# APPENDIX I

# TRANSPORTATION ANALYSIS

**This page intentionally left blank**

June 6, 2025

Ms. Jennifer Ackerman
City of Livermore – Planning Division
1052 S. Livermore Avenue
Livermore, CA 94550

**Re: Traffic Counts Comparison Analysis for the Proposed Residential Development at 2930 Pacific Avenue in Livermore, California**

Dear Ms. Ackerman:

This letter is provided to confirm the continued validity of the Traffic Impact Analysis (TIA) report previously submitted for the 2930 Pacific Avenue Residential Development in Livermore, California, dated January 11, 2024.

As the 2023 traffic counts used in the traffic operations analysis are more than two years old, we have conducted a comparison of the 2023 and current 2025 traffic volumes for the busiest study intersections and roadway segments. This comparison found no significant changes in travel patterns in the study area as described in this letter. Therefore, the original assumptions and conclusions of the TIA remain applicable.

## Data Collection

Intersection turning movement counts (AM and PM peak hours) and 24-hour roadway segment tube counts were collected on May 28, 2025 at the following locations. Count sheets are included in the Appendix.

**Study Intersections (AM & PM Peak Hour Counts)**

1. S. Livermore Avenue & East Avenue
2. S. Livermore Avenue & Pacific Avenue
3. Dolores Street & East Avenue

**Study Roadway Segments (24-Hr Traffic Counts)**

1. S. Livermore Avenue (north of Pacific Avenue)
2. Pacific Avenue (east of S. Livermore Avenue)

## Traffic Counts Comparison

All of the study intersections experienced increases in total intersection volumes between 2.4 percent and 10.8 percent from 2023 to 2025, with the exception of the intersection at S. Livermore Avenue and Pacific Avenue, which had a 5.7 percent decrease in total intersection volume during the AM peak hour over the two-year period. All of the study roadway segments experienced volume increase between 7.5 percent and 9.7 percent between 2023 and 2025. Tables 1 and 2 below show the percentage differences of the intersection volumes and roadway segments from

2023 to 2025, respectively. Comparison between the 2025 and 2023 traffic counts revealed no significant changes in traffic patterns in the study area.

**Table 1**
**Intersection Volume Variations from 2023 to 2025**

| # | Intersection | Peak | Intersection Volumes | | | |
|---|---|---|---|---|---|---|
| | | | 2023 [1] | 2025 [2] | Difference | % Increase |
| 1 | S. Livermore Avenue & East Avenue | AM | 1539 | 1599 | 60 | 3.9% |
| | | PM | 1738 | 1780 | 42 | 2.4% |
| 2 | S. Livermore Avenue & Pacific Avenue | AM | 776 | 732 | -44 | -5.7% |
| | | PM | 784 | 822 | 38 | 4.8% |
| 3 | Dolores Street & East Avenue | AM | 1726 | 1913 | 187 | 10.8% |
| | | PM | 1808 | 1883 | 75 | 4.1% |

Notes:
[1] Based on counts from January 2023
[2] Based on counts from May 2025

**Table 2**
**Roadway Segment Volume Variations from 2023 to 2025**

| # | Roadway Segment | Daily Traffic | | | |
|---|---|---|---|---|---|
| | | 2023 [1] | 2025 [2] | Difference | % Increase |
| 1 | S. Livermore Avenue (north of Pacific Avenue) | 6,424 | 7,044 | 620 | 9.7% |
| 2 | Pacific Avenue (east of S. Livermore Avenue) | 3,157 | 3,395 | 238 | 7.5% |

Notes:
[1] Based on counts from January 2023
[2] Based on counts from May 2025

## Effects on the 2024 Transportation Analysis

Potential effects on the intersection and roadway segment level of service based on the new 2025 traffic counts were analyzed and presented as follows.

### *Intersection Level of Service*

Results of the intersection level of service analysis from the Transportation Study prepared by Hexagon in 2024 concluded that, based on the 2023 traffic counts, all study intersections would operate at an acceptable level of service D or better with and without the project under all study scenarios.

Between 2023 and 2025, the intersections of S. Livermore Avenue/East Avenue and S. Livermore/Avenue Pacific Avenue experienced relatively moderate intersection volume increases of less than five percent during both AM and PM peak hours. Because of the moderate intersection volume increases, it is anticipated that both intersections would continue to operate at acceptable LOS D based on the 2025 traffic counts.

The intersection at Dolores Street/East Avenue was projected to operate at LOS B with and without the project under all study scenarios based on the 2023 traffic counts. Although the intersection volumes increased by a relatively higher 10.8 percent during the AM peak hour

between 2023 and 2025, it is anticipated that the intersection would have sufficient capacity buffer to accommodate the additional traffic increase and still continue to operate at acceptable LOS D or better based on the 2025 traffic counts.

### *Roadway Segment Level of Service*

Results of the roadway segment level of service analysis from the Transportation Study prepared by Hexagon in 2024 concluded that, based on the 2023 traffic counts, the roadway segments of S. Livermore Avenue (north of Pacific Avenue) and Pacific Avenue (east of S. Livermore Avenue) would operate at an acceptable level of service A with and without the project under all study scenarios.

Based on the moderate traffic volumes increases on both roadway segments at under ten percent, it is anticipated that both segments would continue to operate at acceptable level of service A under all study scenarios.

## Conclusions

A traffic count comparison analysis was performed to estimate the effects of the new 2025 traffic counts on the previous Transportation Analysis dated January 2024. The analysis resulted in the following key findings:

- Comparison between the 2025 and 2023 traffic counts revealed no significant changes in traffic patterns in the study area.
- Based on the level of service analysis results from the previous Transportation Analysis, it is anticipated that all study intersections and study roadway segments would continue to operate at acceptable LOS D based on the 2025 traffic counts.
- Based on the queuing analysis results from the previous Transportation Analysis, it is anticipated that the project would not exacerbate any queuing issues based on the new 2025 traffic counts.
- The new 2025 traffic counts would not have any effects on the VMT, site access, and on-site circulation analyses from the previous Transportation Analysis.

If you have any questions, please feel free to give us a call.

Sincerely,

HEXAGON TRANSPORTATION CONSULTANTS, INC.

Trisha Dudala

Trisha Dudala, P.E.

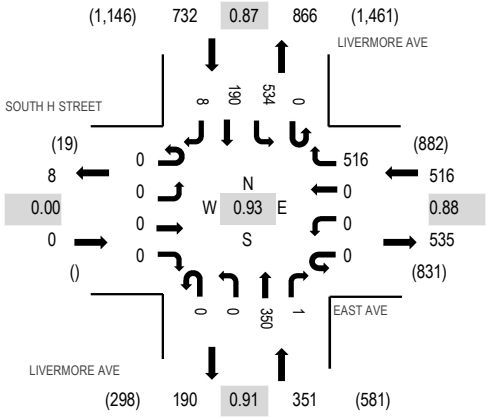
Principal Associate

# Appendix
# 2025 Traffic Counts

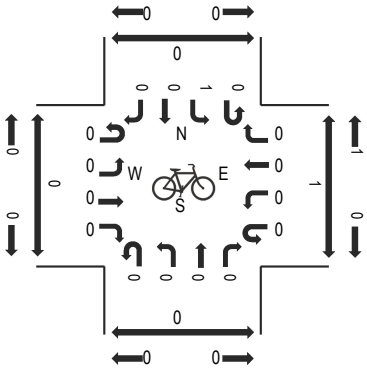
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 1 LIVERMORE AVE & EAST AVE AM
**Date:** Wednesday, May 28, 2025
**Peak Hour:** 07:45 AM - 08:45 AM
**Peak 15-Minutes:** 08:00 AM - 08:15 AM

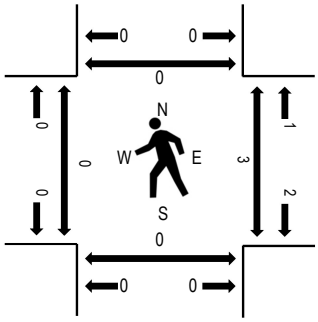
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

| Interval Start Time | SOUTH H STREET Eastbound | | | | EAST AVE Westbound | | | | LIVERMORE AVE Northbound | | | | LIVERMORE AVE Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 80 | 0 | 0 | 51 | 0 | 0 | 56 | 15 | 0 | 202 | 1,022 | 0 | 0 | 0 | 1 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 95 | 0 | 0 | 63 | 0 | 0 | 59 | 21 | 1 | 239 | 1,251 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 74 | 0 | 0 | 52 | 0 | 0 | 71 | 27 | 1 | 225 | 1,401 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 104 | 0 | 0 | 80 | 0 | 0 | 117 | 53 | 2 | 356 | 1,599 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 124 | 0 | 0 | 96 | 0 | 0 | 141 | 70 | 0 | 431 | 1,587 | 0 | 1 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 137 | 0 | 0 | 92 | 0 | 0 | 128 | 31 | 1 | 389 | | 0 | 1 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 151 | 0 | 0 | 82 | 1 | 0 | 148 | 36 | 5 | 423 | | 0 | 1 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 117 | 0 | 0 | 63 | 1 | 0 | 109 | 45 | 9 | 344 | | 0 | 1 | 0 | 0 |

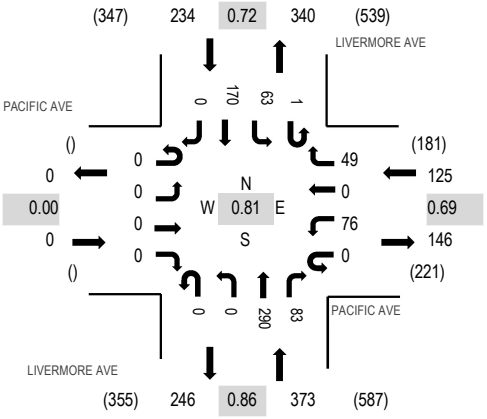
## Peak Rolling Hour Flow Rates

| Vehicle Type | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Lights | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 513 | 0 | 0 | 345 | 1 | 0 | 529 | 189 | 8 | 1,585 |
| Mediums | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 5 | 0 | 0 | 4 | 1 | 0 | 13 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 516 | 0 | 0 | 350 | 1 | 0 | 534 | 190 | 8 | 1,599 |

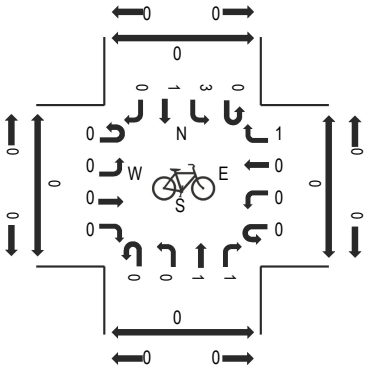
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 2 LIVERMORE AVE & PACIFIC AVE AM
**Date:** Wednesday, May 28, 2025
**Peak Hour:** 07:45 AM - 08:45 AM
**Peak 15-Minutes:** 08:00 AM - 08:15 AM

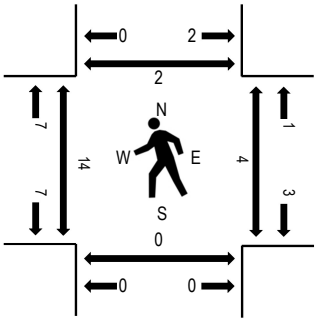
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles



## Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

| Interval Start Time | PACIFIC AVE Eastbound | | | | PACIFIC AVE Westbound | | | | LIVERMORE AVE Northbound | | | | LIVERMORE AVE Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 9 | 0 | 0 | 31 | 8 | 0 | 6 | 10 | 0 | 68 | 421 | 2 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 6 | 0 | 0 | 53 | 12 | 0 | 4 | 13 | 0 | 93 | 579 | 0 | 0 | 1 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 8 | 0 | 0 | 42 | 6 | 0 | 8 | 29 | 0 | 102 | 671 | 0 | 2 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 15 | 0 | 0 | 64 | 12 | 0 | 14 | 47 | 0 | 158 | 732 | 1 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 15 | 0 | 0 | 69 | 31 | 1 | 21 | 59 | 0 | 226 | 694 | 4 | 2 | 0 | 1 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 9 | 0 | 0 | 79 | 29 | 0 | 16 | 33 | 0 | 185 | | 4 | 1 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 10 | 0 | 0 | 78 | 11 | 0 | 12 | 31 | 0 | 163 | | 5 | 1 | 0 | 1 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 5 | 0 | 0 | 45 | 17 | 0 | 14 | 29 | 0 | 120 | | 2 | 0 | 0 | 0 |

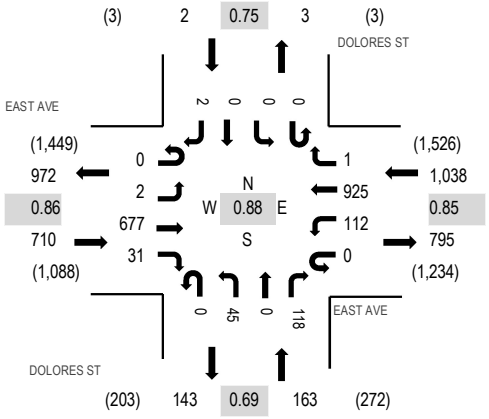
## Peak Rolling Hour Flow Rates

| Vehicle Type | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lights | 0 | 0 | 0 | 0 | 0 | 75 | 0 | 47 | 0 | 0 | 287 | 81 | 1 | 62 | 169 | 0 | 722 |
| Mediums | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 3 | 2 | 0 | 1 | 1 | 0 | 10 |
| Total | 0 | 0 | 0 | 0 | 0 | 76 | 0 | 49 | 0 | 0 | 290 | 83 | 1 | 63 | 170 | 0 | 732 |

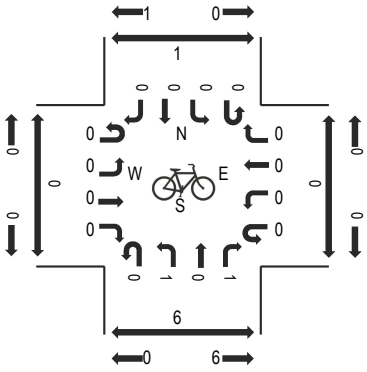
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 3 DOLORES ST & EAST AVE AM
**Date:** Wednesday, May 28, 2025
**Peak Hour:** 08:00 AM - 09:00 AM
**Peak 15-Minutes:** 08:30 AM - 08:45 AM

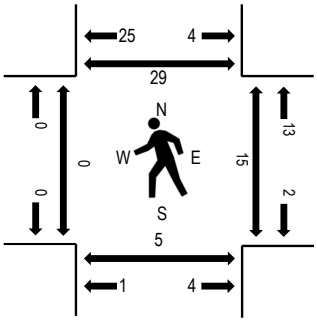
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

| Interval Start Time | EAST AVE Eastbound | | | | EAST AVE Westbound | | | | DOLORES ST Northbound | | | | DOLORES ST Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 7:00 AM | 1 | 0 | 64 | 2 | 0 | 12 | 88 | 0 | 0 | 9 | 0 | 14 | 0 | 0 | 0 | 0 | 190 | 976 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 75 | 3 | 0 | 9 | 109 | 0 | 0 | 8 | 0 | 22 | 0 | 0 | 0 | 0 | 226 | 1,278 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 88 | 3 | 0 | 13 | 115 | 0 | 0 | 9 | 0 | 11 | 0 | 0 | 0 | 0 | 239 | 1,587 | 0 | 1 | 0 | 1 |
| 7:45 AM | 0 | 0 | 139 | 3 | 0 | 15 | 127 | 0 | 0 | 11 | 0 | 25 | 0 | 1 | 0 | 0 | 321 | 1,890 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 1 | 159 | 4 | 0 | 43 | 237 | 0 | 0 | 12 | 0 | 35 | 0 | 0 | 0 | 1 | 492 | 1,913 | 0 | 1 | 3 | 3 |
| 8:15 AM | 0 | 0 | 178 | 6 | 0 | 25 | 262 | 0 | 0 | 15 | 0 | 49 | 0 | 0 | 0 | 0 | 535 | | 0 | 5 | 2 | 14 |
| 8:30 AM | 0 | 1 | 188 | 18 | 0 | 24 | 279 | 1 | 0 | 11 | 0 | 19 | 0 | 0 | 0 | 1 | 542 | | 0 | 6 | 0 | 9 |
| 8:45 AM | 0 | 0 | 152 | 3 | 0 | 20 | 147 | 0 | 0 | 7 | 0 | 15 | 0 | 0 | 0 | 0 | 344 | | 0 | 3 | 0 | 3 |

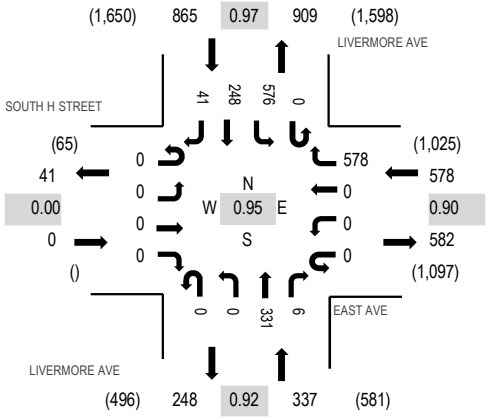
## Peak Rolling Hour Flow Rates

| Vehicle Type | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | |
| Articulated Trucks | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Lights | 0 | 2 | 670 | 30 | 0 | 111 | 918 | 1 | 0 | 43 | 0 | 117 | 0 | 0 | 0 | 2 | 1,894 |
| Mediums | 0 | 0 | 6 | 1 | 0 | 0 | 7 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 17 |
| Total | 0 | 2 | 677 | 31 | 0 | 112 | 925 | 1 | 0 | 45 | 0 | 118 | 0 | 0 | 0 | 2 | 1,913 |

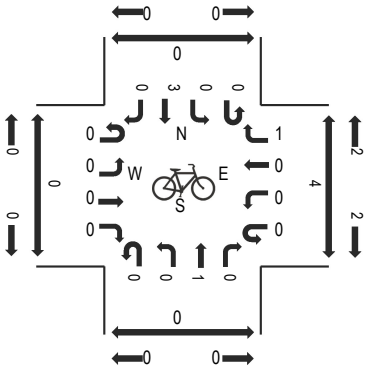
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 1 LIVERMORE AVE & EAST AVE PM
**Date:** Wednesday, May 28, 2025
**Peak Hour:** 04:30 PM - 05:30 PM
**Peak 15-Minutes:** 05:15 PM - 05:30 PM

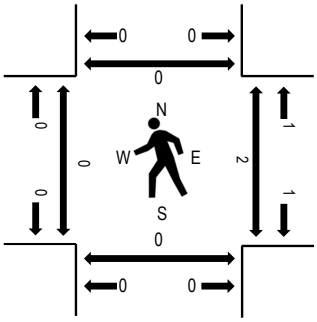
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

| Interval Start Time | SOUTH H STREET Eastbound | | | | EAST AVE Westbound | | | | LIVERMORE AVE Northbound | | | | LIVERMORE AVE Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 94 | 0 | 0 | 55 | 0 | 0 | 113 | 62 | 4 | 328 | 1,562 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 115 | 0 | 0 | 61 | 1 | 0 | 129 | 69 | 7 | 382 | 1,694 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 136 | 0 | 0 | 86 | 2 | 0 | 121 | 60 | 2 | 407 | 1,780 | 0 | 1 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 128 | 0 | 0 | 91 | 1 | 0 | 152 | 64 | 9 | 445 | 1,771 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 154 | 0 | 0 | 77 | 1 | 0 | 148 | 64 | 16 | 460 | 1,694 | 0 | 1 | 0 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 160 | 0 | 0 | 77 | 2 | 0 | 155 | 60 | 14 | 468 | | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 112 | 0 | 0 | 81 | 0 | 0 | 146 | 54 | 5 | 398 | | 0 | 2 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 126 | 0 | 0 | 45 | 1 | 0 | 125 | 63 | 8 | 368 | | 0 | 3 | 0 | 0 |

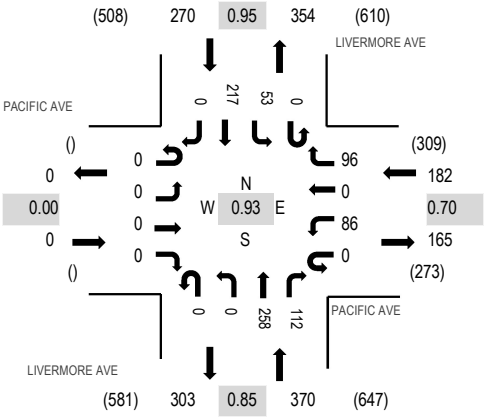
## Peak Rolling Hour Flow Rates

| Vehicle Type | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lights | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 576 | 0 | 0 | 329 | 6 | 0 | 574 | 242 | 41 | 1,768 |
| Mediums | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 2 | 6 | 0 | 12 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 578 | 0 | 0 | 331 | 6 | 0 | 576 | 248 | 41 | 1,780 |

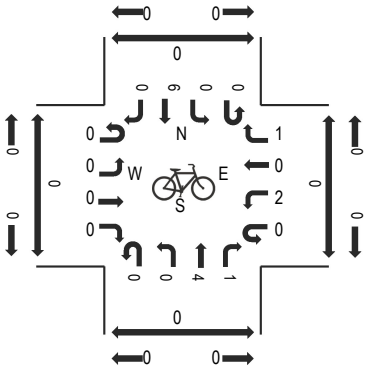
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 2 LIVERMORE AVE & PACIFIC AVE PM
**Date:** Wednesday, May 28, 2025
**Peak Hour:** 04:15 PM - 05:15 PM
**Peak 15-Minutes:** 04:45 PM - 05:00 PM

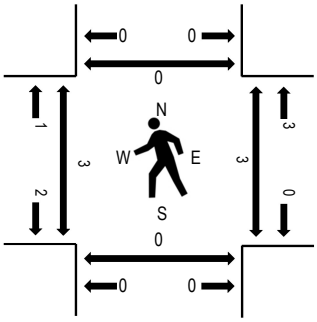
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles



## Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

| Interval Start Time | PACIFIC AVE Eastbound | | | | PACIFIC AVE Westbound | | | | LIVERMORE AVE Northbound | | | | LIVERMORE AVE Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 8 | 0 | 0 | 51 | 28 | 0 | 7 | 54 | 0 | 169 | 789 | 1 | 1 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 16 | 0 | 0 | 60 | 22 | 0 | 15 | 53 | 0 | 182 | 822 | 0 | 1 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 22 | 0 | 0 | 79 | 31 | 0 | 17 | 54 | 0 | 218 | 808 | 1 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 20 | 0 | 0 | 66 | 37 | 0 | 11 | 60 | 0 | 220 | 751 | 1 | 2 | 0 | 0 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 38 | 0 | 0 | 53 | 22 | 0 | 10 | 50 | 0 | 202 | 675 | 1 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 22 | 0 | 0 | 56 | 14 | 0 | 16 | 45 | 0 | 168 | | 0 | 1 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 13 | 0 | 0 | 59 | 14 | 0 | 5 | 53 | 0 | 161 | | 0 | 2 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 8 | 0 | 0 | 39 | 16 | 0 | 8 | 50 | 0 | 144 | | 0 | 1 | 0 | 0 |

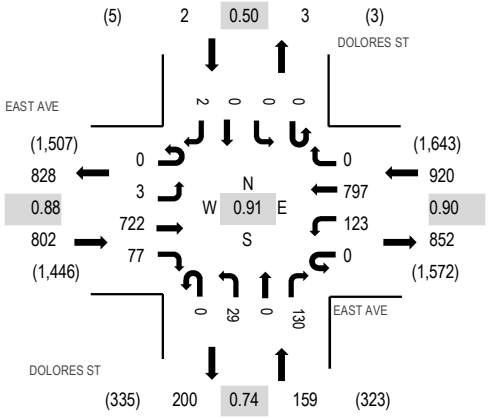
## Peak Rolling Hour Flow Rates

| Vehicle Type | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Lights | 0 | 0 | 0 | 0 | 0 | 86 | 0 | 95 | 0 | 0 | 257 | 112 | 0 | 52 | 215 | 0 | 817 |
| Mediums | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 4 |
| Total | 0 | 0 | 0 | 0 | 0 | 86 | 0 | 96 | 0 | 0 | 258 | 112 | 0 | 53 | 217 | 0 | 822 |

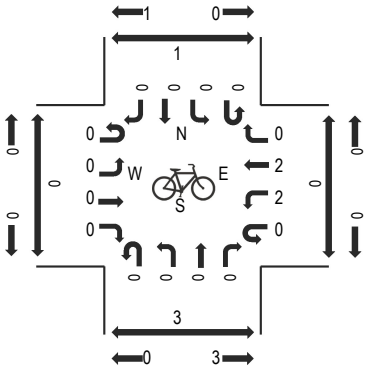
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 3 DOLORES ST & EAST AVE PM
**Date:** Wednesday, May 28, 2025
**Peak Hour:** 04:45 PM - 05:45 PM
**Peak 15-Minutes:** 04:45 PM - 05:00 PM

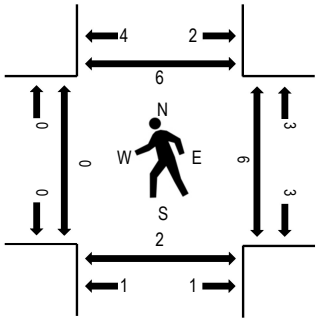
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

| Interval Start Time | EAST AVE Eastbound | | | | EAST AVE Westbound | | | | DOLORES ST Northbound | | | | DOLORES ST Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 0 | 147 | 9 | 0 | 26 | 133 | 0 | 0 | 11 | 0 | 31 | 0 | 0 | 0 | 0 | 357 | 1,665 | 0 | 1 | 0 | 0 |
| 4:15 PM | 0 | 0 | 163 | 12 | 0 | 21 | 168 | 0 | 0 | 9 | 0 | 32 | 0 | 0 | 0 | 0 | 405 | 1,812 | 0 | 2 | 0 | 1 |
| 4:30 PM | 1 | 0 | 140 | 12 | 0 | 14 | 174 | 0 | 0 | 11 | 0 | 34 | 0 | 0 | 0 | 1 | 387 | 1,868 | 0 | 1 | 0 | 3 |
| 4:45 PM | 0 | 1 | 173 | 20 | 0 | 31 | 224 | 0 | 0 | 12 | 0 | 55 | 0 | 0 | 0 | 0 | 516 | 1,883 | 0 | 2 | 2 | 1 |
| 5:00 PM | 0 | 1 | 205 | 22 | 0 | 33 | 196 | 0 | 0 | 6 | 0 | 40 | 0 | 0 | 0 | 1 | 504 | 1,752 | 0 | 2 | 0 | 1 |
| 5:15 PM | 0 | 0 | 179 | 17 | 0 | 24 | 210 | 0 | 0 | 8 | 0 | 22 | 0 | 0 | 0 | 1 | 461 | | 0 | 2 | 0 | 3 |
| 5:30 PM | 0 | 1 | 165 | 18 | 0 | 35 | 167 | 0 | 0 | 3 | 0 | 13 | 0 | 0 | 0 | 0 | 402 | | 0 | 0 | 0 | 1 |
| 5:45 PM | 0 | 0 | 150 | 10 | 0 | 31 | 156 | 0 | 0 | 13 | 0 | 23 | 0 | 0 | 0 | 2 | 385 | | 0 | 3 | 0 | 4 |

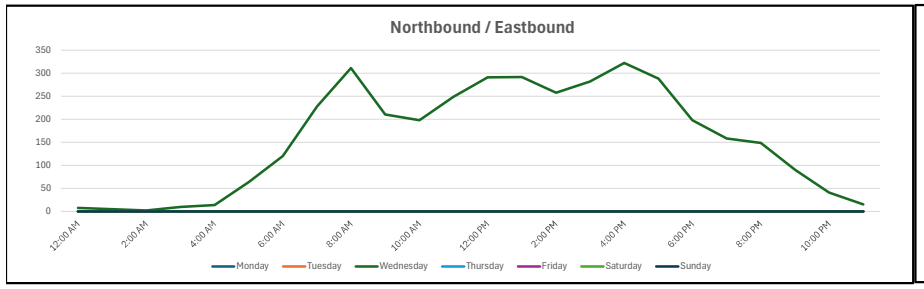
## Peak Rolling Hour Flow Rates

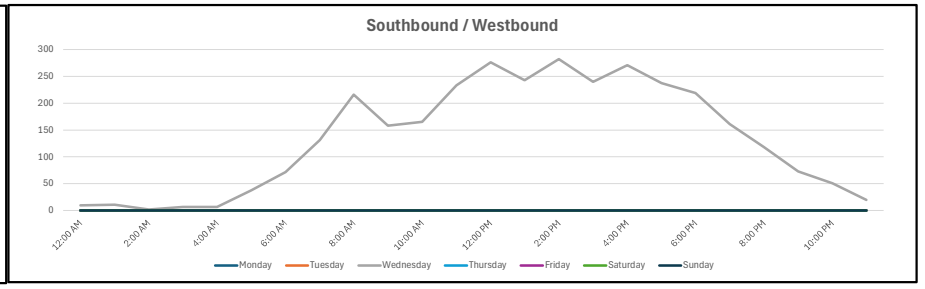
| Vehicle Type | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Lights | 0 | 3 | 715 | 75 | 0 | 121 | 794 | 0 | 0 | 28 | 0 | 130 | 0 | 0 | 0 | 2 | 1,868 |
| Mediums | 0 | 0 | 7 | 2 | 0 | 1 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| Total | 0 | 3 | 722 | 77 | 0 | 123 | 797 | 0 | 0 | 29 | 0 | 130 | 0 | 0 | 0 | 2 | 1,883 |

# Vehicle Volume Report - Hourly

**Site Description:** S Livermore Ave N.O Pacific Ave
**Site Number:** 4
**Start Date:** 05/28/2025
**End Date:** 05/28/2025

| Time | Monday 6/2/25 | | | Tuesday 6/3/25 | | | Wednesday 5/28/25 | | | Thursday 5/29/25 | | | Friday 5/30/25 | | | Saturday 5/31/25 | | | Sunday 6/1/25 | | | 3 Day Avg Tue-Thu | | 5 Day Avg Mon-Fri | | 7 Day Avg Mon-Sun | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NB | SB | Total | NB | SB | Total | NB | SB | Total | NB | SB | Total | NB | SB | Total | NB | SB | Total | NB | SB | Total | NB | SB | NB | SB | NB | SB |
| 12:00 AM | - | - | - | - | - | - | 8 | 10 | 18 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1:00 AM | - | - | - | - | - | - | 5 | 11 | 16 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2:00 AM | - | - | - | - | - | - | 2 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3:00 AM | - | - | - | - | - | - | 10 | 7 | 17 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4:00 AM | - | - | - | - | - | - | 14 | 7 | 21 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 5:00 AM | - | - | - | - | - | - | 64 | 38 | 102 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6:00 AM | - | - | - | - | - | - | 120 | 72 | 192 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 7:00 AM | - | - | - | - | - | - | 228 | 131 | 359 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8:00 AM | - | - | - | - | - | - | 311 | 216 | 527 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 9:00 AM | - | - | - | - | - | - | 210 | 158 | 368 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10:00 AM | - | - | - | - | - | - | 198 | 165 | 363 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 11:00 AM | - | - | - | - | - | - | 249 | 233 | 482 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12:00 PM | - | - | - | - | - | - | 291 | 276 | 567 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1:00 PM | - | - | - | - | - | - | 292 | 243 | 535 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2:00 PM | - | - | - | - | - | - | 258 | 282 | 540 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3:00 PM | - | - | - | - | - | - | 282 | 240 | 522 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4:00 PM | - | - | - | - | - | - | 322 | 271 | 593 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 5:00 PM | - | - | - | - | - | - | 288 | 237 | 525 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6:00 PM | - | - | - | - | - | - | 198 | 219 | 417 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 7:00 PM | - | - | - | - | - | - | 158 | 161 | 319 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8:00 PM | - | - | - | - | - | - | 149 | 118 | 267 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 9:00 PM | - | - | - | - | - | - | 90 | 73 | 163 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10:00 PM | - | - | - | - | - | - | 41 | 51 | 92 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 11:00 PM | - | - | - | - | - | - | 15 | 20 | 35 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **6:00 AM - 9:00 AM** | - | - | - | - | - | - | **659** | **419** | **1078** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **3:00 PM - 6:00 PM** | - | - | - | - | - | - | **892** | **748** | **1640** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **6:00 AM - 7:00 PM** | - | - | - | - | - | - | **3247** | **2743** | **5990** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **12:00 AM - 12:00 AM** | - | - | - | - | - | - | **3803** | **3241** | **7044** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| ***Percent*** | - | - | - | - | - | - | ***54.0%*** | ***46.0%*** | ***100.0%*** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **AM Peak** | - | - | | - | - | | **8:00 AM** | **9:00 AM** | | - | - | | - | - | | - | - | | - | - | | | | | | | |
| **PM Peak** | - | - | | - | - | | **4:00 PM** | **5:00 PM** | | - | - | | - | - | | - | - | | - | - | | | | | | | |

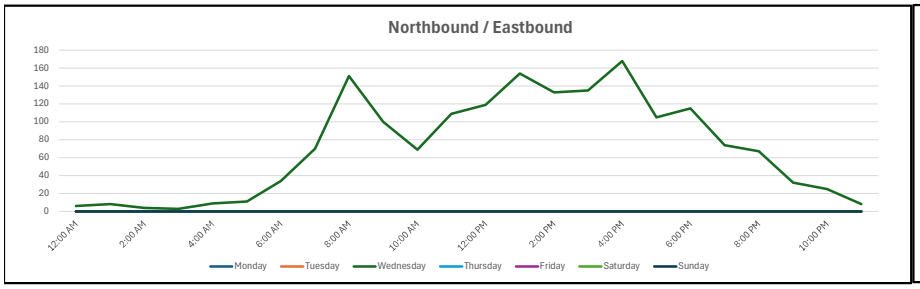


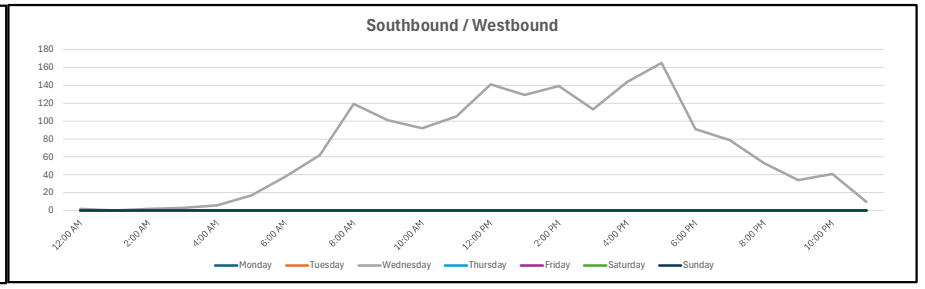



# Vehicle Volume Report - Hourly

**Site Description:** Pacific Ave E.O S Livermore Ave
**Site Number:** 5
**Start Date:** 05/28/2025
**End Date:** 05/28/2025

| Time | Monday 6/2/25 | | | Tuesday 6/3/25 | | | Wednesday 5/28/25 | | | Thursday 5/29/25 | | | Friday 5/30/25 | | | Saturday 5/31/25 | | | Sunday 6/1/25 | | | 3 Day Avg Tue-Thu | | 5 Day Avg Mon-Fri | | 7 Day Avg Mon-Sun | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | EB | WB | Total | EB | WB | Total | EB | WB | Total | EB | WB | Total | EB | WB | Total | EB | WB | Total | EB | WB | Total | EB | WB | EB | WB | EB | WB |
| 12:00 AM | - | - | - | - | - | - | 6 | 2 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1:00 AM | - | - | - | - | - | - | 8 | 0 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2:00 AM | - | - | - | - | - | - | 4 | 2 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3:00 AM | - | - | - | - | - | - | 3 | 3 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4:00 AM | - | - | - | - | - | - | 9 | 6 | 15 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 5:00 AM | - | - | - | - | - | - | 11 | 17 | 28 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6:00 AM | - | - | - | - | - | - | 34 | 38 | 72 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 7:00 AM | - | - | - | - | - | - | 70 | 62 | 132 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8:00 AM | - | - | - | - | - | - | 151 | 119 | 270 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 9:00 AM | - | - | - | - | - | - | 100 | 101 | 201 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10:00 AM | - | - | - | - | - | - | 69 | 92 | 161 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 11:00 AM | - | - | - | - | - | - | 109 | 105 | 214 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12:00 PM | - | - | - | - | - | - | 119 | 141 | 260 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1:00 PM | - | - | - | - | - | - | 154 | 129 | 283 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2:00 PM | - | - | - | - | - | - | 133 | 139 | 272 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3:00 PM | - | - | - | - | - | - | 135 | 113 | 248 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4:00 PM | - | - | - | - | - | - | 168 | 144 | 312 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 5:00 PM | - | - | - | - | - | - | 105 | 165 | 270 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6:00 PM | - | - | - | - | - | - | 115 | 91 | 206 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 7:00 PM | - | - | - | - | - | - | 74 | 79 | 153 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8:00 PM | - | - | - | - | - | - | 67 | 53 | 120 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 9:00 PM | - | - | - | - | - | - | 32 | 34 | 66 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10:00 PM | - | - | - | - | - | - | 25 | 41 | 66 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 11:00 PM | - | - | - | - | - | - | 8 | 10 | 18 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **6:00 AM - 9:00 AM** | - | - | - | - | - | - | **255** | **219** | **474** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **3:00 PM - 6:00 PM** | - | - | - | - | - | - | **408** | **422** | **830** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **6:00 AM - 7:00 PM** | - | - | - | - | - | - | **1462** | **1439** | **2901** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **12:00 AM - 12:00 AM** | - | - | - | - | - | - | **1709** | **1686** | **3395** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| ***Percent*** | - | - | - | - | - | - | ***50.3%*** | ***49.7%*** | ***100.0%*** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **AM Peak** | - | - | | - | - | | **8:00 AM** | **9:00 AM** | | - | - | | - | - | | - | - | | - | - | | | | | | | |
| **PM Peak** | - | - | | - | - | | **4:00 PM** | **5:00 PM** | | - | - | | - | - | | - | - | | - | - | | | | | | | |



HEXAGON TRANSPORTATION CONSULTANTS, INC.

# 2930 Pacific Avenue

## Transportation Analysis

Prepared for:

**SWENSON**

**January 11, 2024**


**Hexagon Transportation Consultants, Inc.**
Hexagon Office: 100 Century Center Court, Suite 501
San Jose, CA 95112
Hexagon Job Number: 23TD01
Phone: 408.971.6100
Client Name: SWENSON

# Table of Contents

Executive Summary ..... iii
1. Introduction ..... 1
2. Vehicle Miles Traveled ..... 9
3. Local Transportation Analysis ..... 10
4. AppendixOther Transportation Issues ..... 32

## Appendices

Appendix A Traffic Counts
Appendix B Level of Service Calculations

## List of Tables

Table ES- 1 Intersection Level of Service Summary ..... v
Table ES- 2 Intersection Level of Service Summary ..... vii

Table 1 Signalized Intersection Level of Service Definitions Based on Control Delay ..... 6
Table 2 Unsignalized Intersection Level of Service Definitions Based on Delay ..... 7
Table 3 Roadway Segment LOS Thresholds ..... 7
Table 4 Existing Intersection Levels of Service ..... 17
Table 5 Project Trip Generation Estimates ..... 18
Table 6 Background Intersection Levels of Service ..... 27
Table 7 Cumulative 2045 Intersection Levels of Service ..... 28
Table 8 Roadway Segment Analysis ..... 30
Table 9 Queuing Analysis Summary ..... 31

## List of Figures

Figure 1 Site Location and Study Intersections ..... 2
Figure 2 Project Site Plan ..... 3
Figure 3 Existing Bicycle Facilities ..... 13
Figure 4 Existing Transit Services ..... 14
Figure 5 Existing Lane Configurations ..... 15
Figure 6 Existing Traffic Volumes ..... 16
Figure 7 Project Trip Distribution ..... 19
Figure 8 Gross Project Trip Assignment ..... 20
Figure 9 Existing Trip Credit ..... 21
Figure 10 Background Traffic Volumes ..... 23
Figure 11 Background Plus Project Traffic Volumes ..... 24
Figure 12 Cumulative 2045 Traffic Volumes ..... 25
Figure 13 Cumulative 2045 Plus Project Traffic Volumes ..... 26

# Executive Summary

This report presents the results of the Transportation Analysis (TA) conducted for the proposed residential development at 2930 Pacific Avenue in Livermore, California. The project site is currently occupied by the Livermore Town Center, a shopping center that is surrounded by South Livermore Avenue on the west, Pacific Street on the south, Dolores Street on the east and existing residential development on the north. As proposed, the project would include demolishing the existing commercial buildings (totaling 66,617 sq. ft) and constructing a residential community with 115 townhouses. The main vehicular access will be provided via a full access unsignalized driveway on Pacific Avenue. Secondary access will be provided on the back side of the project on Dolores Street. The existing shopping center is served by five driveways and the proposed project would reduce the driveways to two main access driveways and three Emergency Vehicle Access (EVA) driveways.

The proposed uses are consistent with the land use designation for the project site parcel in the City of Livermore General Plan and would not require a general plan amendment. The project site is zoned as "Neighborhood Mixed Use (NMU)", which allows both housing and commercial/retail development. Thus, the proposed use is consistent with the general plan land use designation for the project site.

## VMT Analysis

The Alameda County Transportation Commission (CTC) has developed maps and tables that display estimates of VMT per Capita and per Employee at the Traffic Analysis Zone (TAZ) level and planning area level in Alameda County. These TAZ estimates come from the Alameda Countywide Travel Demand Model that is consistent with Plan Bay Area 2040.

The Alameda County East Planning Area encompasses the cities of Livermore, Dublin, and Pleasanton. Using the Alameda County VMT Mapping Resources, the VMT per capita for the project TAZ is 24.43, which is less than the threshold of 25.93 VMT per capita for the Alameda County East Planning Area. Therefore, the proposed project would have a less than significant impact on VMT.

## Project Trip Generation

Trip generation estimates for the proposed project were based on trip rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 11th Edition for "Single-Family Attached Housing" (Land Use 215) located in a general Urban/Suburban area. After applying the existing trip credits based on AM and PM peak hour driveway counts, the net new project trips would be 138 daily trips including 11 net trips during the AM peak hour and 28 fewer trips during the PM peak hour. The existing trip credits reflect more than 60% of the shopping center being vacant. Thus, compared to the

trips that could be generated by the shopping center at full occupancy, the proposed residential development would generate fewer daily, AM and PM peak hour trips.

## Intersection Level of Service Analysis

The results of the intersection level of service analysis (see Table ES-1) show that all study intersections would operate at an acceptable level of service D or better with and without the project.

## Roadway Segment Level of Service Analysis

The results of the roadway segment level of service analysis (see Table ES-2) show that all study segments would operate at an acceptable level of service A with and without the project.

## Intersection Queuing Analysis

Vehicle queuing was evaluated using Synchro software for selected locations where the project would add 10 or more left-turning vehicles. The results of the intersection queuing analysis indicate that the project would not cause or exacerbate queuing deficiencies.

## Other Transportation Issues

Generally, the preliminary site plan shows adequate site access, and the proposed project would not have an adverse effect on the existing transit services, pedestrian facilities, or bicycle facilities in the study area. Hexagon provides the following recommendations for the proposed project:

1. In order to provide adequate sight distance for vehicles exiting the project site, Hexagon recommends installing a minimum 25 feet of red curb to the east and west of the driveway on Pacific Avenue and 25 feet of red curb to the north and south of the driveway on Dolores Street based on the stopping sight distance standards in the California Manual on Uniform Traffic Control Devices ( CA MUTCD).
2. Hexagon recommends including a turnaround space for residential guests at the end of the parking aisle in the southeast corner of the project site, adjacent to the EVA access on Dolores Street.
3. Prior to final design parking stall dimensions should be reviewed by City staff.

**Table ES- 1**
**Intersection Level of Service Summary**

| ID | Intersection | Control[1] | Peak Hour | Count Date | Existing Avg. Delay | Existing Avg. Delay[2] | Existing LOS | Background Avg. Delay[2] | Background LOS | Background Plus Project Avg. Delay[2] | Background Plus Project LOS | Background Plus Project Incr. in delay | Cumulative Avg. Delay[2] | Cumulative LOS | Cumulative Plus Project Avg. Delay[2] | Cumulative Plus Project LOS | Cumulative Plus Project Incr. in delay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | S. Livermore Ave and Fourth St | Signal | AM | 01/26/23 | 24.3 | 24.3 | C | 24.9 | C | 24.9 | C | 0.0 | 32.4 | C | 32.5 | C | 0.1 |
| | | | PM | 01/26/23 | 31.5 | 31.5 | C | 31.9 | C | 31.9 | C | 0.0 | 42.0 | D | 42.7 | D | 0.7 |
| 2 | S. Livermore Ave and East Ave | Signal | AM | 01/26/23 | 23.9 | 23.9 | C | 24.7 | C | 24.7 | C | 0.0 | 36.0 | D | 36.3 | D | 0.3 |
| | | | PM | 01/26/23 | 25.1 | 25.1 | C | 26.0 | C | 26.0 | C | 0.0 | 35.6 | D | 35.6 | D | 0.0 |
| 3 | S. Livermore Ave and Palm Ave | TWSC | AM | 01/26/23 | 11.3 | 11.3 | B | 11.2 | B | 10.8 | B | -0.4 | 13.3 | B | 12.5 | B | -0.8 |
| | | | PM | 01/26/23 | 13.8 | 13.8 | B | 14.3 | B | 13.5 | B | -0.8 | 17.8 | C | 16.6 | C | -1.2 |
| 4 | S. Livermore Ave and Pacific Ave | OWSC | AM | 01/26/23 | 15.5 | 15.5 | C | 16.3 | C | 16.7 | C | 0.3 | 27.8 | D | 29.6 | D | 1.8 |
| | | | PM | 01/26/23 | 14.8 | 14.8 | B | 15.4 | C | 15.8 | C | 0.4 | 23.2 | D | 24.5 | D | 1.3 |
| 5 | Dolores St and Pacific Ave | AWSC | AM | 01/26/23 | 8.3 | 8.3 | A | 8.4 | A | 8.5 | A | 0.1 | 9.1 | A | 9.3 | A | 0.2 |
| | | | PM | 01/26/23 | 8.4 | 8.4 | A | 8.5 | A | 8.5 | A | 0.0 | 9.1 | A | 9.2 | A | 0.1 |
| 6 | Dolores St and East Ave | Signal | AM | 05/17/23 | 21.0 | 21.0 | B | 22.6 | B | 21.3 | B | -1.3 | 25.3 | B | 24.6 | B | -0.7 |
| | | | PM | 05/17/23 | 13.2 | 13.2 | B | 13.7 | B | 13.6 | B | -0.1 | 19.8 | B | 19.4 | B | -0.4 |
| 7 | Project Dwy and Pacific Ave | OWSC | AM | 01/26/23 | #REF! | -- | -- -- | -- | -- | 9.5 | A | -- | -- | -- | 9.9 | B | -- |
| | | | PM | 01/26/23 | #REF! | -- | -- -- | -- | -- | 9.8 | A | -- | -- | -- | 10.3 | B | -- |
| 8 | Dolores St and Project Dwy | OWSC | AM | 01/26/23 | #REF! | -- | -- -- | -- | -- | 9.3 | A | -- | -- | -- | 9.7 | A | -- |
| | | | PM | 01/26/23 | #REF! | -- | -- -- | -- | -- | 9.6 | A | -- | -- | -- | 10.0 | B | -- |

Notes:
1. Control Type Definitions: OWSC = One-Way Stop Control, TWSC = Two-Way Stop Control, AWSC = All-Way Stop Control.
2. Delay/LOS based on HCM 7th methodology. Intersections (1 and 2) that were not supported by HCM 7th methodology, HCM 2000 was used. Intersection level of service for OWSC and TWSC intersections is represented by the delay for the worst approach. Intersection level of service for all other control types is represented by average delay for all movements.

**Table ES- 2**
**Roadway Segment Level of Service Summary**

| | Existing | | | | | Background | | | Background Plus Project | | | Cumulative | | | Cumulative Plus Project | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roadway Segment | ADT | # of Lanes | Daily Capacity | V/C Ratio | LOS | ADT | V/C Ratio | LOS | ADT | V/C Ratio | LOS | ADT | V/C Ratio | LOS | ADT | V/C Ratio | LOS |
| Pacific Ave between S. Livermore Ave and Dolores St | 3,157 | 2 | 10,000 | 0.3157 | A | 3,301 | 0.1651 | A | 3,381 | 0.1691 | A | 4,381 | 0.21903 | A | 4,461 | 0.2230 | A |
| S. Livermore Ave between Palm Ave and 8th St | 6,424 | 2 | 20,000 | 0.3212 | A | 6,717 | 0.3359 | A | 6,777 | 0.3389 | A | 8,914 | 0.4457 | A | 8,974 | 0.4487 | A |

# 1. Introduction

This report presents the results of the Transportation Analysis (TA) conducted for the proposed residential development at 2930 Pacific Avenue in Livermore, California. The project site is currently occupied by the Livermore Town Center, a shopping center that is surrounded by South Livermore Avenue on the west, Pacific Street on the south, Dolores Street on the east and existing residential development on the north. As proposed, the project would include demolishing the existing commercial buildings (totaling 66,617 sq. ft) and constructing a residential community with 115 townhouses. The main vehicular access will be provided via a full access unsignalized driveway on Pacific Avenue. Secondary access will be provided on the back side of the project on Dolores Street. The existing shopping center is served by five driveways and the proposed project would reduce the driveways to two main access driveways and three Emergency Vehicle Access (EVA) driveways (one driveway on Livermore Avenue and two driveways on Dolores Street).

The proposed uses are consistent with the land use designation for the project site parcel in the City of Livermore General Plan and would not require a general plan amendment. The project site is zoned as “Neighborhood Mixed Use (NMU)”, which allows both housing and commercial/retail development. Thus, the proposed use is consistent with the general plan land use designation for the project site.

The project site and the surrounding study area are shown on Figure 1. The proposed site plan is shown on Figure 2.

## Scope of Study

The purpose of the transportation analysis is to identify any transportation impacts in accordance with the standards set forth by City of Livermore and Alameda County Transportation Commission (Alameda CTC). Alameda CTC administers the County’s Congestion Management Program (CMP). An Alameda County CMP analysis was not required because the net project trip generation would be fewer than 100 peak hour vehicle trips.

This report includes an evaluation of transportation impacts according to CEQA and a Local Transportation Analysis (LTA) per the City of Livermore Scope of Work for Traffic Impact Analysis requirements dated 02/25/2019.

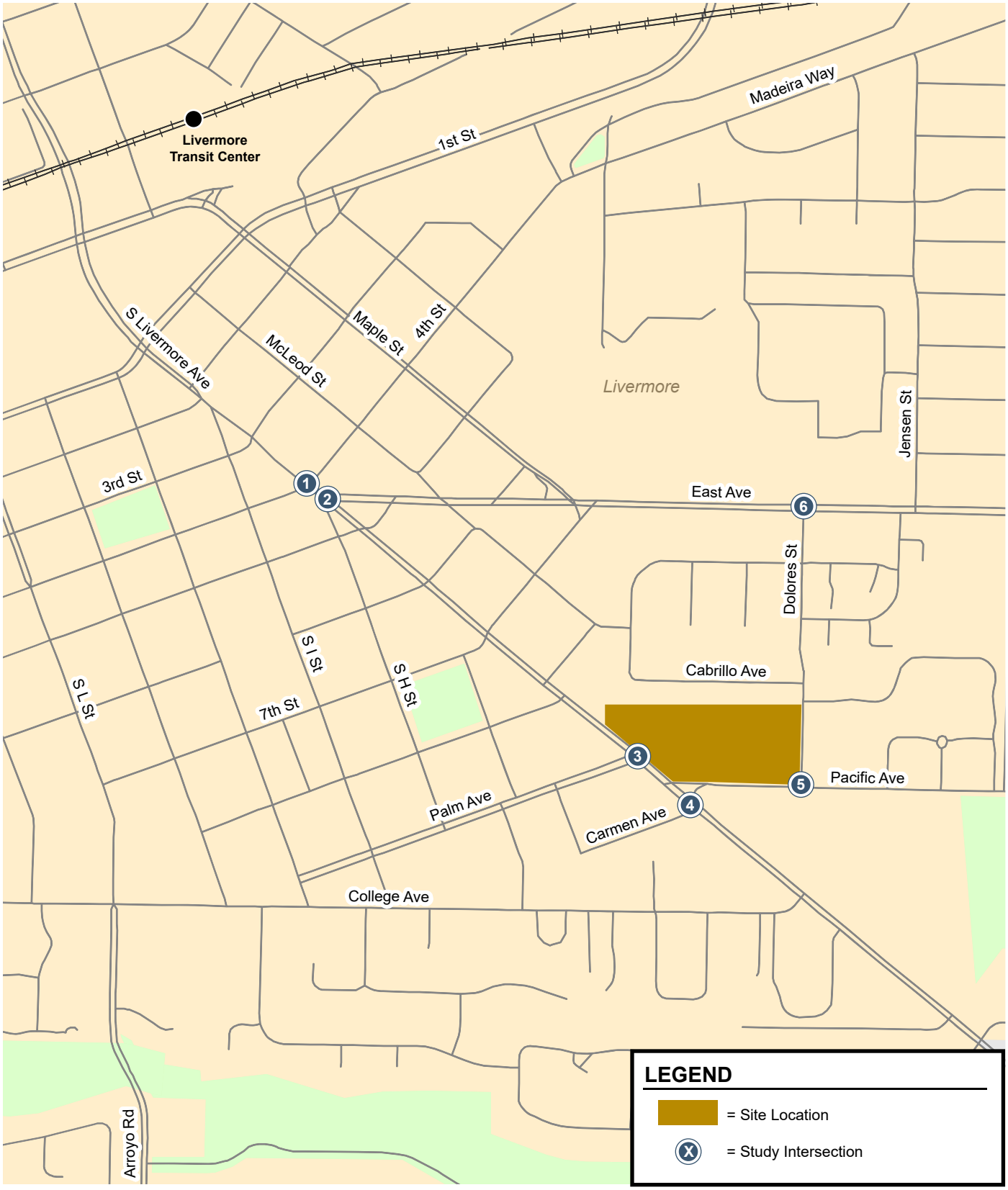



**Figure 1**
**Site Location and Study Intersections**

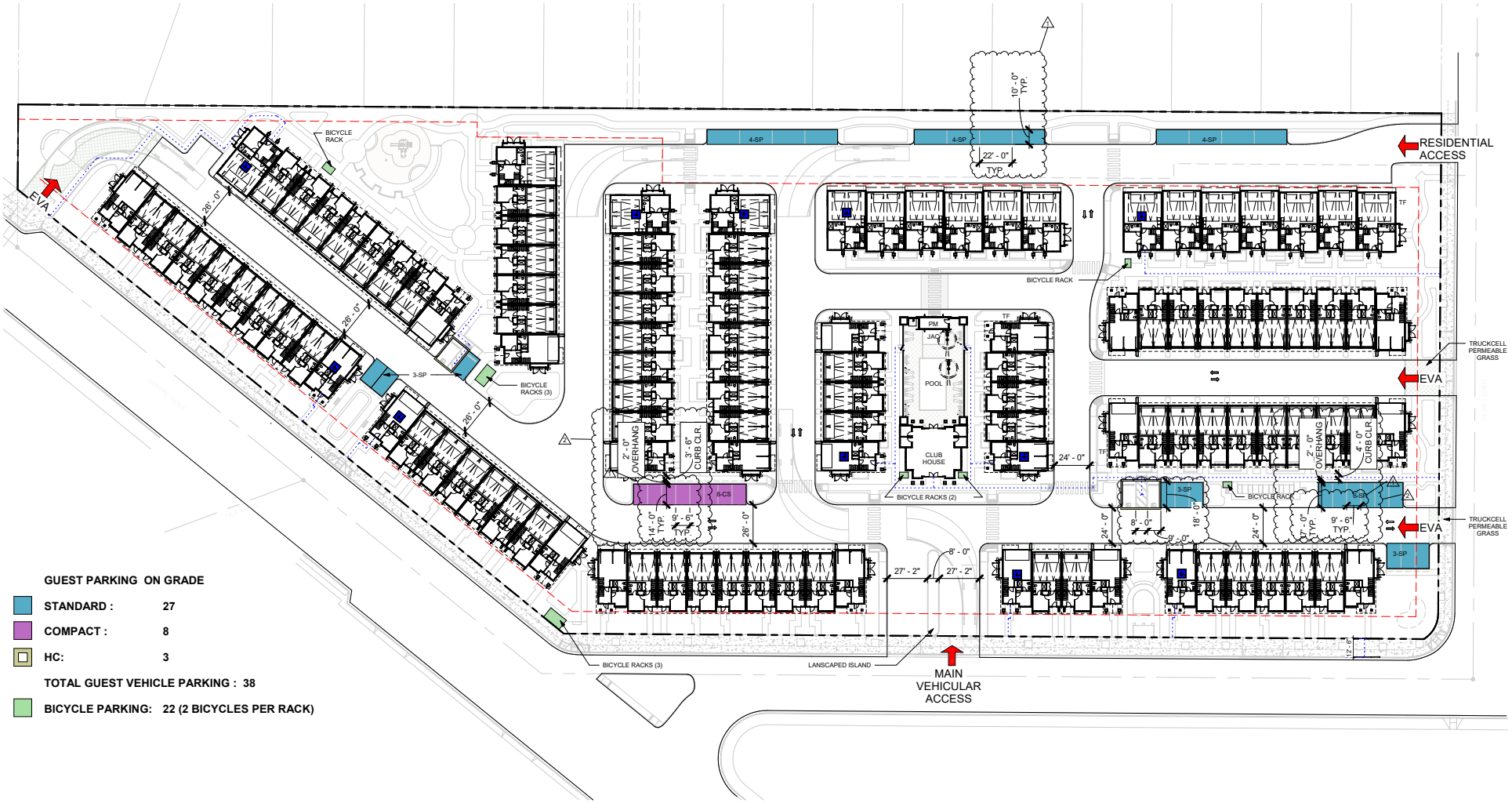



**Figure 2**
**Project Site Plan**

HEXAGON

NORTH
Not to Scale

# CEQA Analysis

## Vehicle Miles Traveled Standards and Analysis Methodology

Senate Bill (SB) 743, signed into law in 2013, requires CEQA lead agencies to shift from using traditional Level of Service (LOS) standards and automobile delay to Vehicle Miles Traveled (VMT) in order to determine significant traffic impacts. SB 743 requires lead agencies to implement its guidelines, requiring them to select a VMT methodology, choose significance thresholds, and determine feasible mitigation measures. The goal of SB 743 is to encourage development that reduces VMT. Since the City of Livermore has not yet adopted a policy or established any thresholds based on VMT, the potential impacts of this project were determined based upon the Governor's Office of Planning & Research (OPR)'s recommendations in the December 2018 *Technical Advisory on Evaluation of Transportation Impacts in CEQ*A document.

# Local Transportation Analysis

The potential adverse effects of the project were evaluated in accordance with the standards set forth by the City of Livermore. The traffic study includes an analysis of AM and PM peak-hour traffic conditions for six intersections and two roadway segments in the vicinity of the project site. The study also includes an analysis of transit, bicycle, and pedestrian access. The study intersections and roadway segments are identified below.

## Study Intersections:

1. S. Livermore Avenue & Fourth Street (signal)
2. S. Livermore Avenue & East Avenue (signal)
3. S. Livermore Avenue & Palm Avenue (unsignalized)
4. S. Livermore Avenue & Pacific Avenue (unsignalized)
5. Dolores Street & Pacific Avenue (unsignalized)
6. East Avenue & Dolores Street (signal)

## Roadway Segments:

1. S. Livermore Avenue – between Palm Avenue and Eighth Street
2. Pacific Avenue – between S. Livermore Avenue and Dolores Street

Traffic conditions at the study intersections were analyzed for both the weekday AM and PM peak hours of adjacent street traffic. The AM peak hour is expected to occur between 7:00 AM and 9:00 AM and the PM peak hour is expected to occur between 4:00 PM and 6:00 PM on a regular weekday. These are the peak commute hours during which most traffic congestion occurs on the roadways.

Traffic conditions were evaluated for the following scenarios:

**Scenario 1:** *Existing Conditions.* Existing conditions were represented by existing peak-hour traffic volumes on the existing roadway network. Existing traffic volumes were obtained from new traffic counts conducted in January 2023.

**Scenario 2:** *Background Conditions*. Background conditions are defined as conditions just prior to completion of the proposed development. Based on coordination with Livermore City staff, there are no approved projects in the study area. Therefore, annual growth factors based on the Alameda County Travel Demand Model were applied to the existing 2023 volumes for a period of three years to estimate the background traffic volumes.

**Scenario 3:** *Project Conditions*. Project-generated traffic volumes were added to background traffic volumes to estimate background plus project conditions (also referred to as Project Conditions). Project conditions were evaluated relative to background conditions in order to identify substantial adverse effects from the proposed project.

**Scenario 4:** *Cumulative Conditions*. Cumulative conditions represent the future conditions (year 2045) with expected growth in the area. Cumulative traffic volumes were estimated by applying a growth factor to existing volumes. The growth factor was estimated based on available year 2040 forecasts from the Alameda County travel demand forecast model. The annual growth factors were applied to the 2023 volumes over a period of 22 years to estimate Year 2045 volumes.

**Scenario 5:** *Cumulative plus Project Conditions*. Cumulative plus project conditions were estimated by adding to the cumulative traffic volumes the additional traffic estimated to be generated by the proposed project. Cumulative plus project conditions were evaluated relative to cumulative conditions to identify substantial adverse effects from the proposed project.

## Methodology

This section presents the methods used to determine the traffic conditions at study intersections for each scenario described above. It includes descriptions of the data requirements, the analysis methodologies, and the applicable level of service standards.

### Data Requirements

The data required for the analysis were obtained from new traffic counts, previous traffic studies, the City of Livermore, and field observations. The following data were collected from these sources:

- Existing traffic volumes
- Existing lane configurations
- Signal timing and phasing
- Previous traffic studies, and
- Year 2040 traffic volumes from the Alameda County travel demand forecast model

### Level of Service Standards and Analysis Methodologies

Traffic conditions at the study intersections were evaluated using level of service (LOS). *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The various analysis methods are described below.

**City of Livermore Intersections**

The City of Livermore evaluates level of service at signalized intersections based on the Highway Capacity Manual (HCM) level of service methodology using Synchro software. The HCM method evaluates signalized intersection operations based on average control delay time for all vehicles at the intersection.

This study uses the HCM 7$^{th}$ Edition for signalized and unsignalized intersections utilizing Synchro software to determine intersection level of service. The two signalized intersections on S. Livermore Avenue were observed to operate with one controller and thus were analyzed as clustered intersections

in Synchro. Since the HCM 7th edition does not support the analysis of clustered intersections, the HCM 2000 methodology was used.

The HCM method evaluates intersection operations on the basis of average control delay time for all vehicles at the intersection. This average delay can then be correlated to a level of service. Table 1 presents the level of service definitions for signalized intersections. The level of service definitions for unsignalized intersections are presented in Table 2. Note that for unsignalized intersections under two-way or side-street stop control, the level of service is reported for the worst approach.

**City of Livermore Roadway Segments**

Roadway segment levels of service were calculated by comparing the daily roadway volumes to the LOS thresholds used for other projects in Livermore and other communities within Alameda County, as shown in Table 3. For major streets a per-lane capacity of 800 vehicles per hour and 10,000 vehicles per day and for local streets, 400 vehicles per hour and 5,000 vehicles per day was used. The City of Livermore does not have a level of service policy for daily roadway segment operations.

**Table 1**
**Signalized Intersection Level of Service Definitions Based on Control Delay**

| Level of Service | Description | Average Control Delay Per Vehicle (sec.) |
|---|---|---|
| A | Signal progression is extremely favorable. Most vehicles arrive during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay. | 10.0 or less |
| B | Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay. | 10.1 to 20.0 |
| C | Higher delays may result from fair signal progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though some vehicles may still pass through the intersection without stopping. | 20.1 to 35.0 |
| D | The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lengths, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable. | 35.1 to 55.0 |
| E | This is considered to be the limit of acceptable delay. These high delay values generally indicate poor signal progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Individual cycle failures occur frequently. | 55.1 to 80.0 |
| F | This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes of such delay levels. | greater than 80.0 |

Source: Transportation Research Board, *Highway Capacity Manual 6th Edition* (Washington, D.C., 2016), p.16-19.

**Table 2**
**Unsignalized Intersection Level of Service Definitions Based on Delay**

| Level of Service | Description | Average Delay Per Vehicle (Sec.) |
|---|---|---|
| A | Little or no traffic delay | 10.0 or less |
| B | Short traffic delays | 10.1 to 15.0 |
| C | Average traffic delays | 15.1 to 25.0 |
| D | Long traffic delays | 25.1 to 35.0 |
| E | Very long traffic delays | 35.1 to 50.0 |
| F | Extreme traffic delays | greater than 50.0 |

Source: Transportation Research Board, *Highway Capacity Manual 6th Edition* (Washington D.C., 2016).

**Table 3**
**Roadway Segment LOS Thresholds**

| LOS | Density |
|---|---|
| A | <0.6 |
| B | 0.61 to 0.70 |
| C | 0.71 to 0.80 |
| D | 0.81 to 0.90 |
| E | 0.91 to 1.00 |
| F | >1.00 |

*Source: Lassen Road Residential Project TIA by Fehr & Peers, 2018*

## Substantial Adverse Effect Criteria

The criteria used to establish what constitutes an adverse effect by the project is discussed below. Adverse effects on intersections are based on the level of service standards of the jurisdiction in which the intersection is located. For this analysis, criteria for adverse effects on signalized and unsignalized intersections are based on the City of Livermore level of service standards as described below. As the City of Livermore does not have a level of service policy for daily roadway segment operations, the adverse effect of the project on roadway segments are based on the criteria used in other transportation analysis studies in Livermore.

### Signalized Intersections

The project may cause an adverse effect if one of the two following criteria are met:

- The addition of project traffic to an intersection, results in the degradation of intersection operations from acceptable operations (Mid-level LOS D or better) to unacceptable operations (Greater than Mid-level LOS D; LOS E or F).

- At an intersection projected to operate at unacceptable LOS prior to the addition of project traffic, the addition of project traffic increases the average control delay by five (5) seconds or more.

**Unsignalized Intersections**

The project may cause an adverse effect if one of the two following criteria are met:

- The addition of project traffic to an intersection, results in the degradation of intersection operations from acceptable operations (Mid-level LOS D or better) to unacceptable operations (Greater than Mid-level LOS D; LOS E or F).
- The Peak Hour Signal Warrant (Warrant 3) is met.

**Roadway Segment**

The project may cause an adverse effect if one of the two following criteria are met:

- The addition of project traffic to a roadway segment results in the degradation of the segment from acceptable operations (Mid-level LOS D or better) to unacceptable operations (Greater than Mid-level LOS D; LOS E or F).
- On a roadway segment that is projected to operate at unacceptable LOS prior to the addition of project traffic, the addition of project traffic to a roadway segment results in the exacerbation of unacceptable operations by increasing the average daily volume by more than 5 percent.

## Report Organization

The remainder of this report is divided into four chapters. Chapter 2 presents the CEQA impact analysis. Chapter 3 presents the local transportation analysis including the description of the existing roadway network, transit service, bicycle and pedestrian facilities as well as traffic conditions in the study area under existing, background, background plus project, cumulative, cumulative plus project, and recommended improvements. Chapter 4 provides an evaluation of other transportation-related issues, such as site access, on-site circulation, parking, potential project adverse effects on bicycle, pedestrian, and transit facilities, roadway segment analysis, and an evaluation of vehicle queuing.

# 2. Vehicle Miles Traveled

## Vehicle Miles Traveled (VMT)

Senate Bill (SB) 743 changed the way transportation impacts are identified under CEQA from vehicle level of service (LOS) to daily vehicle miles traveled (VMT). Since the City of Livermore has not yet adopted a policy or established any thresholds based on VMT, the potential impacts of this project were determined based upon the Governor's Office of Planning & Research (OPR)'s recommendations.

### Residential VMT

The Alameda County Transportation Commission (CTC) has developed maps and tables that display estimates of VMT per Capita and per Employee at the Traffic Analysis Zone (TAZ) level and planning area level in Alameda County. These TAZ estimates come from the Alameda Countywide Travel Demand Model that is consistent with Plan Bay Area 2040. For the proposed residential use, the VMT per capita for the TAZ in which the project site is located is compared to the following threshold:

- 15 percent below the Alameda County East Planning Area Year 2020 average of 30.5 VMT per capita, which calculates to a VMT per capita of 25.9.

The Alameda County East Planning Area encompasses the cities of Livermore, Dublin, and Pleasanton. Using the Alameda County VMT Mapping Resources, the VMT per capita for the project TAZ is 24.43, which is less than the threshold of 25.93 VMT per capita. Therefore, the proposed project would have a less than significant impact on VMT.

# 3. Local Transportation Analysis

This chapter describes the local transportation analysis including existing transportation facilities near the project site and the intersection operations under existing conditions. The chapter also describes the intersection operations analysis under background conditions and cumulative conditions with and without the project. Improvements are recommended for any adverse intersection traffic effects caused by the project.

## Existing Conditions

This section describes the existing conditions for all of the major transportation facilities near the site, including the roadway network, transit service, and bicycle and pedestrian facilities.

### Roadway Network

Regional access to the project site is provided via I-580.

**I-580** is an east-west freeway with four mixed-flow lanes and two express lanes in the eastbound direction, and four mixed-flow lanes and one express lane in the westbound direction within the project vicinity. I-580 provides regional access from Marin County and the east bay cities in Alameda County to San Joaquin County, where it merges with Interstate 5 (I-5). Access to the project study area is provided via its interchange with North Livermore Avenue.

Local access to the site is provided on South Livermore Avenue and Pacific Avenue. Other roadways in the study area include East Avenue, Fourth Street and Dolores Street. These roadways are described below.

**South Livermore Avenue** is primarily a two-lane, north-south arterial roadway that begins at Railroad Avenue and continues south past Concannon Boulevard, where it becomes Tesla Road. North of Railroad Avenue, it continues as North Livermore Avenue with four lanes and has a full interchange with I-580. North of I-580, it continues as a two-lane roadway up to Manning Road. South Livermore Avenue is located adjacent to the project site and provides direct access to the project site via an existing driveway that is located directly opposite Palm Avenue. The existing driveway on South Livermore Avenue would be converted to an EVA driveway with the redevelopment of the proposed project. Livermore Avenue south of I-580 has been designated as a major street and north of I-580 has been designated as an intercounty route per the City of Livermore General Plan. The speed limit on South Livermore Avenue, near the project site is 30 mph. On Street parking is generally permitted on both sides of the street along South Livermore Avenue except on the east side between Pacific Avenue and Palm Avenue.

**Pacific Avenue** is primarily a two-lane, east-west roadway that begins at South Livermore Avenue and continues east and ends in a cul-de-sac to the east of Fire Lane. Pacific Avenue is located adjacent to

the project site and would provide primary access to the proposed townhomes via a new driveway. There are no speed limit signs on Pacific Avenue. On-Street parking is generally permitted on both sides of the street except along the frontage of the project site.

**East Avenue** is primarily a four-lane, east-west arterial roadway that begins at South Livermore Avenue and continues east past Vasco Road to Greenville Road. East Avenue is designated as a major street between South Livermore Avenue and Vasco Road in the City of Livermore General Plan. The posted speed limit on East Avenue is 30 mph. Parking is generally permitted on both sides of East Avenue in the vicinity of the project.

**Fourth Street** is primarily a four-lane, east-west arterial roadway that begins at Holmes Street and continues east to Inman Road. Fourth Street is designated as a major street in the City of Livermore General Plan. The posted speed limit on Fourth Street is 30 mph. Parking is generally permitted on both sides of the street.

**Dolores Street** is primarily a two-lane, north-south roadway that begins at Pacific Avenue and extends north to East Avenue. A secondary access for the proposed project's residential townhouse neighborhood will be provided on Dolores Street. There are no speed limit signs on Dolores Street. On-Street parking is generally permitted on both sides of the street.

## Existing Pedestrian and Bicycle Facilities

Pedestrian facilities consist of sidewalks, crosswalks, and pedestrian signals at signalized intersections. In the project vicinity, sidewalks are provided on both sides of South Livermore Avenue, Pacific Avenue, Dolores Street, and East Avenue. Crosswalks with pedestrian signal heads and push buttons are provided at the signalized intersections of South Livermore Avenue/Fourth Street and South Livermore Avenue/East Avenue. In the immediate vicinity of the project, crosswalks are provided on all approaches at the unsignalized intersection of South Livermore Avenue & Palm Avenue.

According to the Alameda CTC Bicycle Plan and the City of Livermore Active Transportation Plan, there are several designated bikeways within the vicinity of the project site. Bicycle facilities in the City of Livermore can be categorized into different classifications: Class I multi-use trail, Class II bike lane, Class III bike route and Class IV separated bikeway. Class I multi-use trails have a separate right of way exclusive for bicycles and pedestrians. Class II bike lanes are dedicated pavement within a roadway with striping and signage separating bicyclists from motorists. Class III bike routes are signed roadways where the travel lane is wide enough for both bicycles and vehicles and have low traffic volume. Class IV separated bikeways are on-street bicycle lanes that are physically separated from motor vehicle traffic by a vertical element or barrier. Designated bicycle facilities are provided along segments of the following roadways in the study area:

- The existing Class I Arroyo Mocho Trail is a part of a network of multi-use trails in Livermore and links with the city of Pleasanton. The trail provides access to neighborhoods, schools, parks, the business district and municipal facilities. Some sections are immediately adjacent to high-traffic streets, while other segments follow a paved route along the arroyo, removed from traffic. In the vicinity of the project, the Arroyo Trail can be accessed from the east end of Pacific Avenue, approximately 1,800 feet from the project site.
- South Livermore Avenue has Class II bicycle lanes in both directions south of Fifth Street.
- East Avenue is designated as a Class III bike route between South Livermore Avenue and the Livermore Community Center and has Class II bicycle lanes in both directions between the Livermore Community Center and Greenville Road.

The existing bicycle facilities within the study area are shown on Figure 3.

## Existing Transit Service

Existing transit service to the study area is provided by the Livermore-Amador Valley Transit Authority (LAVTA). Bus stops within the vicinity of the project site are located along Pacific Avenue, Dolores Street, and East Avenue. LAVTA bus lines with stops within the study area include Route 14 (Local) and Route 30R (Rapid).

Local Route 14 provides service between E. Dublin/Pleasanton BART Station and Livermore Transit Center with 30- to 45-minute headways during peak hours. The bus stops closest to the project site are located along the project frontage on Pacific Avenue and Dolores Street.

The Rapid Route 30R provides service between West Dublin/Pleasanton BART and Sandia Laboratory between 5:07 AM and 10:51 PM with headways of 15-minutes during the peak hours. The bus stops closest to the project site are located on East Avenue near Dolores Street.

The LAVTA bus services and the closest bus stops in the vicinity of the project site are shown on Figure 4.

## Existing Intersection Lane Configurations and Traffic Volumes

The existing lane configurations at the study intersections were obtained from previous studies and satellite imagery and are shown on Figure 5.

Existing weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak hour traffic volumes were obtained from new intersection turning movement counts in January and May 2023 (see Figure 6). Traffic count data for intersections are included in Appendix A.

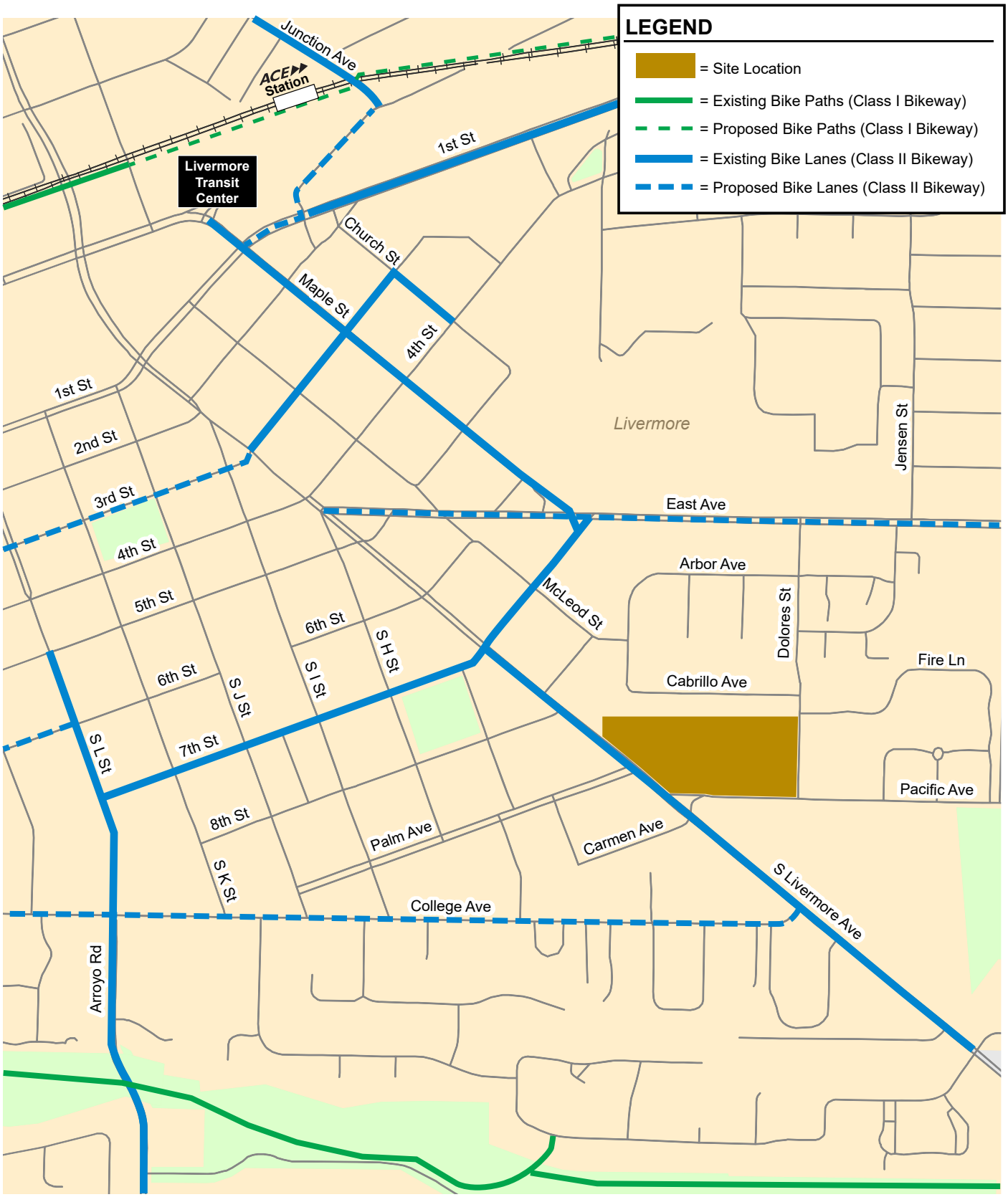



**Figure 3**
**Existing Bicycle Facilities**

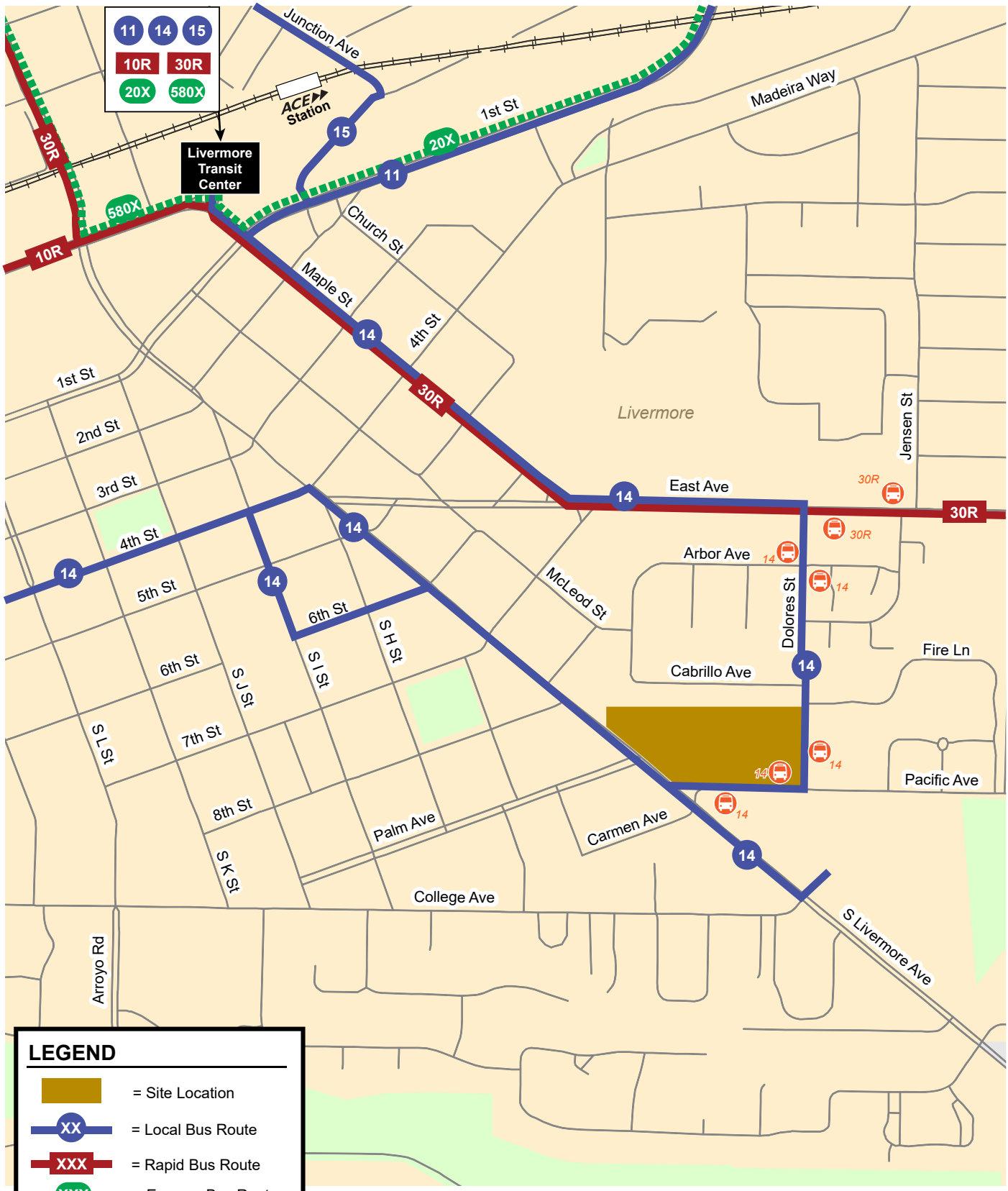



**Figure 4**
**Existing Transit Services**



NORTH
Not to Scale

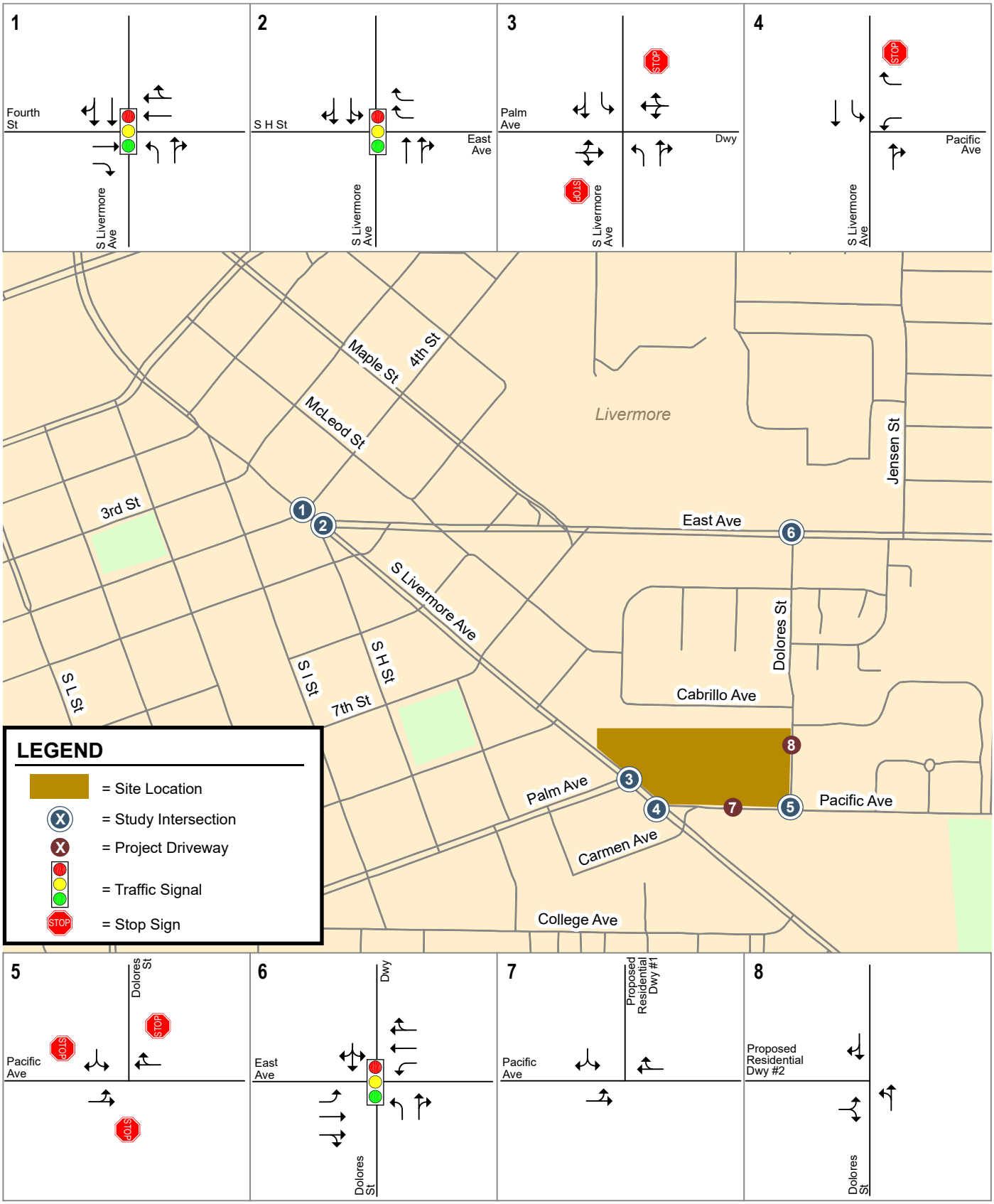



**Figure 5**
**Existing Lane Configurations**

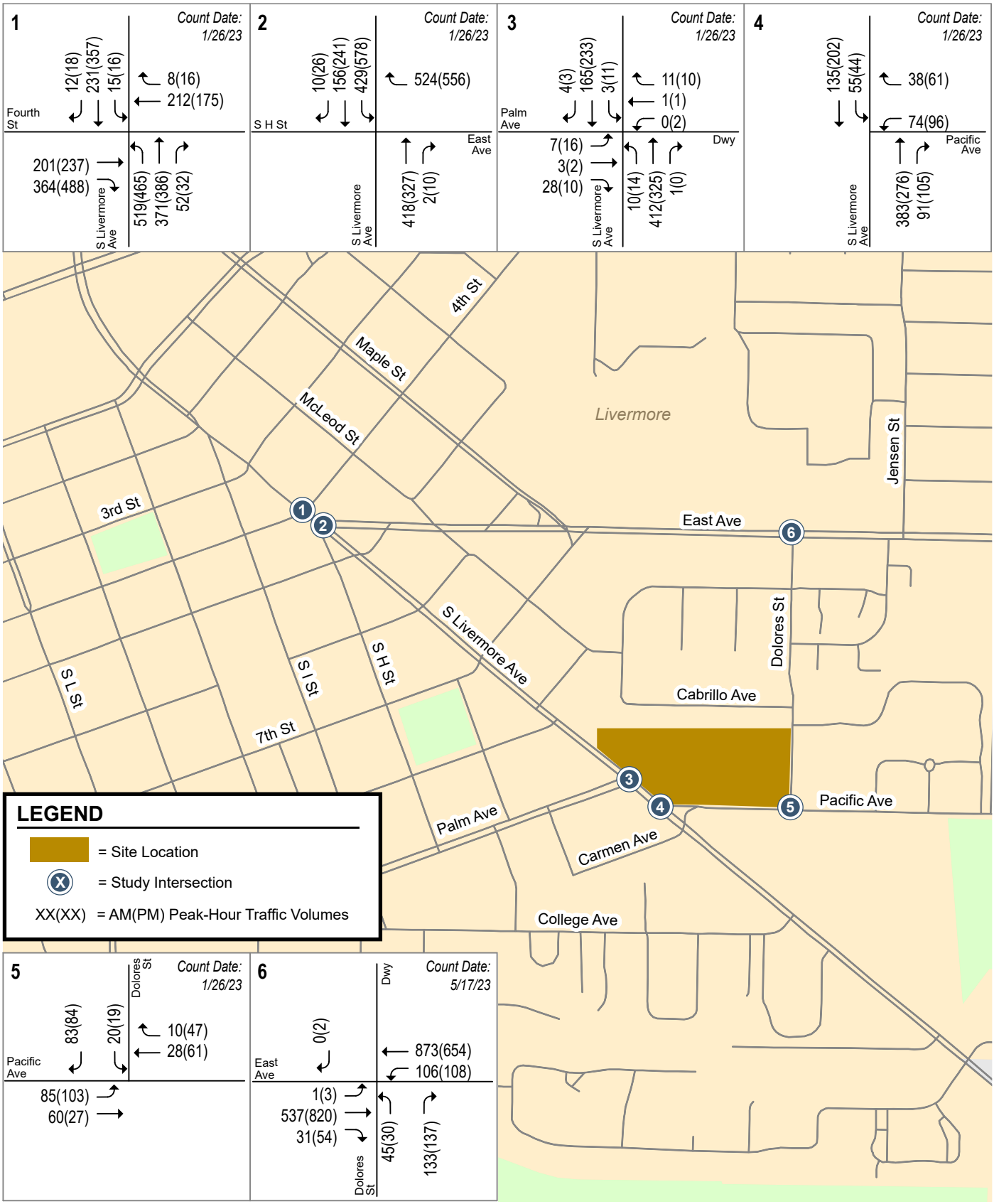



**Figure 6**
**Existing Traffic Volumes**

### Existing Conditions Intersection Levels of Service

The results of the level of service analysis under existing conditions are summarized in Table 4. The results show that all six study intersections currently operate at an acceptable level of service during the AM and PM peak hours. The level of service calculation sheets are included in Appendix B.

**Table 4**
**Existing Intersection Levels of Service**

| | | | | | Existing | |
|---|---|---|---|---|---|---|
| ID | Intersection | Control [1] | Peak Hour | Count Date | Avg. Delay[2] | LOS |
| 1 | S. Livermore Ave and Fourth St | Signal | AM | 01/26/23 | 24.3 | C |
| | | | PM | 01/26/23 | 31.5 | C |
| 2 | S. Livermore Ave and East Ave | Signal | AM | 01/26/23 | 23.9 | C |
| | | | PM | 01/26/23 | 25.1 | C |
| 3 | S. Livermore Ave and Palm Ave | TWSC | AM | 01/26/23 | 11.3 | B |
| | | | PM | 01/26/23 | 13.8 | B |
| 4 | S. Livermore Ave and Pacific Ave | OWSC | AM | 01/26/23 | 15.5 | C |
| | | | PM | 01/26/23 | 14.8 | B |
| 5 | Dolores St and Pacific Ave | AWSC | AM | 01/26/23 | 8.3 | A |
| | | | PM | 01/26/23 | 8.4 | A |
| 6 | Dolores St and East Ave | Signal | AM | 05/17/23 | 21.0 | B |
| | | | PM | 05/17/23 | 13.2 | B |

Notes:
1. Control Type Definitions: OWSC = One-Way Stop Control, TWSC = Two-Way Stop Control, AWSC = All-Way Stop Control.
2. Delay/LOS based on HCM 7th methodology. Intersections (1 and 2) that were not supported by HCM 7th methodology, HCM 2000 was used. Intersection level of service for OWSC and TWSC intersections is represented by the delay for the worst approach. Intersection level of service for all other control types is represented by average delay for all movements.

## Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: 1) trip generation, 2) trip distribution, and 3) trip assignment. In determining project trip generation, the magnitude of traffic entering and exiting the project site is estimated for the AM and PM peak hours. As part of the project trip distribution, an estimate is made of the directions to and from which the project trips would travel. In the project trip assignment, the project trips are assigned to specific streets and intersections. These procedures are described below.

### Trip Generation

Daily and peak hour trip generation estimates for the proposed project were based on trip rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition* (2021) for "Single-Family Attached Housing" (Land Use 215) located in a general Urban/Suburban area. Based on the ITE rates, the proposed project would generate 828 gross daily trips including 55 gross AM peak-hour trips and 66 gross PM peak-hour trips (see Table 5).

The project is eligible to receive credit for trips generated by the existing buildings on the site. The traffic generated by the existing shopping center was estimated based on AM and PM peak hour driveway counts conducted on Thursday, January 26, 2023. Based on the October 2022 rent roll provided by the applicant, the existing shopping plaza was more than 60% vacant. The daily trips for the shopping center were estimated by assuming five times the sum of AM and PM peak hour trips.

The number of trips generated by the existing shopping center was deducted from the number of trips that would be generated by the proposed project, which results in a net increase of 138 daily trips including 11 net trips during the AM peak hour and 28 fewer trips during the PM peak hour. The existing trip credits reflect more than 60% of the shopping center being vacant. Thus, compared to the trips that could be generated by the shopping center at full occupancy, the proposed residential development would generate fewer daily, AM and PM peak hour trips.

**Table 5**
**Project Trip Generation Estimates**

| | | Daily | | AM Peak Hour | | | | PM Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Land Use** | **Size** | **Rate** | **Trips** | **Rate** | **In** | **Out** | **Total** | **Rate** | **In** | **Out** | **Total** |
| **Proposed Uses** | | | | | | | | | | | |
| Residential[1] | 115 du | 7.20 | 828 | 0.48 | 17 | 38 | 55 | 0.57 | 38 | 28 | 66 |
| **Gross Project Trips** | | | **828** | | **17** | **38** | **55** | | **38** | **28** | **66** |
| **Existing Uses** | | | | | | | | | | | |
| Shopping Center[2] | 66.6 ksf | | *-690* | | *-25* | *-19* | *-44* | | *-51* | *-43* | *-94* |
| **Total Net New Trips** | | | **138** | | **(8)** | **19** | **11** | | **(13)** | **(15)** | **(28)** |

Notes:

Trip rates are from the ITE Trip Generation Manual, 11th Edition, 2021.

[1] Single-Family Attached Housing (Land Use 215) average rates in a general urban/suburban setting expressed in trips per dwelling unit (du) are used.

[2] Based on AM and PM peak hour driveway counts conducted on Thursday, January 26, 2023. Daily volume is calculated assuming 5 x (AM peak hour plus PM peak hour volumes).

## Trip Distribution and Assignment

The trip distribution patterns were estimated in discussion with City staff based on existing travel patterns on the surrounding roadway system and locations of complimentary land uses. The project trip distribution patterns are shown on Figure 7.

The estimated project generated traffic was added to the surrounding road network based on the distribution percentages shown on Figure 7. The project trip assignment is shown on Figure 8. The existing trip credit is shown on Figure 9.

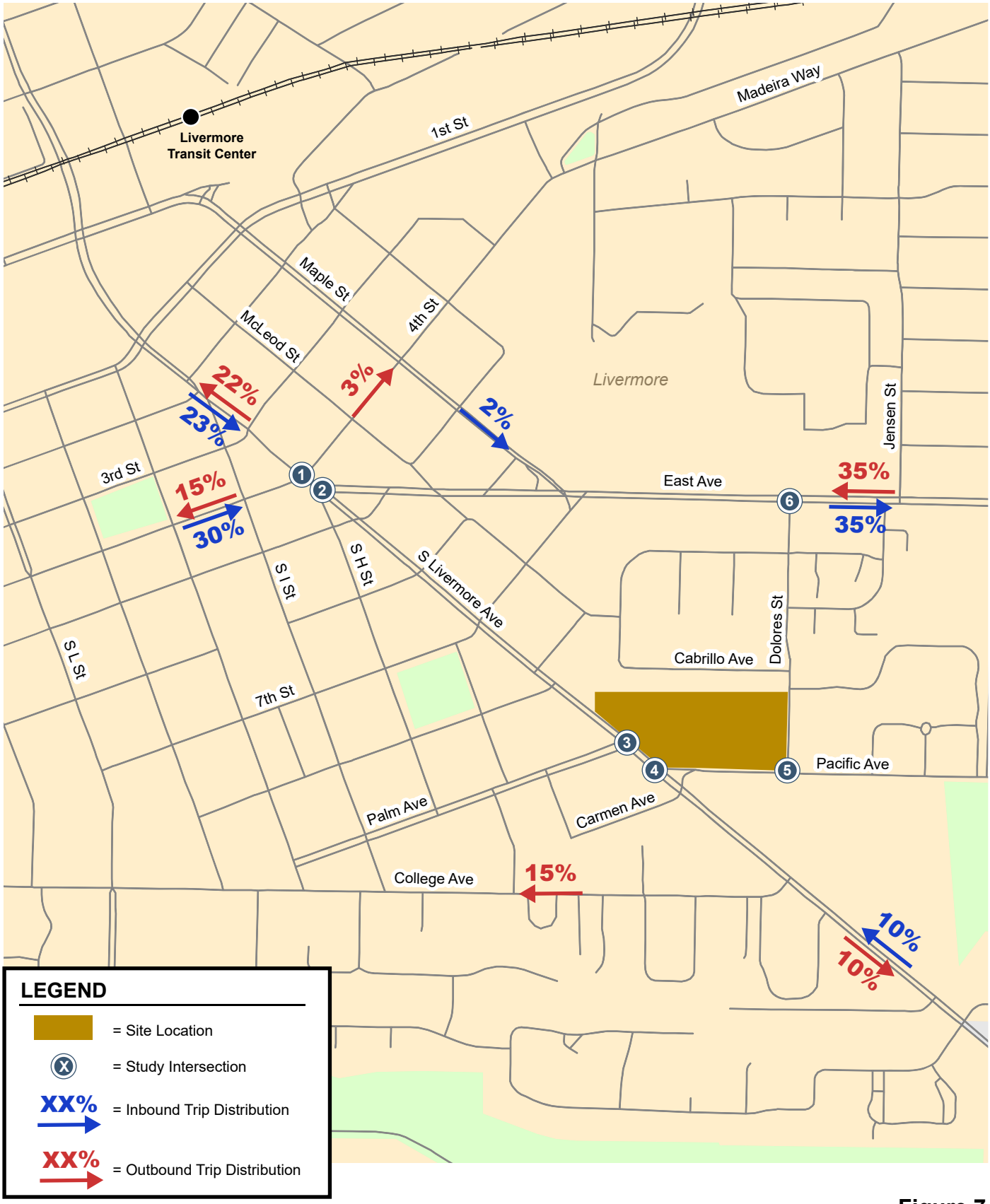



**Figure 7**
**Project Trip Distribution**

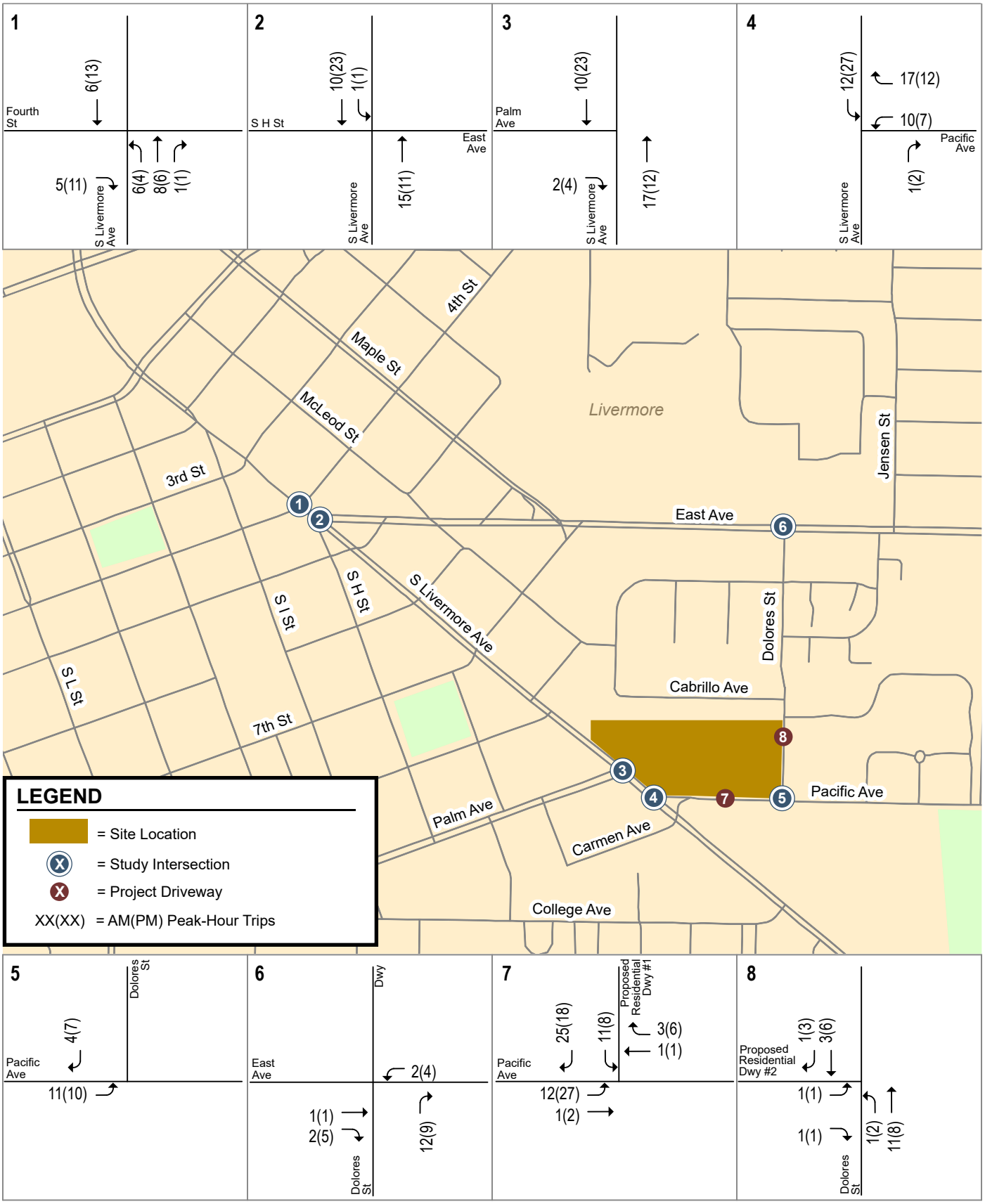



**Figure 8**
**Gross Project Trip Assignment**



NORTH
Not to Scale

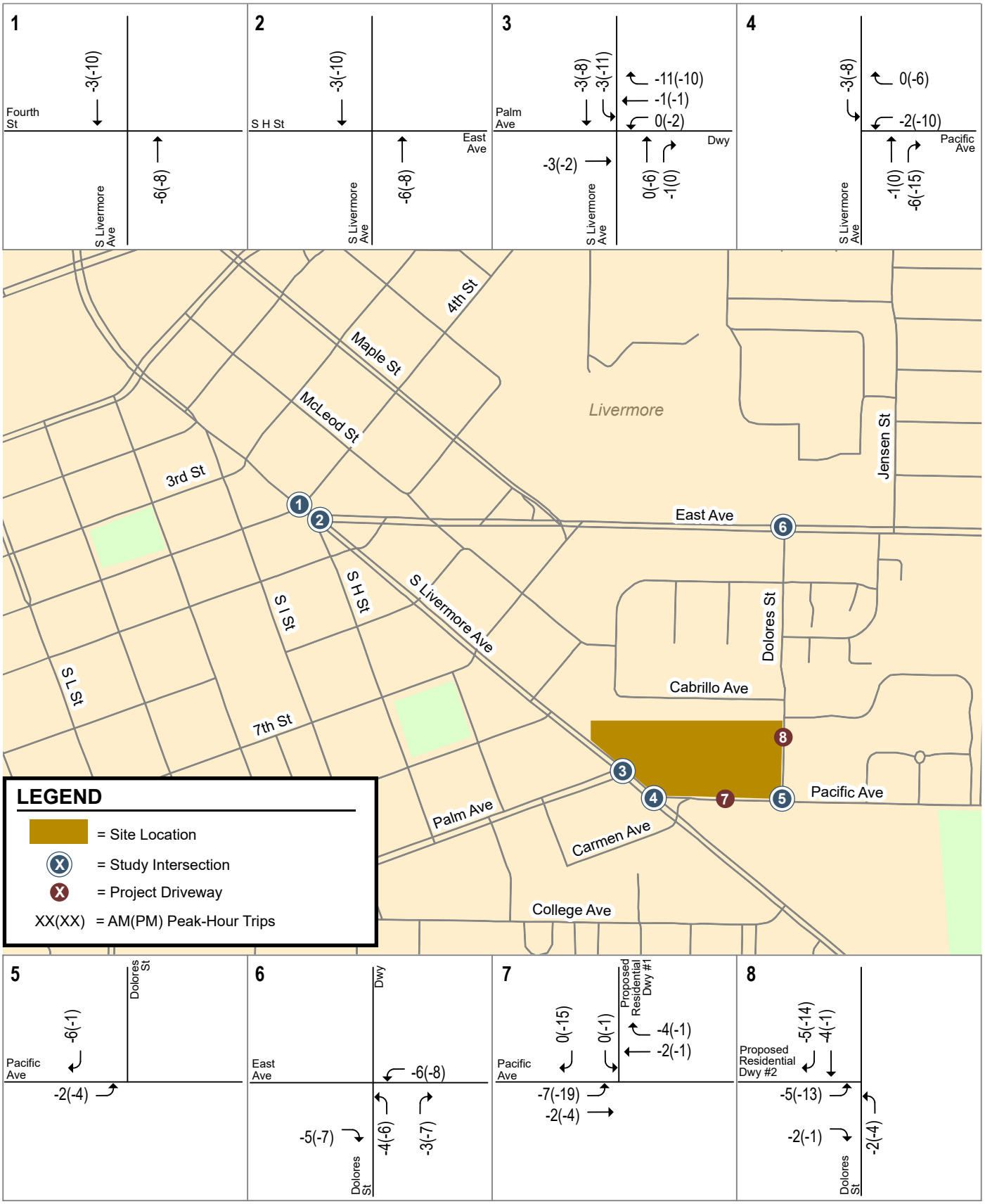



**Figure 9**
**Existing Trip Credit**

## Roadway Network

The roadway network under background, cumulative, and project conditions would be the same as existing conditions because there are no planned and funded transportation improvements at the study intersections that would alter the existing intersection lane configurations, and the project would not alter the existing intersection lane configurations.

## Traffic Volumes

### Background Traffic Volumes

Background conditions are defined as conditions just prior to completion of the proposed development. Based on coordination with Livermore City staff, there are no approved projects in the study area. Therefore, annual growth rates of 1.6% for the AM peak hour and 1.38% for the PM peak hour were derived based on volume growth for roadways around the project site in the Alameda County Travel Demand Model. The growth rates were applied to the existing 2023 AM and PM peak hour volumes for a period of three years to estimate the background volumes. The annual growth factors account for general growth in the area. The background volumes are shown on Figure 10.

### Background Plus Project Traffic Volumes

Project trips, as represented in the above project trip assignment, were added to background traffic volumes to obtain background plus project traffic volumes (see Figure 11).

### Cumulative 2045 Traffic Volumes

Similar to the background traffic volumes, the cumulative no project traffic volumes were estimated by applying a 1.6 and 1.38 percent growth factor per year for 22 years to existing traffic volumes during the AM and PM peak hours, respectively. The cumulative traffic volumes are shown on Figure 12.

### Cumulative 2045 Plus Project Traffic Volumes

Project trips, as represented in the above project trip assignment, were added to cumulative traffic volumes to obtain cumulative plus project traffic volumes (see Figure 13).

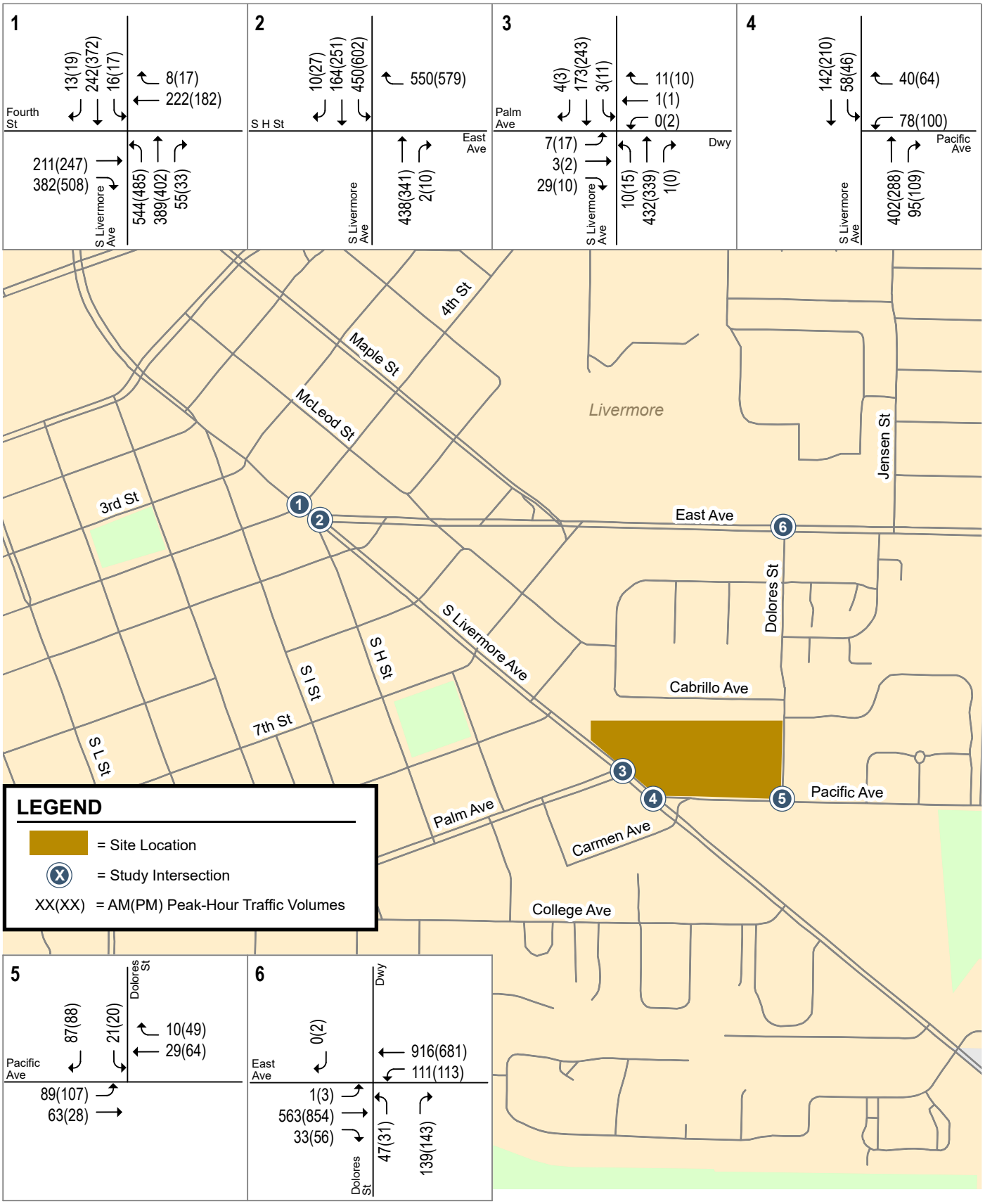
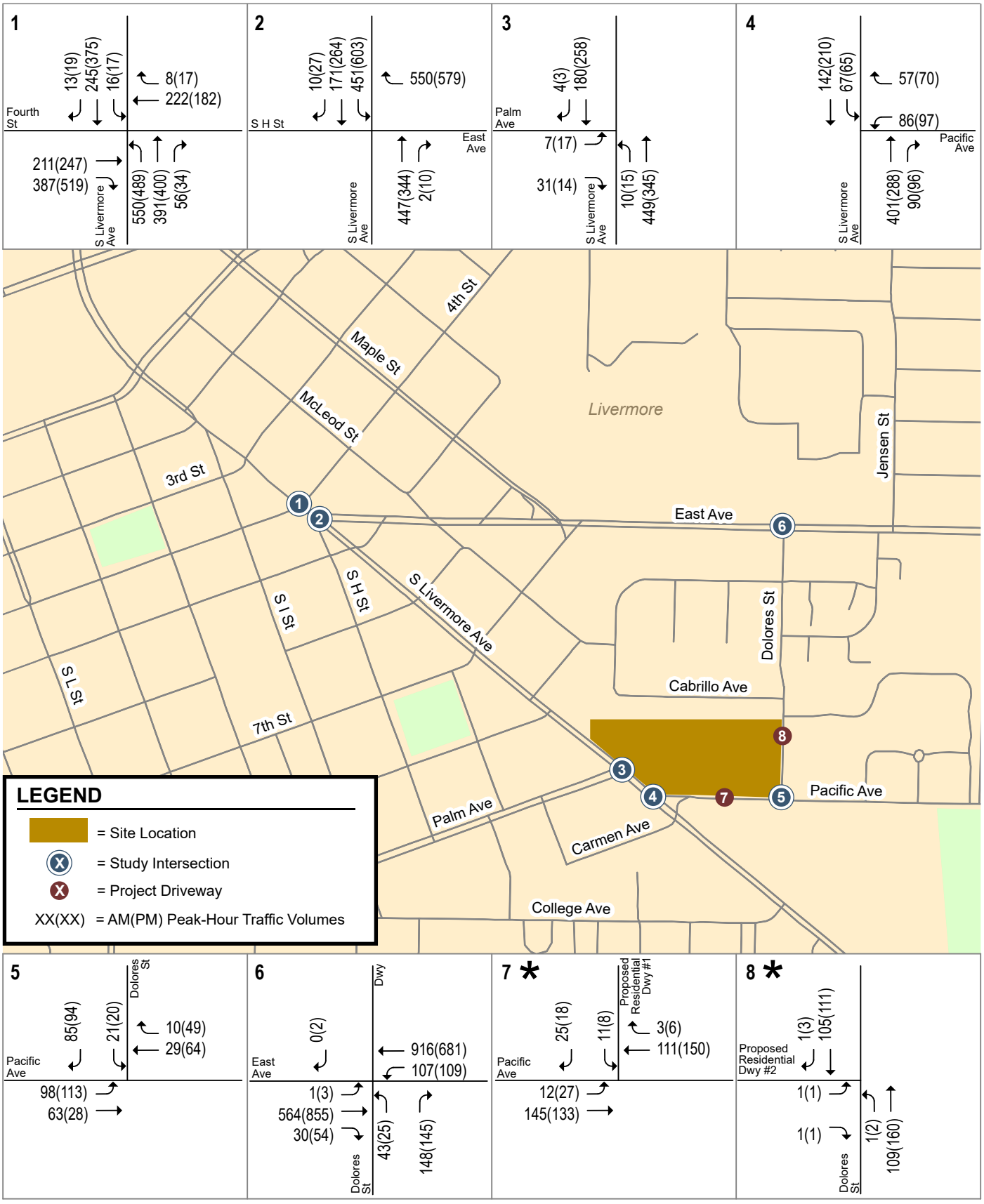



**Figure 10**
**Background Traffic Volumes**




* = Gross Project Trips are shown at project driveways.

**Figure 11**
**Background Plus Project Traffic Volumes**

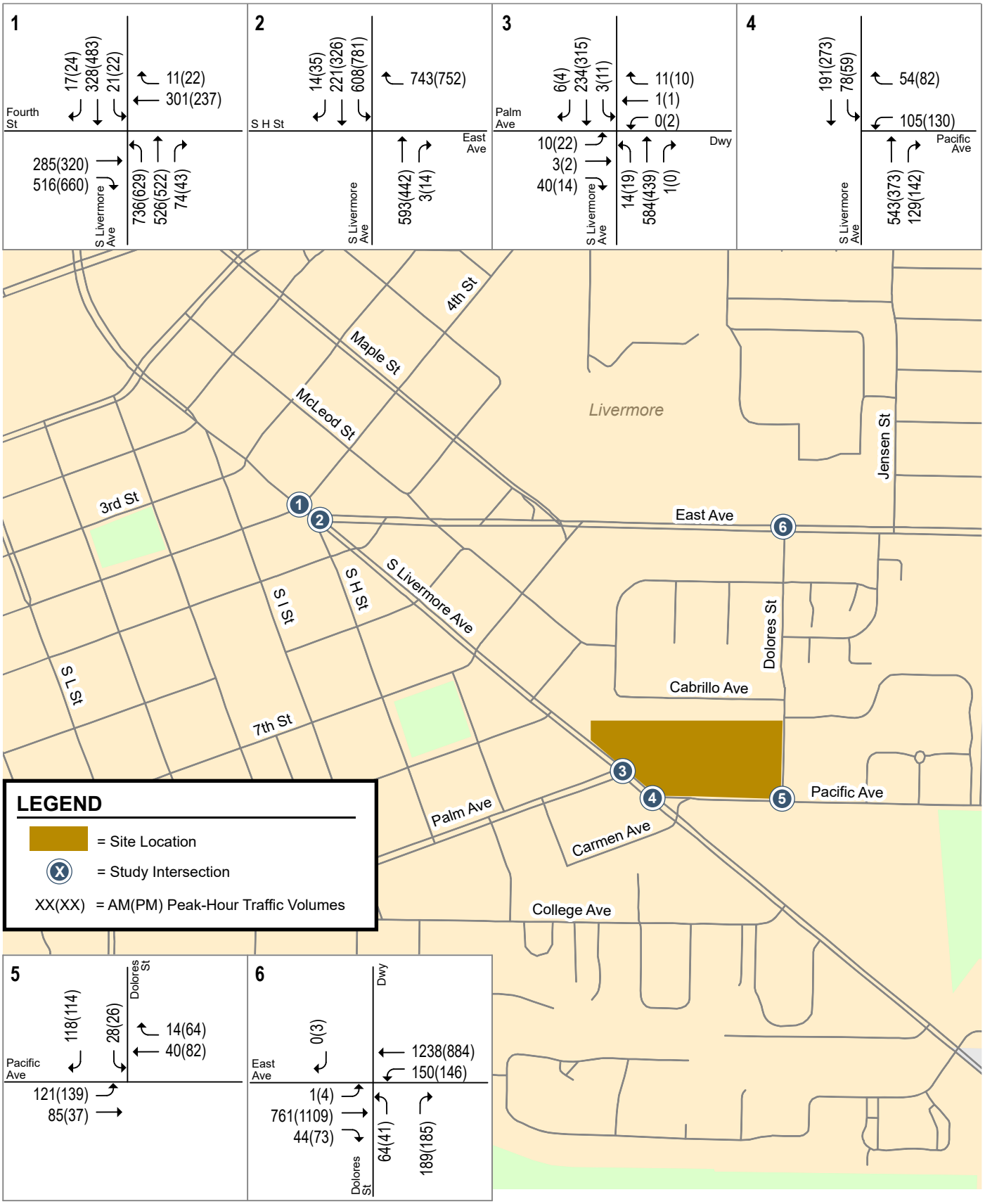
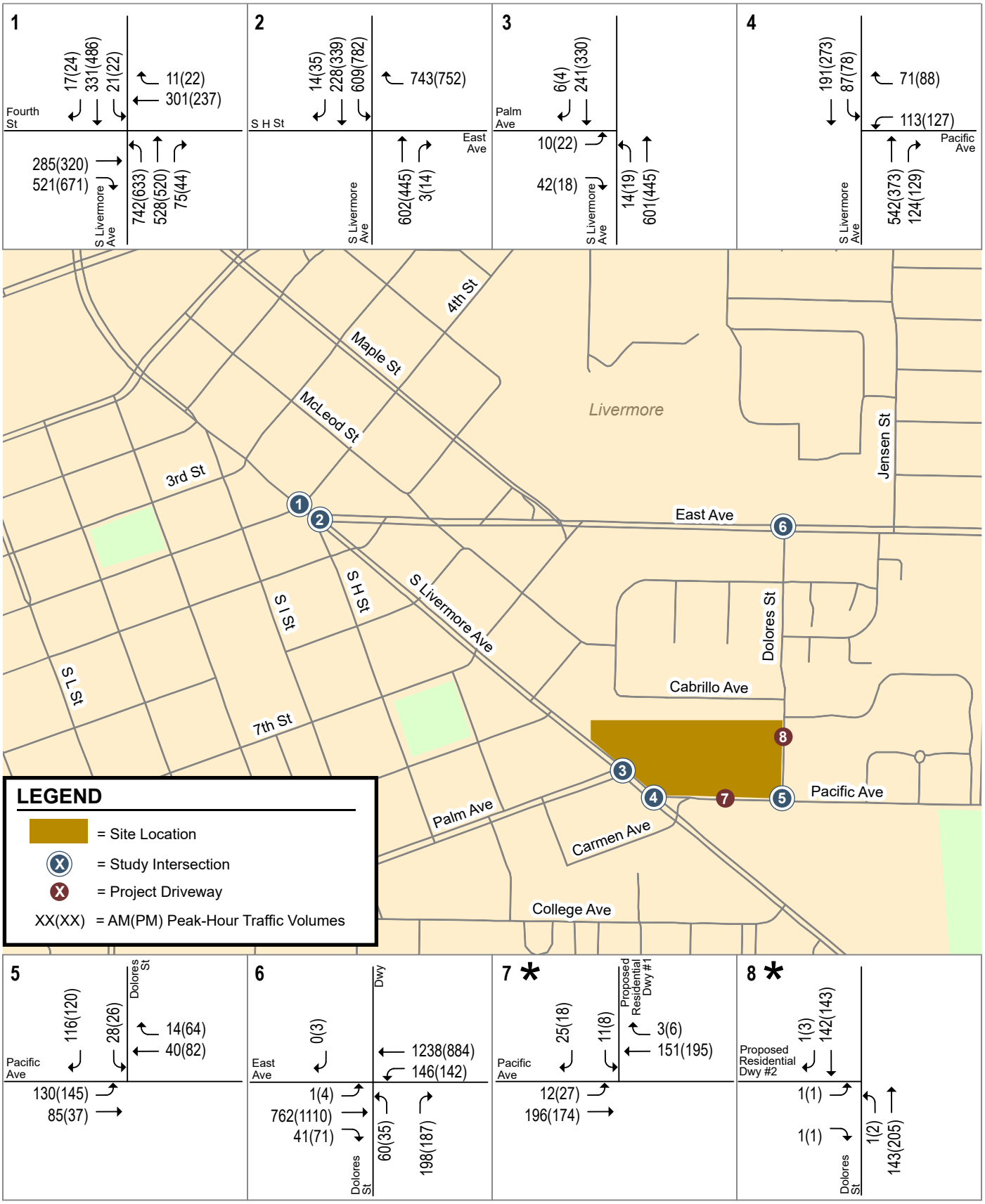



**Figure 12**
**Cumulative 2045 Traffic Volumes**




* = Gross Project Trips are shown at project driveways.

**Figure 13**
**Cumulative 2045 Plus Project Traffic Volumes**

## Intersection Levels of Service

The results of the intersection level of service analysis (see Tables 6 and 7) show that all study intersections, would operate at acceptable levels during both the AM and PM peak hours of traffic under background and cumulative conditions, with and without the project. The level of service calculation sheets are included in Appendix B.

There is one signalized intersection (#6) for which the average delay under project conditions is shown to be less than under no project conditions during at least one peak hour. This is because the intersection delay is a weighted average of all intersection movements and the addition of project traffic to movements with delays lower than the average intersection delay can reduce the average delay for the entire intersection. Also, the project would generate fewer trips during the PM peak hour, compared to the existing shopping center at its current occupancy. The intersection of S. Livermore Avenue/Palm Avenue would operate as a three-legged intersection, as the existing driveway opposite Palm Avenue would be removed with the redevelopment of the project site.

**Table 6**
**Background Intersection Levels of Service**

| | | | | | Background | | Background Plus Project | | |
|---|---|---|---|---|---|---|---|---|---|
| ID | Intersection | Control [1] | Peak Hour | Count Date | Avg. Delay[2] | LOS | Avg. Delay[2] | LOS | Incr. in delay |
| 1 | S. Livermore Ave and Fourth St | Signal | AM | 01/26/23 | 24.9 | C | 24.9 | C | 0.000 |
| | | | PM | 01/26/23 | 31.9 | C | 31.9 | C | 0.000 |
| 2 | S. Livermore Ave and East Ave | Signal | AM | 01/26/23 | 24.7 | C | 24.7 | C | 0.000 |
| | | | PM | 01/26/23 | 26.0 | C | 26.0 | C | 0.000 |
| 3 | S. Livermore Ave and Palm Ave | TWSC | AM | 01/26/23 | 11.2 | B | 10.8 | B | -0.430 |
| | | | PM | 01/26/23 | 14.3 | B | 13.5 | B | -0.830 |
| 4 | S. Livermore Ave and Pacific Ave | OWSC | AM | 01/26/23 | 16.3 | C | 16.7 | C | 0.310 |
| | | | PM | 01/26/23 | 15.4 | C | 15.8 | C | 0.420 |
| 5 | Dolores St and Pacific Ave | AWSC | AM | 01/26/23 | 8.4 | A | 8.5 | A | 0.100 |
| | | | PM | 01/26/23 | 8.5 | A | 8.5 | A | 0.000 |
| 6 | Dolores St and East Ave | Signal | AM | 05/17/23 | 22.6 | B | 21.3 | B | -1.300 |
| | | | PM | 05/17/23 | 13.7 | B | 13.6 | B | -0.100 |
| 7 | Project Dwy and Pacific Ave | OWSC | AM | 01/26/23 | -- | -- | 9.5 | A | -- |
| | | | PM | 01/26/23 | -- | -- | 9.8 | A | -- |
| 8 | Dolores St and Project Dwy | OWSC | AM | 01/26/23 | -- | -- | 9.3 | A | -- |
| | | | PM | 01/26/23 | -- | -- | 9.6 | A | -- |

Notes:

1. Control Type Definitions: OWSC = One-Way Stop Control, TWSC = Two-Way Stop Control, AWSC = All-Way Stop Control.

2. Delay/LOS based on HCM 7th methodology. Intersections (1 and 2) that were not supported by HCM 7th methodology, HCM 2000 was used. Intersection level of service for OWSC and TWSC intersections is represented by the delay for the worst approach. Intersection level of service for all other control types is represented by average delay for all movements.

**Table 7**
**Cumulative 2045 Intersection Levels of Service**

| ID | Intersection | Control [1] | Peak Hour | Count Date | Cumulative Avg. Delay[2] | Cumulative LOS | Cumulative Plus Project Avg. Delay[2] | Cumulative Plus Project LOS | Incr. in delay |
|---|---|---|---|---|---|---|---|---|---|
| 1 | S. Livermore Ave and Fourth St | Signal | AM | 01/26/23 | 32.4 | C | 32.5 | C | 0.100 |
| | | | PM | 01/26/23 | 42.0 | D | 42.7 | D | 0.700 |
| 2 | S. Livermore Ave and East Ave | Signal | AM | 01/26/23 | 36.0 | D | 36.3 | D | 0.300 |
| | | | PM | 01/26/23 | 35.6 | D | 35.6 | D | 0.000 |
| 3 | S. Livermore Ave and Palm Ave | TWSC | AM | 01/26/23 | 13.3 | B | 12.5 | B | -0.840 |
| | | | PM | 01/26/23 | 17.8 | C | 16.6 | C | -1.150 |
| 4 | S. Livermore Ave and Pacific Ave | OWSC | AM | 01/26/23 | 27.8 | D | 29.6 | D | 1.800 |
| | | | PM | 01/26/23 | 23.2 | D | 24.5 | D | 1.300 |
| 5 | Dolores St and Pacific Ave | AWSC | AM | 01/26/23 | 9.1 | A | 9.3 | A | 0.200 |
| | | | PM | 01/26/23 | 9.1 | A | 9.2 | A | 0.100 |
| 6 | Dolores St and East Ave | Signal | AM | 05/17/23 | 25.3 | B | 24.6 | B | -0.700 |
| | | | PM | 05/17/23 | 19.8 | B | 19.4 | B | -0.400 |
| 7 | Project Dwy and Pacific Ave | OWSC | AM | 01/26/23 | -- | -- | 9.9 | B | -- |
| | | | PM | 01/26/23 | -- | -- | 10.3 | B | -- |
| 8 | Dolores St and Project Dwy | OWSC | AM | 01/26/23 | -- | -- | 9.7 | A | -- |
| | | | PM | 01/26/23 | -- | -- | 10.0 | B | -- |

Notes:

1. Control Type Definitions: OWSC = One-Way Stop Control, TWSC = Two-Way Stop Control, AWSC = All-Way Stop Control.

2. Delay/LOS based on HCM 7th methodology. Intersections (1 and 2) that were not supported by HCM 7th methodology, HCM 2000 was used. Intersection level of service for OWSC and TWSC intersections is represented by the delay for the worst approach. Intersection level of service for all other control types is represented by average delay for all movements.

## Roadway Segment Analysis

An analysis of the potential daily traffic increase due to the proposed project was performed to identify the effect of the addition of project traffic on the volume-to-capacity ratio of select street segments. The City of Livermore *General Plan* identifies Livermore Avenue as a Major Street, which typically carries 20,000 to 50,000 vehicles per day. However, S. Livermore Avenue has approximately 6,000 vehicles per day, which classifies as a Collector. Pacific Avenue is considered a Local Street, which typically carries up to 5,000 vehicles per day. The analysis focused on the daily traffic volumes of the following two key segments along Pacific Avenue and S. Livermore Avenue:

- Pacific Avenue, between S. Livermore Avenue and Dolores Street
- S. Livermore Avenue, between Palm Avenue and 8th Street

Roadway segment levels of service were calculated by comparing the daily roadway volumes to the LOS thresholds used for other projects in Livermore and other communities within Alameda County. For major streets a per-lane capacity of 800 vehicles per hour and 10,000 vehicles per day was used. And for local streets, 400 vehicles per hour and 10,000 vehicles per day was used. The City of Livermore does not have a level of service policy for daily roadway segment operations.

Existing daily traffic counts on these roadway segments were collected over a one-day time period in January 2023 (see Appendix A). Background and cumulative daily traffic volumes without the proposed project were estimated using an annual growth rate of 1.5% based on volume growth for roadways around the project site in the County's travel demand forecast model (see Table 8). The analysis shows that both roadway segments would continue to operate at LOS A under project and cumulative plus project conditions.

## Evaluation of Vehicle Queuing

Vehicle queuing was evaluated using Synchro software for selected locations where the project would add 10 or more left-turning vehicles. The basis of the analysis is as follows: (1) Synchro is used to estimate the 95th percentile maximum number of queued vehicles for a particular movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 25 feet per vehicle; and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the movement to determine if adequate storage is available to accommodate the 95th percentile queues. This analysis thus provides a basis for determining whether the addition of project trips would exacerbate peak hour queues and delays, as well as estimating future storage requirements at intersections.

Based on the selection criteria of 10 or more project trips per left-turn lane, the following lanes were analyzed during the AM and PM peak hours:

- S. Livermore Avenue and Pacific Avenue – southbound S. Livermore Avenue left-turn onto eastbound Pacific Avenue
- S. Livermore Avenue and Pacific Avenue – westbound Pacific Avenue left-turn onto southbound S. Livermore Avenue

The results of the queuing analysis show that the project would not cause extensive queuing issues. The vehicle queuing estimates are provided in Table 9.

**Table 8**
**Roadway Segment Analysis**

| Roadway Segment | Existing | | | | | Background | | | Background Plus Project | | | Cumulative | | | Cumulative Plus Project | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ADT | # of Lanes | Daily Capacity | V/C Ratio | LOS | ADT | V/C Ratio | LOS | ADT | V/C Ratio | LOS | ADT | V/C Ratio | LOS | ADT | V/C Ratio | LOS |
| Pacific Ave between S. Livermore Ave and Dolores St | 3,157 | 2 | 10,000 | 0.3157 | A | 3,301 | 0.1651 | A | 3,381 | 0.1691 | A | 4,381 | 0.21903 | A | 4,461 | 0.2230 | A |
| S. Livermore Ave between Palm Ave and 8th St | 6,424 | 2 | 20,000 | 0.3212 | A | 6,717 | 0.3359 | A | 6,777 | 0.3389 | A | 8,914 | 0.4457 | A | 8,974 | 0.4487 | A |

**Table 9**
**Queuing Analysis Summary**

| Analysis Scenario | S. Livermore Ave & Pacific Ave | | | |
|---|---|---|---|---|
| | SBL | | WBL[1] | |
| | AM | PM | AM | PM |
| **Existing** | | | | |
| Volume (vphpl) | 55 | 44 | 74 | 96 |
| 95th %. Queue (ft/ln) | 5 | 3 | 21 | 26 |
| 95th %. Queue[2] (veh/ln) | 1 | 1 | 1 | 1 |
| Storage (ft/ln) | 100 | 100 | 175 | 175 |
| Adequate (Y/N) | Y | Y | Y | Y |
| **Background** | | | | |
| Volume (vphpl) | 58 | 46 | 78 | 100 |
| 95th %. Queue (ft/ln) | 5 | 4 | 24 | 29 |
| 95th %. Queue[2] (veh/ln) | 1 | 1 | 1 | 1 |
| Storage (ft./ ln.) | 100 | 100 | 175 | 175 |
| Adequate (Y/N) | Y | Y | Y | Y |
| **Background Plus Project** | | | | |
| Volume (vphpl) | 65 | 69 | 87 | 96 |
| 95th %. Queue (ft/ln) | 6 | 6 | 29 | 30 |
| 95th %. Queue[2] (veh/ln) | 1 | 1 | 1 | 1 |
| Storage (ft/ln) | 100 | 100 | 150 | 150 |
| Adequate (Y/N) | Y | Y | Y | Y |
| **Cumulative** | | | | |
| Volume (vphpl) | 78 | 59 | 105 | 130 |
| 95th %. Queue (ft/ln) | 8 | 5 | 62 | 65 |
| 95th %. Queue[2] (veh/ln) | 1 | 1 | 3 | 3 |
| Storage (ft/ln) | 100 | 100 | 175 | 175 |
| Adequate (Y/N) | Y | Y | Y | Y |
| **Cumulative Plus Project** | | | | |
| Volume (vphpl) | 85 | 82 | 114 | 126 |
| 95th %. Queue (ft/ln) | 9 | 8 | 78 | 72 |
| 95th %. Queue[2] (veh/ln) | 1 | 1 | 4 | 3 |
| Storage (ft/ln) | 100 | 100 | 150 | 150 |
| Adequate (Y/N) | Y | Y | Y | Y |

Notes:
SBL = southbound left-turn
[1] The existing, background, and cumulative storage lengths are measured from the intersection to the first existing driveway. Under project conditions, the storage lengths are measured from the intersection to the proposed driveway.
[2] Assumes 25 feet per vehicle queued.

# 4. Other Transportation Issues

This chapter presents other transportation issues associated with the proposed project. These include an analysis of:

- Site access and on-site circulation
- Parking
- Potential adverse effects to transit, bicycle, and pedestrian facilities

Unlike the level of service and VMT impact methodology, which is adopted by the City Council, the analyses in this chapter are based on professional judgment in accordance with the standards and methods employed by the traffic engineering community.

## Site Access and On-Site Circulation

The site access and on-site circulation evaluation is based on the July 21, 2023 site plan prepared by Swenson (see Figure 2). Site access was evaluated to determine the adequacy of the site's driveways with regard to the following: traffic volume, delays, sight distance, vehicle queues, geometric design, and safety. On-site vehicular circulation was reviewed in accordance with generally accepted traffic engineering standards and transportation planning principles.

### Vehicle Site Access

Vehicular access to the site would be provided via one full-access driveway on Pacific Avenue and one full-access driveway on Dolores Street. Parking would be provided within individual garages and surface level guest parking spaces. As shown on the site plan, the driveway on Pacific Avenue would be a total of 62 feet in width, including an 8-foot median between a 27-foot inbound lane and a 27-foot outbound lane. The driveway on Dolores Street would be approximately 26 feet in width. The driveway widths would meet the City's minimum requirement of 24 feet for a two-way driveway and will be able to accommodate vehicle turns to and from the site.

#### Project Driveway Operations

The project is estimated to generate 17 gross inbound trips and 38 gross outbound trips during the AM peak hour and 38 gross inbound trips and 28 gross outbound trips during the PM peak hour between the two driveways on Pacific Avenue and Dolores Street. Thus, one vehicle would enter either driveway approximately every 4 minutes and one vehicle would exit either driveway approximately every 90 seconds during the AM peak hour. During the PM peak hour, one vehicle would enter either driveway approximately every 90 seconds and one vehicle would exit either driveway approximately every two minutes.

Because of the low/moderate project trips at the driveways and low/moderate volumes on Dolores Street and Pacific Avenue, vehicles would easily be able to enter and exit the project driveways. Vehicles turning left into the project site on Dolores Street or Pacific Avenue could block the travel lane momentarily due to vehicles slowing down to turn into the driveway or yielding to oncoming traffic. This would not have a noticeable effect on traffic operations.

**Sight Distance**

The project driveways should be free and clear of any obstructions to optimize sight distance, thereby ensuring that exiting vehicles can see pedestrians on the sidewalk and other vehicles traveling on Pacific Avenue and Dolores Street. Based on City of Livermore Standard Detail L-17A, trees should be placed a minimum of 40 feet from the face-of-curb. Other landscaping and signage should not conflict with a driver's ability to locate a gap in traffic and see oncoming pedestrians and bicyclists. Adequate sight distance (sight distance triangles) should be provided at the driveways in accordance with Caltrans standards. Sight distance triangles should be measured approximately 10 feet back from the traveled way.

According to the Caltrans *Highway Design Manual*, the minimum stopping sight distance is the distance required by the user, traveling at a given speed, to bring the vehicle to a stop after an object 0.5-foot high on the road becomes visible. Stopping sight distance for motorists is measured from the driver's eyes, which are assumed to be 3.5 feet above the pavement surface, to an object 0.5 foot high on the road. The required stopping sight distances are based on the Caltrans *Highway Design Manual*, Table 201.1. The project driveways are located on Pacific Avenue and Dolores Street, which have an implied speed limit of 25 mph. Thus, the Caltrans stopping sight distance requirement is 150 feet on Pacific Avenue and Dolores Street.

The project driveway on Pacific Avenue would replace an existing driveway approximately 215 feet east of the S. Livermore/Pacific Avenue intersection (from the curb on the west side of the driveway to the nearest painted crosswalk line). Vehicles turning onto eastbound Pacific Avenue from S. Livermore Avenue are assumed to have a turning speed of 15 mph, which corresponds to a Caltrans stopping sight distance of 100 feet. There is a roadway curve to the west of the driveway, but vehicles at the driveway would be able to see vehicles 125 feet west on eastbound Pacific Avenue after they turn from S. Livermore Avenue. On-street parking is currently permitted for 45 feet west of the existing driveway and there is currently 25 feet of red curb to the east of the existing driveway.

Section 3B.19 of California Manual on Uniform Traffic Control Devices (CA MUTCD) states that "*At all intersections, one stall length on each side measured from the crosswalk or end of curb return should have parking prohibited.*" In order to prevent vehicles from parking and obstructing the vision of exiting drivers, Hexagon recommends including 25 feet of red curb to the west and 25 feet of red curb to the east of the project driveway on Pacific Avenue.

The project driveway on Dolores Street would replace an existing driveway. There are no roadway curves and on-street parking is permitted on both sides of the driveway. In order to prevent vehicles from parking and obstructing the vision of exiting drivers, Hexagon recommends including 25 feet of red curb to the north and south of the project driveway on Dolores Street.

> **Recommendation:** Hexagon recommends installing a minimum of 25 feet of red curb to the east and west of the driveway on Pacific Avenue and 25 feet of red curb to the north and south of the driveway on Dolores Street.

## On-Site Circulation

On-site vehicular circulation was reviewed in accordance with the City of Livermore Development Code and generally accepted traffic engineering standards. Generally, the proposed site plan would provide vehicle traffic with adequate connectivity through the parking areas. The project would provide 90-

degree parking stalls throughout the parking areas, with some parallel parking spaces along the northern edge of the project site. Based on the Livermore Development Code Section 4.04.070, drive aisles with 90-degree parking spaces are required to be 24 feet wide. As measured on the site plan, the drive aisles would range between 24 and 26 feet wide, which would meet the requirement.

The site plan provides adequate pedestrian circulation throughout the sites and the surrounding pedestrian facilities. In addition to the sidewalks along S. Livermore Avenue, Pacific Avenue, and Dolores Street, the site plan shows continuous walkways within the site that would provide pedestrian access between the street frontages and all proposed buildings and shared outdoor spaces.

On-site vehicle circulation was also evaluated to identify whether there would be dead-end aisles on site. Dead-end aisles are undesirable because drivers can enter the aisle, and upon discovering that there is no available parking, must back out or conduct three-point turns. The residential parking area would have a dead-end aisle near the guest parking spaces in the southeast corner of the project site.

> **Recommendation:** Hexagon recommends including a turnaround space for residential guests at the end of the aisle in the southeast corner of the project site.

### Emergency Vehicles, Truck Access and Circulation

Emergency response vehicles would be able to access the project site via the driveways on Pacific Avenue, and Dolores Street. Additionally, one EVA driveway is proposed on S. Livermore Avenue and two EVA driveways are proposed on Dolores Street.

## Parking Analysis

The parking analysis for the proposed project is based on the City of Livermore's zoning code requirements.

### Vehicle Parking

Section 4.04.020 of the Livermore Development Code states that townhouse/condominium projects are required to provide two spaces for each dwelling unit and one guest parking space per four dwelling units. Based on the proposed 115 townhouse units, the project would be required to provide 230 residential parking spaces and 29 guest parking spaces. The project proposes 230 residential parking spaces and 38 guest parking spaces (including 8 compact parking stalls and 3 ADA compliant stalls), which would exceed the requirement.

Based on the Livermore Development Code Section 4.04.070, all standard perpendicular parking spaces should be a minimum of 18 feet long by 9 feet wide and all compact spaces should be a minimum of 16 feet long by 8.5 feet wide. However, the paved parking space length may be decreased by up to two feet by providing an equivalent vehicle overhang into landscaped areas, or over paved walkways.

> **Recommendation:** Prior to final design, parking stall dimensions should be reviewed by City staff.

#### ADA Parking

The 2019 California Building Code Table 11B-208.2 states that parking facilities that would provide 26 to 50 parking spaces are required to provide two accessible parking spaces. The project should provide two ADA spaces within the guest parking spaces. Based on Section 11B-208.2.4, the project would be required to provide one van accessible space. The site plan shows 3ADA stalls with all of them being van accessible.

Based on the 2019 California Building Code Section 11B-502.2, car accessible parking spaces should be a minimum of 9 feet wide and 18 feet long and van accessible parking spaces should be a minimum of 12 feet wide and 18 feet long. Van parking spaces may be 9 feet wide where access aisles are at least 8 feet wide.

### Bicycle Parking

The Livermore Development Code Section 4.04.030 states that residential projects should provide a minimum of one secure bicycle stall per four bedrooms. Based on the proposed 443 bedrooms, the project would be required to provide 111 bicycle parking spaces for the residents. The site plan shows that a total of 115 bicycle parking spaces would be provided by providing one secured bicycle parking space within individual garages. The site plan also shows that the project would provide a total of 22 short-term bicycle parking spaces for residential guests at various locations on the project site.

## Potential Adverse Effects on Pedestrians, Bicycles, and Transit

### Pedestrians and Bicycles

The proposed project would generate pedestrian trips from residents and resident guests who work within walking distance of the site or who are traveling to/from transit stops (see further discussion below). Overall, the volume of pedestrian trips generated by the project is expected to be relatively low and not exceed the carrying capacity of the sidewalks and crosswalks nearby. Existing pedestrian counts on South Livermore Avenue, Pacific Avenue, and Dolores Street show low pedestrian activity in the area (a total of 25 pedestrian trips during the AM peak hour and 43 pedestrian trips during the PM peak hour for all three intersections combined). In the project vicinity, sidewalks are provided on both sides of adjacent streets, and crosswalks are provided at most of the study intersections. At least one leg of crosswalks is missing along the intersections of S. Livermore Avenue/East Avenue, Livermore Avenue/Pacific Avenue, Dolores Avenue/Pacific Avenue, and Dolores Avenue/East Avenue. However, the project is well situated to take advantage of the existing pedestrian facilities in the immediate vicinity. The existing networks of sidewalks and crosswalks provide good connectivity and safe routes to transit services and other points of interest in the downtown area. The proposed project would provide pedestrian access paths and crosswalks throughout the site connecting all adjacent streets to the buildings and parks on site.

Existing bicycle access to the project vicinity is provided primarily via a network of nearby Class II bike lanes. Bike lanes near the project site are located on South Livermore Avenue and 7$^{th}$ Street. Overall, the volume of bicycle trips generated by the project is expected to be relatively low and not exceed the bicycle-carrying capacity of streets surrounding the site. Existing bicycle counts on South Livermore Avenue, Pacific Avenue, and Dolores Street show low bicycle activity in the area (a total of 5 bicycle trips during the AM peak hour and 12 bicycle trips during the PM peak hour for all three intersections combined. The project would provide bicycle parking facilities on site to meet the requirements of the Livermore Municipal Code. The project would not remove any bicycle facilities, nor would it conflict with any adopted plans or policies for new bicycle facilities.

According to the 2019 Alameda County Congestion Management Program (CMP) Transportation Impact Analysis Technical Guidelines, a project would create an adverse effect on pedestrian and bike circulation if: (1) its vehicle trips would present a barrier to bikes/pedestrians safely crossing roadways, or (2) it would reduce or sever existing or planned bike/pedestrian circulation in the area. Based on these criteria, the proposed project would not create an adverse effect to bike/pedestrian circulation in the area.

## Transit

Transit service to the project vicinity is provided by the Livermore-Amador Valley Transit Authority (LAVTA) Local Route 14 and Rapid Route 30R. Local Route 14 provides service between the East Dublin/Pleasanton BART station and the Livermore Transit Center, with bus stops located along Pacific Avenue and Dolores Street. Rapid Route 30R provides service between the Dublin BART station and the Livermore Transit Center, with bus stops located along East Avenue (see Chapter 2 for detailed discussion). According to the U.S. Census Bureau, 2017-2021 American Community Survey 5-Year Estimates, public transportation trips comprise approximately 3.1% of the total commute mode share in the City of Livermore. For the proposed project, this would equate to one new transit trip during the peak commute hours. This volume of riders would not exceed the carrying capacity of the existing bus service near the project site.

According to the 2019 Alameda County Congestion Management Program (CMP) Transportation Impact Analysis Technical Guidelines, a project would create an adverse effect on transit service if it: (1) causes vehicular congestion that would significantly degrade transit operations, (2) cause a ridership increase that would exceed existing transit capacity, (3) lacks adequate pedestrian connections between the project site and transit stops, or (4) conflict with existing transit service plans or preclude future transit service to the project area. Based on these criteria, the proposed project would not cause an adverse effect to transit operations in the study area.

# 2930 Pacific Avenue
# Transportation Analysis

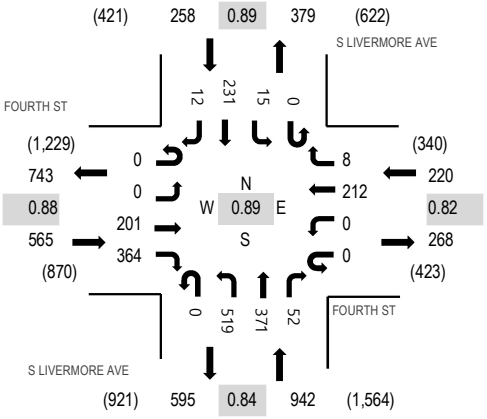
## Technical Appendices

# Appendix A
## Traffic Counts

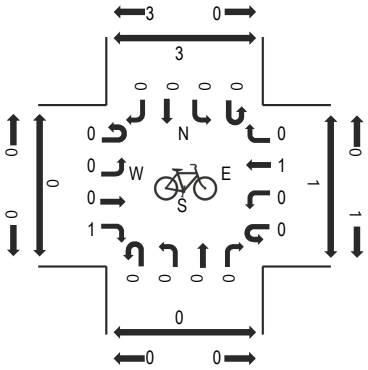
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 1 S LIVERMORE AVE & FOURTH ST AM
**Date:** Thursday, January 26, 2023
**Peak Hour:** 07:45 AM - 08:45 AM
**Peak 15-Minutes:** 08:15 AM - 08:30 AM

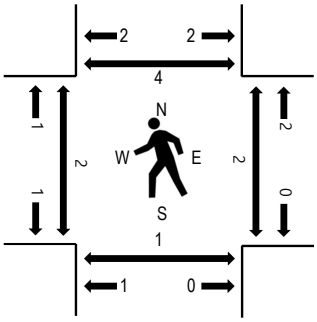
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

| Interval Start Time | FOURTH ST Eastbound | | | | FOURTH ST Westbound | | | | S LIVERMORE AVE Northbound | | | | S LIVERMORE AVE Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 7:00 AM | 0 | 0 | 26 | 36 | 0 | 0 | 17 | 0 | 0 | 72 | 49 | 1 | 0 | 0 | 19 | 2 | 222 | 1,300 | 1 | 1 | 0 | 0 |
| 7:15 AM | 0 | 0 | 22 | 41 | 0 | 0 | 22 | 5 | 0 | 100 | 57 | 2 | 0 | 2 | 34 | 1 | 286 | 1,598 | 1 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 30 | 51 | 0 | 0 | 36 | 3 | 0 | 113 | 70 | 11 | 0 | 6 | 46 | 0 | 366 | 1,871 | 0 | 0 | 1 | 0 |
| 7:45 AM | 0 | 0 | 48 | 83 | 0 | 0 | 54 | 1 | 0 | 109 | 70 | 12 | 0 | 4 | 44 | 1 | 426 | 1,985 | 0 | 1 | 0 | 2 |
| 8:00 AM | 0 | 0 | 53 | 90 | 0 | 0 | 66 | 1 | 0 | 137 | 87 | 12 | 0 | 2 | 68 | 4 | 520 | 1,895 | 2 | 0 | 1 | 1 |
| 8:15 AM | 0 | 0 | 62 | 98 | 0 | 0 | 50 | 5 | 0 | 136 | 122 | 23 | 0 | 4 | 54 | 5 | 559 | | 0 | 1 | 0 | 1 |
| 8:30 AM | 0 | 0 | 38 | 93 | 0 | 0 | 42 | 1 | 0 | 137 | 92 | 5 | 0 | 5 | 65 | 2 | 480 | | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 45 | 54 | 0 | 0 | 36 | 1 | 0 | 83 | 58 | 6 | 0 | 4 | 45 | 4 | 336 | | 0 | 0 | 1 | 0 |

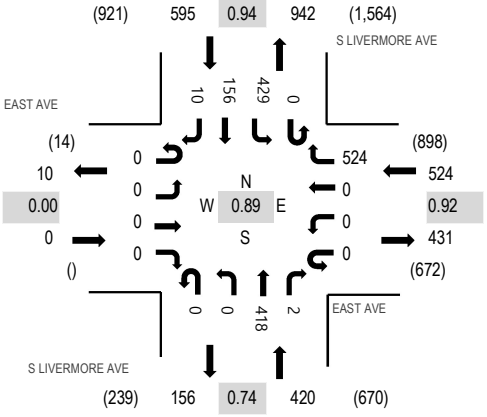
## Peak Rolling Hour Flow Rates

| Vehicle Type | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| Lights | 0 | 0 | 201 | 355 | 0 | 0 | 212 | 8 | 0 | 515 | 365 | 51 | 0 | 15 | 226 | 12 | 1,960 |
| Mediums | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 1 | 0 | 0 | 5 | 0 | 22 |
| Total | 0 | 0 | 201 | 364 | 0 | 0 | 212 | 8 | 0 | 519 | 371 | 52 | 0 | 15 | 231 | 12 | 1,985 |

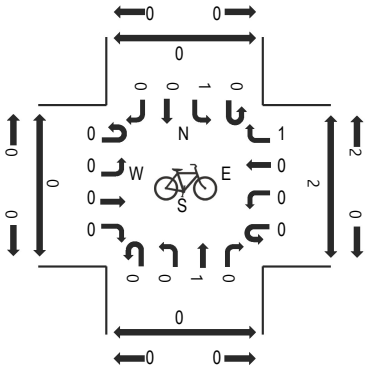
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 2 S LIVERMORE AVE & EAST AVE AM
**Date:** Thursday, January 26, 2023
**Peak Hour:** 07:45 AM - 08:45 AM
**Peak 15-Minutes:** 08:15 AM - 08:30 AM

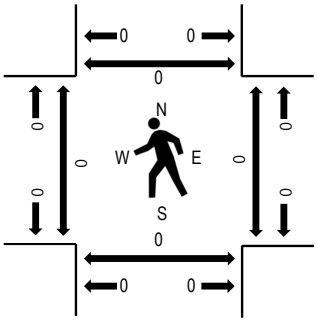
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles



## Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

| Interval Start Time | EAST AVE Eastbound | | | | EAST AVE Westbound | | | | S LIVERMORE AVE Northbound | | | | S LIVERMORE AVE Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 | 0 | 0 | 55 | 0 | 0 | 44 | 11 | 0 | 177 | 1,022 | 0 | 1 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 107 | 0 | 0 | 52 | 1 | 0 | 55 | 20 | 0 | 235 | 1,239 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 112 | 0 | 0 | 82 | 0 | 0 | 68 | 26 | 3 | 291 | 1,438 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 106 | 0 | 0 | 85 | 1 | 0 | 92 | 34 | 1 | 319 | 1,539 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 142 | 0 | 0 | 94 | 0 | 0 | 108 | 46 | 4 | 394 | 1,467 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 140 | 0 | 0 | 141 | 1 | 0 | 116 | 34 | 2 | 434 | | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 136 | 0 | 0 | 98 | 0 | 0 | 113 | 42 | 3 | 392 | | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 88 | 0 | 0 | 59 | 1 | 0 | 72 | 26 | 1 | 247 | | 0 | 0 | 0 | 0 |

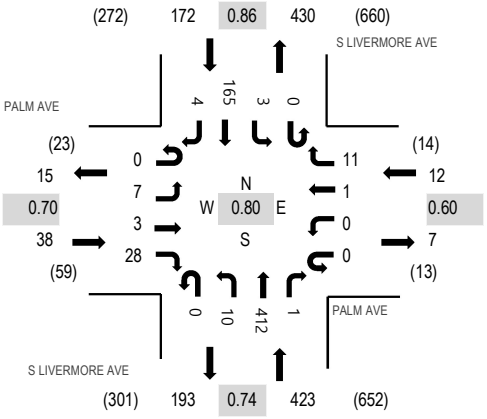
## Peak Rolling Hour Flow Rates

| Vehicle Type | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 4 |
| Lights | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 522 | 0 | 0 | 409 | 1 | 0 | 422 | 149 | 10 | 1,513 |
| Mediums | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 7 | 0 | 0 | 7 | 7 | 0 | 22 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 524 | 0 | 0 | 418 | 2 | 0 | 429 | 156 | 10 | 1,539 |

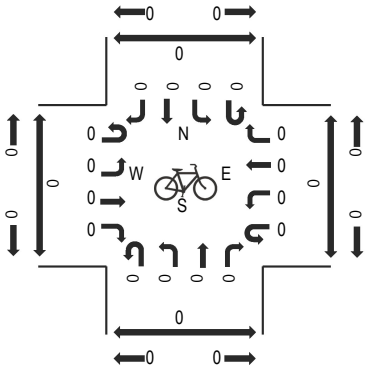
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 3 S LIVERMORE AVE & PALM AVE AM
**Date:** Thursday, January 26, 2023
**Peak Hour:** 07:45 AM - 08:45 AM
**Peak 15-Minutes:** 08:15 AM - 08:30 AM

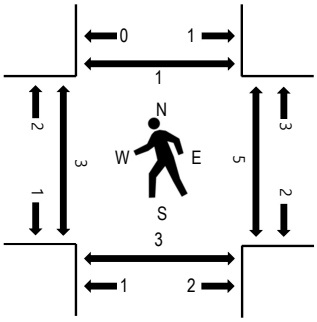
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

| Interval Start Time | PALM AVE Eastbound | | | | PALM AVE Westbound | | | | S LIVERMORE AVE Northbound | | | | S LIVERMORE AVE Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 7:00 AM | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 56 | 0 | 0 | 0 | 13 | 0 | 74 | 399 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 4 | 53 | 0 | 0 | 0 | 25 | 0 | 85 | 491 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 3 | 0 | 5 | 0 | 0 | 0 | 1 | 0 | 1 | 70 | 0 | 0 | 2 | 26 | 2 | 110 | 607 | 1 | 1 | 0 | 0 |
| 7:45 AM | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 1 | 85 | 0 | 0 | 0 | 38 | 0 | 130 | 645 | 0 | 1 | 1 | 0 |
| 8:00 AM | 0 | 2 | 2 | 8 | 0 | 0 | 0 | 3 | 0 | 5 | 95 | 1 | 0 | 1 | 47 | 2 | 166 | 598 | 1 | 2 | 0 | 1 |
| 8:15 AM | 0 | 3 | 1 | 10 | 0 | 0 | 1 | 2 | 0 | 3 | 139 | 0 | 0 | 1 | 40 | 1 | 201 | | 2 | 2 | 2 | 0 |
| 8:30 AM | 0 | 1 | 0 | 6 | 0 | 0 | 0 | 5 | 0 | 1 | 93 | 0 | 0 | 1 | 40 | 1 | 148 | | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 2 | 1 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 44 | 0 | 0 | 3 | 29 | 0 | 83 | | 2 | 3 | 1 | 0 |

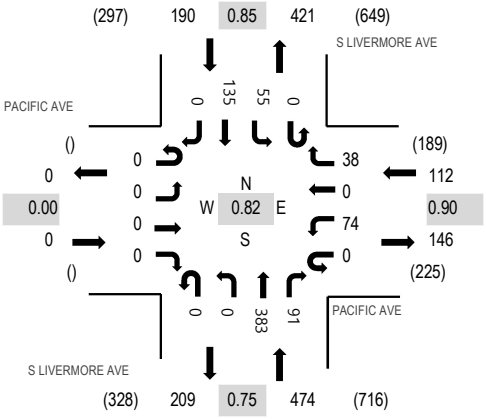
## Peak Rolling Hour Flow Rates

| Vehicle Type | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | |
| Articulated Trucks | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 3 |
| Lights | 0 | 7 | 3 | 27 | 0 | 0 | 1 | 11 | 0 | 10 | 408 | 1 | 0 | 3 | 161 | 4 | 636 |
| Mediums | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 6 |
| Total | 0 | 7 | 3 | 28 | 0 | 0 | 1 | 11 | 0 | 10 | 412 | 1 | 0 | 3 | 165 | 4 | 645 |

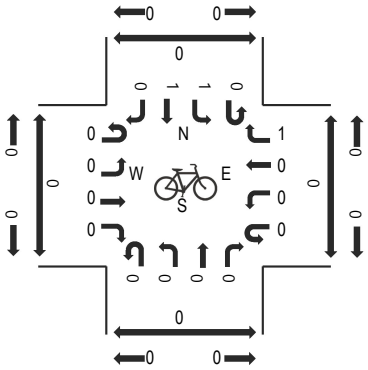
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 4 S LIVERMORE AVE & PACIFIC AVE AM
**Date:** Thursday, January 26, 2023
**Peak Hour:** 07:45 AM - 08:45 AM
**Peak 15-Minutes:** 08:15 AM - 08:30 AM

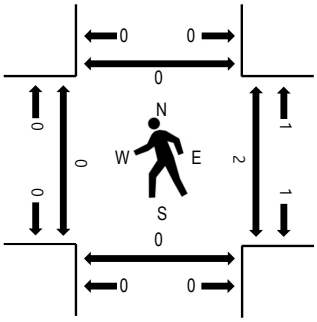
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

| Interval Start Time | PACIFIC AVE Eastbound | | | | PACIFIC AVE Westbound | | | | S LIVERMORE AVE Northbound | | | | S LIVERMORE AVE Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 11 | 0 | 0 | 45 | 3 | 0 | 5 | 13 | 0 | 82 | 465 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 14 | 0 | 0 | 42 | 15 | 0 | 4 | 23 | 0 | 111 | 585 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 10 | 0 | 0 | 62 | 11 | 0 | 7 | 23 | 0 | 116 | 712 | 0 | 1 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 12 | 0 | 0 | 73 | 17 | 0 | 10 | 28 | 0 | 156 | 776 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 10 | 0 | 0 | 91 | 24 | 0 | 11 | 45 | 0 | 202 | 737 | 0 | 1 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 8 | 0 | 0 | 133 | 25 | 0 | 20 | 31 | 0 | 238 | | 0 | 1 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 8 | 0 | 0 | 86 | 25 | 0 | 14 | 31 | 0 | 180 | | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 5 | 0 | 0 | 39 | 25 | 0 | 9 | 23 | 0 | 117 | | 0 | 0 | 0 | 0 |

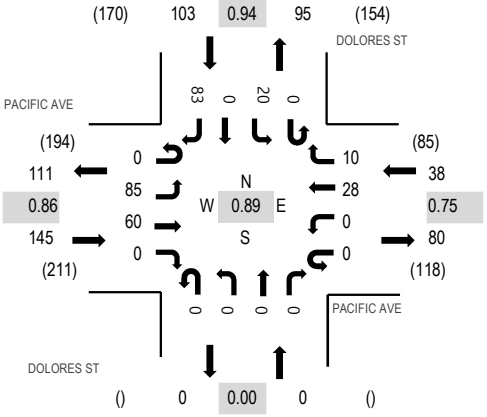
## Peak Rolling Hour Flow Rates

| Vehicle Type | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 |
| Lights | 0 | 0 | 0 | 0 | 0 | 72 | 0 | 37 | 0 | 0 | 377 | 90 | 0 | 53 | 132 | 0 | 761 |
| Mediums | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 4 | 1 | 0 | 2 | 2 | 0 | 12 |
| Total | 0 | 0 | 0 | 0 | 0 | 74 | 0 | 38 | 0 | 0 | 383 | 91 | 0 | 55 | 135 | 0 | 776 |

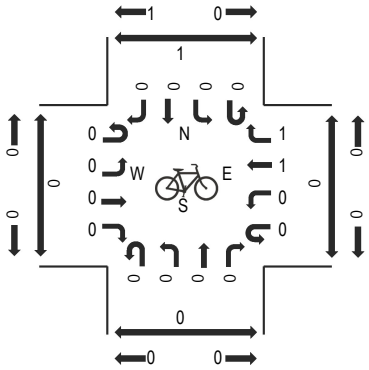
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 5 DOLORES ST & PACIFIC AVE AM
**Date:** Thursday, January 26, 2023
**Peak Hour:** 08:00 AM - 09:00 AM
**Peak 15-Minutes:** 08:15 AM - 08:30 AM

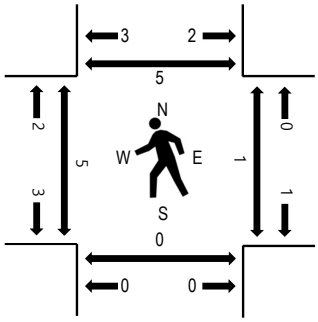
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

| Interval Start Time | PACIFIC AVE Eastbound | | | | PACIFIC AVE Westbound | | | | DOLORES ST Northbound | | | | DOLORES ST Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 7:00 AM | 0 | 4 | 3 | 0 | 0 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 8 | 27 | 180 | 2 | 0 | 0 | 2 |
| 7:15 AM | 0 | 14 | 4 | 0 | 0 | 0 | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 15 | 51 | 224 | 3 | 0 | 0 | 3 |
| 7:30 AM | 0 | 10 | 8 | 0 | 0 | 0 | 7 | 6 | 0 | 0 | 0 | 0 | 1 | 9 | 0 | 5 | 46 | 253 | 0 | 1 | 0 | 0 |
| 7:45 AM | 0 | 17 | 6 | 0 | 0 | 0 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 21 | 56 | 277 | 0 | 0 | 0 | 1 |
| 8:00 AM | 0 | 24 | 11 | 0 | 0 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 25 | 71 | 286 | 1 | 0 | 0 | 1 |
| 8:15 AM | 0 | 31 | 11 | 0 | 0 | 0 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 22 | 80 | | 1 | 1 | 0 | 0 |
| 8:30 AM | 0 | 13 | 19 | 0 | 0 | 0 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 20 | 70 | | 1 | 0 | 0 | 3 |
| 8:45 AM | 0 | 17 | 19 | 0 | 0 | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 16 | 65 | | 2 | 0 | 0 | 1 |

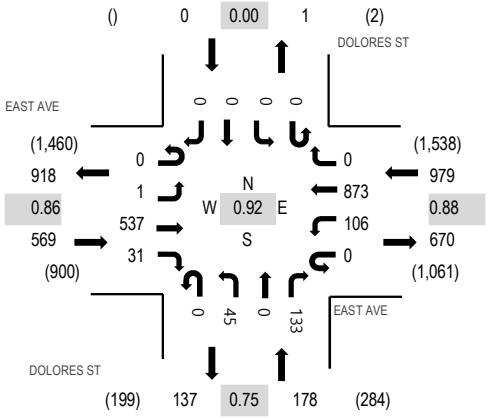
## Peak Rolling Hour Flow Rates

| Vehicle Type | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lights | 0 | 81 | 59 | 0 | 0 | 0 | 27 | 10 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 79 | 275 |
| Mediums | 0 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 11 |
| Total | 0 | 85 | 60 | 0 | 0 | 0 | 28 | 10 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 83 | 286 |

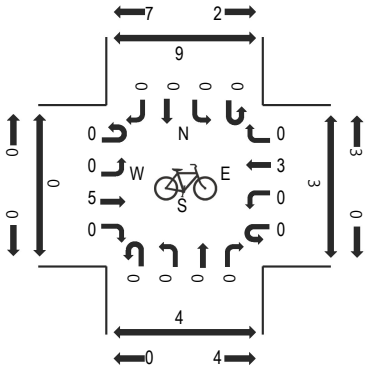
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 1 DOLORES ST & EAST AVE AM
**Date:** Wednesday, May 17, 2023
**Peak Hour:** 08:00 AM - 09:00 AM
**Peak 15-Minutes:** 08:15 AM - 08:30 AM

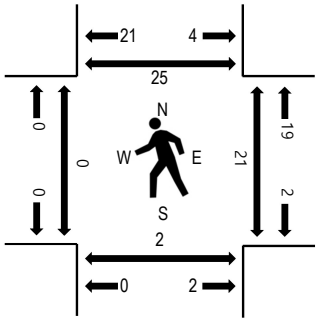
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles



## Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

| Interval Start Time | EAST AVE Eastbound | | | | EAST AVE Westbound | | | | DOLORES ST Northbound | | | | DOLORES ST Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 7:00 AM | 0 | 0 | 72 | 4 | 0 | 11 | 96 | 0 | 0 | 14 | 0 | 12 | 0 | 0 | 0 | 0 | 209 | 996 | 0 | 0 | 1 | 1 |
| 7:15 AM | 0 | 0 | 87 | 1 | 0 | 17 | 122 | 0 | 0 | 7 | 0 | 20 | 0 | 0 | 0 | 0 | 254 | 1,185 | 0 | 2 | 0 | 0 |
| 7:30 AM | 0 | 1 | 69 | 2 | 0 | 10 | 147 | 0 | 0 | 6 | 0 | 16 | 0 | 0 | 0 | 0 | 251 | 1,401 | 0 | 1 | 0 | 0 |
| 7:45 AM | 0 | 0 | 92 | 3 | 0 | 14 | 142 | 0 | 0 | 8 | 0 | 23 | 0 | 0 | 0 | 0 | 282 | 1,544 | 0 | 1 | 0 | 1 |
| 8:00 AM | 0 | 1 | 142 | 7 | 0 | 29 | 172 | 0 | 0 | 14 | 0 | 33 | 0 | 0 | 0 | 0 | 398 | 1,726 | 0 | 4 | 1 | 4 |
| 8:15 AM | 0 | 0 | 127 | 7 | 0 | 34 | 243 | 0 | 0 | 10 | 0 | 49 | 0 | 0 | 0 | 0 | 470 | | 0 | 7 | 1 | 7 |
| 8:30 AM | 0 | 0 | 112 | 7 | 0 | 22 | 215 | 0 | 0 | 10 | 0 | 28 | 0 | 0 | 0 | 0 | 394 | | 0 | 2 | 0 | 4 |
| 8:45 AM | 0 | 0 | 156 | 10 | 0 | 21 | 243 | 0 | 0 | 11 | 0 | 23 | 0 | 0 | 0 | 0 | 464 | | 0 | 8 | 0 | 10 |

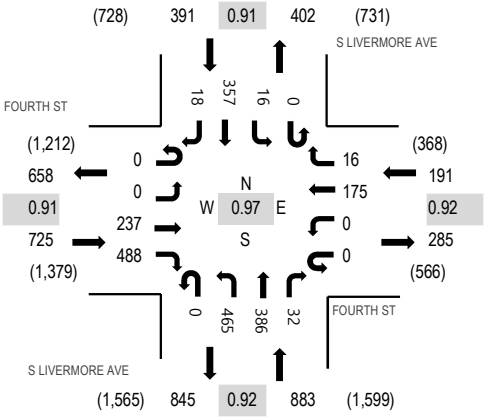
## Peak Rolling Hour Flow Rates

| Vehicle Type | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Lights | 0 | 1 | 530 | 29 | 0 | 106 | 865 | 0 | 0 | 43 | 0 | 133 | 0 | 0 | 0 | 0 | 1,707 |
| Mediums | 0 | 0 | 7 | 2 | 0 | 0 | 6 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| Total | 0 | 1 | 537 | 31 | 0 | 106 | 873 | 0 | 0 | 45 | 0 | 133 | 0 | 0 | 0 | 0 | 1,726 |

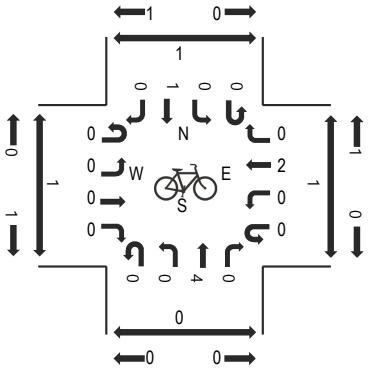
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 1 S LIVERMORE AVE & FOURTH ST PM
**Date:** Thursday, January 26, 2023
**Peak Hour:** 04:45 PM - 05:45 PM
**Peak 15-Minutes:** 05:15 PM - 05:30 PM

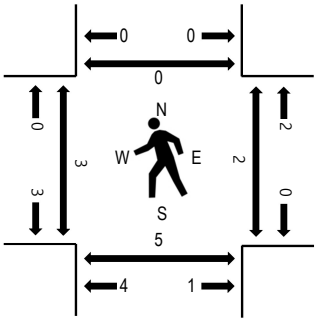
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

| Interval Start Time | FOURTH ST Eastbound | | | | FOURTH ST Westbound | | | | S LIVERMORE AVE Northbound | | | | S LIVERMORE AVE Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 0 | 64 | 98 | 0 | 0 | 52 | 0 | 0 | 89 | 68 | 6 | 0 | 1 | 85 | 4 | 467 | 1,924 | 0 | 1 | 1 | 3 |
| 4:15 PM | 0 | 0 | 51 | 78 | 0 | 0 | 39 | 3 | 0 | 93 | 77 | 5 | 0 | 3 | 62 | 4 | 415 | 2,009 | 1 | 0 | 0 | 2 |
| 4:30 PM | 0 | 0 | 65 | 126 | 0 | 0 | 40 | 2 | 0 | 92 | 90 | 10 | 0 | 2 | 74 | 4 | 505 | 2,157 | 3 | 2 | 1 | 0 |
| 4:45 PM | 0 | 0 | 50 | 123 | 0 | 0 | 45 | 6 | 0 | 111 | 94 | 4 | 0 | 6 | 97 | 1 | 537 | 2,190 | 2 | 1 | 1 | 0 |
| 5:00 PM | 0 | 0 | 59 | 117 | 0 | 0 | 49 | 3 | 0 | 118 | 92 | 7 | 0 | 6 | 96 | 5 | 552 | 2,150 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 70 | 135 | 0 | 0 | 39 | 1 | 0 | 112 | 112 | 16 | 0 | 2 | 70 | 6 | 563 | | 0 | 1 | 3 | 0 |
| 5:30 PM | 0 | 0 | 58 | 113 | 0 | 0 | 42 | 6 | 0 | 124 | 88 | 5 | 0 | 2 | 94 | 6 | 538 | | 1 | 0 | 1 | 0 |
| 5:45 PM | 0 | 0 | 66 | 106 | 0 | 0 | 39 | 2 | 0 | 93 | 87 | 6 | 0 | 2 | 91 | 5 | 497 | | 1 | 2 | 2 | 1 |

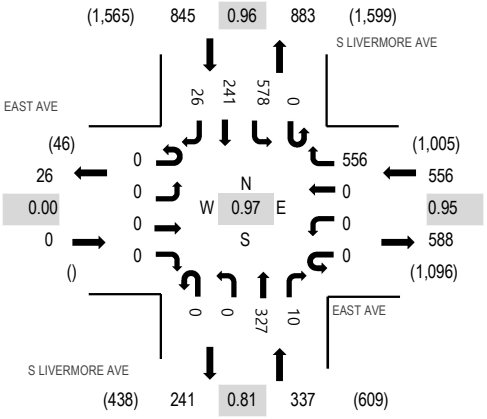
## Peak Rolling Hour Flow Rates

| Vehicle Type | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | |
| Articulated Trucks | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Lights | 0 | 0 | 234 | 483 | 0 | 0 | 174 | 15 | 0 | 462 | 383 | 31 | 0 | 16 | 356 | 17 | 2,171 |
| Mediums | 0 | 0 | 2 | 5 | 0 | 0 | 1 | 1 | 0 | 3 | 3 | 1 | 0 | 0 | 1 | 1 | 18 |
| Total | 0 | 0 | 237 | 488 | 0 | 0 | 175 | 16 | 0 | 465 | 386 | 32 | 0 | 16 | 357 | 18 | 2,190 |

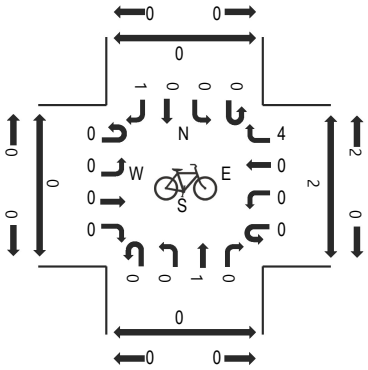
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 2 S LIVERMORE AVE & EAST AVE PM
**Date:** Thursday, January 26, 2023
**Peak Hour:** 04:45 PM - 05:45 PM
**Peak 15-Minutes:** 05:15 PM - 05:30 PM

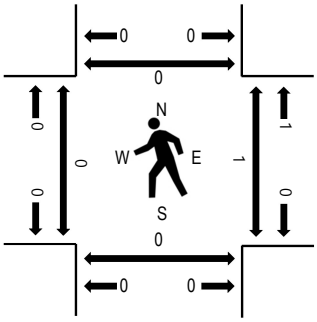
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles



## Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

| Interval Start Time | EAST AVE Eastbound | | | | EAST AVE Westbound | | | | S LIVERMORE AVE Northbound | | | | S LIVERMORE AVE Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 109 | 0 | 0 | 54 | 3 | 0 | 129 | 49 | 5 | 349 | 1,490 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 108 | 0 | 0 | 67 | 1 | 0 | 95 | 41 | 4 | 316 | 1,572 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 115 | 0 | 0 | 77 | 0 | 0 | 146 | 53 | 1 | 392 | 1,705 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 137 | 0 | 0 | 72 | 4 | 0 | 162 | 52 | 6 | 433 | 1,738 | 0 | 1 | 0 | 0 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 135 | 0 | 0 | 82 | 1 | 0 | 138 | 67 | 8 | 431 | 1,689 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 138 | 0 | 0 | 102 | 4 | 0 | 154 | 47 | 4 | 449 | | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 146 | 0 | 0 | 71 | 1 | 0 | 124 | 75 | 8 | 425 | | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 117 | 0 | 0 | 69 | 1 | 0 | 133 | 54 | 10 | 384 | | 0 | 2 | 0 | 0 |

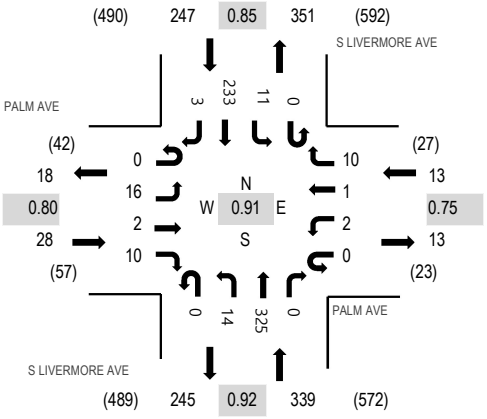
## Peak Rolling Hour Flow Rates

| Vehicle Type | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lights | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 554 | 0 | 0 | 322 | 10 | 0 | 574 | 239 | 26 | 1,725 |
| Mediums | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 5 | 0 | 0 | 4 | 2 | 0 | 13 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 556 | 0 | 0 | 327 | 10 | 0 | 578 | 241 | 26 | 1,738 |

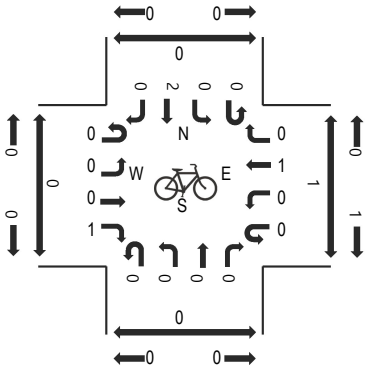
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 3 S LIVERMORE AVE & PALM AVE PM
**Date:** Thursday, January 26, 2023
**Peak Hour:** 04:30 PM - 05:30 PM
**Peak 15-Minutes:** 05:00 PM - 05:15 PM

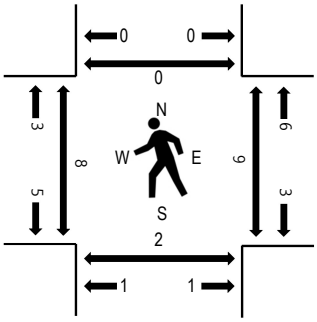
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

| Interval Start Time | PALM AVE Eastbound | | | | PALM AVE Westbound | | | | S LIVERMORE AVE Northbound | | | | S LIVERMORE AVE Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 4 | 2 | 4 | 0 | 0 | 2 | 3 | 0 | 5 | 54 | 0 | 0 | 4 | 58 | 3 | 139 | 547 | 0 | 2 | 0 | 0 |
| 4:15 PM | 0 | 1 | 0 | 5 | 0 | 0 | 1 | 2 | 0 | 2 | 55 | 0 | 0 | 0 | 47 | 0 | 113 | 580 | 2 | 2 | 3 | 0 |
| 4:30 PM | 0 | 8 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 73 | 0 | 0 | 4 | 54 | 1 | 147 | 627 | 0 | 1 | 0 | 0 |
| 4:45 PM | 0 | 3 | 0 | 3 | 0 | 1 | 1 | 3 | 0 | 4 | 75 | 0 | 0 | 4 | 53 | 1 | 148 | 620 | 1 | 2 | 0 | 0 |
| 5:00 PM | 0 | 2 | 0 | 5 | 0 | 1 | 0 | 3 | 0 | 2 | 90 | 0 | 0 | 1 | 68 | 0 | 172 | 599 | 4 | 6 | 1 | 0 |
| 5:15 PM | 0 | 3 | 1 | 1 | 0 | 0 | 0 | 4 | 0 | 3 | 87 | 0 | 0 | 2 | 58 | 1 | 160 | | 3 | 0 | 1 | 0 |
| 5:30 PM | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 4 | 50 | 0 | 0 | 3 | 74 | 1 | 140 | | 1 | 3 | 1 | 0 |
| 5:45 PM | 0 | 3 | 0 | 4 | 0 | 0 | 2 | 2 | 0 | 2 | 60 | 1 | 0 | 0 | 51 | 2 | 127 | | 1 | 0 | 0 | 0 |

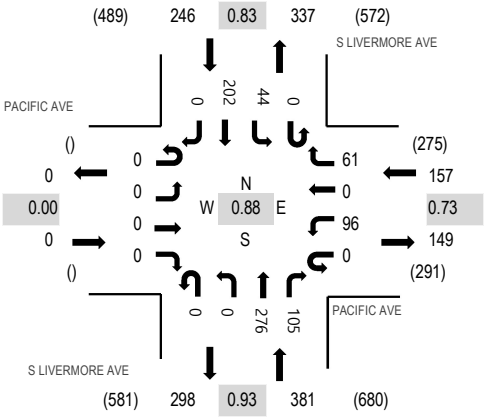
## Peak Rolling Hour Flow Rates

| Vehicle Type | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | |
| Articulated Trucks | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| Lights | 0 | 15 | 2 | 10 | 0 | 2 | 1 | 10 | 0 | 14 | 321 | 0 | 0 | 11 | 228 | 3 | 617 |
| Mediums | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 8 |
| Total | 0 | 16 | 2 | 10 | 0 | 2 | 1 | 10 | 0 | 14 | 325 | 0 | 0 | 11 | 233 | 3 | 627 |

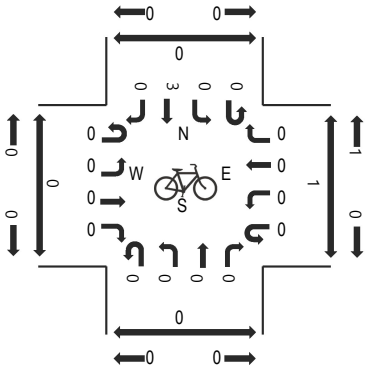
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 4 S LIVERMORE AVE & PACIFIC AVE PM
**Date:** Thursday, January 26, 2023
**Peak Hour:** 04:30 PM - 05:30 PM
**Peak 15-Minutes:** 05:00 PM - 05:15 PM

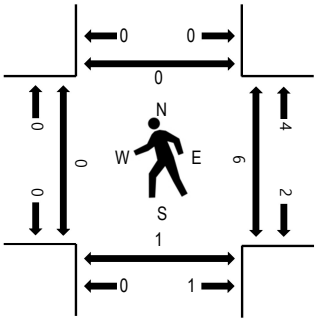
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles



## Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

| Interval Start Time | PACIFIC AVE Eastbound | | | | PACIFIC AVE Westbound | | | | S LIVERMORE AVE Northbound | | | | S LIVERMORE AVE Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 12 | 0 | 0 | 47 | 19 | 0 | 8 | 54 | 0 | 162 | 670 | 0 | 2 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 6 | 0 | 0 | 51 | 26 | 0 | 7 | 40 | 0 | 145 | 730 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 10 | 0 | 0 | 67 | 23 | 0 | 14 | 47 | 0 | 179 | 784 | 0 | 1 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 12 | 0 | 0 | 66 | 23 | 0 | 6 | 49 | 0 | 184 | 783 | 0 | 2 | 0 | 0 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 26 | 0 | 0 | 67 | 33 | 0 | 15 | 53 | 0 | 222 | 774 | 0 | 1 | 1 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 13 | 0 | 0 | 76 | 26 | 0 | 9 | 53 | 0 | 199 | | 0 | 2 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 7 | 0 | 0 | 49 | 22 | 0 | 17 | 63 | 0 | 178 | | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 14 | 0 | 0 | 49 | 36 | 0 | 7 | 47 | 0 | 175 | | 0 | 0 | 0 | 0 |

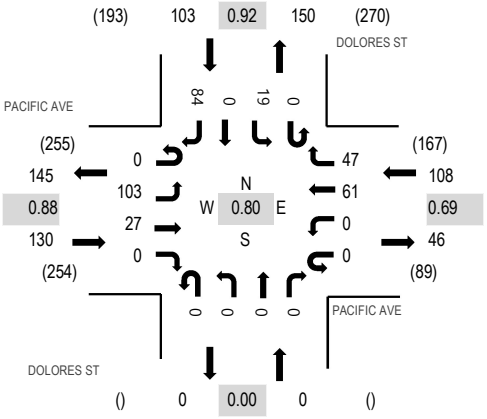
## Peak Rolling Hour Flow Rates

| Vehicle Type | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lights | 0 | 0 | 0 | 0 | 0 | 96 | 0 | 60 | 0 | 0 | 274 | 105 | 0 | 42 | 200 | 0 | 777 |
| Mediums | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 2 | 0 | 7 |
| Total | 0 | 0 | 0 | 0 | 0 | 96 | 0 | 61 | 0 | 0 | 276 | 105 | 0 | 44 | 202 | 0 | 784 |

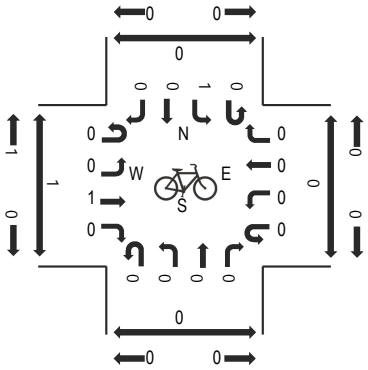
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 5 DOLORES ST & PACIFIC AVE PM
**Date:** Thursday, January 26, 2023
**Peak Hour:** 04:30 PM - 05:30 PM
**Peak 15-Minutes:** 05:00 PM - 05:15 PM

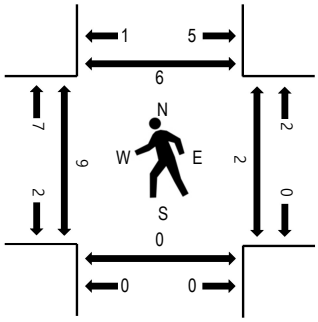
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

| Interval Start Time | PACIFIC AVE Eastbound | | | | PACIFIC AVE Westbound | | | | DOLORES ST Northbound | | | | DOLORES ST Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 19 | 2 | 0 | 0 | 0 | 12 | 5 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 23 | 64 | 275 | 2 | 0 | 0 | 0 |
| 4:15 PM | 0 | 22 | 10 | 0 | 0 | 0 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 10 | 55 | 318 | 2 | 1 | 0 | 3 |
| 4:30 PM | 0 | 22 | 8 | 0 | 0 | 0 | 13 | 10 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 16 | 80 | 341 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 24 | 3 | 0 | 0 | 0 | 9 | 12 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 25 | 76 | 335 | 3 | 0 | 0 | 0 |
| 5:00 PM | 0 | 33 | 8 | 0 | 0 | 0 | 26 | 13 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 25 | 107 | 339 | 5 | 2 | 0 | 4 |
| 5:15 PM | 0 | 24 | 8 | 0 | 0 | 0 | 13 | 12 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 18 | 78 | | 1 | 0 | 0 | 2 |
| 5:30 PM | 0 | 28 | 8 | 0 | 0 | 0 | 9 | 8 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 14 | 74 | | 4 | 0 | 0 | 5 |
| 5:45 PM | 0 | 30 | 5 | 0 | 0 | 0 | 11 | 5 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 25 | 80 | | 5 | 0 | 0 | 3 |

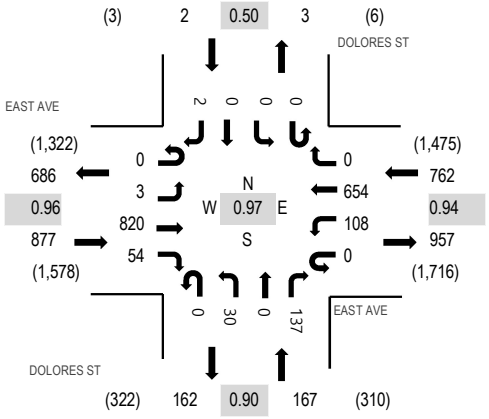
## Peak Rolling Hour Flow Rates

| Vehicle Type | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lights | 0 | 100 | 27 | 0 | 0 | 0 | 61 | 47 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 83 | 337 |
| Mediums | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 |
| Total | 0 | 103 | 27 | 0 | 0 | 0 | 61 | 47 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 84 | 341 |

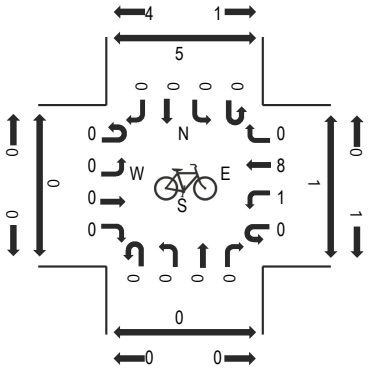
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 1 DOLORES ST & EAST AVE PM
**Date:** Wednesday, May 17, 2023
**Peak Hour:** 04:45 PM - 05:45 PM
**Peak 15-Minutes:** 05:15 PM - 05:30 PM

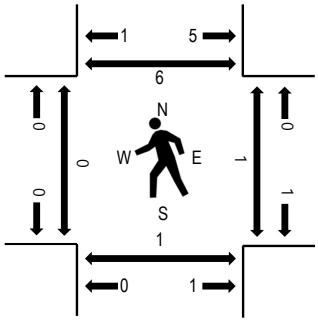
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles



## Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

| Interval Start Time | EAST AVE Eastbound | | | | EAST AVE Westbound | | | | DOLORES ST Northbound | | | | DOLORES ST Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 0 | 159 | 13 | 0 | 24 | 136 | 0 | 0 | 8 | 0 | 23 | 0 | 0 | 0 | 0 | 363 | 1,595 | 0 | 1 | 2 | 4 |
| 4:15 PM | 0 | 0 | 163 | 9 | 0 | 25 | 150 | 1 | 0 | 5 | 0 | 33 | 0 | 0 | 0 | 0 | 386 | 1,697 | 0 | 3 | 0 | 1 |
| 4:30 PM | 0 | 1 | 152 | 16 | 0 | 22 | 164 | 1 | 0 | 10 | 0 | 37 | 0 | 0 | 0 | 1 | 404 | 1,778 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 205 | 11 | 0 | 24 | 165 | 0 | 0 | 3 | 0 | 34 | 0 | 0 | 0 | 0 | 442 | 1,808 | 0 | 0 | 0 | 2 |
| 5:00 PM | 0 | 0 | 201 | 15 | 0 | 29 | 177 | 0 | 0 | 11 | 0 | 31 | 0 | 0 | 0 | 1 | 465 | 1,771 | 0 | 0 | 1 | 1 |
| 5:15 PM | 0 | 1 | 215 | 13 | 0 | 23 | 172 | 0 | 0 | 8 | 0 | 35 | 0 | 0 | 0 | 0 | 467 | | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 2 | 199 | 15 | 0 | 32 | 140 | 0 | 0 | 8 | 0 | 37 | 0 | 0 | 0 | 1 | 434 | | 0 | 1 | 0 | 3 |
| 5:45 PM | 0 | 0 | 170 | 18 | 0 | 33 | 157 | 0 | 0 | 5 | 0 | 22 | 0 | 0 | 0 | 0 | 405 | | 0 | 0 | 0 | 1 |

## Peak Rolling Hour Flow Rates

| Vehicle Type | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lights | 0 | 3 | 813 | 52 | 0 | 108 | 648 | 0 | 0 | 28 | 0 | 137 | 0 | 0 | 0 | 2 | 1,791 |
| Mediums | 0 | 0 | 7 | 2 | 0 | 0 | 6 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| Total | 0 | 3 | 820 | 54 | 0 | 108 | 654 | 0 | 0 | 30 | 0 | 137 | 0 | 0 | 0 | 2 | 1,808 |

# All Traffic Data Services, LLC

www.alltrafficdata.net

Site Code: 10
PACIFIC AVE E.O S LIVERMORE AVE

| Start Time | 26-Jan-23 Thu | EB | WB | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:00 AM | | 7 | 5 | | | | | | | 12 |
| 01:00 | | 4 | 4 | | | | | | | 8 |
| 02:00 | | 2 | 1 | | | | | | | 3 |
| 03:00 | | 3 | 6 | | | | | | | 9 |
| 04:00 | | 3 | 11 | | | | | | | 14 |
| 05:00 | | 14 | 15 | | | | | | | 29 |
| 06:00 | | 34 | 29 | | | | | | | 63 |
| 07:00 | | 72 | 85 | | | | | | | 157 |
| 08:00 | | **158** | **110** | | | | | | | **268** |
| 09:00 | | 81 | 88 | | | | | | | 169 |
| 10:00 | | 68 | 68 | | | | | | | 136 |
| 11:00 | | 91 | 99 | | | | | | | 190 |
| 12:00 PM | | 119 | 125 | | | | | | | 244 |
| 01:00 | | 128 | 101 | | | | | | | 229 |
| 02:00 | | 128 | 122 | | | | | | | 250 |
| 03:00 | | 141 | 128 | | | | | | | 269 |
| 04:00 | | 130 | 126 | | | | | | | 256 |
| 05:00 | | **169** | **151** | | | | | | | **320** |
| 06:00 | | 103 | 97 | | | | | | | 200 |
| 07:00 | | 72 | 62 | | | | | | | 134 |
| 08:00 | | 49 | 42 | | | | | | | 91 |
| 09:00 | | 29 | 26 | | | | | | | 55 |
| 10:00 | | 14 | 16 | | | | | | | 30 |
| 11:00 | | 11 | 10 | | | | | | | 21 |
| Total | | 1630 | 1527 | | | | | | | 3157 |
| Percent | | 51.6% | 48.4% | | | | | | | |
| AM Peak | - | 08:00 | 08:00 | - | - | - | - | - | - | 08:00 |
| Vol. | - | 158 | 110 | - | - | - | - | - | - | 268 |
| PM Peak | - | 17:00 | 17:00 | - | - | - | - | - | - | 17:00 |
| Vol. | - | 169 | 151 | - | - | - | - | - | - | 320 |
| Grand Total | | 1630 | 1527 | | | | | | | 3157 |
| Percent | | 51.6% | 48.4% | | | | | | | |
| | | | | | | | | | | |
| ADT | | ADT 3,157 | | AADT 3,157 | | | | | | |

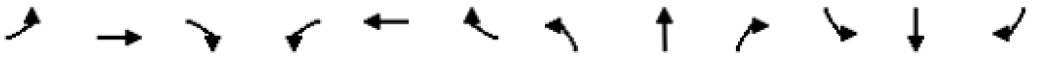
# All Traffic Data Services, LLC

www.alltrafficdata.net

Site Code: 11
S LIVERMORE AVE N.O PALM AVE

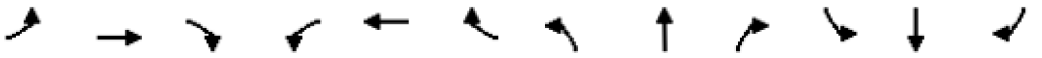
| Start Time | 26-Jan-23 Thu | NB | SB | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:00 AM | | 6 | 12 | | | | | | | 18 |
| 01:00 | | 5 | 2 | | | | | | | 7 |
| 02:00 | | 4 | 4 | | | | | | | 8 |
| 03:00 | | 11 | 4 | | | | | | | 15 |
| 04:00 | | 24 | 12 | | | | | | | 36 |
| 05:00 | | 70 | 27 | | | | | | | 97 |
| 06:00 | | 167 | 40 | | | | | | | 207 |
| 07:00 | | 272 | 105 | | | | | | | 377 |
| 08:00 | | **389** | **169** | | | | | | | **558** |
| 09:00 | | 198 | 153 | | | | | | | 351 |
| 10:00 | | 164 | 161 | | | | | | | 325 |
| 11:00 | | 234 | 163 | | | | | | | 397 |
| 12:00 PM | | 242 | 199 | | | | | | | 441 |
| 01:00 | | 212 | 190 | | | | | | | 402 |
| 02:00 | | 225 | 211 | | | | | | | 436 |
| 03:00 | | 264 | **288** | | | | | | | 552 |
| 04:00 | | 275 | 229 | | | | | | | 504 |
| 05:00 | | **308** | 259 | | | | | | | **567** |
| 06:00 | | 212 | 227 | | | | | | | 439 |
| 07:00 | | 140 | 142 | | | | | | | 282 |
| 08:00 | | 87 | 103 | | | | | | | 190 |
| 09:00 | | 56 | 70 | | | | | | | 126 |
| 10:00 | | 31 | 31 | | | | | | | 62 |
| 11:00 | | 10 | 17 | | | | | | | 27 |
| Total | | 3606 | 2818 | | | | | | | 6424 |
| Percent | | 56.1% | 43.9% | | | | | | | |
| AM Peak | - | 08:00 | 08:00 | - | - | - | - | - | - | 08:00 |
| Vol. | - | 389 | 169 | - | - | - | - | - | - | 558 |
| PM Peak | - | 17:00 | 15:00 | - | - | - | - | - | - | 17:00 |
| Vol. | - | 308 | 288 | - | - | - | - | - | - | 567 |
| Grand Total | | 3606 | 2818 | | | | | | | 6424 |
| Percent | | 56.1% | 43.9% | | | | | | | |
| | | | | | | | | | | |
| ADT | | ADT 6,424 | | AADT 6,424 | | | | | | |

# Appendix B
## Level of Service Calculations



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 201 | 364 | 0 | 212 | 8 | 519 | 371 | 52 | 15 | 231 | 12 |
| Future Volume (vph) | 0 | 201 | 364 | 0 | 212 | 8 | 519 | 371 | 52 | 15 | 231 | 12 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | 4.5 | | 4.5 | | 4.5 | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 1.00 | 1.00 | | 0.95 | | 1.00 | 1.00 | | | 0.95 | |
| Frpb, ped/bikes | | 1.00 | 1.00 | | 0.99 | | 1.00 | 0.99 | | | 0.99 | |
| Flpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Frt | | 1.00 | 0.85 | | 0.99 | | 1.00 | 0.98 | | | 0.99 | |
| Flt Protected | | 1.00 | 1.00 | | 1.00 | | 0.95 | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1863 | 1583 | | 3515 | | 1770 | 1823 | | | 3502 | |
| Flt Permitted | | 1.00 | 1.00 | | 1.00 | | 0.95 | 1.00 | | | 0.99 | |
| Satd. Flow (perm) | | 1863 | 1583 | | 3515 | | 1770 | 1823 | | | 3502 | |
| 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) | 0 | 218 | 396 | 0 | 230 | 9 | 564 | 403 | 57 | 16 | 251 | 13 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 4 | 0 |
| Lane Group Flow (vph) | 0 | 218 | 396 | 0 | 239 | 0 | 564 | 457 | 0 | 0 | 276 | 0 |
| Confl. Peds. (#/hr) | | | 1 | | | 4 | | | 2 | | | 2 |
| Turn Type | | NA | custom | | NA | | Split | NA | | Split | NA | |
| Protected Phases | | 8 | 8 3 | | 8 | | 5 | 5 | | 6 | 6 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | 17.1 | 55.7 | | 17.1 | | 74.6 | 74.6 | | | 14.8 | |
| Effective Green, g (s) | | 17.1 | 55.7 | | 17.1 | | 74.6 | 74.6 | | | 14.8 | |
| Actuated g/C Ratio | | 0.14 | 0.46 | | 0.14 | | 0.62 | 0.62 | | | 0.12 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | | 4.5 | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 265 | 734 | | 500 | | 1100 | 1133 | | | 431 | |
| v/s Ratio Prot | | c0.12 | 0.25 | | 0.07 | | c0.32 | 0.25 | | | c0.08 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | 0.82 | 0.53 | | 0.47 | | 0.51 | 0.40 | | | 0.64 | |
| Uniform Delay, d1 | | 49.9 | 22.9 | | 47.3 | | 12.6 | 11.4 | | | 50.0 | |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | 0.04 | 0.01 | | | 1.00 | |
| Incremental Delay, d2 | | 18.2 | 0.7 | | 0.7 | | 1.4 | 0.8 | | | 3.2 | |
| Delay (s) | | 68.2 | 23.7 | | 48.0 | | 1.9 | 1.0 | | | 53.3 | |
| Level of Service | | E | C | | D | | A | A | | | D | |
| Approach Delay (s/veh) | | 39.5 | | | 48.0 | | | 1.5 | | | 53.3 | |
| Approach LOS | | D | | | D | | | A | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 24.3 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.61 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 58.9% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 0 | 524 | 0 | 418 | 2 | 429 | 156 | 10 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 0 | 524 | 0 | 418 | 2 | 429 | 156 | 10 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | | 4.5 | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | | | | | 0.88 | | 0.95 | | | 0.95 | |
| Frt | | | | | | 0.85 | | 0.99 | | | 0.99 | |
| Flt Protected | | | | | | 1.00 | | 1.00 | | | 0.96 | |
| Satd. Flow (prot) | | | | | | 2787 | | 3537 | | | 3407 | |
| Flt Permitted | | | | | | 1.00 | | 1.00 | | | 0.96 | |
| Satd. Flow (perm) | | | | | | 2787 | | 3537 | | | 3407 | |
| 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) | 0 | 0 | 0 | 0 | 0 | 570 | 0 | 454 | 2 | 466 | 170 | 11 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 0 | 570 | 0 | 456 | 0 | 0 | 646 | 0 |
| Turn Type | | | | | | Prot | | NA | | Split | NA | |
| Protected Phases | | | | | | 3 | | 2 | | 1 3 | 1 3 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | | | | | 38.6 | | 31.5 | | | 79.5 | |
| Effective Green, g (s) | | | | | | 38.6 | | 31.5 | | | 79.5 | |
| Actuated g/C Ratio | | | | | | 0.32 | | 0.26 | | | 0.66 | |
| Clearance Time (s) | | | | | | 4.5 | | 4.5 | | | | |
| Vehicle Extension (s) | | | | | | 3.0 | | 3.0 | | | | |
| Lane Grp Cap (vph) | | | | | | 896 | | 928 | | | 2257 | |
| v/s Ratio Prot | | | | | | c0.20 | | c0.13 | | | c0.19 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | | | | | 0.63 | | 0.49 | | | 0.28 | |
| Uniform Delay, d1 | | | | | | 34.7 | | 37.4 | | | 8.4 | |
| Progression Factor | | | | | | 1.00 | | 1.00 | | | 0.05 | |
| Incremental Delay, d2 | | | | | | 3.4 | | 1.8 | | | 0.0 | |
| Delay (s) | | | | | | 38.1 | | 39.3 | | | 0.5 | |
| Level of Service | | | | | | D | | D | | | A | |
| Approach Delay (s/veh) | | 0.0 | | | 38.1 | | | 39.3 | | | 0.5 | |
| Approach LOS | | A | | | D | | | D | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 23.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.50 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 42.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Intersection | |
|---|---|
| Int Delay, s/veh | 1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 7 | 3 | 28 | 0 | 1 | 11 | 10 | 412 | 1 | 3 | 165 | 4 |
| Future Vol, veh/h | 7 | 3 | 28 | 0 | 1 | 11 | 10 | 412 | 1 | 3 | 165 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 100 | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 8 | 3 | 30 | 0 | 1 | 12 | 11 | 448 | 1 | 3 | 179 | 4 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 658 | 659 | 182 | 658 | 660 | 448 | 184 | 0 | 0 | 449 | 0 | 0 |
| Stage 1 | 188 | 188 | - | 470 | 470 | - | - | - | - | - | - | - |
| Stage 2 | 470 | 471 | - | 187 | 190 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 377 | 384 | 861 | 378 | 383 | 610 | 1391 | - | - | 1111 | - | - |
| Stage 1 | 814 | 744 | - | 574 | 560 | - | - | - | - | - | - | - |
| Stage 2 | 574 | 560 | - | 814 | 743 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 365 | 380 | 861 | 357 | 379 | 610 | 1391 | - | - | 1111 | - | - |
| Mov Cap-2 Maneuver | 365 | 380 | - | 357 | 379 | - | - | - | - | - | - | - |
| Stage 1 | 811 | 742 | - | 569 | 556 | - | - | - | - | - | - | - |
| Stage 2 | 557 | 555 | - | 780 | 741 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 11.04 | 11.34 | 0.18 | 0.14 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1391 | - | - | 638 | 581 | 1111 | - | - |
| HCM Lane V/C Ratio | 0.008 | - | - | 0.065 | 0.022 | 0.003 | - | - |
| HCM Control Delay (s/veh) | 7.6 | - | - | 11 | 11.3 | 8.2 | - | - |
| HCM Lane LOS | A | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.2 | 0.1 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.9 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 74 | 38 | 383 | 91 | 55 | 135 |
| Future Vol, veh/h | 74 | 38 | 383 | 91 | 55 | 135 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | Stop | - | None | - | None |
| Storage Length | 50 | 0 | - | - | 100 | - |
| 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 | 80 | 41 | 416 | 99 | 60 | 147 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 732 | 466 | 0 | 0 | 515 | 0 |
| Stage 1 | 466 | - | - | - | - | - |
| Stage 2 | 266 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 388 | 597 | - | - | 1050 | - |
| Stage 1 | 632 | - | - | - | - | - |
| Stage 2 | 778 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 366 | 597 | - | - | 1050 | - |
| Mov Cap-2 Maneuver | 366 | - | - | - | - | - |
| Stage 1 | 632 | - | - | - | - | - |
| Stage 2 | 734 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 15.5 | 1 | 2.5 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 366 | 597 | 1050 | - |
| HCM Lane V/C Ratio | - | - | 0.22 | 0.069 | 0.057 | - |
| HCM Control Delay (s/veh) | - | - | 17.6 | 11.5 | 8.6 | - |
| HCM Lane LOS | - | - | C | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.8 | 0.2 | 0.2 | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.9 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 85 | 60 | 28 | 10 | 20 | 83 |
| Future Vol, veh/h | 85 | 60 | 28 | 10 | 20 | 83 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 92 | 65 | 30 | 11 | 22 | 90 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay, s/veh | 8.3 | 7.4 | 7.5 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 59% | 0% | 19% |
| Vol Thru, % | 41% | 74% | 0% |
| Vol Right, % | 0% | 26% | 81% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 145 | 38 | 103 |
| LT Vol | 85 | 0 | 20 |
| Through Vol | 60 | 28 | 0 |
| RT Vol | 0 | 10 | 83 |
| Lane Flow Rate | 158 | 41 | 112 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.187 | 0.047 | 0.122 |
| Departure Headway (Hd) | 4.281 | 4.095 | 3.939 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 834 | 862 | 916 |
| Service Time | 2.334 | 2.182 | 1.939 |
| HCM Lane V/C Ratio | 0.189 | 0.048 | 0.122 |
| HCM Control Delay, s/veh | 8.3 | 7.4 | 7.5 |
| HCM Lane LOS | A | A | A |
| HCM 95th-tile Q | 0.7 | 0.1 | 0.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 1 | 537 | 31 | 106 | 873 | 0 | 45 | 0 | 133 | 0 | 0 | 0 |
| Future Volume (veh/h) | 1 | 537 | 31 | 106 | 873 | 0 | 45 | 0 | 133 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.96 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 1 | 584 | 34 | 115 | 949 | 0 | 49 | 0 | 145 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2 | 2141 | 125 | 99 | 2422 | 0 | 297 | 0 | 255 | 0 | 2 | 0 |
| Arrive On Green | 0.00 | 0.63 | 0.63 | 0.06 | 0.68 | 0.00 | 0.17 | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 |
| Sat Flow, veh/h | 1781 | 3413 | 198 | 1781 | 3647 | 0 | 1781 | 0 | 1525 | 0 | 1870 | 0 |
| Grp Volume(v), veh/h | 1 | 304 | 314 | 115 | 949 | 0 | 49 | 0 | 145 | 0 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1834 | 1781 | 1777 | 0 | 1781 | 0 | 1525 | 0 | 1870 | 0 |
| Q Serve(g_s), s | 0.1 | 6.9 | 6.9 | 5.0 | 10.4 | 0.0 | 2.1 | 0.0 | 7.9 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.1 | 6.9 | 6.9 | 5.0 | 10.4 | 0.0 | 2.1 | 0.0 | 7.9 | 0.0 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.11 | 1.00 | | 0.00 | 1.00 | | 1.00 | 0.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 2 | 1115 | 1151 | 99 | 2422 | 0 | 297 | 0 | 255 | 0 | 2 | 0 |
| V/C Ratio(X) | 0.41 | 0.27 | 0.27 | 1.16 | 0.39 | 0.00 | 0.16 | 0.00 | 0.57 | 0.00 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 99 | 1115 | 1151 | 99 | 2422 | 0 | 584 | 0 | 500 | 0 | 52 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 44.9 | 7.5 | 7.5 | 42.5 | 6.2 | 0.0 | 32.1 | 0.0 | 34.5 | 0.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 83.8 | 0.6 | 0.6 | 140.6 | 0.5 | 0.0 | 0.3 | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 |
| Initial Q Delay(d3), s/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 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 2.5 | 2.6 | 6.0 | 3.4 | 0.0 | 0.9 | 0.0 | 3.0 | 0.0 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 128.7 | 8.1 | 8.1 | 183.1 | 6.7 | 0.0 | 32.4 | 0.0 | 36.5 | 0.0 | 0.0 | 0.0 |
| LnGrp LOS | F | A | A | F | A | | C | | D | | | |
| Approach Vol, veh/h | | 619 | | | 1064 | | | 194 | | | 0 | |
| Approach Delay, s/veh | | 8.3 | | | 25.8 | | | 35.5 | | | 0.0 | |
| Approach LOS | | A | | | C | | | D | | | | |

| Timer - Assigned Phs | 2 | 3 | 4 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 19.5 | 9.5 | 61.0 | 0.0 | 4.6 | 65.8 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 29.5 | 5.0 | 35.0 | 2.5 | 5.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 9.9 | 7.0 | 8.9 | 0.0 | 2.1 | 12.4 |
| Green Ext Time (p_c), s | 0.9 | 0.0 | 4.0 | 0.0 | 0.0 | 7.2 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 21.0 |
| HCM 7th LOS | C |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 7 | 139 | 107 | 4 | 0 | 0 |
| Future Vol, veh/h | 7 | 139 | 107 | 4 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 8 | 151 | 116 | 4 | 0 | 0 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 121 | 0 | - | 0 | 285 | 118 |
| Stage 1 | - | - | - | - | 118 | - |
| 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 | 1467 | - | - | - | 705 | 933 |
| Stage 1 | - | - | - | - | 907 | - |
| Stage 2 | - | - | - | - | 863 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1467 | - | - | - | 701 | 933 |
| Mov Cap-2 Maneuver | - | - | - | - | 701 | - |
| Stage 1 | - | - | - | - | 902 | - |
| Stage 2 | - | - | - | - | 863 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 0.36 | 0 | 0 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 86 | - | - | - | - |
| HCM Lane V/C Ratio | 0.005 | - | - | - | - |
| HCM Control Delay (s/veh) | 7.5 | 0 | - | - | 0 |
| HCM Lane LOS | A | A | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | - |

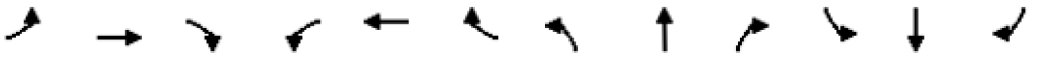
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 5 | 2 | 2 | 93 | 101 | 5 |
| Future Vol, veh/h | 5 | 2 | 2 | 93 | 101 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 2 | 2 | 101 | 110 | 5 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 218 | 113 | 115 | 0 | - | 0 |
| Stage 1 | 113 | - | - | - | - | - |
| Stage 2 | 105 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 770 | 940 | 1474 | - | - | - |
| Stage 1 | 912 | - | - | - | - | - |
| Stage 2 | 919 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 769 | 940 | 1474 | - | - | - |
| Mov Cap-2 Maneuver | 769 | - | - | - | - | - |
| Stage 1 | 911 | - | - | - | - | - |
| Stage 2 | 919 | - | - | - | - | - |

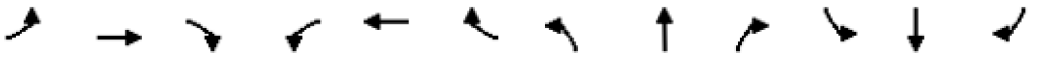
| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 9.48 | 0.16 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 38 | - | 811 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | 0.009 | - | - |
| HCM Control Delay (s/veh) | 7.4 | 0 | 9.5 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 237 | 488 | 0 | 175 | 16 | 465 | 386 | 32 | 16 | 357 | 18 |
| Future Volume (vph) | 0 | 237 | 488 | 0 | 175 | 16 | 465 | 386 | 32 | 16 | 357 | 18 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | 4.5 | | 4.5 | | 4.5 | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 1.00 | 1.00 | | 0.95 | | 1.00 | 1.00 | | | 0.95 | |
| Frpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | | 1.00 | 0.99 | | | 0.99 | |
| Flpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Frt | | 1.00 | 0.85 | | 0.98 | | 1.00 | 0.98 | | | 0.99 | |
| Flt Protected | | 1.00 | 1.00 | | 1.00 | | 0.95 | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1863 | 1583 | | 3496 | | 1770 | 1838 | | | 3504 | |
| Flt Permitted | | 1.00 | 1.00 | | 1.00 | | 0.95 | 1.00 | | | 0.99 | |
| Satd. Flow (perm) | | 1863 | 1583 | | 3496 | | 1770 | 1838 | | | 3504 | |
| 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) | 0 | 258 | 530 | 0 | 190 | 17 | 505 | 420 | 35 | 17 | 388 | 20 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 258 | 530 | 0 | 207 | 0 | 505 | 453 | 0 | 0 | 422 | 0 |
| Confl. Peds. (#/hr) | | | 5 | | | | | | 2 | | | 3 |
| Turn Type | | NA | custom | | NA | | Split | NA | | Split | NA | |
| Protected Phases | | 8 | 8 3 | | 8 | | 5 | 5 | | 6 | 6 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | 26.4 | 77.9 | | 26.4 | | 87.0 | 87.0 | | | 23.1 | |
| Effective Green, g (s) | | 26.4 | 77.9 | | 26.4 | | 87.0 | 87.0 | | | 23.1 | |
| Actuated g/C Ratio | | 0.18 | 0.52 | | 0.18 | | 0.58 | 0.58 | | | 0.15 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | | 4.5 | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 327 | 822 | | 615 | | 1026 | 1066 | | | 539 | |
| v/s Ratio Prot | | c0.14 | c0.33 | | 0.06 | | c0.29 | 0.25 | | | c0.12 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | 0.78 | 0.64 | | 0.33 | | 0.49 | 0.42 | | | 0.78 | |
| Uniform Delay, d1 | | 59.1 | 26.0 | | 54.1 | | 18.5 | 17.5 | | | 61.0 | |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | 0.02 | 0.01 | | | 1.00 | |
| Incremental Delay, d2 | | 11.9 | 1.7 | | 0.3 | | 1.3 | 1.0 | | | 7.3 | |
| Delay (s) | | 71.0 | 27.7 | | 54.4 | | 1.7 | 1.2 | | | 68.3 | |
| Level of Service | | E | C | | D | | A | A | | | E | |
| Approach Delay (s/veh) | | 41.9 | | | 54.4 | | | 1.5 | | | 68.3 | |
| Approach LOS | | D | | | D | | | A | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 31.5 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.67 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 62.0% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 0 | 556 | 0 | 327 | 10 | 578 | 241 | 26 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 0 | 556 | 0 | 327 | 10 | 578 | 241 | 26 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | | 4.5 | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | | | | | 0.88 | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | | | | | 1.00 | | 0.99 | | | 1.00 | |
| Flpb, ped/bikes | | | | | | 1.00 | | 1.00 | | | 1.00 | |
| Frt | | | | | | 0.85 | | 0.99 | | | 0.99 | |
| Flt Protected | | | | | | 1.00 | | 1.00 | | | 0.96 | |
| Satd. Flow (prot) | | | | | | 2787 | | 3522 | | | 3407 | |
| Flt Permitted | | | | | | 1.00 | | 1.00 | | | 0.96 | |
| Satd. Flow (perm) | | | | | | 2787 | | 3522 | | | 3407 | |
| 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) | 0 | 0 | 0 | 0 | 0 | 604 | 0 | 355 | 11 | 628 | 262 | 28 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 0 | 604 | 0 | 364 | 0 | 0 | 916 | 0 |
| Confl. Peds. (#/hr) | | | | | | | | | 1 | | | |
| Turn Type | | | | | | Prot | | NA | | Split | NA | |
| Protected Phases | | | | | | 3 | | 2 | | 1 3 | 1 3 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | | | | | 51.5 | | 31.0 | | | 110.0 | |
| Effective Green, g (s) | | | | | | 51.5 | | 31.0 | | | 110.0 | |
| Actuated g/C Ratio | | | | | | 0.34 | | 0.21 | | | 0.73 | |
| Clearance Time (s) | | | | | | 4.5 | | 4.5 | | | | |
| Vehicle Extension (s) | | | | | | 3.0 | | 3.0 | | | | |
| Lane Grp Cap (vph) | | | | | | 956 | | 727 | | | 2498 | |
| v/s Ratio Prot | | | | | | c0.22 | | c0.10 | | | c0.27 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | | | | | 0.63 | | 0.50 | | | 0.36 | |
| Uniform Delay, d1 | | | | | | 41.2 | | 52.6 | | | 7.2 | |
| Progression Factor | | | | | | 1.00 | | 1.00 | | | 0.04 | |
| Incremental Delay, d2 | | | | | | 3.1 | | 2.4 | | | 0.0 | |
| Delay (s) | | | | | | 44.4 | | 55.1 | | | 0.4 | |
| Level of Service | | | | | | D | | E | | | A | |
| Approach Delay (s/veh) | | 0.0 | | | 44.4 | | | 55.1 | | | 0.4 | |
| Approach LOS | | A | | | D | | | E | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 25.1 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.52 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 65.4% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 16 | 2 | 10 | 2 | 1 | 10 | 14 | 325 | 0 | 11 | 233 | 3 |
| Future Vol, veh/h | 16 | 2 | 10 | 2 | 1 | 10 | 14 | 325 | 0 | 11 | 233 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 8 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 100 | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 17 | 2 | 11 | 2 | 1 | 11 | 15 | 353 | 0 | 12 | 253 | 3 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 671 | 680 | 265 | 673 | 681 | 362 | 265 | 0 | 0 | 362 | 0 | 0 |
| Stage 1 | 287 | 287 | - | 393 | 393 | - | - | - | - | - | - | - |
| Stage 2 | 384 | 393 | - | 280 | 288 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 370 | 373 | 774 | 369 | 373 | 682 | 1299 | - | - | 1196 | - | - |
| Stage 1 | 721 | 674 | - | 632 | 606 | - | - | - | - | - | - | - |
| Stage 2 | 639 | 606 | - | 726 | 673 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 352 | 359 | 766 | 350 | 359 | 677 | 1290 | - | - | 1186 | - | - |
| Mov Cap-2 Maneuver | 352 | 359 | - | 350 | 359 | - | - | - | - | - | - | - |
| Stage 1 | 708 | 663 | - | 619 | 594 | - | - | - | - | - | - | - |
| Stage 2 | 620 | 594 | - | 705 | 661 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 13.84 | 11.61 | 0.32 | 0.36 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1290 | - | - | 437 | 558 | 1186 | - | - |
| HCM Lane V/C Ratio | 0.012 | - | - | 0.07 | 0.025 | 0.01 | - | - |
| HCM Control Delay (s/veh) | 7.8 | - | - | 13.8 | 11.6 | 8.1 | - | - |
| HCM Lane LOS | A | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.2 | 0.1 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.4 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 96 | 61 | 276 | 105 | 44 | 202 |
| Future Vol, veh/h | 96 | 61 | 276 | 105 | 44 | 202 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 6 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | Stop | - | None | - | None |
| Storage Length | 50 | 0 | - | - | 100 | - |
| 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 | 104 | 66 | 300 | 114 | 48 | 220 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 679 | 363 | 0 | 0 | 420 | 0 |
| Stage 1 | 363 | - | - | - | - | - |
| Stage 2 | 316 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 417 | 682 | - | - | 1139 | - |
| Stage 1 | 704 | - | - | - | - | - |
| Stage 2 | 739 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 397 | 678 | - | - | 1132 | - |
| Mov Cap-2 Maneuver | 397 | - | - | - | - | - |
| Stage 1 | 700 | - | - | - | - | - |
| Stage 2 | 707 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 14.8 | 0 | 1.49 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 397 | 678 | 1132 | - |
| HCM Lane V/C Ratio | - | - | 0.263 | 0.098 | 0.042 | - |
| HCM Control Delay (s/veh) | - | - | 17.3 | 10.9 | 8.3 | - |
| HCM Lane LOS | - | - | C | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 1 | 0.3 | 0.1 | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.9 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 103 | 27 | 61 | 47 | 19 | 84 |
| Future Vol, veh/h | 103 | 27 | 61 | 47 | 19 | 84 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 112 | 29 | 66 | 51 | 21 | 91 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay, s/veh | 8.4 | 7.7 | 7.6 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 79% | 0% | 18% |
| Vol Thru, % | 21% | 56% | 0% |
| Vol Right, % | 0% | 44% | 82% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 130 | 108 | 103 |
| LT Vol | 103 | 0 | 19 |
| Through Vol | 27 | 61 | 0 |
| RT Vol | 0 | 47 | 84 |
| Lane Flow Rate | 141 | 117 | 112 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.172 | 0.13 | 0.126 |
| Departure Headway (Hd) | 4.381 | 3.98 | 4.054 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 810 | 885 | 890 |
| Service Time | 2.457 | 2.073 | 2.054 |
| HCM Lane V/C Ratio | 0.174 | 0.132 | 0.126 |
| HCM Control Delay, s/veh | 8.4 | 7.7 | 7.6 |
| HCM Lane LOS | A | A | A |
| HCM 95th-tile Q | 0.6 | 0.4 | 0.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 3 | 820 | 54 | 108 | 654 | 0 | 30 | 0 | 137 | 0 | 0 | 2 |
| Future Volume (veh/h) | 3 | 820 | 54 | 108 | 654 | 0 | 30 | 0 | 137 | 0 | 0 | 2 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 3 | 891 | 59 | 117 | 711 | 0 | 33 | 0 | 149 | 0 | 0 | 2 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 7 | 1378 | 91 | 150 | 1733 | 0 | 250 | 0 | 222 | 0 | 0 | 3 |
| Arrive On Green | 0.00 | 0.41 | 0.41 | 0.08 | 0.49 | 0.00 | 0.14 | 0.00 | 0.14 | 0.00 | 0.00 | 0.00 |
| Sat Flow, veh/h | 1781 | 3383 | 224 | 1781 | 3647 | 0 | 1781 | 0 | 1582 | 0 | 0 | 1585 |
| Grp Volume(v), veh/h | 3 | 468 | 482 | 117 | 711 | 0 | 33 | 0 | 149 | 0 | 0 | 2 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1830 | 1781 | 1777 | 0 | 1781 | 0 | 1582 | 0 | 0 | 1585 |
| Q Serve(g_s), s | 0.1 | 10.4 | 10.4 | 3.2 | 6.3 | 0.0 | 0.8 | 0.0 | 4.4 | 0.0 | 0.0 | 0.1 |
| Cycle Q Clear(g_c), s | 0.1 | 10.4 | 10.4 | 3.2 | 6.3 | 0.0 | 0.8 | 0.0 | 4.4 | 0.0 | 0.0 | 0.1 |
| Prop In Lane | 1.00 | | 0.12 | 1.00 | | 0.00 | 1.00 | | 1.00 | 0.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 7 | 724 | 745 | 150 | 1733 | 0 | 250 | 0 | 222 | 0 | 0 | 3 |
| V/C Ratio(X) | 0.41 | 0.65 | 0.65 | 0.78 | 0.41 | 0.00 | 0.13 | 0.00 | 0.67 | 0.00 | 0.00 | 0.62 |
| Avail Cap(c_a), veh/h | 181 | 1212 | 1248 | 236 | 2533 | 0 | 1070 | 0 | 950 | 0 | 0 | 81 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 24.4 | 11.7 | 11.7 | 22.0 | 8.1 | 0.0 | 18.5 | 0.0 | 20.0 | 0.0 | 0.0 | 24.5 |
| Incr Delay (d2), s/veh | 33.3 | 1.0 | 0.9 | 8.4 | 0.2 | 0.0 | 0.2 | 0.0 | 3.5 | 0.0 | 0.0 | 116.7 |
| Initial Q Delay(d3), s/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 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 3.5 | 3.6 | 1.6 | 1.9 | 0.0 | 0.3 | 0.0 | 1.7 | 0.0 | 0.0 | 0.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 57.7 | 12.7 | 12.7 | 30.4 | 8.2 | 0.0 | 18.7 | 0.0 | 23.5 | 0.0 | 0.0 | 141.1 |
| LnGrp LOS | E | B | B | C | A | | B | | C | | | F |
| Approach Vol, veh/h | | 953 | | | 828 | | | 182 | | | 2 | |
| Approach Delay, s/veh | | 12.8 | | | 11.4 | | | 22.7 | | | 141.1 | |
| Approach LOS | | B | | | B | | | C | | | F | |

| Timer - Assigned Phs | 2 | 3 | 4 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 11.4 | 8.6 | 24.5 | 4.6 | 4.7 | 28.4 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 29.5 | 6.5 | 33.5 | 2.5 | 5.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 6.4 | 5.2 | 12.4 | 2.1 | 2.1 | 8.3 |
| Green Ext Time (p_c), s | 1.0 | 0.0 | 6.4 | 0.0 | 0.0 | 5.4 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 13.2 |
| HCM 7th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 19 | 130 | 144 | 1 | 1 | 15 |
| Future Vol, veh/h | 19 | 130 | 144 | 1 | 1 | 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 | - | - | - | - | 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 | 21 | 141 | 157 | 1 | 1 | 16 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 158 | 0 | - | 0 | 340 | 157 |
| Stage 1 | - | - | - | - | 157 | - |
| Stage 2 | - | - | - | - | 183 | - |
| 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 | 1422 | - | - | - | 656 | 888 |
| Stage 1 | - | - | - | - | 871 | - |
| Stage 2 | - | - | - | - | 849 | - |
| Platoon blocked, % | | | - | - | - | |
| Mov Cap-1 Maneuver | 1422 | - | - | - | 646 | 888 |
| Mov Cap-2 Maneuver | - | - | - | - | 646 | - |
| Stage 1 | - | - | - | - | 858 | - |
| Stage 2 | - | - | - | - | 849 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 0.97 | 0 | 9.23 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 230 | - | - | - | 868 |
| HCM Lane V/C Ratio | 0.015 | - | - | - | 0.02 |
| HCM Control Delay (s/veh) | 7.6 | 0 | - | - | 9.2 |
| HCM Lane LOS | A | A | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.1 |

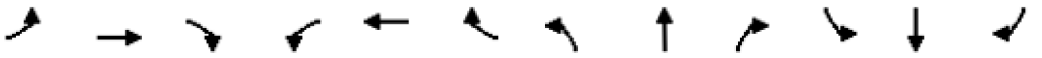
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 13 | 1 | 4 | 146 | 102 | 14 |
| Future Vol, veh/h | 13 | 1 | 4 | 146 | 102 | 14 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 14 | 1 | 4 | 159 | 111 | 15 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 286 | 118 | 126 | 0 | - | 0 |
| Stage 1 | 118 | - | - | - | - | - |
| Stage 2 | 167 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 704 | 933 | 1460 | - | - | - |
| Stage 1 | 907 | - | - | - | - | - |
| Stage 2 | 862 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 702 | 933 | 1460 | - | - | - |
| Mov Cap-2 Maneuver | 702 | - | - | - | - | - |
| Stage 1 | 904 | - | - | - | - | - |
| Stage 2 | 862 | - | - | - | - | - |

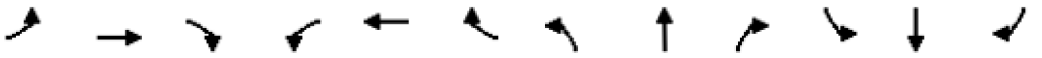
| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 10.15 | 0.2 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 48 | - | 715 | - | - |
| HCM Lane V/C Ratio | 0.003 | - | 0.021 | - | - |
| HCM Control Delay (s/veh) | 7.5 | 0 | 10.1 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 211 | 382 | 0 | 222 | 8 | 544 | 389 | 55 | 16 | 242 | 13 |
| Future Volume (vph) | 0 | 211 | 382 | 0 | 222 | 8 | 544 | 389 | 55 | 16 | 242 | 13 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | 4.5 | | 4.5 | | 4.5 | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 1.00 | 1.00 | | 0.95 | | 1.00 | 1.00 | | | 0.95 | |
| Frpb, ped/bikes | | 1.00 | 1.00 | | 0.99 | | 1.00 | 0.99 | | | 0.99 | |
| Flpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Frt | | 1.00 | 0.85 | | 0.99 | | 1.00 | 0.98 | | | 0.99 | |
| Flt Protected | | 1.00 | 1.00 | | 1.00 | | 0.95 | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1863 | 1583 | | 3516 | | 1770 | 1823 | | | 3501 | |
| Flt Permitted | | 1.00 | 1.00 | | 1.00 | | 0.95 | 1.00 | | | 0.99 | |
| Satd. Flow (perm) | | 1863 | 1583 | | 3516 | | 1770 | 1823 | | | 3501 | |
| 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) | 0 | 229 | 415 | 0 | 241 | 9 | 591 | 423 | 60 | 17 | 263 | 14 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 229 | 415 | 0 | 250 | 0 | 591 | 480 | 0 | 0 | 291 | 0 |
| Confl. Peds. (#/hr) | | | 1 | | | 4 | | | 2 | | | 2 |
| Turn Type | | NA | custom | | NA | | Split | NA | | Split | NA | |
| Protected Phases | | 8 | 8 3 | | 8 | | 5 | 5 | | 6 | 6 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | 17.3 | 55.2 | | 17.3 | | 73.9 | 73.9 | | | 15.3 | |
| Effective Green, g (s) | | 17.3 | 55.2 | | 17.3 | | 73.9 | 73.9 | | | 15.3 | |
| Actuated g/C Ratio | | 0.14 | 0.46 | | 0.14 | | 0.62 | 0.62 | | | 0.13 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | | 4.5 | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 268 | 728 | | 506 | | 1090 | 1122 | | | 446 | |
| v/s Ratio Prot | | c0.12 | 0.26 | | 0.07 | | c0.33 | 0.26 | | | c0.08 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | 0.85 | 0.57 | | 0.49 | | 0.54 | 0.42 | | | 0.65 | |
| Uniform Delay, d1 | | 50.1 | 23.7 | | 47.3 | | 13.2 | 12.0 | | | 49.8 | |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | 0.04 | 0.01 | | | 1.00 | |
| Incremental Delay, d2 | | 22.3 | 1.0 | | 0.7 | | 1.5 | 0.9 | | | 3.3 | |
| Delay (s) | | 72.4 | 24.7 | | 48.0 | | 2.1 | 1.1 | | | 53.2 | |
| Level of Service | | E | C | | D | | A | A | | | D | |
| Approach Delay (s/veh) | | 41.7 | | | 48.0 | | | 1.6 | | | 53.2 | |
| Approach LOS | | D | | | D | | | A | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 24.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.64 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 61.2% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 0 | 550 | 0 | 438 | 2 | 450 | 164 | 10 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 0 | 550 | 0 | 438 | 2 | 450 | 164 | 10 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | | 4.5 | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | | | | | 0.88 | | 0.95 | | | 0.95 | |
| Frt | | | | | | 0.85 | | 0.99 | | | 0.99 | |
| Flt Protected | | | | | | 1.00 | | 1.00 | | | 0.96 | |
| Satd. Flow (prot) | | | | | | 2787 | | 3537 | | | 3408 | |
| Flt Permitted | | | | | | 1.00 | | 1.00 | | | 0.96 | |
| Satd. Flow (perm) | | | | | | 2787 | | 3537 | | | 3408 | |
| 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) | 0 | 0 | 0 | 0 | 0 | 598 | 0 | 476 | 2 | 489 | 178 | 11 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 0 | 598 | 0 | 478 | 0 | 0 | 677 | 0 |
| Turn Type | | | | | | Prot | | NA | | Split | NA | |
| Protected Phases | | | | | | 3 | | 2 | | 1 3 | 1 3 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | | | | | 37.9 | | 31.5 | | | 79.5 | |
| Effective Green, g (s) | | | | | | 37.9 | | 31.5 | | | 79.5 | |
| Actuated g/C Ratio | | | | | | 0.32 | | 0.26 | | | 0.66 | |
| Clearance Time (s) | | | | | | 4.5 | | 4.5 | | | | |
| Vehicle Extension (s) | | | | | | 3.0 | | 3.0 | | | | |
| Lane Grp Cap (vph) | | | | | | 880 | | 928 | | | 2257 | |
| v/s Ratio Prot | | | | | | c0.21 | | c0.14 | | | c0.20 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | | | | | 0.67 | | 0.51 | | | 0.29 | |
| Uniform Delay, d1 | | | | | | 35.7 | | 37.7 | | | 8.5 | |
| Progression Factor | | | | | | 1.00 | | 1.00 | | | 0.05 | |
| Incremental Delay, d2 | | | | | | 4.2 | | 2.0 | | | 0.0 | |
| Delay (s) | | | | | | 39.9 | | 39.7 | | | 0.5 | |
| Level of Service | | | | | | D | | D | | | A | |
| Approach Delay (s/veh) | | 0.0 | | | 39.9 | | | 39.7 | | | 0.5 | |
| Approach LOS | | A | | | D | | | D | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 24.7 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.53 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 44.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Intersection | |
|---|---|
| Int Delay, s/veh | 1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 7 | 3 | 29 | 0 | 1 | 11 | 10 | 432 | 1 | 3 | 173 | 4 |
| Future Vol, veh/h | 7 | 3 | 29 | 0 | 1 | 11 | 10 | 432 | 1 | 3 | 173 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 100 | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 8 | 3 | 32 | 0 | 1 | 12 | 11 | 470 | 1 | 3 | 188 | 4 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 689 | 689 | 190 | 688 | 691 | 470 | 192 | 0 | 0 | 471 | 0 | 0 |
| Stage 1 | 197 | 197 | - | 492 | 492 | - | - | - | - | - | - | - |
| Stage 2 | 492 | 492 | - | 196 | 199 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 360 | 369 | 852 | 360 | 368 | 593 | 1381 | - | - | 1091 | - | - |
| Stage 1 | 805 | 738 | - | 559 | 548 | - | - | - | - | - | - | - |
| Stage 2 | 559 | 547 | - | 806 | 736 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 348 | 365 | 852 | 340 | 364 | 593 | 1381 | - | - | 1091 | - | - |
| Mov Cap-2 Maneuver | 348 | 365 | - | 340 | 364 | - | - | - | - | - | - | - |
| Stage 1 | 803 | 736 | - | 554 | 543 | - | - | - | - | - | - | - |
| Stage 2 | 542 | 543 | - | 770 | 734 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 11.18 | 11.54 | 0.17 | 0.14 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1381 | - | - | 625 | 564 | 1091 | - | - |
| HCM Lane V/C Ratio | 0.008 | - | - | 0.068 | 0.023 | 0.003 | - | - |
| HCM Control Delay (s/veh) | 7.6 | - | - | 11.2 | 11.5 | 8.3 | - | - |
| HCM Lane LOS | A | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.2 | 0.1 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 78 | 40 | 402 | 95 | 58 | 142 |
| Future Vol, veh/h | 78 | 40 | 402 | 95 | 58 | 142 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | Stop | - | None | - | None |
| Storage Length | 50 | 0 | - | - | 100 | - |
| 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 | 85 | 43 | 437 | 103 | 63 | 154 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 769 | 489 | 0 | 0 | 540 | 0 |
| Stage 1 | 489 | - | - | - | - | - |
| Stage 2 | 280 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 369 | 579 | - | - | 1028 | - |
| Stage 1 | 617 | - | - | - | - | - |
| Stage 2 | 767 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 347 | 579 | - | - | 1028 | - |
| Mov Cap-2 Maneuver | 347 | - | - | - | - | - |
| Stage 1 | 617 | - | - | - | - | - |
| Stage 2 | 720 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 16.34 | 0 | 2.53 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 347 | 579 | 1028 | - |
| HCM Lane V/C Ratio | - | - | 0.245 | 0.075 | 0.061 | - |
| HCM Control Delay (s/veh) | - | - | 18.7 | 11.7 | 8.7 | - |
| HCM Lane LOS | - | - | C | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.9 | 0.2 | 0.2 | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.9 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 89 | 63 | 29 | 10 | 21 | 87 |
| Future Vol, veh/h | 89 | 63 | 29 | 10 | 21 | 87 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 97 | 68 | 32 | 11 | 23 | 95 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay, s/veh | 8.4 | 7.4 | 7.5 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 59% | 0% | 19% |
| Vol Thru, % | 41% | 74% | 0% |
| Vol Right, % | 0% | 26% | 81% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 152 | 39 | 108 |
| LT Vol | 89 | 0 | 21 |
| Through Vol | 63 | 29 | 0 |
| RT Vol | 0 | 10 | 87 |
| Lane Flow Rate | 165 | 42 | 117 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.197 | 0.048 | 0.129 |
| Departure Headway (Hd) | 4.29 | 4.114 | 3.96 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 831 | 856 | 911 |
| Service Time | 2.349 | 2.209 | 1.96 |
| HCM Lane V/C Ratio | 0.199 | 0.049 | 0.128 |
| HCM Control Delay, s/veh | 8.4 | 7.4 | 7.5 |
| HCM Lane LOS | A | A | A |
| HCM 95th-tile Q | 0.7 | 0.2 | 0.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 1 | 563 | 33 | 111 | 916 | 0 | 47 | 0 | 139 | 0 | 0 | 0 |
| Future Volume (veh/h) | 1 | 563 | 33 | 111 | 916 | 0 | 47 | 0 | 139 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.96 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 1 | 612 | 36 | 121 | 996 | 0 | 51 | 0 | 151 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2 | 2129 | 125 | 99 | 2411 | 0 | 303 | 0 | 260 | 0 | 2 | 0 |
| Arrive On Green | 0.00 | 0.62 | 0.62 | 0.06 | 0.68 | 0.00 | 0.17 | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 |
| Sat Flow, veh/h | 1781 | 3410 | 200 | 1781 | 3647 | 0 | 1781 | 0 | 1526 | 0 | 1870 | 0 |
| Grp Volume(v), veh/h | 1 | 319 | 329 | 121 | 996 | 0 | 51 | 0 | 151 | 0 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1834 | 1781 | 1777 | 0 | 1781 | 0 | 1526 | 0 | 1870 | 0 |
| Q Serve(g_s), s | 0.1 | 7.4 | 7.4 | 5.0 | 11.3 | 0.0 | 2.2 | 0.0 | 8.2 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.1 | 7.4 | 7.4 | 5.0 | 11.3 | 0.0 | 2.2 | 0.0 | 8.2 | 0.0 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.11 | 1.00 | | 0.00 | 1.00 | | 1.00 | 0.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 2 | 1109 | 1145 | 99 | 2411 | 0 | 303 | 0 | 260 | 0 | 2 | 0 |
| V/C Ratio(X) | 0.41 | 0.29 | 0.29 | 1.22 | 0.41 | 0.00 | 0.17 | 0.00 | 0.58 | 0.00 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 99 | 1109 | 1145 | 99 | 2411 | 0 | 584 | 0 | 500 | 0 | 52 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 44.9 | 7.7 | 7.7 | 42.5 | 6.5 | 0.0 | 31.9 | 0.0 | 34.4 | 0.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 83.8 | 0.7 | 0.6 | 162.0 | 0.5 | 0.0 | 0.3 | 0.0 | 2.1 | 0.0 | 0.0 | 0.0 |
| Initial Q Delay(d3), s/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 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 2.7 | 2.8 | 6.6 | 3.7 | 0.0 | 1.0 | 0.0 | 3.1 | 0.0 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 128.7 | 8.4 | 8.4 | 204.5 | 7.0 | 0.0 | 32.2 | 0.0 | 36.4 | 0.0 | 0.0 | 0.0 |
| LnGrp LOS | F | A | A | F | A | | C | | D | | | |
| Approach Vol, veh/h | | 649 | | | 1117 | | | 202 | | | 0 | |
| Approach Delay, s/veh | | 8.6 | | | 28.4 | | | 35.4 | | | 0.0 | |
| Approach LOS | | A | | | C | | | D | | | | |

| Timer - Assigned Phs | 2 | 3 | 4 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 19.8 | 9.5 | 60.7 | 0.0 | 4.6 | 65.6 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 29.5 | 5.0 | 35.0 | 2.5 | 5.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 10.2 | 7.0 | 9.4 | 0.0 | 2.1 | 13.3 |
| Green Ext Time (p_c), s | 1.0 | 0.0 | 4.2 | 0.0 | 0.0 | 7.5 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 22.6 |
| HCM 7th LOS | C |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 7 | 146 | 112 | 4 | 0 | 0 |
| Future Vol, veh/h | 7 | 146 | 112 | 4 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 8 | 159 | 122 | 4 | 0 | 0 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 126 | 0 | - | 0 | 298 | 124 |
| Stage 1 | - | - | - | - | 124 | - |
| Stage 2 | - | - | - | - | 174 | - |
| 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 | 1460 | - | - | - | 693 | 927 |
| Stage 1 | - | - | - | - | 902 | - |
| Stage 2 | - | - | - | - | 856 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1460 | - | - | - | 689 | 927 |
| Mov Cap-2 Maneuver | - | - | - | - | 689 | - |
| Stage 1 | - | - | - | - | 896 | - |
| Stage 2 | - | - | - | - | 856 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 0.34 | 0 | 0 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 82 | - | - | - | - |
| HCM Lane V/C Ratio | 0.005 | - | - | - | - |
| HCM Control Delay (s/veh) | 7.5 | 0 | - | - | 0 |
| HCM Lane LOS | A | A | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | - |

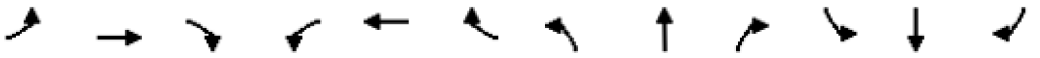
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 5 | 2 | 2 | 98 | 106 | 5 |
| Future Vol, veh/h | 5 | 2 | 2 | 98 | 106 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 2 | 2 | 107 | 115 | 5 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 229 | 118 | 121 | 0 | - | 0 |
| Stage 1 | 118 | - | - | - | - | - |
| Stage 2 | 111 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 759 | 934 | 1467 | - | - | - |
| Stage 1 | 907 | - | - | - | - | - |
| Stage 2 | 914 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 758 | 934 | 1467 | - | - | - |
| Mov Cap-2 Maneuver | 758 | - | - | - | - | - |
| Stage 1 | 906 | - | - | - | - | - |
| Stage 2 | 914 | - | - | - | - | - |

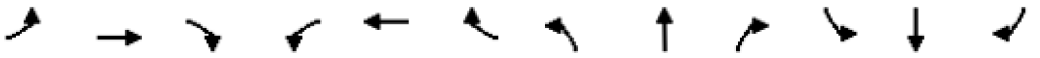
| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 9.54 | 0.15 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 36 | - | 801 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | 0.009 | - | - |
| HCM Control Delay (s/veh) | 7.5 | 0 | 9.5 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 247 | 508 | 0 | 182 | 17 | 485 | 402 | 33 | 17 | 372 | 19 |
| Future Volume (vph) | 0 | 247 | 508 | 0 | 182 | 17 | 485 | 402 | 33 | 17 | 372 | 19 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | 4.5 | | 4.5 | | 4.5 | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 1.00 | 1.00 | | 0.95 | | 1.00 | 1.00 | | | 0.95 | |
| Frpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | | 1.00 | 0.99 | | | 0.99 | |
| Flpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Frt | | 1.00 | 0.85 | | 0.98 | | 1.00 | 0.98 | | | 0.99 | |
| Flt Protected | | 1.00 | 1.00 | | 1.00 | | 0.95 | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1863 | 1583 | | 3495 | | 1770 | 1838 | | | 3504 | |
| Flt Permitted | | 1.00 | 1.00 | | 1.00 | | 0.95 | 1.00 | | | 0.99 | |
| Satd. Flow (perm) | | 1863 | 1583 | | 3495 | | 1770 | 1838 | | | 3504 | |
| 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) | 0 | 268 | 552 | 0 | 198 | 18 | 527 | 437 | 36 | 18 | 404 | 21 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 268 | 552 | 0 | 216 | 0 | 527 | 471 | 0 | 0 | 440 | 0 |
| Confl. Peds. (#/hr) | | | 5 | | | | | | 2 | | | 3 |
| Turn Type | | NA | custom | | NA | | Split | NA | | Split | NA | |
| Protected Phases | | 8 | 8 3 | | 8 | | 5 | 5 | | 6 | 6 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | 27.1 | 77.3 | | 27.1 | | 85.7 | 85.7 | | | 23.7 | |
| Effective Green, g (s) | | 27.1 | 77.3 | | 27.1 | | 85.7 | 85.7 | | | 23.7 | |
| Actuated g/C Ratio | | 0.18 | 0.52 | | 0.18 | | 0.57 | 0.57 | | | 0.16 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | | 4.5 | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 336 | 815 | | 631 | | 1011 | 1050 | | | 553 | |
| v/s Ratio Prot | | c0.14 | c0.35 | | 0.06 | | c0.30 | 0.26 | | | c0.13 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | 0.79 | 0.67 | | 0.34 | | 0.52 | 0.44 | | | 0.79 | |
| Uniform Delay, d1 | | 58.8 | 27.0 | | 53.6 | | 19.6 | 18.5 | | | 60.8 | |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | 0.02 | 0.01 | | | 1.00 | |
| Incremental Delay, d2 | | 12.3 | 2.2 | | 0.3 | | 1.5 | 1.0 | | | 7.8 | |
| Delay (s) | | 71.2 | 29.3 | | 53.9 | | 1.9 | 1.3 | | | 68.6 | |
| Level of Service | | E | C | | D | | A | A | | | E | |
| Approach Delay (s/veh) | | 43.0 | | | 53.9 | | | 1.6 | | | 68.6 | |
| Approach LOS | | D | | | D | | | A | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 31.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.70 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 63.9% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 0 | 579 | 0 | 341 | 10 | 602 | 251 | 27 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 0 | 579 | 0 | 341 | 10 | 602 | 251 | 27 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | | 4.5 | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | | | | | 0.88 | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | | | | | 1.00 | | 0.99 | | | 1.00 | |
| Flpb, ped/bikes | | | | | | 1.00 | | 1.00 | | | 1.00 | |
| Frt | | | | | | 0.85 | | 0.99 | | | 0.99 | |
| Flt Protected | | | | | | 1.00 | | 1.00 | | | 0.96 | |
| Satd. Flow (prot) | | | | | | 2787 | | 3523 | | | 3407 | |
| Flt Permitted | | | | | | 1.00 | | 1.00 | | | 0.96 | |
| Satd. Flow (perm) | | | | | | 2787 | | 3523 | | | 3407 | |
| 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) | 0 | 0 | 0 | 0 | 0 | 629 | 0 | 371 | 11 | 654 | 273 | 29 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 0 | 629 | 0 | 380 | 0 | 0 | 954 | 0 |
| Confl. Peds. (#/hr) | | | | | | | | | 1 | | | |
| Turn Type | | | | | | Prot | | NA | | Split | NA | |
| Protected Phases | | | | | | 3 | | 2 | | 1 3 | 1 3 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | | | | | 50.2 | | 31.0 | | | 110.0 | |
| Effective Green, g (s) | | | | | | 50.2 | | 31.0 | | | 110.0 | |
| Actuated g/C Ratio | | | | | | 0.33 | | 0.21 | | | 0.73 | |
| Clearance Time (s) | | | | | | 4.5 | | 4.5 | | | | |
| Vehicle Extension (s) | | | | | | 3.0 | | 3.0 | | | | |
| Lane Grp Cap (vph) | | | | | | 932 | | 728 | | | 2498 | |
| v/s Ratio Prot | | | | | | c0.23 | | c0.11 | | | c0.28 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | | | | | 0.67 | | 0.52 | | | 0.38 | |
| Uniform Delay, d1 | | | | | | 42.8 | | 52.9 | | | 7.4 | |
| Progression Factor | | | | | | 1.00 | | 1.00 | | | 0.04 | |
| Incremental Delay, d2 | | | | | | 3.9 | | 2.6 | | | 0.0 | |
| Delay (s) | | | | | | 46.7 | | 55.5 | | | 0.4 | |
| Level of Service | | | | | | D | | E | | | A | |
| Approach Delay (s/veh) | | 0.0 | | | 46.7 | | | 55.5 | | | 0.4 | |
| Approach LOS | | A | | | D | | | E | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 26.0 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.54 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 66.7% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 17 | 2 | 10 | 2 | 1 | 10 | 15 | 339 | 0 | 11 | 243 | 3 |
| Future Vol, veh/h | 17 | 2 | 10 | 2 | 1 | 10 | 15 | 339 | 0 | 11 | 243 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 8 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 100 | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 18 | 2 | 11 | 2 | 1 | 11 | 16 | 368 | 0 | 12 | 264 | 3 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 699 | 708 | 276 | 701 | 709 | 377 | 275 | 0 | 0 | 377 | 0 | 0 |
| Stage 1 | 298 | 298 | - | 410 | 410 | - | - | - | - | - | - | - |
| Stage 2 | 402 | 410 | - | 291 | 299 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 354 | 360 | 763 | 353 | 359 | 669 | 1288 | - | - | 1181 | - | - |
| Stage 1 | 711 | 667 | - | 619 | 595 | - | - | - | - | - | - | - |
| Stage 2 | 625 | 595 | - | 717 | 666 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 337 | 346 | 756 | 335 | 345 | 663 | 1278 | - | - | 1171 | - | - |
| Mov Cap-2 Maneuver | 337 | 346 | - | 335 | 345 | - | - | - | - | - | - | - |
| Stage 1 | 698 | 655 | - | 605 | 583 | - | - | - | - | - | - | - |
| Stage 2 | 606 | 583 | - | 696 | 654 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 14.33 | 11.81 | 0.33 | 0.35 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1278 | - | - | 417 | 543 | 1171 | - | - |
| HCM Lane V/C Ratio | 0.013 | - | - | 0.076 | 0.026 | 0.01 | - | - |
| HCM Control Delay (s/veh) | 7.9 | - | - | 14.3 | 11.8 | 8.1 | - | - |
| HCM Lane LOS | A | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.2 | 0.1 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.6 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 100 | 64 | 288 | 109 | 46 | 210 |
| Future Vol, veh/h | 100 | 64 | 288 | 109 | 46 | 210 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 6 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | Stop | - | None | - | None |
| Storage Length | 50 | 0 | - | - | 100 | - |
| 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 | 109 | 70 | 313 | 118 | 50 | 228 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 708 | 378 | 0 | 0 | 438 | 0 |
| Stage 1 | 378 | - | - | - | - | - |
| Stage 2 | 329 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 401 | 668 | - | - | 1122 | - |
| Stage 1 | 693 | - | - | - | - | - |
| Stage 2 | 729 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 381 | 665 | - | - | 1116 | - |
| Mov Cap-2 Maneuver | 381 | - | - | - | - | - |
| Stage 1 | 689 | - | - | - | - | - |
| Stage 2 | 696 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 15.4 | 0 | 1.51 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 381 | 665 | 1116 | - |
| HCM Lane V/C Ratio | - | - | 0.285 | 0.105 | 0.045 | - |
| HCM Control Delay (s/veh) | - | - | 18.2 | 11 | 8.4 | - |
| HCM Lane LOS | - | - | C | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 1.2 | 0.3 | 0.1 | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 107 | 28 | 64 | 49 | 20 | 88 |
| Future Vol, veh/h | 107 | 28 | 64 | 49 | 20 | 88 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 116 | 30 | 70 | 53 | 22 | 96 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay, s/veh | 8.5 | 7.8 | 7.7 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 79% | 0% | 19% |
| Vol Thru, % | 21% | 57% | 0% |
| Vol Right, % | 0% | 43% | 81% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 135 | 113 | 108 |
| LT Vol | 107 | 0 | 20 |
| Through Vol | 28 | 64 | 0 |
| RT Vol | 0 | 49 | 88 |
| Lane Flow Rate | 147 | 123 | 117 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.179 | 0.14 | 0.133 |
| Departure Headway (Hd) | 4.394 | 4.094 | 4.079 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 806 | 881 | 883 |
| Service Time | 2.48 | 2.094 | 2.086 |
| HCM Lane V/C Ratio | 0.182 | 0.14 | 0.133 |
| HCM Control Delay, s/veh | 8.5 | 7.8 | 7.7 |
| HCM Lane LOS | A | A | A |
| HCM 95th-tile Q | 0.6 | 0.5 | 0.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 3 | 854 | 56 | 113 | 681 | 0 | 31 | 0 | 143 | 0 | 0 | 2 |
| Future Volume (veh/h) | 3 | 854 | 56 | 113 | 681 | 0 | 31 | 0 | 143 | 0 | 0 | 2 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 3 | 928 | 61 | 123 | 740 | 0 | 34 | 0 | 155 | 0 | 0 | 2 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 7 | 1363 | 90 | 158 | 1731 | 0 | 258 | 0 | 230 | 0 | 0 | 3 |
| Arrive On Green | 0.00 | 0.40 | 0.40 | 0.09 | 0.49 | 0.00 | 0.15 | 0.00 | 0.15 | 0.00 | 0.00 | 0.00 |
| Sat Flow, veh/h | 1781 | 3384 | 222 | 1781 | 3647 | 0 | 1781 | 0 | 1582 | 0 | 0 | 1585 |
| Grp Volume(v), veh/h | 3 | 487 | 502 | 123 | 740 | 0 | 34 | 0 | 155 | 0 | 0 | 2 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1830 | 1781 | 1777 | 0 | 1781 | 0 | 1582 | 0 | 0 | 1585 |
| Q Serve(g_s), s | 0.1 | 11.2 | 11.2 | 3.4 | 6.7 | 0.0 | 0.8 | 0.0 | 4.6 | 0.0 | 0.0 | 0.1 |
| Cycle Q Clear(g_c), s | 0.1 | 11.2 | 11.2 | 3.4 | 6.7 | 0.0 | 0.8 | 0.0 | 4.6 | 0.0 | 0.0 | 0.1 |
| Prop In Lane | 1.00 | | 0.12 | 1.00 | | 0.00 | 1.00 | | 1.00 | 0.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 7 | 715 | 737 | 158 | 1731 | 0 | 258 | 0 | 230 | 0 | 0 | 3 |
| V/C Ratio(X) | 0.41 | 0.68 | 0.68 | 0.78 | 0.43 | 0.00 | 0.13 | 0.00 | 0.68 | 0.00 | 0.00 | 0.63 |
| Avail Cap(c_a), veh/h | 179 | 1198 | 1234 | 233 | 2504 | 0 | 1058 | 0 | 939 | 0 | 0 | 80 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 24.7 | 12.2 | 12.2 | 22.2 | 8.3 | 0.0 | 18.5 | 0.0 | 20.1 | 0.0 | 0.0 | 24.8 |
| Incr Delay (d2), s/veh | 33.4 | 1.2 | 1.1 | 9.5 | 0.2 | 0.0 | 0.2 | 0.0 | 3.4 | 0.0 | 0.0 | 119.6 |
| Initial Q Delay(d3), s/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 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 3.8 | 3.9 | 1.7 | 2.0 | 0.0 | 0.3 | 0.0 | 1.7 | 0.0 | 0.0 | 0.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 58.0 | 13.4 | 13.3 | 31.7 | 8.4 | 0.0 | 18.7 | 0.0 | 23.6 | 0.0 | 0.0 | 144.4 |
| LnGrp LOS | E | B | B | C | A | | B | | C | | | F |
| Approach Vol, veh/h | | 992 | | | 863 | | | 189 | | | 2 | |
| Approach Delay, s/veh | | 13.5 | | | 11.7 | | | 22.7 | | | 144.4 | |
| Approach LOS | | B | | | B | | | C | | | F | |

| Timer - Assigned Phs | 2 | 3 | 4 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 11.7 | 8.9 | 24.5 | 4.6 | 4.7 | 28.7 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 29.5 | 6.5 | 33.5 | 2.5 | 5.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 6.6 | 5.4 | 13.2 | 2.1 | 2.1 | 8.7 |
| Green Ext Time (p_c), s | 1.0 | 0.0 | 6.6 | 0.0 | 0.0 | 5.6 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 13.7 |
| HCM 7th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 19 | 135 | 150 | 1 | 1 | 15 |
| Future Vol, veh/h | 19 | 135 | 150 | 1 | 1 | 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 | - | - | - | - | 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 | 21 | 147 | 163 | 1 | 1 | 16 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 164 | 0 | - | 0 | 352 | 164 |
| Stage 1 | - | - | - | - | 164 | - |
| Stage 2 | - | - | - | - | 188 | - |
| 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 | 1414 | - | - | - | 646 | 881 |
| Stage 1 | - | - | - | - | 866 | - |
| Stage 2 | - | - | - | - | 844 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1414 | - | - | - | 636 | 881 |
| Mov Cap-2 Maneuver | - | - | - | - | 636 | - |
| Stage 1 | - | - | - | - | 852 | - |
| Stage 2 | - | - | - | - | 844 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 0.94 | 0 | 9.27 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 222 | - | - | - | 860 |
| HCM Lane V/C Ratio | 0.015 | - | - | - | 0.02 |
| HCM Control Delay (s/veh) | 7.6 | 0 | - | - | 9.3 |
| HCM Lane LOS | A | A | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.1 |

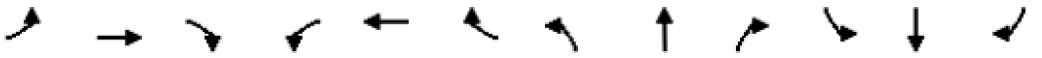
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 13 | 1 | 4 | 152 | 106 | 14 |
| Future Vol, veh/h | 13 | 1 | 4 | 152 | 106 | 14 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 14 | 1 | 4 | 165 | 115 | 15 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 297 | 123 | 130 | 0 | - | 0 |
| Stage 1 | 123 | - | - | - | - | - |
| Stage 2 | 174 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 694 | 928 | 1455 | - | - | - |
| Stage 1 | 903 | - | - | - | - | - |
| Stage 2 | 856 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 692 | 928 | 1455 | - | - | - |
| Mov Cap-2 Maneuver | 692 | - | - | - | - | - |
| Stage 1 | 900 | - | - | - | - | - |
| Stage 2 | 856 | - | - | - | - | - |

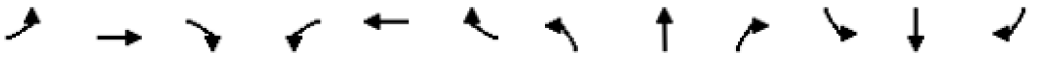
| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 10.22 | 0.19 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 46 | - | 705 | - | - |
| HCM Lane V/C Ratio | 0.003 | - | 0.022 | - | - |
| HCM Control Delay (s/veh) | 7.5 | 0 | 10.2 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 211 | 387 | 0 | 222 | 8 | 550 | 391 | 56 | 16 | 245 | 13 |
| Future Volume (vph) | 0 | 211 | 387 | 0 | 222 | 8 | 550 | 391 | 56 | 16 | 245 | 13 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | 4.5 | | 4.5 | | 4.5 | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 1.00 | 1.00 | | 0.95 | | 1.00 | 1.00 | | | 0.95 | |
| Frpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Flpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Frt | | 1.00 | 0.85 | | 0.99 | | 1.00 | 0.98 | | | 0.99 | |
| Flt Protected | | 1.00 | 1.00 | | 1.00 | | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1863 | 1583 | | 3516 | | 1770 | 1822 | | | 3502 | |
| Flt Permitted | | 1.00 | 1.00 | | 1.00 | | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | | 1863 | 1583 | | 3516 | | 1770 | 1822 | | | 3502 | |
| 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) | 0 | 229 | 421 | 0 | 241 | 9 | 598 | 425 | 61 | 17 | 266 | 14 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 229 | 421 | 0 | 250 | 0 | 598 | 483 | 0 | 0 | 294 | 0 |
| Confl. Peds. (#/hr) | | | 1 | | | 4 | | | 2 | | | 2 |
| Turn Type | | NA | custom | | NA | | Split | NA | | Split | NA | |
| Protected Phases | | 8 | 8 3 | | 8 | | 5 | 5 | | 6 | 6 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | 17.3 | 55.1 | | 17.3 | | 73.8 | 73.8 | | | 15.4 | |
| Effective Green, g (s) | | 17.3 | 55.1 | | 17.3 | | 73.8 | 73.8 | | | 15.4 | |
| Actuated g/C Ratio | | 0.14 | 0.46 | | 0.14 | | 0.62 | 0.62 | | | 0.13 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | | 4.5 | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 268 | 726 | | 506 | | 1088 | 1120 | | | 449 | |
| v/s Ratio Prot | | c0.12 | c0.27 | | 0.07 | | c0.34 | 0.26 | | | c0.08 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | 0.85 | 0.58 | | 0.49 | | 0.55 | 0.43 | | | 0.65 | |
| Uniform Delay, d1 | | 50.1 | 23.9 | | 47.3 | | 13.4 | 12.1 | | | 49.8 | |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | 0.05 | 0.02 | | | 1.00 | |
| Incremental Delay, d2 | | 22.3 | 1.1 | | 0.8 | | 1.6 | 1.0 | | | 3.4 | |
| Delay (s) | | 72.5 | 25.0 | | 48.1 | | 2.2 | 1.2 | | | 53.2 | |
| Level of Service | | E | C | | D | | A | A | | | D | |
| Approach Delay (s/veh) | | 41.8 | | | 48.1 | | | 1.7 | | | 53.2 | |
| Approach LOS | | D | | | D | | | A | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 24.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.64 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 61.6% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 0 | 550 | 0 | 447 | 2 | 451 | 171 | 10 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 0 | 550 | 0 | 447 | 2 | 451 | 171 | 10 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | | 4.5 | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | | | | | 0.88 | | 0.95 | | | 0.95 | |
| Frt | | | | | | 0.85 | | 1.00 | | | 1.00 | |
| Flt Protected | | | | | | 1.00 | | 1.00 | | | 0.97 | |
| Satd. Flow (prot) | | | | | | 2787 | | 3537 | | | 3409 | |
| Flt Permitted | | | | | | 1.00 | | 1.00 | | | 0.97 | |
| Satd. Flow (perm) | | | | | | 2787 | | 3537 | | | 3409 | |
| 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) | 0 | 0 | 0 | 0 | 0 | 598 | 0 | 486 | 2 | 490 | 186 | 11 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 0 | 598 | 0 | 488 | 0 | 0 | 686 | 0 |
| Turn Type | | | | | | Prot | | NA | | Split | NA | |
| Protected Phases | | | | | | 3 | | 2 | | 1 3 | 1 3 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | | | | | 37.8 | | 31.5 | | | 79.5 | |
| Effective Green, g (s) | | | | | | 37.8 | | 31.5 | | | 79.5 | |
| Actuated g/C Ratio | | | | | | 0.32 | | 0.26 | | | 0.66 | |
| Clearance Time (s) | | | | | | 4.5 | | 4.5 | | | | |
| Vehicle Extension (s) | | | | | | 3.0 | | 3.0 | | | | |
| Lane Grp Cap (vph) | | | | | | 877 | | 928 | | | 2258 | |
| v/s Ratio Prot | | | | | | c0.21 | | c0.14 | | | c0.20 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | | | | | 0.68 | | 0.53 | | | 0.30 | |
| Uniform Delay, d1 | | | | | | 35.9 | | 37.9 | | | 8.6 | |
| Progression Factor | | | | | | 1.00 | | 1.00 | | | 0.05 | |
| Incremental Delay, d2 | | | | | | 4.3 | | 2.1 | | | 0.1 | |
| Delay (s) | | | | | | 40.1 | | 40.0 | | | 0.5 | |
| Level of Service | | | | | | D | | D | | | A | |
| Approach Delay (s/veh) | | 0.0 | | | 40.1 | | | 40.0 | | | 0.5 | |
| Approach LOS | | A | | | D | | | D | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 24.7 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.53 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 44.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 7 | 0 | 31 | 0 | 0 | 0 | 10 | 449 | 0 | 0 | 180 | 4 |
| Future Vol, veh/h | 7 | 0 | 31 | 0 | 0 | 0 | 10 | 449 | 0 | 0 | 180 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 100 | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 8 | 0 | 34 | 0 | 0 | 0 | 11 | 488 | 0 | 0 | 196 | 4 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 708 | 708 | 198 | 705 | 710 | 488 | 200 | 0 | 0 | 488 | 0 | 0 |
| Stage 1 | 198 | 198 | - | 510 | 510 | - | - | - | - | - | - | - |
| Stage 2 | 510 | 510 | - | 196 | 200 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 350 | 360 | 843 | 351 | 359 | 580 | 1372 | - | - | 1075 | - | - |
| Stage 1 | 804 | 737 | - | 546 | 538 | - | - | - | - | - | - | - |
| Stage 2 | 546 | 538 | - | 806 | 736 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 347 | 357 | 843 | 334 | 356 | 580 | 1372 | - | - | 1075 | - | - |
| Mov Cap-2 Maneuver | 347 | 357 | - | 334 | 356 | - | - | - | - | - | - | - |
| Stage 1 | 804 | 737 | - | 542 | 533 | - | - | - | - | - | - | - |
| Stage 2 | 542 | 533 | - | 774 | 736 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 10.75 | 0 | 0.17 | 0 |
| HCM LOS | B | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1372 | - | - | 667 | - | 1075 | - | - |
| HCM Lane V/C Ratio | 0.008 | - | - | 0.062 | - | - | - | - |
| HCM Control Delay (s/veh) | 7.6 | - | - | 10.7 | 0 | 0 | - | - |
| HCM Lane LOS | A | - | - | B | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.2 | - | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 86 | 57 | 401 | 90 | 67 | 142 |
| Future Vol, veh/h | 86 | 57 | 401 | 90 | 67 | 142 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | Stop | - | None | - | None |
| Storage Length | 50 | 0 | - | - | 100 | - |
| 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 | 93 | 62 | 436 | 98 | 73 | 154 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 785 | 485 | 0 | 0 | 534 | 0 |
| Stage 1 | 485 | - | - | - | - | - |
| Stage 2 | 300 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 362 | 582 | - | - | 1034 | - |
| Stage 1 | 619 | - | - | - | - | - |
| Stage 2 | 752 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 336 | 582 | - | - | 1034 | - |
| Mov Cap-2 Maneuver | 336 | - | - | - | - | - |
| Stage 1 | 619 | - | - | - | - | - |
| Stage 2 | 699 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 16.65 | 0 | 2.8 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 336 | 582 | 1034 | - |
| HCM Lane V/C Ratio | - | - | 0.278 | 0.106 | 0.07 | - |
| HCM Control Delay (s/veh) | - | - | 19.8 | 11.9 | 8.7 | - |
| HCM Lane LOS | - | - | C | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 1.1 | 0.4 | 0.2 | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 98 | 63 | 29 | 10 | 21 | 85 |
| Future Vol, veh/h | 98 | 63 | 29 | 10 | 21 | 85 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 107 | 68 | 32 | 11 | 23 | 92 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay, s/veh | 8.5 | 7.4 | 7.6 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 61% | 0% | 20% |
| Vol Thru, % | 39% | 74% | 0% |
| Vol Right, % | 0% | 26% | 80% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 161 | 39 | 106 |
| LT Vol | 98 | 0 | 21 |
| Through Vol | 63 | 29 | 0 |
| RT Vol | 0 | 10 | 85 |
| Lane Flow Rate | 175 | 42 | 115 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.209 | 0.048 | 0.128 |
| Departure Headway (Hd) | 4.291 | 4.118 | 3.986 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 830 | 854 | 904 |
| Service Time | 2.351 | 2.217 | 1.986 |
| HCM Lane V/C Ratio | 0.211 | 0.049 | 0.127 |
| HCM Control Delay, s/veh | 8.5 | 7.4 | 7.6 |
| HCM Lane LOS | A | A | A |
| HCM 95th-tile Q | 0.8 | 0.2 | 0.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 1 | 564 | 30 | 107 | 916 | 0 | 43 | 0 | 148 | 0 | 0 | 0 |
| Future Volume (veh/h) | 1 | 564 | 30 | 107 | 916 | 0 | 43 | 0 | 148 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.96 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 1 | 613 | 33 | 116 | 996 | 0 | 47 | 0 | 161 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2 | 2123 | 114 | 99 | 2393 | 0 | 312 | 0 | 268 | 0 | 2 | 0 |
| Arrive On Green | 0.00 | 0.62 | 0.62 | 0.06 | 0.67 | 0.00 | 0.18 | 0.00 | 0.18 | 0.00 | 0.00 | 0.00 |
| Sat Flow, veh/h | 1781 | 3429 | 184 | 1781 | 3647 | 0 | 1781 | 0 | 1528 | 0 | 1870 | 0 |
| Grp Volume(v), veh/h | 1 | 317 | 329 | 116 | 996 | 0 | 47 | 0 | 161 | 0 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1837 | 1781 | 1777 | 0 | 1781 | 0 | 1528 | 0 | 1870 | 0 |
| Q Serve(g_s), s | 0.1 | 7.5 | 7.5 | 5.0 | 11.4 | 0.0 | 2.0 | 0.0 | 8.7 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.1 | 7.5 | 7.5 | 5.0 | 11.4 | 0.0 | 2.0 | 0.0 | 8.7 | 0.0 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.10 | 1.00 | | 0.00 | 1.00 | | 1.00 | 0.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 2 | 1100 | 1137 | 99 | 2393 | 0 | 312 | 0 | 268 | 0 | 2 | 0 |
| V/C Ratio(X) | 0.41 | 0.29 | 0.29 | 1.17 | 0.42 | 0.00 | 0.15 | 0.00 | 0.60 | 0.00 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 99 | 1100 | 1137 | 99 | 2393 | 0 | 584 | 0 | 501 | 0 | 52 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 44.9 | 7.9 | 7.9 | 42.5 | 6.7 | 0.0 | 31.4 | 0.0 | 34.2 | 0.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 83.8 | 0.7 | 0.6 | 144.1 | 0.5 | 0.0 | 0.2 | 0.0 | 2.2 | 0.0 | 0.0 | 0.0 |
| Initial Q Delay(d3), s/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 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 2.8 | 2.9 | 6.1 | 3.8 | 0.0 | 0.9 | 0.0 | 3.4 | 0.0 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 128.7 | 8.6 | 8.6 | 186.6 | 7.2 | 0.0 | 31.7 | 0.0 | 36.4 | 0.0 | 0.0 | 0.0 |
| LnGrp LOS | F | A | A | F | A | | C | | D | | | |
| Approach Vol, veh/h | | 647 | | | 1112 | | | 208 | | | 0 | |
| Approach Delay, s/veh | | 8.8 | | | 25.9 | | | 35.3 | | | 0.0 | |
| Approach LOS | | A | | | C | | | D | | | | |

| Timer - Assigned Phs | 2 | 3 | 4 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 20.3 | 9.5 | 60.2 | 0.0 | 4.6 | 65.1 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 29.5 | 5.0 | 35.0 | 2.5 | 5.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 10.7 | 7.0 | 9.5 | 0.0 | 2.1 | 13.4 |
| Green Ext Time (p_c), s | 1.0 | 0.0 | 4.2 | 0.0 | 0.0 | 7.5 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 21.3 |
| HCM 7th LOS | C |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.4 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 12 | 145 | 111 | 3 | 11 | 25 |
| Future Vol, veh/h | 12 | 145 | 111 | 3 | 11 | 25 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 13 | 158 | 121 | 3 | 12 | 27 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 124 | 0 | - | 0 | 306 | 122 |
| Stage 1 | - | - | - | - | 122 | - |
| Stage 2 | - | - | - | - | 184 | - |
| 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 | 1463 | - | - | - | 686 | 929 |
| Stage 1 | - | - | - | - | 903 | - |
| Stage 2 | - | - | - | - | 848 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1463 | - | - | - | 679 | 929 |
| Mov Cap-2 Maneuver | - | - | - | - | 679 | - |
| Stage 1 | - | - | - | - | 894 | - |
| Stage 2 | - | - | - | - | 848 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 0.57 | 0 | 9.52 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 138 | - | - | - | 835 |
| HCM Lane V/C Ratio | 0.009 | - | - | - | 0.047 |
| HCM Control Delay (s/veh) | 7.5 | 0 | - | - | 9.5 |
| HCM Lane LOS | A | A | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.1 |

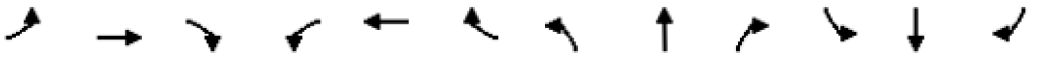
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1 | 1 | 1 | 109 | 105 | 1 |
| Future Vol, veh/h | 1 | 1 | 1 | 109 | 105 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 1 | 1 | 118 | 114 | 1 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 235 | 115 | 115 | 0 | - | 0 |
| Stage 1 | 115 | - | - | - | - | - |
| Stage 2 | 121 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 753 | 938 | 1474 | - | - | - |
| Stage 1 | 910 | - | - | - | - | - |
| Stage 2 | 905 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 752 | 938 | 1474 | - | - | - |
| Mov Cap-2 Maneuver | 752 | - | - | - | - | - |
| Stage 1 | 909 | - | - | - | - | - |
| Stage 2 | 905 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 9.32 | 0.07 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 16 | - | 835 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | 0.003 | - | - |
| HCM Control Delay (s/veh) | 7.4 | 0 | 9.3 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 247 | 519 | 0 | 182 | 17 | 489 | 400 | 34 | 17 | 375 | 19 |
| Future Volume (vph) | 0 | 247 | 519 | 0 | 182 | 17 | 489 | 400 | 34 | 17 | 375 | 19 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | 4.5 | | 4.5 | | 4.5 | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 1.00 | 1.00 | | 0.95 | | 1.00 | 1.00 | | | 0.95 | |
| Frpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Flpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Frt | | 1.00 | 0.85 | | 0.99 | | 1.00 | 0.99 | | | 0.99 | |
| Flt Protected | | 1.00 | 1.00 | | 1.00 | | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1863 | 1583 | | 3495 | | 1770 | 1837 | | | 3504 | |
| Flt Permitted | | 1.00 | 1.00 | | 1.00 | | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | | 1863 | 1583 | | 3495 | | 1770 | 1837 | | | 3504 | |
| 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) | 0 | 268 | 564 | 0 | 198 | 18 | 532 | 435 | 37 | 18 | 408 | 21 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 268 | 564 | 0 | 216 | 0 | 532 | 470 | 0 | 0 | 444 | 0 |
| Confl. Peds. (#/hr) | | | 5 | | | | | | 2 | | | 3 |
| Turn Type | | NA | custom | | NA | | Split | NA | | Split | NA | |
| Protected Phases | | 8 | 8 3 | | 8 | | 5 | 5 | | 6 | 6 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | 27.5 | 77.3 | | 27.5 | | 85.3 | 85.3 | | | 23.7 | |
| Effective Green, g (s) | | 27.5 | 77.3 | | 27.5 | | 85.3 | 85.3 | | | 23.7 | |
| Actuated g/C Ratio | | 0.18 | 0.52 | | 0.18 | | 0.57 | 0.57 | | | 0.16 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | | 4.5 | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 341 | 815 | | 640 | | 1006 | 1044 | | | 553 | |
| v/s Ratio Prot | | c0.14 | c0.36 | | 0.06 | | c0.30 | 0.26 | | | c0.13 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | 0.79 | 0.69 | | 0.34 | | 0.53 | 0.45 | | | 0.80 | |
| Uniform Delay, d1 | | 58.4 | 27.4 | | 53.3 | | 20.0 | 18.8 | | | 60.9 | |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | 0.02 | 0.01 | | | 1.00 | |
| Incremental Delay, d2 | | 11.3 | 2.6 | | 0.3 | | 1.6 | 1.1 | | | 8.3 | |
| Delay (s) | | 69.7 | 29.9 | | 53.6 | | 2.0 | 1.4 | | | 69.2 | |
| Level of Service | | E | C | | D | | A | A | | | E | |
| Approach Delay (s/veh) | | 42.8 | | | 53.6 | | | 1.7 | | | 69.2 | |
| Approach LOS | | D | | | D | | | A | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 31.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.70 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 64.2% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 0 | 579 | 0 | 344 | 10 | 603 | 264 | 27 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 0 | 579 | 0 | 344 | 10 | 603 | 264 | 27 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | | 4.5 | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | | | | | 0.88 | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | | | | | 1.00 | | 1.00 | | | 1.00 | |
| Flpb, ped/bikes | | | | | | 1.00 | | 1.00 | | | 1.00 | |
| Frt | | | | | | 0.85 | | 1.00 | | | 1.00 | |
| Flt Protected | | | | | | 1.00 | | 1.00 | | | 0.97 | |
| Satd. Flow (prot) | | | | | | 2787 | | 3523 | | | 3408 | |
| Flt Permitted | | | | | | 1.00 | | 1.00 | | | 0.97 | |
| Satd. Flow (perm) | | | | | | 2787 | | 3523 | | | 3408 | |
| 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) | 0 | 0 | 0 | 0 | 0 | 629 | 0 | 374 | 11 | 655 | 287 | 29 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 0 | 629 | 0 | 383 | 0 | 0 | 970 | 0 |
| Confl. Peds. (#/hr) | | | | | | | | | 1 | | | |
| Turn Type | | | | | | Prot | | NA | | Split | NA | |
| Protected Phases | | | | | | 3 | | 2 | | 1 3 | 1 3 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | | | | | 49.8 | | 31.0 | | | 110.0 | |
| Effective Green, g (s) | | | | | | 49.8 | | 31.0 | | | 110.0 | |
| Actuated g/C Ratio | | | | | | 0.33 | | 0.21 | | | 0.73 | |
| Clearance Time (s) | | | | | | 4.5 | | 4.5 | | | | |
| Vehicle Extension (s) | | | | | | 3.0 | | 3.0 | | | | |
| Lane Grp Cap (vph) | | | | | | 925 | | 728 | | | 2499 | |
| v/s Ratio Prot | | | | | | c0.23 | | c0.11 | | | c0.28 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | | | | | 0.68 | | 0.53 | | | 0.39 | |
| Uniform Delay, d1 | | | | | | 43.2 | | 53.0 | | | 7.5 | |
| Progression Factor | | | | | | 1.00 | | 1.00 | | | 0.05 | |
| Incremental Delay, d2 | | | | | | 4.0 | | 2.7 | | | 0.1 | |
| Delay (s) | | | | | | 47.2 | | 55.7 | | | 0.4 | |
| Level of Service | | | | | | D | | E | | | A | |
| Approach Delay (s/veh) | | 0.0 | | | 47.2 | | | 55.7 | | | 0.4 | |
| Approach LOS | | A | | | D | | | E | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 26.0 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.55 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 66.7% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 17 | 0 | 14 | 0 | 0 | 0 | 15 | 345 | 0 | 0 | 258 | 3 |
| Future Vol, veh/h | 17 | 0 | 14 | 0 | 0 | 0 | 15 | 345 | 0 | 0 | 258 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 8 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 100 | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 18 | 0 | 15 | 0 | 0 | 0 | 16 | 375 | 0 | 0 | 280 | 3 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 698 | 707 | 292 | 699 | 708 | 384 | 292 | 0 | 0 | 384 | 0 | 0 |
| Stage 1 | 290 | 290 | - | 417 | 417 | - | - | - | - | - | - | - |
| Stage 2 | 408 | 417 | - | 282 | 292 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 355 | 360 | 747 | 354 | 359 | 664 | 1270 | - | - | 1174 | - | - |
| Stage 1 | 718 | 672 | - | 614 | 591 | - | - | - | - | - | - | - |
| Stage 2 | 620 | 591 | - | 725 | 671 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 348 | 350 | 740 | 339 | 349 | 658 | 1260 | - | - | 1164 | - | - |
| Mov Cap-2 Maneuver | 348 | 350 | - | 339 | 349 | - | - | - | - | - | - | - |
| Stage 1 | 712 | 667 | - | 600 | 579 | - | - | - | - | - | - | - |
| Stage 2 | 612 | 579 | - | 708 | 666 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 13.5 | 0 | 0.33 | 0 |
| HCM LOS | B | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1260 | - | - | 457 | - | 1164 | - | - |
| HCM Lane V/C Ratio | 0.013 | - | - | 0.074 | - | - | - | - |
| HCM Control Delay (s/veh) | 7.9 | - | - | 13.5 | 0 | 0 | - | - |
| HCM Lane LOS | A | - | - | B | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.2 | - | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.9 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 97 | 70 | 288 | 96 | 65 | 210 |
| Future Vol, veh/h | 97 | 70 | 288 | 96 | 65 | 210 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 6 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | Stop | - | None | - | None |
| Storage Length | 50 | 0 | - | - | 100 | - |
| 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 | 105 | 76 | 313 | 104 | 71 | 228 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 742 | 371 | 0 | 0 | 423 | 0 |
| Stage 1 | 371 | - | - | - | - | - |
| Stage 2 | 371 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 383 | 675 | - | - | 1136 | - |
| Stage 1 | 698 | - | - | - | - | - |
| Stage 2 | 698 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 357 | 671 | - | - | 1129 | - |
| Mov Cap-2 Maneuver | 357 | - | - | - | - | - |
| Stage 1 | 694 | - | - | - | - | - |
| Stage 2 | 654 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 15.82 | 0 | 1.99 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 357 | 671 | 1129 | - |
| HCM Lane V/C Ratio | - | - | 0.295 | 0.113 | 0.063 | - |
| HCM Control Delay (s/veh) | - | - | 19.3 | 11.1 | 8.4 | - |
| HCM Lane LOS | - | - | C | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 1.2 | 0.4 | 0.2 | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.1 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 113 | 28 | 64 | 49 | 20 | 94 |
| Future Vol, veh/h | 113 | 28 | 64 | 49 | 20 | 94 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 123 | 30 | 70 | 53 | 22 | 102 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay, s/veh | 8.5 | 7.8 | 7.8 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 80% | 0% | 18% |
| Vol Thru, % | 20% | 57% | 0% |
| Vol Right, % | 0% | 43% | 82% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 141 | 113 | 114 |
| LT Vol | 113 | 0 | 20 |
| Through Vol | 28 | 64 | 0 |
| RT Vol | 0 | 49 | 94 |
| Lane Flow Rate | 153 | 123 | 124 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.188 | 0.141 | 0.141 |
| Departure Headway (Hd) | 4.408 | 4.119 | 4.089 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 803 | 876 | 881 |
| Service Time | 2.499 | 2.119 | 2.097 |
| HCM Lane V/C Ratio | 0.191 | 0.14 | 0.141 |
| HCM Control Delay, s/veh | 8.5 | 7.8 | 7.8 |
| HCM Lane LOS | A | A | A |
| HCM 95th-tile Q | 0.7 | 0.5 | 0.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 3 | 855 | 54 | 109 | 681 | 0 | 25 | 0 | 145 | 0 | 0 | 2 |
| Future Volume (veh/h) | 3 | 855 | 54 | 109 | 681 | 0 | 25 | 0 | 145 | 0 | 0 | 2 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 3 | 929 | 59 | 118 | 740 | 0 | 27 | 0 | 158 | 0 | 0 | 2 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 7 | 1370 | 87 | 151 | 1723 | 0 | 260 | 0 | 231 | 0 | 0 | 3 |
| Arrive On Green | 0.00 | 0.40 | 0.40 | 0.09 | 0.48 | 0.00 | 0.15 | 0.00 | 0.15 | 0.00 | 0.00 | 0.00 |
| Sat Flow, veh/h | 1781 | 3393 | 215 | 1781 | 3647 | 0 | 1781 | 0 | 1582 | 0 | 0 | 1585 |
| Grp Volume(v), veh/h | 3 | 487 | 501 | 118 | 740 | 0 | 27 | 0 | 158 | 0 | 0 | 2 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1831 | 1781 | 1777 | 0 | 1781 | 0 | 1582 | 0 | 0 | 1585 |
| Q Serve(g_s), s | 0.1 | 11.1 | 11.1 | 3.2 | 6.7 | 0.0 | 0.7 | 0.0 | 4.7 | 0.0 | 0.0 | 0.1 |
| Cycle Q Clear(g_c), s | 0.1 | 11.1 | 11.1 | 3.2 | 6.7 | 0.0 | 0.7 | 0.0 | 4.7 | 0.0 | 0.0 | 0.1 |
| Prop In Lane | 1.00 | | 0.12 | 1.00 | | 0.00 | 1.00 | | 1.00 | 0.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 7 | 718 | 740 | 151 | 1723 | 0 | 260 | 0 | 231 | 0 | 0 | 3 |
| V/C Ratio(X) | 0.41 | 0.68 | 0.68 | 0.78 | 0.43 | 0.00 | 0.10 | 0.00 | 0.68 | 0.00 | 0.00 | 0.62 |
| Avail Cap(c_a), veh/h | 180 | 1202 | 1239 | 234 | 2512 | 0 | 1061 | 0 | 942 | 0 | 0 | 80 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 24.6 | 12.1 | 12.1 | 22.2 | 8.3 | 0.0 | 18.3 | 0.0 | 20.1 | 0.0 | 0.0 | 24.7 |
| Incr Delay (d2), s/veh | 33.4 | 1.1 | 1.1 | 8.6 | 0.2 | 0.0 | 0.2 | 0.0 | 3.5 | 0.0 | 0.0 | 118.8 |
| Initial Q Delay(d3), s/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 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 3.8 | 3.9 | 1.6 | 2.0 | 0.0 | 0.3 | 0.0 | 1.8 | 0.0 | 0.0 | 0.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 58.0 | 13.2 | 13.2 | 30.8 | 8.5 | 0.0 | 18.5 | 0.0 | 23.6 | 0.0 | 0.0 | 143.5 |
| LnGrp LOS | E | B | B | C | A | | B | | C | | | F |
| Approach Vol, veh/h | | 991 | | | 858 | | | 185 | | | 2 | |
| Approach Delay, s/veh | | 13.4 | | | 11.5 | | | 22.8 | | | 143.5 | |
| Approach LOS | | B | | | B | | | C | | | F | |

| Timer - Assigned Phs | 2 | 3 | 4 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 11.7 | 8.7 | 24.5 | 4.6 | 4.7 | 28.5 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 29.5 | 6.5 | 33.5 | 2.5 | 5.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 6.7 | 5.2 | 13.1 | 2.1 | 2.1 | 8.7 |
| Green Ext Time (p_c), s | 1.0 | 0.0 | 6.6 | 0.0 | 0.0 | 5.6 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 13.6 |
| HCM 7th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.3 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 27 | 133 | 150 | 6 | 8 | 18 |
| Future Vol, veh/h | 27 | 133 | 150 | 6 | 8 | 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 | - | - | - | - | 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 | 29 | 145 | 163 | 7 | 9 | 20 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 170 | 0 | - | 0 | 370 | 166 |
| Stage 1 | - | - | - | - | 166 | - |
| Stage 2 | - | - | - | - | 203 | - |
| 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 | 1408 | - | - | - | 631 | 878 |
| Stage 1 | - | - | - | - | 863 | - |
| Stage 2 | - | - | - | - | 831 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1408 | - | - | - | 616 | 878 |
| Mov Cap-2 Maneuver | - | - | - | - | 616 | - |
| Stage 1 | - | - | - | - | 844 | - |
| Stage 2 | - | - | - | - | 831 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 1.28 | 0 | 9.81 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 304 | - | - | - | 777 |
| HCM Lane V/C Ratio | 0.021 | - | - | - | 0.036 |
| HCM Control Delay (s/veh) | 7.6 | 0 | - | - | 9.8 |
| HCM Lane LOS | A | A | - | - | A |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.1 |

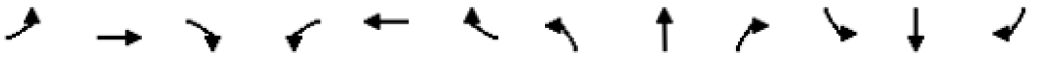
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1 | 1 | 2 | 160 | 111 | 3 |
| Future Vol, veh/h | 1 | 1 | 2 | 160 | 111 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 1 | 2 | 174 | 121 | 3 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 301 | 122 | 124 | 0 | - | 0 |
| Stage 1 | 122 | - | - | - | - | - |
| Stage 2 | 178 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 691 | 929 | 1463 | - | - | - |
| Stage 1 | 903 | - | - | - | - | - |
| Stage 2 | 853 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 690 | 929 | 1463 | - | - | - |
| Mov Cap-2 Maneuver | 690 | - | - | - | - | - |
| Stage 1 | 902 | - | - | - | - | - |
| Stage 2 | 853 | - | - | - | - | - |

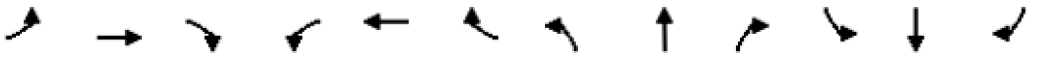
| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 9.56 | 0.09 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 22 | - | 792 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | 0.003 | - | - |
| HCM Control Delay (s/veh) | 7.5 | 0 | 9.6 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 285 | 516 | 0 | 301 | 11 | 736 | 526 | 74 | 21 | 328 | 17 |
| Future Volume (vph) | 0 | 285 | 516 | 0 | 301 | 11 | 736 | 526 | 74 | 21 | 328 | 17 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | 4.5 | | 4.5 | | 4.5 | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 1.00 | 1.00 | | 0.95 | | 1.00 | 1.00 | | | 0.95 | |
| Frpb, ped/bikes | | 1.00 | 1.00 | | 0.99 | | 1.00 | 0.99 | | | 0.99 | |
| Flpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Frt | | 1.00 | 0.85 | | 0.99 | | 1.00 | 0.98 | | | 0.99 | |
| Flt Protected | | 1.00 | 1.00 | | 1.00 | | 0.95 | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1863 | 1583 | | 3516 | | 1770 | 1823 | | | 3503 | |
| Flt Permitted | | 1.00 | 1.00 | | 1.00 | | 0.95 | 1.00 | | | 0.99 | |
| Satd. Flow (perm) | | 1863 | 1583 | | 3516 | | 1770 | 1823 | | | 3503 | |
| 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) | 0 | 310 | 561 | 0 | 327 | 12 | 800 | 572 | 80 | 23 | 357 | 18 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 310 | 561 | 0 | 339 | 0 | 800 | 649 | 0 | 0 | 395 | 0 |
| Confl. Peds. (#/hr) | | | 1 | | | 4 | | | 2 | | | 2 |
| Turn Type | | NA | custom | | NA | | Split | NA | | Split | NA | |
| Protected Phases | | 8 | 8 3 | | 8 | | 5 | 5 | | 6 | 6 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | 23.5 | 69.8 | | 23.5 | | 81.8 | 81.8 | | | 21.2 | |
| Effective Green, g (s) | | 23.5 | 69.8 | | 23.5 | | 81.8 | 81.8 | | | 21.2 | |
| Actuated g/C Ratio | | 0.17 | 0.50 | | 0.17 | | 0.58 | 0.58 | | | 0.15 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | | 4.5 | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 312 | 789 | | 590 | | 1034 | 1065 | | | 530 | |
| v/s Ratio Prot | | c0.17 | 0.35 | | 0.10 | | c0.45 | 0.36 | | | c0.11 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | 0.99 | 0.71 | | 0.57 | | 0.77 | 0.60 | | | 0.74 | |
| Uniform Delay, d1 | | 58.1 | 27.2 | | 53.6 | | 22.0 | 18.7 | | | 56.8 | |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | 0.11 | 0.03 | | | 1.00 | |
| Incremental Delay, d2 | | 48.9 | 3.0 | | 1.3 | | 2.8 | 1.2 | | | 5.6 | |
| Delay (s) | | 107.1 | 30.3 | | 55.0 | | 5.2 | 1.8 | | | 62.4 | |
| Level of Service | | F | C | | E | | A | A | | | E | |
| Approach Delay (s/veh) | | 57.6 | | | 55.0 | | | 3.7 | | | 62.4 | |
| Approach LOS | | E | | | E | | | A | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 32.4 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.84 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 78.0% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 0 | 743 | 0 | 593 | 3 | 608 | 221 | 14 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 0 | 743 | 0 | 593 | 3 | 608 | 221 | 14 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | | 4.5 | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | | | | | 0.88 | | 0.95 | | | 0.95 | |
| Frt | | | | | | 0.85 | | 0.99 | | | 0.99 | |
| Flt Protected | | | | | | 1.00 | | 1.00 | | | 0.96 | |
| Satd. Flow (prot) | | | | | | 2787 | | 3537 | | | 3408 | |
| Flt Permitted | | | | | | 1.00 | | 1.00 | | | 0.96 | |
| Satd. Flow (perm) | | | | | | 2787 | | 3537 | | | 3408 | |
| 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) | 0 | 0 | 0 | 0 | 0 | 808 | 0 | 645 | 3 | 661 | 240 | 15 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 0 | 808 | 0 | 648 | 0 | 0 | 915 | 0 |
| Turn Type | | | | | | Prot | | NA | | Split | NA | |
| Protected Phases | | | | | | 3 | | 2 | | 1 3 | 1 3 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | | | | | 46.3 | | 31.0 | | | 100.0 | |
| Effective Green, g (s) | | | | | | 46.3 | | 31.0 | | | 100.0 | |
| Actuated g/C Ratio | | | | | | 0.33 | | 0.22 | | | 0.71 | |
| Clearance Time (s) | | | | | | 4.5 | | 4.5 | | | | |
| Vehicle Extension (s) | | | | | | 3.0 | | 3.0 | | | | |
| Lane Grp Cap (vph) | | | | | | 921 | | 783 | | | 2434 | |
| v/s Ratio Prot | | | | | | c0.29 | | c0.18 | | | c0.27 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | | | | | 0.87 | | 0.82 | | | 0.37 | |
| Uniform Delay, d1 | | | | | | 44.1 | | 51.9 | | | 7.8 | |
| Progression Factor | | | | | | 1.00 | | 1.00 | | | 0.05 | |
| Incremental Delay, d2 | | | | | | 11.5 | | 9.7 | | | 0.0 | |
| Delay (s) | | | | | | 55.7 | | 61.7 | | | 0.4 | |
| Level of Service | | | | | | E | | E | | | A | |
| Approach Delay (s/veh) | | 0.0 | | | 55.7 | | | 61.7 | | | 0.4 | |
| Approach LOS | | A | | | E | | | E | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 36.0 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.70 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 57.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 10 | 3 | 40 | 0 | 1 | 11 | 14 | 584 | 1 | 3 | 234 | 6 |
| Future Vol, veh/h | 10 | 3 | 40 | 0 | 1 | 11 | 14 | 584 | 1 | 3 | 234 | 6 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 100 | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 3 | 43 | 0 | 1 | 12 | 15 | 635 | 1 | 3 | 254 | 7 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 930 | 930 | 258 | 928 | 933 | 635 | 261 | 0 | 0 | 636 | 0 | 0 |
| Stage 1 | 264 | 264 | - | 666 | 666 | - | - | - | - | - | - | - |
| Stage 2 | 666 | 666 | - | 263 | 267 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 248 | 267 | 781 | 248 | 266 | 478 | 1304 | - | - | 948 | - | - |
| Stage 1 | 741 | 690 | - | 449 | 457 | - | - | - | - | - | - | - |
| Stage 2 | 449 | 457 | - | 743 | 688 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 237 | 263 | 781 | 228 | 262 | 478 | 1304 | - | - | 948 | - | - |
| Mov Cap-2 Maneuver | 237 | 263 | - | 228 | 262 | - | - | - | - | - | - | - |
| Stage 1 | 738 | 688 | - | 444 | 452 | - | - | - | - | - | - | - |
| Stage 2 | 431 | 452 | - | 695 | 685 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 13.04 | 13.29 | 0.18 | 0.11 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1304 | - | - | 505 | 447 | 948 | - | - |
| HCM Lane V/C Ratio | 0.012 | - | - | 0.114 | 0.029 | 0.003 | - | - |
| HCM Control Delay (s/veh) | 7.8 | - | - | 13 | 13.3 | 8.8 | - | - |
| HCM Lane LOS | A | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.4 | 0.1 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.7 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 105 | 54 | 543 | 129 | 78 | 191 |
| Future Vol, veh/h | 105 | 54 | 543 | 129 | 78 | 191 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | Stop | - | None | - | None |
| Storage Length | 50 | 0 | - | - | 100 | - |
| 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 | 114 | 59 | 590 | 140 | 85 | 208 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1038 | 660 | 0 | 0 | 730 | 0 |
| Stage 1 | 660 | - | - | - | - | - |
| Stage 2 | 377 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 256 | 463 | - | - | 874 | - |
| Stage 1 | 514 | - | - | - | - | - |
| Stage 2 | 693 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 231 | 463 | - | - | 874 | - |
| Mov Cap-2 Maneuver | 231 | - | - | - | - | - |
| Stage 1 | 514 | - | - | - | - | - |
| Stage 2 | 626 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 27.75 | 0 | 2.77 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 231 | 463 | 874 | - |
| HCM Lane V/C Ratio | - | - | 0.494 | 0.127 | 0.097 | - |
| HCM Control Delay (s/veh) | - | - | 34.9 | 13.9 | 9.6 | - |
| HCM Lane LOS | - | - | D | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 2.5 | 0.4 | 0.3 | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.6 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 121 | 85 | 40 | 14 | 28 | 118 |
| Future Vol, veh/h | 121 | 85 | 40 | 14 | 28 | 118 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 132 | 92 | 43 | 15 | 30 | 128 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay, s/veh | 9.1 | 7.7 | 8.1 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 59% | 0% | 19% |
| Vol Thru, % | 41% | 74% | 0% |
| Vol Right, % | 0% | 26% | 81% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 206 | 54 | 146 |
| LT Vol | 121 | 0 | 28 |
| Through Vol | 85 | 40 | 0 |
| RT Vol | 0 | 14 | 118 |
| Lane Flow Rate | 224 | 59 | 159 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.272 | 0.071 | 0.182 |
| Departure Headway (Hd) | 4.376 | 4.37 | 4.138 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 808 | 822 | 871 |
| Service Time | 2.476 | 2.384 | 2.142 |
| HCM Lane V/C Ratio | 0.277 | 0.072 | 0.183 |
| HCM Control Delay, s/veh | 9.1 | 7.7 | 8.1 |
| HCM Lane LOS | A | A | A |
| HCM 95th-tile Q | 1.1 | 0.2 | 0.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 1 | 761 | 44 | 150 | 1238 | 0 | 64 | 0 | 189 | 0 | 0 | 0 |
| Future Volume (veh/h) | 1 | 761 | 44 | 150 | 1238 | 0 | 64 | 0 | 189 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.97 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 1 | 827 | 48 | 163 | 1346 | 0 | 70 | 0 | 205 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2 | 1977 | 115 | 129 | 2311 | 0 | 353 | 0 | 305 | 0 | 2 | 0 |
| Arrive On Green | 0.00 | 0.58 | 0.58 | 0.07 | 0.65 | 0.00 | 0.20 | 0.00 | 0.20 | 0.00 | 0.00 | 0.00 |
| Sat Flow, veh/h | 1781 | 3413 | 198 | 1781 | 3647 | 0 | 1781 | 0 | 1535 | 0 | 1870 | 0 |
| Grp Volume(v), veh/h | 1 | 430 | 445 | 163 | 1346 | 0 | 70 | 0 | 205 | 0 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1834 | 1781 | 1777 | 0 | 1781 | 0 | 1535 | 0 | 1870 | 0 |
| Q Serve(g_s), s | 0.1 | 12.1 | 12.1 | 6.5 | 19.2 | 0.0 | 3.0 | 0.0 | 11.1 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.1 | 12.1 | 12.1 | 6.5 | 19.2 | 0.0 | 3.0 | 0.0 | 11.1 | 0.0 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.11 | 1.00 | | 0.00 | 1.00 | | 1.00 | 0.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 2 | 1029 | 1063 | 129 | 2311 | 0 | 353 | 0 | 305 | 0 | 2 | 0 |
| V/C Ratio(X) | 0.41 | 0.42 | 0.42 | 1.27 | 0.58 | 0.00 | 0.20 | 0.00 | 0.67 | 0.00 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 99 | 1029 | 1063 | 129 | 2311 | 0 | 584 | 0 | 503 | 0 | 52 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 44.9 | 10.5 | 10.5 | 41.7 | 8.9 | 0.0 | 30.1 | 0.0 | 33.4 | 0.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 83.8 | 1.3 | 1.2 | 167.7 | 1.1 | 0.0 | 0.3 | 0.0 | 2.6 | 0.0 | 0.0 | 0.0 |
| Initial Q Delay(d3), s/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 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 4.7 | 4.8 | 8.8 | 6.7 | 0.0 | 1.3 | 0.0 | 4.3 | 0.0 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 128.7 | 11.8 | 11.7 | 209.5 | 9.9 | 0.0 | 30.4 | 0.0 | 36.0 | 0.0 | 0.0 | 0.0 |
| LnGrp LOS | F | B | B | F | A | | C | | D | | | |
| Approach Vol, veh/h | | 876 | | | 1509 | | | 275 | | | 0 | |
| Approach Delay, s/veh | | 11.9 | | | 31.5 | | | 34.5 | | | 0.0 | |
| Approach LOS | | B | | | C | | | C | | | | |

| Timer - Assigned Phs | 2 | 3 | 4 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 22.4 | 11.0 | 56.6 | 0.0 | 4.6 | 63.0 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 29.5 | 6.5 | 33.5 | 2.5 | 5.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 13.1 | 8.5 | 14.1 | 0.0 | 2.1 | 21.2 |
| Green Ext Time (p_c), s | 1.3 | 0.0 | 5.6 | 0.0 | 0.0 | 8.2 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 25.3 |
| HCM 7th LOS | C |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 7 | 197 | 152 | 4 | 0 | 0 |
| Future Vol, veh/h | 7 | 197 | 152 | 4 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 8 | 214 | 165 | 4 | 0 | 0 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 170 | 0 | - | 0 | 397 | 167 |
| Stage 1 | - | - | - | - | 167 | - |
| Stage 2 | - | - | - | - | 229 | - |
| 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 | 1408 | - | - | - | 608 | 877 |
| Stage 1 | - | - | - | - | 862 | - |
| Stage 2 | - | - | - | - | 809 | - |
| Platoon blocked, % | | | - | - | - | |
| Mov Cap-1 Maneuver | 1408 | - | - | - | 605 | 877 |
| Mov Cap-2 Maneuver | - | - | - | - | 605 | - |
| Stage 1 | - | - | - | - | 857 | - |
| Stage 2 | - | - | - | - | 809 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 0.26 | 0 | 0 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 62 | - | - | - | - |
| HCM Lane V/C Ratio | 0.005 | - | - | - | - |
| HCM Control Delay (s/veh) | 7.6 | 0 | - | - | 0 |
| HCM Lane LOS | A | A | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 5 | 2 | 2 | 132 | 143 | 5 |
| Future Vol, veh/h | 5 | 2 | 2 | 132 | 143 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 2 | 2 | 143 | 155 | 5 |

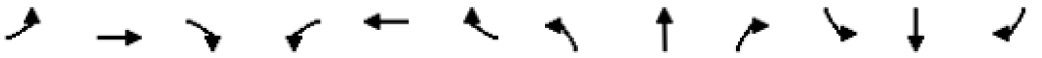
| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 306 | 158 | 161 | 0 | - | 0 |
| Stage 1 | 158 | - | - | - | - | - |
| Stage 2 | 148 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 686 | 887 | 1418 | - | - | - |
| Stage 1 | 870 | - | - | - | - | - |
| Stage 2 | 880 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 685 | 887 | 1418 | - | - | - |
| Mov Cap-2 Maneuver | 685 | - | - | - | - | - |
| Stage 1 | 869 | - | - | - | - | - |
| Stage 2 | 880 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 9.97 | 0.11 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 27 | - | 733 | - | - |
| HCM Lane V/C Ratio | 0.002 | - | 0.01 | - | - |
| HCM Control Delay (s/veh) | 7.5 | 0 | 10 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | - | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 320 | 660 | 0 | 237 | 22 | 629 | 522 | 43 | 22 | 483 | 24 |
| Future Volume (vph) | 0 | 320 | 660 | 0 | 237 | 22 | 629 | 522 | 43 | 22 | 483 | 24 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | 4.5 | | 4.5 | | 4.5 | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 1.00 | 1.00 | | 0.95 | | 1.00 | 1.00 | | | 0.95 | |
| Frpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | | 1.00 | 0.99 | | | 0.99 | |
| Flpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Frt | | 1.00 | 0.85 | | 0.98 | | 1.00 | 0.98 | | | 0.99 | |
| Flt Protected | | 1.00 | 1.00 | | 1.00 | | 0.95 | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1863 | 1583 | | 3494 | | 1770 | 1838 | | | 3505 | |
| Flt Permitted | | 1.00 | 1.00 | | 1.00 | | 0.95 | 1.00 | | | 0.99 | |
| Satd. Flow (perm) | | 1863 | 1583 | | 3494 | | 1770 | 1838 | | | 3505 | |
| 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) | 0 | 348 | 717 | 0 | 258 | 24 | 684 | 567 | 47 | 24 | 525 | 26 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 0 | 348 | 717 | 0 | 282 | 0 | 684 | 612 | 0 | 0 | 573 | 0 |
| Confl. Peds. (#/hr) | | | 5 | | | | | | 2 | | | 3 |
| Turn Type | | NA | custom | | NA | | Split | NA | | Split | NA | |
| Protected Phases | | 8 | 8 3 | | 8 | | 5 | 5 | | 6 | 6 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | 28.7 | 74.5 | | 28.7 | | 81.3 | 81.3 | | | 26.5 | |
| Effective Green, g (s) | | 28.7 | 74.5 | | 28.7 | | 81.3 | 81.3 | | | 26.5 | |
| Actuated g/C Ratio | | 0.19 | 0.50 | | 0.19 | | 0.54 | 0.54 | | | 0.18 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | | 4.5 | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 356 | 786 | | 668 | | 959 | 996 | | | 619 | |
| v/s Ratio Prot | | c0.19 | c0.45 | | 0.08 | | c0.39 | 0.33 | | | c0.16 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | 0.97 | 0.91 | | 0.42 | | 0.71 | 0.61 | | | 0.92 | |
| Uniform Delay, d1 | | 60.3 | 34.7 | | 53.3 | | 25.6 | 23.5 | | | 60.7 | |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | 0.01 | 0.01 | | | 1.00 | |
| Incremental Delay, d2 | | 41.2 | 14.8 | | 0.4 | | 2.2 | 1.3 | | | 19.7 | |
| Delay (s) | | 101.5 | 49.5 | | 53.7 | | 2.7 | 1.6 | | | 80.4 | |
| Level of Service | | F | D | | D | | A | A | | | F | |
| Approach Delay (s/veh) | | 66.5 | | | 53.7 | | | 2.2 | | | 80.4 | |
| Approach LOS | | E | | | D | | | A | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 42.0 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.90 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 78.4% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 0 | 752 | 0 | 442 | 14 | 781 | 326 | 35 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 0 | 752 | 0 | 442 | 14 | 781 | 326 | 35 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | | 4.5 | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | | | | | 0.88 | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | | | | | 1.00 | | 0.99 | | | 1.00 | |
| Flpb, ped/bikes | | | | | | 1.00 | | 1.00 | | | 1.00 | |
| Frt | | | | | | 0.85 | | 0.99 | | | 0.99 | |
| Flt Protected | | | | | | 1.00 | | 1.00 | | | 0.96 | |
| Satd. Flow (prot) | | | | | | 2787 | | 3522 | | | 3406 | |
| Flt Permitted | | | | | | 1.00 | | 1.00 | | | 0.96 | |
| Satd. Flow (perm) | | | | | | 2787 | | 3522 | | | 3406 | |
| 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) | 0 | 0 | 0 | 0 | 0 | 817 | 0 | 480 | 15 | 849 | 354 | 38 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 0 | 817 | 0 | 493 | 0 | 0 | 1239 | 0 |
| Confl. Peds. (#/hr) | | | | | | | | | 1 | | | |
| Turn Type | | | | | | Prot | | NA | | Split | NA | |
| Protected Phases | | | | | | 3 | | 2 | | 1 3 | 1 3 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | | | | | 45.8 | | 31.0 | | | 110.0 | |
| Effective Green, g (s) | | | | | | 45.8 | | 31.0 | | | 110.0 | |
| Actuated g/C Ratio | | | | | | 0.31 | | 0.21 | | | 0.73 | |
| Clearance Time (s) | | | | | | 4.5 | | 4.5 | | | | |
| Vehicle Extension (s) | | | | | | 3.0 | | 3.0 | | | | |
| Lane Grp Cap (vph) | | | | | | 850 | | 727 | | | 2497 | |
| v/s Ratio Prot | | | | | | c0.29 | | c0.14 | | | c0.36 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | | | | | 0.96 | | 0.67 | | | 0.49 | |
| Uniform Delay, d1 | | | | | | 51.2 | | 54.9 | | | 8.3 | |
| Progression Factor | | | | | | 1.00 | | 1.00 | | | 0.06 | |
| Incremental Delay, d2 | | | | | | 22.7 | | 5.0 | | | 0.0 | |
| Delay (s) | | | | | | 73.9 | | 59.9 | | | 0.5 | |
| Level of Service | | | | | | E | | E | | | A | |
| Approach Delay (s/veh) | | 0.0 | | | 73.9 | | | 59.9 | | | 0.5 | |
| Approach LOS | | A | | | E | | | E | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 35.6 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.72 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 76.6% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 22 | 2 | 14 | 2 | 1 | 10 | 19 | 439 | 0 | 11 | 315 | 4 |
| Future Vol, veh/h | 22 | 2 | 14 | 2 | 1 | 10 | 19 | 439 | 0 | 11 | 315 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 8 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 100 | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 24 | 2 | 15 | 2 | 1 | 11 | 21 | 477 | 0 | 12 | 342 | 4 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 896 | 904 | 355 | 897 | 906 | 486 | 355 | 0 | 0 | 486 | 0 | 0 |
| Stage 1 | 376 | 376 | - | 527 | 527 | - | - | - | - | - | - | - |
| Stage 2 | 519 | 527 | - | 369 | 379 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 261 | 277 | 689 | 261 | 276 | 581 | 1204 | - | - | 1077 | - | - |
| Stage 1 | 645 | 616 | - | 534 | 528 | - | - | - | - | - | - | - |
| Stage 2 | 540 | 528 | - | 651 | 615 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 246 | 265 | 683 | 243 | 264 | 576 | 1195 | - | - | 1068 | - | - |
| Mov Cap-2 Maneuver | 246 | 265 | - | 243 | 264 | - | - | - | - | - | - | - |
| Stage 1 | 633 | 605 | - | 520 | 514 | - | - | - | - | - | - | - |
| Stage 2 | 519 | 514 | - | 626 | 603 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 17.75 | 13.4 | 0.33 | 0.28 |
| HCM LOS | C | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1195 | - | - | 324 | 443 | 1068 | - | - |
| HCM Lane V/C Ratio | 0.017 | - | - | 0.128 | 0.032 | 0.011 | - | - |
| HCM Control Delay (s/veh) | 8.1 | - | - | 17.7 | 13.4 | 8.4 | - | - |
| HCM Lane LOS | A | - | - | C | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.4 | 0.1 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 130 | 82 | 373 | 142 | 59 | 273 |
| Future Vol, veh/h | 130 | 82 | 373 | 142 | 59 | 273 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 6 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | Stop | - | None | - | None |
| Storage Length | 50 | 0 | - | - | 100 | - |
| 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 | 141 | 89 | 405 | 154 | 64 | 297 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 915 | 489 | 0 | 0 | 566 | 0 |
| Stage 1 | 489 | - | - | - | - | - |
| Stage 2 | 426 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 303 | 579 | - | - | 1006 | - |
| Stage 1 | 617 | - | - | - | - | - |
| Stage 2 | 659 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 282 | 576 | - | - | 1000 | - |
| Mov Cap-2 Maneuver | 282 | - | - | - | - | - |
| Stage 1 | 613 | - | - | - | - | - |
| Stage 2 | 616 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 23.18 | 0 | 1.57 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 282 | 576 | 1000 | - |
| HCM Lane V/C Ratio | - | - | 0.502 | 0.155 | 0.064 | - |
| HCM Control Delay (s/veh) | - | - | 30 | 12.4 | 8.8 | - |
| HCM Lane LOS | - | - | D | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 2.6 | 0.5 | 0.2 | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.5 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 139 | 37 | 82 | 64 | 26 | 114 |
| Future Vol, veh/h | 139 | 37 | 82 | 64 | 26 | 114 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 151 | 40 | 89 | 70 | 28 | 124 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay, s/veh | 9.1 | 8.2 | 8.2 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 79% | 0% | 19% |
| Vol Thru, % | 21% | 56% | 0% |
| Vol Right, % | 0% | 44% | 81% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 176 | 146 | 140 |
| LT Vol | 139 | 0 | 26 |
| Through Vol | 37 | 82 | 0 |
| RT Vol | 0 | 64 | 114 |
| Lane Flow Rate | 191 | 159 | 152 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.244 | 0.186 | 0.18 |
| Departure Headway (Hd) | 4.595 | 4.225 | 4.267 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 782 | 851 | 842 |
| Service Time | 2.617 | 2.247 | 2.289 |
| HCM Lane V/C Ratio | 0.244 | 0.187 | 0.181 |
| HCM Control Delay, s/veh | 9.1 | 8.2 | 8.2 |
| HCM Lane LOS | A | A | A |
| HCM 95th-tile Q | 1 | 0.7 | 0.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 4 | 1109 | 73 | 146 | 884 | 0 | 41 | 0 | 185 | 0 | 0 | 3 |
| Future Volume (veh/h) | 4 | 1109 | 73 | 146 | 884 | 0 | 41 | 0 | 185 | 0 | 0 | 3 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 4 | 1205 | 79 | 159 | 961 | 0 | 45 | 0 | 201 | 0 | 0 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 10 | 1499 | 98 | 181 | 1916 | 0 | 307 | 0 | 273 | 0 | 0 | 3 |
| Arrive On Green | 0.01 | 0.44 | 0.44 | 0.10 | 0.54 | 0.00 | 0.17 | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 |
| Sat Flow, veh/h | 1781 | 3385 | 222 | 1781 | 3647 | 0 | 1781 | 0 | 1582 | 0 | 0 | 1585 |
| Grp Volume(v), veh/h | 4 | 632 | 652 | 159 | 961 | 0 | 45 | 0 | 201 | 0 | 0 | 3 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1830 | 1781 | 1777 | 0 | 1781 | 0 | 1582 | 0 | 0 | 1585 |
| Q Serve(g_s), s | 0.1 | 19.7 | 19.7 | 5.6 | 10.9 | 0.0 | 1.4 | 0.0 | 7.7 | 0.0 | 0.0 | 0.1 |
| Cycle Q Clear(g_c), s | 0.1 | 19.7 | 19.7 | 5.6 | 10.9 | 0.0 | 1.4 | 0.0 | 7.7 | 0.0 | 0.0 | 0.1 |
| Prop In Lane | 1.00 | | 0.12 | 1.00 | | 0.00 | 1.00 | | 1.00 | 0.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 10 | 787 | 811 | 181 | 1916 | 0 | 307 | 0 | 273 | 0 | 0 | 3 |
| V/C Ratio(X) | 0.42 | 0.80 | 0.80 | 0.88 | 0.50 | 0.00 | 0.15 | 0.00 | 0.74 | 0.00 | 0.00 | 0.93 |
| Avail Cap(c_a), veh/h | 139 | 930 | 958 | 181 | 1943 | 0 | 821 | 0 | 729 | 0 | 0 | 62 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.7 | 15.4 | 15.4 | 28.4 | 9.3 | 0.0 | 22.5 | 0.0 | 25.1 | 0.0 | 0.0 | 31.9 |
| Incr Delay (d2), s/veh | 26.6 | 4.4 | 4.4 | 35.5 | 0.2 | 0.0 | 0.2 | 0.0 | 3.9 | 0.0 | 0.0 | 210.7 |
| Initial Q Delay(d3), s/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 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 7.8 | 8.1 | 4.1 | 3.6 | 0.0 | 0.6 | 0.0 | 3.0 | 0.0 | 0.0 | 0.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 58.4 | 19.8 | 19.8 | 63.9 | 9.5 | 0.0 | 22.7 | 0.0 | 29.0 | 0.0 | 0.0 | 242.7 |
| LnGrp LOS | E | B | B | E | A | | C | | C | | | F |
| Approach Vol, veh/h | | 1288 | | | 1120 | | | 246 | | | 3 | |
| Approach Delay, s/veh | | 19.9 | | | 17.2 | | | 27.8 | | | 242.7 | |
| Approach LOS | | B | | | B | | | C | | | F | |

| Timer - Assigned Phs | 2 | 3 | 4 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.5 | 11.0 | 32.9 | 4.6 | 4.8 | 39.0 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 29.5 | 6.5 | 33.5 | 2.5 | 5.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 9.7 | 7.6 | 21.7 | 2.1 | 2.1 | 12.9 |
| Green Ext Time (p_c), s | 1.3 | 0.0 | 6.6 | 0.0 | 0.0 | 7.3 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 19.8 |
| HCM 7th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.7 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 19 | 176 | 195 | 1 | 1 | 15 |
| Future Vol, veh/h | 19 | 176 | 195 | 1 | 1 | 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 | - | - | - | - | 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 | 21 | 191 | 212 | 1 | 1 | 16 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 213 | 0 | - | 0 | 445 | 213 |
| Stage 1 | - | - | - | - | 213 | - |
| Stage 2 | - | - | - | - | 233 | - |
| 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 | 1357 | - | - | - | 571 | 828 |
| Stage 1 | - | - | - | - | 823 | - |
| Stage 2 | - | - | - | - | 806 | - |
| Platoon blocked, % | | | - | - | - | |
| Mov Cap-1 Maneuver | 1357 | - | - | - | 561 | 828 |
| Mov Cap-2 Maneuver | - | - | - | - | 561 | - |
| Stage 1 | - | - | - | - | 809 | - |
| Stage 2 | - | - | - | - | 806 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 0.75 | 0 | 9.58 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 175 | - | - | - | 804 |
| HCM Lane V/C Ratio | 0.015 | - | - | - | 0.022 |
| HCM Control Delay (s/veh) | 7.7 | 0 | - | - | 9.6 |
| HCM Lane LOS | A | A | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.1 |

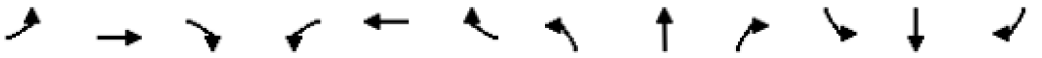
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 13 | 1 | 4 | 197 | 138 | 14 |
| Future Vol, veh/h | 13 | 1 | 4 | 197 | 138 | 14 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 14 | 1 | 4 | 214 | 150 | 15 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 380 | 158 | 165 | 0 | - | 0 |
| Stage 1 | 158 | - | - | - | - | - |
| Stage 2 | 223 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 622 | 888 | 1413 | - | - | - |
| Stage 1 | 871 | - | - | - | - | - |
| Stage 2 | 814 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 620 | 888 | 1413 | - | - | - |
| Mov Cap-2 Maneuver | 620 | - | - | - | - | - |
| Stage 1 | 868 | - | - | - | - | - |
| Stage 2 | 814 | - | - | - | - | - |

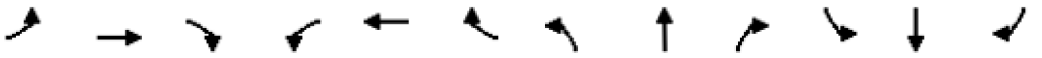
| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 10.83 | 0.15 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 36 | - | 633 | - | - |
| HCM Lane V/C Ratio | 0.003 | - | 0.024 | - | - |
| HCM Control Delay (s/veh) | 7.6 | 0 | 10.8 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 285 | 521 | 0 | 301 | 11 | 742 | 528 | 75 | 21 | 331 | 17 |
| Future Volume (vph) | 0 | 285 | 521 | 0 | 301 | 11 | 742 | 528 | 75 | 21 | 331 | 17 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | 4.5 | | 4.5 | | 4.5 | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 1.00 | 1.00 | | 0.95 | | 1.00 | 1.00 | | | 0.95 | |
| Frpb, ped/bikes | | 1.00 | 1.00 | | 0.99 | | 1.00 | 0.99 | | | 0.99 | |
| Flpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Frt | | 1.00 | 0.85 | | 0.99 | | 1.00 | 0.98 | | | 0.99 | |
| Flt Protected | | 1.00 | 1.00 | | 1.00 | | 0.95 | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1863 | 1583 | | 3516 | | 1770 | 1822 | | | 3503 | |
| Flt Permitted | | 1.00 | 1.00 | | 1.00 | | 0.95 | 1.00 | | | 0.99 | |
| Satd. Flow (perm) | | 1863 | 1583 | | 3516 | | 1770 | 1822 | | | 3503 | |
| 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) | 0 | 310 | 566 | 0 | 327 | 12 | 807 | 574 | 82 | 23 | 360 | 18 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 310 | 566 | 0 | 339 | 0 | 807 | 653 | 0 | 0 | 398 | 0 |
| Confl. Peds. (#/hr) | | | 1 | | | 4 | | | 2 | | | 2 |
| Turn Type | | NA | custom | | NA | | Split | NA | | Split | NA | |
| Protected Phases | | 8 | 8 3 | | 8 | | 5 | 5 | | 6 | 6 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | 23.5 | 69.7 | | 23.5 | | 81.7 | 81.7 | | | 21.3 | |
| Effective Green, g (s) | | 23.5 | 69.7 | | 23.5 | | 81.7 | 81.7 | | | 21.3 | |
| Actuated g/C Ratio | | 0.17 | 0.50 | | 0.17 | | 0.58 | 0.58 | | | 0.15 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | | 4.5 | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 312 | 788 | | 590 | | 1032 | 1063 | | | 532 | |
| v/s Ratio Prot | | c0.17 | 0.36 | | 0.10 | | c0.46 | 0.36 | | | c0.11 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | 0.99 | 0.71 | | 0.57 | | 0.78 | 0.61 | | | 0.74 | |
| Uniform Delay, d1 | | 58.1 | 27.4 | | 53.6 | | 22.3 | 18.9 | | | 56.7 | |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | 0.11 | 0.03 | | | 1.00 | |
| Incremental Delay, d2 | | 48.9 | 3.1 | | 1.3 | | 2.9 | 1.2 | | | 5.7 | |
| Delay (s) | | 107.1 | 30.6 | | 55.0 | | 5.5 | 1.9 | | | 62.5 | |
| Level of Service | | F | C | | E | | A | A | | | E | |
| Approach Delay (s/veh) | | 57.6 | | | 55.0 | | | 3.9 | | | 62.5 | |
| Approach LOS | | E | | | E | | | A | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 32.5 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.84 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 78.5% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 0 | 743 | 0 | 602 | 3 | 609 | 228 | 14 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 0 | 743 | 0 | 602 | 3 | 609 | 228 | 14 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | | 4.5 | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | | | | | 0.88 | | 0.95 | | | 0.95 | |
| Frt | | | | | | 0.85 | | 0.99 | | | 0.99 | |
| Flt Protected | | | | | | 1.00 | | 1.00 | | | 0.96 | |
| Satd. Flow (prot) | | | | | | 2787 | | 3537 | | | 3409 | |
| Flt Permitted | | | | | | 1.00 | | 1.00 | | | 0.96 | |
| Satd. Flow (perm) | | | | | | 2787 | | 3537 | | | 3409 | |
| 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) | 0 | 0 | 0 | 0 | 0 | 808 | 0 | 654 | 3 | 662 | 248 | 15 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 0 | 808 | 0 | 657 | 0 | 0 | 924 | 0 |
| Turn Type | | | | | | Prot | | NA | | Split | NA | |
| Protected Phases | | | | | | 3 | | 2 | | 1 3 | 1 3 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | | | | | 46.2 | | 31.0 | | | 100.0 | |
| Effective Green, g (s) | | | | | | 46.2 | | 31.0 | | | 100.0 | |
| Actuated g/C Ratio | | | | | | 0.33 | | 0.22 | | | 0.71 | |
| Clearance Time (s) | | | | | | 4.5 | | 4.5 | | | | |
| Vehicle Extension (s) | | | | | | 3.0 | | 3.0 | | | | |
| Lane Grp Cap (vph) | | | | | | 919 | | 783 | | | 2435 | |
| v/s Ratio Prot | | | | | | c0.29 | | c0.19 | | | c0.27 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | | | | | 0.87 | | 0.83 | | | 0.37 | |
| Uniform Delay, d1 | | | | | | 44.2 | | 52.1 | | | 7.8 | |
| Progression Factor | | | | | | 1.00 | | 1.00 | | | 0.06 | |
| Incremental Delay, d2 | | | | | | 11.7 | | 10.4 | | | 0.0 | |
| Delay (s) | | | | | | 55.9 | | 62.5 | | | 0.5 | |
| Level of Service | | | | | | E | | E | | | A | |
| Approach Delay (s/veh) | | 0.0 | | | 55.9 | | | 62.5 | | | 0.5 | |
| Approach LOS | | A | | | E | | | E | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 36.3 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.71 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 58.0% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 10 | 0 | 42 | 0 | 0 | 0 | 14 | 601 | 0 | 0 | 241 | 6 |
| Future Vol, veh/h | 10 | 0 | 42 | 0 | 0 | 0 | 14 | 601 | 0 | 0 | 241 | 6 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 100 | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 0 | 46 | 0 | 0 | 0 | 15 | 653 | 0 | 0 | 262 | 7 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 949 | 949 | 265 | 946 | 952 | 653 | 268 | 0 | 0 | 653 | 0 | 0 |
| Stage 1 | 265 | 265 | - | 684 | 684 | - | - | - | - | - | - | - |
| Stage 2 | 684 | 684 | - | 262 | 268 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 240 | 260 | 773 | 242 | 259 | 467 | 1295 | - | - | 934 | - | - |
| Stage 1 | 740 | 689 | - | 439 | 449 | - | - | - | - | - | - | - |
| Stage 2 | 439 | 449 | - | 743 | 687 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 238 | 257 | 773 | 225 | 256 | 467 | 1295 | - | - | 934 | - | - |
| Mov Cap-2 Maneuver | 238 | 257 | - | 225 | 256 | - | - | - | - | - | - | - |
| Stage 1 | 740 | 689 | - | 434 | 444 | - | - | - | - | - | - | - |
| Stage 2 | 434 | 444 | - | 699 | 687 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 12.45 | 0 | 0.18 | 0 |
| HCM LOS | B | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1295 | - | - | 539 | - | 934 | - | - |
| HCM Lane V/C Ratio | 0.012 | - | - | 0.105 | - | - | - | - |
| HCM Control Delay (s/veh) | 7.8 | - | - | 12.5 | 0 | 0 | - | - |
| HCM Lane LOS | A | - | - | B | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.3 | - | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.6 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 113 | 71 | 542 | 124 | 87 | 191 |
| Future Vol, veh/h | 113 | 71 | 542 | 124 | 87 | 191 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | Stop | - | None | - | None |
| Storage Length | 50 | 0 | - | - | 100 | - |
| 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 | 123 | 77 | 589 | 135 | 95 | 208 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1053 | 657 | 0 | 0 | 724 | 0 |
| Stage 1 | 657 | - | - | - | - | - |
| Stage 2 | 397 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 250 | 465 | - | - | 879 | - |
| Stage 1 | 516 | - | - | - | - | - |
| Stage 2 | 679 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 224 | 465 | - | - | 879 | - |
| Mov Cap-2 Maneuver | 224 | - | - | - | - | - |
| Stage 1 | 516 | - | - | - | - | - |
| Stage 2 | 606 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 29.55 | 0 | 3 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 224 | 465 | 879 | - |
| HCM Lane V/C Ratio | - | - | 0.55 | 0.166 | 0.108 | - |
| HCM Control Delay (s/veh) | - | - | 39.1 | 14.3 | 9.6 | - |
| HCM Lane LOS | - | - | E | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 3 | 0.6 | 0.4 | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.7 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 130 | 85 | 40 | 14 | 28 | 116 |
| Future Vol, veh/h | 130 | 85 | 40 | 14 | 28 | 116 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 141 | 92 | 43 | 15 | 30 | 126 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay, s/veh | 9.3 | 7.7 | 8.1 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 60% | 0% | 19% |
| Vol Thru, % | 40% | 74% | 0% |
| Vol Right, % | 0% | 26% | 81% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 215 | 54 | 144 |
| LT Vol | 130 | 0 | 28 |
| Through Vol | 85 | 40 | 0 |
| RT Vol | 0 | 14 | 116 |
| Lane Flow Rate | 234 | 59 | 157 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.291 | 0.071 | 0.181 |
| Departure Headway (Hd) | 4.477 | 4.376 | 4.163 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 809 | 819 | 864 |
| Service Time | 2.477 | 2.399 | 2.18 |
| HCM Lane V/C Ratio | 0.289 | 0.072 | 0.182 |
| HCM Control Delay, s/veh | 9.3 | 7.7 | 8.1 |
| HCM Lane LOS | A | A | A |
| HCM 95th-tile Q | 1.2 | 0.2 | 0.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 1 | 762 | 41 | 146 | 1238 | 0 | 60 | 0 | 198 | 0 | 0 | 0 |
| Future Volume (veh/h) | 1 | 762 | 41 | 146 | 1238 | 0 | 60 | 0 | 198 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.97 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 1 | 828 | 45 | 159 | 1346 | 0 | 65 | 0 | 215 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2 | 1969 | 107 | 129 | 2293 | 0 | 362 | 0 | 312 | 0 | 2 | 0 |
| Arrive On Green | 0.00 | 0.57 | 0.57 | 0.07 | 0.65 | 0.00 | 0.20 | 0.00 | 0.20 | 0.00 | 0.00 | 0.00 |
| Sat Flow, veh/h | 1781 | 3427 | 186 | 1781 | 3647 | 0 | 1781 | 0 | 1536 | 0 | 1870 | 0 |
| Grp Volume(v), veh/h | 1 | 429 | 444 | 159 | 1346 | 0 | 65 | 0 | 215 | 0 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1836 | 1781 | 1777 | 0 | 1781 | 0 | 1536 | 0 | 1870 | 0 |
| Q Serve(g_s), s | 0.1 | 12.2 | 12.2 | 6.5 | 19.5 | 0.0 | 2.7 | 0.0 | 11.7 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.1 | 12.2 | 12.2 | 6.5 | 19.5 | 0.0 | 2.7 | 0.0 | 11.7 | 0.0 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.10 | 1.00 | | 0.00 | 1.00 | | 1.00 | 0.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 2 | 1021 | 1055 | 129 | 2293 | 0 | 362 | 0 | 312 | 0 | 2 | 0 |
| V/C Ratio(X) | 0.41 | 0.42 | 0.42 | 1.24 | 0.59 | 0.00 | 0.18 | 0.00 | 0.69 | 0.00 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 99 | 1021 | 1055 | 129 | 2293 | 0 | 584 | 0 | 503 | 0 | 52 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 44.9 | 10.7 | 10.7 | 41.7 | 9.1 | 0.0 | 29.6 | 0.0 | 33.2 | 0.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 83.8 | 1.3 | 1.2 | 156.0 | 1.1 | 0.0 | 0.2 | 0.0 | 2.7 | 0.0 | 0.0 | 0.0 |
| Initial Q Delay(d3), s/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 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 4.8 | 4.9 | 8.4 | 6.8 | 0.0 | 1.2 | 0.0 | 4.5 | 0.0 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 128.7 | 12.0 | 12.0 | 197.8 | 10.2 | 0.0 | 29.9 | 0.0 | 35.9 | 0.0 | 0.0 | 0.0 |
| LnGrp LOS | F | B | B | F | B | | C | | D | | | |
| Approach Vol, veh/h | | 874 | | | 1505 | | | 280 | | | 0 | |
| Approach Delay, s/veh | | 12.1 | | | 30.0 | | | 34.5 | | | 0.0 | |
| Approach LOS | | B | | | C | | | C | | | | |

| Timer - Assigned Phs | 2 | 3 | 4 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 22.8 | 11.0 | 56.2 | 0.0 | 4.6 | 62.6 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 29.5 | 6.5 | 33.5 | 2.5 | 5.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 13.7 | 8.5 | 14.2 | 0.0 | 2.1 | 21.5 |
| Green Ext Time (p_c), s | 1.4 | 0.0 | 5.6 | 0.0 | 0.0 | 8.0 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 24.6 |
| HCM 7th LOS | C |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.1 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 12 | 196 | 151 | 3 | 11 | 25 |
| Future Vol, veh/h | 12 | 196 | 151 | 3 | 11 | 25 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 13 | 213 | 164 | 3 | 12 | 27 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 167 | 0 | - | 0 | 405 | 166 |
| Stage 1 | - | - | - | - | 166 | - |
| Stage 2 | - | - | - | - | 239 | - |
| 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 | 1410 | - | - | - | 602 | 879 |
| Stage 1 | - | - | - | - | 864 | - |
| Stage 2 | - | - | - | - | 801 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1410 | - | - | - | 596 | 879 |
| Mov Cap-2 Maneuver | - | - | - | - | 596 | - |
| Stage 1 | - | - | - | - | 855 | - |
| Stage 2 | - | - | - | - | 801 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 0.44 | 0 | 9.94 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 104 | - | - | - | 767 |
| HCM Lane V/C Ratio | 0.009 | - | - | - | 0.051 |
| HCM Control Delay (s/veh) | 7.6 | 0 | - | - | 9.9 |
| HCM Lane LOS | A | A | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.2 |

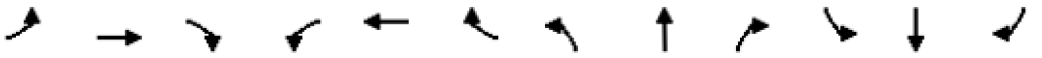
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1 | 1 | 1 | 143 | 142 | 1 |
| Future Vol, veh/h | 1 | 1 | 1 | 143 | 142 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 1 | 1 | 155 | 154 | 1 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 313 | 155 | 155 | 0 | - | 0 |
| Stage 1 | 155 | - | - | - | - | - |
| Stage 2 | 158 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 680 | 891 | 1425 | - | - | - |
| Stage 1 | 873 | - | - | - | - | - |
| Stage 2 | 871 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 680 | 891 | 1425 | - | - | - |
| Mov Cap-2 Maneuver | 680 | - | - | - | - | - |
| Stage 1 | 873 | - | - | - | - | - |
| Stage 2 | 871 | - | - | - | - | - |

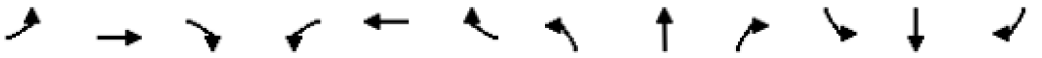
| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 9.68 | 0.05 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 12 | - | 771 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | 0.003 | - | - |
| HCM Control Delay (s/veh) | 7.5 | 0 | 9.7 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 320 | 671 | 0 | 237 | 22 | 633 | 520 | 44 | 22 | 486 | 24 |
| Future Volume (vph) | 0 | 320 | 671 | 0 | 237 | 22 | 633 | 520 | 44 | 22 | 486 | 24 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | 4.5 | | 4.5 | | 4.5 | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 1.00 | 1.00 | | 0.95 | | 1.00 | 1.00 | | | 0.95 | |
| Frpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | | 1.00 | 0.99 | | | 0.99 | |
| Flpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Frt | | 1.00 | 0.85 | | 0.98 | | 1.00 | 0.98 | | | 0.99 | |
| Flt Protected | | 1.00 | 1.00 | | 1.00 | | 0.95 | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1863 | 1583 | | 3494 | | 1770 | 1837 | | | 3505 | |
| Flt Permitted | | 1.00 | 1.00 | | 1.00 | | 0.95 | 1.00 | | | 0.99 | |
| Satd. Flow (perm) | | 1863 | 1583 | | 3494 | | 1770 | 1837 | | | 3505 | |
| 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) | 0 | 348 | 729 | 0 | 258 | 24 | 688 | 565 | 48 | 24 | 528 | 26 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 0 | 348 | 729 | 0 | 282 | 0 | 688 | 611 | 0 | 0 | 576 | 0 |
| Confl. Peds. (#/hr) | | | 5 | | | | | | 2 | | | 3 |
| Turn Type | | NA | custom | | NA | | Split | NA | | Split | NA | |
| Protected Phases | | 8 | 8 3 | | 8 | | 5 | 5 | | 6 | 6 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | 28.7 | 74.4 | | 28.7 | | 81.2 | 81.2 | | | 26.6 | |
| Effective Green, g (s) | | 28.7 | 74.4 | | 28.7 | | 81.2 | 81.2 | | | 26.6 | |
| Actuated g/C Ratio | | 0.19 | 0.50 | | 0.19 | | 0.54 | 0.54 | | | 0.18 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | | 4.5 | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 356 | 785 | | 668 | | 958 | 994 | | | 621 | |
| v/s Ratio Prot | | c0.19 | c0.46 | | 0.08 | | c0.39 | 0.33 | | | c0.16 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | 0.97 | 0.92 | | 0.42 | | 0.71 | 0.61 | | | 0.92 | |
| Uniform Delay, d1 | | 60.3 | 35.3 | | 53.3 | | 25.8 | 23.6 | | | 60.7 | |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | 0.01 | 0.01 | | | 1.00 | |
| Incremental Delay, d2 | | 41.2 | 17.0 | | 0.4 | | 2.2 | 1.3 | | | 19.9 | |
| Delay (s) | | 101.5 | 52.3 | | 53.7 | | 2.7 | 1.6 | | | 80.6 | |
| Level of Service | | F | D | | D | | A | A | | | F | |
| Approach Delay (s/veh) | | 68.2 | | | 53.7 | | | 2.2 | | | 80.6 | |
| Approach LOS | | E | | | D | | | A | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 42.7 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.90 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 78.7% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 0 | 752 | 0 | 445 | 14 | 782 | 339 | 35 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 0 | 752 | 0 | 445 | 14 | 782 | 339 | 35 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | | 4.5 | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | | | | | 0.88 | | 0.95 | | | 0.95 | |
| Frpb, ped/bikes | | | | | | 1.00 | | 0.99 | | | 1.00 | |
| Flpb, ped/bikes | | | | | | 1.00 | | 1.00 | | | 1.00 | |
| Frt | | | | | | 0.85 | | 0.99 | | | 0.99 | |
| Flt Protected | | | | | | 1.00 | | 1.00 | | | 0.96 | |
| Satd. Flow (prot) | | | | | | 2787 | | 3522 | | | 3408 | |
| Flt Permitted | | | | | | 1.00 | | 1.00 | | | 0.96 | |
| Satd. Flow (perm) | | | | | | 2787 | | 3522 | | | 3408 | |
| 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) | 0 | 0 | 0 | 0 | 0 | 817 | 0 | 484 | 15 | 850 | 368 | 38 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 0 | 817 | 0 | 497 | 0 | 0 | 1255 | 0 |
| Confl. Peds. (#/hr) | | | | | | | | | 1 | | | |
| Turn Type | | | | | | Prot | | NA | | Split | NA | |
| Protected Phases | | | | | | 3 | | 2 | | 1 3 | 1 3 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | | | | | 45.7 | | 31.0 | | | 110.0 | |
| Effective Green, g (s) | | | | | | 45.7 | | 31.0 | | | 110.0 | |
| Actuated g/C Ratio | | | | | | 0.30 | | 0.21 | | | 0.73 | |
| Clearance Time (s) | | | | | | 4.5 | | 4.5 | | | | |
| Vehicle Extension (s) | | | | | | 3.0 | | 3.0 | | | | |
| Lane Grp Cap (vph) | | | | | | 849 | | 727 | | | 2499 | |
| v/s Ratio Prot | | | | | | c0.29 | | c0.14 | | | c0.37 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | | | | | 0.96 | | 0.68 | | | 0.50 | |
| Uniform Delay, d1 | | | | | | 51.3 | | 54.9 | | | 8.4 | |
| Progression Factor | | | | | | 1.00 | | 1.00 | | | 0.06 | |
| Incremental Delay, d2 | | | | | | 22.9 | | 5.1 | | | 0.0 | |
| Delay (s) | | | | | | 74.2 | | 60.1 | | | 0.5 | |
| Level of Service | | | | | | E | | E | | | A | |
| Approach Delay (s/veh) | | 0.0 | | | 74.2 | | | 60.1 | | | 0.5 | |
| Approach LOS | | A | | | E | | | E | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 35.6 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.73 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 76.7% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 22 | 0 | 18 | 0 | 0 | 0 | 19 | 445 | 0 | 0 | 330 | 4 |
| Future Vol, veh/h | 22 | 0 | 18 | 0 | 0 | 0 | 19 | 445 | 0 | 0 | 330 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 8 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 100 | - | - | 100 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 24 | 0 | 20 | 0 | 0 | 0 | 21 | 484 | 0 | 0 | 359 | 4 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 894 | 903 | 371 | 895 | 905 | 493 | 371 | 0 | 0 | 493 | 0 | 0 |
| Stage 1 | 369 | 369 | - | 534 | 534 | - | - | - | - | - | - | - |
| Stage 2 | 525 | 534 | - | 361 | 371 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 262 | 277 | 675 | 262 | 276 | 576 | 1187 | - | - | 1071 | - | - |
| Stage 1 | 651 | 621 | - | 530 | 524 | - | - | - | - | - | - | - |
| Stage 2 | 536 | 524 | - | 658 | 619 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 255 | 268 | 669 | 247 | 267 | 571 | 1178 | - | - | 1062 | - | - |
| Mov Cap-2 Maneuver | 255 | 268 | - | 247 | 267 | - | - | - | - | - | - | - |
| Stage 1 | 646 | 616 | - | 516 | 511 | - | - | - | - | - | - | - |
| Stage 2 | 526 | 511 | - | 637 | 615 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s/v | 16.6 | 0 | 0.33 | 0 |
| HCM LOS | C | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1178 | - | - | 354 | - | 1062 | - | - |
| HCM Lane V/C Ratio | 0.018 | - | - | 0.123 | - | - | - | - |
| HCM Control Delay (s/veh) | 8.1 | - | - | 16.6 | 0 | 0 | - | - |
| HCM Lane LOS | A | - | - | C | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.4 | - | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.6 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 127 | 88 | 373 | 129 | 78 | 273 |
| Future Vol, veh/h | 127 | 88 | 373 | 129 | 78 | 273 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 6 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | Stop | - | None | - | None |
| Storage Length | 50 | 0 | - | - | 100 | - |
| 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 | 138 | 96 | 405 | 140 | 85 | 297 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 949 | 482 | 0 | 0 | 552 | 0 |
| Stage 1 | 482 | - | - | - | - | - |
| Stage 2 | 467 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 289 | 585 | - | - | 1018 | - |
| Stage 1 | 621 | - | - | - | - | - |
| Stage 2 | 631 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 263 | 581 | - | - | 1012 | - |
| Mov Cap-2 Maneuver | 263 | - | - | - | - | - |
| Stage 1 | 618 | - | - | - | - | - |
| Stage 2 | 577 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 24.48 | 0 | 1.97 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 263 | 581 | 1012 | - |
| HCM Lane V/C Ratio | - | - | 0.525 | 0.165 | 0.084 | - |
| HCM Control Delay (s/veh) | - | - | 32.8 | 12.4 | 8.9 | - |
| HCM Lane LOS | - | - | D | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 2.8 | 0.6 | 0.3 | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.6 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 145 | 37 | 82 | 64 | 26 | 120 |
| Future Vol, veh/h | 145 | 37 | 82 | 64 | 26 | 120 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 158 | 40 | 89 | 70 | 28 | 130 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay, s/veh | 9.2 | 8.3 | 8.3 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 80% | 0% | 18% |
| Vol Thru, % | 20% | 56% | 0% |
| Vol Right, % | 0% | 44% | 82% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 182 | 146 | 146 |
| LT Vol | 145 | 0 | 26 |
| Through Vol | 37 | 82 | 0 |
| RT Vol | 0 | 64 | 120 |
| Lane Flow Rate | 198 | 159 | 159 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.254 | 0.187 | 0.189 |
| Departure Headway (Hd) | 4.614 | 4.249 | 4.279 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 779 | 844 | 839 |
| Service Time | 2.638 | 2.274 | 2.302 |
| HCM Lane V/C Ratio | 0.254 | 0.188 | 0.19 |
| HCM Control Delay, s/veh | 9.2 | 8.3 | 8.3 |
| HCM Lane LOS | A | A | A |
| HCM 95th-tile Q | 1 | 0.7 | 0.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 4 | 1110 | 71 | 142 | 884 | 0 | 35 | 0 | 187 | 0 | 0 | 3 |
| Future Volume (veh/h) | 4 | 1110 | 71 | 142 | 884 | 0 | 35 | 0 | 187 | 0 | 0 | 3 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 4 | 1207 | 77 | 154 | 961 | 0 | 38 | 0 | 203 | 0 | 0 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 10 | 1501 | 96 | 181 | 1914 | 0 | 309 | 0 | 274 | 0 | 0 | 3 |
| Arrive On Green | 0.01 | 0.44 | 0.44 | 0.10 | 0.54 | 0.00 | 0.17 | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 |
| Sat Flow, veh/h | 1781 | 3392 | 216 | 1781 | 3647 | 0 | 1781 | 0 | 1582 | 0 | 0 | 1585 |
| Grp Volume(v), veh/h | 4 | 632 | 652 | 154 | 961 | 0 | 38 | 0 | 203 | 0 | 0 | 3 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1831 | 1781 | 1777 | 0 | 1781 | 0 | 1582 | 0 | 0 | 1585 |
| Q Serve(g_s), s | 0.1 | 19.7 | 19.8 | 5.5 | 11.0 | 0.0 | 1.2 | 0.0 | 7.8 | 0.0 | 0.0 | 0.1 |
| Cycle Q Clear(g_c), s | 0.1 | 19.7 | 19.8 | 5.5 | 11.0 | 0.0 | 1.2 | 0.0 | 7.8 | 0.0 | 0.0 | 0.1 |
| Prop In Lane | 1.00 | | 0.12 | 1.00 | | 0.00 | 1.00 | | 1.00 | 0.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 10 | 786 | 810 | 181 | 1914 | 0 | 309 | 0 | 274 | 0 | 0 | 3 |
| V/C Ratio(X) | 0.42 | 0.80 | 0.80 | 0.85 | 0.50 | 0.00 | 0.12 | 0.00 | 0.74 | 0.00 | 0.00 | 0.93 |
| Avail Cap(c_a), veh/h | 139 | 929 | 957 | 181 | 1940 | 0 | 820 | 0 | 728 | 0 | 0 | 62 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.8 | 15.5 | 15.5 | 28.3 | 9.4 | 0.0 | 22.4 | 0.0 | 25.1 | 0.0 | 0.0 | 32.0 |
| Incr Delay (d2), s/veh | 26.6 | 4.4 | 4.4 | 30.4 | 0.2 | 0.0 | 0.2 | 0.0 | 3.9 | 0.0 | 0.0 | 210.7 |
| Initial Q Delay(d3), s/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 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 7.9 | 8.1 | 3.7 | 3.6 | 0.0 | 0.5 | 0.0 | 3.1 | 0.0 | 0.0 | 0.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 58.4 | 19.9 | 19.8 | 58.7 | 9.6 | 0.0 | 22.6 | 0.0 | 29.1 | 0.0 | 0.0 | 242.7 |
| LnGrp LOS | E | B | B | E | A | | C | | C | | | F |
| Approach Vol, veh/h | | 1288 | | | 1115 | | | 241 | | | 3 | |
| Approach Delay, s/veh | | 20.0 | | | 16.3 | | | 28.0 | | | 242.7 | |
| Approach LOS | | B | | | B | | | C | | | F | |

| Timer - Assigned Phs | 2 | 3 | 4 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.6 | 11.0 | 32.9 | 4.6 | 4.8 | 39.0 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 29.5 | 6.5 | 33.5 | 2.5 | 5.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 9.8 | 7.5 | 21.8 | 2.1 | 2.1 | 13.0 |
| Green Ext Time (p_c), s | 1.3 | 0.0 | 6.6 | 0.0 | 0.0 | 7.3 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 19.4 |
| HCM 7th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.1 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 27 | 174 | 195 | 6 | 8 | 18 |
| Future Vol, veh/h | 27 | 174 | 195 | 6 | 8 | 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 | - | - | - | - | 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 | 29 | 189 | 212 | 7 | 9 | 20 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 218 | 0 | - | 0 | 463 | 215 |
| Stage 1 | - | - | - | - | 215 | - |
| Stage 2 | - | - | - | - | 248 | - |
| 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 | 1351 | - | - | - | 557 | 825 |
| Stage 1 | - | - | - | - | 821 | - |
| Stage 2 | - | - | - | - | 793 | - |
| Platoon blocked, % | | | - | - | - | |
| Mov Cap-1 Maneuver | 1351 | - | - | - | 544 | 825 |
| Mov Cap-2 Maneuver | - | - | - | - | 544 | - |
| Stage 1 | - | - | - | - | 801 | - |
| Stage 2 | - | - | - | - | 793 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 1.04 | 0 | 10.27 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 242 | - | - | - | 711 |
| HCM Lane V/C Ratio | 0.022 | - | - | - | 0.04 |
| HCM Control Delay (s/veh) | 7.7 | 0 | - | - | 10.3 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1 | 1 | 2 | 205 | 143 | 3 |
| Future Vol, veh/h | 1 | 1 | 2 | 205 | 143 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 1 | 2 | 223 | 155 | 3 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 384 | 157 | 159 | 0 | - | 0 |
| Stage 1 | 157 | - | - | - | - | - |
| Stage 2 | 227 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 619 | 888 | 1421 | - | - | - |
| Stage 1 | 871 | - | - | - | - | - |
| Stage 2 | 811 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 618 | 888 | 1421 | - | - | - |
| Mov Cap-2 Maneuver | 618 | - | - | - | - | - |
| Stage 1 | 870 | - | - | - | - | - |
| Stage 2 | 811 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 9.96 | 0.07 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 17 | - | 729 | - | - |
| HCM Lane V/C Ratio | 0.002 | - | 0.003 | - | - |
| HCM Control Delay (s/veh) | 7.5 | 0 | 10 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | - | - |