | 17   | 18    | 442        |
| 08:45 AM    | 37                        | 94   | 9     | 37                          | 16   | 21    | 13                        | 112  | 25    | 20                         | 16   | 13    | 413        |
| Total       | 117                       | 349  | 38    | 188                         | 67   | 144   | 59                        | 469  | 132   | 67                         | 68   | 73    | 1771       |
| 09:00 AM    | 28                        | 108  | 14    | 28                          | 19   | 25    | 16                        | 118  | 21    | 20                         | 15   | 22    | 434        |
| 09:15 AM    | 21                        | 79   | 12    | 39                          | 15   | 25    | 13                        | 110  | 27    | 12                         | 9    | 19    | 381        |
| 09:30 AM    | 31                        | 72   | 6     | 34                          | 13   | 29    | 20                        | 102  | 27    | 14                         | 16   | 18    | 382        |
| 09:45 AM    | 25                        | 82   | 9     | 36                          | 13   | 29    | 22                        | 130  | 38    | 12                         | 8    | 13    | 417        |
| Total       | 105                       | 341  | 41    | 137                         | 60   | 108   | 71                        | 460  | 113   | 58                         | 48   | 72    | 1614       |
| 03:00 PM    | 68                        | 190  | 21    | 87                          | 31   | 56    | 26                        | 182  | 40    | 23                         | 24   | 26    | 774        |
| 03:15 PM    | 76                        | 193  | 22    | 75                          | 24   | 57    | 25                        | 199  | 49    | 22                         | 18   | 34    | 794        |
| 03:30 PM    | 77                        | 198  | 25    | 77                          | 22   | 44    | 27                        | 194  | 50    | 18                         | 27   | 36    | 795        |
| 03:45 PM    | 66                        | 185  | 20    | 77                          | 32   | 48    | 33                        | 206  | 47    | 17                         | 26   | 32    | 789        |
| Total       | 287                       | 766  | 88    | 316                         | 109  | 205   | 111                       | 781  | 186   | 80                         | 95   | 128   | 3152       |
| 04:00 PM    | 81                        | 229  | 24    | 76                          | 26   | 49    | 32                        | 205  | 46    | 15                         | 30   | 35    | 848        |
| 04:15 PM    | 67                        | 222  | 33    | 73                          | 26   | 48    | 39                        | 203  | 48    | 25                         | 28   | 31    | 843        |
| 04:30 PM    | 78                        | 219  | 18    | 72                          | 25   | 47    | 39                        | 214  | 47    | 21                         | 30   | 45    | 855        |
| 04:45 PM    | 60                        | 201  | 20    | 81                          | 37   | 41    | 34                        | 182  | 39    | 20                         | 30   | 27    | 772        |
| Total       | 286                       | 871  | 95    | 302                         | 114  | 185   | 144                       | 804  | 180   | 81                         | 118  | 138   | 3318       |
| 05:00 PM    | 62                        | 184  | 15    | 73                          | 24   | 46    | 27                        | 188  | 44    | 20                         | 23   | 35    | 741        |
| 05:15 PM    | 67                        | 183  | 26    | 69                          | 20   | 37    | 28                        | 170  | 46    | 26                         | 23   | 34    | 729        |
| 05:30 PM    | 59                        | 205  | 22    | 68                          | 23   | 42    | 23                        | 194  | 33    | 19                         | 25   | 27    | 740        |
| 05:45 PM    | 54                        | 173  | 27    | 69                          | 30   | 39    | 18                        | 193  | 28    | 15                         | 24   | 29    | 699        |
| Total       | 242                       | 745  | 90    | 279                         | 97   | 164   | 96                        | 745  | 151   | 80                         | 95   | 125   | 2909       |
| Grand Total | 1129                      | 3365 | 374   | 1453                        | 480  | 1005  | 527                       | 3594 | 858   | 435                        | 520  | 591   | 14331      |
| Apprch %    | 23.2                      | 69.1 | 7.7   | 49.5                        | 16.3 | 34.2  | 10.6                      | 72.2 | 17.2  | 28.1                       | 33.6 | 38.2  |            |
| Total %     | 7.9                       | 23.5 | 2.6   | 10.1                        | 3.3  | 7     | 3.7                       | 25.1 | 6     | 3                          | 3.6  | 4.1   |            |

# CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

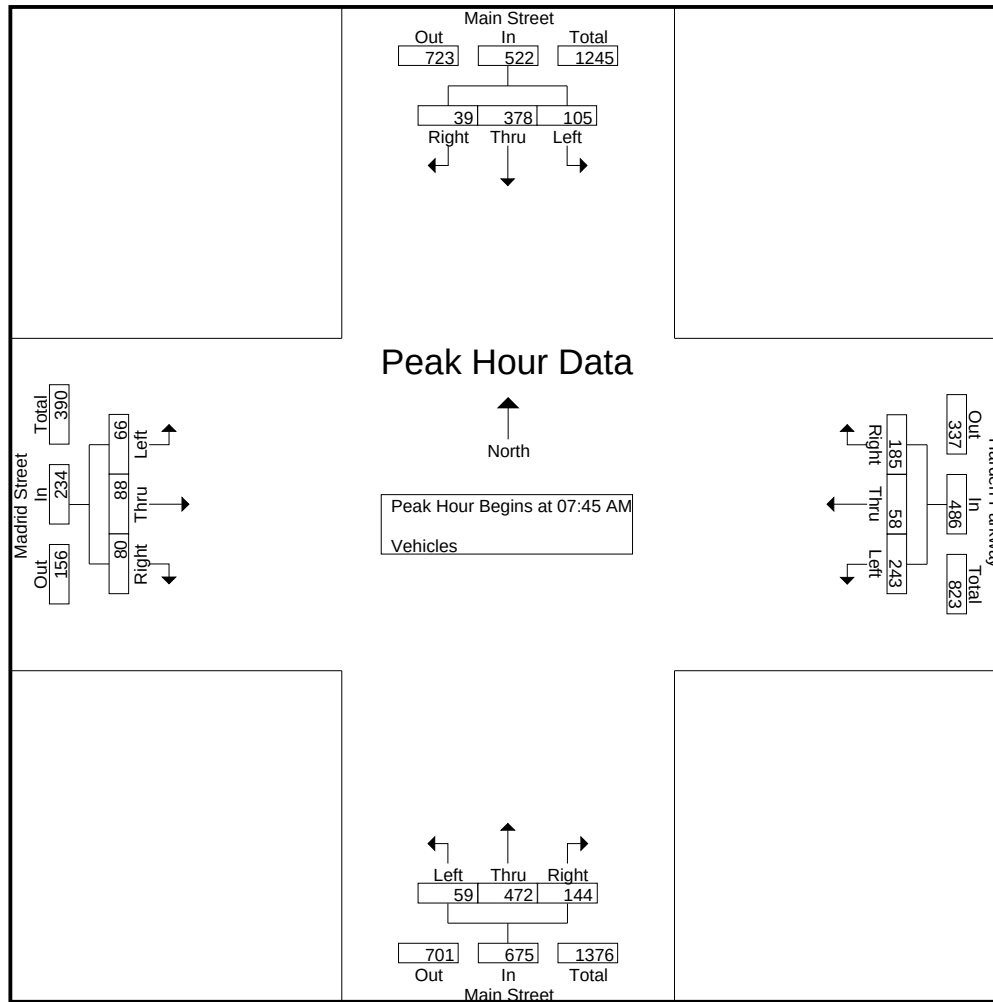
File Name : MainSt\_MadridSt-HardenPkwy\_02-21-25

Site Code : 00000000

Start Date : 2/21/2025

Page No : 2

|                                                                   | Main Street Southbound |            |           |            | Harden Parkway Westbound |           |           |            | Main Street Northbound |            |           |            | Madrid Street Eastbound |           |           |            |            |
|-------------------------------------------------------------------|------------------------|------------|-----------|------------|--------------------------|-----------|-----------|------------|------------------------|------------|-----------|------------|-------------------------|-----------|-----------|------------|------------|
| Start Time                                                        | Left                   | Thru       | Right     | App. Total | Left                     | Thru      | Right     | App. Total | Left                   | Thru       | Right     | App. Total | Left                    | Thru      | Right     | App. Total | Int. Total |
| <b>Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1</b> |                        |            |           |            |                          |           |           |            |                        |            |           |            |                         |           |           |            |            |
| Peak Hour for Entire Intersection Begins at 07:45 AM              |                        |            |           |            |                          |           |           |            |                        |            |           |            |                         |           |           |            |            |
| 07:45 AM                                                          | 25                     | <b>123</b> | 10        | <b>158</b> | <b>92</b>                | 7         | <b>62</b> | <b>161</b> | 13                     | 115        | 37        | 165        | <b>19</b>               | <b>36</b> | 20        | <b>75</b>  | <b>559</b> |
| 08:00 AM                                                          | 25                     | 86         | 9         | 120        | 56                       | 15        | 51        | 122        | 15                     | <b>129</b> | 26        | 170        | 12                      | 15        | <b>22</b> | 49         | 461        |
| 08:15 AM                                                          | 22                     | 84         | 7         | 113        | 57                       | <b>19</b> | 38        | 114        | 15                     | 115        | <b>41</b> | <b>171</b> | 17                      | 20        | 20        | 57         | 455        |
| 08:30 AM                                                          | <b>33</b>              | 85         | <b>13</b> | 131        | 38                       | 17        | 34        | 89         | <b>16</b>              | 113        | 40        | 169        | 18                      | 17        | 18        | 53         | 442        |
| Total Volume                                                      | 105                    | 378        | 39        | 522        | 243                      | 58        | 185       | 486        | 59                     | 472        | 144       | 675        | 66                      | 88        | 80        | 234        | 1917       |
| % App. Total                                                      | 20.1                   | 72.4       | 7.5       |            | 50                       | 11.9      | 38.1      |            | 8.7                    | 69.9       | 21.3      |            | 28.2                    | 37.6      | 34.2      |            |            |
| PHF                                                               | .795                   | .768       | .750      | .826       | .660                     | .763      | .746      | .755       | .922                   | .915       | .878      | .987       | .868                    | .611      | .909      | .780       | .857       |



# CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

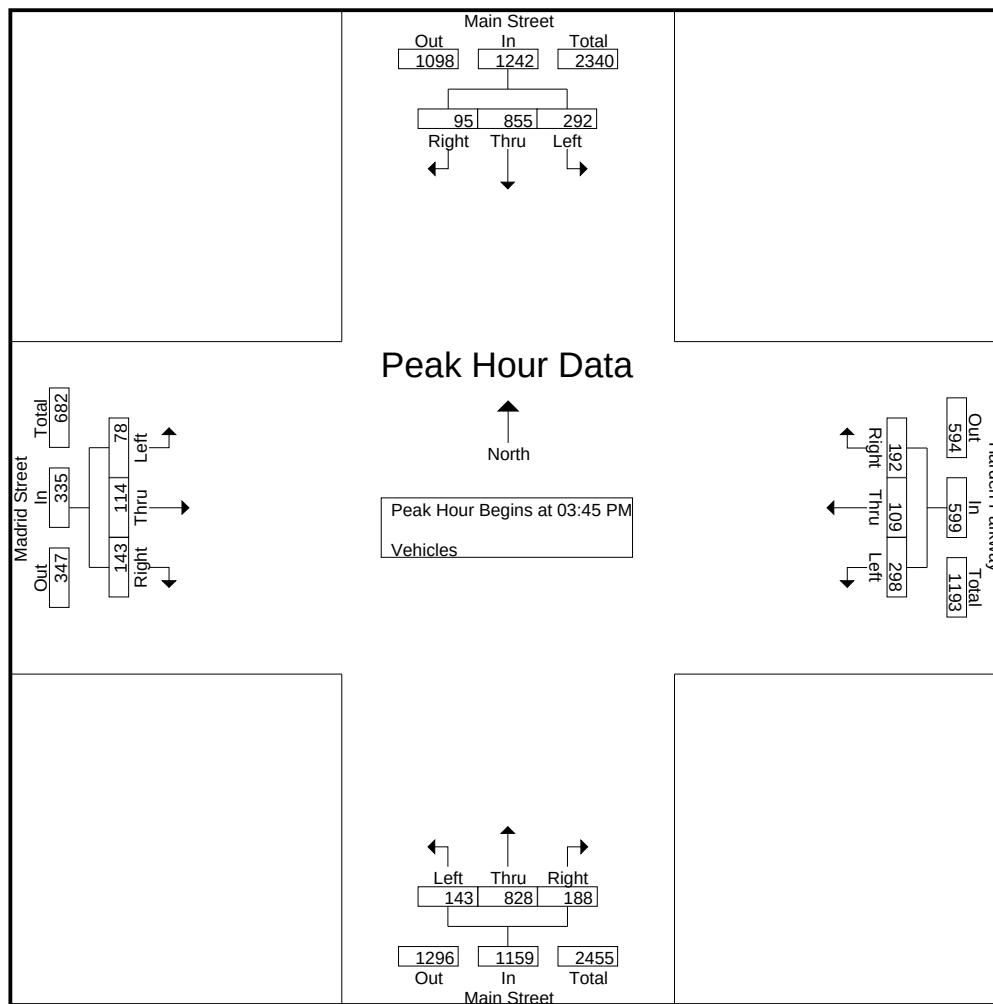
File Name : MainSt\_MadridSt-HardenPkwy\_02-21-25

Site Code : 00000000

Start Date : 2/21/2025

Page No : 3

|                                                                   | Main Street Southbound |      |       |            | Harden Parkway Westbound |      |       |            | Main Street Northbound |      |       |            | Madrid Street Eastbound |      |       |            |            |
|-------------------------------------------------------------------|------------------------|------|-------|------------|--------------------------|------|-------|------------|------------------------|------|-------|------------|-------------------------|------|-------|------------|------------|
| Start Time                                                        | Left                   | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Left                   | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Int. Total |
| <b>Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1</b> |                        |      |       |            |                          |      |       |            |                        |      |       |            |                         |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 03:45 PM              |                        |      |       |            |                          |      |       |            |                        |      |       |            |                         |      |       |            |            |
| 03:45 PM                                                          | 66                     | 185  | 20    | 271        | 77                       | 32   | 48    | 157        | 33                     | 206  | 47    | 286        | 17                      | 26   | 32    | 75         | 789        |
| 04:00 PM                                                          | 81                     | 229  | 24    | 334        | 76                       | 26   | 49    | 151        | 32                     | 205  | 46    | 283        | 15                      | 30   | 35    | 80         | 848        |
| 04:15 PM                                                          | 67                     | 222  | 33    | 322        | 73                       | 26   | 48    | 147        | 39                     | 203  | 48    | 290        | 25                      | 28   | 31    | 84         | 843        |
| 04:30 PM                                                          | 78                     | 219  | 18    | 315        | 72                       | 25   | 47    | 144        | 39                     | 214  | 47    | 300        | 21                      | 30   | 45    | 96         | 855        |
| Total Volume                                                      | 292                    | 855  | 95    | 1242       | 298                      | 109  | 192   | 599        | 143                    | 828  | 188   | 1159       | 78                      | 114  | 143   | 335        | 3335       |
| % App. Total                                                      | 23.5                   | 68.8 | 7.6   |            | 49.7                     | 18.2 | 32.1  |            | 12.3                   | 71.4 | 16.2  |            | 23.3                    | 34   | 42.7  |            |            |
| PHF                                                               | .901                   | .933 | .720  | .930       | .968                     | .852 | .980  | .954       | .917                   | .967 | .979  | .966       | .780                    | .950 | .794  | .872       | .975       |



# CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : MainSt\_MadridSt-HardenPkwY\_02-22-25

Site Code : 00000000

Start Date : 2/22/2025

Page No : 1

## Groups Printed- Vehicles

|             | Main Street<br>Southbound |      |       | Harden Parkway<br>Westbound |      |       | Main Street<br>Northbound |      |       | Madrid Street<br>Eastbound |      |       |            |
|-------------|---------------------------|------|-------|-----------------------------|------|-------|---------------------------|------|-------|----------------------------|------|-------|------------|
| Start Time  | Left                      | Thru | Right | Left                        | Thru | Right | Left                      | Thru | Right | Left                       | Thru | Right | Int. Total |
| 07:00 AM    | 12                        | 35   | 4     | 7                           | 4    | 12    | 4                         | 32   | 5     | 3                          | 6    | 13    | 137        |
| 07:15 AM    | 11                        | 39   | 5     | 18                          | 4    | 13    | 13                        | 58   | 11    | 12                         | 11   | 7     | 202        |
| 07:30 AM    | 12                        | 42   | 5     | 24                          | 7    | 21    | 8                         | 66   | 8     | 16                         | 5    | 7     | 221        |
| 07:45 AM    | 17                        | 44   | 7     | 27                          | 11   | 21    | 9                         | 64   | 13    | 14                         | 14   | 8     | 249        |
| Total       | 52                        | 160  | 21    | 76                          | 26   | 67    | 34                        | 220  | 37    | 45                         | 36   | 35    | 809        |
| 08:00 AM    | 21                        | 55   | 10    | 28                          | 13   | 26    | 9                         | 67   | 10    | 12                         | 6    | 16    | 273        |
| 08:15 AM    | 22                        | 59   | 8     | 34                          | 22   | 28    | 8                         | 78   | 6     | 13                         | 8    | 16    | 302        |
| 08:30 AM    | 17                        | 68   | 6     | 49                          | 11   | 23    | 7                         | 84   | 14    | 16                         | 9    | 18    | 322        |
| 08:45 AM    | 25                        | 73   | 7     | 37                          | 6    | 24    | 17                        | 88   | 11    | 14                         | 17   | 18    | 337        |
| Total       | 85                        | 255  | 31    | 148                         | 52   | 101   | 41                        | 317  | 41    | 55                         | 40   | 68    | 1234       |
| 09:00 AM    | 26                        | 76   | 6     | 32                          | 13   | 20    | 12                        | 101  | 16    | 17                         | 10   | 11    | 340        |
| 09:15 AM    | 40                        | 99   | 10    | 39                          | 15   | 27    | 20                        | 120  | 16    | 13                         | 15   | 15    | 429        |
| 09:30 AM    | 31                        | 89   | 10    | 54                          | 13   | 25    | 26                        | 118  | 13    | 17                         | 21   | 21    | 438        |
| 09:45 AM    | 41                        | 98   | 7     | 32                          | 22   | 28    | 15                        | 118  | 22    | 21                         | 15   | 22    | 441        |
| Total       | 138                       | 362  | 33    | 157                         | 63   | 100   | 73                        | 457  | 67    | 68                         | 61   | 69    | 1648       |
| 03:00 PM    | 58                        | 170  | 13    | 68                          | 28   | 43    | 33                        | 204  | 23    | 21                         | 28   | 40    | 729        |
| 03:15 PM    | 62                        | 199  | 18    | 72                          | 26   | 45    | 32                        | 194  | 28    | 20                         | 21   | 35    | 752        |
| 03:30 PM    | 58                        | 197  | 14    | 78                          | 31   | 44    | 33                        | 202  | 39    | 36                         | 19   | 43    | 794        |
| 03:45 PM    | 54                        | 189  | 22    | 82                          | 28   | 40    | 38                        | 219  | 33    | 30                         | 29   | 40    | 804        |
| Total       | 232                       | 755  | 67    | 300                         | 113  | 172   | 136                       | 819  | 123   | 107                        | 97   | 158   | 3079       |
| 04:00 PM    | 59                        | 188  | 22    | 73                          | 29   | 40    | 41                        | 191  | 38    | 19                         | 31   | 44    | 775        |
| 04:15 PM    | 46                        | 194  | 7     | 74                          | 28   | 35    | 40                        | 188  | 47    | 25                         | 32   | 34    | 750        |
| 04:30 PM    | 56                        | 171  | 11    | 89                          | 31   | 36    | 37                        | 196  | 32    | 27                         | 32   | 40    | 758        |
| 04:45 PM    | 55                        | 204  | 21    | 83                          | 23   | 48    | 42                        | 171  | 37    | 20                         | 30   | 31    | 765        |
| Total       | 216                       | 757  | 61    | 319                         | 111  | 159   | 160                       | 746  | 154   | 91                         | 125  | 149   | 3048       |
| 05:00 PM    | 66                        | 176  | 16    | 72                          | 23   | 45    | 35                        | 185  | 30    | 26                         | 24   | 38    | 736        |
| 05:15 PM    | 51                        | 172  | 14    | 75                          | 24   | 39    | 40                        | 172  | 33    | 20                         | 22   | 33    | 695        |
| 05:30 PM    | 64                        | 169  | 18    | 68                          | 29   | 35    | 39                        | 159  | 32    | 23                         | 22   | 27    | 685        |
| 05:45 PM    | 55                        | 159  | 13    | 61                          | 22   | 35    | 39                        | 165  | 29    | 25                         | 16   | 48    | 667        |
| Total       | 236                       | 676  | 61    | 276                         | 98   | 154   | 153                       | 681  | 124   | 94                         | 84   | 146   | 2783       |
| Grand Total | 959                       | 2965 | 274   | 1276                        | 463  | 753   | 597                       | 3240 | 546   | 460                        | 443  | 625   | 12601      |
| Apprch %    | 22.8                      | 70.6 | 6.5   | 51.2                        | 18.6 | 30.2  | 13.6                      | 73.9 | 12.5  | 30.1                       | 29   | 40.9  |            |
| Total %     | 7.6                       | 23.5 | 2.2   | 10.1                        | 3.7  | 6     | 4.7                       | 25.7 | 4.3   | 3.7                        | 3.5  | 5     |            |



# CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

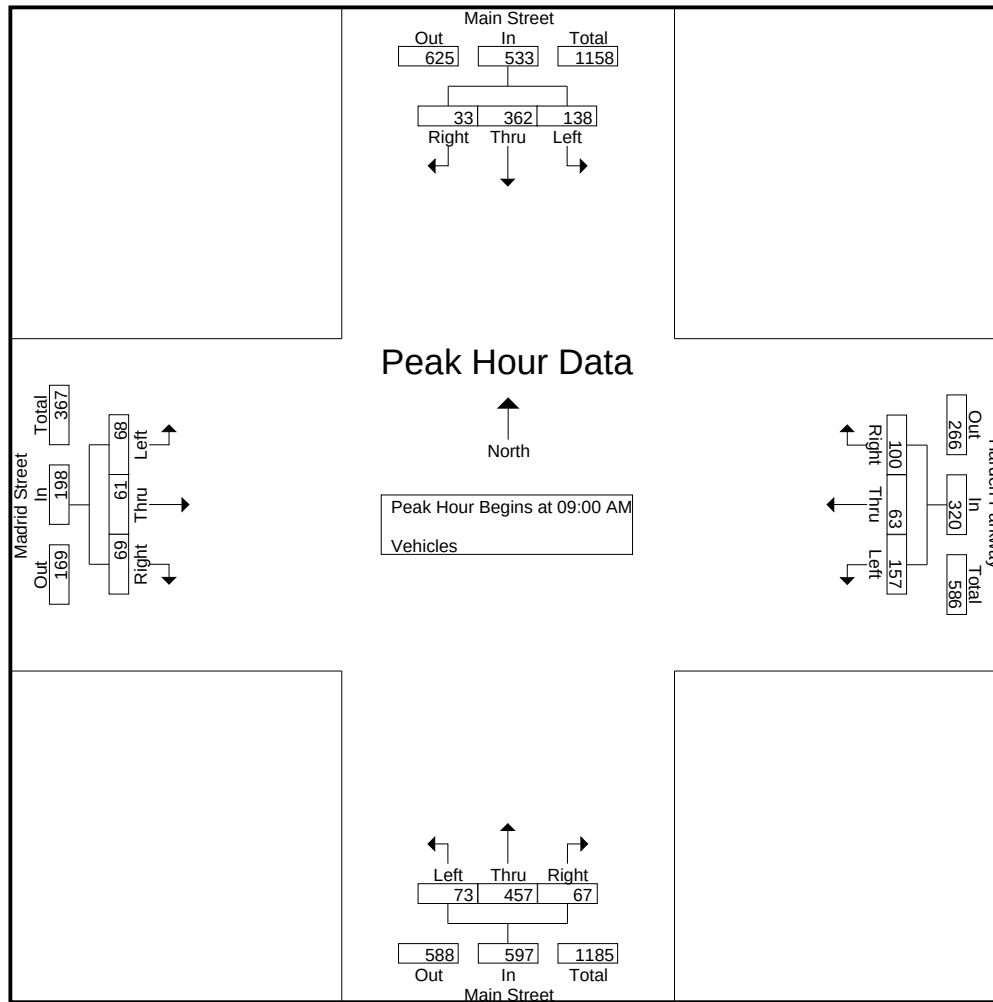
File Name : MainSt\_MadridSt-HardenPkwy\_02-22-25

Site Code : 00000000

Start Date : 2/22/2025

Page No : 2

|                                                                   | Main Street Southbound |           |           |            | Harden Parkway Westbound |           |           |            | Main Street Northbound |            |           |            | Madrid Street Eastbound |           |           |            |            |
|-------------------------------------------------------------------|------------------------|-----------|-----------|------------|--------------------------|-----------|-----------|------------|------------------------|------------|-----------|------------|-------------------------|-----------|-----------|------------|------------|
| Start Time                                                        | Left                   | Thru      | Right     | App. Total | Left                     | Thru      | Right     | App. Total | Left                   | Thru       | Right     | App. Total | Left                    | Thru      | Right     | App. Total | Int. Total |
| <b>Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1</b> |                        |           |           |            |                          |           |           |            |                        |            |           |            |                         |           |           |            |            |
| Peak Hour for Entire Intersection Begins at 09:00 AM              |                        |           |           |            |                          |           |           |            |                        |            |           |            |                         |           |           |            |            |
| 09:00 AM                                                          | 26                     | 76        | 6         | 108        | 32                       | 13        | 20        | 65         | 12                     | 101        | 16        | 129        | 17                      | 10        | 11        | 38         | 340        |
| 09:15 AM                                                          | 40                     | <b>99</b> | <b>10</b> | <b>149</b> | 39                       | 15        | 27        | 81         | 20                     | <b>120</b> | 16        | 156        | 13                      | 15        | 15        | 43         | 429        |
| 09:30 AM                                                          | 31                     | 89        | 10        | 130        | <b>54</b>                | 13        | 25        | <b>92</b>  | <b>26</b>              | 118        | 13        | <b>157</b> | 17                      | <b>21</b> | 21        | <b>59</b>  | 438        |
| 09:45 AM                                                          | <b>41</b>              | 98        | 7         | 146        | 32                       | <b>22</b> | <b>28</b> | 82         | 15                     | 118        | <b>22</b> | 155        | <b>21</b>               | 15        | <b>22</b> | 58         | <b>441</b> |
| Total Volume                                                      | 138                    | 362       | 33        | 533        | 157                      | 63        | 100       | 320        | 73                     | 457        | 67        | 597        | 68                      | 61        | 69        | 198        | 1648       |
| % App. Total                                                      | 25.9                   | 67.9      | 6.2       |            | 49.1                     | 19.7      | 31.2      |            | 12.2                   | 76.5       | 11.2      |            | 34.3                    | 30.8      | 34.8      |            |            |
| PHF                                                               | .841                   | .914      | .825      | .894       | .727                     | .716      | .893      | .870       | .702                   | .952       | .761      | .951       | .810                    | .726      | .784      | .839       | .934       |



# CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

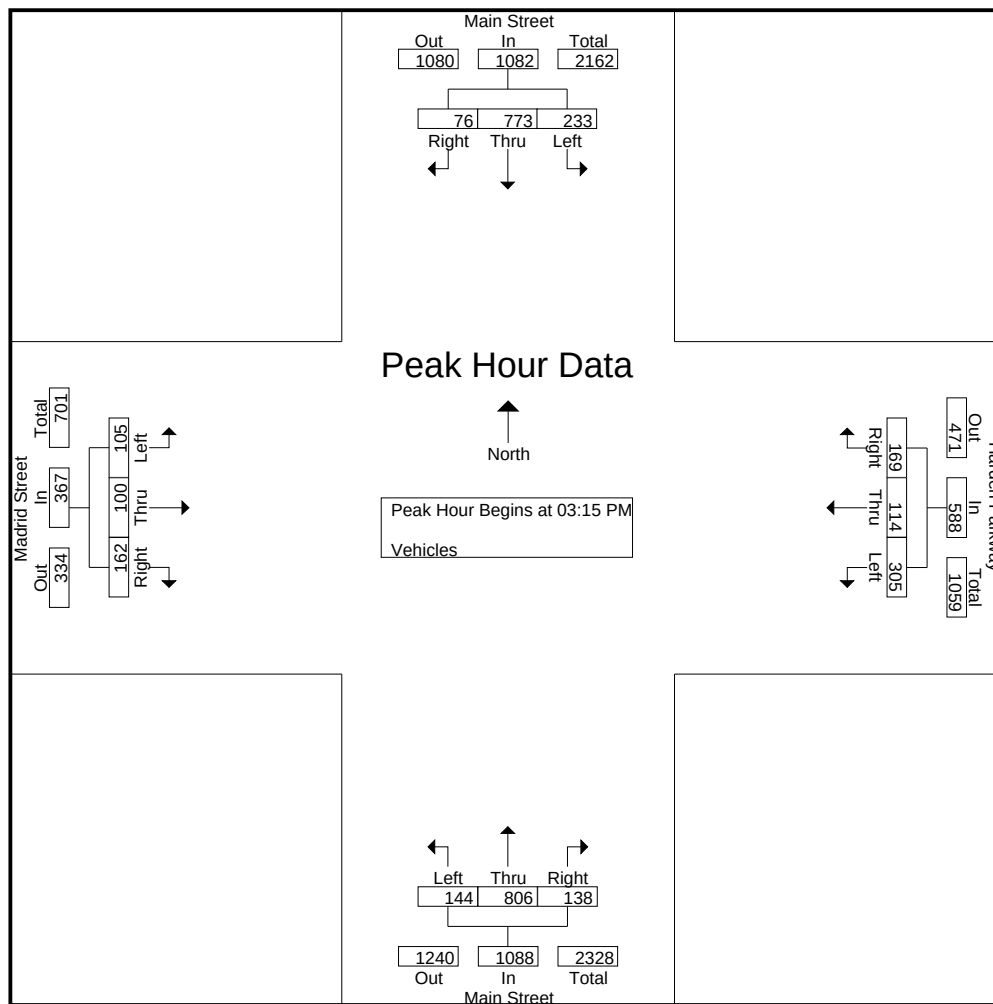
File Name : MainSt\_MadridSt-HardenPkwy\_02-22-25

Site Code : 00000000

Start Date : 2/22/2025

Page No : 3

|                                                                   | Main Street Southbound |      |       |            | Harden Parkway Westbound |      |       |            | Main Street Northbound |      |       |            | Madrid Street Eastbound |      |       |            |            |
|-------------------------------------------------------------------|------------------------|------|-------|------------|--------------------------|------|-------|------------|------------------------|------|-------|------------|-------------------------|------|-------|------------|------------|
| Start Time                                                        | Left                   | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Left                   | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Int. Total |
| <b>Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1</b> |                        |      |       |            |                          |      |       |            |                        |      |       |            |                         |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 03:15 PM              |                        |      |       |            |                          |      |       |            |                        |      |       |            |                         |      |       |            |            |
| 03:15 PM                                                          | 62                     | 199  | 18    | 279        | 72                       | 26   | 45    | 143        | 32                     | 194  | 28    | 254        | 20                      | 21   | 35    | 76         | 752        |
| 03:30 PM                                                          | 58                     | 197  | 14    | 269        | 78                       | 31   | 44    | 153        | 33                     | 202  | 39    | 274        | 36                      | 19   | 43    | 98         | 794        |
| 03:45 PM                                                          | 54                     | 189  | 22    | 265        | 82                       | 28   | 40    | 150        | 38                     | 219  | 33    | 290        | 30                      | 29   | 40    | 99         | 804        |
| 04:00 PM                                                          | 59                     | 188  | 22    | 269        | 73                       | 29   | 40    | 142        | 41                     | 191  | 38    | 270        | 19                      | 31   | 44    | 94         | 775        |
| Total Volume                                                      | 233                    | 773  | 76    | 1082       | 305                      | 114  | 169   | 588        | 144                    | 806  | 138   | 1088       | 105                     | 100  | 162   | 367        | 3125       |
| % App. Total                                                      | 21.5                   | 71.4 | 7     |            | 51.9                     | 19.4 | 28.7  |            | 13.2                   | 74.1 | 12.7  |            | 28.6                    | 27.2 | 44.1  |            |            |
| PHF                                                               | .940                   | .971 | .864  | .970       | .930                     | .919 | .939  | .961       | .878                   | .920 | .885  | .938       | .729                    | .806 | .920  | .927       | .972       |



# CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : MallDrivewayEast\_MadridSt\_02-21-25

Site Code : 00000000

Start Date : 2/21/2025

Page No : 1

## Groups Printed- Vehicles

|             | Mall Driveway East<br>Southbound |      |       | Madrid Street<br>Westbound |      |       | Northbound |      |       | Madrid Street<br>Eastbound |      |       |            |
|-------------|----------------------------------|------|-------|----------------------------|------|-------|------------|------|-------|----------------------------|------|-------|------------|
| Start Time  | Left                             | Thru | Right | Left                       | Thru | Right | Left       | Thru | Right | Left                       | Thru | Right | Int. Total |
| 07:00 AM    | 2                                | 0    | 0     | 0                          | 18   | 2     | 0          | 0    | 0     | 0                          | 44   | 0     | 66         |
| 07:15 AM    | 2                                | 0    | 0     | 0                          | 24   | 6     | 0          | 0    | 0     | 1                          | 40   | 0     | 73         |
| 07:30 AM    | 2                                | 0    | 0     | 0                          | 18   | 8     | 0          | 0    | 0     | 0                          | 47   | 0     | 75         |
| 07:45 AM    | 3                                | 0    | 1     | 0                          | 22   | 2     | 0          | 0    | 0     | 1                          | 73   | 0     | 102        |
| Total       | 9                                | 0    | 1     | 0                          | 82   | 18    | 0          | 0    | 0     | 2                          | 204  | 0     | 316        |
| 08:00 AM    | 3                                | 0    | 0     | 0                          | 41   | 4     | 0          | 0    | 0     | 2                          | 46   | 0     | 96         |
| 08:15 AM    | 4                                | 0    | 0     | 0                          | 35   | 7     | 0          | 0    | 0     | 3                          | 49   | 0     | 98         |
| 08:30 AM    | 1                                | 0    | 2     | 0                          | 44   | 8     | 0          | 0    | 0     | 2                          | 52   | 0     | 109        |
| 08:45 AM    | 6                                | 0    | 3     | 0                          | 29   | 4     | 0          | 0    | 0     | 0                          | 43   | 0     | 85         |
| Total       | 14                               | 0    | 5     | 0                          | 149  | 23    | 0          | 0    | 0     | 7                          | 190  | 0     | 388        |
| 09:00 AM    | 7                                | 0    | 1     | 0                          | 40   | 9     | 0          | 0    | 0     | 3                          | 50   | 0     | 110        |
| 09:15 AM    | 1                                | 0    | 0     | 0                          | 32   | 8     | 0          | 0    | 0     | 0                          | 39   | 0     | 80         |
| 09:30 AM    | 5                                | 0    | 0     | 0                          | 26   | 16    | 0          | 0    | 0     | 0                          | 43   | 0     | 90         |
| 09:45 AM    | 6                                | 0    | 0     | 0                          | 30   | 12    | 0          | 0    | 0     | 2                          | 27   | 0     | 77         |
| Total       | 19                               | 0    | 1     | 0                          | 128  | 45    | 0          | 0    | 0     | 5                          | 159  | 0     | 357        |
| 03:00 PM    | 12                               | 0    | 10    | 0                          | 52   | 26    | 0          | 0    | 0     | 3                          | 61   | 0     | 164        |
| 03:15 PM    | 11                               | 0    | 4     | 0                          | 50   | 21    | 0          | 0    | 0     | 1                          | 63   | 0     | 150        |
| 03:30 PM    | 11                               | 0    | 3     | 0                          | 53   | 24    | 0          | 0    | 0     | 5                          | 70   | 0     | 166        |
| 03:45 PM    | 10                               | 0    | 5     | 0                          | 71   | 14    | 0          | 0    | 0     | 3                          | 64   | 0     | 167        |
| Total       | 44                               | 0    | 22    | 0                          | 226  | 85    | 0          | 0    | 0     | 12                         | 258  | 0     | 647        |
| 04:00 PM    | 15                               | 0    | 2     | 0                          | 71   | 9     | 0          | 0    | 0     | 6                          | 65   | 0     | 168        |
| 04:15 PM    | 16                               | 0    | 3     | 0                          | 73   | 18    | 0          | 0    | 0     | 5                          | 69   | 0     | 184        |
| 04:30 PM    | 11                               | 0    | 5     | 0                          | 67   | 16    | 0          | 0    | 0     | 0                          | 86   | 0     | 185        |
| 04:45 PM    | 7                                | 0    | 2     | 0                          | 78   | 7     | 0          | 0    | 0     | 0                          | 70   | 0     | 164        |
| Total       | 49                               | 0    | 12    | 0                          | 289  | 50    | 0          | 0    | 0     | 11                         | 290  | 0     | 701        |
| 05:00 PM    | 3                                | 0    | 2     | 0                          | 48   | 15    | 0          | 0    | 0     | 0                          | 75   | 0     | 143        |
| 05:15 PM    | 6                                | 0    | 2     | 0                          | 55   | 19    | 0          | 0    | 0     | 4                          | 73   | 0     | 159        |
| 05:30 PM    | 3                                | 0    | 0     | 0                          | 47   | 19    | 0          | 0    | 0     | 1                          | 68   | 0     | 138        |
| 05:45 PM    | 6                                | 0    | 2     | 0                          | 54   | 20    | 0          | 0    | 0     | 1                          | 62   | 0     | 145        |
| Total       | 18                               | 0    | 6     | 0                          | 204  | 73    | 0          | 0    | 0     | 6                          | 278  | 0     | 585        |
| Grand Total | 153                              | 0    | 47    | 0                          | 1078 | 294   | 0          | 0    | 0     | 43                         | 1379 | 0     | 2994       |
| Apprch %    | 76.5                             | 0    | 23.5  | 0                          | 78.6 | 21.4  | 0          | 0    | 0     | 3                          | 97   | 0     |            |
| Total %     | 5.1                              | 0    | 1.6   | 0                          | 36   | 9.8   | 0          | 0    | 0     | 1.4                        | 46.1 | 0     |            |

# CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

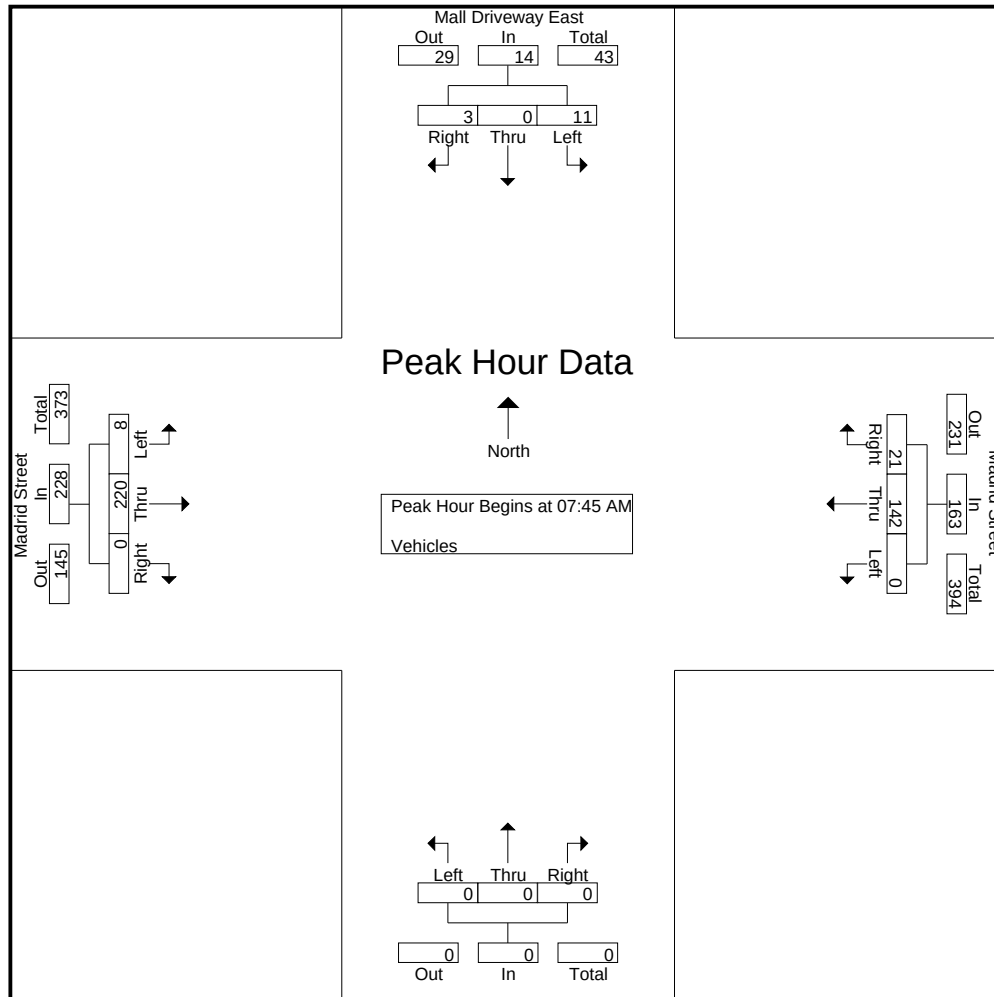
File Name : MallDrivewayEast\_MadridSt\_02-21-25

Site Code : 00000000

Start Date : 2/21/2025

Page No : 2

|                                                                   | Mall Driveway East Southbound |      |       |            | Madrid Street Westbound |      |       |            | Northbound |      |       |            | Madrid Street Eastbound |      |       |            |            |
|-------------------------------------------------------------------|-------------------------------|------|-------|------------|-------------------------|------|-------|------------|------------|------|-------|------------|-------------------------|------|-------|------------|------------|
| Start Time                                                        | Left                          | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left       | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Int. Total |
| <b>Peak Hour Analysis From 07:00 AM to 12:00 PM - Peak 1 of 1</b> |                               |      |       |            |                         |      |       |            |            |      |       |            |                         |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 07:45 AM              |                               |      |       |            |                         |      |       |            |            |      |       |            |                         |      |       |            |            |
| 07:45 AM                                                          | 3                             | 0    | 1     | 4          | 0                       | 22   | 2     | 24         | 0          | 0    | 0     | 0          | 1                       | 73   | 0     | 74         | 102        |
| 08:00 AM                                                          | 3                             | 0    | 0     | 3          | 0                       | 41   | 4     | 45         | 0          | 0    | 0     | 0          | 2                       | 46   | 0     | 48         | 96         |
| 08:15 AM                                                          | 4                             | 0    | 0     | 4          | 0                       | 35   | 7     | 42         | 0          | 0    | 0     | 0          | 3                       | 49   | 0     | 52         | 98         |
| 08:30 AM                                                          | 1                             | 0    | 2     | 3          | 0                       | 44   | 8     | 52         | 0          | 0    | 0     | 0          | 2                       | 52   | 0     | 54         | 109        |
| Total Volume                                                      | 11                            | 0    | 3     | 14         | 0                       | 142  | 21    | 163        | 0          | 0    | 0     | 0          | 8                       | 220  | 0     | 228        | 405        |
| % App. Total                                                      | 78.6                          | 0    | 21.4  |            | 0                       | 87.1 | 12.9  |            | 0          | 0    | 0     |            | 3.5                     | 96.5 | 0     |            |            |
| PHF                                                               | .688                          | .000 | .375  | .875       | .000                    | .807 | .656  | .784       | .000       | .000 | .000  | .000       | .667                    | .753 | .000  | .770       | .929       |



# CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

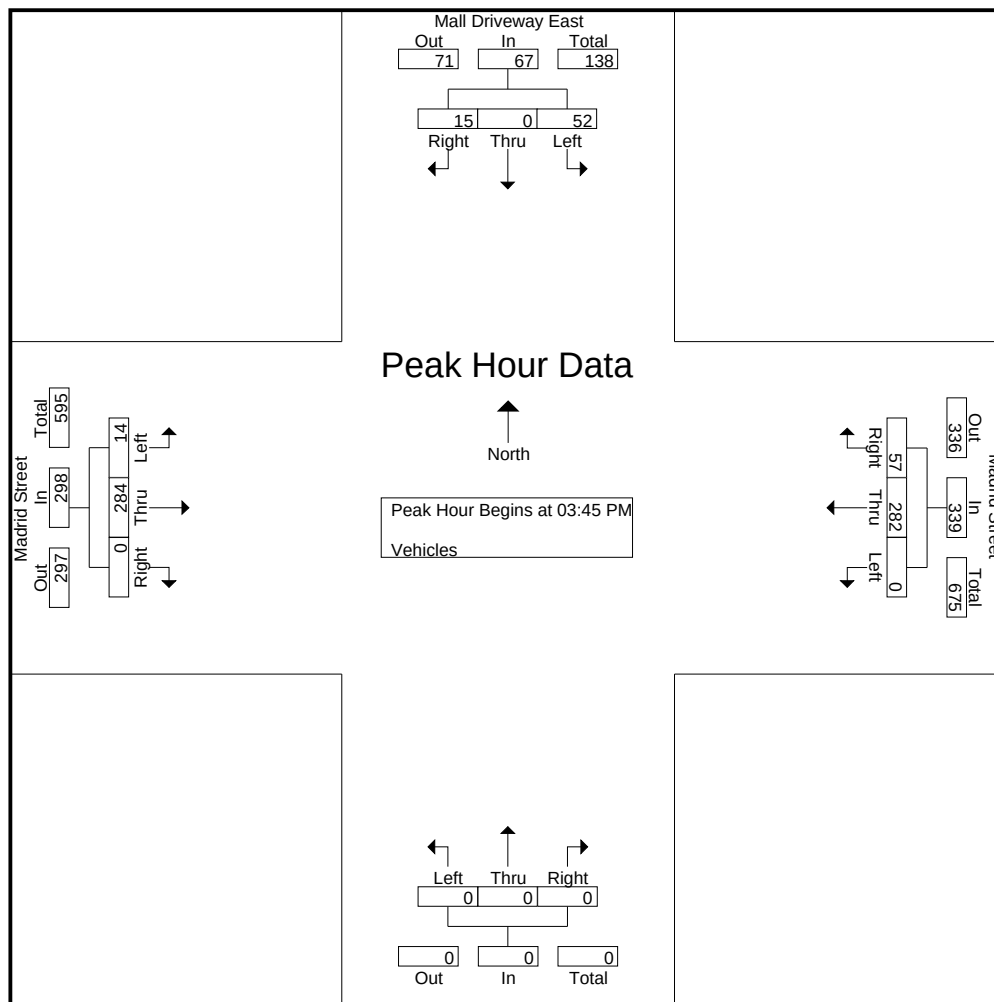
File Name : MallDrivewayEast\_MadridSt\_02-21-25

Site Code : 00000000

Start Date : 2/21/2025

Page No : 3

|                                                                   | Mall Driveway East Southbound |      |       |            | Madrid Street Westbound |      |       |            | Northbound |      |       |            | Madrid Street Eastbound |      |       |            |            |
|-------------------------------------------------------------------|-------------------------------|------|-------|------------|-------------------------|------|-------|------------|------------|------|-------|------------|-------------------------|------|-------|------------|------------|
| Start Time                                                        | Left                          | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left       | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Int. Total |
| <b>Peak Hour Analysis From 12:15 PM to 05:45 PM - Peak 1 of 1</b> |                               |      |       |            |                         |      |       |            |            |      |       |            |                         |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 03:45 PM              |                               |      |       |            |                         |      |       |            |            |      |       |            |                         |      |       |            |            |
| 03:45 PM                                                          | 10                            | 0    | 5     | 15         | 0                       | 71   | 14    | 85         | 0          | 0    | 0     | 0          | 3                       | 64   | 0     | 67         | 167        |
| 04:00 PM                                                          | 15                            | 0    | 2     | 17         | 0                       | 71   | 9     | 80         | 0          | 0    | 0     | 0          | 6                       | 65   | 0     | 71         | 168        |
| 04:15 PM                                                          | 16                            | 0    | 3     | 19         | 0                       | 73   | 18    | 91         | 0          | 0    | 0     | 0          | 5                       | 69   | 0     | 74         | 184        |
| 04:30 PM                                                          | 11                            | 0    | 5     | 16         | 0                       | 67   | 16    | 83         | 0          | 0    | 0     | 0          | 0                       | 86   | 0     | 86         | 185        |
| Total Volume                                                      | 52                            | 0    | 15    | 67         | 0                       | 282  | 57    | 339        | 0          | 0    | 0     | 0          | 14                      | 284  | 0     | 298        | 704        |
| % App. Total                                                      | 77.6                          | 0    | 22.4  |            | 0                       | 83.2 | 16.8  |            | 0          | 0    | 0     |            | 4.7                     | 95.3 | 0     |            |            |
| PHF                                                               | .813                          | .000 | .750  | .882       | .000                    | .966 | .792  | .931       | .000       | .000 | .000  | .000       | .583                    | .826 | .000  | .866       | .951       |



# CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : MallDrivewayEast\_MadridSt\_02-22-25

Site Code : 00000000

Start Date : 2/22/2025

Page No : 1

## Groups Printed- Vehicles

|             | Mall Driveway East<br>Southbound |      |       | Madrid Street<br>Westbound |      |       | Northbound |      |       | Madrid Street<br>Eastbound |      |       |            |
|-------------|----------------------------------|------|-------|----------------------------|------|-------|------------|------|-------|----------------------------|------|-------|------------|
| Start Time  | Left                             | Thru | Right | Left                       | Thru | Right | Left       | Thru | Right | Left                       | Thru | Right | Int. Total |
| 07:00 AM    | 1                                | 0    | 0     | 0                          | 11   | 1     | 0          | 0    | 0     | 0                          | 21   | 0     | 34         |
| 07:15 AM    | 2                                | 0    | 1     | 0                          | 16   | 6     | 0          | 0    | 0     | 0                          | 28   | 0     | 53         |
| 07:30 AM    | 3                                | 0    | 0     | 0                          | 15   | 6     | 0          | 0    | 0     | 0                          | 24   | 0     | 48         |
| 07:45 AM    | 1                                | 0    | 2     | 0                          | 25   | 2     | 0          | 0    | 0     | 1                          | 35   | 0     | 66         |
| Total       | 7                                | 0    | 3     | 0                          | 67   | 15    | 0          | 0    | 0     | 1                          | 108  | 0     | 201        |
| 08:00 AM    | 2                                | 0    | 0     | 0                          | 23   | 9     | 0          | 0    | 0     | 1                          | 32   | 0     | 67         |
| 08:15 AM    | 1                                | 0    | 1     | 0                          | 31   | 7     | 0          | 0    | 0     | 1                          | 36   | 0     | 77         |
| 08:30 AM    | 3                                | 0    | 2     | 0                          | 21   | 3     | 0          | 0    | 0     | 1                          | 40   | 0     | 70         |
| 08:45 AM    | 3                                | 0    | 6     | 0                          | 22   | 8     | 0          | 0    | 0     | 2                          | 47   | 0     | 88         |
| Total       | 9                                | 0    | 9     | 0                          | 97   | 27    | 0          | 0    | 0     | 5                          | 155  | 0     | 302        |
| 09:00 AM    | 2                                | 0    | 2     | 0                          | 19   | 13    | 0          | 0    | 0     | 0                          | 36   | 0     | 72         |
| 09:15 AM    | 1                                | 0    | 3     | 0                          | 30   | 16    | 0          | 0    | 0     | 1                          | 43   | 0     | 94         |
| 09:30 AM    | 2                                | 0    | 4     | 0                          | 46   | 2     | 0          | 0    | 0     | 2                          | 57   | 0     | 113        |
| 09:45 AM    | 5                                | 0    | 4     | 0                          | 31   | 13    | 0          | 0    | 0     | 4                          | 53   | 0     | 110        |
| Total       | 10                               | 0    | 13    | 0                          | 126  | 44    | 0          | 0    | 0     | 7                          | 189  | 0     | 389        |
| 03:00 PM    | 11                               | 0    | 6     | 0                          | 49   | 25    | 0          | 0    | 0     | 3                          | 78   | 0     | 172        |
| 03:15 PM    | 5                                | 0    | 8     | 0                          | 56   | 20    | 0          | 0    | 0     | 3                          | 71   | 0     | 163        |
| 03:30 PM    | 10                               | 0    | 7     | 0                          | 51   | 27    | 0          | 0    | 0     | 3                          | 87   | 0     | 185        |
| 03:45 PM    | 13                               | 0    | 4     | 0                          | 69   | 19    | 0          | 0    | 0     | 5                          | 82   | 0     | 192        |
| Total       | 39                               | 0    | 25    | 0                          | 225  | 91    | 0          | 0    | 0     | 14                         | 318  | 0     | 712        |
| 04:00 PM    | 15                               | 0    | 8     | 0                          | 66   | 25    | 0          | 0    | 0     | 4                          | 81   | 0     | 199        |
| 04:15 PM    | 15                               | 0    | 2     | 0                          | 48   | 27    | 0          | 0    | 0     | 1                          | 76   | 0     | 169        |
| 04:30 PM    | 23                               | 0    | 2     | 0                          | 54   | 25    | 0          | 0    | 0     | 1                          | 76   | 0     | 181        |
| 04:45 PM    | 12                               | 0    | 4     | 0                          | 51   | 34    | 0          | 0    | 0     | 2                          | 71   | 0     | 174        |
| Total       | 65                               | 0    | 16    | 0                          | 219  | 111   | 0          | 0    | 0     | 8                          | 304  | 0     | 723        |
| 05:00 PM    | 15                               | 0    | 3     | 0                          | 57   | 27    | 0          | 0    | 0     | 0                          | 73   | 0     | 175        |
| 05:15 PM    | 14                               | 0    | 8     | 0                          | 54   | 26    | 0          | 0    | 0     | 2                          | 61   | 0     | 165        |
| 05:30 PM    | 11                               | 0    | 10    | 0                          | 48   | 36    | 0          | 0    | 0     | 1                          | 60   | 0     | 166        |
| 05:45 PM    | 15                               | 0    | 6     | 0                          | 43   | 28    | 0          | 0    | 0     | 0                          | 74   | 0     | 166        |
| Total       | 55                               | 0    | 27    | 0                          | 202  | 117   | 0          | 0    | 0     | 3                          | 268  | 0     | 672        |
| Grand Total | 185                              | 0    | 93    | 0                          | 936  | 405   | 0          | 0    | 0     | 38                         | 1342 | 0     | 2999       |
| Apprch %    | 66.5                             | 0    | 33.5  | 0                          | 69.8 | 30.2  | 0          | 0    | 0     | 2.8                        | 97.2 | 0     |            |
| Total %     | 6.2                              | 0    | 3.1   | 0                          | 31.2 | 13.5  | 0          | 0    | 0     | 1.3                        | 44.7 | 0     |            |

# CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

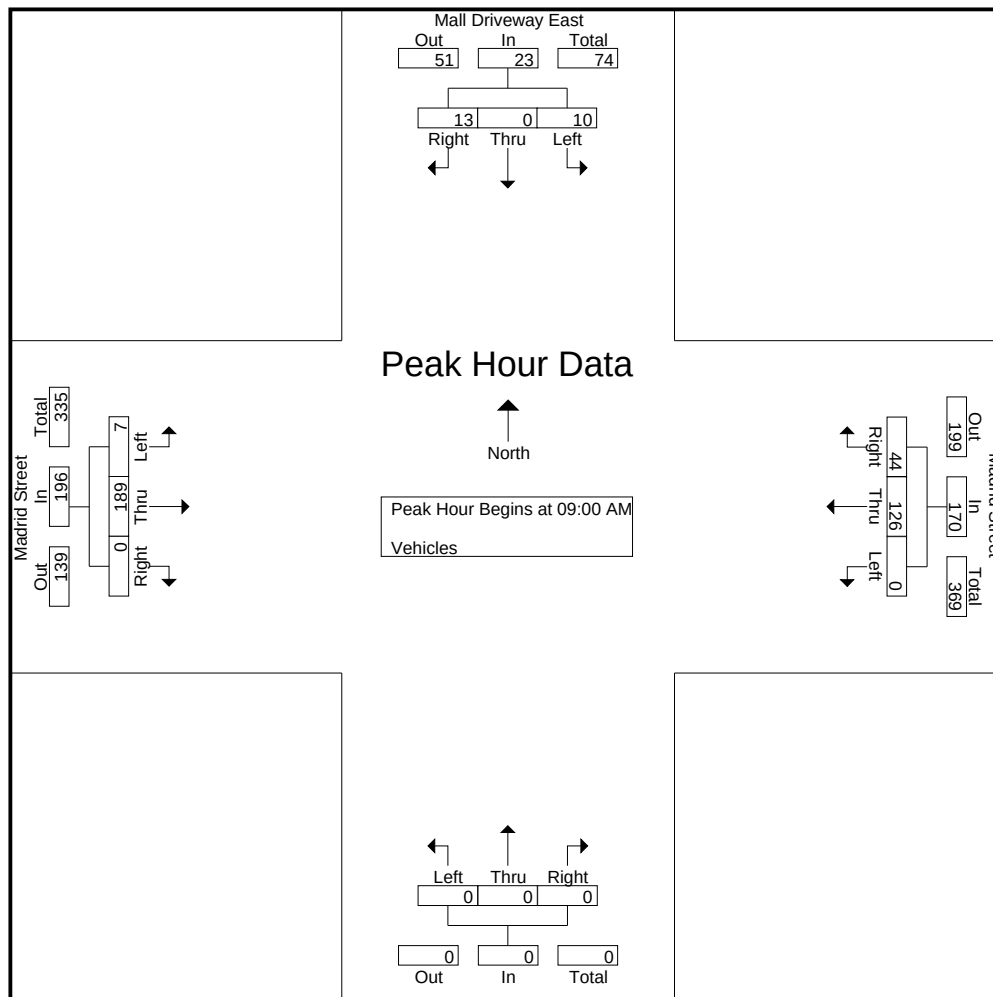
File Name : MallDrivewayEast\_MadridSt\_02-22-25

Site Code : 00000000

Start Date : 2/22/2025

Page No : 2

|                                                                   | Mall Driveway East Southbound |      |       |            | Madrid Street Westbound |      |       |            | Northbound |      |       |            | Madrid Street Eastbound |      |       |            |            |
|-------------------------------------------------------------------|-------------------------------|------|-------|------------|-------------------------|------|-------|------------|------------|------|-------|------------|-------------------------|------|-------|------------|------------|
| Start Time                                                        | Left                          | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left       | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Int. Total |
| <b>Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1</b> |                               |      |       |            |                         |      |       |            |            |      |       |            |                         |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 09:00 AM              |                               |      |       |            |                         |      |       |            |            |      |       |            |                         |      |       |            |            |
| 09:00 AM                                                          | 2                             | 0    | 2     | 4          | 0                       | 19   | 13    | 32         | 0          | 0    | 0     | 0          | 0                       | 36   | 0     | 36         | 72         |
| 09:15 AM                                                          | 1                             | 0    | 3     | 4          | 0                       | 30   | 16    | 46         | 0          | 0    | 0     | 0          | 1                       | 43   | 0     | 44         | 94         |
| 09:30 AM                                                          | 2                             | 0    | 4     | 6          | 0                       | 46   | 2     | 48         | 0          | 0    | 0     | 0          | 2                       | 57   | 0     | 59         | 113        |
| 09:45 AM                                                          | 5                             | 0    | 4     | 9          | 0                       | 31   | 13    | 44         | 0          | 0    | 0     | 0          | 4                       | 53   | 0     | 57         | 110        |
| Total Volume                                                      | 10                            | 0    | 13    | 23         | 0                       | 126  | 44    | 170        | 0          | 0    | 0     | 0          | 7                       | 189  | 0     | 196        | 389        |
| % App. Total                                                      | 43.5                          | 0    | 56.5  |            | 0                       | 74.1 | 25.9  |            | 0          | 0    | 0     |            | 3.6                     | 96.4 | 0     |            |            |
| PHF                                                               | .500                          | .000 | .813  | .639       | .000                    | .685 | .688  | .885       | .000       | .000 | .000  | .000       | .438                    | .829 | .000  | .831       | .861       |





# CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

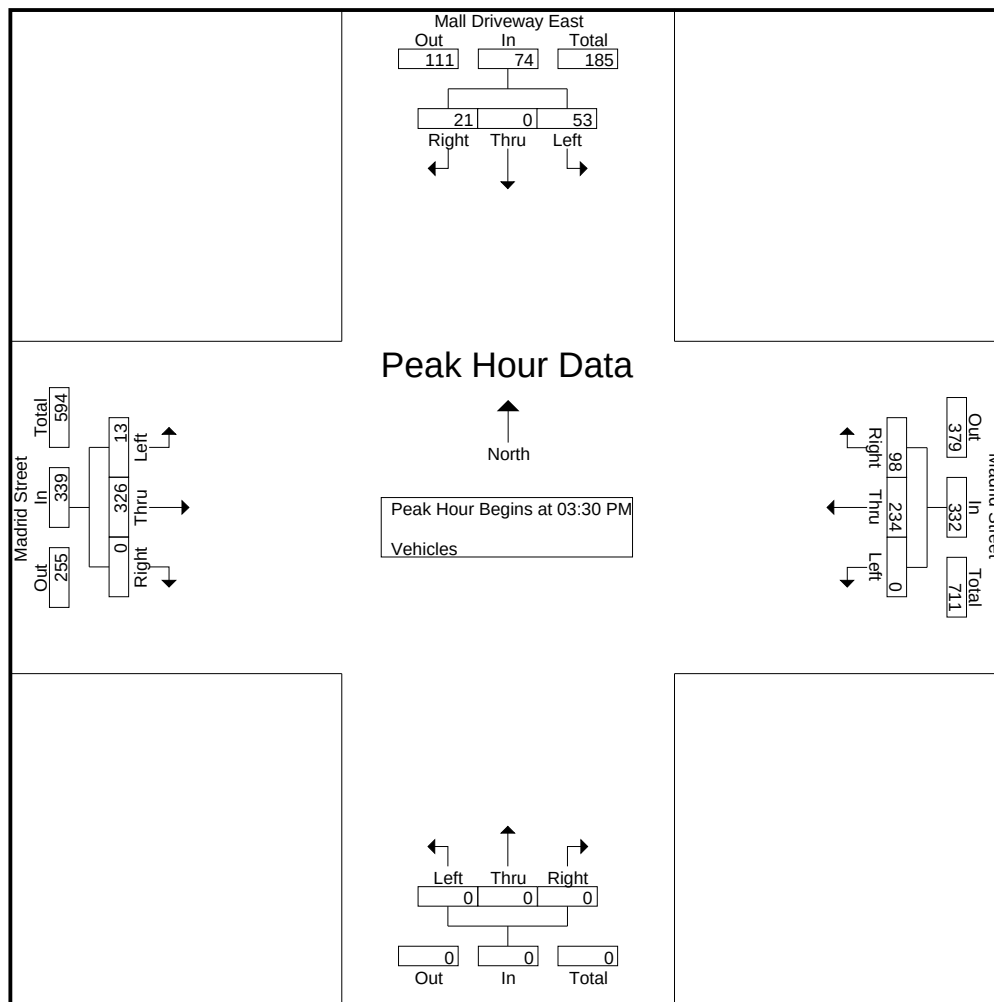
File Name : MallDrivewayEast\_MadridSt\_02-22-25

Site Code : 00000000

Start Date : 2/22/2025

Page No : 3

|                                                                   | Mall Driveway East Southbound |      |       |            | Madrid Street Westbound |      |       |            | Northbound |      |       |            | Madrid Street Eastbound |      |       |            |            |
|-------------------------------------------------------------------|-------------------------------|------|-------|------------|-------------------------|------|-------|------------|------------|------|-------|------------|-------------------------|------|-------|------------|------------|
| Start Time                                                        | Left                          | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left       | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Int. Total |
| <b>Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1</b> |                               |      |       |            |                         |      |       |            |            |      |       |            |                         |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 03:30 PM              |                               |      |       |            |                         |      |       |            |            |      |       |            |                         |      |       |            |            |
| 03:30 PM                                                          | 10                            | 0    | 7     | 17         | 0                       | 51   | 27    | 78         | 0          | 0    | 0     | 0          | 3                       | 87   | 0     | 90         | 185        |
| 03:45 PM                                                          | 13                            | 0    | 4     | 17         | 0                       | 69   | 19    | 88         | 0          | 0    | 0     | 0          | 5                       | 82   | 0     | 87         | 192        |
| 04:00 PM                                                          | 15                            | 0    | 8     | 23         | 0                       | 66   | 25    | 91         | 0          | 0    | 0     | 0          | 4                       | 81   | 0     | 85         | 199        |
| 04:15 PM                                                          | 15                            | 0    | 2     | 17         | 0                       | 48   | 27    | 75         | 0          | 0    | 0     | 0          | 1                       | 76   | 0     | 77         | 169        |
| Total Volume                                                      | 53                            | 0    | 21    | 74         | 0                       | 234  | 98    | 332        | 0          | 0    | 0     | 0          | 13                      | 326  | 0     | 339        | 745        |
| % App. Total                                                      | 71.6                          | 0    | 28.4  |            | 0                       | 70.5 | 29.5  |            | 0          | 0    | 0     |            | 3.8                     | 96.2 | 0     |            |            |
| PHF                                                               | .883                          | .000 | .656  | .804       | .000                    | .848 | .907  | .912       | .000       | .000 | .000  | .000       | .650                    | .937 | .000  | .942       | .936       |



# CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : MallDrivewayWest\_MadridSt\_02-21-25

Site Code : 00000000

Start Date : 2/21/2025

Page No : 1

## Groups Printed- Vehicles

|             | Mall Driveway West<br>Southbound |      |       | Madrid Street<br>Westbound |      |       | Northbound |      |       | Madrid Street<br>Eastbound |      |       |            |
|-------------|----------------------------------|------|-------|----------------------------|------|-------|------------|------|-------|----------------------------|------|-------|------------|
| Start Time  | Left                             | Thru | Right | Left                       | Thru | Right | Left       | Thru | Right | Left                       | Thru | Right | Int. Total |
| 07:00 AM    | 18                               | 0    | 1     | 0                          | 11   | 7     | 0          | 0    | 0     | 1                          | 23   | 0     | 61         |
| 07:15 AM    | 13                               | 0    | 3     | 0                          | 5    | 15    | 0          | 0    | 0     | 1                          | 27   | 0     | 64         |
| 07:30 AM    | 12                               | 0    | 0     | 0                          | 10   | 8     | 0          | 0    | 0     | 0                          | 37   | 0     | 67         |
| 07:45 AM    | 6                                | 0    | 2     | 0                          | 13   | 9     | 0          | 0    | 0     | 3                          | 42   | 0     | 75         |
| Total       | 49                               | 0    | 6     | 0                          | 39   | 39    | 0          | 0    | 0     | 5                          | 129  | 0     | 267        |
| 08:00 AM    | 13                               | 0    | 0     | 0                          | 22   | 15    | 0          | 0    | 0     | 1                          | 20   | 0     | 71         |
| 08:15 AM    | 12                               | 0    | 6     | 0                          | 24   | 10    | 0          | 0    | 0     | 4                          | 42   | 0     | 98         |
| 08:30 AM    | 14                               | 0    | 3     | 0                          | 24   | 14    | 0          | 0    | 0     | 3                          | 29   | 0     | 87         |
| 08:45 AM    | 23                               | 0    | 2     | 0                          | 12   | 22    | 0          | 0    | 0     | 3                          | 23   | 0     | 85         |
| Total       | 62                               | 0    | 11    | 0                          | 82   | 61    | 0          | 0    | 0     | 11                         | 114  | 0     | 341        |
| 09:00 AM    | 18                               | 0    | 1     | 0                          | 17   | 14    | 0          | 0    | 0     | 5                          | 26   | 0     | 81         |
| 09:15 AM    | 14                               | 0    | 3     | 0                          | 15   | 11    | 0          | 0    | 0     | 4                          | 17   | 0     | 64         |
| 09:30 AM    | 17                               | 0    | 4     | 0                          | 12   | 16    | 0          | 0    | 0     | 5                          | 15   | 0     | 69         |
| 09:45 AM    | 15                               | 0    | 0     | 0                          | 12   | 18    | 0          | 0    | 0     | 7                          | 15   | 0     | 67         |
| Total       | 64                               | 0    | 8     | 0                          | 56   | 59    | 0          | 0    | 0     | 21                         | 73   | 0     | 281        |
| 03:00 PM    | 32                               | 0    | 11    | 0                          | 42   | 15    | 0          | 0    | 0     | 5                          | 24   | 0     | 129        |
| 03:15 PM    | 45                               | 0    | 7     | 0                          | 34   | 20    | 0          | 0    | 0     | 4                          | 21   | 0     | 131        |
| 03:30 PM    | 43                               | 0    | 8     | 0                          | 41   | 17    | 0          | 0    | 0     | 7                          | 22   | 0     | 138        |
| 03:45 PM    | 39                               | 0    | 8     | 0                          | 41   | 26    | 0          | 0    | 0     | 6                          | 25   | 0     | 145        |
| Total       | 159                              | 0    | 34    | 0                          | 158  | 78    | 0          | 0    | 0     | 22                         | 92   | 0     | 543        |
| 04:00 PM    | 35                               | 0    | 15    | 0                          | 50   | 23    | 0          | 0    | 0     | 5                          | 31   | 0     | 159        |
| 04:15 PM    | 34                               | 0    | 10    | 0                          | 44   | 30    | 0          | 0    | 0     | 6                          | 37   | 0     | 161        |
| 04:30 PM    | 49                               | 0    | 7     | 0                          | 41   | 29    | 0          | 0    | 0     | 5                          | 34   | 0     | 165        |
| 04:45 PM    | 39                               | 0    | 10    | 0                          | 51   | 27    | 0          | 0    | 0     | 12                         | 31   | 0     | 170        |
| Total       | 157                              | 0    | 42    | 0                          | 186  | 109   | 0          | 0    | 0     | 28                         | 133  | 0     | 655        |
| 05:00 PM    | 39                               | 0    | 10    | 0                          | 33   | 15    | 0          | 0    | 0     | 4                          | 28   | 0     | 129        |
| 05:15 PM    | 44                               | 0    | 7     | 0                          | 33   | 21    | 0          | 0    | 0     | 4                          | 27   | 0     | 136        |
| 05:30 PM    | 38                               | 0    | 11    | 0                          | 25   | 21    | 0          | 0    | 0     | 8                          | 33   | 0     | 136        |
| 05:45 PM    | 41                               | 0    | 11    | 0                          | 34   | 16    | 0          | 0    | 0     | 9                          | 26   | 0     | 137        |
| Total       | 162                              | 0    | 39    | 0                          | 125  | 73    | 0          | 0    | 0     | 25                         | 114  | 0     | 538        |
| Grand Total | 653                              | 0    | 140   | 0                          | 646  | 419   | 0          | 0    | 0     | 112                        | 655  | 0     | 2625       |
| Apprch %    | 82.3                             | 0    | 17.7  | 0                          | 60.7 | 39.3  | 0          | 0    | 0     | 14.6                       | 85.4 | 0     |            |
| Total %     | 24.9                             | 0    | 5.3   | 0                          | 24.6 | 16    | 0          | 0    | 0     | 4.3                        | 25   | 0     |            |

# CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

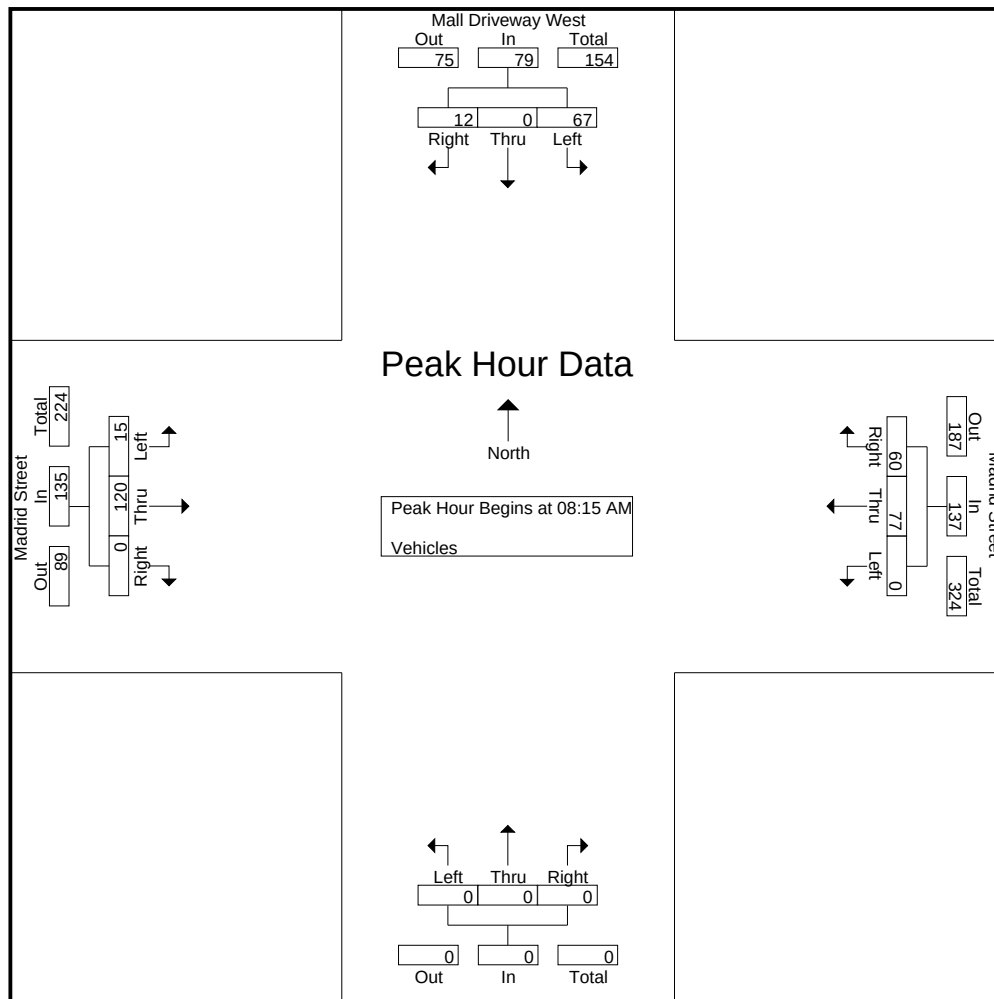
File Name : MallDrivewayWest\_MadridSt\_02-21-25

Site Code : 00000000

Start Date : 2/21/2025

Page No : 2

|                                                                   | Mall Driveway West Southbound |      |       |            | Madrid Street Westbound |      |       |            | Northbound |      |       |            | Madrid Street Eastbound |      |       |            |            |
|-------------------------------------------------------------------|-------------------------------|------|-------|------------|-------------------------|------|-------|------------|------------|------|-------|------------|-------------------------|------|-------|------------|------------|
| Start Time                                                        | Left                          | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left       | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Int. Total |
| <b>Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1</b> |                               |      |       |            |                         |      |       |            |            |      |       |            |                         |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 08:15 AM              |                               |      |       |            |                         |      |       |            |            |      |       |            |                         |      |       |            |            |
| 08:15 AM                                                          | 12                            | 0    | 6     | 18         | 0                       | 24   | 10    | 34         | 0          | 0    | 0     | 0          | 4                       | 42   | 0     | 46         | 98         |
| 08:30 AM                                                          | 14                            | 0    | 3     | 17         | 0                       | 24   | 14    | 38         | 0          | 0    | 0     | 0          | 3                       | 29   | 0     | 32         | 87         |
| 08:45 AM                                                          | 23                            | 0    | 2     | 25         | 0                       | 12   | 22    | 34         | 0          | 0    | 0     | 0          | 3                       | 23   | 0     | 26         | 85         |
| 09:00 AM                                                          | 18                            | 0    | 1     | 19         | 0                       | 17   | 14    | 31         | 0          | 0    | 0     | 0          | 5                       | 26   | 0     | 31         | 81         |
| Total Volume                                                      | 67                            | 0    | 12    | 79         | 0                       | 77   | 60    | 137        | 0          | 0    | 0     | 0          | 15                      | 120  | 0     | 135        | 351        |
| % App. Total                                                      | 84.8                          | 0    | 15.2  |            | 0                       | 56.2 | 43.8  |            | 0          | 0    | 0     |            | 11.1                    | 88.9 | 0     |            |            |
| PHF                                                               | .728                          | .000 | .500  | .790       | .000                    | .802 | .682  | .901       | .000       | .000 | .000  | .000       | .750                    | .714 | .000  | .734       | .895       |



# CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

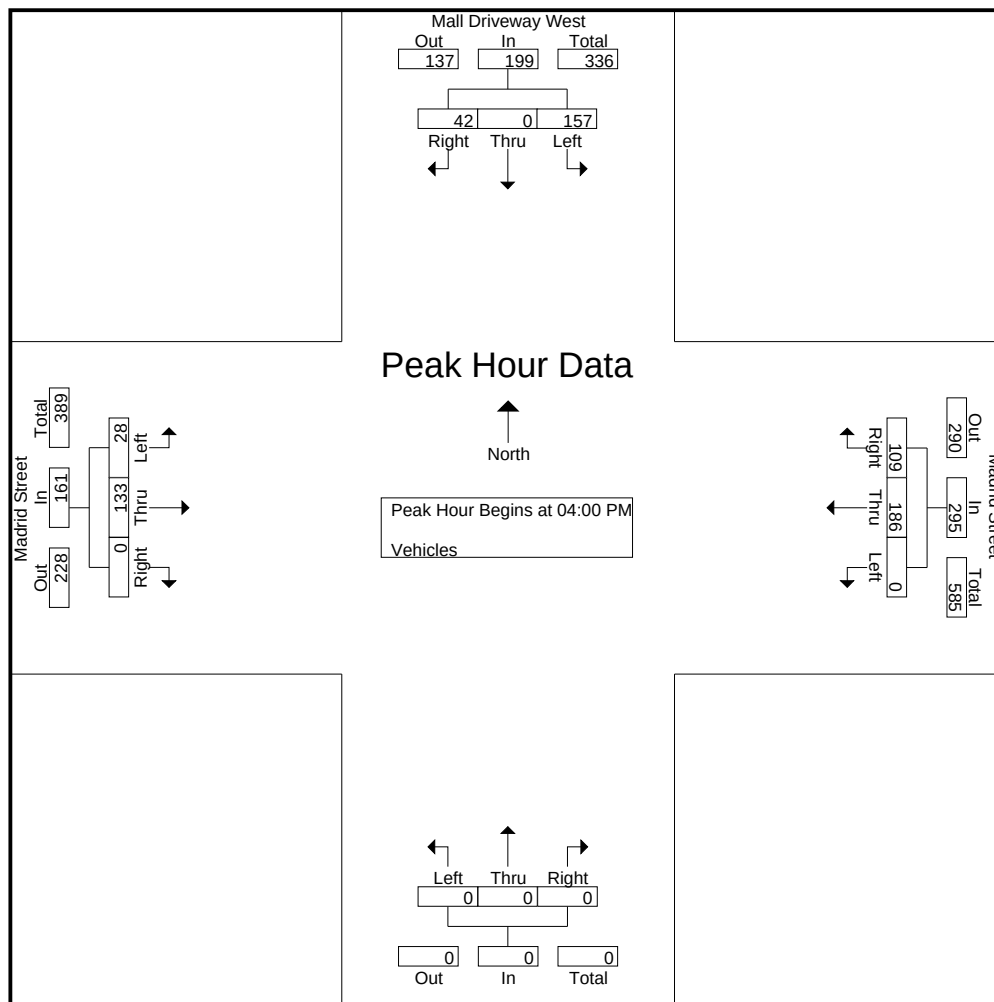
File Name : MallDrivewayWest\_MadridSt\_02-21-25

Site Code : 00000000

Start Date : 2/21/2025

Page No : 3

|                                                                   | Mall Driveway West Southbound |      |       |            | Madrid Street Westbound |      |       |            | Northbound |      |       |            | Madrid Street Eastbound |      |       |            |            |
|-------------------------------------------------------------------|-------------------------------|------|-------|------------|-------------------------|------|-------|------------|------------|------|-------|------------|-------------------------|------|-------|------------|------------|
| Start Time                                                        | Left                          | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left       | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Int. Total |
| <b>Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1</b> |                               |      |       |            |                         |      |       |            |            |      |       |            |                         |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 04:00 PM              |                               |      |       |            |                         |      |       |            |            |      |       |            |                         |      |       |            |            |
| 04:00 PM                                                          | 35                            | 0    | 15    | 50         | 0                       | 50   | 23    | 73         | 0          | 0    | 0     | 0          | 5                       | 31   | 0     | 36         | 159        |
| 04:15 PM                                                          | 34                            | 0    | 10    | 44         | 0                       | 44   | 30    | 74         | 0          | 0    | 0     | 0          | 6                       | 37   | 0     | 43         | 161        |
| 04:30 PM                                                          | 49                            | 0    | 7     | 56         | 0                       | 41   | 29    | 70         | 0          | 0    | 0     | 0          | 5                       | 34   | 0     | 39         | 165        |
| 04:45 PM                                                          | 39                            | 0    | 10    | 49         | 0                       | 51   | 27    | 78         | 0          | 0    | 0     | 0          | 12                      | 31   | 0     | 43         | 170        |
| Total Volume                                                      | 157                           | 0    | 42    | 199        | 0                       | 186  | 109   | 295        | 0          | 0    | 0     | 0          | 28                      | 133  | 0     | 161        | 655        |
| % App. Total                                                      | 78.9                          | 0    | 21.1  |            | 0                       | 63.1 | 36.9  |            | 0          | 0    | 0     |            | 17.4                    | 82.6 | 0     |            |            |
| PHF                                                               | .801                          | .000 | .700  | .888       | .000                    | .912 | .908  | .946       | .000       | .000 | .000  | .000       | .583                    | .899 | .000  | .936       | .963       |



# CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : MallDrivewayWest\_MadridSt\_02-22-25

Site Code : 00000000

Start Date : 2/22/2025

Page No : 1

## Groups Printed- Vehicles

|             | Mall Driveway West<br>Southbound |      |       | Madrid Street<br>Westbound |      |       | Northbound |      |       | Madrid Street<br>Eastbound |      |       |            |
|-------------|----------------------------------|------|-------|----------------------------|------|-------|------------|------|-------|----------------------------|------|-------|------------|
| Start Time  | Left                             | Thru | Right | Left                       | Thru | Right | Left       | Thru | Right | Left                       | Thru | Right | Int. Total |
| 07:00 AM    | 7                                | 0    | 3     | 0                          | 6    | 5     | 0          | 0    | 0     | 3                          | 14   | 0     | 38         |
| 07:15 AM    | 9                                | 0    | 0     | 0                          | 9    | 10    | 0          | 0    | 0     | 4                          | 19   | 0     | 51         |
| 07:30 AM    | 7                                | 0    | 1     | 0                          | 4    | 12    | 0          | 0    | 0     | 2                          | 19   | 0     | 45         |
| 07:45 AM    | 12                               | 0    | 3     | 0                          | 11   | 16    | 0          | 0    | 0     | 2                          | 22   | 0     | 66         |
| Total       | 35                               | 0    | 7     | 0                          | 30   | 43    | 0          | 0    | 0     | 11                         | 74   | 0     | 200        |
| 08:00 AM    | 13                               | 0    | 2     | 0                          | 8    | 14    | 0          | 0    | 0     | 2                          | 20   | 0     | 59         |
| 08:15 AM    | 16                               | 0    | 4     | 0                          | 22   | 8     | 0          | 0    | 0     | 4                          | 22   | 0     | 76         |
| 08:30 AM    | 12                               | 0    | 1     | 0                          | 11   | 12    | 0          | 0    | 0     | 6                          | 29   | 0     | 71         |
| 08:45 AM    | 12                               | 0    | 2     | 0                          | 14   | 14    | 0          | 0    | 0     | 5                          | 32   | 0     | 79         |
| Total       | 53                               | 0    | 9     | 0                          | 55   | 48    | 0          | 0    | 0     | 17                         | 103  | 0     | 285        |
| 09:00 AM    | 16                               | 0    | 1     | 0                          | 11   | 14    | 0          | 0    | 0     | 3                          | 20   | 0     | 65         |
| 09:15 AM    | 20                               | 0    | 5     | 0                          | 14   | 18    | 0          | 0    | 0     | 3                          | 19   | 0     | 79         |
| 09:30 AM    | 18                               | 0    | 2     | 0                          | 18   | 32    | 0          | 0    | 0     | 4                          | 27   | 0     | 101        |
| 09:45 AM    | 19                               | 0    | 2     | 0                          | 11   | 26    | 0          | 0    | 0     | 4                          | 37   | 0     | 99         |
| Total       | 73                               | 0    | 10    | 0                          | 54   | 90    | 0          | 0    | 0     | 14                         | 103  | 0     | 344        |
| 03:00 PM    | 49                               | 0    | 5     | 0                          | 29   | 25    | 0          | 0    | 0     | 9                          | 28   | 0     | 145        |
| 03:15 PM    | 45                               | 0    | 10    | 0                          | 38   | 25    | 0          | 0    | 0     | 5                          | 24   | 0     | 147        |
| 03:30 PM    | 59                               | 0    | 9     | 0                          | 34   | 24    | 0          | 0    | 0     | 7                          | 25   | 0     | 158        |
| 03:45 PM    | 58                               | 0    | 11    | 0                          | 35   | 36    | 0          | 0    | 0     | 6                          | 28   | 0     | 174        |
| Total       | 211                              | 0    | 35    | 0                          | 136  | 110   | 0          | 0    | 0     | 27                         | 105  | 0     | 624        |
| 04:00 PM    | 49                               | 0    | 12    | 0                          | 37   | 37    | 0          | 0    | 0     | 8                          | 32   | 0     | 175        |
| 04:15 PM    | 53                               | 0    | 13    | 0                          | 23   | 26    | 0          | 0    | 0     | 6                          | 29   | 0     | 150        |
| 04:30 PM    | 54                               | 0    | 10    | 0                          | 25   | 31    | 0          | 0    | 0     | 12                         | 24   | 0     | 156        |
| 04:45 PM    | 54                               | 0    | 8     | 0                          | 29   | 24    | 0          | 0    | 0     | 10                         | 21   | 0     | 146        |
| Total       | 210                              | 0    | 43    | 0                          | 114  | 118   | 0          | 0    | 0     | 36                         | 106  | 0     | 627        |
| 05:00 PM    | 45                               | 0    | 19    | 0                          | 36   | 24    | 0          | 0    | 0     | 5                          | 29   | 0     | 158        |
| 05:15 PM    | 44                               | 0    | 9     | 0                          | 35   | 29    | 0          | 0    | 0     | 5                          | 21   | 0     | 143        |
| 05:30 PM    | 37                               | 0    | 5     | 0                          | 33   | 25    | 0          | 0    | 0     | 3                          | 21   | 0     | 124        |
| 05:45 PM    | 48                               | 0    | 4     | 0                          | 32   | 18    | 0          | 0    | 0     | 4                          | 26   | 0     | 132        |
| Total       | 174                              | 0    | 37    | 0                          | 136  | 96    | 0          | 0    | 0     | 17                         | 97   | 0     | 557        |
| Grand Total | 756                              | 0    | 141   | 0                          | 525  | 505   | 0          | 0    | 0     | 122                        | 588  | 0     | 2637       |
| Apprch %    | 84.3                             | 0    | 15.7  | 0                          | 51   | 49    | 0          | 0    | 0     | 17.2                       | 82.8 | 0     |            |
| Total %     | 28.7                             | 0    | 5.3   | 0                          | 19.9 | 19.2  | 0          | 0    | 0     | 4.6                        | 22.3 | 0     |            |

# CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

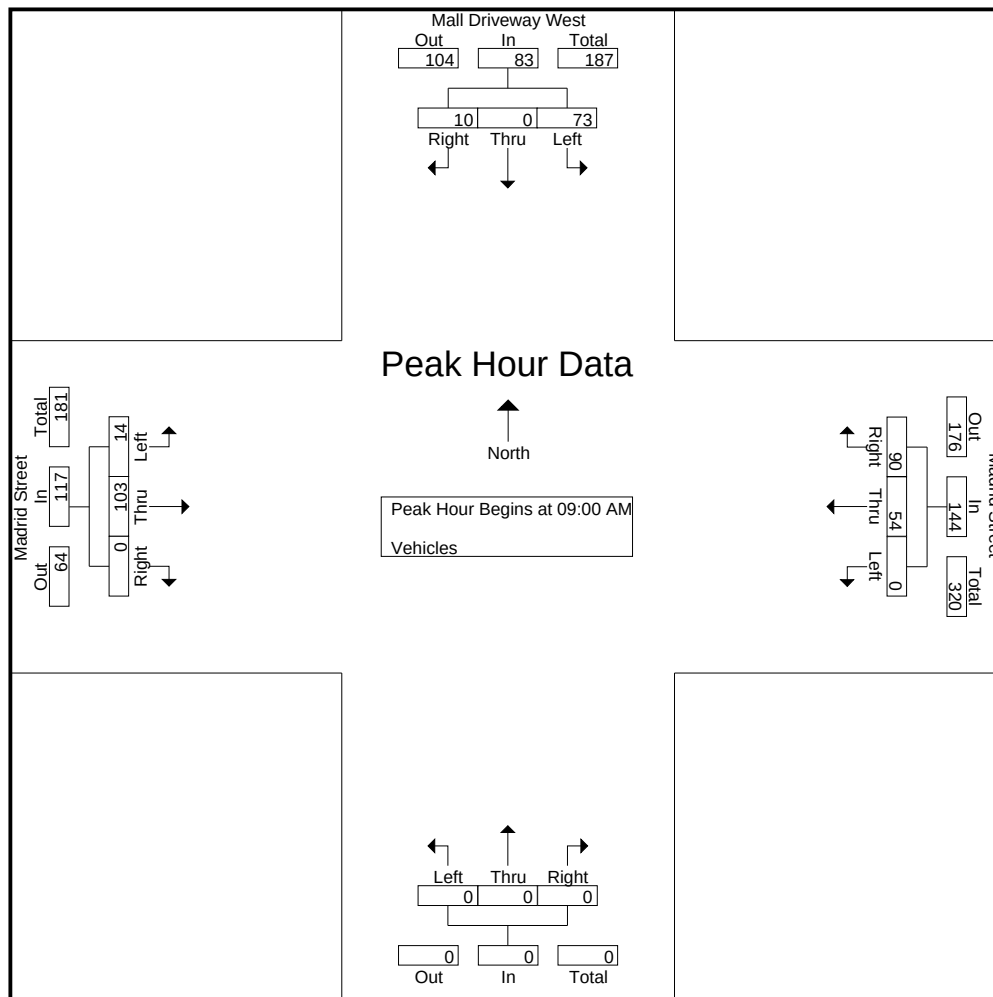
File Name : MallDrivewayWest\_MadridSt\_02-22-25

Site Code : 00000000

Start Date : 2/22/2025

Page No : 2

|                                                                   | Mall Driveway West Southbound |      |       |            | Madrid Street Westbound |      |       |            | Northbound |      |       |            | Madrid Street Eastbound |      |       |            |            |
|-------------------------------------------------------------------|-------------------------------|------|-------|------------|-------------------------|------|-------|------------|------------|------|-------|------------|-------------------------|------|-------|------------|------------|
| Start Time                                                        | Left                          | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left       | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Int. Total |
| <b>Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1</b> |                               |      |       |            |                         |      |       |            |            |      |       |            |                         |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 09:00 AM              |                               |      |       |            |                         |      |       |            |            |      |       |            |                         |      |       |            |            |
| 09:00 AM                                                          | 16                            | 0    | 1     | 17         | 0                       | 11   | 14    | 25         | 0          | 0    | 0     | 0          | 3                       | 20   | 0     | 23         | 65         |
| 09:15 AM                                                          | 20                            | 0    | 5     | 25         | 0                       | 14   | 18    | 32         | 0          | 0    | 0     | 0          | 3                       | 19   | 0     | 22         | 79         |
| 09:30 AM                                                          | 18                            | 0    | 2     | 20         | 0                       | 18   | 32    | 50         | 0          | 0    | 0     | 0          | 4                       | 27   | 0     | 31         | 101        |
| 09:45 AM                                                          | 19                            | 0    | 2     | 21         | 0                       | 11   | 26    | 37         | 0          | 0    | 0     | 0          | 4                       | 37   | 0     | 41         | 99         |
| Total Volume                                                      | 73                            | 0    | 10    | 83         | 0                       | 54   | 90    | 144        | 0          | 0    | 0     | 0          | 14                      | 103  | 0     | 117        | 344        |
| % App. Total                                                      | 88                            | 0    | 12    |            | 0                       | 37.5 | 62.5  |            | 0          | 0    | 0     |            | 12                      | 88   | 0     |            |            |
| PHF                                                               | .913                          | .000 | .500  | .830       | .000                    | .750 | .703  | .720       | .000       | .000 | .000  | .000       | .875                    | .696 | .000  | .713       | .851       |



# CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

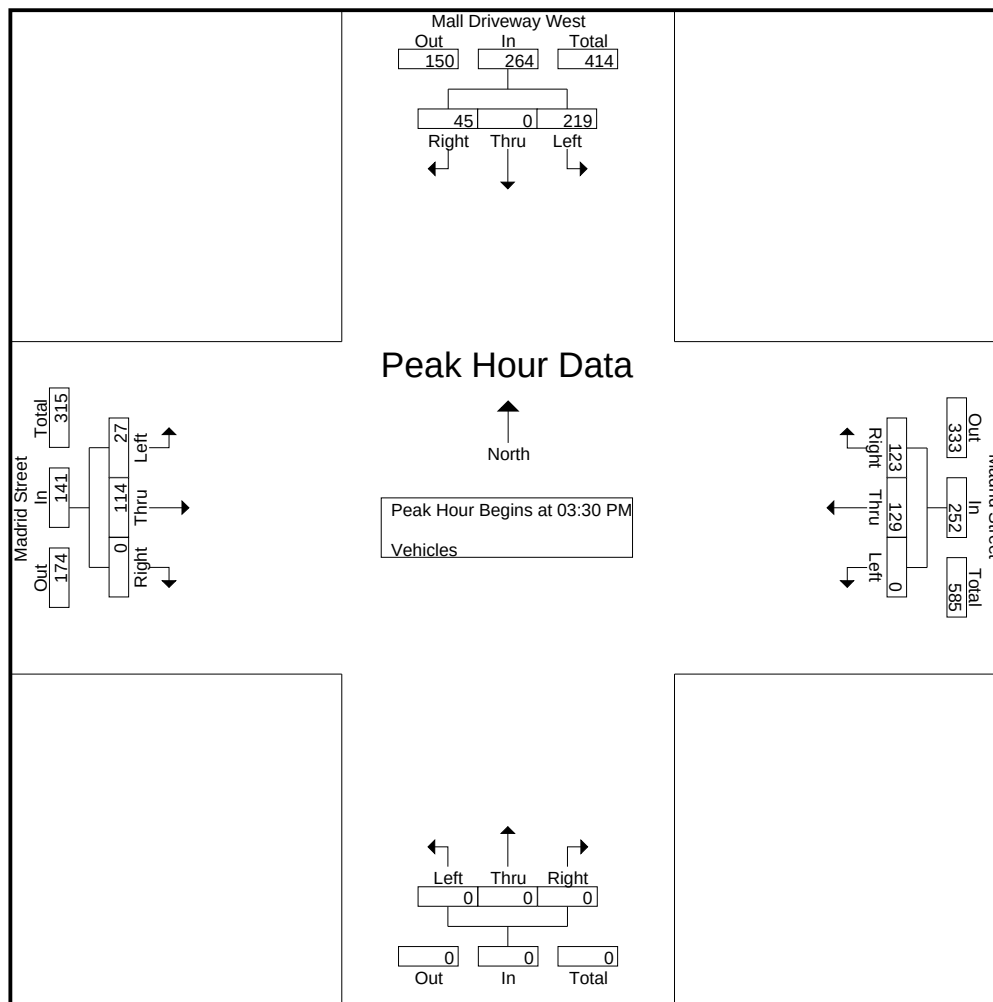
File Name : MallDrivewayWest\_MadridSt\_02-22-25

Site Code : 00000000

Start Date : 2/22/2025

Page No : 3

|                                                                   | Mall Driveway West Southbound |      |       |            | Madrid Street Westbound |      |       |            | Northbound |      |       |            | Madrid Street Eastbound |      |       |            |            |
|-------------------------------------------------------------------|-------------------------------|------|-------|------------|-------------------------|------|-------|------------|------------|------|-------|------------|-------------------------|------|-------|------------|------------|
| Start Time                                                        | Left                          | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left       | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Int. Total |
| <b>Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1</b> |                               |      |       |            |                         |      |       |            |            |      |       |            |                         |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 03:30 PM              |                               |      |       |            |                         |      |       |            |            |      |       |            |                         |      |       |            |            |
| 03:30 PM                                                          | 59                            | 0    | 9     | 68         | 0                       | 34   | 24    | 58         | 0          | 0    | 0     | 0          | 7                       | 25   | 0     | 32         | 158        |
| 03:45 PM                                                          | 58                            | 0    | 11    | 69         | 0                       | 35   | 36    | 71         | 0          | 0    | 0     | 0          | 6                       | 28   | 0     | 34         | 174        |
| 04:00 PM                                                          | 49                            | 0    | 12    | 61         | 0                       | 37   | 37    | 74         | 0          | 0    | 0     | 0          | 8                       | 32   | 0     | 40         | 175        |
| 04:15 PM                                                          | 53                            | 0    | 13    | 66         | 0                       | 23   | 26    | 49         | 0          | 0    | 0     | 0          | 6                       | 29   | 0     | 35         | 150        |
| Total Volume                                                      | 219                           | 0    | 45    | 264        | 0                       | 129  | 123   | 252        | 0          | 0    | 0     | 0          | 27                      | 114  | 0     | 141        | 657        |
| % App. Total                                                      | 83                            | 0    | 17    |            | 0                       | 51.2 | 48.8  |            | 0          | 0    | 0     |            | 19.1                    | 80.9 | 0     |            |            |
| PHF                                                               | .928                          | .000 | .865  | .957       | .000                    | .872 | .831  | .851       | .000       | .000 | .000  | .000       | .844                    | .891 | .000  | .881       | .939       |



## **Appendix 2 - Tables for LOS, Delays and Queue Lengths**



| AM                                              |                  | Madrid Street/Harden Pkwy |           |           | Madrid Street/Harden Pkwy |           |           | North Main Street |           |           | North Main Street |           |           |
|-------------------------------------------------|------------------|---------------------------|-----------|-----------|---------------------------|-----------|-----------|-------------------|-----------|-----------|-------------------|-----------|-----------|
|                                                 |                  | Eastbound                 |           |           | Westbound                 |           |           | Northbound        |           |           | Southbound        |           |           |
|                                                 |                  | Left                      | Thru      | Right     | Left                      | Thru      | Right     | Left              | Thru      | Right     | Left              | Thru      | Right     |
| Existing                                        | Delay (Sec)      | 144.7                     | 45.6      | 41.4      | 54.0                      | 27.2      | 31.5      | 42.9              | 33.0      | 30.4      | 46.1              | 32.1      | 29.4      |
|                                                 | LOS              | F                         | D         | D         | D                         | C         | C         | D                 | C         | C         | D                 | C         | C         |
|                                                 | 95th% Queue (ft) | 151.0                     | 116       | 0         | 194                       | 201       | 55        | 83                | 143       | 24        | 134               | 116       | 0         |
| Existing Plus Project                           | Delay (Sec)      | 151.6                     | 46.1      | 41.5      | 54.8                      | 27.2      | 31.5      | 43.3              | 33.0      | 30.4      | 46.1              | 32.1      | 29.4      |
|                                                 | LOS              | F                         | D         | D         | D                         | C         | C         | D                 | C         | C         | D                 | C         | C         |
|                                                 | 95th% Queue (ft) | 155.0                     | 123       | 0         | 201                       | 203       | 55        | 90                | 143       | 24        | 134               | 116       | 0         |
| Comparison of Existing to Existing Plus Project | Delay (Sec)      | 6.9                       | 0.5       | 0.1       | 0.8                       | 0.0       | 0.0       | 0.4               | 0.0       | 0.0       | 0.0               | 0.0       | 0.0       |
|                                                 | LOS              | No Change                 | No Change | No Change | No Change                 | No Change | No Change | No Change         | No Change | No Change | No Change         | No Change | No Change |
|                                                 | 95th% Queue (ft) | 4.0                       | 7.0       | 0.0       | 7.0                       | 2.0       | 0.0       | 7.0               | 0.0       | 0.0       | 0.0               | 0.0       | 0.0       |

| PM                                              |                  | Madrid Street/Harden Pkwy |           |           | Madrid Street/Harden Pkwy |           |           | North Main Street |           |           | North Main Street |           |           |
|-------------------------------------------------|------------------|---------------------------|-----------|-----------|---------------------------|-----------|-----------|-------------------|-----------|-----------|-------------------|-----------|-----------|
|                                                 |                  | Eastbound                 |           |           | Westbound                 |           |           | Northbound        |           |           | Southbound        |           |           |
|                                                 |                  | Left                      | Thru      | Right     | Left                      | Thru      | Right     | Left              | Thru      | Right     | Left              | Thru      | Right     |
| Existing                                        | Delay (Sec)      | 194.5                     | 47.6      | 42.1      | 67.5                      | 29.8      | 31.6      | 49.7              | 37.1      | 30.8      | 112.3             | 37.5      | 29.9      |
|                                                 | LOS              | F                         | D         | D         | E                         | C         | C         | D                 | D         | C         | F                 | D         | C         |
|                                                 | 95th% Queue (ft) | 177.0                     | 144       | 27        | 294.0                     | 303.0     | 56        | 176               | 258       | 57        | 436.0             | 267       | 0         |
| Existing Plus Project                           | Delay (Sec)      | 203.2                     | 48.3      | 42.1      | 70.3                      | 29.8      | 31.6      | 50.6              | 37.1      | 30.8      | 112.3             | 37.5      | 29.9      |
|                                                 | LOS              | F                         | D         | D         | E                         | C         | C         | D                 | D         | C         | F                 | D         | C         |
|                                                 | 95th% Queue (ft) | 182.0                     | 154       | 33        | 308.0                     | 308.0     | 56        | 184               | 258       | 57        | 436.0             | 267       | 0         |
| Comparison of Existing to Existing Plus Project | Delay (Sec)      | 8.7                       | 0.7       | 0.0       | 2.8                       | 0.0       | 0.0       | 0.9               | 0.0       | 0.0       | 0.0               | 0.0       | 0.0       |
|                                                 | LOS              | No Change                 | No Change | No Change | No Change                 | No Change | No Change | No Change         | No Change | No Change | No Change         | No Change | No Change |
|                                                 | 95th% Queue (ft) | 5.0                       | 10.0      | 6.0       | 14.0                      | 5.0       | 0.0       | 8.0               | 0.0       | 0.0       | 0.0               | 0.0       | 0.0       |

| AM                                              |                   | Madrid Street |           |           | Madrid Street |           |           | Mall Dwy East of Project Site |           |           | Mall Dwy East of Project Site |           |           |
|-------------------------------------------------|-------------------|---------------|-----------|-----------|---------------|-----------|-----------|-------------------------------|-----------|-----------|-------------------------------|-----------|-----------|
|                                                 |                   | Eastbound     |           |           | Westbound     |           |           | Northbound                    |           |           | Southbound                    |           |           |
|                                                 |                   | Left          | Thru      | Right     | Left          | Thru      | Right     | Left                          | Thru      | Right     | Left                          | Thru      | Right     |
| Existing                                        | Delay (Sec)       | 7.6           |           |           |               |           |           |                               |           |           | 11.3                          |           | 9.1       |
|                                                 | LOS               | A             |           |           |               |           |           |                               |           |           | B                             |           | A         |
|                                                 | 95th% Queue (veh) | 0.0           |           |           |               |           |           |                               |           |           | 0.1                           |           | 0.0       |
| Existing Plus Project                           | Delay (Sec)       | 7.7           |           |           |               |           |           |                               |           |           | 12.1                          |           | 9.3       |
|                                                 | LOS               | A             |           |           |               |           |           |                               |           |           | B                             |           | A         |
|                                                 | 95th% Queue (veh) | 0.0           |           |           |               |           |           |                               |           |           | 0.3                           |           | 0.0       |
| Comparison of Existing to Existing Plus Project | Delay (Sec)       | 0.1           | 0.0       | 0.0       | 0.0           | 0.0       | 0.0       | 0.0                           | 0.0       | 0.0       | 0.8                           | 0.0       | 0.2       |
|                                                 | LOS               | No Change     | No Change | No Change | No Change     | No Change | No Change | No Change                     | No Change | No Change | No Change                     | No Change | No Change |
|                                                 | 95th% Queue (veh) | 0.0           | 0.0       | 0.0       | 0.0           | 0.0       | 0.0       | 0.0                           | 0.0       | 0.0       | 0.2                           | 0.0       | 0.0       |

| PM                                              |                   | Madrid Street |           |           | Madrid Street |           |           | Mall Dwy East of Project Site |           |           | Mall Dwy East of Project Site |           |           |
|-------------------------------------------------|-------------------|---------------|-----------|-----------|---------------|-----------|-----------|-------------------------------|-----------|-----------|-------------------------------|-----------|-----------|
|                                                 |                   | Eastbound     |           |           | Westbound     |           |           | Northbound                    |           |           | Southbound                    |           |           |
|                                                 |                   | Left          | Thru      | Right     | Left          | Thru      | Right     | Left                          | Thru      | Right     | Left                          | Thru      | Right     |
| Existing                                        | Delay (Sec)       | 8.1           |           |           |               |           |           |                               |           |           | 15.1                          |           | 10.2      |
|                                                 | LOS               | A             |           |           |               |           |           |                               |           |           | C                             |           | B         |
|                                                 | 95th% Queue (veh) | 0.0           |           |           |               |           |           |                               |           |           | 0.5                           |           | 0.1       |
| Existing Plus Project                           | Delay (Sec)       | 8.2           |           |           |               |           |           |                               |           |           | 17.0                          |           | 10.5      |
|                                                 | LOS               | A             |           |           |               |           |           |                               |           |           | C                             |           | B         |
|                                                 | 95th% Queue (veh) | 0.0           |           |           |               |           |           |                               |           |           | 0.9                           |           | 0.1       |
| Comparison of Existing to Existing Plus Project | Delay (Sec)       | 0.1           | 0.0       | 0.0       | 0.0           | 0.0       | 0.0       | 0.0                           | 0.0       | 0.0       | 1.9                           | 0.0       | 0.3       |
|                                                 | LOS               | No Change     | No Change | No Change | No Change     | No Change | No Change | No Change                     | No Change | No Change | No Change                     | No Change | No Change |
|                                                 | 95th% Queue (veh) | 0.0           | 0.0       | 0.0       | 0.0           | 0.0       | 0.0       | 0.0                           | 0.0       | 0.0       | 0.4                           | 0.0       | 0.0       |

| PM                                          |                   | Madrid Street |           |           | Madrid Street |           |           | Mall Dwy East of Project Site |           |           | Mall Dwy East of Project Site |           |           |
|---------------------------------------------|-------------------|---------------|-----------|-----------|---------------|-----------|-----------|-------------------------------|-----------|-----------|-------------------------------|-----------|-----------|
|                                             |                   | Eastbound     |           |           | Westbound     |           |           | Northbound                    |           |           | Southbound                    |           |           |
|                                             |                   | Left          | Thru      | Right     | Left          | Thru      | Right     | Left                          | Thru      | Right     | Left                          | Thru      | Right     |
| Future                                      | Delay (Sec)       | 8.2           |           |           |               |           |           |                               |           |           | 16.7                          |           | 10.4      |
|                                             | LOS               | A             |           |           |               |           |           |                               |           |           | C                             |           | B         |
|                                             | 95th% Queue (veh) | 0.0           |           |           |               |           |           |                               |           |           | 0.8                           |           | 0.1       |
| Future Plus Project                         | Delay (Sec)       | 8.3           |           |           |               |           |           |                               |           |           | 19.2                          |           | 10.7      |
|                                             | LOS               | A             |           |           |               |           |           |                               |           |           | C                             |           | B         |
|                                             | 95th% Queue (veh) | 0.0           |           |           |               |           |           |                               |           |           | 1.4                           |           | 0.1       |
| Comparison of Future to Future Plus Project | Delay (Sec)       | 0.1           | 0.0       | 0.0       | 0.0           | 0.0       | 0.0       | 0.0                           | 0.0       | 0.0       | 2.5                           | 0.0       | 0.3       |
|                                             | LOS               | No Change     | No Change | No Change | No Change     | No Change | No Change | No Change                     | No Change | No Change | No Change                     | No Change | No Change |
|                                             | 95th% Queue (veh) | 0.0           | 0.0       | 0.0       | 0.0           | 0.0       | 0.0       | 0.0                           | 0.0       | 0.0       | 0.6                           | 0.0       | 0.0       |

| AM                                              |                   | Madrid Street |           |           | Madrid Street |           |           | Mall Dwy West of Project Site |           |           | Mall Dwy West of Project Site |           |           |
|-------------------------------------------------|-------------------|---------------|-----------|-----------|---------------|-----------|-----------|-------------------------------|-----------|-----------|-------------------------------|-----------|-----------|
|                                                 |                   | Eastbound     |           |           | Westbound     |           |           | Northbound                    |           |           | Southbound                    |           |           |
|                                                 |                   | Left          | Thru      | Right     | Left          | Thru      | Right     | Left                          | Thru      | Right     | Left                          | Thru      | Right     |
| Existing                                        | Delay (Sec)       | 7.5           |           |           |               |           |           |                               |           |           | 10.7                          |           | 8.9       |
|                                                 | LOS               | A             |           |           |               |           |           |                               |           |           | B                             |           | A         |
|                                                 | 95th% Queue (veh) | 0.0           |           |           |               |           |           |                               |           |           | 0.3                           |           | 0.0       |
| Existing Plus Project                           | Delay (Sec)       | 7.6           |           |           |               |           |           |                               |           |           | 10.9                          |           | 9.0       |
|                                                 | LOS               | A             |           |           |               |           |           |                               |           |           | B                             |           | A         |
|                                                 | 95th% Queue (veh) | 0.0           |           |           |               |           |           |                               |           |           | 0.4                           |           | 0.0       |
| Comparison of Existing to Existing Plus Project | Delay (Sec)       | 0.1           | 0.0       | 0.0       | 0.0           | 0.0       | 0.0       | 0.0                           | 0.0       | 0.0       | 0.2                           | 0.0       | 0.1       |
|                                                 | LOS               | No Change     | No Change | No Change | No Change     | No Change | No Change | No Change                     | No Change | No Change | No Change                     | No Change | No Change |
|                                                 | 95th% Queue (veh) | 0.0           | 0.0       | 0.0       | 0.0           | 0.0       | 0.0       | 0.0                           | 0.0       | 0.0       | 0.1                           | 0.0       | 0.0       |

| PM                                              |                   | Madrid Street |           |           | Madrid Street |           |           | Mall Dwy West of Project Site |           |           | Mall Dwy West of Project Site |           |       |
|-------------------------------------------------|-------------------|---------------|-----------|-----------|---------------|-----------|-----------|-------------------------------|-----------|-----------|-------------------------------|-----------|-------|
|                                                 |                   | Eastbound     |           |           | Westbound     |           |           | Northbound                    |           |           | Southbound                    |           |       |
|                                                 |                   | Left          | Thru      | Right     | Left          | Thru      | Right     | Left                          | Thru      | Right     | Left                          | Thru      | Right |
| Existing                                        | Delay (Sec)       | 8.0           |           |           |               |           |           |                               |           |           | 14.7                          |           | 9.9   |
|                                                 | LOS               | A             |           |           |               |           |           |                               |           |           | B                             |           | A     |
|                                                 | 95th% Queue (veh) | 0.1           |           |           |               |           |           |                               |           |           | 1.3                           |           | 0.2   |
| Existing Plus Project                           | Delay (Sec)       | 8.0           |           |           |               |           |           |                               |           |           | 15.1                          |           | 10.0  |
|                                                 | LOS               | A             |           |           |               |           |           |                               |           |           | C                             |           | B     |
|                                                 | 95th% Queue (veh) | 0.1           |           |           |               |           |           |                               |           |           | 1.4                           |           | 0.2   |
| Comparison of Existing to Existing Plus Project | Delay (Sec)       | 0.0           | 0.0       | 0.0       | 0.0           | 0.0       | 0.0       | 0.0                           | 0.0       | 0.0       | 0.4                           | 0.0       | 0.1   |
|                                                 | LOS               | No Change     | No Change | No Change | No Change     | No Change | No Change | No Change                     | No Change | No Change | C                             | No Change | B     |
|                                                 | 95th% Queue (veh) | 0.0           | 0.0       | 0.0       | 0.0           | 0.0       | 0.0       | 0.0                           | 0.0       | 0.0       | 0.1                           | 0.0       | 0.0   |

| PM                                          |                   | Madrid Street |           |           | Madrid Street |           |           | Mall Dwy West of Project Site |           |           | Mall Dwy West of Project Site |           |           |
|---------------------------------------------|-------------------|---------------|-----------|-----------|---------------|-----------|-----------|-------------------------------|-----------|-----------|-------------------------------|-----------|-----------|
|                                             |                   | Eastbound     |           |           | Westbound     |           |           | Northbound                    |           |           | Southbound                    |           |           |
|                                             |                   | Left          | Thru      | Right     | Left          | Thru      | Right     | Left                          | Thru      | Right     | Left                          | Thru      | Right     |
| Future                                      | Delay (Sec)       | 8.0           |           |           |               |           |           |                               |           |           | 15.4                          |           | 10.0      |
|                                             | LOS               | A             |           |           |               |           |           |                               |           |           | C                             |           | B         |
|                                             | 95th% Queue (veh) | 0.1           |           |           |               |           |           |                               |           |           | 1.5                           |           | 0.2       |
| Future Plus Project                         | Delay (Sec)       | 8.1           |           |           |               |           |           |                               |           |           | 15.7                          |           | 10.1      |
|                                             | LOS               | A             |           |           |               |           |           |                               |           |           | C                             |           | B         |
|                                             | 95th% Queue (veh) | 0.1           |           |           |               |           |           |                               |           |           | 1.5                           |           | 0.2       |
| Comparison of Future to Future Plus Project | Delay (Sec)       | 0.1           | 0.0       | 0.0       | 0.0           | 0.0       | 0.0       | 0.0                           | 0.0       | 0.0       | 0.3                           | 0.0       | 0.1       |
|                                             | LOS               | No Change     | No Change | No Change | No Change     | No Change | No Change | No Change                     | No Change | No Change | No Change                     | No Change | No Change |
|                                             | 95th% Queue (veh) | 0.0           | 0.0       | 0.0       | 0.0           | 0.0       | 0.0       | 0.0                           | 0.0       | 0.0       | 0.0                           | 0.0       | 0.0       |

## Appendix 3 - (HCM) analysis worksheets

## Queues

3:

03/21/2025

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 72                                                                                | 96                                                                                | 87                                                                                | 161                                                                               | 166                                                                               | 201                                                                               | 64                                                                                 | 513                                                                                 | 157                                                                                 | 114                                                                                 | 411                                                                                 | 42                                                                                  |
| v/c Ratio               | 0.95                                                                              | 0.32                                                                              | 0.20                                                                              | 0.59                                                                              | 0.59                                                                              | 0.34                                                                              | 0.21                                                                               | 0.35                                                                                | 0.26                                                                                | 0.38                                                                                | 0.28                                                                                | 0.07                                                                                |
| Control Delay           | 145.6                                                                             | 46.2                                                                              | 1.1                                                                               | 54.8                                                                              | 54.8                                                                              | 6.0                                                                               | 43.5                                                                               | 33.1                                                                                | 2.8                                                                                 | 46.7                                                                                | 32.2                                                                                | 0.2                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 145.6                                                                             | 46.2                                                                              | 1.1                                                                               | 54.8                                                                              | 54.8                                                                              | 6.0                                                                               | 43.5                                                                               | 33.1                                                                                | 2.8                                                                                 | 46.7                                                                                | 32.2                                                                                | 0.2                                                                                 |
| Queue Length 50th (ft)  | 55                                                                                | 64                                                                                | 0                                                                                 | 118                                                                               | 122                                                                               | 0                                                                                 | 42                                                                                 | 110                                                                                 | 0                                                                                   | 76                                                                                  | 86                                                                                  | 0                                                                                   |
| Queue Length 95th (ft)  | #151                                                                              | 116                                                                               | 0                                                                                 | 194                                                                               | 201                                                                               | 55                                                                                | 83                                                                                 | 143                                                                                 | 24                                                                                  | 134                                                                                 | 116                                                                                 | 0                                                                                   |
| Internal Link Dist (ft) |                                                                                   | 424                                                                               |                                                                                   |                                                                                   | 657                                                                               |                                                                                   |                                                                                    | 1570                                                                                |                                                                                     |                                                                                     | 1044                                                                                |                                                                                     |
| Turn Bay Length (ft)    | 230                                                                               |                                                                                   | 190                                                                               | 250                                                                               |                                                                                   | 433                                                                               | 210                                                                                |                                                                                     | 150                                                                                 | 250                                                                                 |                                                                                     | 150                                                                                 |
| Base Capacity (vph)     | 76                                                                                | 303                                                                               | 426                                                                               | 273                                                                               | 279                                                                               | 591                                                                               | 303                                                                                | 1486                                                                                | 604                                                                                 | 303                                                                                 | 1486                                                                                | 604                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.95                                                                              | 0.32                                                                              | 0.20                                                                              | 0.59                                                                              | 0.59                                                                              | 0.34                                                                              | 0.21                                                                               | 0.35                                                                                | 0.26                                                                                | 0.38                                                                                | 0.28                                                                                | 0.07                                                                                |

## Intersection Summary

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

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 3: Madrid St. & N. Main St.

03/21/2025

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |  |  |  |  |   |  |  |  |  |  |
| Traffic Volume (vph)              | 66                                                                                | 88                                                                                | 80                                                                                | 243                                                                               | 58                                                                                | 185                                                                               | 59                                                                                  | 472                                                                                 | 144                                                                                 | 105                                                                                 | 378                                                                                 | 39                                                                                  |
| Future Volume (vph)               | 66                                                                                | 88                                                                                | 80                                                                                | 243                                                                               | 58                                                                                | 185                                                                               | 59                                                                                  | 472                                                                                 | 144                                                                                 | 105                                                                                 | 378                                                                                 | 39                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.97                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1770                                                                              | 1863                                                                              | 1583                                                                              | 1681                                                                              | 1716                                                                              | 1583                                                                              | 1770                                                                                | 5085                                                                                | 1583                                                                                | 1770                                                                                | 5085                                                                                | 1583                                                                                |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.61                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1770                                                                              | 1863                                                                              | 1583                                                                              | 1681                                                                              | 1077                                                                              | 1583                                                                              | 1770                                                                                | 5085                                                                                | 1583                                                                                | 1770                                                                                | 5085                                                                                | 1583                                                                                |
| Peak-hour factor, PHF             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Adj. Flow (vph)                   | 72                                                                                | 96                                                                                | 87                                                                                | 264                                                                               | 63                                                                                | 201                                                                               | 64                                                                                  | 513                                                                                 | 157                                                                                 | 114                                                                                 | 411                                                                                 | 42                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 73                                                                                | 0                                                                                 | 0                                                                                 | 144                                                                               | 0                                                                                   | 0                                                                                   | 111                                                                                 | 0                                                                                   | 0                                                                                   | 30                                                                                  |
| Lane Group Flow (vph)             | 72                                                                                | 96                                                                                | 14                                                                                | 161                                                                               | 166                                                                               | 57                                                                                | 64                                                                                  | 513                                                                                 | 46                                                                                  | 114                                                                                 | 411                                                                                 | 12                                                                                  |
| Turn Type                         | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                                | NA                                                                                  | Perm                                                                                | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |
| Actuated Green, G (s)             | 5.0                                                                               | 18.9                                                                              | 18.9                                                                              | 18.9                                                                              | 43.9                                                                              | 32.8                                                                              | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                |
| Effective Green, g (s)            | 5.0                                                                               | 18.9                                                                              | 18.9                                                                              | 18.9                                                                              | 43.9                                                                              | 32.8                                                                              | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                |
| Actuated g/C Ratio                | 0.04                                                                              | 0.16                                                                              | 0.16                                                                              | 0.16                                                                              | 0.38                                                                              | 0.28                                                                              | 0.17                                                                                | 0.29                                                                                | 0.29                                                                                | 0.17                                                                                | 0.29                                                                                | 0.29                                                                                |
| Clearance Time (s)                | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 |
| Lane Grp Cap (vph)                | 76                                                                                | 303                                                                               | 257                                                                               | 273                                                                               | 511                                                                               | 447                                                                               | 303                                                                                 | 1486                                                                                | 462                                                                                 | 303                                                                                 | 1486                                                                                | 462                                                                                 |
| v/s Ratio Prot                    | 0.04                                                                              | 0.05                                                                              |                                                                                   | c0.10                                                                             | 0.05                                                                              |                                                                                   | 0.04                                                                                | c0.10                                                                               |                                                                                     | c0.06                                                                               | 0.08                                                                                |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | 0.01                                                                              |                                                                                   | c0.07                                                                             | 0.04                                                                              |                                                                                     |                                                                                     | 0.03                                                                                |                                                                                     |                                                                                     | 0.01                                                                                |
| v/c Ratio                         | 0.95                                                                              | 0.32                                                                              | 0.06                                                                              | 0.59                                                                              | 0.32                                                                              | 0.13                                                                              | 0.21                                                                                | 0.35                                                                                | 0.10                                                                                | 0.38                                                                                | 0.28                                                                                | 0.03                                                                                |
| Uniform Delay, d1                 | 55.4                                                                              | 42.9                                                                              | 41.0                                                                              | 45.0                                                                              | 25.5                                                                              | 30.9                                                                              | 41.3                                                                                | 32.3                                                                                | 29.9                                                                                | 42.6                                                                                | 31.6                                                                                | 29.3                                                                                |
| Progression 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                                                                                |
| Incremental Delay, d2             | 89.3                                                                              | 2.7                                                                               | 0.4                                                                               | 9.0                                                                               | 1.7                                                                               | 0.6                                                                               | 1.6                                                                                 | 0.6                                                                                 | 0.4                                                                                 | 3.5                                                                                 | 0.5                                                                                 | 0.1                                                                                 |
| Delay (s)                         | 144.7                                                                             | 45.6                                                                              | 41.4                                                                              | 54.0                                                                              | 27.2                                                                              | 31.5                                                                              | 42.9                                                                                | 33.0                                                                                | 30.4                                                                                | 46.1                                                                                | 32.1                                                                                | 29.4                                                                                |
| Level of Service                  | F                                                                                 | D                                                                                 | D                                                                                 | D                                                                                 | C                                                                                 | C                                                                                 | D                                                                                   | C                                                                                   | C                                                                                   | D                                                                                   | C                                                                                   | C                                                                                   |
| Approach Delay (s)                |                                                                                   | 72.1                                                                              |                                                                                   |                                                                                   | 37.0                                                                              |                                                                                   |                                                                                     | 33.3                                                                                |                                                                                     |                                                                                     | 34.7                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                     | C                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 39.4                                                                              |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                           |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.41                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 116.0                                                                             |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                                |                                                                                     |                                                                                     | 24.4                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 45.1%                                                                             |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                                |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM 6th TWSC

## 6: Madrid & West DWY

03/21/2025

### Intersection

Int Delay, s/veh 2.6

| Movement                 | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |  |  |      |  |  |
| Traffic Vol, veh/h       | 15                                                                                | 120                                                                               | 77                                                                                | 60   | 67                                                                                | 12                                                                                |
| Future Vol, veh/h        | 15                                                                                | 120                                                                               | 77                                                                                | 60   | 67                                                                                | 12                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                 | 0                                                                                 |
| Sign Control             | Free                                                                              | Free                                                                              | Free                                                                              | Free | Stop                                                                              | Stop                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None | -                                                                                 | None                                                                              |
| Storage Length           | 120                                                                               | -                                                                                 | -                                                                                 | -    | 0                                                                                 | 0                                                                                 |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Grade, %                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92                                                                                | 92                                                                                | 92   | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2    | 2                                                                                 | 2                                                                                 |
| Mvmt Flow                | 16                                                                                | 130                                                                               | 84                                                                                | 65   | 73                                                                                | 13                                                                                |

| Major/Minor          | Major1 | Major2 | Minor2          |
|----------------------|--------|--------|-----------------|
| Conflicting Flow All | 149    | 0      | 0 279 117       |
| Stage 1              | -      | -      | - - 117 -       |
| Stage 2              | -      | -      | - - 162 -       |
| Critical Hdwy        | 4.12   | -      | - - 6.42 6.22   |
| Critical Hdwy Stg 1  | -      | -      | - - 5.42 -      |
| Critical Hdwy Stg 2  | -      | -      | - - 5.42 -      |
| Follow-up Hdwy       | 2.218  | -      | - - 3.518 3.318 |
| Pot Cap-1 Maneuver   | 1432   | -      | - - 711 935     |
| Stage 1              | -      | -      | - - 908 -       |
| Stage 2              | -      | -      | - - 867 -       |
| Platoon blocked, %   |        | -      | - -             |
| Mov Cap-1 Maneuver   | 1432   | -      | - - 703 935     |
| Mov Cap-2 Maneuver   | -      | -      | - - 703 -       |
| Stage 1              | -      | -      | - - 898 -       |
| Stage 2              | -      | -      | - - 867 -       |

| Approach             | EB  | WB | SB   |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.8 | 0  | 10.4 |
| HCM LOS              |     |    | B    |

| Minor Lane/Major Mvmt | EBL   | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h)      | 1432  | -   | -   | -   | 703   | 935   |
| HCM Lane V/C Ratio    | 0.011 | -   | -   | -   | 0.104 | 0.014 |
| HCM Control Delay (s) | 7.5   | -   | -   | -   | 10.7  | 8.9   |
| HCM Lane LOS          | A     | -   | -   | -   | B     | A     |
| HCM 95th %tile Q(veh) | 0     | -   | -   | -   | 0.3   | 0     |

# HCM 6th TWSC

## 8: Madrid & East DWY

03/21/2025

### Intersection

Int Delay, s/veh 0.5

| Movement                 | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |  |  |      |  |  |
| Traffic Vol, veh/h       | 8                                                                                 | 220                                                                               | 142                                                                               | 21   | 11                                                                                | 3                                                                                 |
| Future Vol, veh/h        | 8                                                                                 | 220                                                                               | 142                                                                               | 21   | 11                                                                                | 3                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                 | 0                                                                                 |
| Sign Control             | Free                                                                              | Free                                                                              | Free                                                                              | Free | Stop                                                                              | Stop                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None | -                                                                                 | None                                                                              |
| Storage Length           | 140                                                                               | -                                                                                 | -                                                                                 | -    | 0                                                                                 | 0                                                                                 |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Grade, %                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92                                                                                | 92                                                                                | 92   | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2    | 2                                                                                 | 2                                                                                 |
| Mvmt Flow                | 9                                                                                 | 239                                                                               | 154                                                                               | 23   | 12                                                                                | 3                                                                                 |

| Major/Minor          | Major1 | Major2 | Minor2          |
|----------------------|--------|--------|-----------------|
| Conflicting Flow All | 177    | 0      | 0 423 166       |
| Stage 1              | -      | -      | - - 166 -       |
| Stage 2              | -      | -      | - - 257 -       |
| Critical Hdwy        | 4.12   | -      | - - 6.42 6.22   |
| Critical Hdwy Stg 1  | -      | -      | - - 5.42 -      |
| Critical Hdwy Stg 2  | -      | -      | - - 5.42 -      |
| Follow-up Hdwy       | 2.218  | -      | - - 3.518 3.318 |
| Pot Cap-1 Maneuver   | 1399   | -      | - - 588 878     |
| Stage 1              | -      | -      | - - 863 -       |
| Stage 2              | -      | -      | - - 786 -       |
| Platoon blocked, %   |        | -      | - -             |
| Mov Cap-1 Maneuver   | 1399   | -      | - - 584 878     |
| Mov Cap-2 Maneuver   | -      | -      | - - 584 -       |
| Stage 1              | -      | -      | - - 858 -       |
| Stage 2              | -      | -      | - - 786 -       |

| Approach             | EB  | WB | SB   |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.3 | 0  | 10.8 |
| HCM LOS              |     |    | B    |

| Minor Lane/Major Mvmt | EBL   | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h)      | 1399  | -   | -   | -   | 584   | 878   |
| HCM Lane V/C Ratio    | 0.006 | -   | -   | -   | 0.02  | 0.004 |
| HCM Control Delay (s) | 7.6   | -   | -   | -   | 11.3  | 9.1   |
| HCM Lane LOS          | A     | -   | -   | -   | B     | A     |
| HCM 95th %tile Q(veh) | 0     | -   | -   | -   | 0.1   | 0     |



## Queues

3:

03/21/2025

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 74                                                                                | 103                                                                               | 93                                                                                | 166                                                                               | 169                                                                               | 201                                                                               | 71                                                                                 | 513                                                                                 | 157                                                                                 | 114                                                                                 | 411                                                                                 | 45                                                                                  |
| v/c Ratio               | 0.97                                                                              | 0.34                                                                              | 0.22                                                                              | 0.61                                                                              | 0.60                                                                              | 0.34                                                                              | 0.23                                                                               | 0.35                                                                                | 0.26                                                                                | 0.38                                                                                | 0.28                                                                                | 0.07                                                                                |
| Control Delay           | 152.4                                                                             | 46.6                                                                              | 1.2                                                                               | 55.6                                                                              | 55.1                                                                              | 6.0                                                                               | 43.9                                                                               | 33.1                                                                                | 2.8                                                                                 | 46.7                                                                                | 32.2                                                                                | 0.2                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 152.4                                                                             | 46.6                                                                              | 1.2                                                                               | 55.6                                                                              | 55.1                                                                              | 6.0                                                                               | 43.9                                                                               | 33.1                                                                                | 2.8                                                                                 | 46.7                                                                                | 32.2                                                                                | 0.2                                                                                 |
| Queue Length 50th (ft)  | 56                                                                                | 69                                                                                | 0                                                                                 | 123                                                                               | 125                                                                               | 0                                                                                 | 46                                                                                 | 110                                                                                 | 0                                                                                   | 76                                                                                  | 86                                                                                  | 0                                                                                   |
| Queue Length 95th (ft)  | #155                                                                              | 123                                                                               | 0                                                                                 | 201                                                                               | 203                                                                               | 55                                                                                | 90                                                                                 | 143                                                                                 | 24                                                                                  | 134                                                                                 | 116                                                                                 | 0                                                                                   |
| Internal Link Dist (ft) |                                                                                   | 424                                                                               |                                                                                   |                                                                                   | 657                                                                               |                                                                                   |                                                                                    | 1570                                                                                |                                                                                     |                                                                                     | 1044                                                                                |                                                                                     |
| Turn Bay Length (ft)    | 230                                                                               |                                                                                   | 190                                                                               | 250                                                                               |                                                                                   | 433                                                                               | 210                                                                                |                                                                                     | 150                                                                                 | 250                                                                                 |                                                                                     | 150                                                                                 |
| Base Capacity (vph)     | 76                                                                                | 303                                                                               | 426                                                                               | 273                                                                               | 280                                                                               | 591                                                                               | 303                                                                                | 1486                                                                                | 604                                                                                 | 303                                                                                 | 1486                                                                                | 604                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.97                                                                              | 0.34                                                                              | 0.22                                                                              | 0.61                                                                              | 0.60                                                                              | 0.34                                                                              | 0.23                                                                               | 0.35                                                                                | 0.26                                                                                | 0.38                                                                                | 0.28                                                                                | 0.07                                                                                |

## Intersection Summary

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

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

3:

03/21/2025

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |  |  |  |  |   |  |  |  |  |  |
| Traffic Volume (vph)              | 68                                                                                | 95                                                                                | 86                                                                                | 243                                                                               | 65                                                                                | 185                                                                               | 65                                                                                  | 472                                                                                 | 144                                                                                 | 105                                                                                 | 378                                                                                 | 41                                                                                  |
| Future Volume (vph)               | 68                                                                                | 95                                                                                | 86                                                                                | 243                                                                               | 65                                                                                | 185                                                                               | 65                                                                                  | 472                                                                                 | 144                                                                                 | 105                                                                                 | 378                                                                                 | 41                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.97                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1770                                                                              | 1863                                                                              | 1583                                                                              | 1681                                                                              | 1720                                                                              | 1583                                                                              | 1770                                                                                | 5085                                                                                | 1583                                                                                | 1770                                                                                | 5085                                                                                | 1583                                                                                |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.63                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1770                                                                              | 1863                                                                              | 1583                                                                              | 1681                                                                              | 1117                                                                              | 1583                                                                              | 1770                                                                                | 5085                                                                                | 1583                                                                                | 1770                                                                                | 5085                                                                                | 1583                                                                                |
| Peak-hour factor, PHF             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Adj. Flow (vph)                   | 74                                                                                | 103                                                                               | 93                                                                                | 264                                                                               | 71                                                                                | 201                                                                               | 71                                                                                  | 513                                                                                 | 157                                                                                 | 114                                                                                 | 411                                                                                 | 45                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 78                                                                                | 0                                                                                 | 0                                                                                 | 144                                                                               | 0                                                                                   | 0                                                                                   | 111                                                                                 | 0                                                                                   | 0                                                                                   | 32                                                                                  |
| Lane Group Flow (vph)             | 74                                                                                | 103                                                                               | 15                                                                                | 166                                                                               | 169                                                                               | 57                                                                                | 71                                                                                  | 513                                                                                 | 46                                                                                  | 114                                                                                 | 411                                                                                 | 13                                                                                  |
| Turn Type                         | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                                | NA                                                                                  | Perm                                                                                | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |
| Actuated Green, G (s)             | 5.0                                                                               | 18.9                                                                              | 18.9                                                                              | 18.9                                                                              | 43.9                                                                              | 32.8                                                                              | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                |
| Effective Green, g (s)            | 5.0                                                                               | 18.9                                                                              | 18.9                                                                              | 18.9                                                                              | 43.9                                                                              | 32.8                                                                              | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                |
| Actuated g/C Ratio                | 0.04                                                                              | 0.16                                                                              | 0.16                                                                              | 0.16                                                                              | 0.38                                                                              | 0.28                                                                              | 0.17                                                                                | 0.29                                                                                | 0.29                                                                                | 0.17                                                                                | 0.29                                                                                | 0.29                                                                                |
| Clearance Time (s)                | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 |
| Lane Grp Cap (vph)                | 76                                                                                | 303                                                                               | 257                                                                               | 273                                                                               | 520                                                                               | 447                                                                               | 303                                                                                 | 1486                                                                                | 462                                                                                 | 303                                                                                 | 1486                                                                                | 462                                                                                 |
| v/s Ratio Prot                    | 0.04                                                                              | 0.06                                                                              |                                                                                   | c0.10                                                                             | 0.05                                                                              |                                                                                   | 0.04                                                                                | c0.10                                                                               |                                                                                     | c0.06                                                                               | 0.08                                                                                |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | 0.01                                                                              |                                                                                   | c0.07                                                                             | 0.04                                                                              |                                                                                     |                                                                                     | 0.03                                                                                |                                                                                     |                                                                                     | 0.01                                                                                |
| v/c Ratio                         | 0.97                                                                              | 0.34                                                                              | 0.06                                                                              | 0.61                                                                              | 0.33                                                                              | 0.13                                                                              | 0.23                                                                                | 0.35                                                                                | 0.10                                                                                | 0.38                                                                                | 0.28                                                                                | 0.03                                                                                |
| Uniform Delay, d1                 | 55.4                                                                              | 43.0                                                                              | 41.0                                                                              | 45.1                                                                              | 25.5                                                                              | 30.9                                                                              | 41.5                                                                                | 32.3                                                                                | 29.9                                                                                | 42.6                                                                                | 31.6                                                                                | 29.3                                                                                |
| Progression 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                                                                                |
| Incremental Delay, d2             | 96.1                                                                              | 3.0                                                                               | 0.4                                                                               | 9.7                                                                               | 1.7                                                                               | 0.6                                                                               | 1.8                                                                                 | 0.6                                                                                 | 0.4                                                                                 | 3.5                                                                                 | 0.5                                                                                 | 0.1                                                                                 |
| Delay (s)                         | 151.6                                                                             | 46.1                                                                              | 41.5                                                                              | 54.8                                                                              | 27.2                                                                              | 31.5                                                                              | 43.3                                                                                | 33.0                                                                                | 30.4                                                                                | 46.1                                                                                | 32.1                                                                                | 29.4                                                                                |
| Level of Service                  | F                                                                                 | D                                                                                 | D                                                                                 | D                                                                                 | C                                                                                 | C                                                                                 | D                                                                                   | C                                                                                   | C                                                                                   | D                                                                                   | C                                                                                   | C                                                                                   |
| Approach Delay (s)                |                                                                                   | 73.4                                                                              |                                                                                   |                                                                                   | 37.4                                                                              |                                                                                   |                                                                                     | 33.4                                                                                |                                                                                     |                                                                                     | 34.7                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                     | C                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 39.8                                                                              |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                           |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.41                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 116.0                                                                             |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                                |                                                                                     |                                                                                     | 24.4                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 45.3%                                                                             |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                                |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

**Intersection**

Int Delay, s/veh 2.6

| Movement                 | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |  |  |      |  |  |
| Traffic Vol, veh/h       | 17                                                                                | 120                                                                               | 77                                                                                | 80   | 67                                                                                | 12                                                                                |
| Future Vol, veh/h        | 17                                                                                | 120                                                                               | 77                                                                                | 80   | 67                                                                                | 12                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                 | 0                                                                                 |
| Sign Control             | Free                                                                              | Free                                                                              | Free                                                                              | Free | Stop                                                                              | Stop                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None | -                                                                                 | None                                                                              |
| Storage Length           | 120                                                                               | -                                                                                 | -                                                                                 | -    | 0                                                                                 | 0                                                                                 |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Grade, %                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92                                                                                | 92                                                                                | 92   | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2    | 2                                                                                 | 2                                                                                 |
| Mvmt Flow                | 18                                                                                | 130                                                                               | 84                                                                                | 87   | 73                                                                                | 13                                                                                |

| Major/Minor          | Major1 | Major2 | Minor2        |
|----------------------|--------|--------|---------------|
| Conflicting Flow All | 171    | 0      | 0 294 128     |
| Stage 1              | -      | -      | - 128 -       |
| Stage 2              | -      | -      | - 166 -       |
| Critical Hdwy        | 4.12   | -      | - 6.42 6.22   |
| Critical Hdwy Stg 1  | -      | -      | - 5.42 -      |
| Critical Hdwy Stg 2  | -      | -      | - 5.42 -      |
| Follow-up Hdwy       | 2.218  | -      | - 3.518 3.318 |
| Pot Cap-1 Maneuver   | 1406   | -      | - 697 922     |
| Stage 1              | -      | -      | - 898 -       |
| Stage 2              | -      | -      | - 863 -       |
| Platoon blocked, %   |        | -      | -             |
| Mov Cap-1 Maneuver   | 1406   | -      | - 688 922     |
| Mov Cap-2 Maneuver   | -      | -      | - 688 -       |
| Stage 1              | -      | -      | - 886 -       |
| Stage 2              | -      | -      | - 863 -       |

| Approach             | EB  | WB | SB   |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.9 | 0  | 10.6 |
| HCM LOS              |     |    | B    |

| Minor Lane/Major Mvmt | EBL   | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h)      | 1406  | -   | -   | -   | 688   | 922   |
| HCM Lane V/C Ratio    | 0.013 | -   | -   | -   | 0.106 | 0.014 |
| HCM Control Delay (s) | 7.6   | -   | -   | -   | 10.9  | 9     |
| HCM Lane LOS          | A     | -   | -   | -   | B     | A     |
| HCM 95th %tile Q(veh) | 0     | -   | -   | -   | 0.4   | 0     |

**Intersection**

Int Delay, s/veh 1.4

| Movement                 | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |  |  |      |  |  |
| Traffic Vol, veh/h       | 8                                                                                 | 220                                                                               | 162                                                                               | 39   | 48                                                                                | 5                                                                                 |
| Future Vol, veh/h        | 8                                                                                 | 220                                                                               | 162                                                                               | 39   | 48                                                                                | 5                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                 | 0                                                                                 |
| Sign Control             | Free                                                                              | Free                                                                              | Free                                                                              | Free | Stop                                                                              | Stop                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None | -                                                                                 | None                                                                              |
| Storage Length           | 140                                                                               | -                                                                                 | -                                                                                 | -    | 0                                                                                 | 0                                                                                 |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Grade, %                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92                                                                                | 92                                                                                | 92   | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2    | 2                                                                                 | 2                                                                                 |
| Mvmt Flow                | 9                                                                                 | 239                                                                               | 176                                                                               | 42   | 52                                                                                | 5                                                                                 |

| Major/Minor          | Major1 | Major2 | Minor2          |
|----------------------|--------|--------|-----------------|
| Conflicting Flow All | 218    | 0      | 0 454 197       |
| Stage 1              | -      | -      | - - 197 -       |
| Stage 2              | -      | -      | - - 257 -       |
| Critical Hdwy        | 4.12   | -      | - - 6.42 6.22   |
| Critical Hdwy Stg 1  | -      | -      | - - 5.42 -      |
| Critical Hdwy Stg 2  | -      | -      | - - 5.42 -      |
| Follow-up Hdwy       | 2.218  | -      | - - 3.518 3.318 |
| Pot Cap-1 Maneuver   | 1352   | -      | - - 564 844     |
| Stage 1              | -      | -      | - - 836 -       |
| Stage 2              | -      | -      | - - 786 -       |
| Platoon blocked, %   |        | -      | - -             |
| Mov Cap-1 Maneuver   | 1352   | -      | - - 560 844     |
| Mov Cap-2 Maneuver   | -      | -      | - - 560 -       |
| Stage 1              | -      | -      | - - 830 -       |
| Stage 2              | -      | -      | - - 786 -       |

| Approach             | EB  | WB | SB   |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.3 | 0  | 11.8 |
| HCM LOS              |     |    | B    |

| Minor Lane/Major Mvmt | EBL   | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h)      | 1352  | -   | -   | -   | 560   | 844   |
| HCM Lane V/C Ratio    | 0.006 | -   | -   | -   | 0.093 | 0.006 |
| HCM Control Delay (s) | 7.7   | -   | -   | -   | 12.1  | 9.3   |
| HCM Lane LOS          | A     | -   | -   | -   | B     | A     |
| HCM 95th %tile Q(veh) | 0     | -   | -   | -   | 0.3   | 0     |

## Queues

3:

03/21/2025

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 75                                                                                | 100                                                                               | 113                                                                               | 168                                                                               | 173                                                                               | 210                                                                               | 90                                                                                 | 558                                                                                 | 163                                                                                 | 120                                                                                 | 450                                                                                 | 45                                                                                  |
| v/c Ratio               | 0.99                                                                              | 0.33                                                                              | 0.27                                                                              | 0.62                                                                              | 0.62                                                                              | 0.35                                                                              | 0.30                                                                               | 0.38                                                                                | 0.27                                                                                | 0.40                                                                                | 0.30                                                                                | 0.07                                                                                |
| Control Delay           | 155.9                                                                             | 46.4                                                                              | 1.5                                                                               | 55.9                                                                              | 55.9                                                                              | 6.0                                                                               | 45.0                                                                               | 33.5                                                                                | 3.1                                                                                 | 47.2                                                                                | 32.6                                                                                | 0.2                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 155.9                                                                             | 46.4                                                                              | 1.5                                                                               | 55.9                                                                              | 55.9                                                                              | 6.0                                                                               | 45.0                                                                               | 33.5                                                                                | 3.1                                                                                 | 47.2                                                                                | 32.6                                                                                | 0.2                                                                                 |
| Queue Length 50th (ft)  | 57                                                                                | 67                                                                                | 0                                                                                 | 124                                                                               | 128                                                                               | 0                                                                                 | 59                                                                                 | 121                                                                                 | 0                                                                                   | 81                                                                                  | 95                                                                                  | 0                                                                                   |
| Queue Length 95th (ft)  | #157                                                                              | 121                                                                               | 0                                                                                 | 203                                                                               | 208                                                                               | 57                                                                                | 109                                                                                | 156                                                                                 | 28                                                                                  | 140                                                                                 | 126                                                                                 | 0                                                                                   |
| Internal Link Dist (ft) |                                                                                   | 424                                                                               |                                                                                   |                                                                                   | 657                                                                               |                                                                                   |                                                                                    | 1570                                                                                |                                                                                     |                                                                                     | 1044                                                                                |                                                                                     |
| Turn Bay Length (ft)    | 230                                                                               |                                                                                   | 190                                                                               | 250                                                                               |                                                                                   | 433                                                                               | 210                                                                                |                                                                                     | 150                                                                                 | 250                                                                                 |                                                                                     | 150                                                                                 |
| Base Capacity (vph)     | 76                                                                                | 303                                                                               | 426                                                                               | 273                                                                               | 279                                                                               | 598                                                                               | 303                                                                                | 1486                                                                                | 604                                                                                 | 303                                                                                 | 1486                                                                                | 604                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.99                                                                              | 0.33                                                                              | 0.27                                                                              | 0.62                                                                              | 0.62                                                                              | 0.35                                                                              | 0.30                                                                               | 0.38                                                                                | 0.27                                                                                | 0.40                                                                                | 0.30                                                                                | 0.07                                                                                |

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

3:

03/21/2025

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 69                                                                                | 92                                                                                | 104                                                                               | 253                                                                               | 61                                                                                | 193                                                                               | 83                                                                                 | 513                                                                                 | 150                                                                                 | 110                                                                                 | 414                                                                                 | 41                                                                                  |
| Future Volume (vph)               | 69                                                                                | 92                                                                                | 104                                                                               | 253                                                                               | 61                                                                                | 193                                                                               | 83                                                                                 | 513                                                                                 | 150                                                                                 | 110                                                                                 | 414                                                                                 | 41                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                                | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                               | 0.91                                                                                | 1.00                                                                                | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                               | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.97                                                                              | 1.00                                                                              | 0.95                                                                               | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1770                                                                              | 1863                                                                              | 1583                                                                              | 1681                                                                              | 1717                                                                              | 1583                                                                              | 1770                                                                               | 5085                                                                                | 1583                                                                                | 1770                                                                                | 5085                                                                                | 1583                                                                                |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.60                                                                              | 1.00                                                                              | 0.95                                                                               | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1770                                                                              | 1863                                                                              | 1583                                                                              | 1681                                                                              | 1053                                                                              | 1583                                                                              | 1770                                                                               | 5085                                                                                | 1583                                                                                | 1770                                                                                | 5085                                                                                | 1583                                                                                |
| Peak-hour factor, PHF             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Adj. Flow (vph)                   | 75                                                                                | 100                                                                               | 113                                                                               | 275                                                                               | 66                                                                                | 210                                                                               | 90                                                                                 | 558                                                                                 | 163                                                                                 | 120                                                                                 | 450                                                                                 | 45                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 95                                                                                | 0                                                                                 | 0                                                                                 | 151                                                                               | 0                                                                                  | 0                                                                                   | 115                                                                                 | 0                                                                                   | 0                                                                                   | 32                                                                                  |
| Lane Group Flow (vph)             | 75                                                                                | 100                                                                               | 18                                                                                | 168                                                                               | 173                                                                               | 59                                                                                | 90                                                                                 | 558                                                                                 | 48                                                                                  | 120                                                                                 | 450                                                                                 | 13                                                                                  |
| Turn Type                         | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  | Perm                                                                                | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                  | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                    |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |
| Actuated Green, G (s)             | 5.0                                                                               | 18.9                                                                              | 18.9                                                                              | 18.9                                                                              | 43.9                                                                              | 32.8                                                                              | 19.9                                                                               | 33.9                                                                                | 33.9                                                                                | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                |
| Effective Green, g (s)            | 5.0                                                                               | 18.9                                                                              | 18.9                                                                              | 18.9                                                                              | 43.9                                                                              | 32.8                                                                              | 19.9                                                                               | 33.9                                                                                | 33.9                                                                                | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                |
| Actuated g/C Ratio                | 0.04                                                                              | 0.16                                                                              | 0.16                                                                              | 0.16                                                                              | 0.38                                                                              | 0.28                                                                              | 0.17                                                                               | 0.29                                                                                | 0.29                                                                                | 0.17                                                                                | 0.29                                                                                | 0.29                                                                                |
| Clearance Time (s)                | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                                | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 |
| Lane Grp Cap (vph)                | 76                                                                                | 303                                                                               | 257                                                                               | 273                                                                               | 506                                                                               | 447                                                                               | 303                                                                                | 1486                                                                                | 462                                                                                 | 303                                                                                 | 1486                                                                                | 462                                                                                 |
| v/s Ratio Prot                    | 0.04                                                                              | 0.05                                                                              |                                                                                   | c0.10                                                                             | 0.06                                                                              |                                                                                   | 0.05                                                                               | c0.11                                                                               |                                                                                     | c0.07                                                                               | 0.09                                                                                |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | 0.01                                                                              |                                                                                   | c0.07                                                                             | 0.04                                                                              |                                                                                    |                                                                                     | 0.03                                                                                |                                                                                     |                                                                                     | 0.01                                                                                |
| v/c Ratio                         | 0.99                                                                              | 0.33                                                                              | 0.07                                                                              | 0.62                                                                              | 0.34                                                                              | 0.13                                                                              | 0.30                                                                               | 0.38                                                                                | 0.10                                                                                | 0.40                                                                                | 0.30                                                                                | 0.03                                                                                |
| Uniform Delay, d1                 | 55.5                                                                              | 42.9                                                                              | 41.1                                                                              | 45.2                                                                              | 25.7                                                                              | 31.0                                                                              | 41.9                                                                               | 32.6                                                                                | 30.0                                                                                | 42.7                                                                                | 31.9                                                                                | 29.3                                                                                |
| Progression 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                                                                                |
| Incremental Delay, d2             | 99.6                                                                              | 2.9                                                                               | 0.5                                                                               | 10.0                                                                              | 1.8                                                                               | 0.6                                                                               | 2.5                                                                                | 0.7                                                                                 | 0.4                                                                                 | 3.8                                                                                 | 0.5                                                                                 | 0.1                                                                                 |
| Delay (s)                         | 155.1                                                                             | 45.8                                                                              | 41.7                                                                              | 55.1                                                                              | 27.6                                                                              | 31.6                                                                              | 44.4                                                                               | 33.4                                                                                | 30.4                                                                                | 46.5                                                                                | 32.4                                                                                | 29.4                                                                                |
| Level of Service                  | F                                                                                 | D                                                                                 | D                                                                                 | E                                                                                 | C                                                                                 | C                                                                                 | D                                                                                  | C                                                                                   | C                                                                                   | D                                                                                   | C                                                                                   | C                                                                                   |
| Approach Delay (s)                |                                                                                   | 72.7                                                                              |                                                                                   |                                                                                   | 37.5                                                                              |                                                                                   |                                                                                    | 34.0                                                                                |                                                                                     |                                                                                     | 34.9                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                    | C                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 40.0                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.43                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 116.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 46.5%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

| Intersection             |                                                                                   |                                                                                   |                                                                                   |      |                                                                                   |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 2.7                                                                               |                                                                                   |                                                                                   |      |                                                                                   |                                                                                   |
| Movement                 | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR                                                                               |
| Lane Configurations      |  |  |  |      |  |  |
| Traffic Vol, veh/h       | 16                                                                                | 125                                                                               | 81                                                                                | 63   | 70                                                                                | 13                                                                                |
| Future Vol, veh/h        | 16                                                                                | 125                                                                               | 81                                                                                | 63   | 70                                                                                | 13                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                 | 0                                                                                 |
| Sign Control             | Free                                                                              | Free                                                                              | Free                                                                              | Free | Stop                                                                              | Stop                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None | -                                                                                 | None                                                                              |
| Storage Length           | 120                                                                               | -                                                                                 | -                                                                                 | -    | 0                                                                                 | 0                                                                                 |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Grade, %                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92                                                                                | 92                                                                                | 92   | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2    | 2                                                                                 | 2                                                                                 |
| Mvmt Flow                | 17                                                                                | 136                                                                               | 88                                                                                | 68   | 76                                                                                | 14                                                                                |
| Major/Minor              | Major1                                                                            | Major2                                                                            | Minor2                                                                            |      |                                                                                   |                                                                                   |
| Conflicting Flow All     | 156                                                                               | 0                                                                                 | -                                                                                 | 0    | 292                                                                               | 122                                                                               |
| Stage 1                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 122                                                                               | -                                                                                 |
| Stage 2                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 170                                                                               | -                                                                                 |
| Critical Hdwy            | 4.12                                                                              | -                                                                                 | -                                                                                 | -    | 6.42                                                                              | 6.22                                                                              |
| Critical Hdwy Stg 1      | -                                                                                 | -                                                                                 | -                                                                                 | -    | 5.42                                                                              | -                                                                                 |
| Critical Hdwy Stg 2      | -                                                                                 | -                                                                                 | -                                                                                 | -    | 5.42                                                                              | -                                                                                 |
| Follow-up Hdwy           | 2.218                                                                             | -                                                                                 | -                                                                                 | -    | 3.518                                                                             | 3.318                                                                             |
| Pot Cap-1 Maneuver       | 1424                                                                              | -                                                                                 | -                                                                                 | -    | 699                                                                               | 929                                                                               |
| Stage 1                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 903                                                                               | -                                                                                 |
| Stage 2                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 860                                                                               | -                                                                                 |
| Platoon blocked, %       |                                                                                   | -                                                                                 | -                                                                                 | -    |                                                                                   |                                                                                   |
| Mov Cap-1 Maneuver       | 1424                                                                              | -                                                                                 | -                                                                                 | -    | 691                                                                               | 929                                                                               |
| Mov Cap-2 Maneuver       | -                                                                                 | -                                                                                 | -                                                                                 | -    | 691                                                                               | -                                                                                 |
| Stage 1                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 892                                                                               | -                                                                                 |
| Stage 2                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 860                                                                               | -                                                                                 |
| Approach                 | EB                                                                                | WB                                                                                |                                                                                   | SB   |                                                                                   |                                                                                   |
| HCM Control Delay, s     | 0.9                                                                               | 0                                                                                 |                                                                                   | 10.6 |                                                                                   |                                                                                   |
| HCM LOS                  |                                                                                   |                                                                                   |                                                                                   | B    |                                                                                   |                                                                                   |
| Minor Lane/Major Mvmt    | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR  | SBLn1                                                                             | SBLn2                                                                             |
| Capacity (veh/h)         | 1424                                                                              | -                                                                                 | -                                                                                 | -    | 691                                                                               | 929                                                                               |
| HCM Lane V/C Ratio       | 0.012                                                                             | -                                                                                 | -                                                                                 | -    | 0.11                                                                              | 0.015                                                                             |
| HCM Control Delay (s)    | 7.6                                                                               | -                                                                                 | -                                                                                 | -    | 10.9                                                                              | 8.9                                                                               |
| HCM Lane LOS             | A                                                                                 | -                                                                                 | -                                                                                 | -    | B                                                                                 | A                                                                                 |
| HCM 95th %tile Q(veh)    | 0                                                                                 | -                                                                                 | -                                                                                 | -    | 0.4                                                                               | 0                                                                                 |

| Intersection             |                                                                                   |                                                                                   |                                                                                   |        |                                                                                   |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 1                                                                                 |                                                                                   |                                                                                   |        |                                                                                   |                                                                                   |
| Movement                 | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR    | SBL                                                                               | SBR                                                                               |
| Lane Configurations      |  |  |  |        |  |  |
| Traffic Vol, veh/h       | 9                                                                                 | 229                                                                               | 148                                                                               | 44     | 32                                                                                | 4                                                                                 |
| Future Vol, veh/h        | 9                                                                                 | 229                                                                               | 148                                                                               | 44     | 32                                                                                | 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           | 140                                                                               | -                                                                                 | -                                                                                 | -      | 0                                                                                 | 0                                                                                 |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -                                                                                 |
| Grade, %                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92                                                                                | 92                                                                                | 92     | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2      | 2                                                                                 | 2                                                                                 |
| Mvmt Flow                | 10                                                                                | 249                                                                               | 161                                                                               | 48     | 35                                                                                | 4                                                                                 |
|                          |                                                                                   |                                                                                   |                                                                                   |        |                                                                                   |                                                                                   |
| Major/Minor              | Major1                                                                            | Major2                                                                            |                                                                                   | Minor2 |                                                                                   |                                                                                   |
| Conflicting Flow All     | 209                                                                               | 0                                                                                 | -                                                                                 | 0      | 454                                                                               | 185                                                                               |
| Stage 1                  | -                                                                                 | -                                                                                 | -                                                                                 | -      | 185                                                                               | -                                                                                 |
| Stage 2                  | -                                                                                 | -                                                                                 | -                                                                                 | -      | 269                                                                               | -                                                                                 |
| Critical Hdwy            | 4.12                                                                              | -                                                                                 | -                                                                                 | -      | 6.42                                                                              | 6.22                                                                              |
| Critical Hdwy Stg 1      | -                                                                                 | -                                                                                 | -                                                                                 | -      | 5.42                                                                              | -                                                                                 |
| Critical Hdwy Stg 2      | -                                                                                 | -                                                                                 | -                                                                                 | -      | 5.42                                                                              | -                                                                                 |
| Follow-up Hdwy           | 2.218                                                                             | -                                                                                 | -                                                                                 | -      | 3.518                                                                             | 3.318                                                                             |
| Pot Cap-1 Maneuver       | 1362                                                                              | -                                                                                 | -                                                                                 | -      | 564                                                                               | 857                                                                               |
| Stage 1                  | -                                                                                 | -                                                                                 | -                                                                                 | -      | 847                                                                               | -                                                                                 |
| Stage 2                  | -                                                                                 | -                                                                                 | -                                                                                 | -      | 776                                                                               | -                                                                                 |
| Platoon blocked, %       |                                                                                   | -                                                                                 | -                                                                                 | -      |                                                                                   |                                                                                   |
| Mov Cap-1 Maneuver       | 1362                                                                              | -                                                                                 | -                                                                                 | -      | 560                                                                               | 857                                                                               |
| Mov Cap-2 Maneuver       | -                                                                                 | -                                                                                 | -                                                                                 | -      | 560                                                                               | -                                                                                 |
| Stage 1                  | -                                                                                 | -                                                                                 | -                                                                                 | -      | 841                                                                               | -                                                                                 |
| Stage 2                  | -                                                                                 | -                                                                                 | -                                                                                 | -      | 776                                                                               | -                                                                                 |
|                          |                                                                                   |                                                                                   |                                                                                   |        |                                                                                   |                                                                                   |
|                          |                                                                                   |                                                                                   |                                                                                   |        |                                                                                   |                                                                                   |
| Approach                 | EB                                                                                | WB                                                                                |                                                                                   | SB     |                                                                                   |                                                                                   |
| HCM Control Delay, s     | 0.3                                                                               | 0                                                                                 |                                                                                   | 11.6   |                                                                                   |                                                                                   |
| HCM LOS                  | B                                                                                 |                                                                                   |                                                                                   |        |                                                                                   |                                                                                   |
|                          |                                                                                   |                                                                                   |                                                                                   |        |                                                                                   |                                                                                   |
|                          |                                                                                   |                                                                                   |                                                                                   |        |                                                                                   |                                                                                   |
| Minor Lane/Major Mvmt    | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR    | SBLn1                                                                             | SBLn2                                                                             |
| Capacity (veh/h)         | 1362                                                                              | -                                                                                 | -                                                                                 | -      | 560                                                                               | 857                                                                               |
| HCM Lane V/C Ratio       | 0.007                                                                             | -                                                                                 | -                                                                                 | -      | 0.062                                                                             | 0.005                                                                             |
| HCM Control Delay (s)    | 7.7                                                                               | -                                                                                 | -                                                                                 | -      | 11.9                                                                              | 9.2                                                                               |
| HCM Lane LOS             | A                                                                                 | -                                                                                 | -                                                                                 | -      | B                                                                                 | A                                                                                 |
| HCM 95th %tile Q(veh)    | 0                                                                                 | -                                                                                 | -                                                                                 | -      | 0.2                                                                               | 0                                                                                 |



## Queues

3:

03/21/2025

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 77                                                                                | 108                                                                               | 120                                                                               | 173                                                                               | 176                                                                               | 210                                                                               | 97                                                                                 | 558                                                                                 | 163                                                                                 | 120                                                                                 | 450                                                                                 | 47                                                                                  |
| v/c Ratio               | 1.01                                                                              | 0.36                                                                              | 0.28                                                                              | 0.63                                                                              | 0.63                                                                              | 0.35                                                                              | 0.32                                                                               | 0.38                                                                                | 0.27                                                                                | 0.40                                                                                | 0.30                                                                                | 0.08                                                                                |
| Control Delay           | 162.5                                                                             | 47.0                                                                              | 1.6                                                                               | 56.8                                                                              | 56.3                                                                              | 6.0                                                                               | 45.5                                                                               | 33.5                                                                                | 3.1                                                                                 | 47.2                                                                                | 32.6                                                                                | 0.3                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 162.5                                                                             | 47.0                                                                              | 1.6                                                                               | 56.8                                                                              | 56.3                                                                              | 6.0                                                                               | 45.5                                                                               | 33.5                                                                                | 3.1                                                                                 | 47.2                                                                                | 32.6                                                                                | 0.3                                                                                 |
| Queue Length 50th (ft)  | ~59                                                                               | 73                                                                                | 0                                                                                 | 128                                                                               | 130                                                                               | 0                                                                                 | 64                                                                                 | 121                                                                                 | 0                                                                                   | 81                                                                                  | 95                                                                                  | 0                                                                                   |
| Queue Length 95th (ft)  | #160                                                                              | 128                                                                               | 0                                                                                 | 209                                                                               | 211                                                                               | 57                                                                                | 116                                                                                | 156                                                                                 | 28                                                                                  | 140                                                                                 | 126                                                                                 | 0                                                                                   |
| Internal Link Dist (ft) |                                                                                   | 424                                                                               |                                                                                   |                                                                                   | 657                                                                               |                                                                                   |                                                                                    | 1570                                                                                |                                                                                     |                                                                                     | 1044                                                                                |                                                                                     |
| Turn Bay Length (ft)    | 230                                                                               |                                                                                   | 190                                                                               | 250                                                                               |                                                                                   | 433                                                                               | 210                                                                                |                                                                                     | 150                                                                                 | 250                                                                                 |                                                                                     | 150                                                                                 |
| Base Capacity (vph)     | 76                                                                                | 303                                                                               | 426                                                                               | 273                                                                               | 280                                                                               | 598                                                                               | 303                                                                                | 1486                                                                                | 604                                                                                 | 303                                                                                 | 1486                                                                                | 604                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 1.01                                                                              | 0.36                                                                              | 0.28                                                                              | 0.63                                                                              | 0.63                                                                              | 0.35                                                                              | 0.32                                                                               | 0.38                                                                                | 0.27                                                                                | 0.40                                                                                | 0.30                                                                                | 0.08                                                                                |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

3:

03/21/2025

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |  |  |  |  |   |  |  |  |  |  |
| Traffic Volume (vph)              | 71                                                                                | 99                                                                                | 110                                                                               | 253                                                                               | 68                                                                                | 193                                                                               | 89                                                                                  | 513                                                                                 | 150                                                                                 | 110                                                                                 | 414                                                                                 | 43                                                                                  |
| Future Volume (vph)               | 71                                                                                | 99                                                                                | 110                                                                               | 253                                                                               | 68                                                                                | 193                                                                               | 89                                                                                  | 513                                                                                 | 150                                                                                 | 110                                                                                 | 414                                                                                 | 43                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.97                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1770                                                                              | 1863                                                                              | 1583                                                                              | 1681                                                                              | 1720                                                                              | 1583                                                                              | 1770                                                                                | 5085                                                                                | 1583                                                                                | 1770                                                                                | 5085                                                                                | 1583                                                                                |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.61                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1770                                                                              | 1863                                                                              | 1583                                                                              | 1681                                                                              | 1085                                                                              | 1583                                                                              | 1770                                                                                | 5085                                                                                | 1583                                                                                | 1770                                                                                | 5085                                                                                | 1583                                                                                |
| Peak-hour factor, PHF             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Adj. Flow (vph)                   | 77                                                                                | 108                                                                               | 120                                                                               | 275                                                                               | 74                                                                                | 210                                                                               | 97                                                                                  | 558                                                                                 | 163                                                                                 | 120                                                                                 | 450                                                                                 | 47                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 100                                                                               | 0                                                                                 | 0                                                                                 | 151                                                                               | 0                                                                                   | 0                                                                                   | 115                                                                                 | 0                                                                                   | 0                                                                                   | 33                                                                                  |
| Lane Group Flow (vph)             | 77                                                                                | 108                                                                               | 20                                                                                | 173                                                                               | 176                                                                               | 59                                                                                | 97                                                                                  | 558                                                                                 | 48                                                                                  | 120                                                                                 | 450                                                                                 | 14                                                                                  |
| Turn Type                         | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                                | NA                                                                                  | Perm                                                                                | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |
| Actuated Green, G (s)             | 5.0                                                                               | 18.9                                                                              | 18.9                                                                              | 18.9                                                                              | 43.9                                                                              | 32.8                                                                              | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                |
| Effective Green, g (s)            | 5.0                                                                               | 18.9                                                                              | 18.9                                                                              | 18.9                                                                              | 43.9                                                                              | 32.8                                                                              | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                |
| Actuated g/C Ratio                | 0.04                                                                              | 0.16                                                                              | 0.16                                                                              | 0.16                                                                              | 0.38                                                                              | 0.28                                                                              | 0.17                                                                                | 0.29                                                                                | 0.29                                                                                | 0.17                                                                                | 0.29                                                                                | 0.29                                                                                |
| Clearance Time (s)                | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 |
| Lane Grp Cap (vph)                | 76                                                                                | 303                                                                               | 257                                                                               | 273                                                                               | 514                                                                               | 447                                                                               | 303                                                                                 | 1486                                                                                | 462                                                                                 | 303                                                                                 | 1486                                                                                | 462                                                                                 |
| v/s Ratio Prot                    | 0.04                                                                              | 0.06                                                                              |                                                                                   | c0.10                                                                             | 0.06                                                                              |                                                                                   | 0.05                                                                                | c0.11                                                                               |                                                                                     | c0.07                                                                               | 0.09                                                                                |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | 0.01                                                                              |                                                                                   | c0.07                                                                             | 0.04                                                                              |                                                                                     |                                                                                     | 0.03                                                                                |                                                                                     |                                                                                     | 0.01                                                                                |
| v/c Ratio                         | 1.01                                                                              | 0.36                                                                              | 0.08                                                                              | 0.63                                                                              | 0.34                                                                              | 0.13                                                                              | 0.32                                                                                | 0.38                                                                                | 0.10                                                                                | 0.40                                                                                | 0.30                                                                                | 0.03                                                                                |
| Uniform Delay, d1                 | 55.5                                                                              | 43.1                                                                              | 41.1                                                                              | 45.3                                                                              | 25.7                                                                              | 31.0                                                                              | 42.1                                                                                | 32.6                                                                                | 30.0                                                                                | 42.7                                                                                | 31.9                                                                                | 29.3                                                                                |
| Progression 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                                                                                |
| Incremental Delay, d2             | 106.9                                                                             | 3.3                                                                               | 0.6                                                                               | 10.7                                                                              | 1.8                                                                               | 0.6                                                                               | 2.8                                                                                 | 0.7                                                                                 | 0.4                                                                                 | 3.8                                                                                 | 0.5                                                                                 | 0.1                                                                                 |
| Delay (s)                         | 162.4                                                                             | 46.4                                                                              | 41.7                                                                              | 56.0                                                                              | 27.6                                                                              | 31.6                                                                              | 44.9                                                                                | 33.4                                                                                | 30.4                                                                                | 46.5                                                                                | 32.4                                                                                | 29.4                                                                                |
| Level of Service                  | F                                                                                 | D                                                                                 | D                                                                                 | E                                                                                 | C                                                                                 | C                                                                                 | D                                                                                   | C                                                                                   | C                                                                                   | D                                                                                   | C                                                                                   | C                                                                                   |
| Approach Delay (s)                |                                                                                   | 73.9                                                                              |                                                                                   |                                                                                   | 37.9                                                                              |                                                                                   |                                                                                     | 34.1                                                                                |                                                                                     |                                                                                     | 34.9                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                     | C                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 40.5                                                                              |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                   |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.44                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 116.0                                                                             |                                                                                   | Sum of lost time (s)                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 24.4                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 46.7%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

**Intersection**

Int Delay, s/veh 2.7

| Movement                 | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |  |  |      |  |  |
| Traffic Vol, veh/h       | 16                                                                                | 125                                                                               | 81                                                                                | 63   | 70                                                                                | 13                                                                                |
| Future Vol, veh/h        | 16                                                                                | 125                                                                               | 81                                                                                | 63   | 70                                                                                | 13                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                 | 0                                                                                 |
| Sign Control             | Free                                                                              | Free                                                                              | Free                                                                              | Free | Stop                                                                              | Stop                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None | -                                                                                 | None                                                                              |
| Storage Length           | 120                                                                               | -                                                                                 | -                                                                                 | -    | 0                                                                                 | 0                                                                                 |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Grade, %                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92                                                                                | 92                                                                                | 92   | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2    | 2                                                                                 | 2                                                                                 |
| Mvmt Flow                | 17                                                                                | 136                                                                               | 88                                                                                | 68   | 76                                                                                | 14                                                                                |

| Major/Minor          | Major1 | Major2 | Minor2        |
|----------------------|--------|--------|---------------|
| Conflicting Flow All | 156    | 0      | 0 292 122     |
| Stage 1              | -      | -      | - 122 -       |
| Stage 2              | -      | -      | - 170 -       |
| Critical Hdwy        | 4.12   | -      | - 6.42 6.22   |
| Critical Hdwy Stg 1  | -      | -      | - 5.42 -      |
| Critical Hdwy Stg 2  | -      | -      | - 5.42 -      |
| Follow-up Hdwy       | 2.218  | -      | - 3.518 3.318 |
| Pot Cap-1 Maneuver   | 1424   | -      | - 699 929     |
| Stage 1              | -      | -      | - 903 -       |
| Stage 2              | -      | -      | - 860 -       |
| Platoon blocked, %   |        | -      | -             |
| Mov Cap-1 Maneuver   | 1424   | -      | - 691 929     |
| Mov Cap-2 Maneuver   | -      | -      | - 691 -       |
| Stage 1              | -      | -      | - 892 -       |
| Stage 2              | -      | -      | - 860 -       |

| Approach             | EB  | WB | SB   |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.9 | 0  | 10.6 |
| HCM LOS              |     |    | B    |

| Minor Lane/Major Mvmt | EBL   | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h)      | 1424  | -   | -   | -   | 691   | 929   |
| HCM Lane V/C Ratio    | 0.012 | -   | -   | -   | 0.11  | 0.015 |
| HCM Control Delay (s) | 7.6   | -   | -   | -   | 10.9  | 8.9   |
| HCM Lane LOS          | A     | -   | -   | -   | B     | A     |
| HCM 95th %tile Q(veh) | 0     | -   | -   | -   | 0.4   | 0     |

**Intersection**

Int Delay, s/veh 1.9

| Movement                 | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |  |  |      |  |  |
| Traffic Vol, veh/h       | 9                                                                                 | 229                                                                               | 168                                                                               | 62   | 69                                                                                | 6                                                                                 |
| Future Vol, veh/h        | 9                                                                                 | 229                                                                               | 168                                                                               | 62   | 69                                                                                | 6                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                 | 0                                                                                 |
| Sign Control             | Free                                                                              | Free                                                                              | Free                                                                              | Free | Stop                                                                              | Stop                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None | -                                                                                 | None                                                                              |
| Storage Length           | 140                                                                               | -                                                                                 | -                                                                                 | -    | 0                                                                                 | 0                                                                                 |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Grade, %                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92                                                                                | 92                                                                                | 92   | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2    | 2                                                                                 | 2                                                                                 |
| Mvmt Flow                | 10                                                                                | 249                                                                               | 183                                                                               | 67   | 75                                                                                | 7                                                                                 |

| Major/Minor          | Major1 | Major2 | Minor2          |
|----------------------|--------|--------|-----------------|
| Conflicting Flow All | 250    | 0      | 0 486 217       |
| Stage 1              | -      | -      | - - 217 -       |
| Stage 2              | -      | -      | - - 269 -       |
| Critical Hdwy        | 4.12   | -      | - - 6.42 6.22   |
| Critical Hdwy Stg 1  | -      | -      | - - 5.42 -      |
| Critical Hdwy Stg 2  | -      | -      | - - 5.42 -      |
| Follow-up Hdwy       | 2.218  | -      | - - 3.518 3.318 |
| Pot Cap-1 Maneuver   | 1316   | -      | - - 540 823     |
| Stage 1              | -      | -      | - - 819 -       |
| Stage 2              | -      | -      | - - 776 -       |
| Platoon blocked, %   |        | -      | - -             |
| Mov Cap-1 Maneuver   | 1316   | -      | - - 536 823     |
| Mov Cap-2 Maneuver   | -      | -      | - - 536 -       |
| Stage 1              | -      | -      | - - 812 -       |
| Stage 2              | -      | -      | - - 776 -       |

| Approach             | EB  | WB | SB   |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.3 | 0  | 12.5 |
| HCM LOS              |     |    | B    |

| Minor Lane/Major Mvmt | EBL   | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h)      | 1316  | -   | -   | -   | 536   | 823   |
| HCM Lane V/C Ratio    | 0.007 | -   | -   | -   | 0.14  | 0.008 |
| HCM Control Delay (s) | 7.8   | -   | -   | -   | 12.8  | 9.4   |
| HCM Lane LOS          | A     | -   | -   | -   | B     | A     |
| HCM 95th %tile Q(veh) | 0     | -   | -   | -   | 0.5   | 0     |

## Queues

3:

03/21/2025

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 85                                                                                | 124                                                                               | 155                                                                               | 217                                                                               | 225                                                                               | 209                                                                               | 155                                                                                | 900                                                                                 | 204                                                                                 | 317                                                                                 | 929                                                                                 | 103                                                                                 |
| v/c Ratio               | 1.12                                                                              | 0.41                                                                              | 0.36                                                                              | 0.79                                                                              | 0.80                                                                              | 0.35                                                                              | 0.51                                                                               | 0.61                                                                                | 0.34                                                                                | 1.05                                                                                | 0.63                                                                                | 0.17                                                                                |
| Control Delay           | 189.6                                                                             | 48.2                                                                              | 4.7                                                                               | 68.4                                                                              | 68.4                                                                              | 6.0                                                                               | 50.4                                                                               | 37.4                                                                                | 6.2                                                                                 | 111.2                                                                               | 37.8                                                                                | 0.6                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 189.6                                                                             | 48.2                                                                              | 4.7                                                                               | 68.4                                                                              | 68.4                                                                              | 6.0                                                                               | 50.4                                                                               | 37.4                                                                                | 6.2                                                                                 | 111.2                                                                               | 37.8                                                                                | 0.6                                                                                 |
| Queue Length 50th (ft)  | ~73                                                                               | 84                                                                                | 0                                                                                 | 166                                                                               | 172                                                                               | 0                                                                                 | 106                                                                                | 211                                                                                 | 2                                                                                   | ~257                                                                                | 220                                                                                 | 0                                                                                   |
| Queue Length 95th (ft)  | #177                                                                              | 144                                                                               | 27                                                                                | #294                                                                              | #303                                                                              | 56                                                                                | 176                                                                                | 258                                                                                 | 57                                                                                  | #436                                                                                | 267                                                                                 | 0                                                                                   |
| Internal Link Dist (ft) |                                                                                   | 424                                                                               |                                                                                   |                                                                                   | 657                                                                               |                                                                                   |                                                                                    | 1570                                                                                |                                                                                     |                                                                                     | 1044                                                                                |                                                                                     |
| Turn Bay Length (ft)    | 230                                                                               |                                                                                   | 190                                                                               | 250                                                                               |                                                                                   | 433                                                                               | 210                                                                                |                                                                                     | 150                                                                                 | 250                                                                                 |                                                                                     | 150                                                                                 |
| Base Capacity (vph)     | 76                                                                                | 303                                                                               | 426                                                                               | 273                                                                               | 281                                                                               | 597                                                                               | 303                                                                                | 1486                                                                                | 604                                                                                 | 303                                                                                 | 1486                                                                                | 604                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 1.12                                                                              | 0.41                                                                              | 0.36                                                                              | 0.79                                                                              | 0.80                                                                              | 0.35                                                                              | 0.51                                                                               | 0.61                                                                                | 0.34                                                                                | 1.05                                                                                | 0.63                                                                                | 0.17                                                                                |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

3:

03/21/2025

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |  |  |  |  |   |  |  |  |  |  |
| Traffic Volume (vph)              | 78                                                                                | 114                                                                               | 143                                                                               | 298                                                                               | 109                                                                               | 192                                                                               | 143                                                                                 | 828                                                                                 | 188                                                                                 | 292                                                                                 | 855                                                                                 | 95                                                                                  |
| Future Volume (vph)               | 78                                                                                | 114                                                                               | 143                                                                               | 298                                                                               | 109                                                                               | 192                                                                               | 143                                                                                 | 828                                                                                 | 188                                                                                 | 292                                                                                 | 855                                                                                 | 95                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.98                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1770                                                                              | 1863                                                                              | 1583                                                                              | 1681                                                                              | 1729                                                                              | 1583                                                                              | 1770                                                                                | 5085                                                                                | 1583                                                                                | 1770                                                                                | 5085                                                                                | 1583                                                                                |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.59                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1770                                                                              | 1863                                                                              | 1583                                                                              | 1681                                                                              | 1038                                                                              | 1583                                                                              | 1770                                                                                | 5085                                                                                | 1583                                                                                | 1770                                                                                | 5085                                                                                | 1583                                                                                |
| Peak-hour factor, PHF             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Adj. Flow (vph)                   | 85                                                                                | 124                                                                               | 155                                                                               | 324                                                                               | 118                                                                               | 209                                                                               | 155                                                                                 | 900                                                                                 | 204                                                                                 | 317                                                                                 | 929                                                                                 | 103                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 130                                                                               | 0                                                                                 | 0                                                                                 | 150                                                                               | 0                                                                                   | 0                                                                                   | 142                                                                                 | 0                                                                                   | 0                                                                                   | 73                                                                                  |
| Lane Group Flow (vph)             | 85                                                                                | 124                                                                               | 25                                                                                | 217                                                                               | 225                                                                               | 59                                                                                | 155                                                                                 | 900                                                                                 | 62                                                                                  | 317                                                                                 | 929                                                                                 | 30                                                                                  |
| Turn Type                         | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                                | NA                                                                                  | Perm                                                                                | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |
| Actuated Green, G (s)             | 5.0                                                                               | 18.9                                                                              | 18.9                                                                              | 18.9                                                                              | 43.9                                                                              | 32.8                                                                              | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                |
| Effective Green, g (s)            | 5.0                                                                               | 18.9                                                                              | 18.9                                                                              | 18.9                                                                              | 43.9                                                                              | 32.8                                                                              | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                |
| Actuated g/C Ratio                | 0.04                                                                              | 0.16                                                                              | 0.16                                                                              | 0.16                                                                              | 0.38                                                                              | 0.28                                                                              | 0.17                                                                                | 0.29                                                                                | 0.29                                                                                | 0.17                                                                                | 0.29                                                                                | 0.29                                                                                |
| Clearance Time (s)                | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 |
| Lane Grp Cap (vph)                | 76                                                                                | 303                                                                               | 257                                                                               | 273                                                                               | 505                                                                               | 447                                                                               | 303                                                                                 | 1486                                                                                | 462                                                                                 | 303                                                                                 | 1486                                                                                | 462                                                                                 |
| v/s Ratio Prot                    | 0.05                                                                              | 0.07                                                                              |                                                                                   | c0.13                                                                             | 0.07                                                                              |                                                                                   | 0.09                                                                                | 0.18                                                                                |                                                                                     | c0.18                                                                               | c0.18                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | 0.02                                                                              |                                                                                   | c0.10                                                                             | 0.04                                                                              |                                                                                     |                                                                                     | 0.04                                                                                |                                                                                     |                                                                                     | 0.02                                                                                |
| v/c Ratio                         | 1.12                                                                              | 0.41                                                                              | 0.10                                                                              | 0.79                                                                              | 0.45                                                                              | 0.13                                                                              | 0.51                                                                                | 0.61                                                                                | 0.13                                                                                | 1.05                                                                                | 0.63                                                                                | 0.07                                                                                |
| Uniform Delay, d1                 | 55.5                                                                              | 43.5                                                                              | 41.3                                                                              | 46.7                                                                              | 27.0                                                                              | 31.0                                                                              | 43.6                                                                                | 35.3                                                                                | 30.2                                                                                | 48.0                                                                                | 35.5                                                                                | 29.6                                                                                |
| Progression 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                                                                                |
| Incremental Delay, d2             | 139.0                                                                             | 4.1                                                                               | 0.8                                                                               | 20.8                                                                              | 2.8                                                                               | 0.6                                                                               | 6.1                                                                                 | 1.8                                                                                 | 0.6                                                                                 | 64.3                                                                                | 2.0                                                                                 | 0.3                                                                                 |
| Delay (s)                         | 194.5                                                                             | 47.6                                                                              | 42.1                                                                              | 67.5                                                                              | 29.8                                                                              | 31.6                                                                              | 49.7                                                                                | 37.1                                                                                | 30.8                                                                                | 112.3                                                                               | 37.5                                                                                | 29.9                                                                                |
| Level of Service                  | F                                                                                 | D                                                                                 | D                                                                                 | E                                                                                 | C                                                                                 | C                                                                                 | D                                                                                   | D                                                                                   | C                                                                                   | F                                                                                   | D                                                                                   | C                                                                                   |
| Approach Delay (s)                |                                                                                   | 79.6                                                                              |                                                                                   |                                                                                   | 43.0                                                                              |                                                                                   |                                                                                     | 37.7                                                                                |                                                                                     |                                                                                     | 54.5                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                     | D                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 49.1                                                                              |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                   |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.73                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 116.0                                                                             |                                                                                   | Sum of lost time (s)                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 24.4                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 65.2%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

**Intersection**

Int Delay, s/veh 4.5

| Movement                 | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |  |  |      |  |  |
| Traffic Vol, veh/h       | 28                                                                                | 133                                                                               | 186                                                                               | 109  | 157                                                                               | 42                                                                                |
| Future Vol, veh/h        | 28                                                                                | 133                                                                               | 186                                                                               | 109  | 157                                                                               | 42                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                 | 0                                                                                 |
| Sign Control             | Free                                                                              | Free                                                                              | Free                                                                              | Free | Stop                                                                              | Stop                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None | -                                                                                 | None                                                                              |
| Storage Length           | 120                                                                               | -                                                                                 | -                                                                                 | -    | 0                                                                                 | 0                                                                                 |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Grade, %                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92                                                                                | 92                                                                                | 92   | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2    | 2                                                                                 | 2                                                                                 |
| Mvmt Flow                | 30                                                                                | 145                                                                               | 202                                                                               | 118  | 171                                                                               | 46                                                                                |

| Major/Minor          | Major1 | Major2 | Minor2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 320    | 0      | 0      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | 4.12   | -      | -      |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | 2.218  | -      | -      |
| Pot Cap-1 Maneuver   | 1240   | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | 1240   | -      | -      |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | EB  | WB | SB   |
|----------------------|-----|----|------|
| HCM Control Delay, s | 1.4 | 0  | 13.7 |
| HCM LOS              |     |    | B    |

| Minor Lane/Major Mvmt | EBL   | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h)      | 1240  | -   | -   | -   | 542   | 778   |
| HCM Lane V/C Ratio    | 0.025 | -   | -   | -   | 0.315 | 0.059 |
| HCM Control Delay (s) | 8     | -   | -   | -   | 14.7  | 9.9   |
| HCM Lane LOS          | A     | -   | -   | -   | B     | A     |
| HCM 95th %tile Q(veh) | 0.1   | -   | -   | -   | 1.3   | 0.2   |

| Intersection             |                                                                                   |                                                                                   |                                                                                   |      |                                                                                   |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 1.5                                                                               |                                                                                   |                                                                                   |      |                                                                                   |                                                                                   |
| Movement                 | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR                                                                               |
| Lane Configurations      |  |  |  |      |  |  |
| Traffic Vol, veh/h       | 14                                                                                | 284                                                                               | 282                                                                               | 57   | 52                                                                                | 15                                                                                |
| Future Vol, veh/h        | 14                                                                                | 284                                                                               | 282                                                                               | 57   | 52                                                                                | 15                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                 | 0                                                                                 |
| Sign Control             | Free                                                                              | Free                                                                              | Free                                                                              | Free | Stop                                                                              | Stop                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None | -                                                                                 | None                                                                              |
| Storage Length           | 140                                                                               | -                                                                                 | -                                                                                 | -    | 0                                                                                 | 0                                                                                 |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Grade, %                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92                                                                                | 92                                                                                | 92   | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2    | 2                                                                                 | 2                                                                                 |
| Mvmt Flow                | 15                                                                                | 309                                                                               | 307                                                                               | 62   | 57                                                                                | 16                                                                                |
| Major/Minor              | Major1                                                                            | Major2                                                                            | Minor2                                                                            |      |                                                                                   |                                                                                   |
| Conflicting Flow All     | 369                                                                               | 0                                                                                 | -                                                                                 | 0    | 677                                                                               | 338                                                                               |
| Stage 1                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 338                                                                               | -                                                                                 |
| Stage 2                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 339                                                                               | -                                                                                 |
| Critical Hdwy            | 4.12                                                                              | -                                                                                 | -                                                                                 | -    | 6.42                                                                              | 6.22                                                                              |
| Critical Hdwy Stg 1      | -                                                                                 | -                                                                                 | -                                                                                 | -    | 5.42                                                                              | -                                                                                 |
| Critical Hdwy Stg 2      | -                                                                                 | -                                                                                 | -                                                                                 | -    | 5.42                                                                              | -                                                                                 |
| Follow-up Hdwy           | 2.218                                                                             | -                                                                                 | -                                                                                 | -    | 3.518                                                                             | 3.318                                                                             |
| Pot Cap-1 Maneuver       | 1190                                                                              | -                                                                                 | -                                                                                 | -    | 418                                                                               | 704                                                                               |
| Stage 1                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 722                                                                               | -                                                                                 |
| Stage 2                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 722                                                                               | -                                                                                 |
| Platoon blocked, %       |                                                                                   | -                                                                                 | -                                                                                 | -    |                                                                                   |                                                                                   |
| Mov Cap-1 Maneuver       | 1190                                                                              | -                                                                                 | -                                                                                 | -    | 413                                                                               | 704                                                                               |
| Mov Cap-2 Maneuver       | -                                                                                 | -                                                                                 | -                                                                                 | -    | 413                                                                               | -                                                                                 |
| Stage 1                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 713                                                                               | -                                                                                 |
| Stage 2                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 722                                                                               | -                                                                                 |
| Approach                 | EB                                                                                | WB                                                                                |                                                                                   | SB   |                                                                                   |                                                                                   |
| HCM Control Delay, s     | 0.4                                                                               | 0                                                                                 |                                                                                   | 14   |                                                                                   |                                                                                   |
| HCM LOS                  |                                                                                   |                                                                                   |                                                                                   | B    |                                                                                   |                                                                                   |
| Minor Lane/Major Mvmt    | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR  | SBLn1                                                                             | SBLn2                                                                             |
| Capacity (veh/h)         | 1190                                                                              | -                                                                                 | -                                                                                 | -    | 413                                                                               | 704                                                                               |
| HCM Lane V/C Ratio       | 0.013                                                                             | -                                                                                 | -                                                                                 | -    | 0.137                                                                             | 0.023                                                                             |
| HCM Control Delay (s)    | 8.1                                                                               | -                                                                                 | -                                                                                 | -    | 15.1                                                                              | 10.2                                                                              |
| HCM Lane LOS             | A                                                                                 | -                                                                                 | -                                                                                 | -    | C                                                                                 | B                                                                                 |
| HCM 95th %tile Q(veh)    | 0                                                                                 | -                                                                                 | -                                                                                 | -    | 0.5                                                                               | 0.1                                                                               |



## Queues

3:

03/21/2025

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 87                                                                                | 133                                                                               | 163                                                                               | 224                                                                               | 227                                                                               | 209                                                                               | 163                                                                                | 900                                                                                 | 204                                                                                 | 317                                                                                 | 929                                                                                 | 105                                                                                 |
| v/c Ratio               | 1.14                                                                              | 0.44                                                                              | 0.38                                                                              | 0.82                                                                              | 0.80                                                                              | 0.35                                                                              | 0.54                                                                               | 0.61                                                                                | 0.34                                                                                | 1.05                                                                                | 0.63                                                                                | 0.17                                                                                |
| Control Delay           | 197.2                                                                             | 49.0                                                                              | 5.3                                                                               | 71.1                                                                              | 68.8                                                                              | 6.0                                                                               | 51.2                                                                               | 37.4                                                                                | 6.2                                                                                 | 111.2                                                                               | 37.8                                                                                | 0.6                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 197.2                                                                             | 49.0                                                                              | 5.3                                                                               | 71.1                                                                              | 68.8                                                                              | 6.0                                                                               | 51.2                                                                               | 37.4                                                                                | 6.2                                                                                 | 111.2                                                                               | 37.8                                                                                | 0.6                                                                                 |
| Queue Length 50th (ft)  | ~76                                                                               | 91                                                                                | 0                                                                                 | 172                                                                               | 173                                                                               | 0                                                                                 | 112                                                                                | 211                                                                                 | 2                                                                                   | ~257                                                                                | 220                                                                                 | 0                                                                                   |
| Queue Length 95th (ft)  | #182                                                                              | 154                                                                               | 33                                                                                | #308                                                                              | #308                                                                              | 56                                                                                | 184                                                                                | 258                                                                                 | 57                                                                                  | #436                                                                                | 267                                                                                 | 0                                                                                   |
| Internal Link Dist (ft) |                                                                                   | 424                                                                               |                                                                                   |                                                                                   | 657                                                                               |                                                                                   |                                                                                    | 1570                                                                                |                                                                                     |                                                                                     | 1044                                                                                |                                                                                     |
| Turn Bay Length (ft)    | 230                                                                               |                                                                                   | 190                                                                               | 250                                                                               |                                                                                   | 433                                                                               | 210                                                                                |                                                                                     | 150                                                                                 | 250                                                                                 |                                                                                     | 150                                                                                 |
| Base Capacity (vph)     | 76                                                                                | 303                                                                               | 426                                                                               | 273                                                                               | 282                                                                               | 597                                                                               | 303                                                                                | 1486                                                                                | 604                                                                                 | 303                                                                                 | 1486                                                                                | 604                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 1.14                                                                              | 0.44                                                                              | 0.38                                                                              | 0.82                                                                              | 0.80                                                                              | 0.35                                                                              | 0.54                                                                               | 0.61                                                                                | 0.34                                                                                | 1.05                                                                                | 0.63                                                                                | 0.17                                                                                |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

3:

03/21/2025

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |  |  |  |  |   |  |  |  |  |  |
| Traffic Volume (vph)              | 80                                                                                | 122                                                                               | 150                                                                               | 298                                                                               | 117                                                                               | 192                                                                               | 150                                                                                 | 828                                                                                 | 188                                                                                 | 292                                                                                 | 855                                                                                 | 97                                                                                  |
| Future Volume (vph)               | 80                                                                                | 122                                                                               | 150                                                                               | 298                                                                               | 117                                                                               | 192                                                                               | 150                                                                                 | 828                                                                                 | 188                                                                                 | 292                                                                                 | 855                                                                                 | 97                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.98                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1770                                                                              | 1863                                                                              | 1583                                                                              | 1681                                                                              | 1731                                                                              | 1583                                                                              | 1770                                                                                | 5085                                                                                | 1583                                                                                | 1770                                                                                | 5085                                                                                | 1583                                                                                |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.60                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1770                                                                              | 1863                                                                              | 1583                                                                              | 1681                                                                              | 1056                                                                              | 1583                                                                              | 1770                                                                                | 5085                                                                                | 1583                                                                                | 1770                                                                                | 5085                                                                                | 1583                                                                                |
| Peak-hour factor, PHF             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Adj. Flow (vph)                   | 87                                                                                | 133                                                                               | 163                                                                               | 324                                                                               | 127                                                                               | 209                                                                               | 163                                                                                 | 900                                                                                 | 204                                                                                 | 317                                                                                 | 929                                                                                 | 105                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 136                                                                               | 0                                                                                 | 0                                                                                 | 150                                                                               | 0                                                                                   | 0                                                                                   | 142                                                                                 | 0                                                                                   | 0                                                                                   | 74                                                                                  |
| Lane Group Flow (vph)             | 87                                                                                | 133                                                                               | 27                                                                                | 224                                                                               | 227                                                                               | 59                                                                                | 163                                                                                 | 900                                                                                 | 62                                                                                  | 317                                                                                 | 929                                                                                 | 31                                                                                  |
| Turn Type                         | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                                | NA                                                                                  | Perm                                                                                | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |
| Actuated Green, G (s)             | 5.0                                                                               | 18.9                                                                              | 18.9                                                                              | 18.9                                                                              | 43.9                                                                              | 32.8                                                                              | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                |
| Effective Green, g (s)            | 5.0                                                                               | 18.9                                                                              | 18.9                                                                              | 18.9                                                                              | 43.9                                                                              | 32.8                                                                              | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                |
| Actuated g/C Ratio                | 0.04                                                                              | 0.16                                                                              | 0.16                                                                              | 0.16                                                                              | 0.38                                                                              | 0.28                                                                              | 0.17                                                                                | 0.29                                                                                | 0.29                                                                                | 0.17                                                                                | 0.29                                                                                | 0.29                                                                                |
| Clearance Time (s)                | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 |
| Lane Grp Cap (vph)                | 76                                                                                | 303                                                                               | 257                                                                               | 273                                                                               | 509                                                                               | 447                                                                               | 303                                                                                 | 1486                                                                                | 462                                                                                 | 303                                                                                 | 1486                                                                                | 462                                                                                 |
| v/s Ratio Prot                    | 0.05                                                                              | 0.07                                                                              |                                                                                   | c0.13                                                                             | 0.07                                                                              |                                                                                   | 0.09                                                                                | 0.18                                                                                |                                                                                     | c0.18                                                                               | c0.18                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | 0.02                                                                              |                                                                                   | c0.10                                                                             | 0.04                                                                              |                                                                                     |                                                                                     | 0.04                                                                                |                                                                                     |                                                                                     | 0.02                                                                                |
| v/c Ratio                         | 1.14                                                                              | 0.44                                                                              | 0.10                                                                              | 0.82                                                                              | 0.45                                                                              | 0.13                                                                              | 0.54                                                                                | 0.61                                                                                | 0.13                                                                                | 1.05                                                                                | 0.63                                                                                | 0.07                                                                                |
| Uniform Delay, d1                 | 55.5                                                                              | 43.8                                                                              | 41.3                                                                              | 46.9                                                                              | 27.0                                                                              | 31.0                                                                              | 43.9                                                                                | 35.3                                                                                | 30.2                                                                                | 48.0                                                                                | 35.5                                                                                | 29.6                                                                                |
| Progression 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                                                                                |
| Incremental Delay, d2             | 147.7                                                                             | 4.6                                                                               | 0.8                                                                               | 23.4                                                                              | 2.8                                                                               | 0.6                                                                               | 6.7                                                                                 | 1.8                                                                                 | 0.6                                                                                 | 64.3                                                                                | 2.0                                                                                 | 0.3                                                                                 |
| Delay (s)                         | 203.2                                                                             | 48.3                                                                              | 42.1                                                                              | 70.3                                                                              | 29.8                                                                              | 31.6                                                                              | 50.6                                                                                | 37.1                                                                                | 30.8                                                                                | 112.3                                                                               | 37.5                                                                                | 29.9                                                                                |
| Level of Service                  | F                                                                                 | D                                                                                 | D                                                                                 | E                                                                                 | C                                                                                 | C                                                                                 | D                                                                                   | D                                                                                   | C                                                                                   | F                                                                                   | D                                                                                   | C                                                                                   |
| Approach Delay (s)                |                                                                                   | 80.9                                                                              |                                                                                   |                                                                                   | 44.1                                                                              |                                                                                   |                                                                                     | 37.9                                                                                |                                                                                     |                                                                                     | 54.5                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | F                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                     | D                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 49.6                                                                              |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                   |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.73                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 116.0                                                                             |                                                                                   | Sum of lost time (s)                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 24.4                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 70.3%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

**Intersection**

Int Delay, s/veh 4.5

| Movement                 | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |  |  |      |  |  |
| Traffic Vol, veh/h       | 30                                                                                | 133                                                                               | 186                                                                               | 129  | 157                                                                               | 42                                                                                |
| Future Vol, veh/h        | 30                                                                                | 133                                                                               | 186                                                                               | 129  | 157                                                                               | 42                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                 | 0                                                                                 |
| Sign Control             | Free                                                                              | Free                                                                              | Free                                                                              | Free | Stop                                                                              | Stop                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None | -                                                                                 | None                                                                              |
| Storage Length           | 120                                                                               | -                                                                                 | -                                                                                 | -    | 0                                                                                 | 0                                                                                 |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Grade, %                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92                                                                                | 92                                                                                | 92   | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2    | 2                                                                                 | 2                                                                                 |
| Mvmt Flow                | 33                                                                                | 145                                                                               | 202                                                                               | 140  | 171                                                                               | 46                                                                                |

| Major/Minor          | Major1 | Major2 | Minor2          |
|----------------------|--------|--------|-----------------|
| Conflicting Flow All | 342    | 0      | 0 483 272       |
| Stage 1              | -      | -      | - - 272 -       |
| Stage 2              | -      | -      | - - 211 -       |
| Critical Hdwy        | 4.12   | -      | - - 6.42 6.22   |
| Critical Hdwy Stg 1  | -      | -      | - - 5.42 -      |
| Critical Hdwy Stg 2  | -      | -      | - - 5.42 -      |
| Follow-up Hdwy       | 2.218  | -      | - - 3.518 3.318 |
| Pot Cap-1 Maneuver   | 1217   | -      | - - 542 767     |
| Stage 1              | -      | -      | - - 774 -       |
| Stage 2              | -      | -      | - - 824 -       |
| Platoon blocked, %   |        | -      | - -             |
| Mov Cap-1 Maneuver   | 1217   | -      | - - 527 767     |
| Mov Cap-2 Maneuver   | -      | -      | - - 527 -       |
| Stage 1              | -      | -      | - - 753 -       |
| Stage 2              | -      | -      | - - 824 -       |

| Approach             | EB  | WB | SB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 1.5 | 0  | 14 |
| HCM LOS              |     |    | B  |

| Minor Lane/Major Mvmt | EBL   | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h)      | 1217  | -   | -   | -   | 527   | 767   |
| HCM Lane V/C Ratio    | 0.027 | -   | -   | -   | 0.324 | 0.06  |
| HCM Control Delay (s) | 8     | -   | -   | -   | 15.1  | 10    |
| HCM Lane LOS          | A     | -   | -   | -   | C     | B     |
| HCM 95th %tile Q(veh) | 0.1   | -   | -   | -   | 1.4   | 0.2   |

**Intersection**

Int Delay, s/veh 2.3

| Movement                 | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |  |  |      |  |  |
| Traffic Vol, veh/h       | 14                                                                                | 284                                                                               | 302                                                                               | 75   | 89                                                                                | 17                                                                                |
| Future Vol, veh/h        | 14                                                                                | 284                                                                               | 302                                                                               | 75   | 89                                                                                | 17                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                 | 0                                                                                 |
| Sign Control             | Free                                                                              | Free                                                                              | Free                                                                              | Free | Stop                                                                              | Stop                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None | -                                                                                 | None                                                                              |
| Storage Length           | 140                                                                               | -                                                                                 | -                                                                                 | -    | 0                                                                                 | 0                                                                                 |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Grade, %                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92                                                                                | 92                                                                                | 92   | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2    | 2                                                                                 | 2                                                                                 |
| Mvmt Flow                | 15                                                                                | 309                                                                               | 328                                                                               | 82   | 97                                                                                | 18                                                                                |

| Major/Minor          | Major1 | Major2 | Minor2          |
|----------------------|--------|--------|-----------------|
| Conflicting Flow All | 410    | 0      | 0 708 369       |
| Stage 1              | -      | -      | - - 369 -       |
| Stage 2              | -      | -      | - - 339 -       |
| Critical Hdwy        | 4.12   | -      | - - 6.42 6.22   |
| Critical Hdwy Stg 1  | -      | -      | - - 5.42 -      |
| Critical Hdwy Stg 2  | -      | -      | - - 5.42 -      |
| Follow-up Hdwy       | 2.218  | -      | - - 3.518 3.318 |
| Pot Cap-1 Maneuver   | 1149   | -      | - - 401 677     |
| Stage 1              | -      | -      | - - 699 -       |
| Stage 2              | -      | -      | - - 722 -       |
| Platoon blocked, %   |        | -      | - -             |
| Mov Cap-1 Maneuver   | 1149   | -      | - - 396 677     |
| Mov Cap-2 Maneuver   | -      | -      | - - 396 -       |
| Stage 1              | -      | -      | - - 690 -       |
| Stage 2              | -      | -      | - - 722 -       |

| Approach             | EB  | WB | SB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 0.4 | 0  | 16 |
| HCM LOS              |     |    | C  |

| Minor Lane/Major Mvmt | EBL   | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h)      | 1149  | -   | -   | -   | 396   | 677   |
| HCM Lane V/C Ratio    | 0.013 | -   | -   | -   | 0.244 | 0.027 |
| HCM Control Delay (s) | 8.2   | -   | -   | -   | 17    | 10.5  |
| HCM Lane LOS          | A     | -   | -   | -   | C     | B     |
| HCM 95th %tile Q(veh) | 0     | -   | -   | -   | 0.9   | 0.1   |

# Queues

3:

03/21/2025

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 89                                                                                | 129                                                                               | 185                                                                               | 229                                                                               | 232                                                                               | 217                                                                               | 185                                                                                | 960                                                                                 | 213                                                                                 | 330                                                                                 | 989                                                                                 | 108                                                                                 |
| v/c Ratio               | 1.17                                                                              | 0.43                                                                              | 0.43                                                                              | 0.84                                                                              | 0.83                                                                              | 0.36                                                                              | 0.61                                                                               | 0.65                                                                                | 0.35                                                                                | 1.09                                                                                | 0.67                                                                                | 0.18                                                                                |
| Control Delay           | 205.0                                                                             | 48.6                                                                              | 8.1                                                                               | 73.3                                                                              | 71.1                                                                              | 6.0                                                                               | 54.0                                                                               | 38.2                                                                                | 7.0                                                                                 | 123.0                                                                               | 38.7                                                                                | 0.6                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 205.0                                                                             | 48.6                                                                              | 8.1                                                                               | 73.3                                                                              | 71.1                                                                              | 6.0                                                                               | 54.0                                                                               | 38.2                                                                                | 7.0                                                                                 | 123.0                                                                               | 38.7                                                                                | 0.6                                                                                 |
| Queue Length 50th (ft)  | ~79                                                                               | 88                                                                                | 0                                                                                 | 176                                                                               | 178                                                                               | 0                                                                                 | 129                                                                                | 229                                                                                 | 6                                                                                   | ~277                                                                                | 237                                                                                 | 0                                                                                   |
| Queue Length 95th (ft)  | #187                                                                              | 150                                                                               | 52                                                                                | #317                                                                              | #317                                                                              | 57                                                                                | 207                                                                                | 278                                                                                 | 63                                                                                  | #458                                                                                | 287                                                                                 | 0                                                                                   |
| Internal Link Dist (ft) |                                                                                   | 424                                                                               |                                                                                   |                                                                                   | 657                                                                               |                                                                                   |                                                                                    | 1570                                                                                |                                                                                     |                                                                                     | 1044                                                                                |                                                                                     |
| Turn Bay Length (ft)    | 230                                                                               |                                                                                   | 190                                                                               | 250                                                                               |                                                                                   | 433                                                                               | 210                                                                                |                                                                                     | 150                                                                                 | 250                                                                                 |                                                                                     | 150                                                                                 |
| Base Capacity (vph)     | 76                                                                                | 303                                                                               | 426                                                                               | 273                                                                               | 281                                                                               | 603                                                                               | 303                                                                                | 1486                                                                                | 604                                                                                 | 303                                                                                 | 1486                                                                                | 604                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 1.17                                                                              | 0.43                                                                              | 0.43                                                                              | 0.84                                                                              | 0.83                                                                              | 0.36                                                                              | 0.61                                                                               | 0.65                                                                                | 0.35                                                                                | 1.09                                                                                | 0.67                                                                                | 0.18                                                                                |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

3:

03/21/2025

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |  |  |  |  |   |  |  |  |  |  |
| Traffic Volume (vph)              | 82                                                                                | 119                                                                               | 170                                                                               | 310                                                                               | 114                                                                               | 200                                                                               | 170                                                                                 | 883                                                                                 | 196                                                                                 | 304                                                                                 | 910                                                                                 | 99                                                                                  |
| Future Volume (vph)               | 82                                                                                | 119                                                                               | 170                                                                               | 310                                                                               | 114                                                                               | 200                                                                               | 170                                                                                 | 883                                                                                 | 196                                                                                 | 304                                                                                 | 910                                                                                 | 99                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.98                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1770                                                                              | 1863                                                                              | 1583                                                                              | 1681                                                                              | 1729                                                                              | 1583                                                                              | 1770                                                                                | 5085                                                                                | 1583                                                                                | 1770                                                                                | 5085                                                                                | 1583                                                                                |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.57                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1770                                                                              | 1863                                                                              | 1583                                                                              | 1681                                                                              | 1017                                                                              | 1583                                                                              | 1770                                                                                | 5085                                                                                | 1583                                                                                | 1770                                                                                | 5085                                                                                | 1583                                                                                |
| Peak-hour factor, PHF             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Adj. Flow (vph)                   | 89                                                                                | 129                                                                               | 185                                                                               | 337                                                                               | 124                                                                               | 217                                                                               | 185                                                                                 | 960                                                                                 | 213                                                                                 | 330                                                                                 | 989                                                                                 | 108                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 155                                                                               | 0                                                                                 | 0                                                                                 | 156                                                                               | 0                                                                                   | 0                                                                                   | 142                                                                                 | 0                                                                                   | 0                                                                                   | 76                                                                                  |
| Lane Group Flow (vph)             | 89                                                                                | 129                                                                               | 30                                                                                | 229                                                                               | 232                                                                               | 61                                                                                | 185                                                                                 | 960                                                                                 | 71                                                                                  | 330                                                                                 | 989                                                                                 | 32                                                                                  |
| Turn Type                         | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                                | NA                                                                                  | Perm                                                                                | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |
| Actuated Green, G (s)             | 5.0                                                                               | 18.9                                                                              | 18.9                                                                              | 18.9                                                                              | 43.9                                                                              | 32.8                                                                              | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                |
| Effective Green, g (s)            | 5.0                                                                               | 18.9                                                                              | 18.9                                                                              | 18.9                                                                              | 43.9                                                                              | 32.8                                                                              | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                |
| Actuated g/C Ratio                | 0.04                                                                              | 0.16                                                                              | 0.16                                                                              | 0.16                                                                              | 0.38                                                                              | 0.28                                                                              | 0.17                                                                                | 0.29                                                                                | 0.29                                                                                | 0.17                                                                                | 0.29                                                                                | 0.29                                                                                |
| Clearance Time (s)                | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 |
| Lane Grp Cap (vph)                | 76                                                                                | 303                                                                               | 257                                                                               | 273                                                                               | 500                                                                               | 447                                                                               | 303                                                                                 | 1486                                                                                | 462                                                                                 | 303                                                                                 | 1486                                                                                | 462                                                                                 |
| v/s Ratio Prot                    | 0.05                                                                              | 0.07                                                                              |                                                                                   | c0.14                                                                             | 0.08                                                                              |                                                                                   | 0.10                                                                                | 0.19                                                                                |                                                                                     | c0.19                                                                               | c0.19                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | 0.02                                                                              |                                                                                   | c0.10                                                                             | 0.04                                                                              |                                                                                     |                                                                                     | 0.04                                                                                |                                                                                     |                                                                                     | 0.02                                                                                |
| v/c Ratio                         | 1.17                                                                              | 0.43                                                                              | 0.12                                                                              | 0.84                                                                              | 0.46                                                                              | 0.14                                                                              | 0.61                                                                                | 0.65                                                                                | 0.15                                                                                | 1.09                                                                                | 0.67                                                                                | 0.07                                                                                |
| Uniform Delay, d1                 | 55.5                                                                              | 43.7                                                                              | 41.4                                                                              | 47.1                                                                              | 27.2                                                                              | 31.0                                                                              | 44.5                                                                                | 35.8                                                                                | 30.4                                                                                | 48.0                                                                                | 36.1                                                                                | 29.6                                                                                |
| Progression 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                                                                                |
| Incremental Delay, d2             | 156.6                                                                             | 4.3                                                                               | 0.9                                                                               | 25.4                                                                              | 3.1                                                                               | 0.6                                                                               | 8.9                                                                                 | 2.2                                                                                 | 0.7                                                                                 | 77.6                                                                                | 2.4                                                                                 | 0.3                                                                                 |
| Delay (s)                         | 212.1                                                                             | 48.0                                                                              | 42.4                                                                              | 72.5                                                                              | 30.3                                                                              | 31.7                                                                              | 53.3                                                                                | 38.0                                                                                | 31.1                                                                                | 125.7                                                                               | 38.4                                                                                | 29.9                                                                                |
| Level of Service                  | F                                                                                 | D                                                                                 | D                                                                                 | E                                                                                 | C                                                                                 | C                                                                                 | D                                                                                   | D                                                                                   | C                                                                                   | F                                                                                   | D                                                                                   | C                                                                                   |
| Approach Delay (s)                |                                                                                   | 81.7                                                                              |                                                                                   |                                                                                   | 45.0                                                                              |                                                                                   |                                                                                     | 39.0                                                                                |                                                                                     |                                                                                     | 58.0                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | F                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                     | D                                                                                   |                                                                                     |                                                                                     | E                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 51.5                                                                              |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                           |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.76                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 116.0                                                                             |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                                |                                                                                     |                                                                                     | 24.4                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 67.4%                                                                             |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                                |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

**Intersection**

Int Delay, s/veh 4.7

| Movement                 | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |  |  |      |  |  |
| Traffic Vol, veh/h       | 30                                                                                | 139                                                                               | 194                                                                               | 114  | 164                                                                               | 44                                                                                |
| Future Vol, veh/h        | 30                                                                                | 139                                                                               | 194                                                                               | 114  | 164                                                                               | 44                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                 | 0                                                                                 |
| Sign Control             | Free                                                                              | Free                                                                              | Free                                                                              | Free | Stop                                                                              | Stop                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None | -                                                                                 | None                                                                              |
| Storage Length           | 120                                                                               | -                                                                                 | -                                                                                 | -    | 0                                                                                 | 0                                                                                 |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Grade, %                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92                                                                                | 92                                                                                | 92   | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2    | 2                                                                                 | 2                                                                                 |
| Mvmt Flow                | 33                                                                                | 151                                                                               | 211                                                                               | 124  | 178                                                                               | 48                                                                                |

| Major/Minor          | Major1 | Major2 | Minor2          |
|----------------------|--------|--------|-----------------|
| Conflicting Flow All | 335    | 0      | 0 490 273       |
| Stage 1              | -      | -      | - - 273 -       |
| Stage 2              | -      | -      | - - 217 -       |
| Critical Hdwy        | 4.12   | -      | - - 6.42 6.22   |
| Critical Hdwy Stg 1  | -      | -      | - - 5.42 -      |
| Critical Hdwy Stg 2  | -      | -      | - - 5.42 -      |
| Follow-up Hdwy       | 2.218  | -      | - - 3.518 3.318 |
| Pot Cap-1 Maneuver   | 1224   | -      | - - 537 766     |
| Stage 1              | -      | -      | - - 773 -       |
| Stage 2              | -      | -      | - - 819 -       |
| Platoon blocked, %   |        | -      | - -             |
| Mov Cap-1 Maneuver   | 1224   | -      | - - 523 766     |
| Mov Cap-2 Maneuver   | -      | -      | - - 523 -       |
| Stage 1              | -      | -      | - - 752 -       |
| Stage 2              | -      | -      | - - 819 -       |

| Approach             | EB  | WB | SB   |
|----------------------|-----|----|------|
| HCM Control Delay, s | 1.4 | 0  | 14.3 |
| HCM LOS              |     |    | B    |

| Minor Lane/Major Mvmt | EBL   | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h)      | 1224  | -   | -   | -   | 523   | 766   |
| HCM Lane V/C Ratio    | 0.027 | -   | -   | -   | 0.341 | 0.062 |
| HCM Control Delay (s) | 8     | -   | -   | -   | 15.4  | 10    |
| HCM Lane LOS          | A     | -   | -   | -   | C     | B     |
| HCM 95th %tile Q(veh) | 0.1   | -   | -   | -   | 1.5   | 0.2   |

**Intersection**

Int Delay, s/veh 2

| Movement                 | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |  |  |      |  |  |
| Traffic Vol, veh/h       | 15                                                                                | 296                                                                               | 294                                                                               | 81   | 75                                                                                | 16                                                                                |
| Future Vol, veh/h        | 15                                                                                | 296                                                                               | 294                                                                               | 81   | 75                                                                                | 16                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                 | 0                                                                                 |
| Sign Control             | Free                                                                              | Free                                                                              | Free                                                                              | Free | Stop                                                                              | Stop                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None | -                                                                                 | None                                                                              |
| Storage Length           | 140                                                                               | -                                                                                 | -                                                                                 | -    | 0                                                                                 | 0                                                                                 |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Grade, %                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92                                                                                | 92                                                                                | 92   | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2    | 2                                                                                 | 2                                                                                 |
| Mvmt Flow                | 16                                                                                | 322                                                                               | 320                                                                               | 88   | 82                                                                                | 17                                                                                |

| Major/Minor          | Major1 | Major2 | Minor2          |
|----------------------|--------|--------|-----------------|
| Conflicting Flow All | 408    | 0      | 0 718 364       |
| Stage 1              | -      | -      | - - 364 -       |
| Stage 2              | -      | -      | - - 354 -       |
| Critical Hdwy        | 4.12   | -      | - - 6.42 6.22   |
| Critical Hdwy Stg 1  | -      | -      | - - 5.42 -      |
| Critical Hdwy Stg 2  | -      | -      | - - 5.42 -      |
| Follow-up Hdwy       | 2.218  | -      | - - 3.518 3.318 |
| Pot Cap-1 Maneuver   | 1151   | -      | - - 396 681     |
| Stage 1              | -      | -      | - - 703 -       |
| Stage 2              | -      | -      | - - 710 -       |
| Platoon blocked, %   |        | -      | - -             |
| Mov Cap-1 Maneuver   | 1151   | -      | - - 390 681     |
| Mov Cap-2 Maneuver   | -      | -      | - - 390 -       |
| Stage 1              | -      | -      | - - 693 -       |
| Stage 2              | -      | -      | - - 710 -       |

| Approach             | EB  | WB | SB   |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.4 | 0  | 15.6 |
| HCM LOS              |     |    | C    |

| Minor Lane/Major Mvmt | EBL   | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h)      | 1151  | -   | -   | -   | 390   | 681   |
| HCM Lane V/C Ratio    | 0.014 | -   | -   | -   | 0.209 | 0.026 |
| HCM Control Delay (s) | 8.2   | -   | -   | -   | 16.7  | 10.4  |
| HCM Lane LOS          | A     | -   | -   | -   | C     | B     |
| HCM 95th %tile Q(veh) | 0     | -   | -   | -   | 0.8   | 0.1   |



## Queues

3:

03/21/2025

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 91                                                                                | 138                                                                               | 192                                                                               | 233                                                                               | 237                                                                               | 217                                                                               | 192                                                                                | 960                                                                                 | 213                                                                                 | 330                                                                                 | 989                                                                                 | 110                                                                                 |
| v/c Ratio               | 1.20                                                                              | 0.46                                                                              | 0.45                                                                              | 0.85                                                                              | 0.84                                                                              | 0.36                                                                              | 0.63                                                                               | 0.65                                                                                | 0.35                                                                                | 1.09                                                                                | 0.67                                                                                | 0.18                                                                                |
| Control Delay           | 213.2                                                                             | 49.4                                                                              | 8.9                                                                               | 75.2                                                                              | 72.8                                                                              | 6.0                                                                               | 55.1                                                                               | 38.2                                                                                | 7.0                                                                                 | 123.0                                                                               | 38.7                                                                                | 0.7                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 213.2                                                                             | 49.4                                                                              | 8.9                                                                               | 75.2                                                                              | 72.8                                                                              | 6.0                                                                               | 55.1                                                                               | 38.2                                                                                | 7.0                                                                                 | 123.0                                                                               | 38.7                                                                                | 0.7                                                                                 |
| Queue Length 50th (ft)  | ~82                                                                               | 94                                                                                | 0                                                                                 | 180                                                                               | 183                                                                               | 0                                                                                 | 135                                                                                | 229                                                                                 | 6                                                                                   | ~277                                                                                | 237                                                                                 | 0                                                                                   |
| Queue Length 95th (ft)  | #190                                                                              | 159                                                                               | 58                                                                                | #326                                                                              | #326                                                                              | 57                                                                                | 214                                                                                | 278                                                                                 | 63                                                                                  | #458                                                                                | 287                                                                                 | 0                                                                                   |
| Internal Link Dist (ft) |                                                                                   | 424                                                                               |                                                                                   |                                                                                   | 657                                                                               |                                                                                   |                                                                                    | 1570                                                                                |                                                                                     |                                                                                     | 1044                                                                                |                                                                                     |
| Turn Bay Length (ft)    | 230                                                                               |                                                                                   | 190                                                                               | 250                                                                               |                                                                                   | 433                                                                               | 210                                                                                |                                                                                     | 150                                                                                 | 250                                                                                 |                                                                                     | 150                                                                                 |
| Base Capacity (vph)     | 76                                                                                | 303                                                                               | 426                                                                               | 273                                                                               | 282                                                                               | 603                                                                               | 303                                                                                | 1486                                                                                | 604                                                                                 | 303                                                                                 | 1486                                                                                | 604                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 1.20                                                                              | 0.46                                                                              | 0.45                                                                              | 0.85                                                                              | 0.84                                                                              | 0.36                                                                              | 0.63                                                                               | 0.65                                                                                | 0.35                                                                                | 1.09                                                                                | 0.67                                                                                | 0.18                                                                                |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

3:

03/21/2025

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |  |  |  |  |   |  |  |  |  |  |
| Traffic Volume (vph)              | 84                                                                                | 127                                                                               | 177                                                                               | 310                                                                               | 122                                                                               | 200                                                                               | 177                                                                                 | 883                                                                                 | 196                                                                                 | 304                                                                                 | 910                                                                                 | 101                                                                                 |
| Future Volume (vph)               | 84                                                                                | 127                                                                               | 177                                                                               | 310                                                                               | 122                                                                               | 200                                                                               | 177                                                                                 | 883                                                                                 | 196                                                                                 | 304                                                                                 | 910                                                                                 | 101                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                | 1.00                                                                                | 0.91                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.98                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1770                                                                              | 1863                                                                              | 1583                                                                              | 1681                                                                              | 1732                                                                              | 1583                                                                              | 1770                                                                                | 5085                                                                                | 1583                                                                                | 1770                                                                                | 5085                                                                                | 1583                                                                                |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.57                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1770                                                                              | 1863                                                                              | 1583                                                                              | 1681                                                                              | 1013                                                                              | 1583                                                                              | 1770                                                                                | 5085                                                                                | 1583                                                                                | 1770                                                                                | 5085                                                                                | 1583                                                                                |
| Peak-hour factor, PHF             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Adj. Flow (vph)                   | 91                                                                                | 138                                                                               | 192                                                                               | 337                                                                               | 133                                                                               | 217                                                                               | 192                                                                                 | 960                                                                                 | 213                                                                                 | 330                                                                                 | 989                                                                                 | 110                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 161                                                                               | 0                                                                                 | 0                                                                                 | 156                                                                               | 0                                                                                   | 0                                                                                   | 142                                                                                 | 0                                                                                   | 0                                                                                   | 78                                                                                  |
| Lane Group Flow (vph)             | 91                                                                                | 138                                                                               | 31                                                                                | 233                                                                               | 237                                                                               | 61                                                                                | 192                                                                                 | 960                                                                                 | 71                                                                                  | 330                                                                                 | 989                                                                                 | 32                                                                                  |
| Turn Type                         | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                                | NA                                                                                  | Perm                                                                                | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |
| Actuated Green, G (s)             | 5.0                                                                               | 18.9                                                                              | 18.9                                                                              | 18.9                                                                              | 43.9                                                                              | 32.8                                                                              | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                |
| Effective Green, g (s)            | 5.0                                                                               | 18.9                                                                              | 18.9                                                                              | 18.9                                                                              | 43.9                                                                              | 32.8                                                                              | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                | 19.9                                                                                | 33.9                                                                                | 33.9                                                                                |
| Actuated g/C Ratio                | 0.04                                                                              | 0.16                                                                              | 0.16                                                                              | 0.16                                                                              | 0.38                                                                              | 0.28                                                                              | 0.17                                                                                | 0.29                                                                                | 0.29                                                                                | 0.17                                                                                | 0.29                                                                                | 0.29                                                                                |
| Clearance Time (s)                | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 | 6.1                                                                                 |
| Lane Grp Cap (vph)                | 76                                                                                | 303                                                                               | 257                                                                               | 273                                                                               | 500                                                                               | 447                                                                               | 303                                                                                 | 1486                                                                                | 462                                                                                 | 303                                                                                 | 1486                                                                                | 462                                                                                 |
| v/s Ratio Prot                    | 0.05                                                                              | 0.07                                                                              |                                                                                   | c0.14                                                                             | 0.08                                                                              |                                                                                   | 0.11                                                                                | 0.19                                                                                |                                                                                     | c0.19                                                                               | c0.19                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | 0.02                                                                              |                                                                                   | c0.10                                                                             | 0.04                                                                              |                                                                                     |                                                                                     | 0.04                                                                                |                                                                                     |                                                                                     | 0.02                                                                                |
| v/c Ratio                         | 1.20                                                                              | 0.46                                                                              | 0.12                                                                              | 0.85                                                                              | 0.47                                                                              | 0.14                                                                              | 0.63                                                                                | 0.65                                                                                | 0.15                                                                                | 1.09                                                                                | 0.67                                                                                | 0.07                                                                                |
| Uniform Delay, d1                 | 55.5                                                                              | 43.9                                                                              | 41.5                                                                              | 47.2                                                                              | 27.3                                                                              | 31.0                                                                              | 44.7                                                                                | 35.8                                                                                | 30.4                                                                                | 48.0                                                                                | 36.1                                                                                | 29.7                                                                                |
| Progression 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                                                                                |
| Incremental Delay, d2             | 165.8                                                                             | 4.9                                                                               | 1.0                                                                               | 27.2                                                                              | 3.2                                                                               | 0.6                                                                               | 9.7                                                                                 | 2.2                                                                                 | 0.7                                                                                 | 77.6                                                                                | 2.4                                                                                 | 0.3                                                                                 |
| Delay (s)                         | 221.3                                                                             | 48.8                                                                              | 42.4                                                                              | 74.4                                                                              | 30.5                                                                              | 31.7                                                                              | 54.4                                                                                | 38.0                                                                                | 31.1                                                                                | 125.7                                                                               | 38.4                                                                                | 29.9                                                                                |
| Level of Service                  | F                                                                                 | D                                                                                 | D                                                                                 | E                                                                                 | C                                                                                 | C                                                                                 | D                                                                                   | D                                                                                   | C                                                                                   | F                                                                                   | D                                                                                   | C                                                                                   |
| Approach Delay (s)                |                                                                                   | 83.2                                                                              |                                                                                   |                                                                                   | 45.8                                                                              |                                                                                   |                                                                                     | 39.2                                                                                |                                                                                     |                                                                                     | 57.9                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | F                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                     | D                                                                                   |                                                                                     |                                                                                     | E                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 52.0                                                                              |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                           |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.77                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 116.0                                                                             |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                                |                                                                                     |                                                                                     | 24.4                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 72.7%                                                                             |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                                |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

| Intersection             |                                                                                   |                                                                                   |                                                                                   |      |                                                                                   |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 4.6                                                                               |                                                                                   |                                                                                   |      |                                                                                   |                                                                                   |
| Movement                 | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR                                                                               |
| Lane Configurations      |  |  |  |      |  |  |
| Traffic Vol, veh/h       | 32                                                                                | 139                                                                               | 194                                                                               | 134  | 164                                                                               | 44                                                                                |
| Future Vol, veh/h        | 32                                                                                | 139                                                                               | 194                                                                               | 134  | 164                                                                               | 44                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                 | 0                                                                                 |
| Sign Control             | Free                                                                              | Free                                                                              | Free                                                                              | Free | Stop                                                                              | Stop                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None | -                                                                                 | None                                                                              |
| Storage Length           | 120                                                                               | -                                                                                 | -                                                                                 | -    | 0                                                                                 | 0                                                                                 |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Grade, %                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92                                                                                | 92                                                                                | 92   | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2    | 2                                                                                 | 2                                                                                 |
| Mvmt Flow                | 35                                                                                | 151                                                                               | 211                                                                               | 146  | 178                                                                               | 48                                                                                |
| Major/Minor              | Major1                                                                            | Major2                                                                            | Minor2                                                                            |      |                                                                                   |                                                                                   |
| Conflicting Flow All     | 357                                                                               | 0                                                                                 | -                                                                                 | 0    | 505                                                                               | 284                                                                               |
| Stage 1                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 284                                                                               | -                                                                                 |
| Stage 2                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 221                                                                               | -                                                                                 |
| Critical Hdwy            | 4.12                                                                              | -                                                                                 | -                                                                                 | -    | 6.42                                                                              | 6.22                                                                              |
| Critical Hdwy Stg 1      | -                                                                                 | -                                                                                 | -                                                                                 | -    | 5.42                                                                              | -                                                                                 |
| Critical Hdwy Stg 2      | -                                                                                 | -                                                                                 | -                                                                                 | -    | 5.42                                                                              | -                                                                                 |
| Follow-up Hdwy           | 2.218                                                                             | -                                                                                 | -                                                                                 | -    | 3.518                                                                             | 3.318                                                                             |
| Pot Cap-1 Maneuver       | 1202                                                                              | -                                                                                 | -                                                                                 | -    | 527                                                                               | 755                                                                               |
| Stage 1                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 764                                                                               | -                                                                                 |
| Stage 2                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 816                                                                               | -                                                                                 |
| Platoon blocked, %       |                                                                                   | -                                                                                 | -                                                                                 | -    |                                                                                   |                                                                                   |
| Mov Cap-1 Maneuver       | 1202                                                                              | -                                                                                 | -                                                                                 | -    | 512                                                                               | 755                                                                               |
| Mov Cap-2 Maneuver       | -                                                                                 | -                                                                                 | -                                                                                 | -    | 512                                                                               | -                                                                                 |
| Stage 1                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 742                                                                               | -                                                                                 |
| Stage 2                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 816                                                                               | -                                                                                 |
| Approach                 | EB                                                                                | WB                                                                                |                                                                                   | SB   |                                                                                   |                                                                                   |
| HCM Control Delay, s     | 1.5                                                                               | 0                                                                                 |                                                                                   | 14.5 |                                                                                   |                                                                                   |
| HCM LOS                  |                                                                                   |                                                                                   |                                                                                   | B    |                                                                                   |                                                                                   |
| Minor Lane/Major Mvmt    | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR  | SBLn1                                                                             | SBLn2                                                                             |
| Capacity (veh/h)         | 1202                                                                              | -                                                                                 | -                                                                                 | -    | 512                                                                               | 755                                                                               |
| HCM Lane V/C Ratio       | 0.029                                                                             | -                                                                                 | -                                                                                 | -    | 0.348                                                                             | 0.063                                                                             |
| HCM Control Delay (s)    | 8.1                                                                               | -                                                                                 | -                                                                                 | -    | 15.7                                                                              | 10.1                                                                              |
| HCM Lane LOS             | A                                                                                 | -                                                                                 | -                                                                                 | -    | C                                                                                 | B                                                                                 |
| HCM 95th %tile Q(veh)    | 0.1                                                                               | -                                                                                 | -                                                                                 | -    | 1.5                                                                               | 0.2                                                                               |

| Intersection             |                                                                                   |                                                                                   |                                                                                   |      |                                                                                   |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 2.9                                                                               |                                                                                   |                                                                                   |      |                                                                                   |                                                                                   |
| Movement                 | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR                                                                               |
| Lane Configurations      |  |  |  |      |  |  |
| Traffic Vol, veh/h       | 15                                                                                | 296                                                                               | 314                                                                               | 99   | 112                                                                               | 18                                                                                |
| Future Vol, veh/h        | 15                                                                                | 296                                                                               | 314                                                                               | 99   | 112                                                                               | 18                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                 | 0                                                                                 |
| Sign Control             | Free                                                                              | Free                                                                              | Free                                                                              | Free | Stop                                                                              | Stop                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None | -                                                                                 | None                                                                              |
| Storage Length           | 140                                                                               | -                                                                                 | -                                                                                 | -    | 0                                                                                 | 0                                                                                 |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Grade, %                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92                                                                                | 92                                                                                | 92   | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2    | 2                                                                                 | 2                                                                                 |
| Mvmt Flow                | 16                                                                                | 322                                                                               | 341                                                                               | 108  | 122                                                                               | 20                                                                                |
| Major/Minor              | Major1                                                                            | Major2                                                                            | Minor2                                                                            |      |                                                                                   |                                                                                   |
| Conflicting Flow All     | 449                                                                               | 0                                                                                 | -                                                                                 | 0    | 749                                                                               | 395                                                                               |
| Stage 1                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 395                                                                               | -                                                                                 |
| Stage 2                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 354                                                                               | -                                                                                 |
| Critical Hdwy            | 4.12                                                                              | -                                                                                 | -                                                                                 | -    | 6.42                                                                              | 6.22                                                                              |
| Critical Hdwy Stg 1      | -                                                                                 | -                                                                                 | -                                                                                 | -    | 5.42                                                                              | -                                                                                 |
| Critical Hdwy Stg 2      | -                                                                                 | -                                                                                 | -                                                                                 | -    | 5.42                                                                              | -                                                                                 |
| Follow-up Hdwy           | 2.218                                                                             | -                                                                                 | -                                                                                 | -    | 3.518                                                                             | 3.318                                                                             |
| Pot Cap-1 Maneuver       | 1111                                                                              | -                                                                                 | -                                                                                 | -    | 379                                                                               | 654                                                                               |
| Stage 1                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 681                                                                               | -                                                                                 |
| Stage 2                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 710                                                                               | -                                                                                 |
| Platoon blocked, %       |                                                                                   | -                                                                                 | -                                                                                 | -    |                                                                                   |                                                                                   |
| Mov Cap-1 Maneuver       | 1111                                                                              | -                                                                                 | -                                                                                 | -    | 374                                                                               | 654                                                                               |
| Mov Cap-2 Maneuver       | -                                                                                 | -                                                                                 | -                                                                                 | -    | 374                                                                               | -                                                                                 |
| Stage 1                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 671                                                                               | -                                                                                 |
| Stage 2                  | -                                                                                 | -                                                                                 | -                                                                                 | -    | 710                                                                               | -                                                                                 |
| Approach                 | EB                                                                                | WB                                                                                |                                                                                   | SB   |                                                                                   |                                                                                   |
| HCM Control Delay, s     | 0.4                                                                               | 0                                                                                 |                                                                                   | 18   |                                                                                   |                                                                                   |
| HCM LOS                  |                                                                                   |                                                                                   |                                                                                   | C    |                                                                                   |                                                                                   |
| Minor Lane/Major Mvmt    | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR  | SBLn1                                                                             | SBLn2                                                                             |
| Capacity (veh/h)         | 1111                                                                              | -                                                                                 | -                                                                                 | -    | 374                                                                               | 654                                                                               |
| HCM Lane V/C Ratio       | 0.015                                                                             | -                                                                                 | -                                                                                 | -    | 0.326                                                                             | 0.03                                                                              |
| HCM Control Delay (s)    | 8.3                                                                               | -                                                                                 | -                                                                                 | -    | 19.2                                                                              | 10.7                                                                              |
| HCM Lane LOS             | A                                                                                 | -                                                                                 | -                                                                                 | -    | C                                                                                 | B                                                                                 |
| HCM 95th %tile Q(veh)    | 0                                                                                 | -                                                                                 | -                                                                                 | -    | 1.4                                                                               | 0.1                                                                               |

## **Appendix 4 – Queueing Analysis Datasheets**



Location: Sierra College Blvd Car Wash

Date: 8/30/2024

Time: 7:00 AM - 7:00 PM

| Time  | Maximum Queues |            |
|-------|----------------|------------|
|       | Inner Lane     | Outer Lane |
| 7:00  | 0              | 1          |
| 7:05  | 1              | 1          |
| 7:10  | 1              | 1          |
| 7:15  | 1              | 1          |
| 7:20  | 1              | 1          |
| 7:25  | 2              | 0          |
| 7:30  | 2              | 1          |
| 7:35  | 1              | 1          |
| 7:40  | 0              | 1          |
| 7:45  | 0              | 1          |
| 7:50  | 0              | 1          |
| 7:55  | 1              | 1          |
| 8:00  | 1              | 2          |
| 8:05  | 0              | 1          |
| 8:10  | 0              | 1          |
| 8:15  | 1              | 1          |
| 8:20  | 2              | 1          |
| 8:25  | 1              | 2          |
| 8:30  | 1              | 2          |
| 8:35  | 1              | 2          |
| 8:40  | 1              | 3          |
| 8:45  | 0              | 2          |
| 8:50  | 0              | 1          |
| 8:55  | 1              | 1          |
| 9:00  | 2              | 1          |
| 9:05  | 1              | 1          |
| 9:10  | 1              | 2          |
| 9:15  | 2              | 1          |
| 9:20  | 1              | 2          |
| 9:25  | 1              | 1          |
| 9:30  | 1              | 2          |
| 9:35  | 1              | 4          |
| 9:40  | 0              | 2          |
| 9:45  | 0              | 2          |
| 9:50  | 2              | 2          |
| 9:55  | 0              | 2          |
| 10:00 | 0              | 2          |

|       |   |   |
|-------|---|---|
| 10:05 | 0 | 1 |
| 10:10 | 1 | 2 |
| 10:15 | 1 | 1 |
| 10:20 | 0 | 1 |
| 10:25 | 1 | 2 |
| 10:30 | 1 | 1 |
| 10:35 | 1 | 1 |
| 10:40 | 0 | 1 |
| 10:45 | 1 | 1 |
| 10:50 | 1 | 1 |
| 10:55 | 1 | 2 |
| 11:00 | 0 | 3 |
| 11:05 | 0 | 2 |
| 11:10 | 1 | 2 |
| 11:15 | 1 | 3 |
| 11:20 | 0 | 2 |
| 11:25 | 1 | 1 |
| 11:30 | 0 | 1 |
| 11:35 | 1 | 1 |
| 11:40 | 2 | 2 |
| 11:45 | 1 | 1 |
| 11:50 | 0 | 3 |
| 11:55 | 1 | 3 |
| 12:00 | 1 | 4 |
| 12:05 | 3 | 1 |
| 12:10 | 1 | 1 |
| 12:15 | 3 | 1 |
| 12:20 | 1 | 2 |
| 12:25 | 0 | 1 |
| 12:30 | 1 | 3 |
| 12:35 | 0 | 1 |
| 12:40 | 1 | 2 |
| 12:45 | 1 | 1 |
| 12:50 | 1 | 2 |
| 12:55 | 2 | 1 |
| 13:00 | 1 | 1 |
| 13:05 | 1 | 2 |
| 13:10 | 1 | 1 |
| 13:15 | 0 | 2 |
| 13:20 | 1 | 1 |
| 13:25 | 0 | 2 |
| 13:30 | 1 | 1 |
| 13:35 | 2 | 2 |
| 13:40 | 2 | 1 |
| 13:45 | 1 | 1 |
| 13:50 | 0 | 1 |
| 13:55 | 1 | 1 |

|       |   |   |
|-------|---|---|
| 14:00 | 0 | 1 |
| 14:05 | 1 | 3 |
| 14:10 | 1 | 4 |
| 14:15 | 2 | 1 |
| 14:20 | 1 | 1 |
| 14:25 | 2 | 1 |
| 14:30 | 1 | 1 |
| 14:35 | 1 | 1 |
| 14:40 | 0 | 1 |
| 14:45 | 1 | 2 |
| 14:50 | 1 | 1 |
| 14:55 | 1 | 3 |
| 15:00 | 2 | 3 |
| 15:05 | 1 | 1 |
| 15:10 | 1 | 2 |
| 15:15 | 0 | 1 |
| 15:20 | 0 | 1 |
| 15:25 | 1 | 1 |
| 15:30 | 1 | 2 |
| 15:35 | 2 | 1 |
| 15:40 | 2 | 1 |
| 15:45 | 2 | 1 |
| 15:50 | 1 | 2 |
| 15:55 | 1 | 2 |
| 16:00 | 0 | 1 |
| 16:05 | 1 | 1 |
| 16:10 | 1 | 1 |
| 16:15 | 1 | 3 |
| 16:20 | 2 | 2 |
| 16:25 | 1 | 2 |
| 16:30 | 0 | 1 |
| 16:35 | 2 | 1 |
| 16:40 | 2 | 1 |
| 16:45 | 1 | 2 |
| 16:50 | 1 | 2 |
| 16:55 | 1 | 1 |
| 17:00 | 0 | 2 |
| 17:05 | 1 | 1 |
| 17:10 | 1 | 1 |
| 17:15 | 0 | 1 |
| 17:20 | 1 | 2 |
| 17:25 | 1 | 1 |
| 17:30 | 2 | 3 |
| 17:35 | 1 | 1 |
| 17:40 | 0 | 2 |
| 17:45 | 1 | 1 |
| 17:50 | 0 | 1 |



|       |   |   |
|-------|---|---|
| 17:55 | 0 | 1 |
| 18:00 | 0 | 1 |
| 18:05 | 1 | 1 |
| 18:10 | 1 | 1 |
| 18:15 | 0 | 2 |
| 18:20 | 0 | 1 |
| 18:25 | 1 | 2 |
| 18:30 | 0 | 2 |
| 18:35 | 1 | 1 |
| 18:40 | 1 | 1 |
| 18:45 | 1 | 1 |
| 18:50 | 1 | 1 |
| 18:55 | 0 | 2 |



Location: Stanford Ranch Rd Car Wash

Date: 8/30/2024

Time: 7:00 AM - 7:00 PM

| Time  | Maximum Queues |            |
|-------|----------------|------------|
|       | Inner Lane     | Outer Lane |
| 7:00  | 0              | 0          |
| 7:05  | 0              | 0          |
| 7:10  | 0              | 0          |
| 7:15  | 0              | 0          |
| 7:20  | 0              | 0          |
| 7:25  | 0              | 0          |
| 7:30  | 0              | 0          |
| 7:35  | 0              | 0          |
| 7:40  | 0              | 0          |
| 7:45  | 0              | 0          |
| 7:50  | 0              | 0          |
| 7:55  | 0              | 0          |
| 8:00  | 0              | 0          |
| 8:05  | 0              | 0          |
| 8:10  | 0              | 0          |
| 8:15  | 0              | 0          |
| 8:20  | 0              | 0          |
| 8:25  | 0              | 0          |
| 8:30  | 0              | 0          |
| 8:35  | 0              | 0          |
| 8:40  | 0              | 0          |
| 8:45  | 0              | 0          |
| 8:50  | 0              | 0          |
| 8:55  | 0              | 0          |
| 9:00  | 0              | 0          |
| 9:05  | 0              | 0          |
| 9:10  | 0              | 0          |
| 9:15  | 0              | 0          |
| 9:20  | 0              | 0          |
| 9:25  | 0              | 0          |
| 9:30  | 0              | 0          |
| 9:35  | 0              | 0          |
| 9:40  | 0              | 0          |
| 9:45  | 0              | 0          |
| 9:50  | 0              | 0          |
| 9:55  | 0              | 0          |
| 10:00 | 0              | 0          |

|       |   |   |
|-------|---|---|
| 10:05 | 0 | 0 |
| 10:10 | 0 | 0 |
| 10:15 | 0 | 0 |
| 10:20 | 0 | 0 |
| 10:25 | 0 | 0 |
| 10:30 | 0 | 0 |
| 10:35 | 0 | 0 |
| 10:40 | 0 | 0 |
| 10:45 | 0 | 0 |
| 10:50 | 0 | 0 |
| 10:55 | 0 | 0 |
| 11:00 | 0 | 0 |
| 11:05 | 0 | 0 |
| 11:10 | 0 | 0 |
| 11:15 | 0 | 0 |
| 11:20 | 0 | 0 |
| 11:25 | 0 | 0 |
| 11:30 | 0 | 0 |
| 11:35 | 0 | 0 |
| 11:40 | 0 | 0 |
| 11:45 | 0 | 0 |
| 11:50 | 1 | 3 |
| 11:55 | 2 | 3 |
| 12:00 | 1 | 3 |
| 12:05 | 1 | 4 |
| 12:10 | 1 | 1 |
| 12:15 | 2 | 2 |
| 12:20 | 2 | 2 |
| 12:25 | 4 | 2 |
| 12:30 | 2 | 2 |
| 12:35 | 1 | 1 |
| 12:40 | 1 | 2 |
| 12:45 | 1 | 3 |
| 12:50 | 1 | 2 |
| 12:55 | 1 | 1 |
| 13:00 | 2 | 2 |
| 13:05 | 2 | 4 |
| 13:10 | 3 | 4 |
| 13:15 | 1 | 3 |
| 13:20 | 1 | 2 |
| 13:25 | 1 | 3 |
| 13:30 | 2 | 1 |
| 13:35 | 3 | 3 |
| 13:40 | 2 | 1 |
| 13:45 | 1 | 2 |
| 13:50 | 1 | 3 |
| 13:55 | 2 | 2 |

|       |   |   |
|-------|---|---|
| 14:00 | 1 | 3 |
| 14:05 | 1 | 2 |
| 14:10 | 1 | 2 |
| 14:15 | 1 | 2 |
| 14:20 | 1 | 2 |
| 14:25 | 1 | 2 |
| 14:30 | 1 | 1 |
| 14:35 | 1 | 2 |
| 14:40 | 0 | 2 |
| 14:45 | 2 | 1 |
| 14:50 | 2 | 2 |
| 14:55 | 2 | 2 |
| 15:00 | 1 | 1 |
| 15:05 | 2 | 5 |
| 15:10 | 3 | 4 |
| 15:15 | 2 | 3 |
| 15:20 | 2 | 2 |
| 15:25 | 2 | 2 |
| 15:30 | 1 | 3 |
| 15:35 | 1 | 2 |
| 15:40 | 1 | 2 |
| 15:45 | 1 | 1 |
| 15:50 | 1 | 1 |
| 15:55 | 1 | 1 |
| 16:00 | 1 | 2 |
| 16:05 | 1 | 2 |
| 16:10 | 2 | 1 |
| 16:15 | 2 | 4 |
| 16:20 | 2 | 4 |
| 16:25 | 1 | 1 |
| 16:30 | 2 | 2 |
| 16:35 | 1 | 1 |
| 16:40 | 1 | 2 |
| 16:45 | 1 | 2 |
| 16:50 | 1 | 4 |
| 16:55 | 3 | 2 |
| 17:00 | 1 | 2 |
| 17:05 | 1 | 2 |
| 17:10 | 1 | 1 |
| 17:15 | 2 | 1 |
| 17:20 | 1 | 1 |
| 17:25 | 2 | 3 |
| 17:30 | 1 | 2 |
| 17:35 | 1 | 3 |
| 17:40 | 3 | 3 |
| 17:45 | 1 | 1 |
| 17:50 | 1 | 2 |

|       |   |   |
|-------|---|---|
| 17:55 | 1 | 1 |
| 18:00 | 2 | 2 |
| 18:05 | 2 | 1 |
| 18:10 | 1 | 3 |
| 18:15 | 1 | 2 |
| 18:20 | 2 | 4 |
| 18:25 | 1 | 3 |
| 18:30 | 1 | 1 |
| 18:35 | 1 | 2 |
| 18:40 | 1 | 1 |
| 18:45 | 2 | 1 |
| 18:50 | 1 | 2 |
| 18:55 | 0 | 1 |

## **Appendix 5 – All-Way Stop Sign Analysis**

| All-Way Stop Control (AWSC) Warrant Analysis Worksheet                                                              |                                         |                        |                             |     |         |
|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------------------|-----------------------------|-----|---------|
| Intersection Information                                                                                            |                                         |                        |                             |     |         |
| Intersection Name:                                                                                                  | Madrid Street and Project Driveway East |                        |                             |     |         |
| Location:                                                                                                           | City of Salinas                         |                        |                             |     |         |
| Date of Evaluation:                                                                                                 | 3/21/2025                               |                        |                             |     |         |
| Evaluator:                                                                                                          | Armen Hovanessian                       |                        |                             |     |         |
| Existing Traffic Control (if any):                                                                                  | Partial Stop                            |                        |                             |     |         |
| Traffic Volume Criteria (MUTCD Section 2B.07)                                                                       |                                         |                        |                             |     |         |
| (Record data for each approach during peak hours.)                                                                  |                                         |                        |                             |     |         |
| Street Name                                                                                                         | Major Street<br>Madrid                  | Major Street<br>Madrid | Minor Street<br>Project Dwy | N/A |         |
| Approach                                                                                                            | Eastbound                               | Westbound              | Southbound                  | N/A |         |
| 8-hour Average Volume (6 Hours)                                                                                     | 237                                     | 229                    | 33                          | N/A |         |
| Peak Hour Volume                                                                                                    | 298                                     | 339                    | 67                          | N/A |         |
| (Major street = 300+ vehicles per hour, Minor street = 200+ vehicles per hour, for 8 hours)                         |                                         |                        |                             |     |         |
|                                                                                                                     |                                         |                        | YES                         | NO  |         |
| Meets minimum volume warrant:                                                                                       |                                         |                        |                             | X   |         |
| Crash History (Last 12 Months)                                                                                      |                                         |                        |                             |     |         |
| (Include reportable crashes that could be prevented by an all-way stop, such as right-angle and left-turn crashes.) |                                         |                        |                             |     |         |
| Number of correctable crashes:                                                                                      |                                         |                        |                             |     |         |
| (≥5 correctable crashes in 12 months) Data not available                                                            |                                         |                        |                             |     |         |
|                                                                                                                     |                                         |                        | YES                         | NO  |         |
| Meets minimum crash warrant                                                                                         |                                         |                        |                             |     |         |
| Sight Distance & Delay Evaluation                                                                                   |                                         |                        |                             |     |         |
|                                                                                                                     |                                         |                        | YES                         | NO  |         |
| Is sight distance restricted at the intersection?                                                                   |                                         |                        |                             | X   |         |
| Are there excessive delays on the minor approach?                                                                   |                                         |                        |                             | X   |         |
| Do pedestrians or cyclists frequently cross the intersection?                                                       |                                         |                        |                             | X   |         |
| Is the intersection near a school or high pedestrian area?                                                          |                                         |                        |                             | X   |         |
| Meets safety considerations warrant                                                                                 |                                         |                        |                             | X   |         |
| Other Considerations                                                                                                |                                         |                        |                             |     |         |
|                                                                                                                     |                                         |                        | YES                         | NO  | COMMENT |
| Public complaints or concerns?                                                                                      |                                         |                        |                             |     | N/A     |
| Proximity to school zones, parks, or transit stops?                                                                 |                                         |                        |                             | X   |         |
| Nearby traffic signals that could affect operations?                                                                |                                         |                        |                             | X   |         |
| Alternative traffic control solutions considered?                                                                   |                                         |                        |                             | X   |         |
| Conclusion & Recommendation                                                                                         |                                         |                        |                             |     |         |
|                                                                                                                     |                                         |                        | YES                         | NO  | COMMENT |
| All-Way Stop Control Recommended                                                                                    |                                         |                        |                             | X   |         |
| Further Study Required                                                                                              |                                         |                        |                             | X   |         |
| Notes & Justifications:                                                                                             |                                         |                        |                             |     |         |
|                                                                                                                     |                                         |                        |                             |     |         |

| All-Way Stop Control (AWSC) Warrant Analysis Worksheet                                                              |                                         |                        |                             |     |         |
|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------------------|-----------------------------|-----|---------|
| Intersection Information                                                                                            |                                         |                        |                             |     |         |
| Intersection Name:                                                                                                  | Madrid Street and Project Driveway West |                        |                             |     |         |
| Location:                                                                                                           | City of Salinas                         |                        |                             |     |         |
| Date of Evaluation:                                                                                                 | 3/21/2025                               |                        |                             |     |         |
| Evaluator:                                                                                                          | Armen Hovanessian                       |                        |                             |     |         |
| Existing Traffic Control (if any):                                                                                  | Partial Stop                            |                        |                             |     |         |
| Traffic Volume Criteria (MUTCD Section 2B.07)                                                                       |                                         |                        |                             |     |         |
| (Record data for each approach during peak hours.)                                                                  |                                         |                        |                             |     |         |
| Street Name                                                                                                         | Major Street<br>Madrid                  | Major Street<br>Madrid | Minor Street<br>Project Dwy | N/A |         |
| Approach                                                                                                            | Eastbound                               | Westbound              | Southbound                  | N/A |         |
| 8-hour Average Volume (6 Hours)                                                                                     | 128                                     | 178                    | 132                         | N/A |         |
| Peak Hour Volume                                                                                                    | 161                                     | 295                    | 199                         | N/A |         |
| (Major street = 300+ vehicles per hour, Minor street = 200+ vehicles per hour, for 8 hours)                         |                                         |                        |                             |     |         |
|                                                                                                                     |                                         |                        | YES                         | NO  |         |
| Meets minimum volume warrant:                                                                                       |                                         |                        |                             | X   |         |
| Crash History (Last 12 Months)                                                                                      |                                         |                        |                             |     |         |
| (Include reportable crashes that could be prevented by an all-way stop, such as right-angle and left-turn crashes.) |                                         |                        |                             |     |         |
| Number of correctable crashes:                                                                                      |                                         |                        |                             |     |         |
| (≥5 correctable crashes in 12 months) Data not available                                                            |                                         |                        |                             |     |         |
|                                                                                                                     |                                         |                        | YES                         | NO  |         |
| Meets minimum crash warrant                                                                                         |                                         |                        |                             |     |         |
| Sight Distance & Delay Evaluation                                                                                   |                                         |                        |                             |     |         |
|                                                                                                                     |                                         |                        | YES                         | NO  |         |
| Is sight distance restricted at the intersection?                                                                   |                                         |                        |                             | X   |         |
| Are there excessive delays on the minor approach?                                                                   |                                         |                        |                             | X   |         |
| Do pedestrians or cyclists frequently cross the intersection?                                                       |                                         |                        |                             | X   |         |
| Is the intersection near a school or high pedestrian area?                                                          |                                         |                        |                             | X   |         |
| Meets safety considerations warrant                                                                                 |                                         |                        |                             | X   |         |
| Other Considerations                                                                                                |                                         |                        |                             |     |         |
|                                                                                                                     |                                         |                        | YES                         | NO  | COMMENT |
| Public complaints or concerns?                                                                                      |                                         |                        |                             |     | N/A     |
| Proximity to school zones, parks, or transit stops?                                                                 |                                         |                        |                             | X   |         |
| Nearby traffic signals that could affect operations?                                                                |                                         |                        |                             | X   |         |
| Alternative traffic control solutions considered?                                                                   |                                         |                        |                             | X   |         |
| Conclusion & Recommendation                                                                                         |                                         |                        |                             |     |         |
|                                                                                                                     |                                         |                        | YES                         | NO  | COMMENT |
| All-Way Stop Control Recommended                                                                                    |                                         |                        |                             | X   |         |
| Further Study Required                                                                                              |                                         |                        |                             | X   |         |
| Notes & Justifications:                                                                                             |                                         |                        |                             |     |         |
|                                                                                                                     |                                         |                        |                             |     |         |