

NWC MACY ST AND FOOTHILL BLVD TRAFFIC IMPACT ANALYSIS

City of San Bernardino

April 18, 2024



Traffic Engineering • Transportation Planning • Parking • Noise & Vibration
Air Quality • Global Climate Change • Health Risk Assessment

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City of San Bernardino

April 18, 2024

prepared by

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Project No. 19696

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EXECUTIVE SUMMARY

This section summarizes the proposed project, operational findings, and identifies recommendations (if any) as specified in this study.

Project Description

The approximately 16-acre project site (APN: 0142-041-09 to 11, 17, 18, 20, 21, 32, 33, 34, 44 and 0142-521-01 to 03) is located at the northwest corner of the Macy Street and Foothill Boulevard intersection in the City of San Bernardino, California. The project site is currently developed with a six (6) room motel and a 1,525 square foot bar and zoned General Commercial (CG-1).

The proposed project involves construction of 135 single family residential dwelling units. Gated vehicle access for the project site is proposed at Macy Street and Dallas Avenue.

Project Trip Generation

The proposed project is forecast to generate approximately 1,029 net daily trips, including 93 net trips during the AM peak hour and 107 net trips during the PM peak hour.

Level of Service Analysis

The study intersections currently operate and are forecast to continue operating within acceptable Levels of Service (D or better) during the peak hours for Existing, Existing Plus Ambient Growth and Opening Year (2026) Without Project conditions, except for the following intersection that is forecast to continue operating at an unacceptable Level of Service F during the peak hours:

2. Meridian Avenue (NS) at Foothill Boulevard (EW)

The study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Opening Year (2026) With Project conditions, except for the following intersections that are forecast to operate at an unacceptable Levels of Service during the peak hours:

- | | |
|--|---------------|
| 2. Meridian Avenue (NS) at Foothill Boulevard (EW) | LOS F |
| 5. N Rancho Avenue (NS) at Foothill Boulevard (EW) | LOS E to F PM |

The study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Build-out Year (2040) Without Project conditions, except for the following intersections that are forecast to operate at an unacceptable Levels of Service F during the peak hours:

2. Meridian Avenue (NS) at Foothill Boulevard (EW)
5. N Rancho Avenue (NS) at Foothill Boulevard (EW)

The study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Build-out Year (2040) With Project conditions, except for the following intersections that are forecast to operate at an unacceptable Levels of Service during the peak hours:

- | | |
|--|----------|
| 2. Meridian Avenue (NS) at Foothill Boulevard (EW) | LOS F |
| 3. Dallas Avenue (NS) at Foothill Boulevard (EW) | LOS E PM |
| 5. N Rancho Avenue (NS) at Foothill Boulevard (EW) | LOS F |

Summary of Improvements

Project design features, necessary to provide project access, are outlined in the Site Access & On-Site Circulation (see Section 7).

To maintain an acceptable Level of Service at the study intersection, the following improvements are recommended for Opening Year (2026) With Project conditions:

2. Meridian Avenue (NS) at Foothill Boulevard (EW)
 - Modify existing northbound and southbound pavement markings to include dedicated left turn and shared through-right turn lane.
5. N Rancho Avenue (NS) at Foothill Boulevard (EW)
 - Install Traffic Signal

To maintain an acceptable Level of Service at the study intersection, the following improvements are recommended for Build-out Year (2040) With Project conditions:

3. Dallas Avenue (NS) at Foothill Boulevard (EW)
 - Install Traffic Signal

The study area intersections operate at acceptable Levels of Service with the listed improvements.

Vehicle Miles Traveled Analysis

For compliance with California Environmental Quality Act (CEQA) requirements, the project VMT assessment is documented separately in the *NWC Macy St and Foothill Blvd Vehicle Miles Traveled Assessment* (Ganddini Group, Inc., December 11, 2023).

1. INTRODUCTION

This section provides an overview of the proposed project and the general scope of the analysis.

PURPOSE AND OBJECTIVES

The purpose of this study is to evaluate the potential for transportation impacts resulting from the development of the proposed project in the context of the City of San Bernardino's discretionary authority for conformance with locally established operational standards. Although this is a technical report, effort has been made to prepare the report clearly and concisely. A glossary is provided in Appendix A to assist the reader with technical terms.

This study was prepared in consultation with the City of San Bernardino staff following the procedures and methodologies for assessing transportation impacts established by the City of San Bernardino. To assess the project's conformance with local operational standards, this study evaluates the project's effect on traffic operations and, if necessary, identifies recommended improvements or corrective measures to alleviate operational deficiencies substantially caused or worsened by the proposed project. For compliance with California Environmental Quality Act (CEQA) requirements, a vehicle miles traveled (VMT) assessment is documented separately in the *NWC Macy St and Foothill Blvd Vehicle Miles Traveled Assessment* (Ganddini Group, Inc., December 11, 2023).

PROJECT DESCRIPTION

The approximately 16-acre project site (APN: 0142-041-09 to 11, 17, 18, 20, 21, 32, 33, 34, 44 and 0142-521-01 to 03) is located at the northwest corner of the Macy Street and Foothill Boulevard intersection in the City of San Bernardino, California. The project site is currently developed with a six (6) room motel and a 1,525 square foot bar and zoned General Commercial (CG-1). Figure 1 and Figure 2 show the regional and project location maps.

The proposed project involves construction of 135 single family residential dwelling units. Gated vehicle access for the project site is proposed at Macy Street and Dallas Avenue. Figure 3 illustrates the project site plan.

SCOPE OF ANALYSIS

The scope of this analysis was determined in consultation with the City of San Bernardino as documented in the approved scoping agreement provided in Appendix B.

Study Area

Figure 4 illustrates the study area. In accordance with the City of San Bernardino requirements, the study area was determined in consultation with the City engineering staff and consists of classified roadway intersections to which the project is forecast to contribute 50 or more peak hour trips. Based on the project trip generation and distribution forecasts presented later in this report, the study area consists of the following study intersections, each within the City of San Bernardino jurisdiction:

1. Pepper Avenue (NS) at Foothill Boulevard (EW) ¹
2. Meridian Avenue (NS) at Foothill Boulevard (EW)
3. Dallas Avenue (NS) at Foothill Boulevard (EW)
4. Macy Street (NS) at Foothill Boulevard (EW)

¹ (NS) = north-south roadway; (EW) = east-west roadway.

5. N Rancho Avenue (NS) at Foothill Boulevard (EW)
6. Macy Street (NS) at Project Driveway (EW)
7. Dallas Avenue (NS) at Project Driveway (EW)

Analysis Scenarios

This study includes an evaluation of the following analysis scenarios for weekday AM and PM peak hour conditions:

- Existing
- Existing Plus Ambient Growth (2026)
- Opening Year (2026) Without Project
- Opening Year (2026) With Project
- Year 2040 Without Project
- Year 2040 With Project

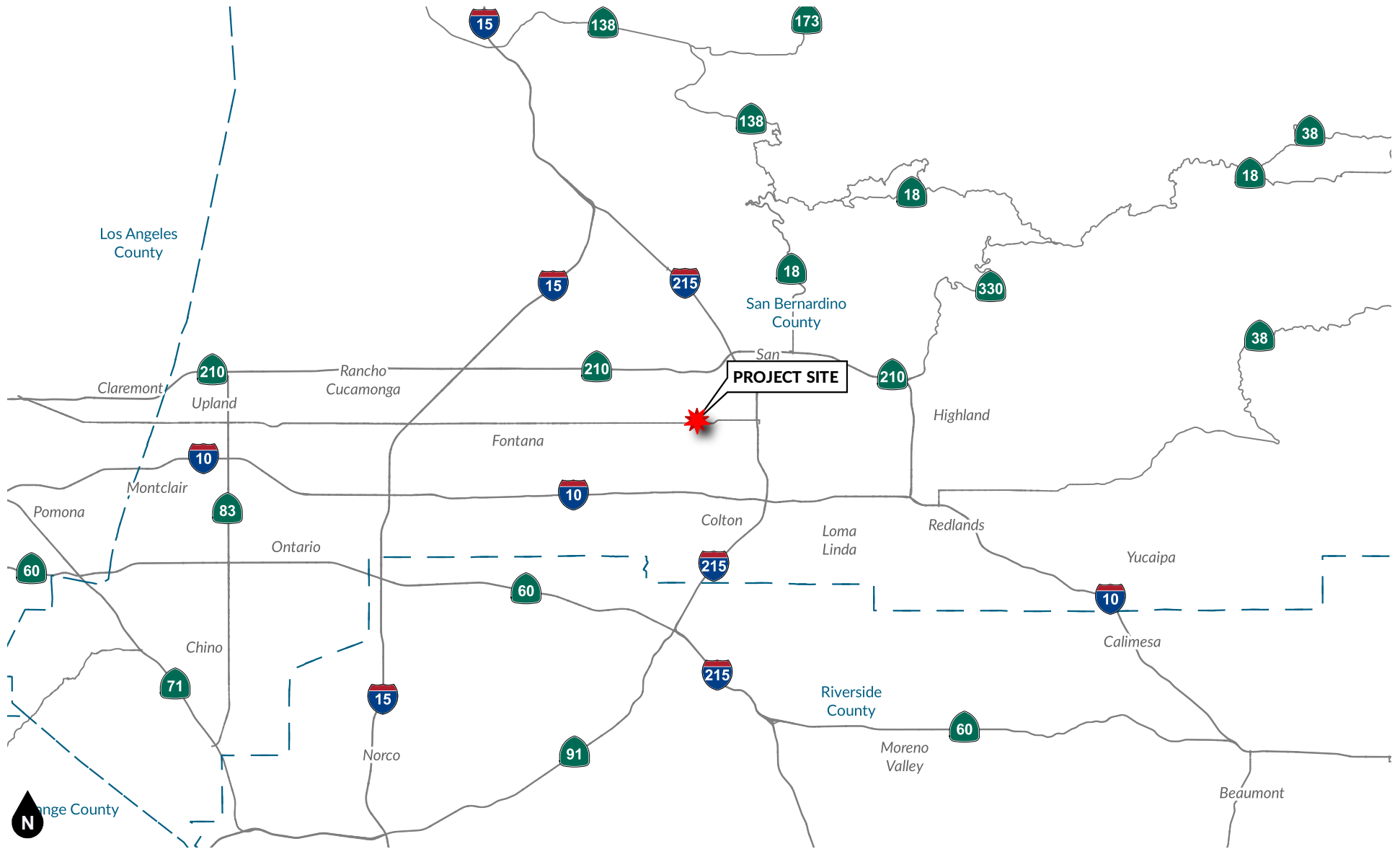


Figure 1
Regional Location Map

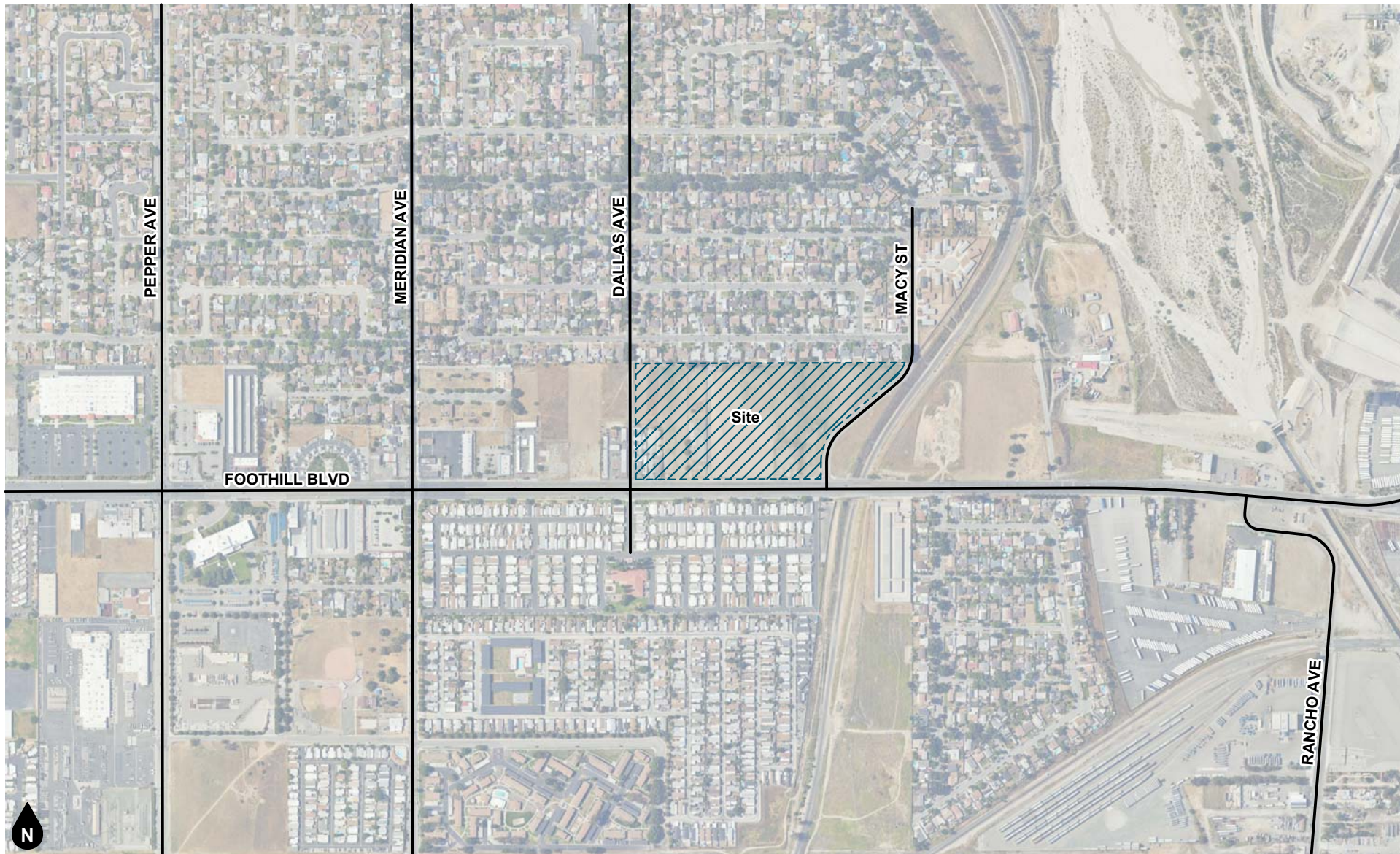


Figure 2
Project Location Map

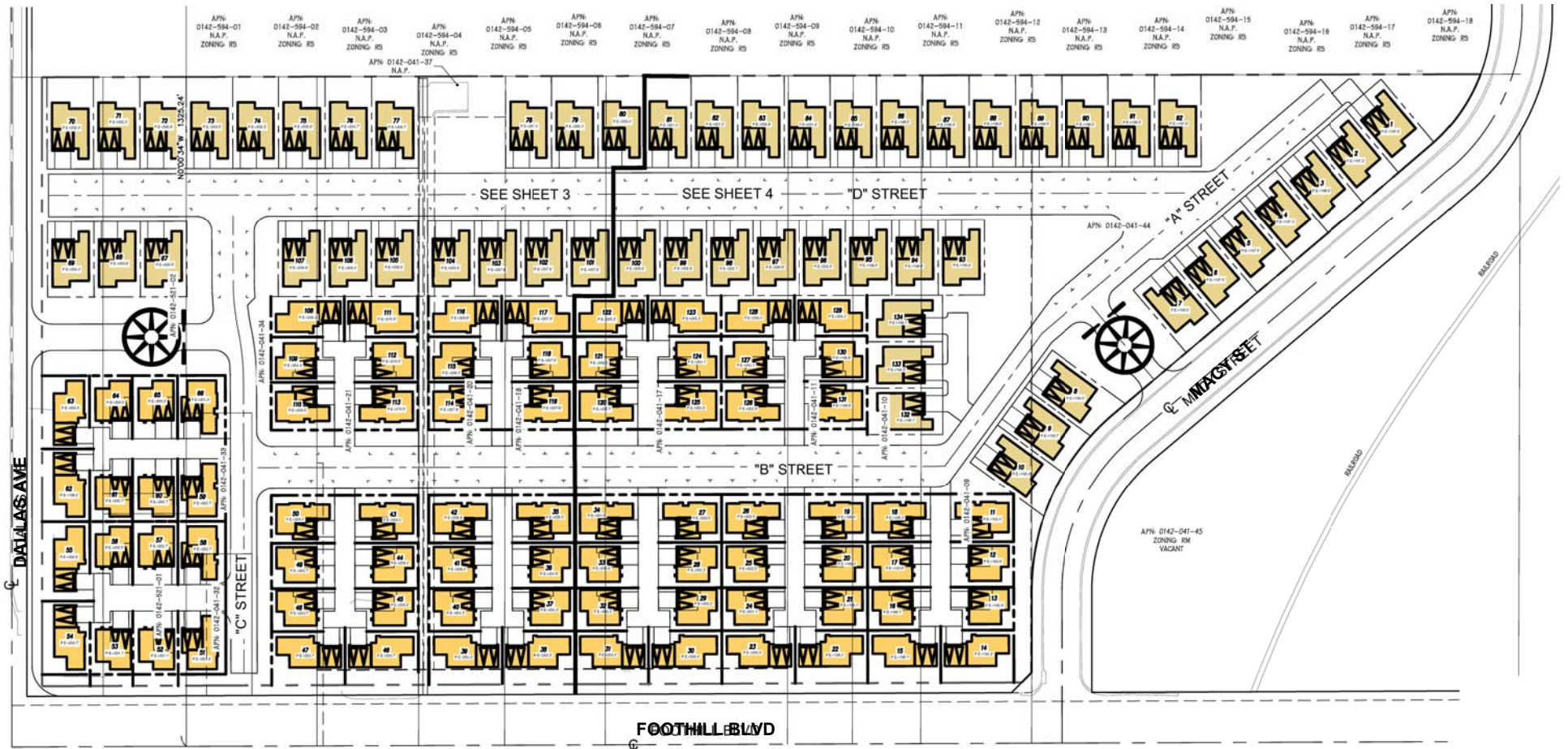
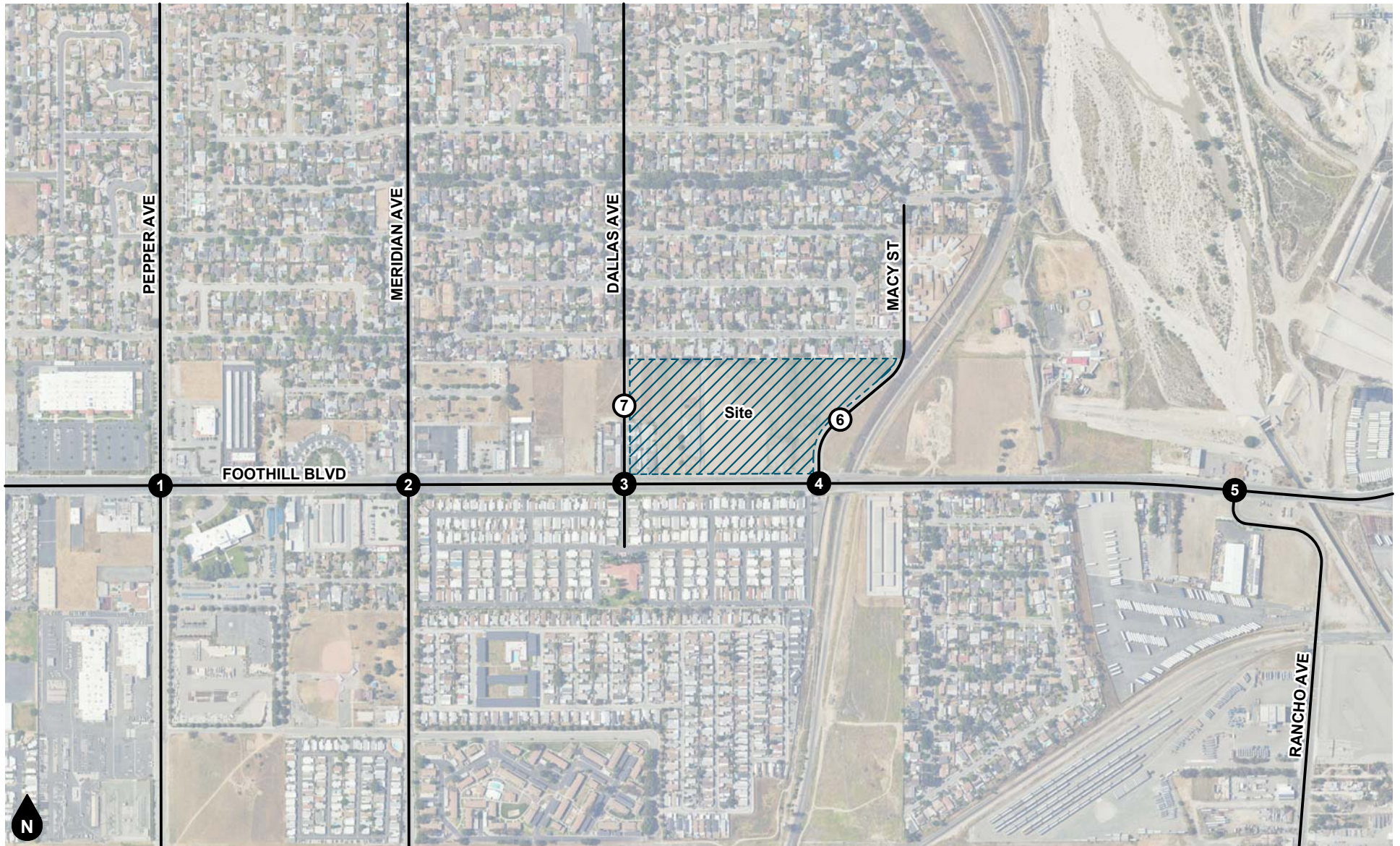


Figure 3
Site Plan



Legend

- # Study Intersection
- # Project Driveway

Figure 4
Study Area

2. METHODOLOGY

This section discusses the analysis methodologies used to assess transportation facility performance as adopted by the respective jurisdictional agencies. This traffic impact analysis is based on the *City of San Bernardino Traffic Impact Analysis Preparation Guidelines* (August 2020) ["City TIA Guidelines"].

LEVEL OF SERVICE/OPERATIONAL ANALYSIS METHODOLOGY (Non-CEQA)

Level of Service analysis is performed to assess conformance with General Plan and operational standards established by the applicable agencies.

Intersections Delay Methodology

City of San Bernardino intersections are analyzed using the intersection delay methodology based on procedures contained in the *Highway Capacity Manual* (HCM) (Transportation Research Board, 7th Edition). The methodology considers the traffic volume and distribution of movements, traffic composition, geometric characteristics, and signalization details to calculate the average control delay per vehicle and corresponding Level of Service. Control delay is defined as the portion of delay attributed to the intersection traffic control (such as a traffic signal or stop sign) and includes initial deceleration, queue move-up time, stopped delay, and final acceleration delay. Intersection delay analysis was performed with default capacity values and adjustment factors recommended in the HCM. The intersection Level of Service is based on the thresholds contained within the HCM.

Level of Service	Delay Methodology	
	Signalized Intersection	Unsignalized Intersection
	Seconds per Vehicle	Seconds per Vehicle
A	≤ 10.0	≤ 10.0
B	> 10.0 to ≤ 20.0	> 10.0 to ≤ 15.0
C	> 20.0 to ≤ 35.0	> 15.0 to ≤ 25.0
D	> 35.0 to ≤ 55.0	> 25.0 to ≤ 35.0
E	> 55.0 to ≤ 80.0	> 35.0 to ≤ 50.0
F	> 80.0	> 50.0

Source: Transportation Research Board *Highway Capacity Manual* (7th Edition).

Level of Service is used to qualitatively describe the performance of a roadway facility, ranging from Level of Service A (free-flow conditions) to Level of Service F (extreme congestion and system failure). At intersections with either traffic signal or all-way-stop control, Level of Service is determined by the average control delay for the overall intersection. At intersections with cross street stop control (i.e., one- or two-way stop control), Level of Service is determined by the average control delay for the worst minor street approach or major street left-turn movement. The Level of Service analysis was performed in accordance with parameters specified in the City TIA Guidelines. Intersection analysis was performed using the Synchro software.

Transportation Effects

The City of San Bernardino has established a minimum acceptable Level of Service D for peak hour intersection operations.

A substantial transportation effect is defined to occur at a signalized study intersection if the project causes intersection operations to degrade from an acceptable Level of Service (D or better) to an unacceptable Level

of Service (E or F) or the project-related increase in volume to capacity ratio is equal to or greater than 0.1 at an intersection that is already operating at an unacceptable Level of Service without the Project.

A substantial transportation effect is defined to occur at an unsignalized study intersection if one or more of the following conditions are met:

- The addition of project trips to a study intersection causes intersection operations to degrade from an acceptable Level of Service (D or better) to an unacceptable Level of Service (E or F).
- The project-related increase in volume to capacity ratio is equal to or greater than 0.1 at an intersection that is already operating at an unacceptable Level of Service (E or F) without the Project.
- The intersection meets peak hour signal warrants either caused by project volumes or project volumes are added at an intersection that meets peak hour signal warrants in the baseline scenario(s). Peak hour signal warrants should be determined based on the latest California Manual on Uniform Traffic Control Devices (CA MUTCD).

Where improvements are identified to address project Level of Service deficiencies, improvements for signalized intersections should be identified such that the intersections are forecast to operate at an acceptable Levels of Service during the peak hours. Furthermore, unsignalized intersections which operated at an acceptable Level of Service without the project should have improvements identified so that the intersections are forecast to operate Levels of Service D or better. Lastly, unsignalized intersections operating at an unacceptable Level of Service where the project adds 0.1 volume to capacity ratio and meets the peak hour traffic signal warrant, should have improvements identified that provide the pre-project Level of Service at a minimum.

Where improvements are identified to address cumulative Level of Service deficiencies, a project fair share cost estimate is provided based on the volume of project traffic using the impacted facility divided by the total “new” traffic (i.e., ambient growth and other developments).

3. EXISTING CONDITIONS

This section describes the existing transportation setting in the project study area.

EXISTING ROADWAY SYSTEM

Figure 5 shows the lane geometry and intersection traffic controls for existing conditions based on a field survey of the study area. Regional access to the project site is provided by Interstate 10 approximately three miles to the south, Interstate 210 approximately two miles to the north and Interstate 215 approximately 2.3 miles to the east of the project site. Local north-south circulation is provided by Pepper Avenue, Meridian Avenue, Dallas Avenue, Macy Street and North Rancho Avenue; and east-west circulation is provided by Foothill Boulevard.

Pepper Avenue: This four-lane divided roadway trends in a north-south direction and is classified as a Major Arterial (four- to six-lane roadway) on the City of San Bernardino General Plan Circulation Element in the study area. On-street parking is prohibited in the project vicinity. There are designated bicycle lanes on both sides of the roadway in the project vicinity; Sidewalks are provided on both sides of the roadway in the project vicinity. The posted speed in the project vicinity is 45 miles per hour.

Meridian Avenue: This two-lane undivided roadway trends in a north-south direction and is classified as a collector roadway (two-lane roadway) on the City of San Bernardino General Plan Circulation Element in the study area. On-street parking is not prohibited in the project vicinity. Currently, there are no designated bicycle facilities in the project vicinity. Sidewalks are provided on either side of the roadway. The posted speed in the project vicinity is 40 miles per hour.

Dallas Avenue: This two-lane undivided alley trends in a north-south direction and is classified as a local roadway (two-lane roadway) on the City of San Bernardino General Plan Circulation Element in the study area. On-street parking is not prohibited in the project vicinity. Currently, there are no designated bicycle facilities in the project vicinity. Sidewalks are not provided on either side of the roadway. The speed limit is not posed in the project vicinity.

Macy Street: This two-lane undivided roadway trends in a north-south direction and is classified as a local roadway (two-lane roadway) on the City of San Bernardino General Plan Circulation Element in the study area. On-street parking is not prohibited in the project vicinity. Currently, there are no designated bicycle facilities in the project vicinity. Sidewalks are not provided on either side of the roadway. The speed limit is not posed in the project vicinity.

North Rancho Avenue: This two-lane undivided to two-lane divided roadway trends in a north-south direction and is classified as a Major Arterial (four to six-lane roadway) on the City of San Bernardino General Plan Circulation Element in the study area. On-street parking is not permitted based on the roadway width south of Foothill Boulevard. Currently, there are no designated bicycle facilities in the project vicinity. Sidewalks are provided intermittently adjacent to developed parcels. The speed limit is not posed in the project vicinity.

Foothill Boulevard: This four-lane with two-way left turn lane roadway trends in an east-west direction and is classified as a Major Arterial (4 lane-divided with 100 feet of right-of-way) on the City of San Bernardino General Plan Circulation Element in the study area. On-street parking is prohibited on both sides of the road in the project vicinity. Currently, the City's Bicycle Facilities and Pedestrian Trails Master Plan identifies Foothill Boulevard as an existing Class III bike route (unmarked/on-street) east of Macy Street and proposed Class III bike route west of Macy Street. Sidewalks are generally provided on the south side of the roadway and on the north side adjacent to developed parcels. The posted speed is 40 miles per hour in the project vicinity.

PEDESTRIAN FACILITIES

Existing pedestrian facilities in the project vicinity are shown on Figure 6. As shown on Figure 6, sidewalks are currently not provided along the project site frontage.

TRANSIT FACILITIES

Figure 7 shows the existing Omnitrans system map in the project vicinity. Bus Route 14 runs along Foothill Boulevard. The closest bus stop to the project is at the northeast corner of Macy Street and Foothill Boulevard, a bus stop located southeast Dallas Avenue and Foothills Boulevard.

GENERAL PLAN CONTEXT

Figure 8 shows the City of San Bernardino General Plan Circulation Element roadway classifications map. This figure shows the nature and extent of arterial and collector highways that are needed to adequately serve the ultimate development depicted by the Land Use Element of the General Plan. The City of San Bernardino standard roadway cross-sections are illustrated on Figure 9.

BICYCLE FACILITIES MASTER PLAN

The City of San Bernardino Bicycle Master Plan is shown on Figure 10. As shown on Figure 10, there are existing bike lanes on Pepper Avenue and a proposed signed bike route on Foothills Boulevard.

EXISTING ROADWAY VOLUMES

Figure 11 shows the existing average daily traffic volumes. The existing average daily traffic volumes have been factored from peak hour intersection turning movement volumes at locations using the following formula for each intersection leg:

$$\text{PM Peak Hour (Approach Volume + Exit Volume)} \times 11.5 = \text{Leg Volume}$$

Figure 12 and Figure 13 show the existing AM and PM peak hour intersection turning movement volumes. Existing peak hour intersection turning movement volumes are based upon AM peak period and PM peak period intersection turning movement counts obtained in February 2024 during typical weekday conditions. The weekday AM peak period was counted between 7:00 AM and 9:00 AM and the weekday PM peak period was counted between 4:00 PM and 6:00 PM; these periods capture the peak times for commuter traffic when the roadway system is typically experiencing peak demand. The actual peak hour within each two-hour count period is determined based on the sum of the four consecutive 15-minute periods with the highest total volume entering the intersection. Thus, the weekday PM peak hour at one intersection may be 4:45 PM to 5:45 PM and may vary at other intersections depending on the four consecutive 15-minute periods that have the highest total volume. Intersection turning movement count worksheets are provided in Appendix C.

Pepper Avenue northbound and southbound lanes were under construction at the time of the turning movement counts. The traffic volumes used in the analysis are a conservative estimate of the post construction volumes based on a pre-construction count from March 2023 which was used to adjust the northbound and southbound through volumes and turning movements affected by the construction.

EXISTING INTERSECTION LEVEL OF SERVICE

The study intersection Levels of Service for Existing conditions are shown in Table 1. Detailed Level of Service worksheets are provided in Appendix D.

As shown in Table 1, the study intersections currently operate within acceptable Levels of Service (D or better) during peak hours, except for the following intersection that currently operates at an unacceptable Level of Service (E or F) during the peak hours:

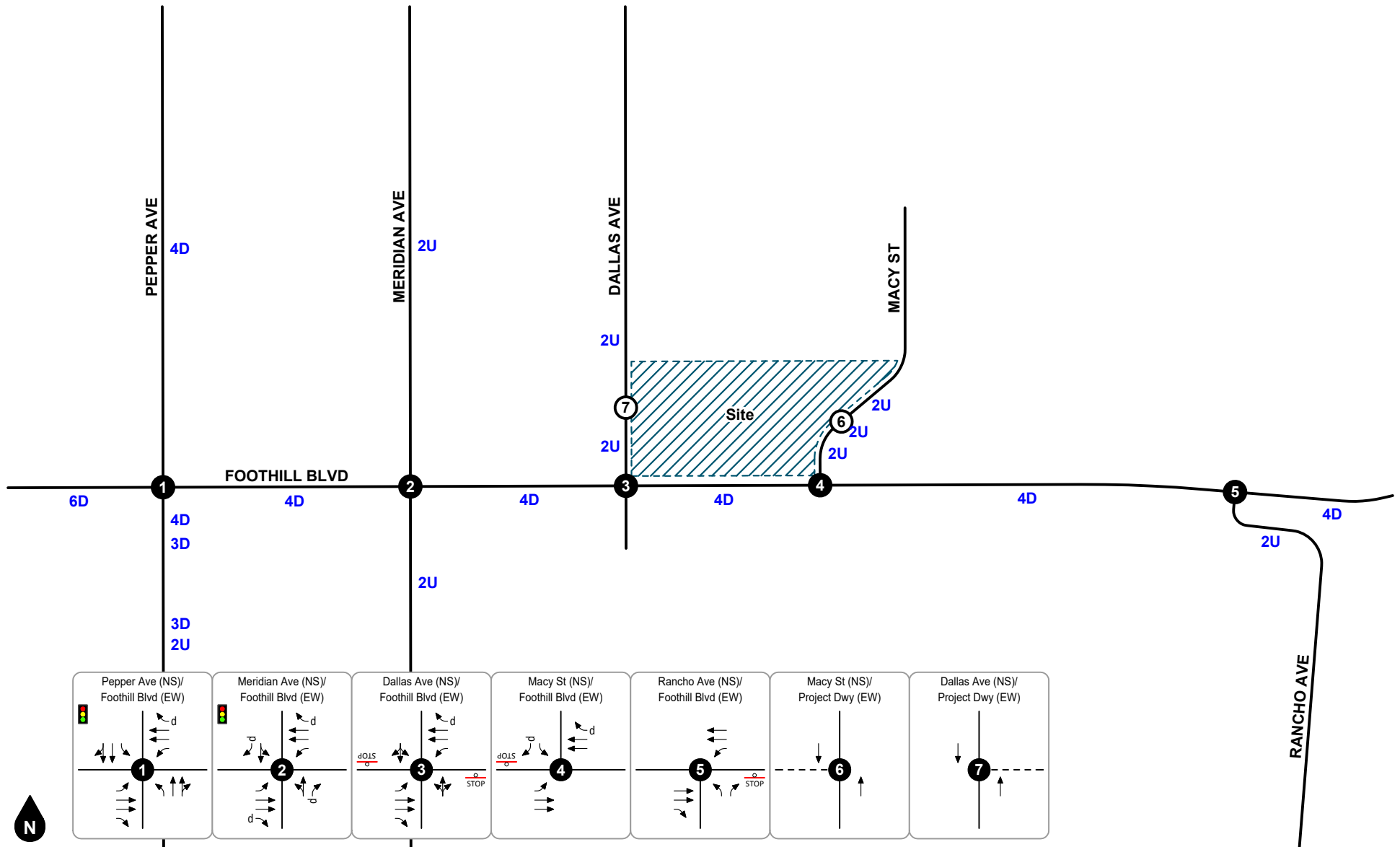
2. Meridian Avenue (NS) at Foothill Boulevard (EW) AM/PM - LOS F

Table 1
Existing Intersection Levels of Service

Study Intersection	Traffic Control ¹	AM Peak Hour		PM Peak Hour	
		Delay ²	LOS ³	Delay ²	LOS
1. Pepper Avenue at Foothill Boulevard	TS	35.7	D	49.2	D
2. Meridian Avenue at Foothill Boulevard	TS	127.2	F	102.0	F
3. Dallas Avenue at Foothill Boulevard	CSS	19.7	C	17.6	C
4. Macy Street at Foothill Boulevard	CSS	14.5	B	16.3	C
5. N Rancho Avenue at Foothill Boulevard	CSS	18.5	C	27.0	D

Notes:

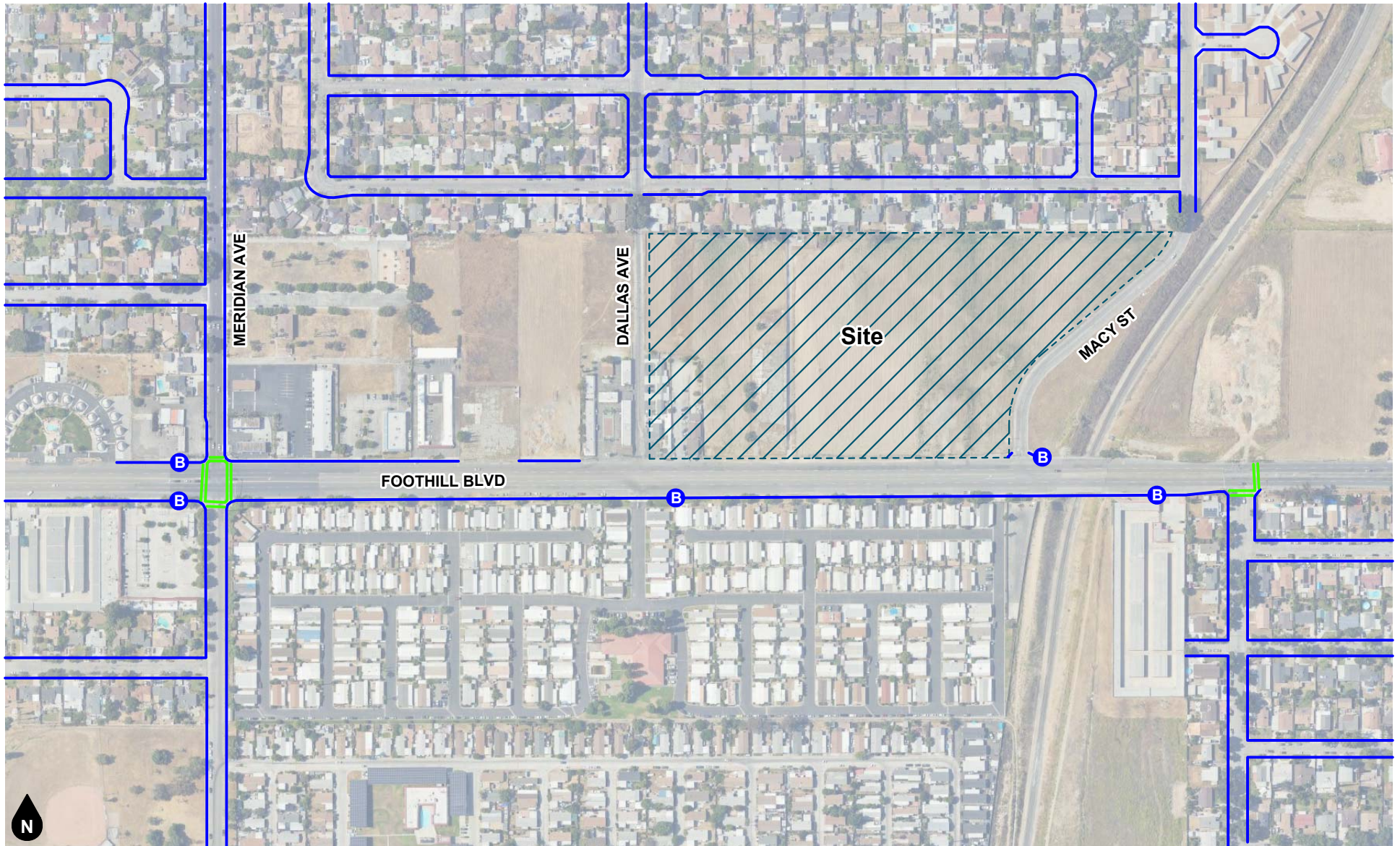
1. TS = Traffic Signal; CSS = Cross Street Stop.
2. Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst minor street approach or major street left turn movement.
3. LOS = Level of Service



Legend

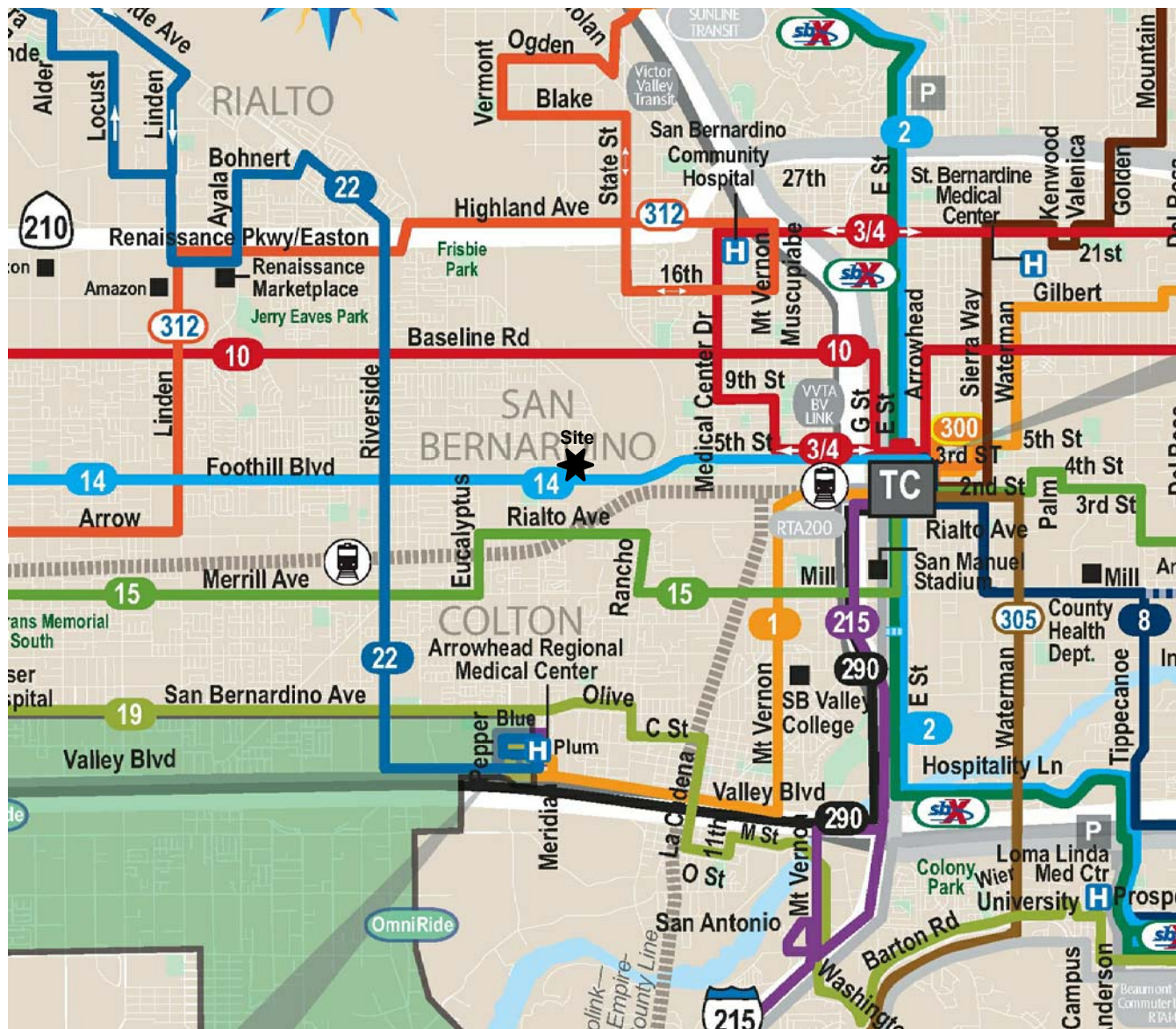
- Traffic Signal
- Stop Sign
- Existing Lane
- De Facto Right Turn Lane
- Project Driveway
- #Lane Divided Roadway
- #Lane Undivided Roadway

Figure 5
Existing Lane Geometry and Intersection Traffic Controls



- Legend**
- Sidewalk
 - Cross Walk
 - B Bus Stop

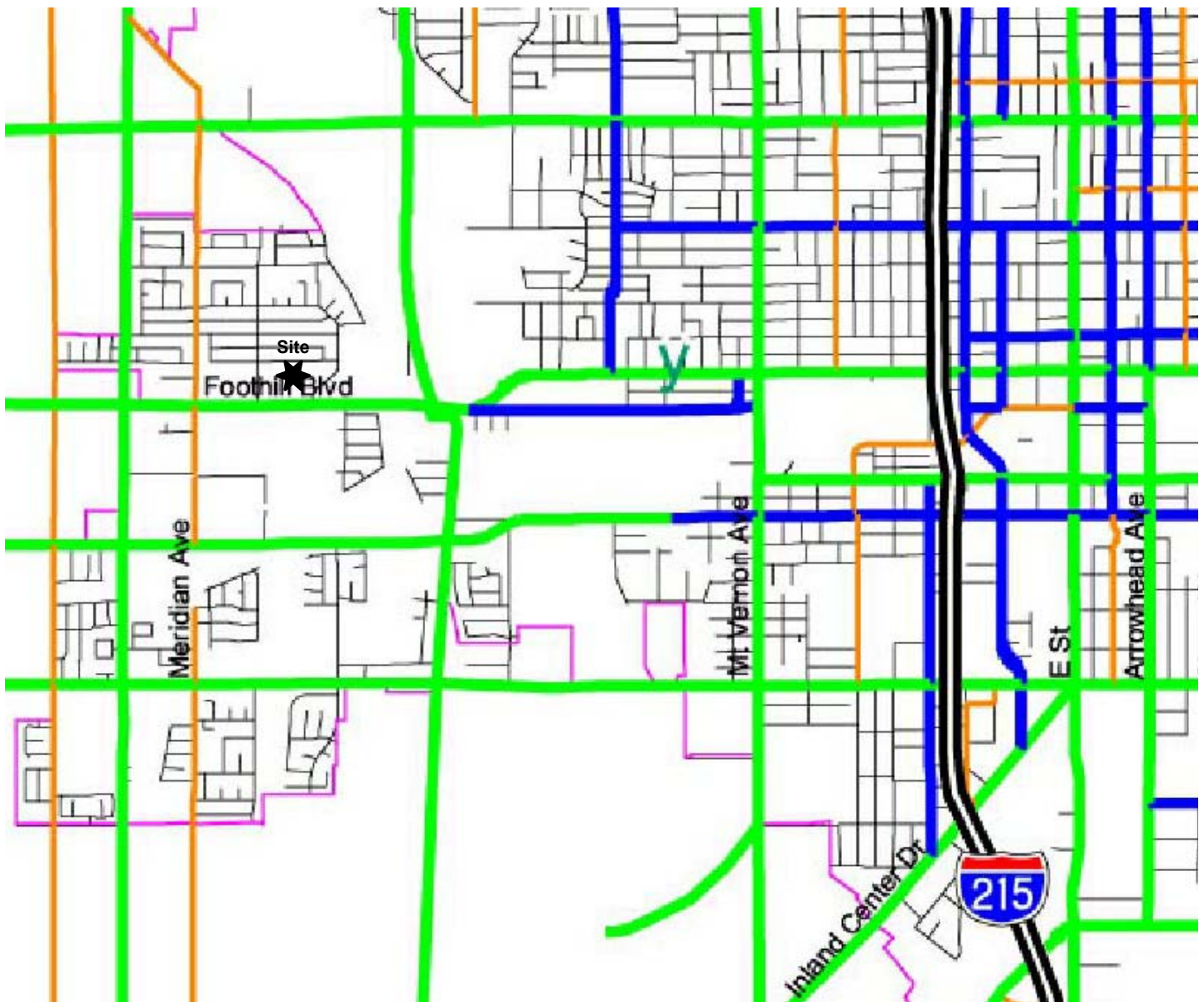
Figure 6
Existing Pedestrian Facilities



- Bus Route
- Tripper Service
- Long-term Detour
- Metrolink
- Metrolink Station
- TransCenter (Timed Transfers)
- Landmark
- Hospital
- Interstate
- State Highway
- sbX Bus Rapid Service Route
- Park-and-Ride

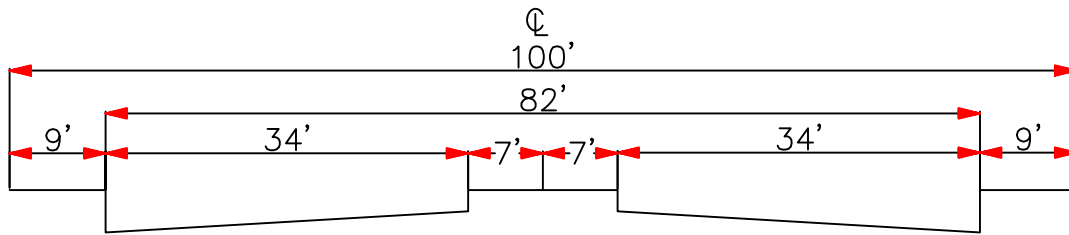
Figure 7
Existing Transit Routes

Source: Omnitrans

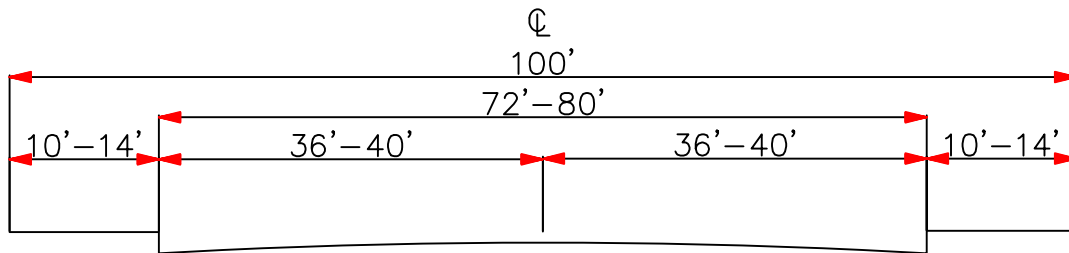


Source: City of San Bernardino

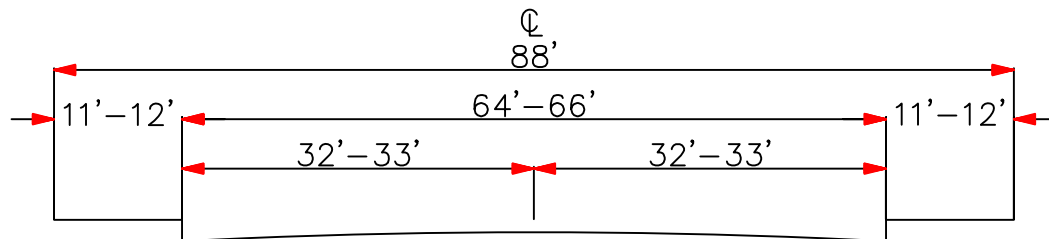
Figure 8
City of San Bernardino General Plan Circulation Element



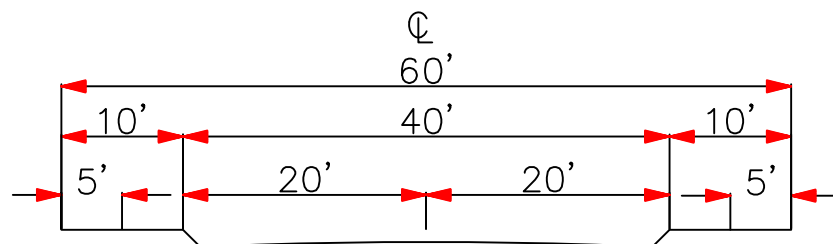
MAJOR DIVIDED HIGHWAYS



MAJOR HIGHWAY



SECONDARY HIGHWAY



COLLECTOR STREET

FOR USE IN QUARTER MILE STREETS,
SCHOOL AND INDUSTRIAL AREAS.

Figure 9
City of San Bernardino General Plan Roadway Cross-Sections

Source: City of San Bernardino

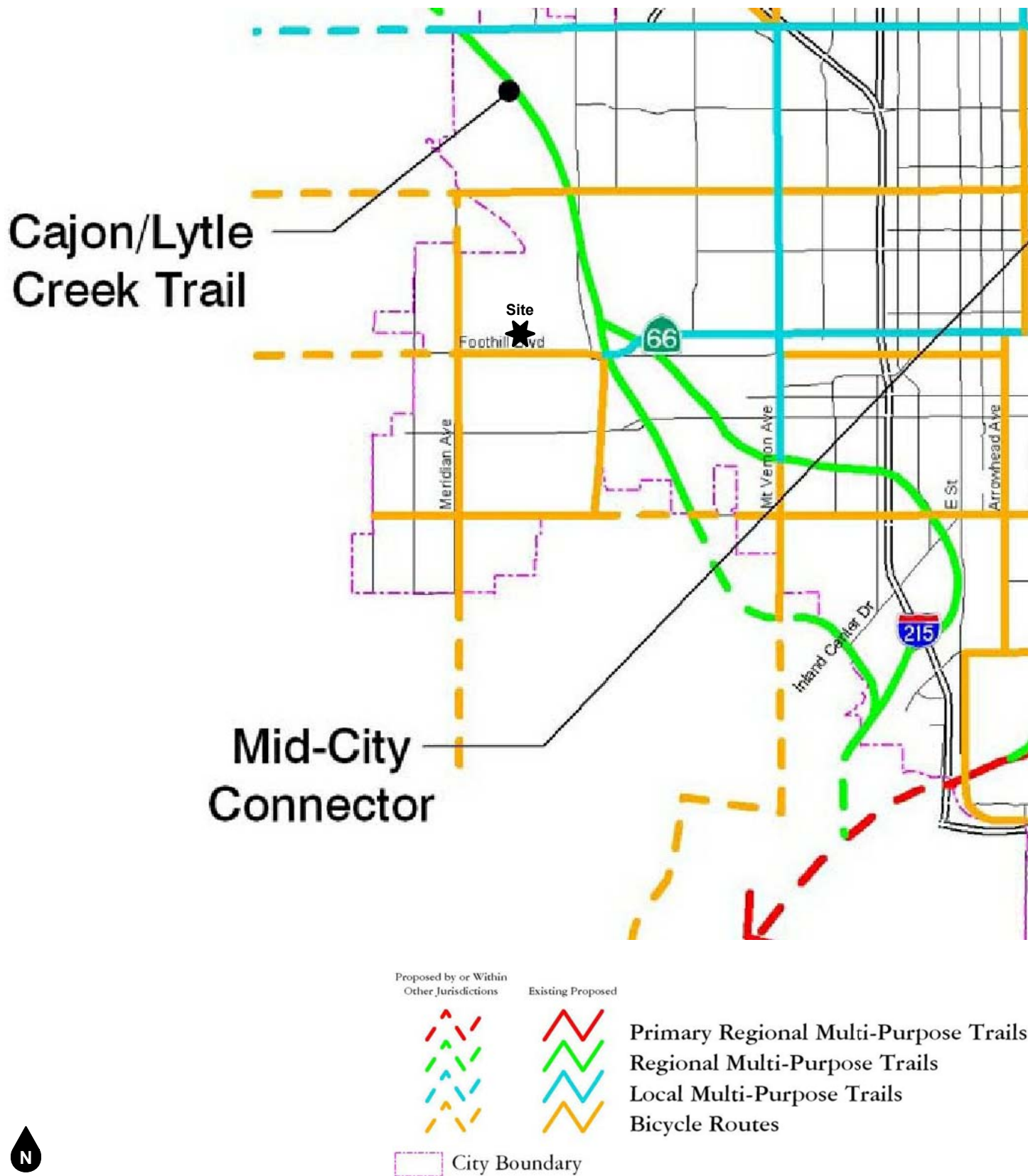


Figure 10
City of San Bernardino Bicycle Facilities Master Plan

Source: City of San Bernardino

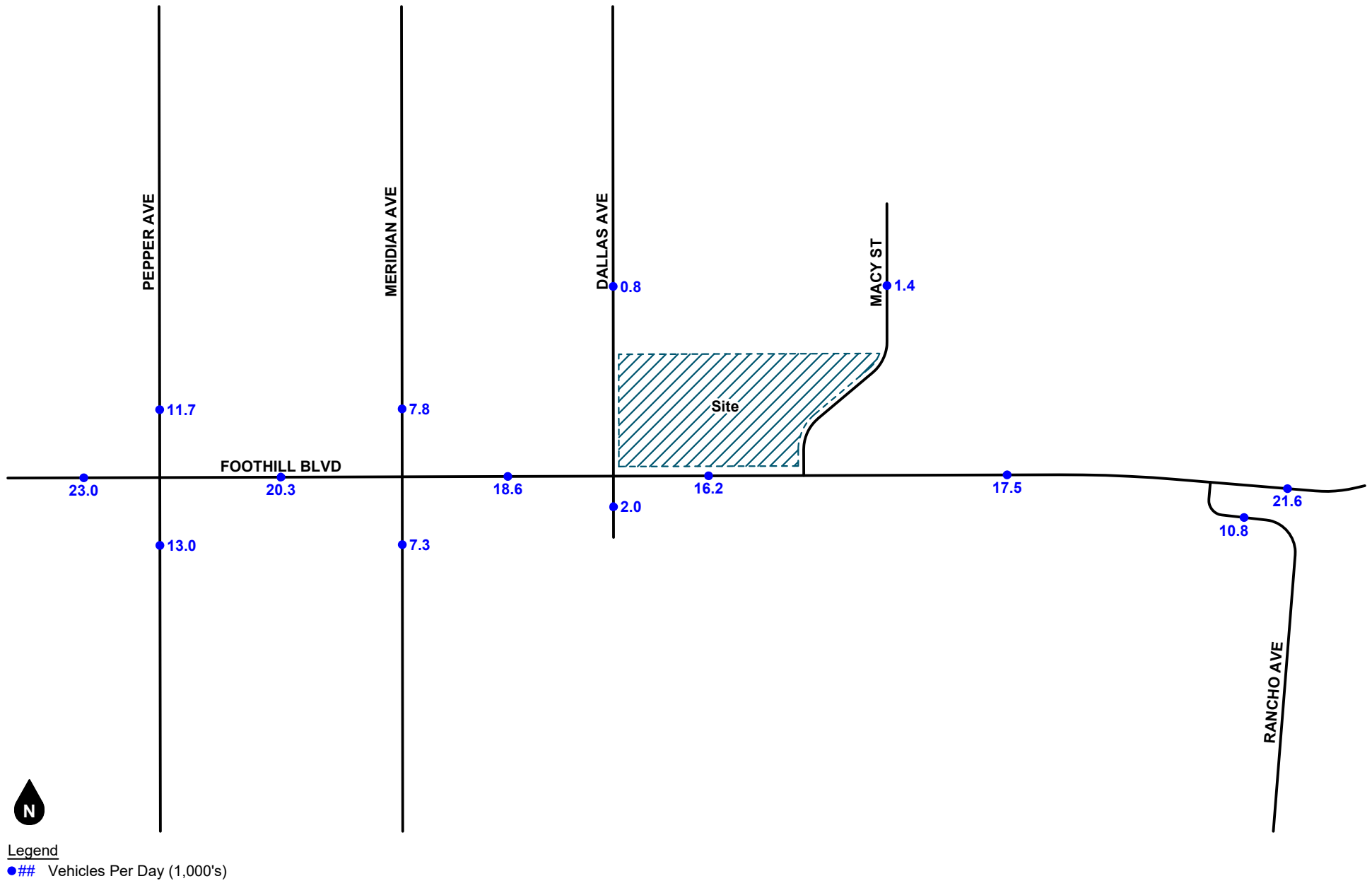


Figure 11
Existing Average Daily Traffic Volumes

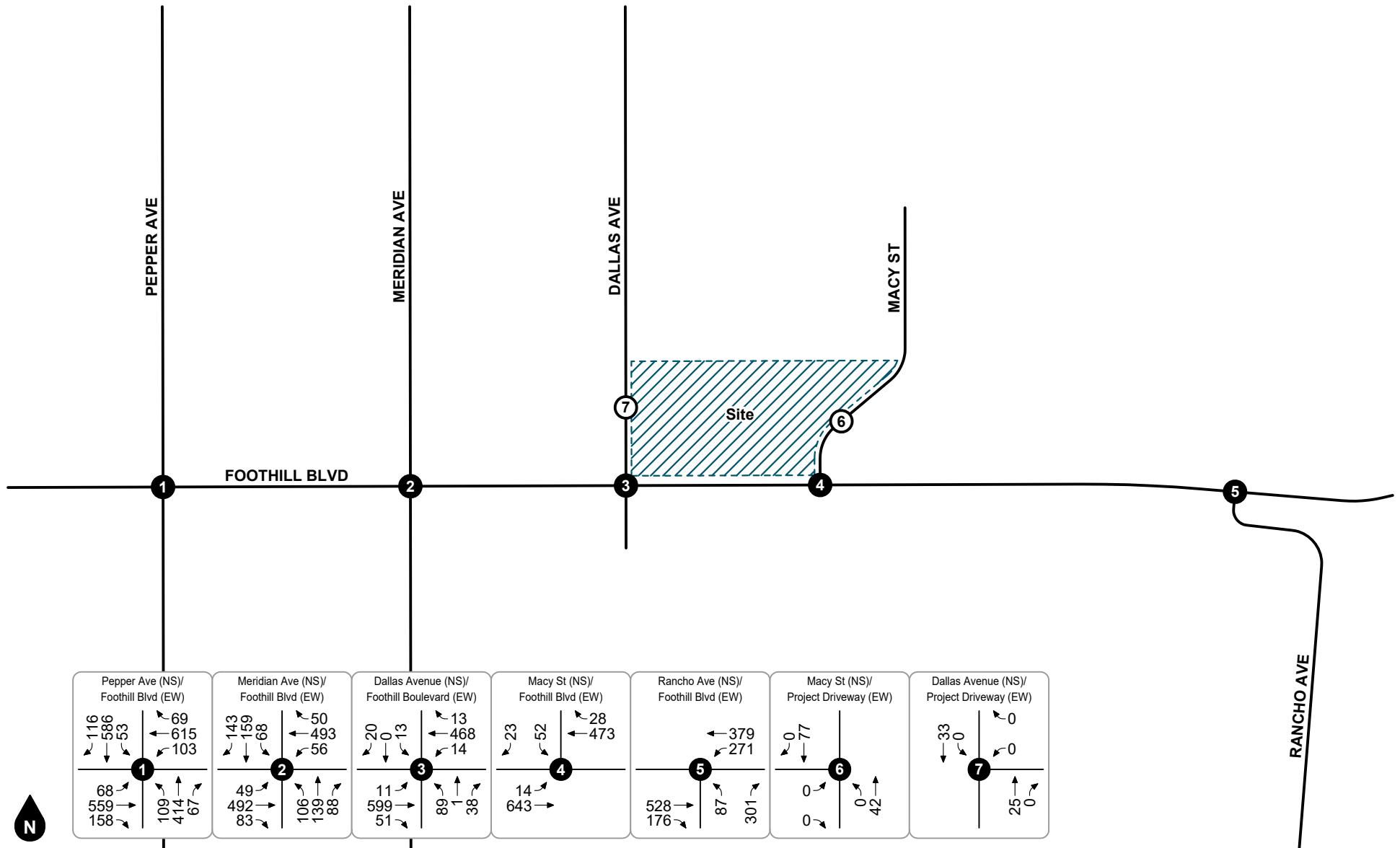
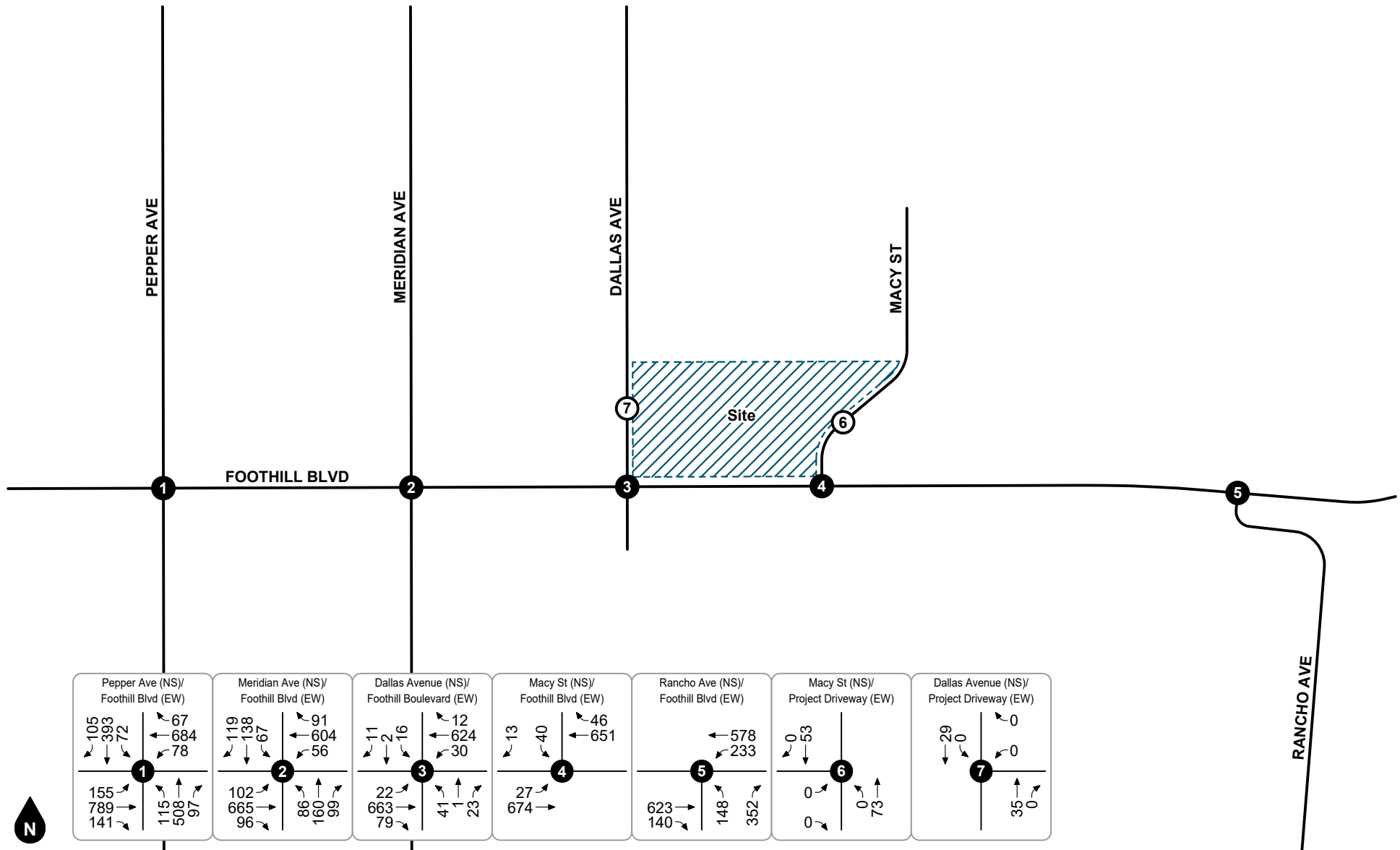


Figure 12
Existing AM Peak Hour Intersection Turning Movement Volumes



Legend

- # Study Intersection
- # Project Driveway

Figure 13
Existing PM Peak Hour Intersection Turning Movement Volumes

4. PROJECT TRIP FORECASTS

This section describes how project trip generation, trip distribution, and trip assignment forecasts were developed. The forecast project volumes are illustrated in the figures contained in this section.

TRIP GENERATION

Table 2 shows the proposed project trip generation forecast is based on average rates obtained from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (11th Edition, 2021) for Land Use Codes 210 (Single Family Detached Residential), 310 (Motel) and 975 (Drinking Place) were determined to adequately represent the land use for the proposed project and existing land uses and were selected for calculation of the project trip generation forecast.

As shown in Table 2, the proposed project is forecast to generate approximately 1,029 net daily trips, including 93 net trips during the AM peak hour and 107 net trips during the PM peak hour.

PROJECT TRIP DISTRIBUTION & ASSIGNMENT

Figure 14 and Figure 15 show the forecast outbound and inbound directional distribution patterns for the project generated trips, respectively. The project trip distribution patterns were developed using engineering judgment in consultation with the City engineering staff based on a review of existing traffic data, surrounding land uses, and the local and regional roadway facilities in the project vicinity.

Based on the identified project trip generation and distributions, the project-generated average daily traffic volumes are shown on Figure 16. The project-generated AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 17 and Figure 18.

Table 2
Project Trip Generation

Trip Generation Rates									
Land Use	Source ¹	Land Use Variable ²	AM Peak Hour			PM Peak Hour			Daily Rate
			% In	% Out	Rate	% In	% Out	Rate	
Single-Family Detached Housing	ITE 210	DU	25%	75%	0.70	63%	37%	0.94	9.43
Motel	ITE 320	RM	37%	63%	0.35	54%	46%	0.36	3.35
Drinking Place	ITE 975 ³	TSF	50%	50%	0.00	66%	34%	11.36	142.00

Trips Generated									
Land Use	Source	Quantity	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
<u>Existing to be removed</u>									
Motel	ITE 320	6 RM	1	1	2	1	1	2	20
Drinking Place	ITE 975	1.575 TSF	0	0	0	12	6	18	224
Total Existing Trips			1	1	2	13	7	20	244
<u>Proposed development</u>									
Single-Family Detached Housing	ITE 210	135 DU	24	71	95	80	47	127	1,273
TOTAL NET TRIPS GENERATED			80	70	93	67	40	107	1,029

Notes:

1. ITE = Institute of Transportation Engineers *Trip Generation Manual* (11th Edition, 2021); ### = Land Use Code.
All rates based on General Urban/Suburban setting.
2. DU = Dwelling Units; RM = Motel Rooms; TSF = Thousand Square feet.
3. ITE rates with data from San Diego Association of Governments (SANDAG) *Vehicular Traffic Generation Rates* (April 2002). Where the daily or peak hour rate is not provided by ITE, the SANDAG percentage of peak hour to daily rate is used to calculate the missing data. Where the peak hour distribution is not provided by ITE, the SANDAG peak hour distribution is used.

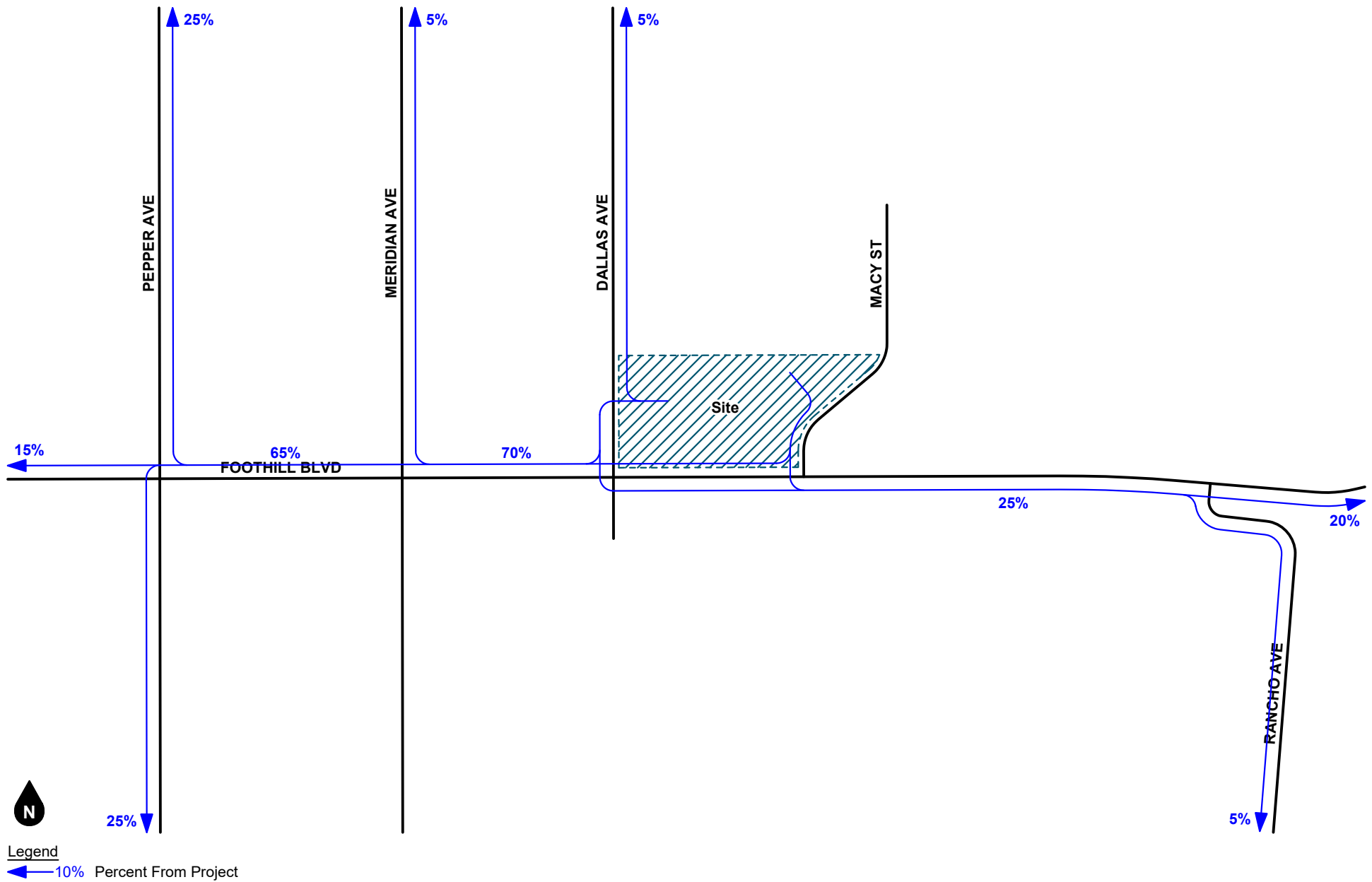


Figure 14
Project Trip Distribution (Outbound)

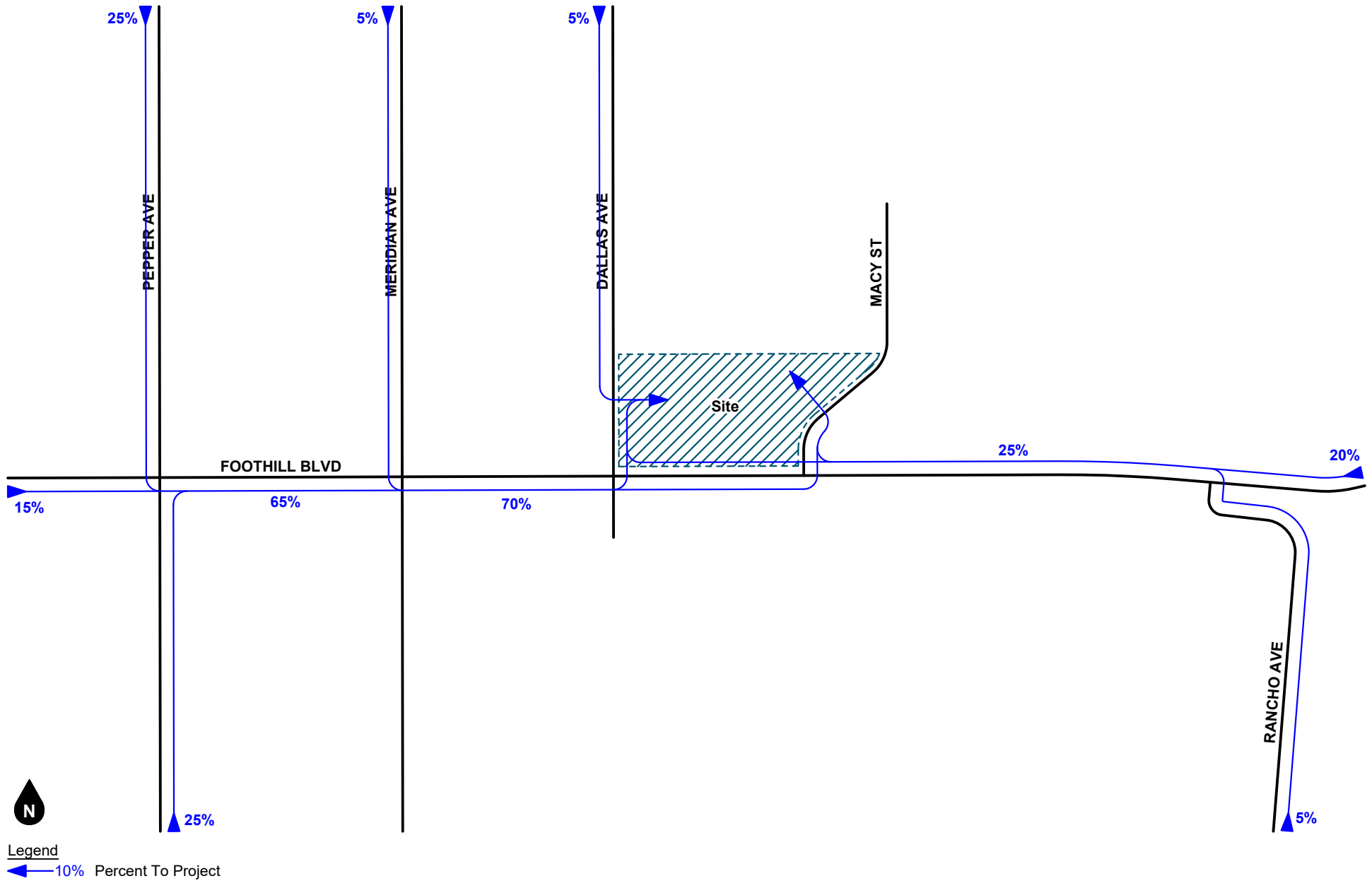


Figure 15
Project Trip Distribution (Inbound)

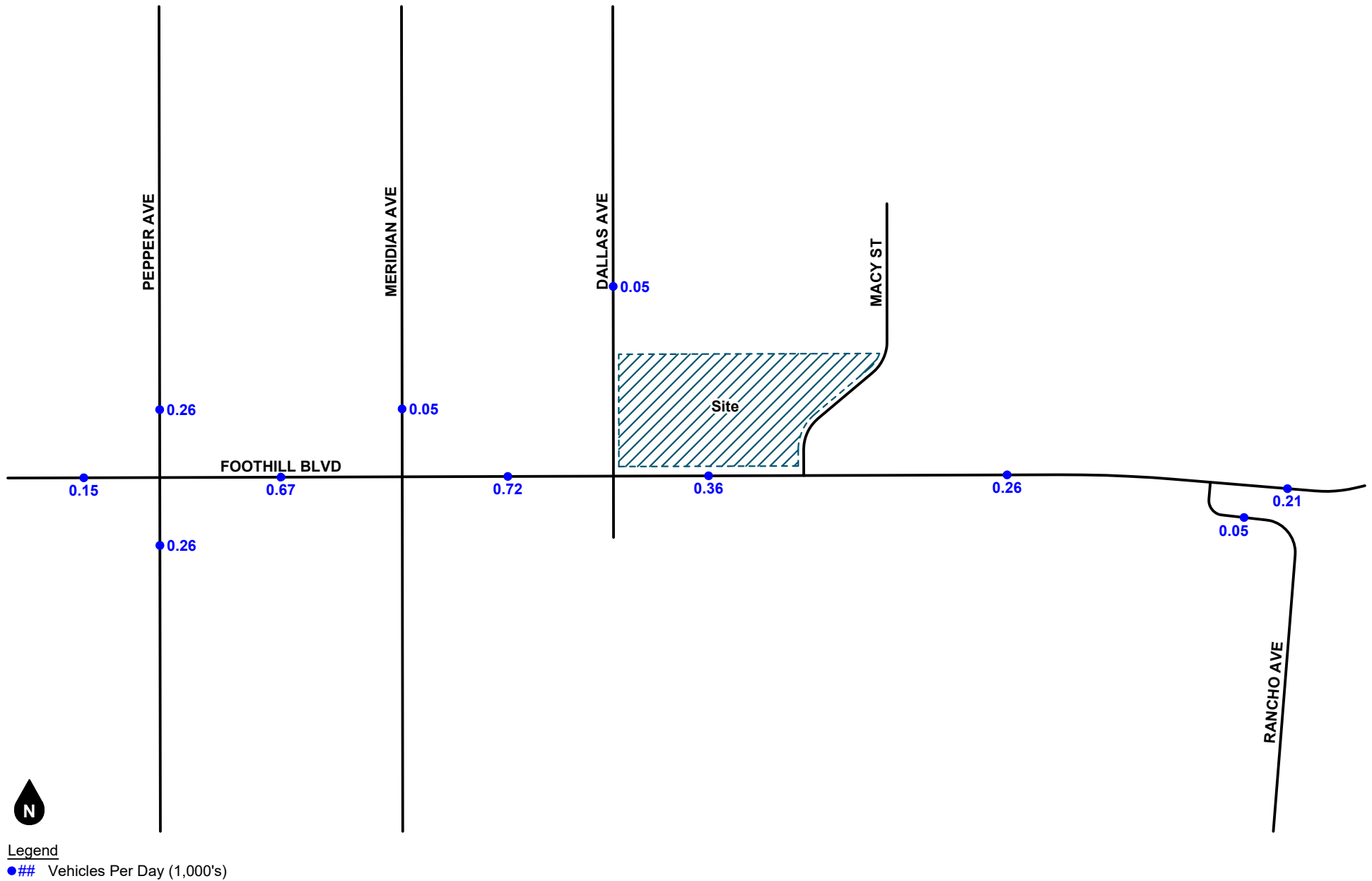
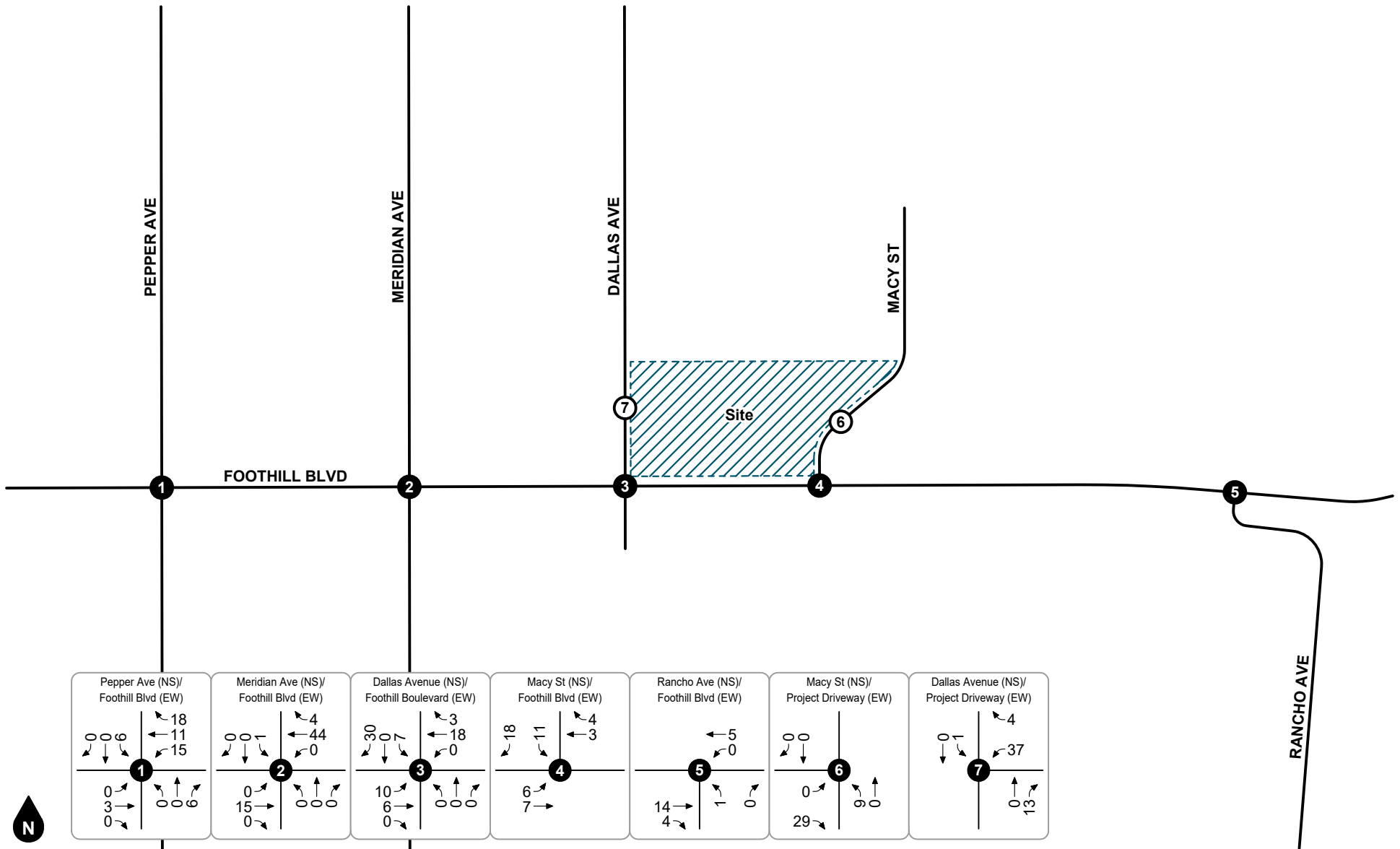


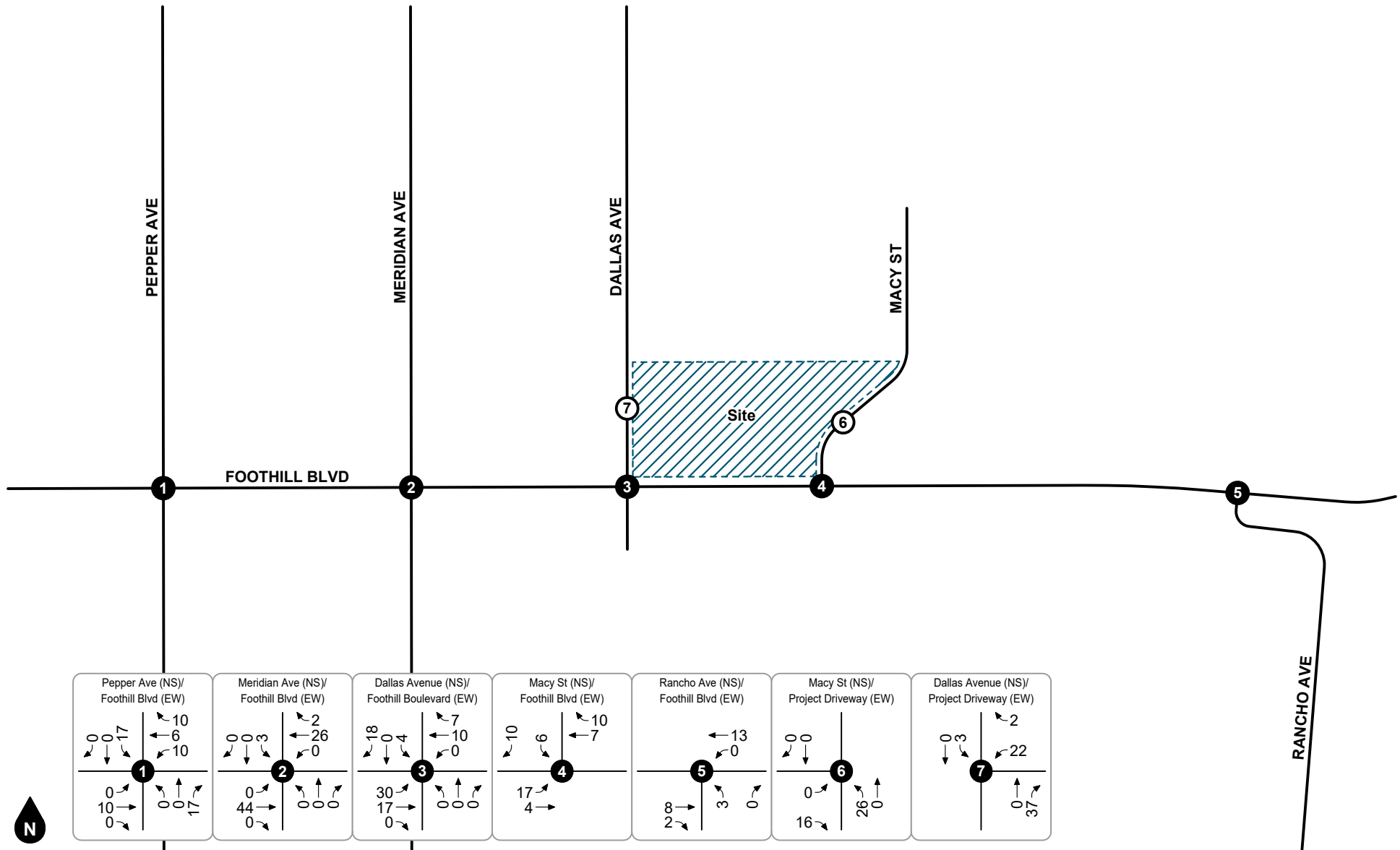
Figure 16
Project Average Daily Traffic Volumes



Legend

- # Study Intersection
- # Project Driveway

Figure 17
Project AM Peak Hour Intersection Turning Movement Volumes



Legend

Study Intersection

Project Driveway

Figure 18
Project PM Peak Hour Intersection Turning Movement Volumes

5. FUTURE VOLUME FORECASTS

This section describes how future volume forecasts for each analysis scenario were developed. Forecast study area volumes are illustrated in the figures contained in this section.

METHOD OF PROJECTION

To assess future conditions, existing volumes were combined with project trips, ambient growth, and other development trips. The project completion date for analysis purposes in this report is 2026.

Ambient Growth

To account for ambient growth, Opening Year (2026) roadway volumes were developed by increasing existing (year 2024) volumes by a growth rate of three percent (3.0%) per year over a two (2) year period for a total growth factor of 1.06. The ambient growth was applied to all movements at the study intersections.

Other Developments

To account for growth associated with other development projects, trips generated by other pending or approved but unconstructed developments in the City of San Bernardino and the City of Rialto were reviewed and added to the study area as appropriate. The other development trip generation summary is shown in Table 3. The regional ambient growth is assumed to account for any additional trips generated by other developments not specifically listed in Table 3. Figure 19 shows the other development location map.

Average daily traffic volumes generated by other developments are shown on Figure 20. Figure 21 and Figure 22 show the forecast AM peak hour and PM peak hour intersection turning movement volumes for trips generated by other developments.

Regional Travel Demand Model Growth

Year 2040 AM and PM peak hour intersection turning movement volumes will be determined using the San Bernardino County Transportation Analysis Model (SBTAM) Year 2040 travel demand model plots and forecasting procedures outlined in the National Cooperative Highway Research Program Report 255.

To derive AM and PM peak hour intersection turning movement volumes, the traffic volume growth forecasts were further refined using a spreadsheet program developed by the Federal Highway Administration and consistent with traffic volume forecasting procedures outlined in the National Cooperative Highway Research Program Report 255. The spreadsheet program uses a linear programming algorithm to calculate future turning movements based on the relationship of existing intersection turning movements and forecast model growth. The forecast turning movements developed by the spreadsheet program were reviewed for reasonableness and adjusted as necessary to ensure growth over near-term forecasts. The end results of the post-processing procedures are future intersection turning movement volumes suitable for analysis. Travel demand model plots are provided in Appendix E Travel demand model post-processing worksheets are provided in Appendix F.

ANALYSIS SCENARIO VOLUMES

Existing Plus Ambient Growth (2026)

The Existing Plus Ambient Growth (2026) volume forecast was developed by applying the ambient growth factor to existing volumes. Existing Plus Ambient Growth (2026) average daily traffic volumes are shown on

Figure 23. Existing Plus Ambient Growth (2026) AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 24 and Figure 25.

Opening Year (2026) Without Project

The Opening Year (2026) Without Project volume forecast was developed by applying the ambient growth factor to existing volumes and adding trips generated by other developments. Opening Year (2026) Without Project average daily traffic volumes are shown on Figure 26. Opening Year (2026) Without Project AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 27 and Figure 28.

Opening Year (2026) With Project

The Opening Year (2026) With Project volume forecast was developed by adding project-generated trips to the Opening Year (2026) Without Project volumes. Opening Year (2026) With Project average daily traffic volumes are shown on Figure 29. Opening Year (2026) With Project AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 30 and Figure 31.

Year 2040 Without Project

The Year 2040 Without Project volume forecast was developed based on the regional travel demand model growth as described above. Year 2040 Without Project average daily traffic volumes are shown on Figure 32. Year 2040 Without Project AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 33 and Figure 34.

Year 2040 With Project

The Year 2040 With Project volume forecast was developed by adding project-generated trips to the Year 2040 Without Project volumes. Year 2040 With Project average daily traffic volumes are shown on Figure 35. Year 2040 With Project AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 36 and Figure 37.

Table 3
Other Development Trip Generation

ID	Name/Address	Land Use	Source ¹	Quantity / Unit Variable ²	AM Peak Hour			PM Peak Hour			Daily
					In	Out	Total	In	Out	Total	
City of San Bernardino											
S1	579 N Macy Street	Single-Family Detached Housing	ITE 210	13 DU	2	7	9	8	4	12	123
S2	2200 W Foothill Blvd	Single-Family Detached Housing	ITE 210	14 DU	2	8	10	8	5	13	132
S3	NW Foothill Blvd/Terrace Rd	Single-Family Detached Housing	ITE 210	27 DU	5	14	19	16	9	25	255
S4	2174 E Foothill Blvd	Single-Family Detached Housing	ITE 210	43 DU	8	22	30	25	15	40	405
S5	TTM20251	Single-Family Detached Housing	ITE 210	38 DU	7	20	27	23	13	36	358
S6	TTM18895	Single-Family Detached Housing	ITE 210	12 DU	2	6	8	7	4	11	113
City of Rialto											
R1	Cactus Ave South of Foothill	Multifamily Housing (Low-Rise, Not Close to Rail Transit)	ITE 220	21 DU	2	6	8	7	4	11	142
R2	128 East Wilson Street	Single-Family Detached Housing	ITE 210	57 DU	10	30	40	34	20	54	538
		Multifamily Housing (Low-Rise, Not Close to Rail Transit)	ITE 220	107 DU	10	33	43	34	21	55	721
		Subtotal		164 DU	20	63	83	68	41	109	1,259
R3	NE Sycamore Ave/Grant St	Single-Family Detached Housing	ITE 210	32 DU	6	16	22	19	11	30	302
TOTAL OTHER DEVELOPMENT TRIPS GENERATED					74	225	299	249	147	396	4,348

Notes:

1. ITE = Institute of Transportation Engineers Trip Generation Manual (11th Edition, 2021); ### = Land Use Code.
All rates based on General Urban/Suburban setting.
2. DU = Dwelling Unit.

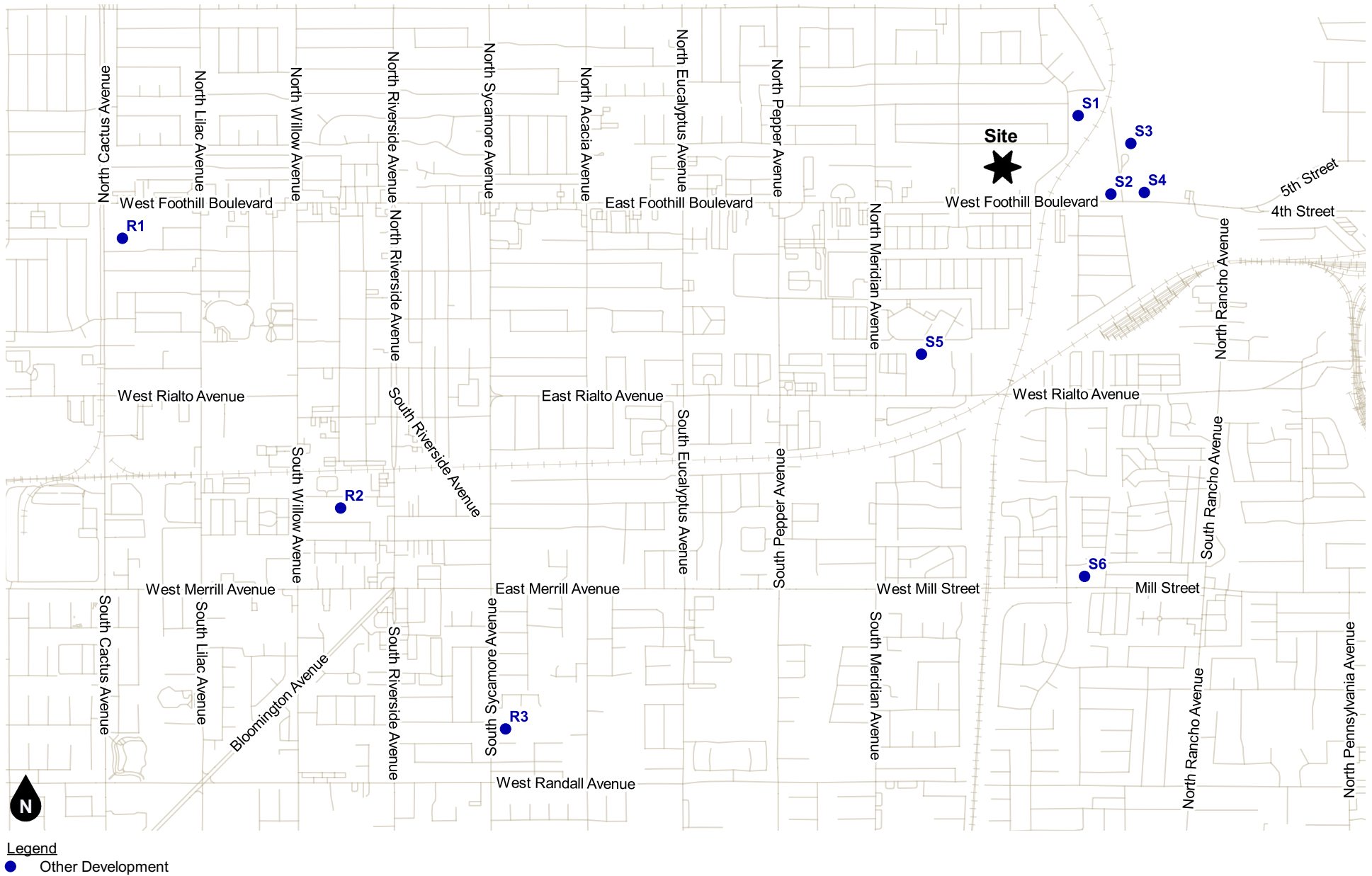


Figure 19
Other Development Location Map

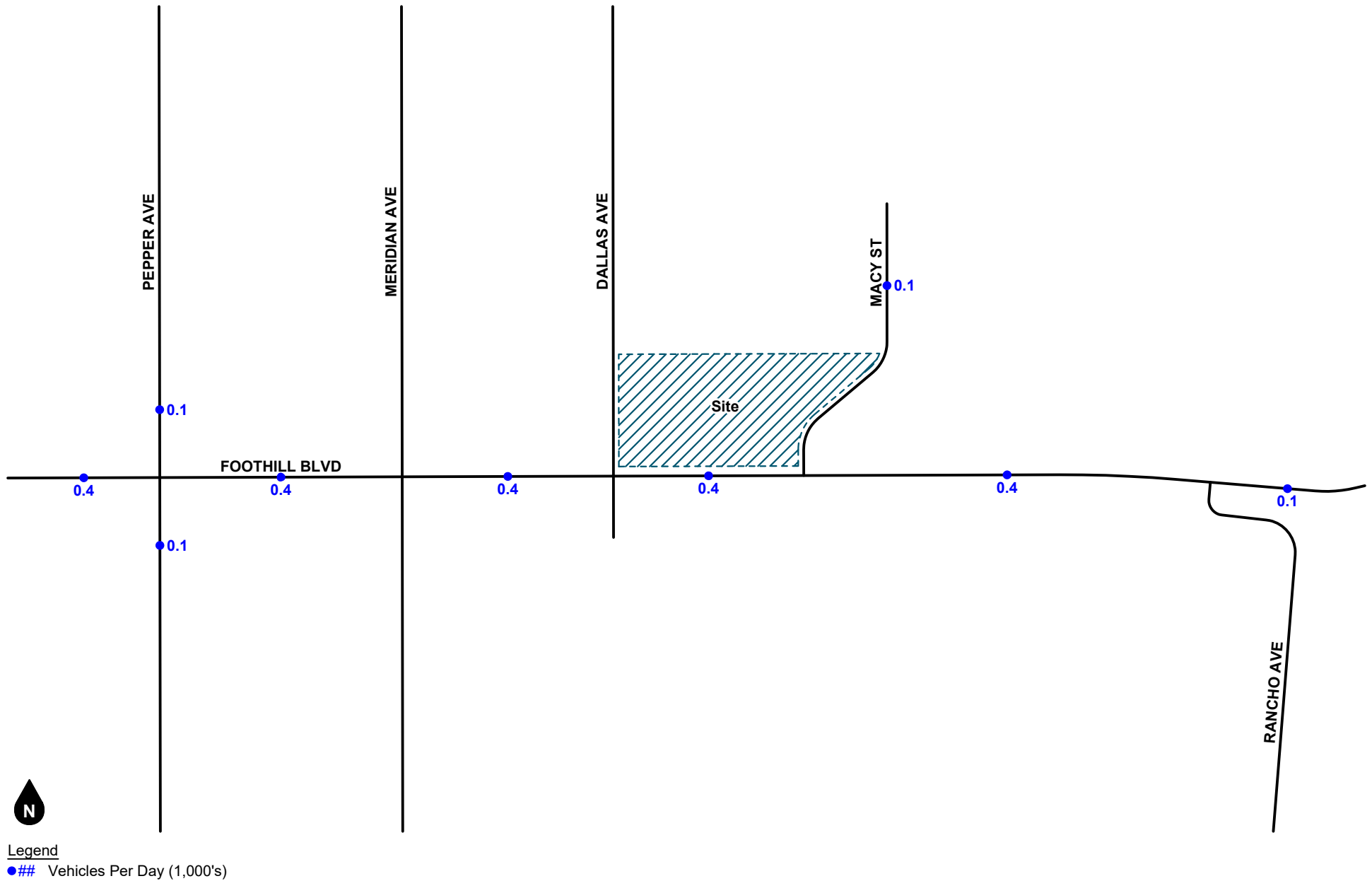
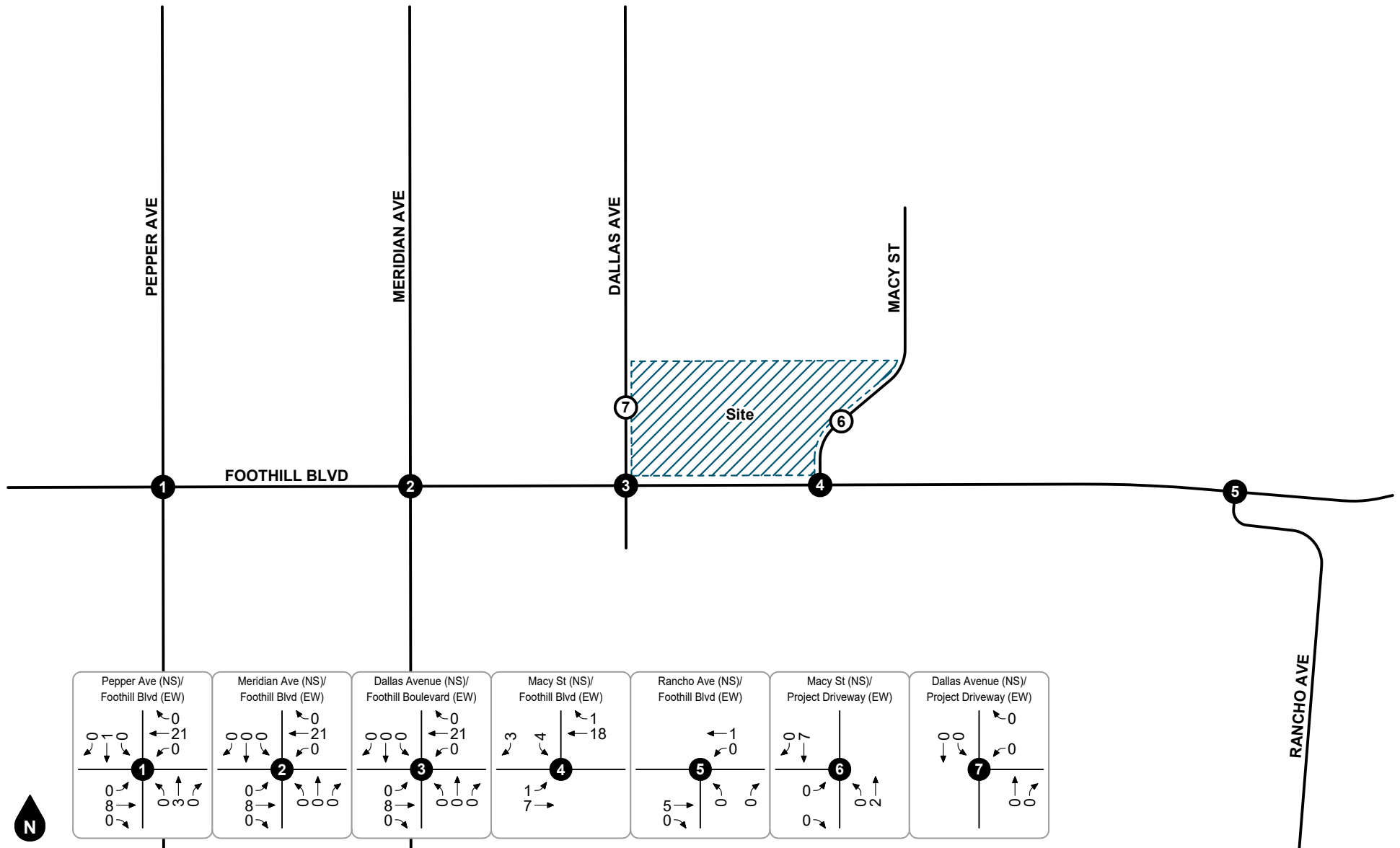


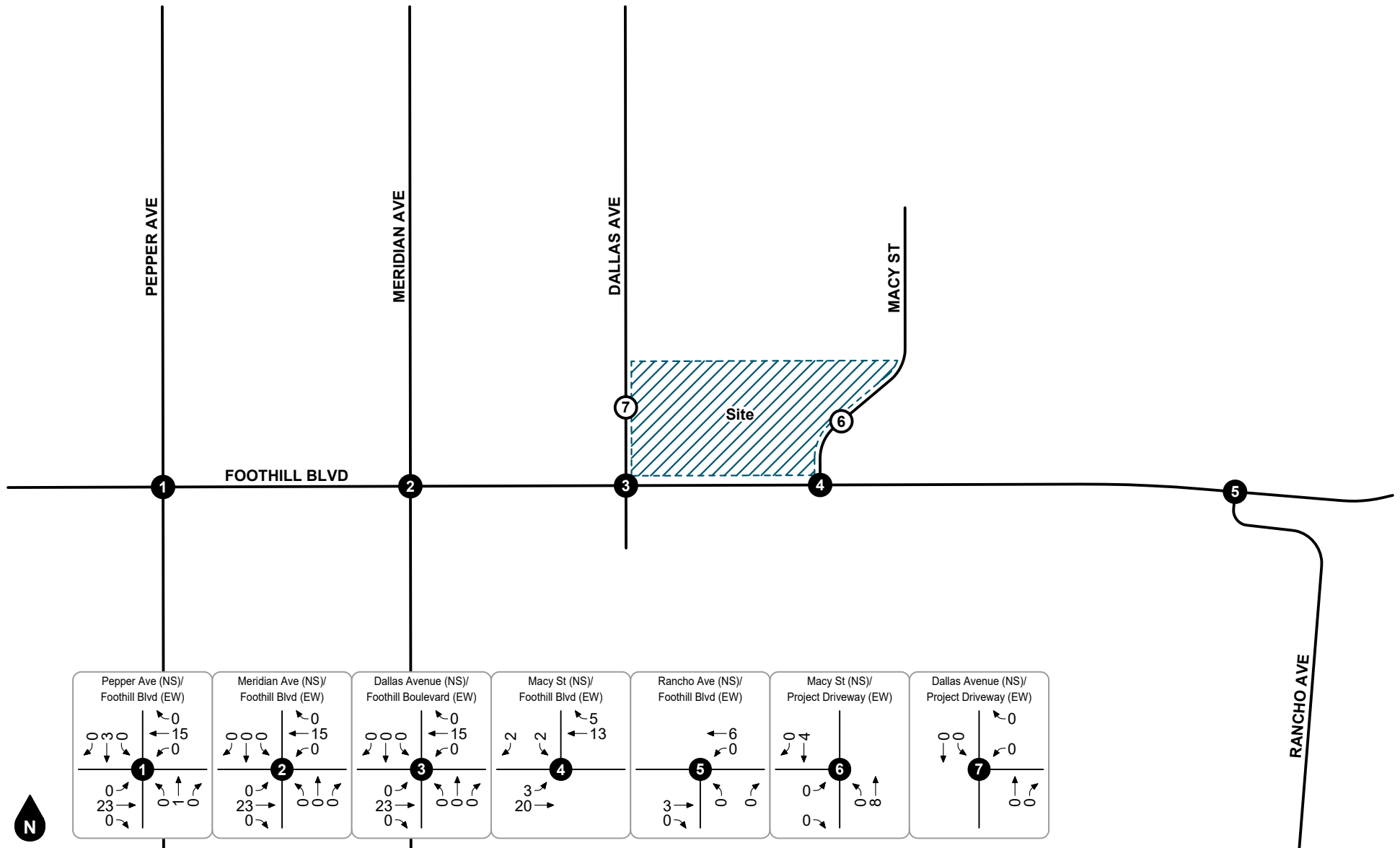
Figure 20
Other Development Average Daily Traffic Volumes



Legend

- # Study Intersection
- # Project Driveway

Figure 21
Other Development
AM Peak Hour Intersection Turning Movement Volumes



Legend

- # Study Intersection
- # Project Driveway

Figure 22
Other Development
PM Peak Hour Intersection Turning Movement Volumes

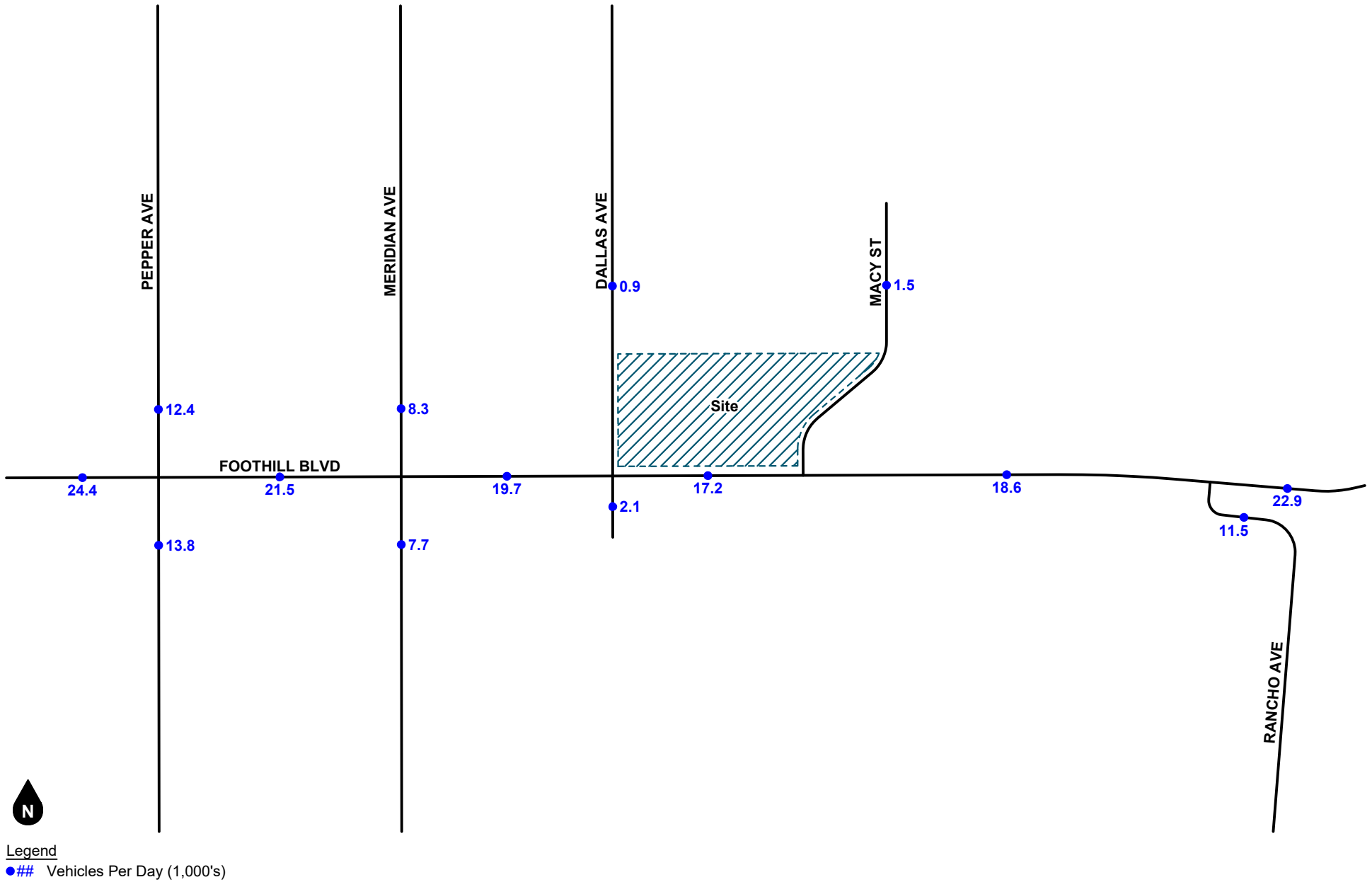


Figure 23
 Existing Plus Ambient Growth Average Daily Traffic Volumes

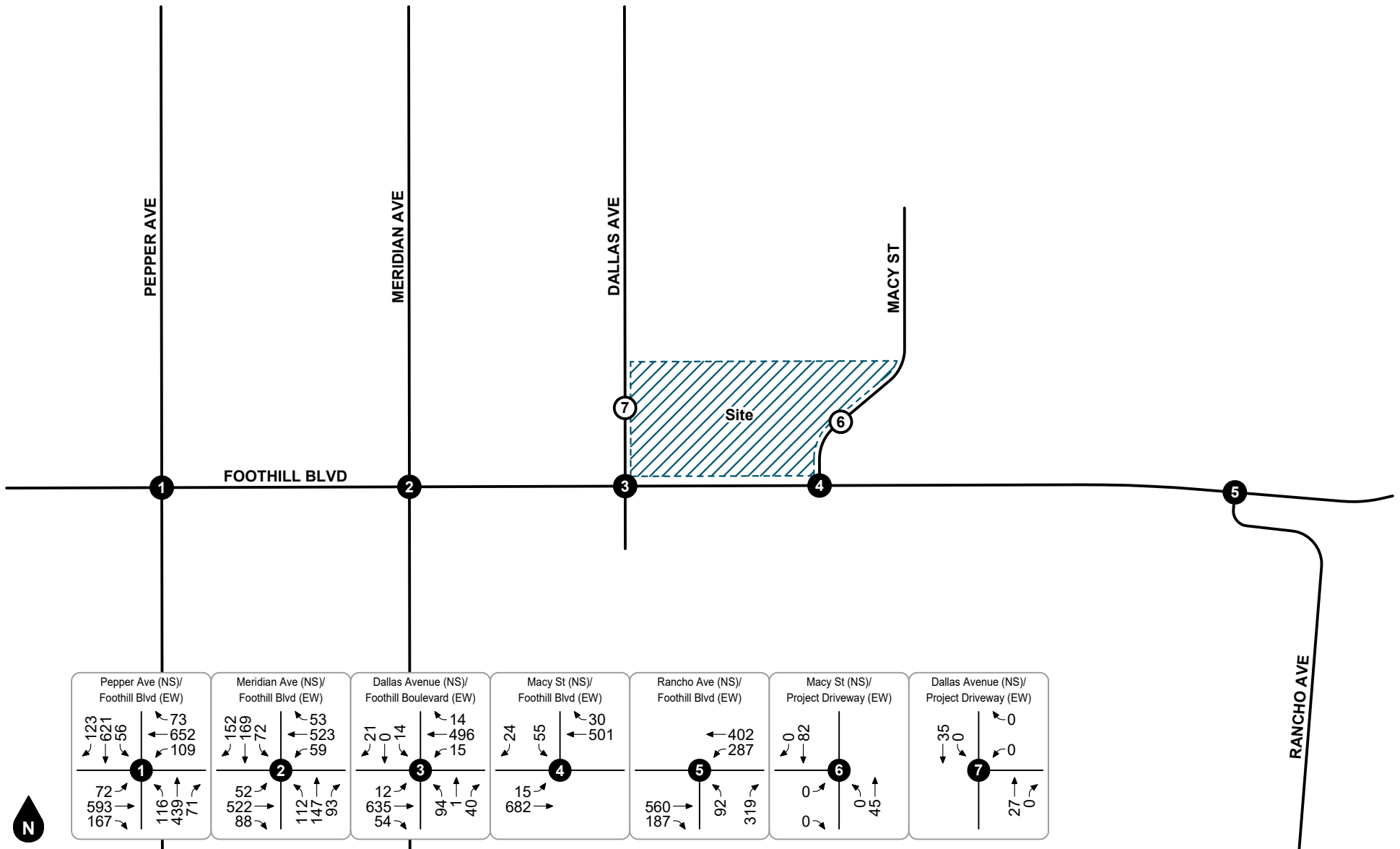
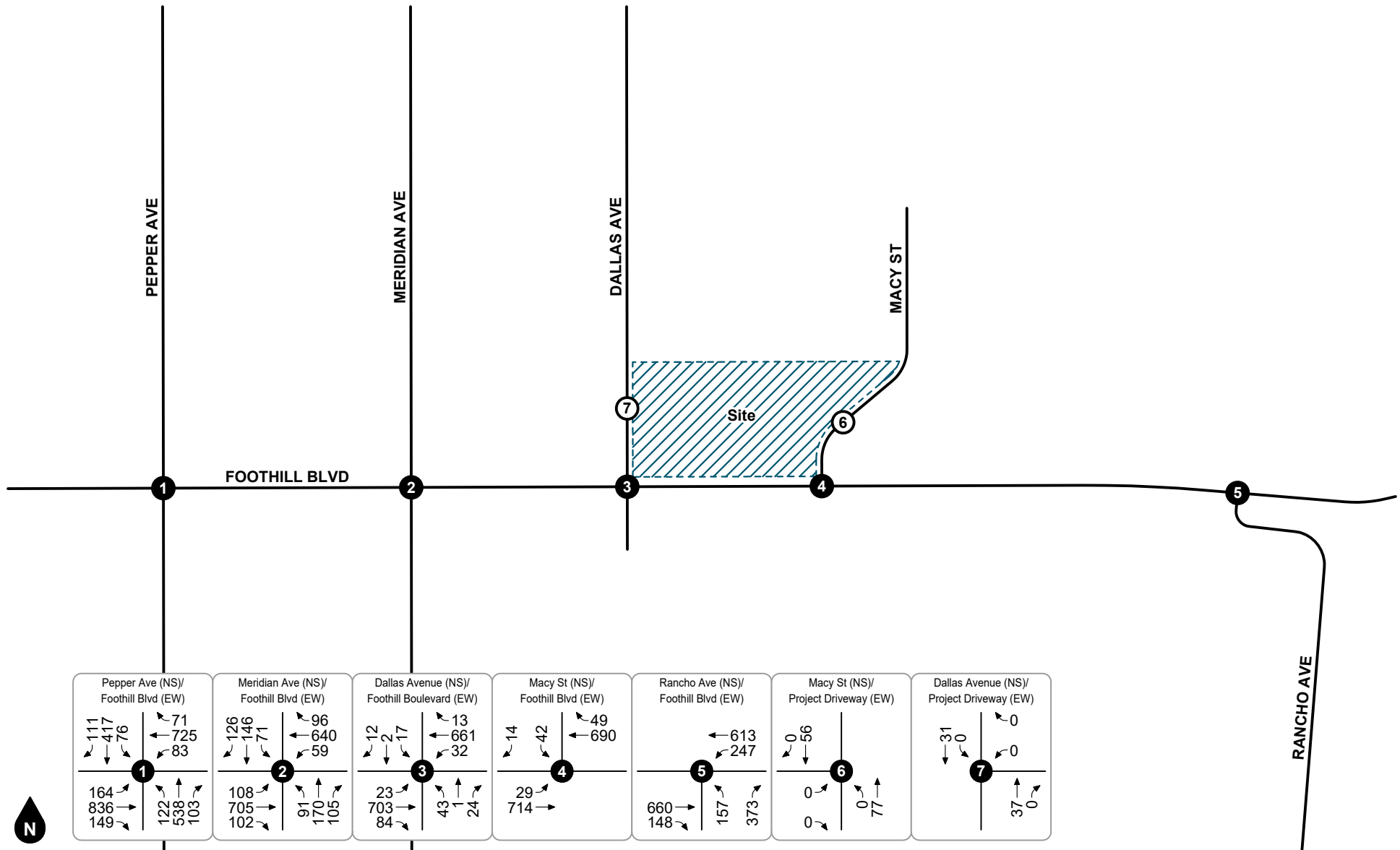


Figure 24
Existing Plus Ambient Growth
AM Peak Hour Intersection Turning Movement Volumes



Legend

- # Study Intersection
- # Project Driveway

Figure 25
Existing Plus Ambient Growth
PM Peak Hour Intersection Turning Movement Volumes

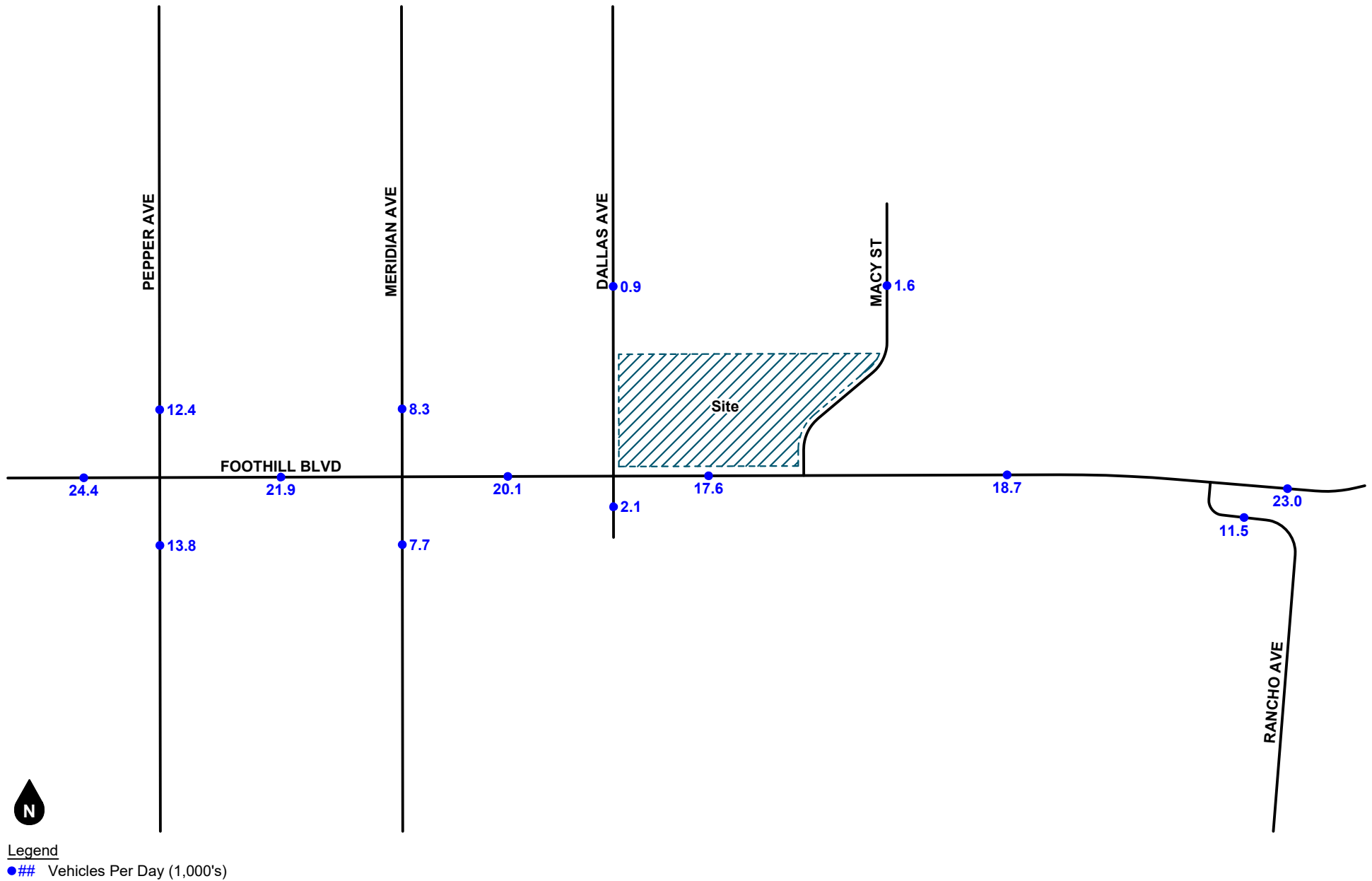
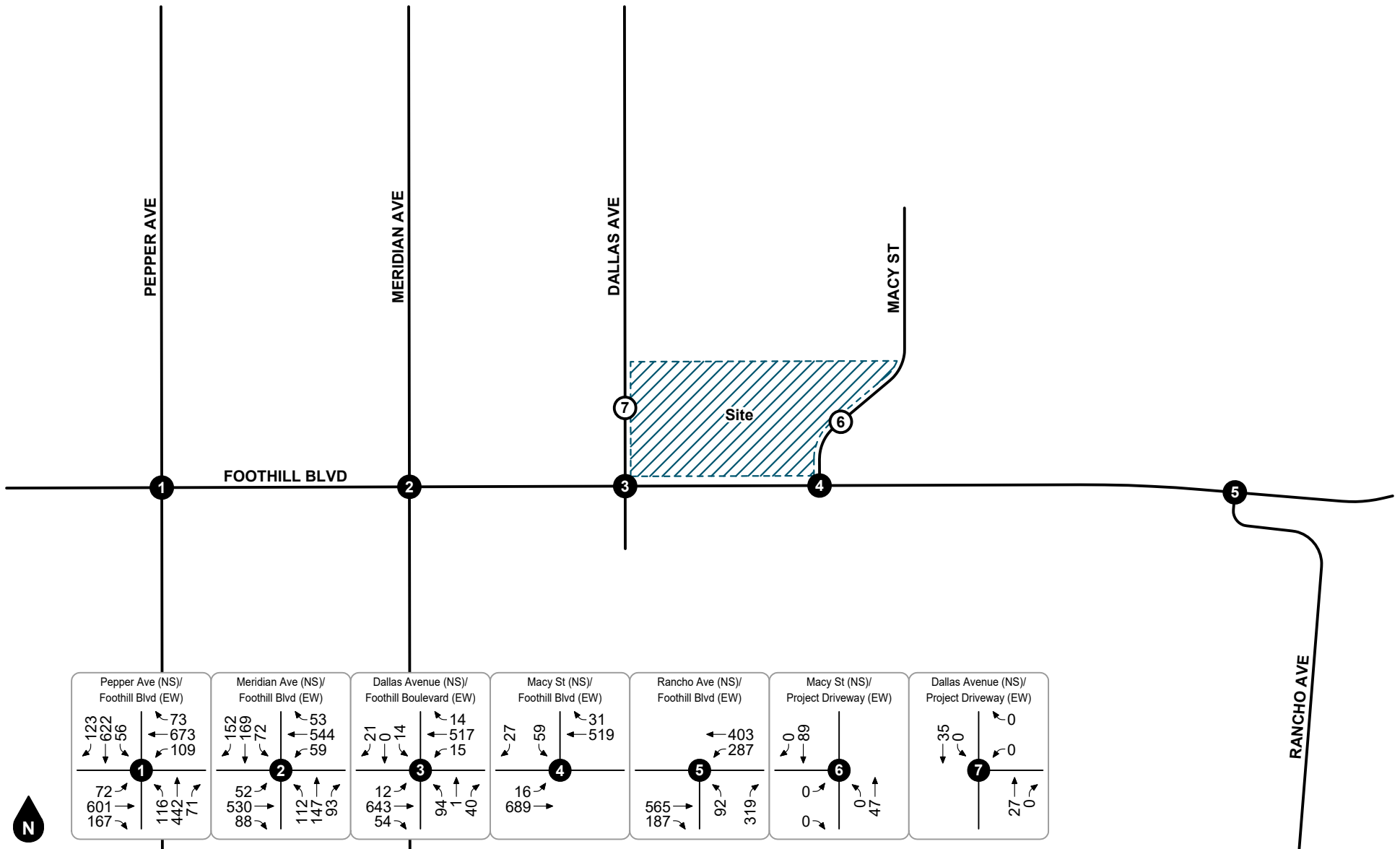


Figure 26
 Opening Year (2026) Without Project Average Daily Traffic Volumes



Legend

- # Study Intersection
- # Project Driveway

Figure 27
Opening Year (2026) Without Project
AM Peak Hour Intersection Turning Movement Volumes

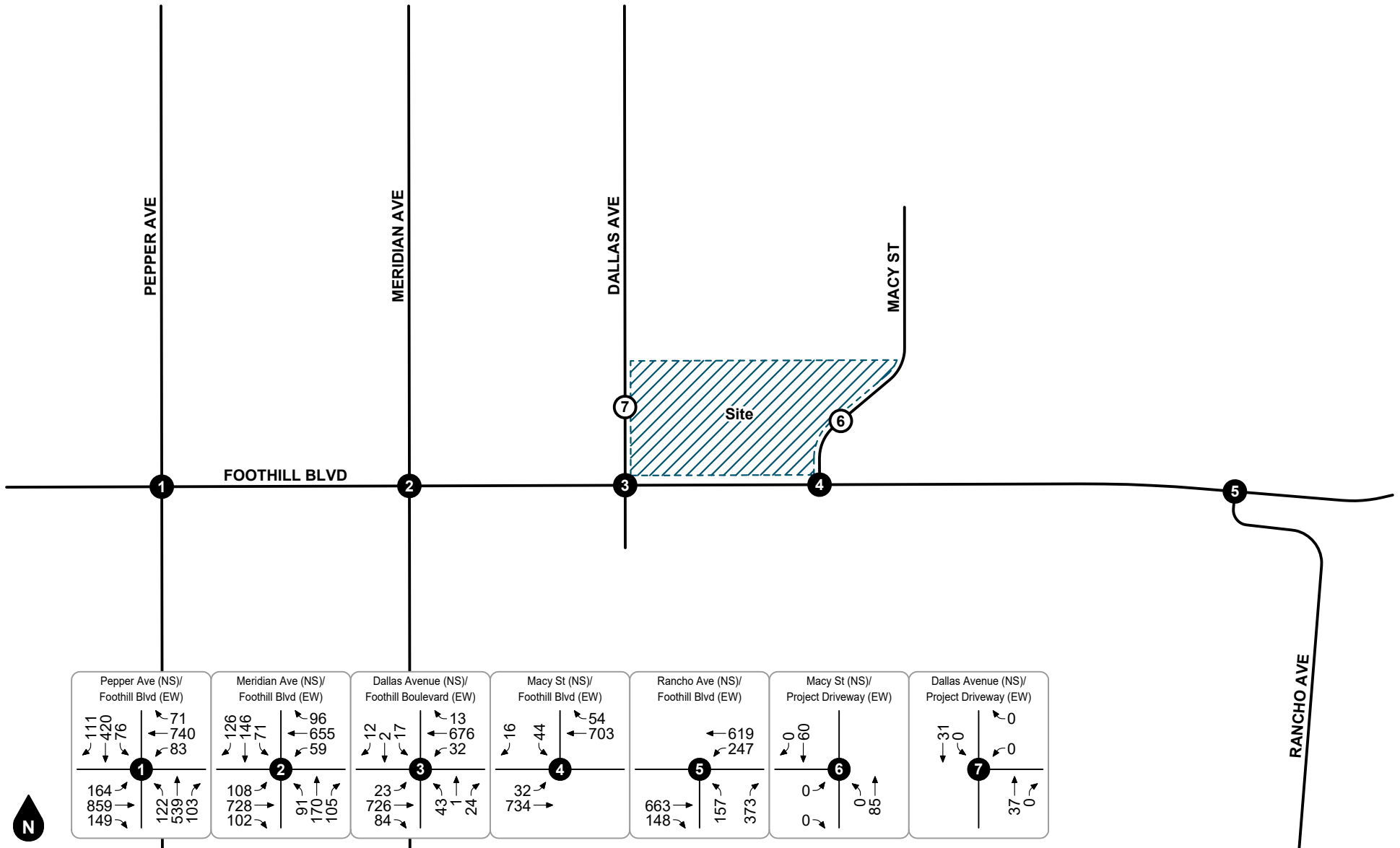


Figure 28
Opening Year (2026) Without Project
PM Peak Hour Intersection Turning Movement Volumes

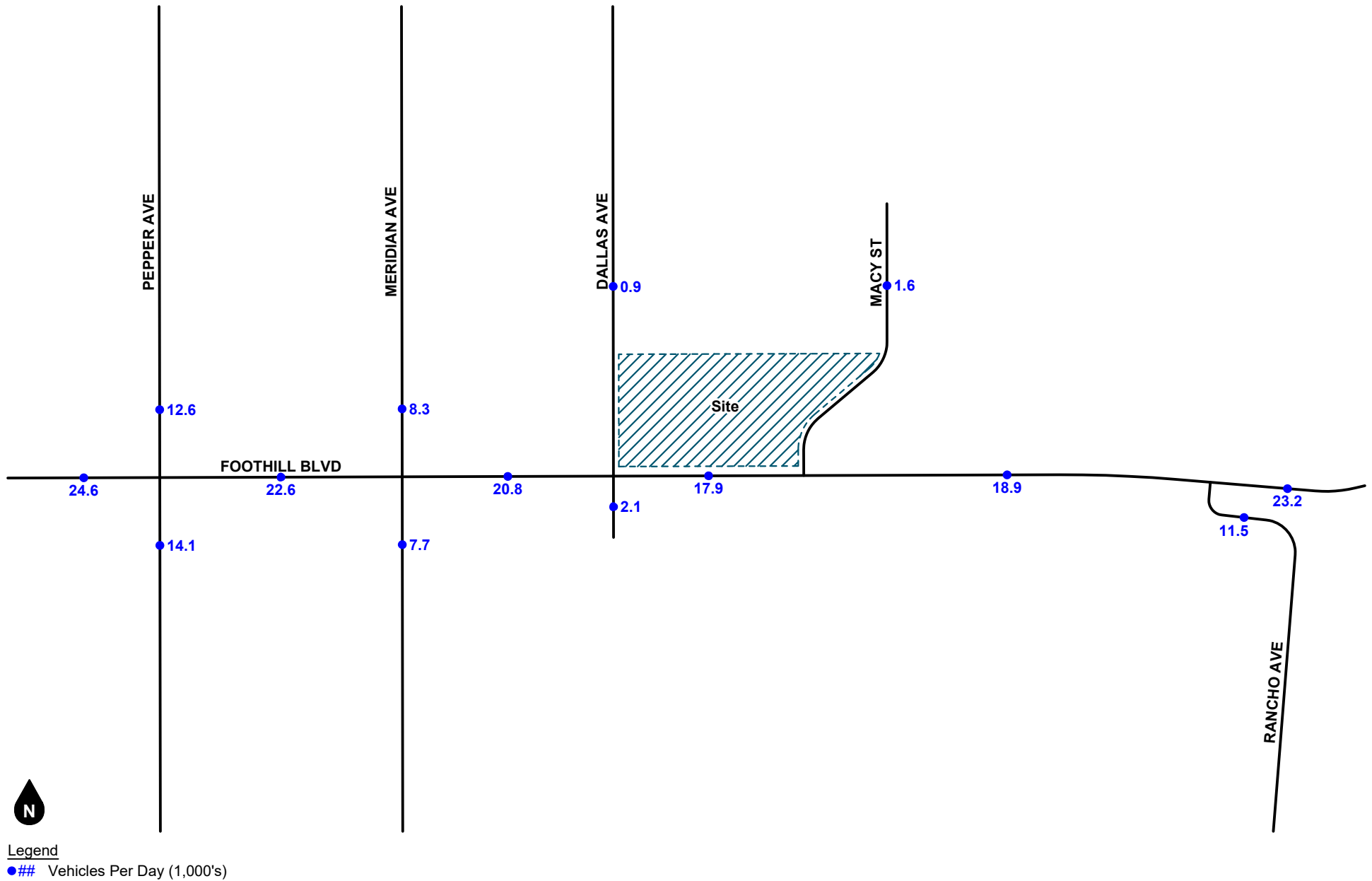
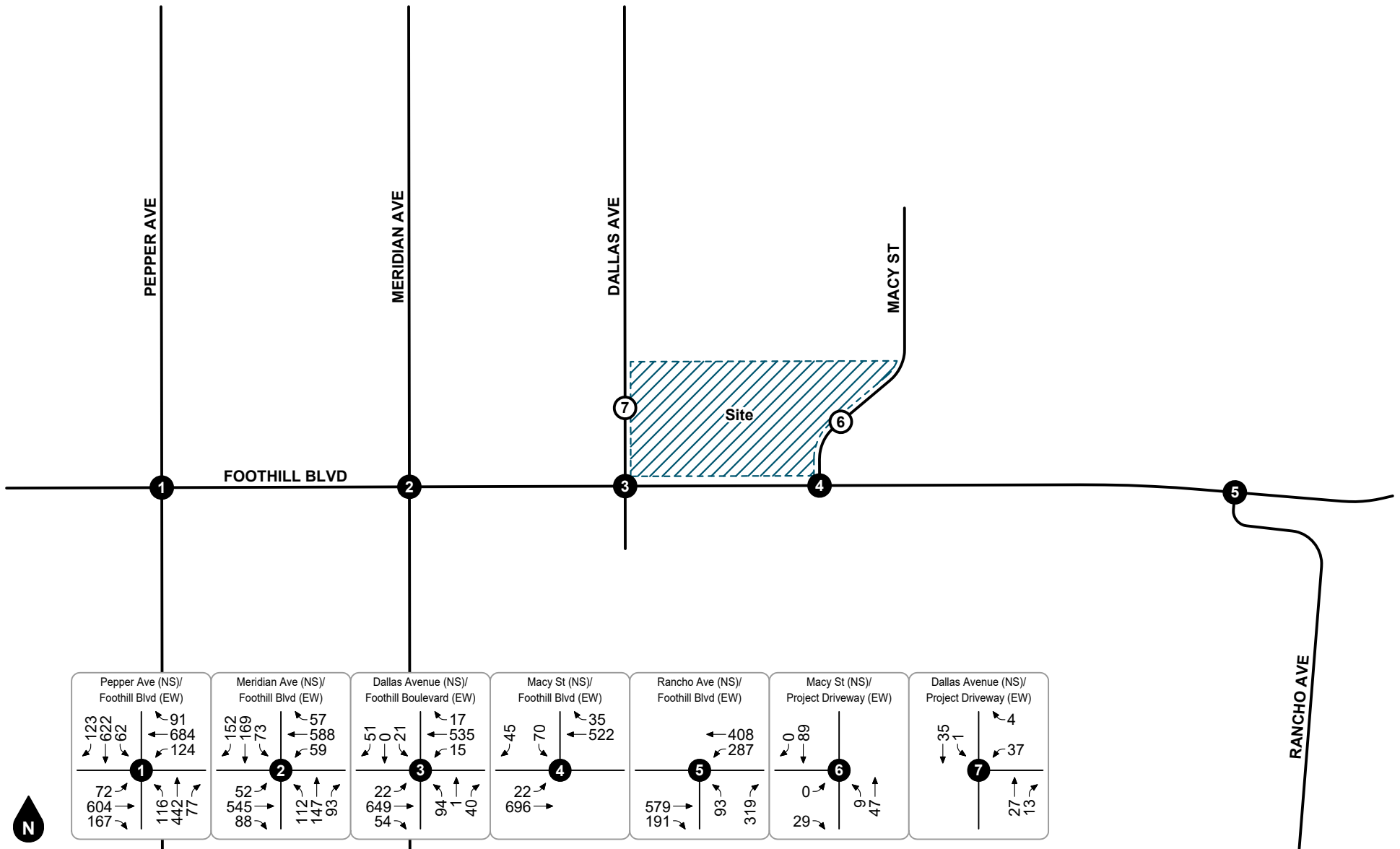


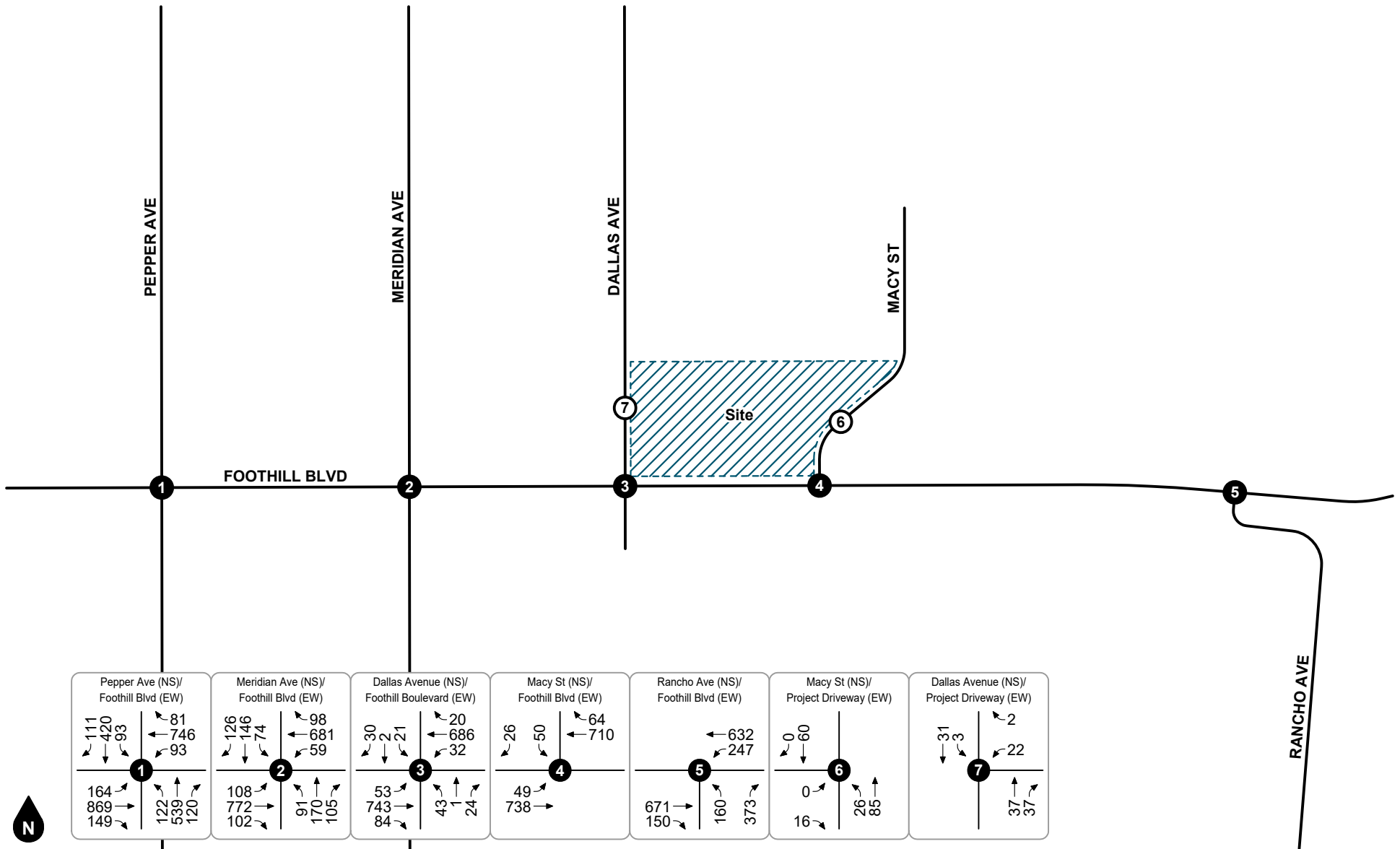
Figure 29
 Opening Year (2026) With Project Average Daily Traffic Volumes



Legend

- # Study Intersection
- # Project Driveway

Figure 30
Opening Year (2026) With Project
AM Peak Hour Intersection Turning Movement Volumes



Legend

- # Study Intersection
- # Project Driveway

Figure 31
Opening Year (2026) With Project
PM Peak Hour Intersection Turning Movement Volumes

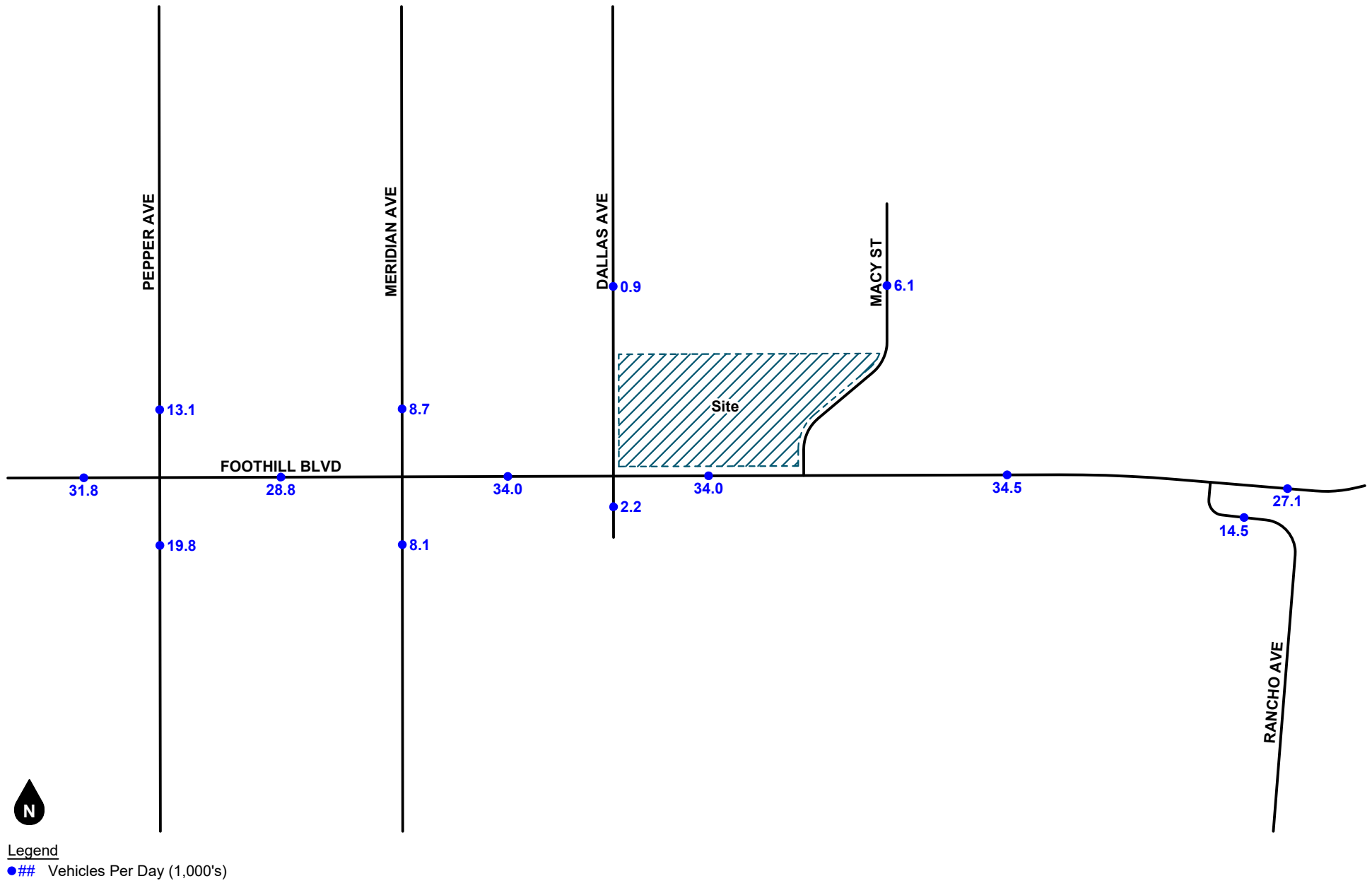
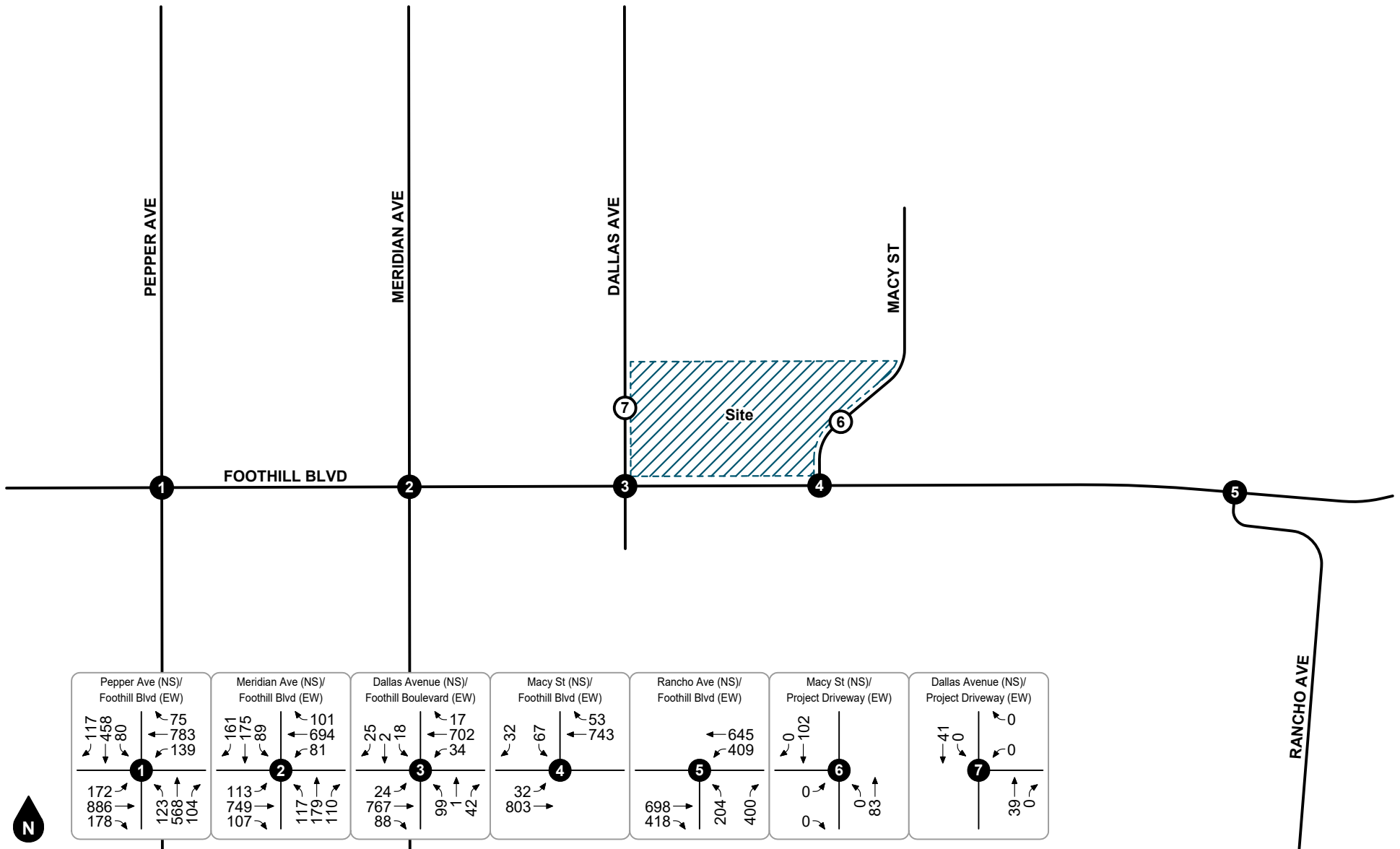


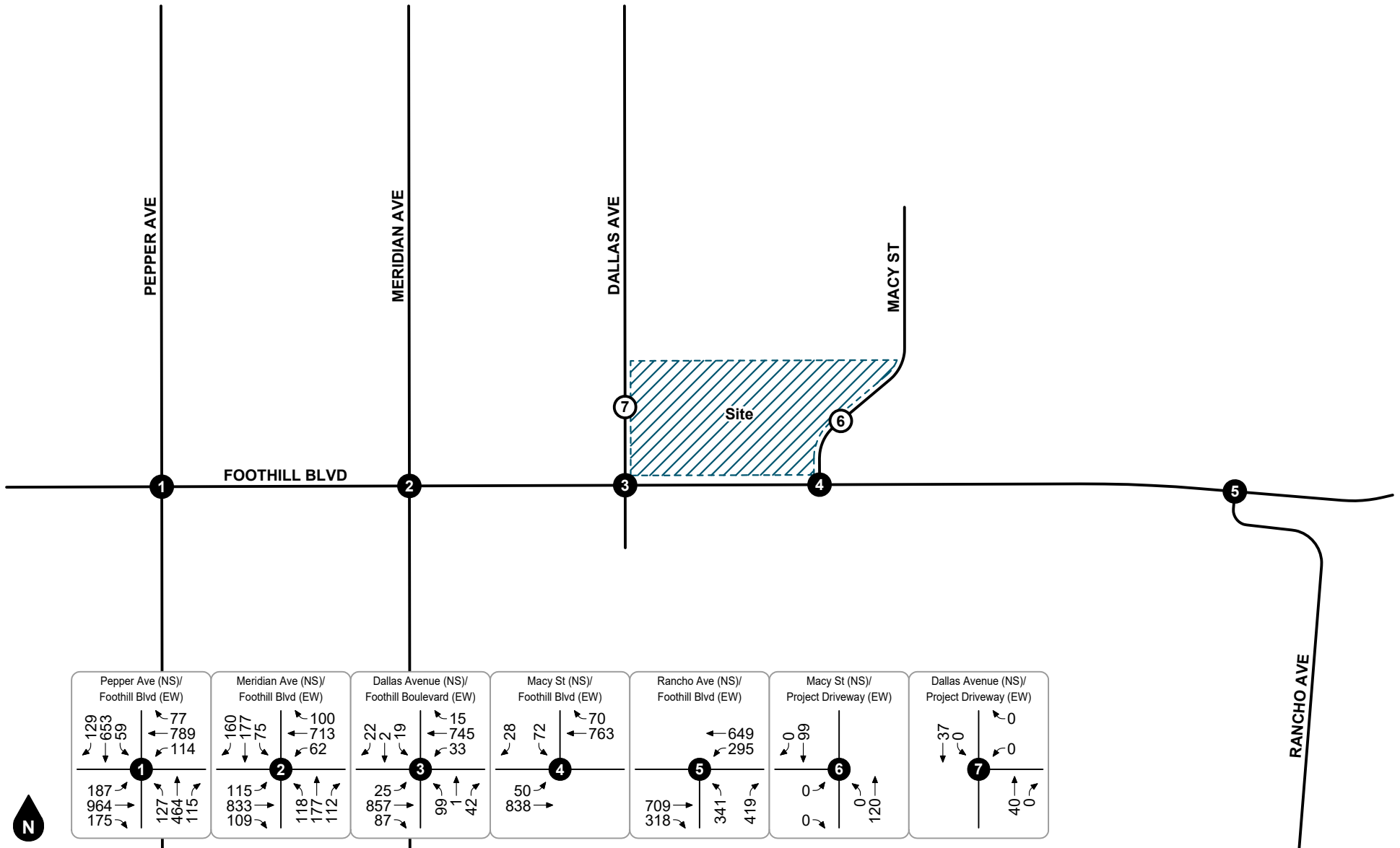
Figure 32
 Year 2040 Without Project Average Daily Traffic Volumes



Legend

- # Study Intersection
- # Project Driveway

Figure 33
Year 2040 Without Project
AM Peak Hour Intersection Turning Movement Volumes



Legend

- # Study Intersection
- # Project Driveway

Figure 34
Year 2040 Without Project
PM Peak Hour Intersection Turning Movement Volumes

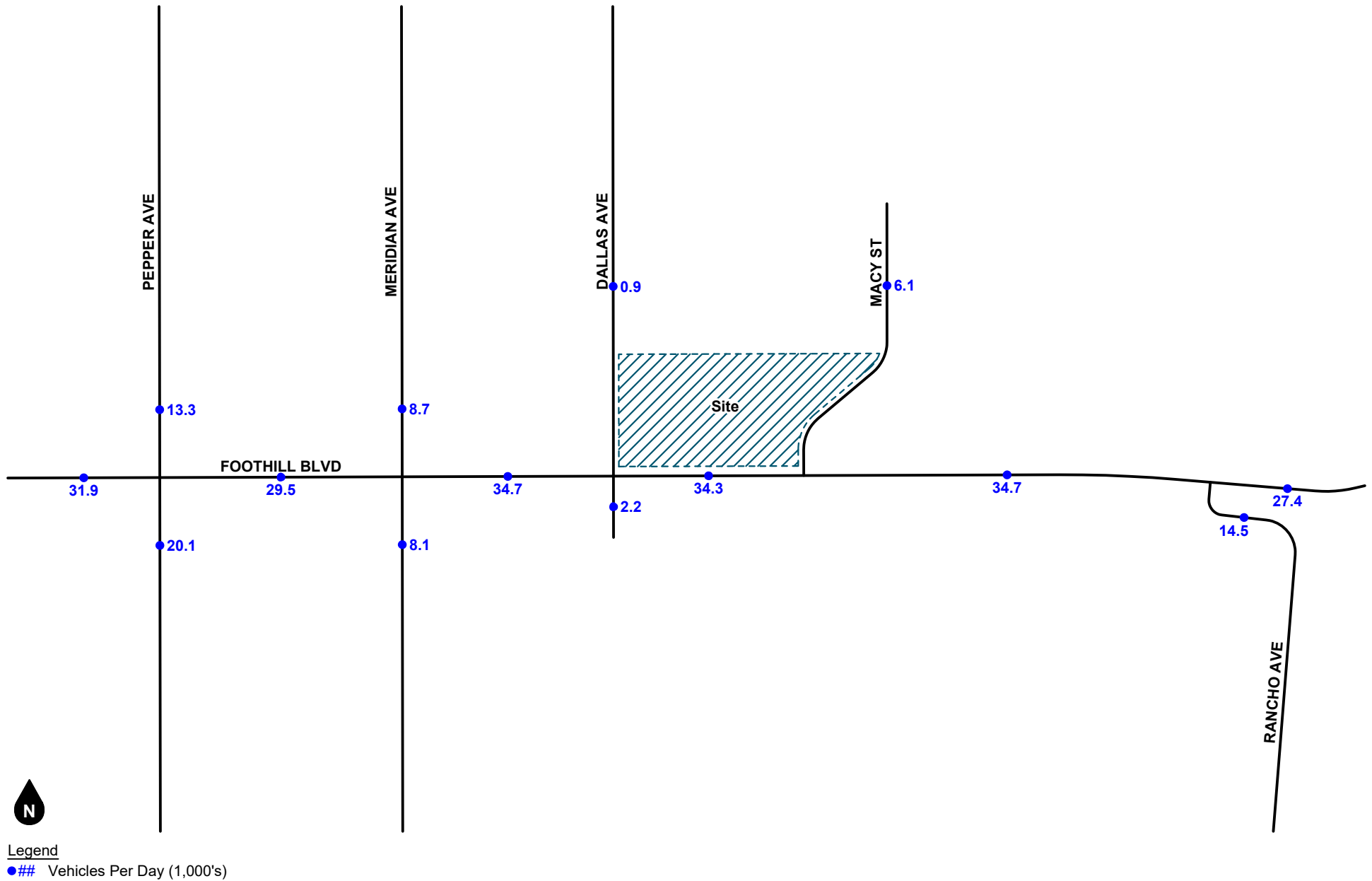
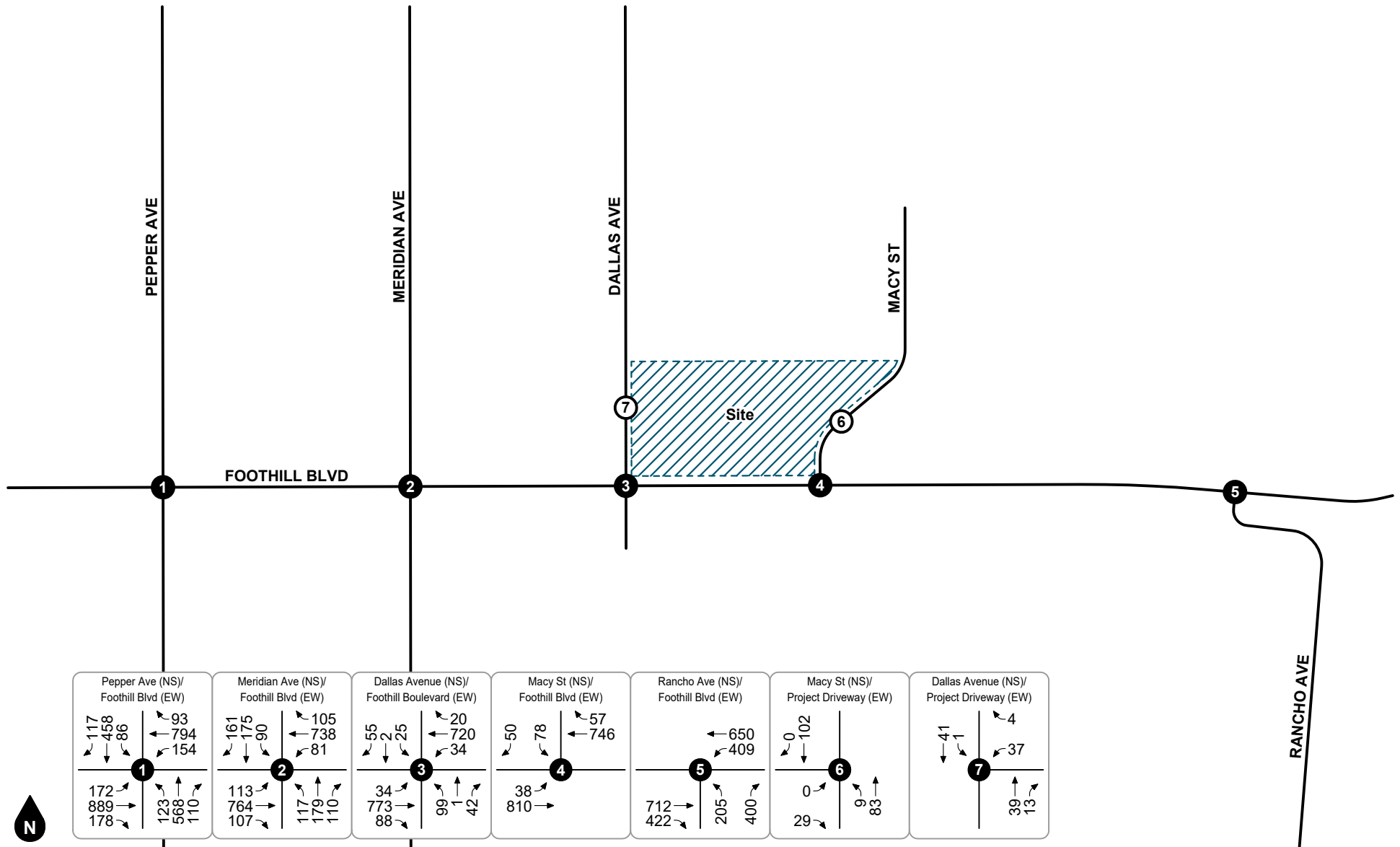


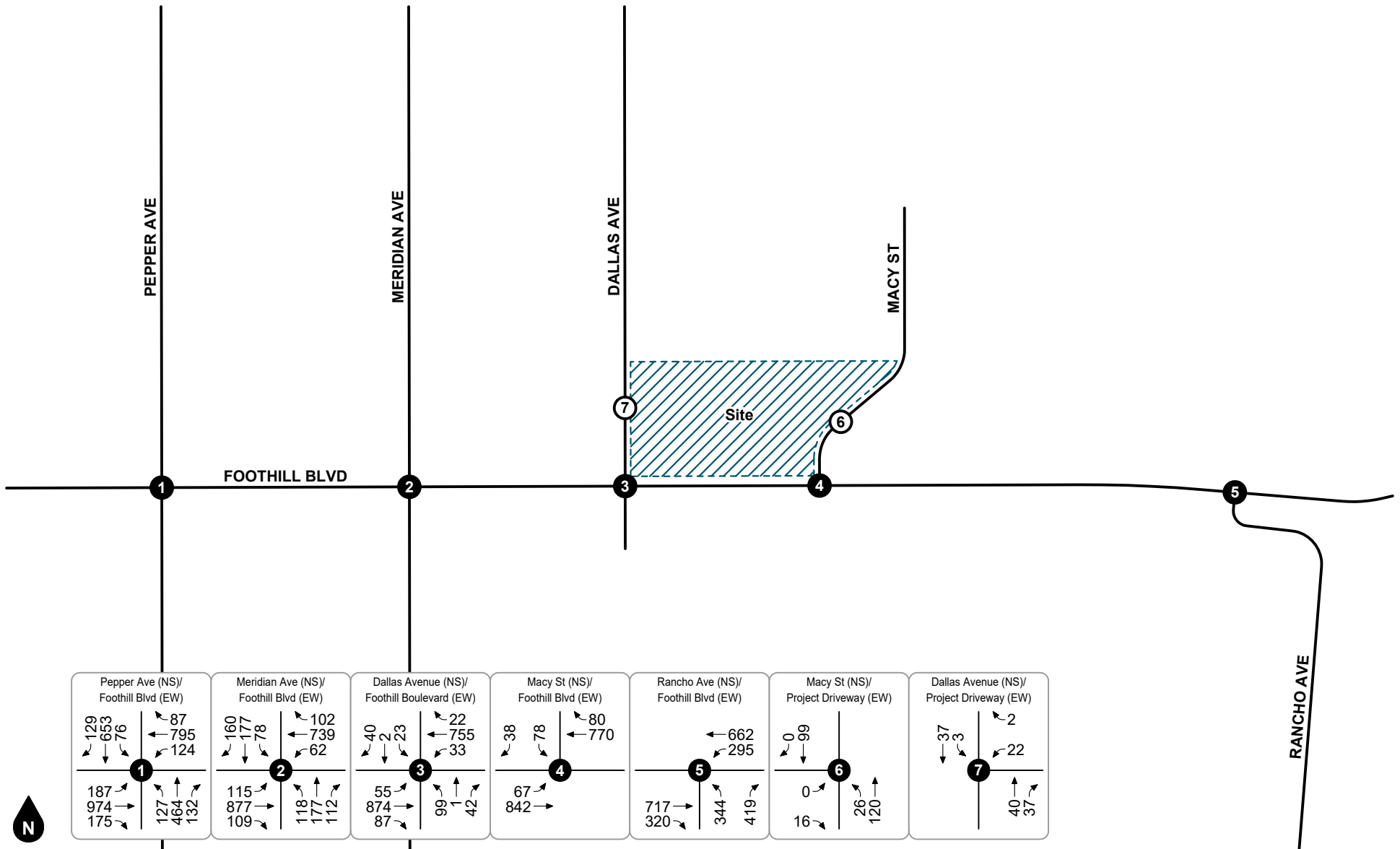
Figure 35
 Year 2040 With Project Average Daily Traffic Volumes



Legend

- # Study Intersection
- # Project Driveway

Figure 36
Year 2040 With Project
AM Peak Hour Intersection Turning Movement Volumes



Legend

- # Study Intersection
- # Project Driveway

Figure 37
Year 2040 With Project
PM Peak Hour Intersection Turning Movement Volumes

6. FUTURE LEVELS OF SERVICE ANALYSIS

Detailed intersection Level of Service calculation worksheets for each of the following analysis scenarios are provided in Appendix D.

Project design features, such as improvements necessary to provide project site access, are assumed to be constructed by the proposed project and are described in further detail in the Site Access & Circulation section presented later in this report.

EXISTING PLUS AMBIENT GROWTH (2026)

The study intersection Levels of Service for Existing Plus Ambient Growth (2026) conditions are shown in Table 4. As shown in Table 4, the study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Existing Plus Ambient Growth (2026) conditions, except for the following intersection that is forecast to continue operating at an unacceptable Level of Service F during the peak hours:

2. Meridian Avenue (NS) at Foothill Boulevard (EW)

OPENING YEAR (2026) WITHOUT PROJECT

The study intersection Levels of Service for Opening Year (2026) Without Project conditions are shown in Table 5, the study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Opening Year (2026) Without Project conditions, except for the following intersection that is forecast to continue operating at an unacceptable Level of Service F during the peak hours:

2. Meridian Avenue (NS) at Foothill Boulevard (EW)

OPENING YEAR (2026) WITH PROJECT

The study intersection Levels of Service for Opening Year (2026) With Project conditions are also shown in Table 5. As shown in Table 5, the study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Opening Year (2026) With Project conditions, except for the following intersections that are forecast to operate at an unacceptable Levels of Service (E or F) during the peak hours at which the project is forecast to exceed the City-established criteria for substantial adverse effects:

- | | |
|--|-----------------|
| 2. Meridian Avenue (NS) at Foothill Boulevard (EW) | AM & PM - LOS F |
| 5. N Rancho Avenue (NS) at Foothill Boulevard (EW) | PM - LOS E |

To address the project's adverse effects, the following improvements are recommended for Opening Year (2026) With Project conditions:

2. Meridian Avenue (NS) at Foothill Boulevard (EW)
 - Restripe the existing northbound and southbound approaches to consist of one dedicated left turn lane and one shared through/right turn lane.
5. N Rancho Avenue (NS) at Foothill Boulevard (EW)
 - Install a traffic signal

As shown in Table 5, the proposed project is forecast to result in no substantial adverse effects at the study intersections for Opening Year (2026) With Project conditions with the recommended improvements.

YEAR 2040 WITHOUT PROJECT

The study intersection Levels of Service for Year 2040 Without Project conditions are shown in Table 6. As shown in Table 6, the study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Year 2040 Without Project conditions, except for the following intersections that are forecast to continue operating at an unacceptable Level of Service F during the peak hours:

2. Meridian Avenue (NS) at Foothill Boulevard (EW)
5. N Rancho Avenue (NS) at Foothill Boulevard (EW)

YEAR 2040 WITH PROJECT

The study intersection Levels of Service for Year 2040 With Project conditions are also shown in Table 6. As shown in Table 6, the study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Year 2040 With Project conditions, except for the following intersections that are forecast to operate at an unacceptable Level of Service (E or F) during the peak hours:

- | | |
|--|-----------------|
| 2. Meridian Avenue (NS) at Foothill Boulevard (EW) | AM & PM - LOS F |
| 3. Dallas Avenue (NS) at Foothill Boulevard (EW) | PM - LOS E |
| 5. N Rancho Avenue (NS) at Foothill Boulevard (EW) | AM & PM - LOS F |

The following improvements are recommended for Year 2040 With Project conditions in addition to the improvements previously identified for Opening Year (2026) conditions:

3. Dallas Avenue (NS) at Foothill Boulevard (EW)
 - Install a traffic signal

As shown in Table 6, the proposed project is forecast to result in no substantial adverse effects as measured by volume to capacity ratio at the above listed study intersection for Year 2040 With Project conditions. However, a traffic signal is warranted at this location.

TRAFFIC SIGNAL WARRANT ANALYSIS

The potential need for installation of a traffic signal at the key intersections was evaluated based on the *California Manual on Uniform Traffic Control Devices* ("California MUTCD," November 2014), Section 4C-04, peak hour volume warrant (Warrant 3). The *California MUTCD* Section 4C-01 states "satisfaction of one or more traffic signal warrants shall not in itself require the installation of a traffic signal" as engineering judgement should be applied to the physical considerations of the location. Traffic signal warrant worksheets are provided in Appendix G.

Installation of a traffic signal is warranted based on the peak hour volume warrant (Warrant 3) at the following study area intersections:

3. Dallas Avenue (NS) at Foothill Boulevard (EW)
5. N Rancho Avenue (NS) at Foothill Boulevard (EW)

Table 4
Existing Plus Ambient Growth Intersection Levels of Service

Study Intersection	Traffic Control ¹	AM Peak Hour		PM Peak Hour	
		Delay ²	LOS ³	Delay ²	LOS
1. Pepper Avenue at Foothill Boulevard	TS	38.6	D	48.8	D
2. Meridian Avenue at Foothill Boulevard	TS	143.4	F	114.3	F
3. Dallas Avenue at Foothill Boulevard	CSS	21.3	C	18.2	C
4. Macy Street at Foothill Boulevard	CSS	14.8	B	16.9	C
5. N Rancho Avenue at Foothill Boulevard	CSS	20.8	C	34.2	D

Notes:

1. TS = Traffic Signal; CSS = Cross Street Stop.
2. Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst minor street approach or major street left turn movement.
3. LOS = Level of Service

Table 5
Opening Year (2026) Intersection Levels of Service & Project-Related Effect

Study Intersection	Traffic Control ¹	Opening Year (2026) Without Project		Opening Year (2026) With Project		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay ²	LOS ³	Delay ²	LOS	Delay ²	LOS ³	Delay ²	LOS	Change	Substantial Effect?	Change	Substantial Effect?
1. Pepper Avenue at Foothill Boulevard	TS	37.4	D	48.9	D	41.9	D	51.0	D	+4.5	NO	+2.1	NO
2. Meridian Avenue at Foothill Boulevard	TS	141.2	F	114.7	F	138.4	F	117.6	F	-2.8		+2.9	
Volume/Capacity Ratio		0.683		0.724		0.697		0.739		+0.014	YES	+0.015	YES
With Improvements	TS	-	-	-	-	39.9	D	52.9	D	+39.9	NO	+52.9	NO
3. Dallas Avenue at Foothill Boulevard	CSS	21.8	C	18.8	C	23.5	C	21.3	C	+1.7	NO	+2.5	NO
4. Macy Street at Foothill Boulevard	CSS	15.2	C	17.2	C	15.3	C	17.5	C	+0.1	NO	+0.3	NO
5. N Rancho Avenue at Foothill Boulevard	CSS	20.9	C	34.6	D	21.5	C	36.5	E	+0.6	NO	+1.9	
Volume/Capacity Ratio				0.097				0.262				+0.165	YES
With Improvements	TS	-	-	-	-	24.8	C	24.8	C	+3.9	NO	-9.8	NO
6. Macy Street at Project Driveway	CSS	-	-	-	-	8.9	A	8.7	A	+8.9	NO	+8.7	NO
7. Dallas Avenue at Project Driveway	CSS	-	-	-	-	9.0	A	9.1	A	+9.0	NO	+9.1	NO

Notes:

1. TS = Traffic Signal; CSS = Cross Street Stop.
2. Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst minor street approach or major street left turn movement.
3. LOS = Level of Service

Table 6
Build-out Year (2040) Intersection Levels of Service & Project-Related Effect

Study Intersection	Traffic Control ¹	Build-out Year (2040) Without Project				Build-out Year (2040) With Project				AM Peak Hour		PM Peak Hour	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		Change	Substantial Effect?	Change	Substantial Effect?
		Delay ²	LOS ³	Delay ²	LOS	Delay ²	LOS ³	Delay ²	LOS				
1. Pepper Avenue at Foothill Boulevard	TS	44.6	D	53.5	D	42.7	D	50.5	D	-1.9	NO	-3.0	NO
2. Meridian Avenue at Foothill Boulevard With Improvements	TS	146.9	F	136.4	F	146.4	F	139.4	F				
	TS	52.1	D	50.5	D	51.9	D	50.7	D	-0.2	NO	+0.2	NO
3. Dallas Avenue at Foothill Boulevard Volume/Capacity Ratio With Improvements	CSS	25.9	D	30.9	D	28.3	D	39.1	E	+2.4	NO	+8.2	NO
	TS	-	-	0.434	-	7.2	A	0.443	A	+7.2	NO	+0.009	NO
4. Macy Street at Foothill Boulevard	CSS	18.4	C	20.5	C	18.6	C	21.4	C	+0.2	NO	+0.9	NO
5. N Rancho Avenue at Foothill Boulevard With Improvements	CSS	391.3	F	301.3	F	419.4	F	314.9	F				
	TS	43.0	D	28.3	C	48.5	D	28.5	C	+5.5	NO	+0.2	NO
6. Macy Street at Project Driveway	CSS	-	-	-	-	8.9	A	8.8	A	+8.9	NO	+8.8	NO
7. Dallas Avenue at Project Driveway	CSS	-	-	-	-	9.1	A	9.1	A	+9.1	NO	+9.1	NO

Notes:

1. TS = Traffic Signal; CSS = Cross Street Stop.

1. Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst minor street approach or major street left turn movement.

2. LOS = Level of Service

7. SITE ACCESS & ON-SITE CIRCULATION

This section evaluates the project site access and on-site circulation. Gated vehicle access for the project site is proposed at Macy Street and Dallas Avenue.

PROJECT DESIGN FEATURES

This analysis assumes the following improvements will be constructed by the project to provide project site access:

6. Macy Street (NS) at Project Driveway (EW)
 - Construct the project driveway with one inbound lane and one outbound lane.
 - Install eastbound stop control at site egress.
7. Dallas Avenue (NS) at Project Driveway (EW)
 - Construct the project driveway with one inbound lane and one outbound lane.
 - Install westbound stop control at site egress.

This analysis also assumes the project shall comply with the following conditions as part of the City of San Bernardino standard development review process to ensure adequate geometric design and emergency access:

- Site-adjacent roadways shall be constructed or repaired at their ultimate half-section width, including landscaping and parkway improvements in conjunction with development, or as otherwise required by the City of San Bernardino.
- All on-site and off-site roadway design, signing/stripping, and traffic control improvements relating to the proposed project shall be submitted to the City for review and constructed following applicable State/Federal engineering standards to the satisfaction of the City of San Bernardino.
- The final grading, landscaping, and street improvement plans shall demonstrate that applicable sight distance requirements are met.
- The project shall comply with the City of San Bernardino municipal parking requirements which will be reviewed as a part of the standard development review process.
- Final project plans shall demonstrate adequate emergency vehicle access and circulation to the satisfaction of the City of San Bernardino Public Works and Fire Departments.
- A construction worksite traffic control plan shall comply with applicable engineering standards outlined in the *California Manual of Uniform Traffic Control Devices* and shall be submitted to the City for review and approval before the issuance of a grading permit or start of construction. The plan shall identify any roadway, sidewalk, bike route, or bus stop closures and detours as well as haul routes and hours of operation. All construction-related trips shall be restricted to off-peak hours to the extent possible.

SITE ACCESS QUEUING ANALYSIS

Table 7 summarizes the results of the queue analysis to check for potential conflicts between the project driveways and the immediately adjacent intersection at and Dallas Avenue/Foothill Boulevard and Macy Street/Foothill Boulevard. The forecasted queue lengths shown in Table 7 are based on the HCM 95th-percentile back-of-queue methodology. Queuing calculations for the project driveways and the adjacent intersection are shown in the Level of Service worksheets provided in Appendix D.

As shown in Table 7, vehicle queue lengths at project driveways are not forecast to exceed the available storage lengths during the peak hours for the Opening Year (2026) With Project and Year 2040 With Project conditions.

GATE STACKING ANALYSIS

Vehicle stacking at the proposed gated access points was evaluated to ensure adequate on-site vehicle storage length allows vehicles a place to wait for the gate to open without blocking the public right-of-way. The vehicle stacking area is measured from the gate to the edge of sidewalk.

The gate queueing analysis was performed based on procedures outlined in the ITE *Transportation and Land Development* (1988). The methodology estimates the number of queueing vehicles at the service point based on a Poisson distribution algorithm for estimating the effect of surges and random arrivals. Analysis inputs include the number of inbound vehicles, the number of gated access locations, the number of service lanes per access, service rate capacity of the gate, and the confidence interval used for the analysis. The length of necessary stacking space is then based on the design vehicle length multiplied by the expected number of vehicles per service lane.

Table 8 summarizes the project driveway gate access analysis; a gate stacking worksheet is provided in Appendix H. As shown in Table 8, the gate entrances provide approximately 72 and 118 feet of storage length, which is sufficient to accommodate the forecast queue length of 25 feet (approximately one car).

TRAFFIC SIGNAL WARRANT ANALYSIS

The potential need for installation of a traffic signal at the project driveways was evaluated based on the *California Manual on Uniform Traffic Control Devices* ("California MUTCD," November 2014), Section 4C-04, peak hour volume warrant (Warrant 3). The *California MUTCD* Section 4C-01 states "satisfaction of one or more traffic signal warrants shall not in itself require the installation of a traffic signal" as engineering judgement should be applied to the physical considerations of the location. Traffic signal warrant worksheets are provided in Appendix G.

Installation of a traffic signal is not warranted at the project driveways based on the peak hour volume warrant (Warrant 3) for the analysis scenarios.

Table 7
Site Access Queuing Analysis

Study Intersection	Approach	Lane	Storage Length (Feet) ²	Peak Hour 95th-Percentile Queue Length (Feet) ¹				Adequate Storage Provided	
				Opening Year (2026)		General Plan Buildout (2040)			
				With Project		With Project		With Project	
				AM	PM	AM	PM		
3. Dallas Avenue at Foothill Boulevard	Northbound	Shared	267	45	20	55	70	YES	YES
	Southbound	Shared	153	<20	<20	<20	<20	YES	YES
	Eastbound	Left	850	<20	<20	<20	<20	YES	YES
	Eastbound	Right	100	<20	<20	<20	<20	YES	YES
	Westbound	Left	100	<20	<20	<20	<20	YES	YES
	Westbound	Right	100	<20	<20	<20	<20	YES	YES
4. Macy Street at Foothill Boulevard	Southbound	Left	850	<20	<20	25	30	YES	YES
	Southbound	Right	850	<20	<20	<20	<20	YES	YES
	Eastbound	Left	850	<20	<20	<20	<20	YES	YES
	Westbound	Right	1,150	<20	<20	<20	<20	YES	YES
6. Macy Street at Project Driveway	Northbound	Shared	460	<20	<20	<20	<20	YES	YES
	Southbound	Shared	430	<20	<20	<20	<20	YES	YES
7. Dallas Avenue at Project Driveway	Northbound	Shared	360	<20	<20	<20	<20	YES	YES
	Southbound	Shared	360	<20	<20	<20	<20	YES	YES

Notes:

1. The forecast 95th-percentile queue lengths shown in the delay calculation worksheets have been rounded up to nearest 5-foot increment.
2. Length of turning lane storage or distance to the adjacent driveway.
3. OY = Opening Year; GPBO = General Plan Buildout.

Table 8
Gate Stacking Minimum Queue Requirements

Gate / Peak Hour	Demand Flow (veh/hr) ¹	Service Lanes	Service Rate Capacity (veh/hr/ln) ²	Utilization Factor	Queue Length (feet) ³	Storage Length (feet)	Adequate Storage Provided
AM Peak Hour							
Macy Street and Project Driveway	32	1	425	0.08	25	72	YES
Dallas Avenue and Project Driveway	48	1	425	0.11	25	118	YES
PM Peak Hour							
Macy Street and Project Driveway	27	1	425	0.06	25	72	YES
Dallas Avenue and Project Driveway	41	1	425	0.10	25	118	YES

Notes:

1. AM and PM peak hour inbound traffic volume for driveways.
2. Service rate for entering code-card or windshield RFI gate control.
3. Based on Transportation and Land Development (Institute of Transportation Engineers, 1988) "Applications of Queuing Analysis" methodology with service rate capacities from *Entrance-Exit Design and Control for Major Parking Facilities* (Crommelin, 1972); see Appendix G.

8. IMPROVEMENTS & FAIR SHARE ANALYSIS

This section summarizes the recommended improvements identified in the previous sections of this report and the project's fair share toward any improvements required for cumulative conditions.

IMPROVEMENTS

Project design features (as detailed in the Site Access & On-Site Circulation Section 7) involve improvements necessary to provide project site, and the construction along the project site frontage.

To maintain an acceptable Level of Service at the study intersection, the following improvement is required for Opening Year (2026) With Project conditions:

2. Meridian Avenue (NS) at Foothill Boulevard (EW)
 - Restripe the existing northbound and southbound approaches to consist of one dedicated left turn lane and one shared through/right turn lane.
5. N Rancho Avenue (NS) at Foothill Boulevard (EW)
 - Install a traffic signal

The following improvements are recommended to maintain acceptable Levels of Service at the study intersections for Year (2040) With Project conditions:

3. Dallas Avenue (NS) at Foothill Boulevard (EW)
 - Install traffic signal

The proposed project is forecast to result in no substantial adverse effects as measured by volume to capacity ratio at the above listed study intersection for Year 2040 With Project conditions. However, a traffic signal is warranted at this location, so fair share contributions are recommended.

DEVELOPMENT IMPACT FEE

The proposed project shall contribute towards the City of San Bernardino Development Impact Fee program (Municipal Code Chapter 3.27.050 and 060) and regional transportation development mitigation fee program (County of San Bernardino Measure I). The Development Impact Fee provides a funding mechanism for arterial streets, traffic signals, interchange improvements as well as emergency services. The purpose of such fees is to minimize, to the greatest extent practicable, the impact that new development has on the City's public services and public facilities. The City intends for new development project applicants to pay their fair share of the costs of providing such public services and public facilities. Unless otherwise approved by the City, all development projects are required to pay the Development Impact Fee as a condition of development.

FAIR SHARE ANALYSIS

A fair share analysis was prepared to identify the share of project trips contributed to substantially impacted locations for which improvements are identified that may not be currently included in the City's Development Impact Fee program. The project fair share is based on the proportion of project peak hour trips contributed to the improvement location relative to the total new peak hour traffic volume.

The fair share analysis is shown in Table 9. Cost estimates are sensitive to the quantity and location of work specified for a given installation. These values represent the relative magnitude of the cost and should be verified through the bidding process.

**Table 9
Fair Share Analysis**

ID	Study Intersection	Estimated Construction Cost ¹	Peak Hour	Peak Hour Volume					Project % at Intersection ²	Project Fair Share Cost
				Existing	Opening Year (2026) With Project	Project Trips	New Trips	Project % of New Trips		
2.	Meridian Avenue at Foothill Boulevard	-	AM	1,926	2,740	64	814	7.9%	13.8%	NA ³
			PM	2,283	2,826	75	543	13.8%		
3.	Dallas Avenue at Foothill Boulevard	\$613,100	AM	1,317	1,893	74	576	12.8%	16.9%	\$103,589
			PM	1,524	2,033	86	509	16.9%		
5.	N Rancho Avenue at Foothill Boulevard	-	AM	1,742	2,798	24	1,056	2.3%	3.8%	NA ³
			PM	2,074	2,757	26	683	3.8%		
Total		\$613,100								\$103,589

Notes:

1. Cost estimate based on values from the San Bernardino County Transportation Authority Preliminary Construction Cost Estimates For Congestion Management Program (2003) and has been factored by 2.45 based on the California Construction Cost Index between January 2003 and March 2024. Costs estimates are sensitive to the quantity and location of work specified for a given installation. These values represent the relative magnitude of the cost and should be verified through the bidding process.
2. Project share of new trips shown are the greater of the AM or PM percent contribution.
3. Project related improvement to mitigate direct impacts and/or improve level of service.

9. CONCLUSIONS

This section summarizes the proposed project, operational findings, and identifies recommendations (if any) as specified in previous sections of this study. Figure 38 summarizes the recommended improvements.

PROJECT TRIP GENERATION

The proposed project is forecast to generate approximately 1,029 net daily trips, including 93 net trips during the AM peak hour and 107 net trips during the PM peak hour.

LEVEL OF SERVICE ANALYSIS

The study intersections currently operate and are forecast to continue operating within acceptable Levels of Service (D or better) during the peak hours for Existing, Existing Plus Ambient Growth and Opening Year (2026) Without Project conditions, except for the following intersection that is forecast to continue operating at an unacceptable Level of Service F during the peak hours:

2. Meridian Avenue (NS) at Foothill Boulevard (EW)

The study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Opening Year (2026) With Project conditions, except for the following intersections that are forecast to operate at an unacceptable Levels of Service during the peak hours:

- | | |
|--|---------------|
| 2. Meridian Avenue (NS) at Foothill Boulevard (EW) | LOS F |
| 5. N Rancho Avenue (NS) at Foothill Boulevard (EW) | LOS E to F PM |

The study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Build-out Year (2040) Without Project conditions, except for the following intersections that are forecast to operate at an unacceptable Level of Service F during the peak hours:

2. Meridian Avenue (NS) at Foothill Boulevard (EW)
5. N Rancho Avenue (NS) at Foothill Boulevard (EW)

The study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Build-out Year (2040) With Project conditions, except for the following intersections that are forecast to operate at an unacceptable Levels of Service during the peak hours:

- | | |
|--|----------|
| 2. Meridian Avenue (NS) at Foothill Boulevard (EW) | LOS F |
| 3. Dallas Avenue (NS) at Foothill Boulevard (EW) | LOS E PM |
| 5. N Rancho Avenue (NS) at Foothill Boulevard (EW) | LOS F |

SUMMARY OF IMPROVEMENTS

Project design features, necessary to provide project access, are outlined in the Site Access & On-Site Circulation (see Section 7).

To maintain an acceptable Level of Service at the study intersection, the following improvements are recommended for Opening Year (2026) With Project conditions:

2. Meridian Avenue (NS) at Foothill Boulevard (EW)
 - Modify existing northbound and southbound pavement markings to include dedicated left turn and shared through-right turn lane.

5. N Rancho Avenue (NS) at Foothill Boulevard (EW)
 - Install Traffic Signal

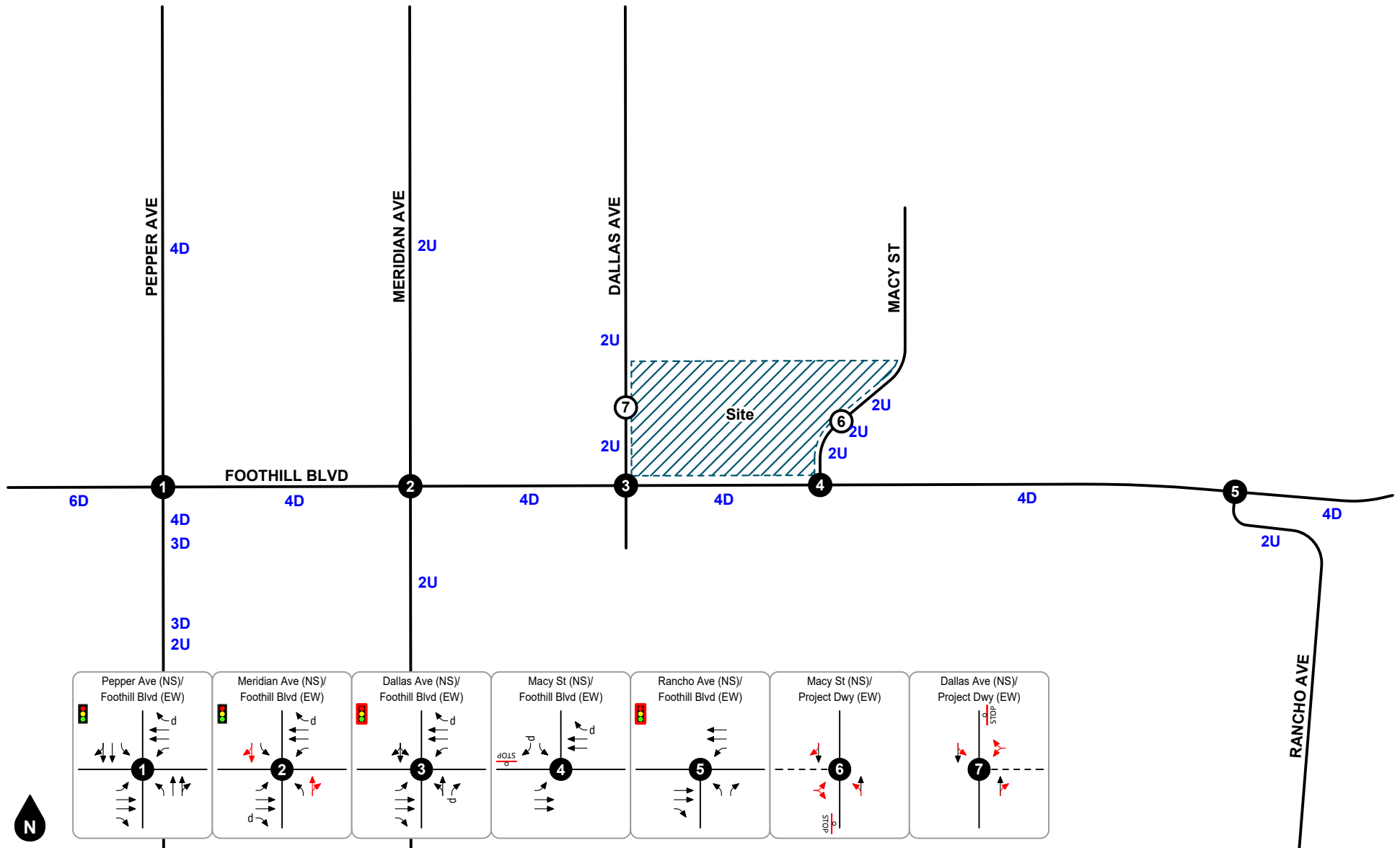
To maintain an acceptable Level of Service at the study intersection, the following improvements are recommended for Build-out Year (2040) With Project conditions:

3. Dallas Avenue (NS) at Foothill Boulevard (EW)
 - Install Traffic Signal

The study area intersections operate at acceptable Levels of Service with the listed improvements.

VEHICLE MILES TRAVELED ANALYSIS

For compliance with California Environmental Quality Act (CEQA) requirements, the project VMT assessment is documented separately in the *NWC Macy St and Foothill Blvd Vehicle Miles Traveled Assessment* (Ganddini Group, Inc., December 11, 2023).



Legend

- Traffic Signal
- Stop Sign
- Existing Lane
- Recommendations
- De Facto Right Turn Lane
- Project Driveway

#D #Lane Divided Roadway
 #U #Lane Undivided Roadway

Figure 38
Recommended Lane Geometry and Intersection Traffic Controls

APPENDICES

Appendix A Glossary
Appendix B Scoping Agreement
Appendix C Traffic Count Data
Appendix D Intersection Level of Service Worksheets
Appendix E Travel Demand Model Plots
Appendix F Post Processing Worksheets
Appendix G Gate Stacking Analysis

APPENDIX A

GLOSSARY

ACRONYMS

AC	Acres
ADT	Average Daily Traffic
Caltrans	California Department of Transportation
DU	Dwelling Unit
ICU	Intersection Capacity Utilization
GFA	Gross Floor Area
LOS	Level of Service
PCE	Passenger Car Equivalent
SF	Square Foot
SP	Service Population
TSF	Thousand Square Feet
V/C	Volume to Capacity Ratio
VMT	Vehicle Miles Traveled

TERMS

ACTUATED SIGNAL CONTROL: A type of traffic signal control in which display of each phase depends on whether the corresponding phase detector has registered a service call or the phase is on recall.

ACTUATION: Detection of a roadway user that is forwarded to the signal controller.

AVERAGE DAILY TRAFFIC: The average 24-hour volume for a stated period is divided by the number of days in that period. For example, Annual Average Daily Traffic is the total volume during a year divided by 365 days.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A point of constriction along a roadway that limits the amount of traffic that can proceed downstream from its location.

CALL: An indication within a signal controller that a particular phase is waiting for service, either through actuation from a roadway user or phase recall.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass through a roadway facility during a specified period.

CHANNELIZATION: The separation of conflicting traffic movements by use of pavement markings, raised curbs, or other suitable means to facilitate free flow movement.

CLEARANCE INTERVAL: Equal to the yellow plus all-red time, if any, when a traffic signal changes between phases (i.e., the amount of time between the end of a green light from one movement to the beginning of a green light for the next).

COORDINATED SIGNAL CONTROL: A type of traffic signal control in which non-coordinated phases associated with minor movements are constrained such that the coordinated phases are served at a specific time during the signal cycle, thus maintaining the efficient progression of traffic flow along the major roadway.

CONTROL DELAY: The portion of delay attributed to the intersection traffic control (such as a traffic signal or stop sign). It includes initial deceleration, queue move-up time, stopped delay, and final acceleration delay.

CORDON: An imaginary boundary line around or across a study area across which vehicles, persons, or other information can be collected for survey and analytical purposes.

CORNER SIGHT DISTANCE: The minimum sight distance required by the driver of a vehicle to cross or enter the lanes of the major roadway without requiring approaching traffic traveling at a given speed to radically alter their speed or trajectory.

CYCLE: A complete sequence of signal indications for all phases. Also known as a signal cycle.

CYCLE LENGTH: The total time for a traffic signal to complete one full cycle.

DAILY CAPACITY: A theoretical value representing the daily traffic volume that will typically result in a peak hour volume equal to the capacity of the roadway.

DELAY: The total additional travel time experienced by a roadway user (driver, passenger, bicyclist, or pedestrian) beyond that required to travel at a desired speed.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device used to count or determine the presence of a roadway user.

DESIGN SPEED: A speed used for purposes of designing horizontal and vertical alignments of a highway.

DIRECTIONAL SPLIT: The percent of two-way traffic traveling in a specified direction.

DIVERSION: The rerouting of traffic from a normal path of travel between two points, such as to avoid congestion or perform a secondary trip.

FREE FLOW: Traffic flow that is unaffected by a traffic control and/or or upstream or downstream conditions.

GAP: Time or distance between two vehicles measured from rear bumper of the front vehicle to front bumper of the second vehicle.

GAP ACCEPTANCE: The method by which a driver accepts an available gap in traffic to enter or cross the road.

HEADWAY: Time or distance between two successive vehicles measured from same point on both vehicles (i.e., front bumper to front bumper). Also known as gap.

LEVEL OF SERVICE: A grading scale of quantitative performance measures representing the quality of service of a transportation facility or service from an average traveler's perspective.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MULTI-MODAL: More than one mode, such as automobile, transit, bicycle, and pedestrian.

OFFSET: The time interval between the beginning of a traffic signal cycle at one intersection and the beginning of signal cycle an adjacent intersection.

PLATOON: A set of vehicles traveling at similar speed and moving as a general group with clear separation between other vehicles ahead and behind.

PASSENGER CAR EQUIVALENT: A metric used to assess the impact of larger vehicles, such as trucks, recreational vehicles, and buses, by converting the traffic volume of larger vehicles to an equivalent number of passenger cars.

PEDESTRIAN CLEARANCE INTERVAL: Also known as the “Flashing Don’t Walk” interval, it signals the end of pedestrian entry into the crosswalk following the “Walk” indication and provides time for pedestrians who have already entered the crosswalk to finishing crossing.

PEAK HOUR: The hour within a day in which the maximum volume occurs.

PEAK HOUR FACTOR: The peak hour volume divided by the four times the peak 15-minute flow rate.

PHASE: In traffic signals, the green, yellow, and red clearance intervals assigned to a specified traffic movement.

PRETIMED SIGNAL: A traffic signal operation in which the cycle length, phasing sequence, and phasing times are predetermined and fixed, regardless of actual demand for any given traffic movement. Also known as a fixed time signal.

PROGRESSION: The coordinated movement of vehicles through signalized intersections along a corridor.

QUEUE: The number of vehicles waiting at a service area such as a traffic signal, stop sign, or access gate.

QUEUE LENGTH: The length of vehicle queue, typically expressed in feet, waiting at a service area such as a traffic signal, stop sign, or access gate.

RECALL: A signal phasing operation in which a specified phase places a call to the signal controller each time a conflicting phase is served, thus ensuring the specified phase will be serviced again.

SEMI-ACTUATED CONTROL: A type of traffic signal control in which only the minor movements are provided detection.

SIGHT DISTANCE: The continuous length of roadway visible to a driver or roadway user.

STACKING DISTANCE: The length of area available behind a service area, such as a traffic signal or gate, for vehicle queuing to occur.

STOPPING SIGHT DISTANCE: The minimum distance required by the driver of a vehicle traveling at a given speed to bring the vehicle to a stop after an object on the road becomes visible, including reaction and response time.

TRAFFIC-ACTUATED SIGNAL: A type of traffic signal that directs traffic to stop and go in accordance with the demands of traffic, as registered by the actuation of detectors. Also known as a demand responsive signal.

TRIP OR TRIP END: The one-directional movement of a person or vehicle. Every trip has an origin and a destination at its respective ends (i.e., trip ends). In terms of site trip generation, the same vehicle entering and exiting a site generates two trips: one inbound trip and one outbound trip.

TRIP GENERATION RATE: The rate at which a land use generates trips per the specified land use variable, such per dwelling unit or per thousand square feet.

TURNING RADIUS: The circular arc formed by the smallest turning path radius of the front outside tire of a vehicle, such as that performed by a U-turn maneuver. This is based on the length and width of the wheelbase as well as the steering mechanism of the vehicle.

VEHICLE MILES TRAVELED: A measure of the amount and distance of automobile travel essentially calculated as the sum of each trip times the trip length.

APPENDIX B

SCOPING AGREEMENT



City of San Bernardino Public Works / Traffic Engineering Department Traffic Scope Approval Form

To be completed by applicant consultant and approved by Public Works prior to start of study

Project Name: NWC Macy Street and Foothill Boulevard
Project Address: northwest corner of Macy Street and Foothill Boulevard
Project Description: 16 AC site with 135 single family residential dwelling units
Developer's Name: TRUCK TERMINAL PROPERTIES
Address: 1820 San Vincent Blvd, Santa Monica CA 90402
Telephone No.: _____
Email Address: _____

Trip Generation Rates from ITE Latest Edition: 11th Other: _____

Land Use (1) Residential
Development Sq Ft 16 acre
ITE Land Use Code 210 (Single Family detached)
Daily Trips 1,029
AM Peak Hour Trips
Inbound 23
Outbound 70
Total 93
PM Peak Hour Trips
Inbound 67
Outbound 40
Total 107

Land Use (2) _____
Development Sq Ft _____
ITE Land Use Code _____
Daily Trips _____
AM Peak Hour Trips
Inbound _____
Outbound _____
Total _____
PM Peak Hour Trips
Inbound _____
Outbound _____
Total _____

(Use Additional Sheet(s), if necessary)

Pass-by Trips (%), if applicable: _____ %
Land Use (1) _____
ITE Land Use Code _____
Daily Trips _____
AM Peak Hour Trips
Inbound _____
Outbound _____
Total _____
PM Peak Hour Trips:
Inbound _____
Outbound _____
Total _____

Land Use (2) _____
ITE Land Use Code _____
Daily Trips _____
AM Peak Hour Trips
Inbound _____
Outbound _____
Total _____
PM Peak Hour Trips:
Inbound _____
Outbound _____
Total _____

Project Opening Year: 2026 Build-out Year: 2040

Study Intersections:

- | | |
|---|---|
| 1 <u>Pepper Avenue / Foothill Boulevard</u> | 6 <u>Macy Street / Project Driveway</u> |
| 2 <u>Meridian Avenue / Foothill Boulevard</u> | 7 <u>Dallas Avenue / Project Driveway</u> |
| 3 <u>Dallas Avenue / Foothill Boulevard</u> | 8 _____ |
| 4 <u>Macy Street / Foothill Boulevard</u> | 9 _____ |
| 5 <u>N Rancho Avenue / Foothill Boulevard</u> | 10 _____ |

(Use Additional Sheet(s) and Maps to show project Boundaries & Attach memo for project Description)



City of San Bernardino Public Works / Traffic Engineering Department
Traffic Scope Approval Form

To be completed by applicant consultant and approved by Public Works prior to start of study

Study Roadway Segments:

1	_____	2	_____
3	_____	4	_____
5	_____	6	_____

Proposed Development Use:

☒ Residential ☐ Commercial ☐ Mixed Use ☐ Other

Software Methodology:

☒ Synchro ☐ HCS

Additional issues to be considered:

☐ Bike/Ped Accommodations	☐ Traffic calming measures	☐ Queuing Analysis
☐ Actuation/Coordination	☐ Merge Analysis	☐ Gap Analysis
	☐ Safety Analysis	☐ Sight Distance Analysis

Is the project screened from VMT assessment? ☒ Yes ☐ No

VMT Screening Justification: The project was screened for Transit Priority Area, Low VMT area, and project type screening. The proposed project satisfies the Low VMT screening criteria; therefore, it can be presumed to result in a less than significant VMT impact based on screening criteria.

Ambient Growth Rate: 3% Opening Year SBTAM for 2040 (if necessary)

Trip Distribution: East 20 % West 15 % North 35 % South 30 %

Consultant Preparer's Name: Ganddini Group, Inc.

Address: 555 Parkcenter Drive Suite 225 Santa Ana, CA 92705

Telephone No. 714-795-3100 PE / TE License #: _____

Email Address: perrie@ganddini.com

Signature: _____

Date: 2023-12-08

Approved By (Public Works Department):

Signature: _____

Date: _____

01/17/2024

Name: _____

Ryan Castillo

Title: _____

Traffic Engineer Associate

Traffic Impact Analysis Required

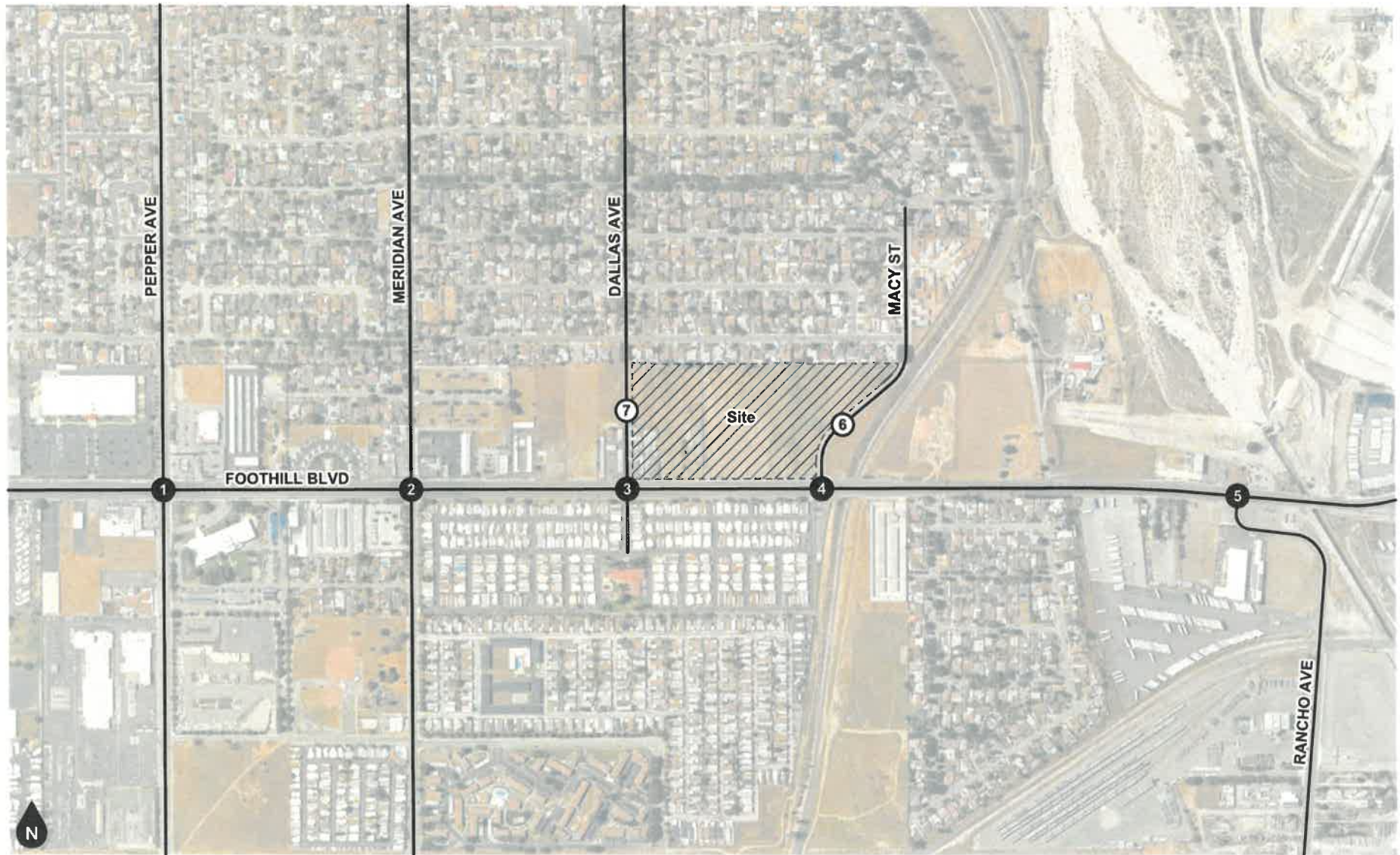
Table 1
Project Trip Generation

Trip Generation Rates									
Land Use	Source ¹	Land Use Variable ²	AM Peak Hour			PM Peak Hour			Daily Rate
			% In	% Out	Rate	% In	% Out	Rate	
Single-Family Detached Housing	ITE 210	DU	25%	75%	0.70	63%	37%	0.94	9.43
Motel	ITE 320	RM	37%	63%	0.35	54%	46%	0.36	3.35
Drinking Place	ITE 975 ³	TSF	50%	50%	0.00	66%	34%	11.36	142.00

Trips Generated									
Land Use	Source	Quantity	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
<u>Existing to be removed</u>									
Motel	ITE 320	6 RM	1	1	2	1	1	2	20
Drinking Place	ITE 975	1.575 TSF	0	0	0	12	6	18	224
Total Existing Trips			1	1	2	13	7	20	244
<u>Proposed development</u>									
Single-Family Detached Housing	ITE 210	135 DU	24	71	95	80	47	127	1,273
TOTAL NET TRIPS GENERATED			23	70	93	67	40	107	1,029

Notes:

1. ITE = Institute of Transportation Engineers *Trip Generation Manual* (11th Edition, 2021); ### = Land Use Code.
All rates based on General Urban/Suburban setting.
2. DU = Dwelling Units; RM = Motel Rooms; TSF = Thousand Square feet.
3. ITE rates with data from San Diego Association of Governments (SANDAG) *Vehicular Traffic Generation Rates* (April 2002). Where the daily or peak hour rate is not provided by ITE, the SANDAG percentage of peak hour to daily rate is used to calculate the missing data. Where the peak hour distribution is not provided by ITE, the SANDAG peak hour distribution is used.



Legend

- # Study Intersection
- # Project Driveway

Figure 1
Project Location Map



Figure 2
Site Plan

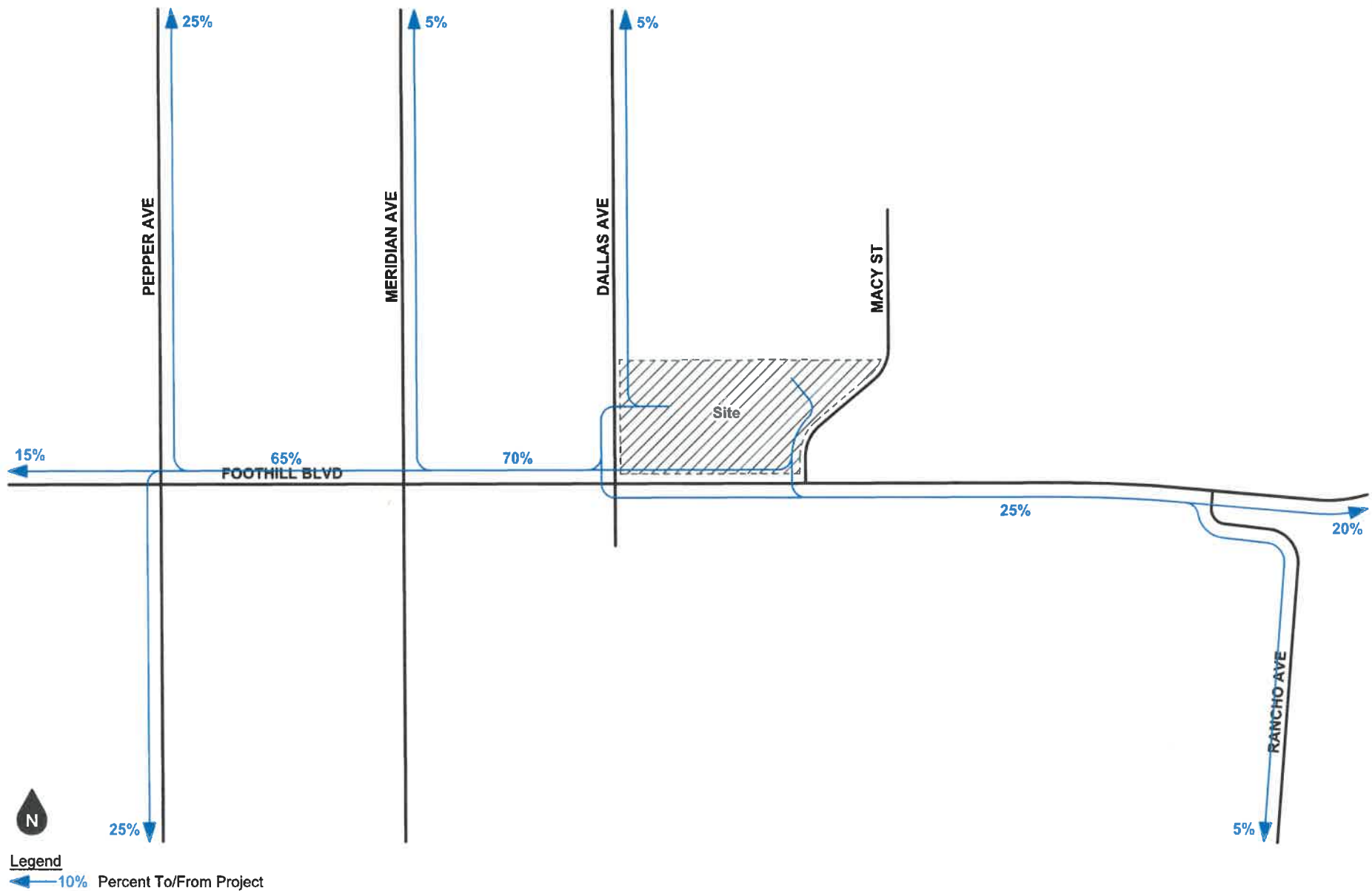
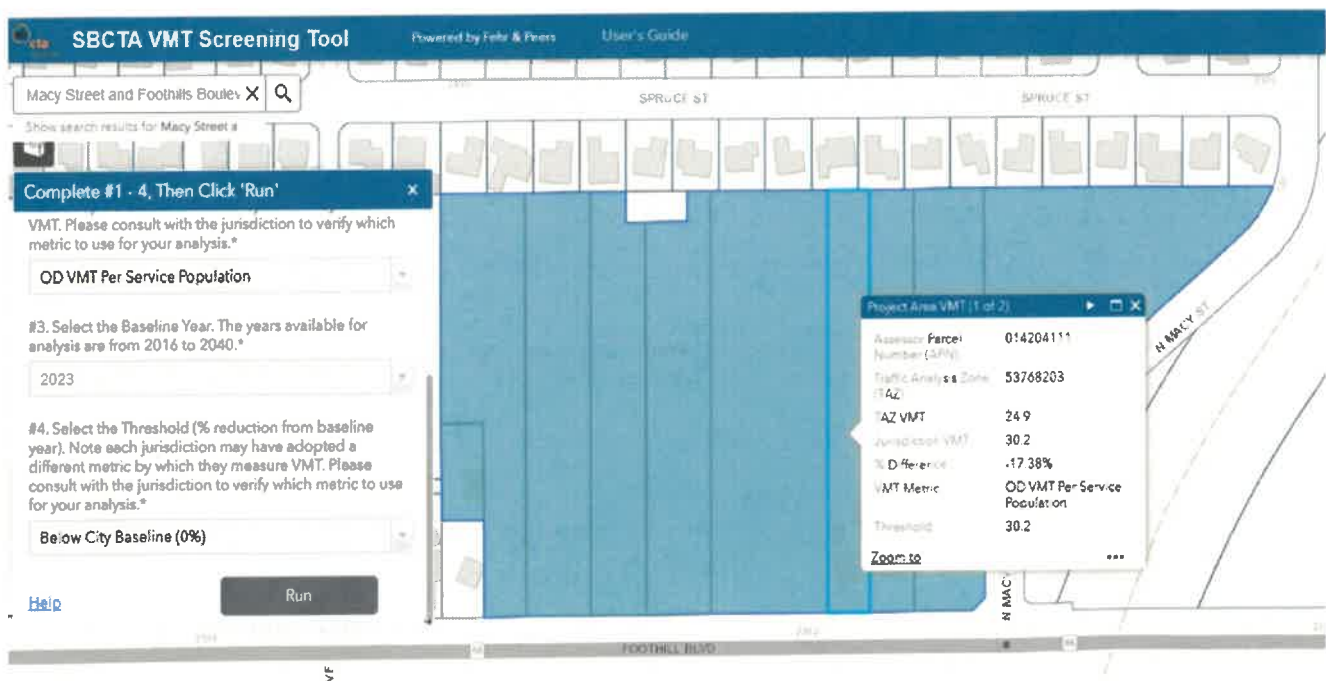


Figure 3
Project Trip Distribution

ATTACHMENT A
VEHICLE MILES TRAVELED
SCREENING INFORMATION



APPENDIX C

TRAFFIC COUNT DATA

City of San Bernardino
N/S: Pepper Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 01_SBC_Pep_FH AM
Site Code : 22524137
Start Date : 2/13/2024
Page No : 1

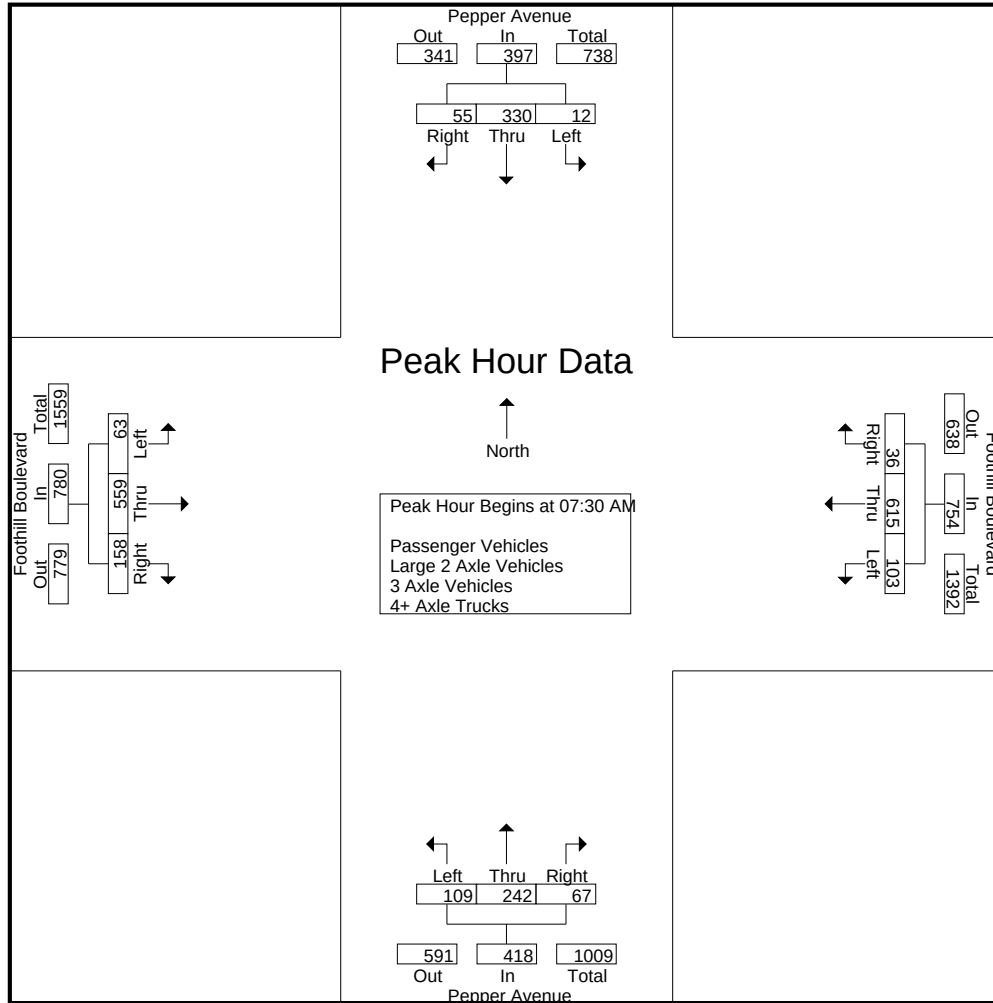
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	3	46	12	61	20	69	19	108	15	42	6	63	8	52	16	76	308
07:15 AM	2	92	10	104	27	107	10	144	17	50	10	77	11	93	30	134	459
07:30 AM	1	89	14	104	38	146	10	194	20	66	15	101	9	117	30	156	555
07:45 AM	4	98	14	116	23	191	9	223	34	54	15	103	14	179	48	241	683
Total	10	325	50	385	108	513	48	669	86	212	46	344	42	441	124	607	2005
08:00 AM	2	70	14	86	21	135	7	163	29	64	26	119	22	164	49	235	603
08:15 AM	5	73	13	91	21	143	10	174	26	58	11	95	18	99	31	148	508
08:30 AM	3	57	15	75	20	114	11	145	24	55	19	98	13	88	32	133	451
08:45 AM	4	57	14	75	24	119	4	147	24	29	10	63	20	100	32	152	437
Total	14	257	56	327	86	511	32	629	103	206	66	375	73	451	144	668	1999
Grand Total	24	582	106	712	194	1024	80	1298	189	418	112	719	115	892	268	1275	4004
Apprch %	3.4	81.7	14.9		14.9	78.9	6.2		26.3	58.1	15.6		9	70	21		
Total %	0.6	14.5	2.6	17.8	4.8	25.6	2	32.4	4.7	10.4	2.8	18	2.9	22.3	6.7	31.8	
Passenger Vehicles	18	565	100	683	180	992	75	1247	180	410	70	660	110	867	260	1237	3827
% Passenger Vehicles	75	97.1	94.3	95.9	92.8	96.9	93.8	96.1	95.2	98.1	62.5	91.8	95.7	97.2	97	97	95.6
Large 2 Axle Vehicles	2	8	1	11	4	23	0	27	5	5	3	13	5	20	4	29	80
% Large 2 Axle Vehicles	8.3	1.4	0.9	1.5	2.1	2.2	0	2.1	2.6	1.2	2.7	1.8	4.3	2.2	1.5	2.3	2
3 Axle Vehicles	4	4	1	9	5	4	5	14	1	1	17	19	0	4	4	8	50
% 3 Axle Vehicles	16.7	0.7	0.9	1.3	2.6	0.4	6.2	1.1	0.5	0.2	15.2	2.6	0	0.4	1.5	0.6	1.2
4+ Axle Trucks	0	5	4	9	5	5	0	10	3	2	22	27	0	1	0	1	47
% 4+ Axle Trucks	0	0.9	3.8	1.3	2.6	0.5	0	0.8	1.6	0.5	19.6	3.8	0	0.1	0	0.1	1.2

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	1	89	14	104	38	146	10	194	20	66	15	101	9	117	30	156	555
07:45 AM	4	98	14	116	23	191	9	223	34	54	15	103	14	179	48	241	683
08:00 AM	2	70	14	86	21	135	7	163	29	64	26	119	22	164	49	235	603
08:15 AM	5	73	13	91	21	143	10	174	26	58	11	95	18	99	31	148	508
Total Volume	12	330	55	397	103	615	36	754	109	242	67	418	63	559	158	780	2349
% App. Total	3	83.1	13.9		13.7	81.6	4.8		26.1	57.9	16		8.1	71.7	20.3		
PHF	.600	.842	.982	.856	.678	.805	.900	.845	.801	.917	.644	.878	.716	.781	.806	.809	.860

City of San Bernardino
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E/W: Foothill Boulevard
Weather: Clear

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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	2	92	10	104	38	146	10	194	20	66	15	101	9	117	30	156
+15 mins.	1	89	14	104	23	191	9	223	34	54	15	103	14	179	48	241
+30 mins.	4	98	14	116	21	135	7	163	29	64	26	119	22	164	49	235
+45 mins.	2	70	14	86	21	143	10	174	26	58	11	95	18	99	31	148
Total Volume	9	349	52	410	103	615	36	754	109	242	67	418	63	559	158	780
% App. Total	2.2	85.1	12.7		13.7	81.6	4.8		26.1	57.9	16		8.1	71.7	20.3	
PHF	.563	.890	.929	.884	.678	.805	.900	.845	.801	.917	.644	.878	.716	.781	.806	.809

City of San Bernardino
N/S: Pepper Avenue
E/W: Foothill Boulevard
Weather: Clear

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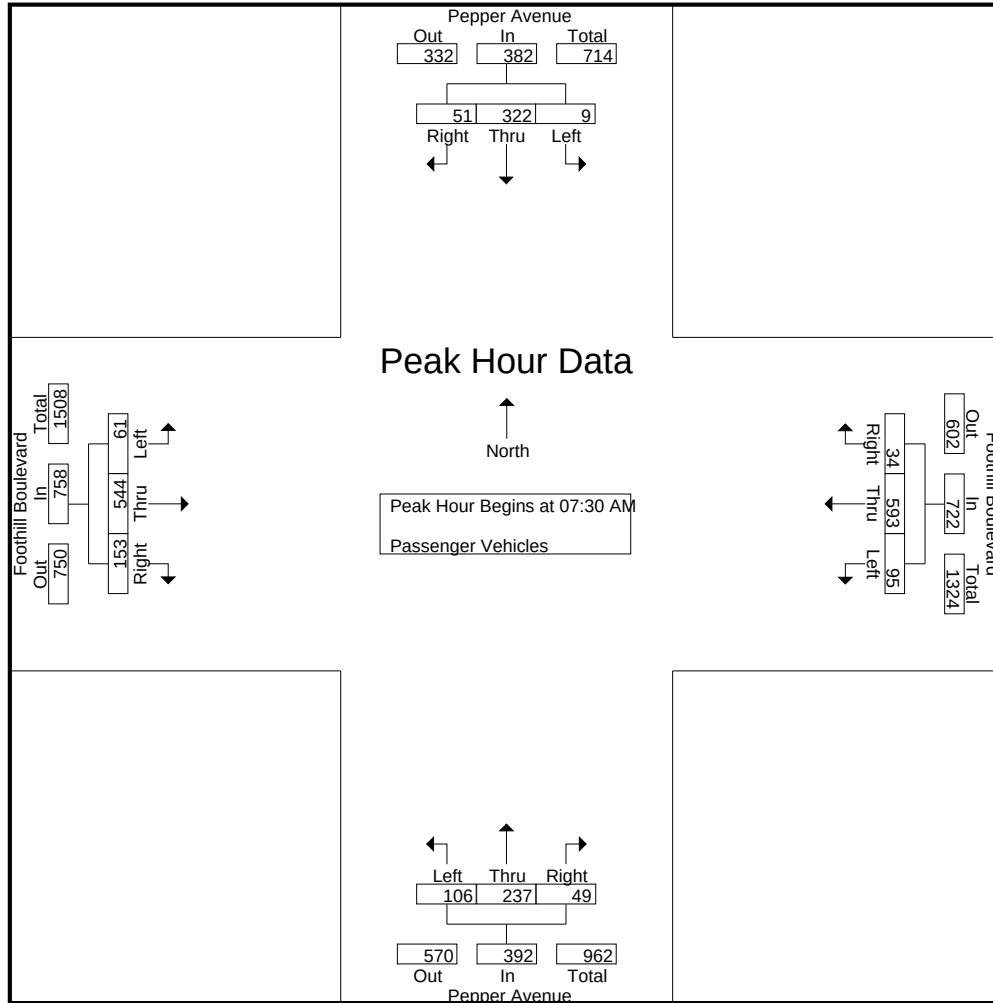
Groups Printed- Passenger Vehicles

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	3	44	12	59	19	67	19	105	12	41	2	55	7	48	14	69	288
07:15 AM	1	88	10	99	27	105	9	141	16	49	4	69	10	91	30	131	440
07:30 AM	1	87	12	100	37	138	9	184	19	65	9	93	7	115	30	152	529
07:45 AM	3	97	13	113	22	189	9	220	33	54	12	99	14	173	46	233	665
Total	8	316	47	371	105	499	46	650	80	209	27	316	38	427	120	585	1922
08:00 AM	1	67	13	81	18	131	6	155	28	61	20	109	22	158	47	227	572
08:15 AM	4	71	13	88	18	135	10	163	26	57	8	91	18	98	30	146	488
08:30 AM	2	57	14	73	16	109	9	134	22	54	10	86	12	86	32	130	423
08:45 AM	3	54	13	70	23	118	4	145	24	29	5	58	20	98	31	149	422
Total	10	249	53	312	75	493	29	597	100	201	43	344	72	440	140	652	1905
Grand Total	18	565	100	683	180	992	75	1247	180	410	70	660	110	867	260	1237	3827
Apprch %	2.6	82.7	14.6		14.4	79.6	6		27.3	62.1	10.6		8.9	70.1	21		
Total %	0.5	14.8	2.6	17.8	4.7	25.9	2	32.6	4.7	10.7	1.8	17.2	2.9	22.7	6.8	32.3	

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	1	87	12	100	37	138	9	184	19	65	9	93	7	115	30	152	529
07:45 AM	3	97	13	113	22	189	9	220	33	54	12	99	14	173	46	233	665
08:00 AM	1	67	13	81	18	131	6	155	28	61	20	109	22	158	47	227	572
08:15 AM	4	71	13	88	18	135	10	163	26	57	8	91	18	98	30	146	488
Total Volume	9	322	51	382	95	593	34	722	106	237	49	392	61	544	153	758	2254
% App. Total	2.4	84.3	13.4		13.2	82.1	4.7		27	60.5	12.5		8	71.8	20.2		
PHF	.563	.830	.981	.845	.642	.784	.850	.820	.803	.912	.613	.899	.693	.786	.814	.813	.847

City of San Bernardino
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	1	87	12	100	37	138	9	184	19	65	9	93	7	115	30	152
+15 mins.	3	97	13	113	22	189	9	220	33	54	12	99	14	173	46	233
+30 mins.	1	67	13	81	18	131	6	155	28	61	20	109	22	158	47	227
+45 mins.	4	71	13	88	18	135	10	163	26	57	8	91	18	98	30	146
Total Volume	9	322	51	382	95	593	34	722	106	237	49	392	61	544	153	758
% App. Total	2.4	84.3	13.4		13.2	82.1	4.7		27	60.5	12.5		8	71.8	20.2	
PHF	.563	.830	.981	.845	.642	.784	.850	.820	.803	.912	.613	.899	.693	.786	.814	.813

City of San Bernardino
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E/W: Foothill Boulevard
Weather: Clear

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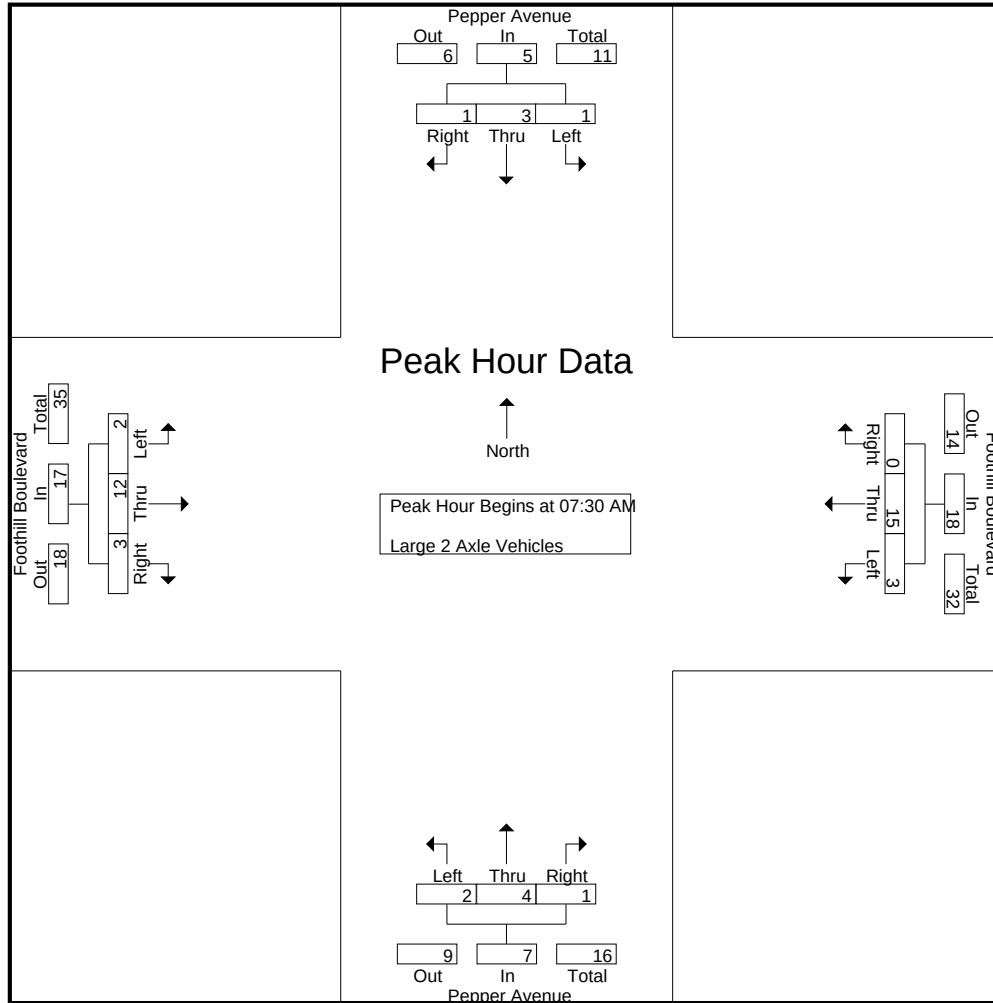
Groups Printed- Large 2 Axle Vehicles

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	0	1	1	2	0	3	1	1	0	2	1	3	1	5	11
07:15 AM	0	2	0	2	0	1	0	1	0	0	2	2	1	2	0	3	8
07:30 AM	0	1	0	1	0	8	0	8	0	1	1	2	2	1	0	3	14
07:45 AM	0	0	0	0	0	1	0	1	1	0	0	1	0	6	2	8	10
Total	0	4	0	4	1	12	0	13	2	2	3	7	4	12	3	19	43
08:00 AM	1	1	1	3	2	3	0	5	1	2	0	3	0	4	1	5	16
08:15 AM	0	1	0	1	1	3	0	4	0	1	0	1	0	1	0	1	7
08:30 AM	0	0	0	0	0	4	0	4	2	0	0	2	1	2	0	3	9
08:45 AM	1	2	0	3	0	1	0	1	0	0	0	0	0	1	0	1	5
Total	2	4	1	7	3	11	0	14	3	3	0	6	1	8	1	10	37
Grand Total	2	8	1	11	4	23	0	27	5	5	3	13	5	20	4	29	80
Apprch %	18.2	72.7	9.1		14.8	85.2	0		38.5	38.5	23.1		17.2	69	13.8		
Total %	2.5	10	1.2	13.8	5	28.8	0	33.8	6.2	6.2	3.8	16.2	6.2	25	5	36.2	

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	1	0	1	0	8	0	8	0	1	1	2	2	1	0	3	14
07:45 AM	0	0	0	0	0	1	0	1	1	0	0	1	0	6	2	8	10
08:00 AM	1	1	1	3	2	3	0	5	1	2	0	3	0	4	1	5	16
08:15 AM	0	1	0	1	1	3	0	4	0	1	0	1	0	1	0	1	7
Total Volume	1	3	1	5	3	15	0	18	2	4	1	7	2	12	3	17	47
% App. Total	20	60	20		16.7	83.3	0		28.6	57.1	14.3		11.8	70.6	17.6		
PHF	.250	.750	.250	.417	.375	.469	.000	.563	.500	.500	.250	.583	.250	.500	.375	.531	.734

City of San Bernardino
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	1	0	1	0	8	0	8	0	1	1	2	2	1	0	3
+15 mins.	0	0	0	0	0	1	0	1	1	0	0	1	0	6	2	8
+30 mins.	1	1	1	3	2	3	0	5	1	2	0	3	0	4	1	5
+45 mins.	0	1	0	1	1	3	0	4	0	1	0	1	0	1	0	1
Total Volume	1	3	1	5	3	15	0	18	2	4	1	7	2	12	3	17
% App. Total	20	60	20		16.7	83.3	0		28.6	57.1	14.3		11.8	70.6	17.6	
PHF	.250	.750	.250	.417	.375	.469	.000	.563	.500	.500	.250	.583	.250	.500	.375	.531

City of San Bernardino
N/S: Pepper Avenue
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Weather: Clear

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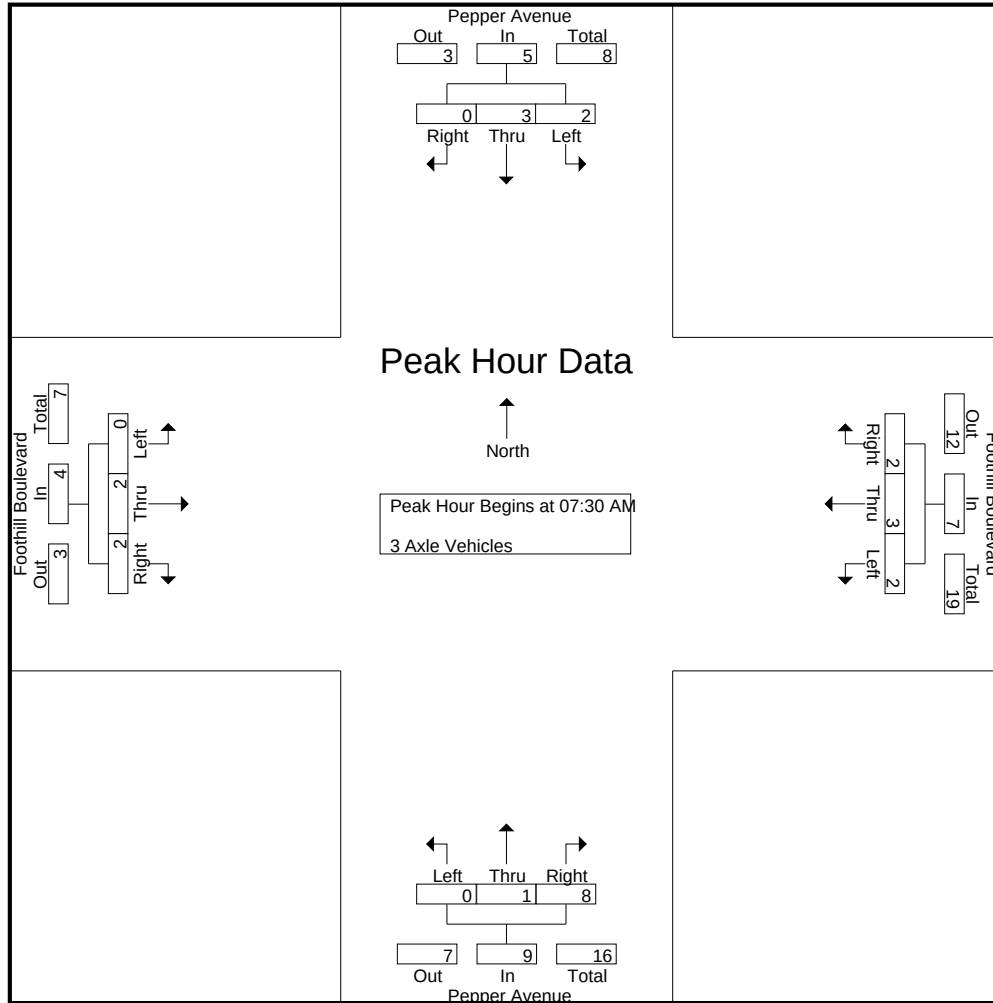
Groups Printed- 3 Axle Vehicles

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	1	0	3	4	0	1	1	2	6
07:15 AM	1	1	0	2	0	1	1	2	0	0	3	3	0	0	0	0	7
07:30 AM	0	0	0	0	0	0	1	1	0	0	2	2	0	0	0	0	3
07:45 AM	1	1	0	2	1	1	0	2	0	0	2	2	0	0	0	0	6
Total	2	2	0	4	1	2	2	5	1	0	10	11	0	1	1	2	22
08:00 AM	0	2	0	2	0	0	1	1	0	1	3	4	0	2	1	3	10
08:15 AM	1	0	0	1	1	2	0	3	0	0	1	1	0	0	1	1	6
08:30 AM	1	0	0	1	2	0	2	4	0	0	1	1	0	0	0	0	6
08:45 AM	0	0	1	1	1	0	0	1	0	0	2	2	0	1	1	2	6
Total	2	2	1	5	4	2	3	9	0	1	7	8	0	3	3	6	28
Grand Total	4	4	1	9	5	4	5	14	1	1	17	19	0	4	4	8	50
Apprch %	44.4	44.4	11.1		35.7	28.6	35.7		5.3	5.3	89.5		0	50	50		
Total %	8	8	2	18	10	8	10	28	2	2	34	38	0	8	8	16	

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	0	1	1	0	0	2	2	0	0	0	0	3
07:45 AM	1	1	0	2	1	1	0	2	0	0	2	2	0	0	0	0	6
08:00 AM	0	2	0	2	0	0	1	1	0	1	3	4	0	2	1	3	10
08:15 AM	1	0	0	1	1	2	0	3	0	0	1	1	0	0	1	1	6
Total Volume	2	3	0	5	2	3	2	7	0	1	8	9	0	2	2	4	25
% App. Total	40	60	0		28.6	42.9	28.6		0	11.1	88.9		0	50	50		
PHF	.500	.375	.000	.625	.500	.375	.500	.583	.000	.250	.667	.563	.000	.250	.500	.333	.625

City of San Bernardino
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	0	0	1	1	0	0	2	2	0	0	0	0
+15 mins.	1	1	0	2	1	1	0	2	0	0	2	2	0	0	0	0
+30 mins.	0	2	0	2	0	0	1	1	0	1	3	4	0	2	1	3
+45 mins.	1	0	0	1	1	2	0	3	0	0	1	1	0	0	1	1
Total Volume	2	3	0	5	2	3	2	7	0	1	8	9	0	2	2	4
% App. Total	40	60	0		28.6	42.9	28.6		0	11.1	88.9		0	50	50	
PHF	.500	.375	.000	.625	.500	.375	.500	.583	.000	.250	.667	.563	.000	.250	.500	.333

City of San Bernardino
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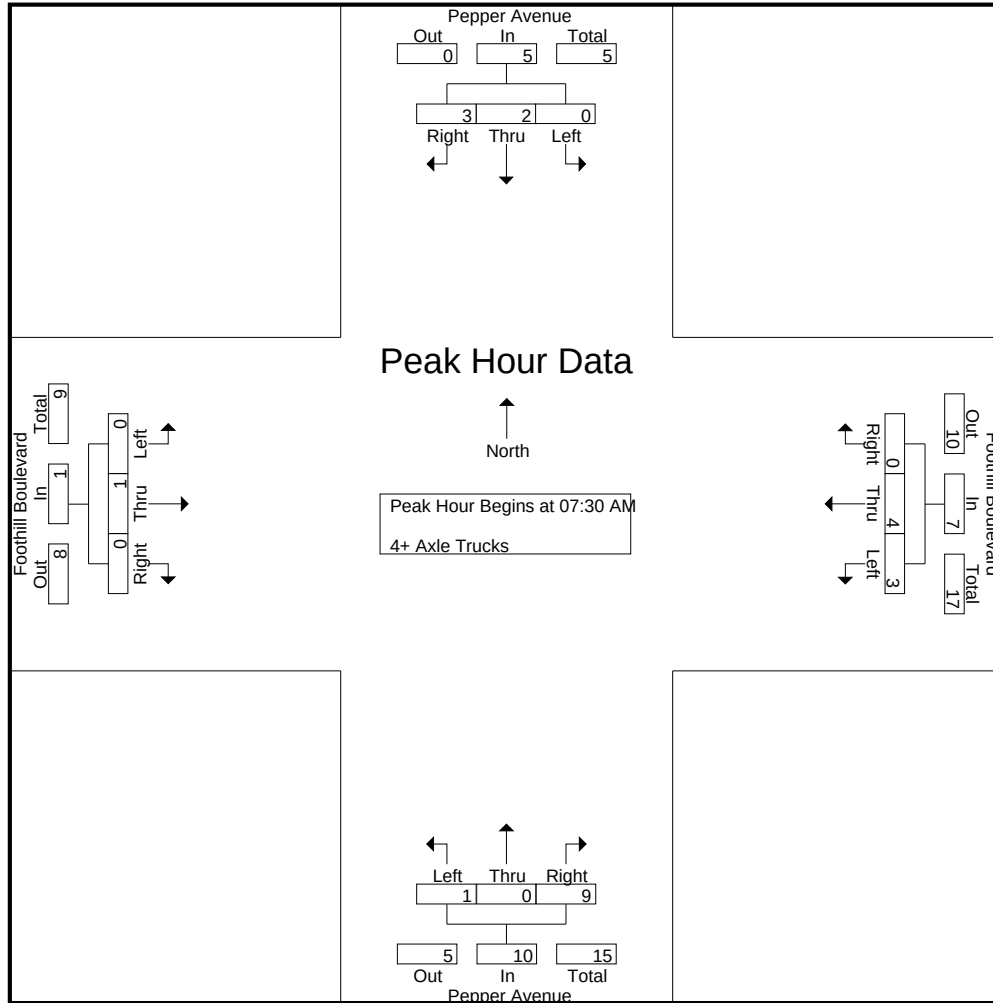
Groups Printed- 4+ Axle Trucks

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	0	1	0	0	0	0	1	0	1	2	0	0	0	0	3
07:15 AM	0	1	0	1	0	0	0	0	1	1	1	3	0	0	0	0	4
07:30 AM	0	1	2	3	1	0	0	1	1	0	3	4	0	1	0	1	9
07:45 AM	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	2
Total	0	3	3	6	1	0	0	1	3	1	6	10	0	1	0	1	18
08:00 AM	0	0	0	0	1	1	0	2	0	0	3	3	0	0	0	0	5
08:15 AM	0	1	0	1	1	3	0	4	0	0	2	2	0	0	0	0	7
08:30 AM	0	0	1	1	2	1	0	3	0	1	8	9	0	0	0	0	13
08:45 AM	0	1	0	1	0	0	0	0	0	0	3	3	0	0	0	0	4
Total	0	2	1	3	4	5	0	9	0	1	16	17	0	0	0	0	29
Grand Total	0	5	4	9	5	5	0	10	3	2	22	27	0	1	0	1	47
Apprch %	0	55.6	44.4		50	50	0		11.1	7.4	81.5		0	100	0		
Total %	0	10.6	8.5	19.1	10.6	10.6	0	21.3	6.4	4.3	46.8	57.4	0	2.1	0	2.1	

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	1	2	3	1	0	0	1	1	0	3	4	0	1	0	1	9
07:45 AM	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	2
08:00 AM	0	0	0	0	1	1	0	2	0	0	3	3	0	0	0	0	5
08:15 AM	0	1	0	1	1	3	0	4	0	0	2	2	0	0	0	0	7
Total Volume	0	2	3	5	3	4	0	7	1	0	9	10	0	1	0	1	23
% App. Total	0	40	60		42.9	57.1	0		10	0	90		0	100	0		
PHF	.000	.500	.375	.417	.750	.333	.000	.438	.250	.000	.750	.625	.000	.250	.000	.250	.639

City of San Bernardino
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	1	2	3	1	0	0	1	1	0	3	4	0	1	0	1
+15 mins.	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
+30 mins.	0	0	0	0	1	1	0	2	0	0	3	3	0	0	0	0
+45 mins.	0	1	0	1	1	3	0	4	0	0	2	2	0	0	0	0
Total Volume	0	2	3	5	3	4	0	7	1	0	9	10	0	1	0	1
% App. Total	0	40	60		42.9	57.1	0		10	0	90		0	100	0	
PHF	.000	.500	.375	.417	.750	.333	.000	.438	.250	.000	.750	.625	.000	.250	.000	.250

City of San Bernardino
N/S: Pepper Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 01_SBC_Pep_FH PM
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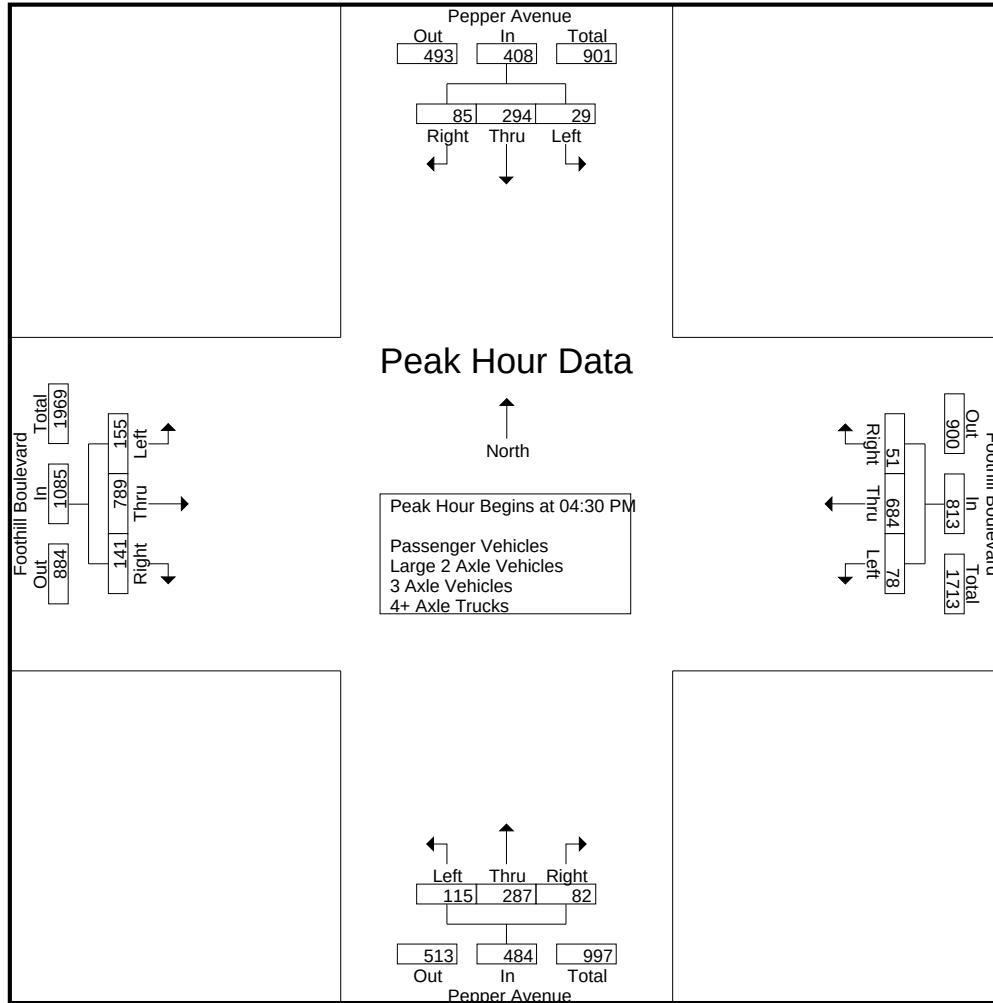
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	4	68	21	93	19	152	14	185	22	78	20	120	28	157	40	225	623
04:15 PM	4	74	22	100	11	140	8	159	29	62	23	114	30	174	37	241	614
04:30 PM	8	74	25	107	27	152	8	187	31	79	23	133	33	184	36	253	680
04:45 PM	7	84	22	113	14	156	11	181	29	71	19	119	44	190	29	263	676
Total	23	300	90	413	71	600	41	712	111	290	85	486	135	705	142	982	2593
05:00 PM	7	59	21	87	18	176	15	209	30	63	23	116	40	201	43	284	696
05:15 PM	7	77	17	101	19	200	17	236	25	74	17	116	38	214	33	285	738
05:30 PM	1	79	15	95	22	139	11	172	32	68	24	124	60	167	35	262	653
05:45 PM	2	66	22	90	21	190	13	224	33	72	15	120	33	157	39	229	663
Total	17	281	75	373	80	705	56	841	120	277	79	476	171	739	150	1060	2750
Grand Total	40	581	165	786	151	1305	97	1553	231	567	164	962	306	1444	292	2042	5343
Apprch %	5.1	73.9	21		9.7	84	6.2		24	58.9	17		15	70.7	14.3		
Total %	0.7	10.9	3.1	14.7	2.8	24.4	1.8	29.1	4.3	10.6	3.1	18	5.7	27	5.5	38.2	
Passenger Vehicles	38	577	163	778	135	1280	97	1512	229	562	144	935	301	1428	289	2018	5243
% Passenger Vehicles	95	99.3	98.8	99	89.4	98.1	100	97.4	99.1	99.1	87.8	97.2	98.4	98.9	99	98.8	98.1
Large 2 Axle Vehicles	1	3	0	4	3	15	0	18	0	2	0	2	3	14	2	19	43
% Large 2 Axle Vehicles	2.5	0.5	0	0.5	2	1.1	0	1.2	0	0.4	0	0.2	1	1	0.7	0.9	0.8
3 Axle Vehicles	0	0	2	2	8	6	0	14	1	2	5	8	1	0	1	2	26
% 3 Axle Vehicles	0	0	1.2	0.3	5.3	0.5	0	0.9	0.4	0.4	3	0.8	0.3	0	0.3	0.1	0.5
4+ Axle Trucks	1	1	0	2	5	4	0	9	1	1	15	17	1	2	0	3	31
% 4+ Axle Trucks	2.5	0.2	0	0.3	3.3	0.3	0	0.6	0.4	0.2	9.1	1.8	0.3	0.1	0	0.1	0.6

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	8	74	25	107	27	152	8	187	31	79	23	133	33	184	36	253	680
04:45 PM	7	84	22	113	14	156	11	181	29	71	19	119	44	190	29	263	676
05:00 PM	7	59	21	87	18	176	15	209	30	63	23	116	40	201	43	284	696
05:15 PM	7	77	17	101	19	200	17	236	25	74	17	116	38	214	33	285	738
Total Volume	29	294	85	408	78	684	51	813	115	287	82	484	155	789	141	1085	2790
% App. Total	7.1	72.1	20.8		9.6	84.1	6.3		23.8	59.3	16.9		14.3	72.7	13		
PHF	.906	.875	.850	.903	.722	.855	.750	.861	.927	.908	.891	.910	.881	.922	.820	.952	.945

City of San Bernardino
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				05:00 PM				04:00 PM				04:45 PM			
+0 mins.	4	68	21	93	18	176	15	209	22	78	20	120	44	190	29	263
+15 mins.	4	74	22	100	19	200	17	236	29	62	23	114	40	201	43	284
+30 mins.	8	74	25	107	22	139	11	172	31	79	23	133	38	214	33	285
+45 mins.	7	84	22	113	21	190	13	224	29	71	19	119	60	167	35	262
Total Volume	23	300	90	413	80	705	56	841	111	290	85	486	182	772	140	1094
% App. Total	5.6	72.6	21.8		9.5	83.8	6.7		22.8	59.7	17.5		16.6	70.6	12.8	
PHF	.719	.893	.900	.914	.909	.881	.824	.891	.895	.918	.924	.914	.758	.902	.814	.960

City of San Bernardino
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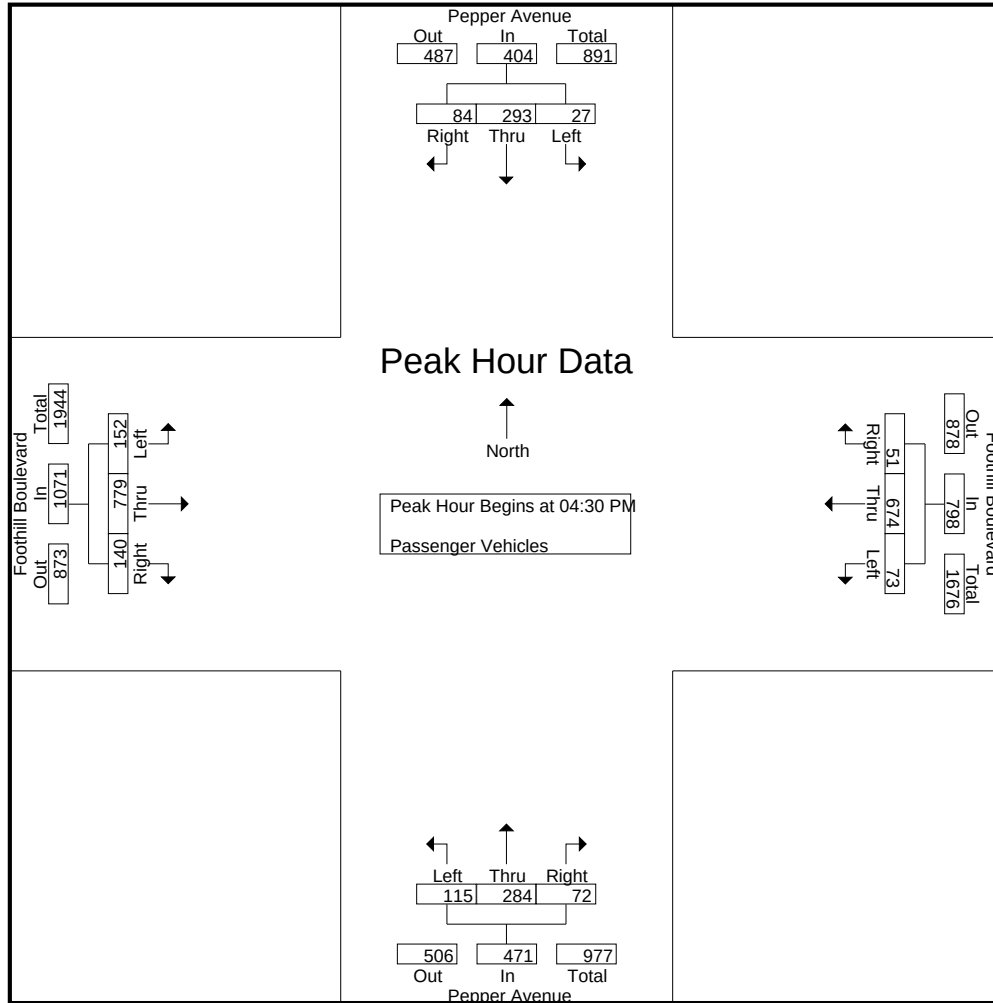
Groups Printed- Passenger Vehicles

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	4	67	20	91	15	148	14	177	22	77	18	117	27	154	38	219	604
04:15 PM	4	72	22	98	6	134	8	148	29	62	17	108	29	174	37	240	594
04:30 PM	8	73	25	106	25	150	8	183	31	78	19	128	32	179	36	247	664
04:45 PM	5	84	22	111	14	153	11	178	29	70	16	115	44	188	29	261	665
Total	21	296	89	406	60	585	41	686	111	287	70	468	132	695	140	967	2527
05:00 PM	7	59	20	86	17	172	15	204	30	62	23	115	38	199	43	280	685
05:15 PM	7	77	17	101	17	199	17	233	25	74	14	113	38	213	32	283	730
05:30 PM	1	79	15	95	20	138	11	169	31	67	24	122	60	165	35	260	646
05:45 PM	2	66	22	90	21	186	13	220	32	72	13	117	33	156	39	228	655
Total	17	281	74	372	75	695	56	826	118	275	74	467	169	733	149	1051	2716
Grand Total	38	577	163	778	135	1280	97	1512	229	562	144	935	301	1428	289	2018	5243
Apprch %	4.9	74.2	21		8.9	84.7	6.4		24.5	60.1	15.4		14.9	70.8	14.3		
Total %	0.7	11	3.1	14.8	2.6	24.4	1.9	28.8	4.4	10.7	2.7	17.8	5.7	27.2	5.5	38.5	

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	8	73	25	106	25	150	8	183	31	78	19	128	32	179	36	247	664
04:45 PM	5	84	22	111	14	153	11	178	29	70	16	115	44	188	29	261	665
05:00 PM	7	59	20	86	17	172	15	204	30	62	23	115	38	199	43	280	685
05:15 PM	7	77	17	101	17	199	17	233	25	74	14	113	38	213	32	283	730
Total Volume	27	293	84	404	73	674	51	798	115	284	72	471	152	779	140	1071	2744
% App. Total	6.7	72.5	20.8		9.1	84.5	6.4		24.4	60.3	15.3		14.2	72.7	13.1		
PHF	.844	.872	.840	.910	.730	.847	.750	.856	.927	.910	.783	.920	.864	.914	.814	.946	.940

City of San Bernardino
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Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	8	73	25	106	25	150	8	183	31	78	19	128	32	179	36	247
+15 mins.	5	84	22	111	14	153	11	178	29	70	16	115	44	188	29	261
+30 mins.	7	59	20	86	17	172	15	204	30	62	23	115	38	199	43	280
+45 mins.	7	77	17	101	17	199	17	233	25	74	14	113	38	213	32	283
Total Volume	27	293	84	404	73	674	51	798	115	284	72	471	152	779	140	1071
% App. Total	6.7	72.5	20.8		9.1	84.5	6.4		24.4	60.3	15.3		14.2	72.7	13.1	
PHF	.844	.872	.840	.910	.730	.847	.750	.856	.927	.910	.783	.920	.864	.914	.814	.946

City of San Bernardino
N/S: Pepper Avenue
E/W: Foothill Boulevard
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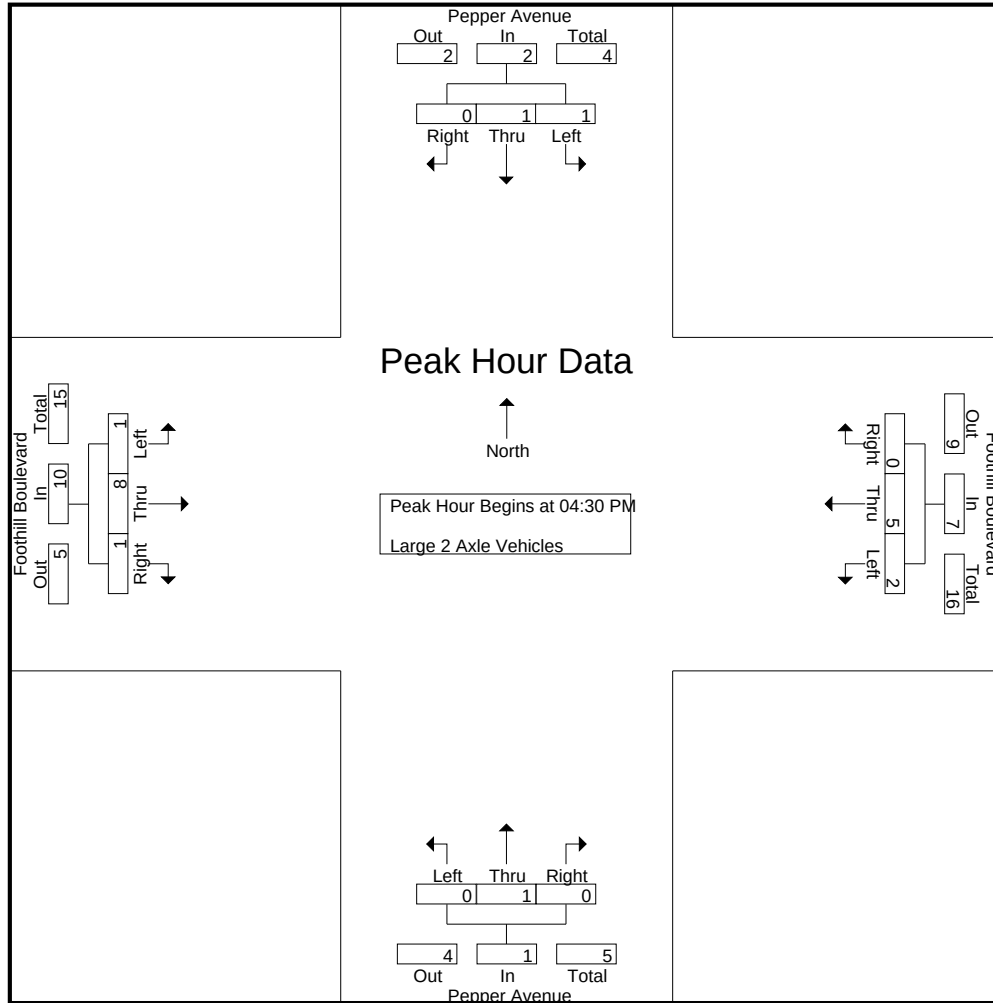
Groups Printed- Large 2 Axle Vehicles

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	1	0	1	0	4	0	4	0	1	0	1	1	3	1	5	11
04:15 PM	0	1	0	1	1	3	0	4	0	0	0	0	1	0	0	1	6
04:30 PM	0	1	0	1	2	1	0	3	0	0	0	0	0	3	0	3	7
04:45 PM	1	0	0	1	0	1	0	1	0	1	0	1	0	2	0	2	5
Total	1	3	0	4	3	9	0	12	0	2	0	2	2	8	1	11	29
05:00 PM	0	0	0	0	0	2	0	2	0	0	0	0	1	2	0	3	5
05:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1	2	3
05:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
05:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
Total	0	0	0	0	0	6	0	6	0	0	0	0	1	6	1	8	14
Grand Total	1	3	0	4	3	15	0	18	0	2	0	2	3	14	2	19	43
Apprch %	25	75	0		16.7	83.3	0		0	100	0		15.8	73.7	10.5		
Total %	2.3	7	0	9.3	7	34.9	0	41.9	0	4.7	0	4.7	7	32.6	4.7	44.2	

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	1	0	1	2	1	0	3	0	0	0	0	0	3	0	3	7
04:45 PM	1	0	0	1	0	1	0	1	0	1	0	1	0	2	0	2	5
05:00 PM	0	0	0	0	0	2	0	2	0	0	0	0	1	2	0	3	5
05:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1	2	3
Total Volume	1	1	0	2	2	5	0	7	0	1	0	1	1	8	1	10	20
% App. Total	50	50	0		28.6	71.4	0		0	100	0		10	80	10		
PHF	.250	.250	.000	.500	.250	.625	.000	.583	.000	.250	.000	.250	.250	.667	.250	.833	.714

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Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	1	0	1	2	1	0	3	0	0	0	0	0	3	0	3
+15 mins.	1	0	0	1	0	1	0	1	0	1	0	0	0	2	0	2
+30 mins.	0	0	0	0	0	2	0	2	0	0	0	0	1	2	0	3
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1	2
Total Volume	1	1	0	2	2	5	0	7	0	1	0	1	1	8	1	10
% App. Total	50	50	0		28.6	71.4	0		0	100	0		10	80	10	
PHF	.250	.250	.000	.500	.250	.625	.000	.583	.000	.250	.000	.250	.250	.667	.250	.833

City of San Bernardino
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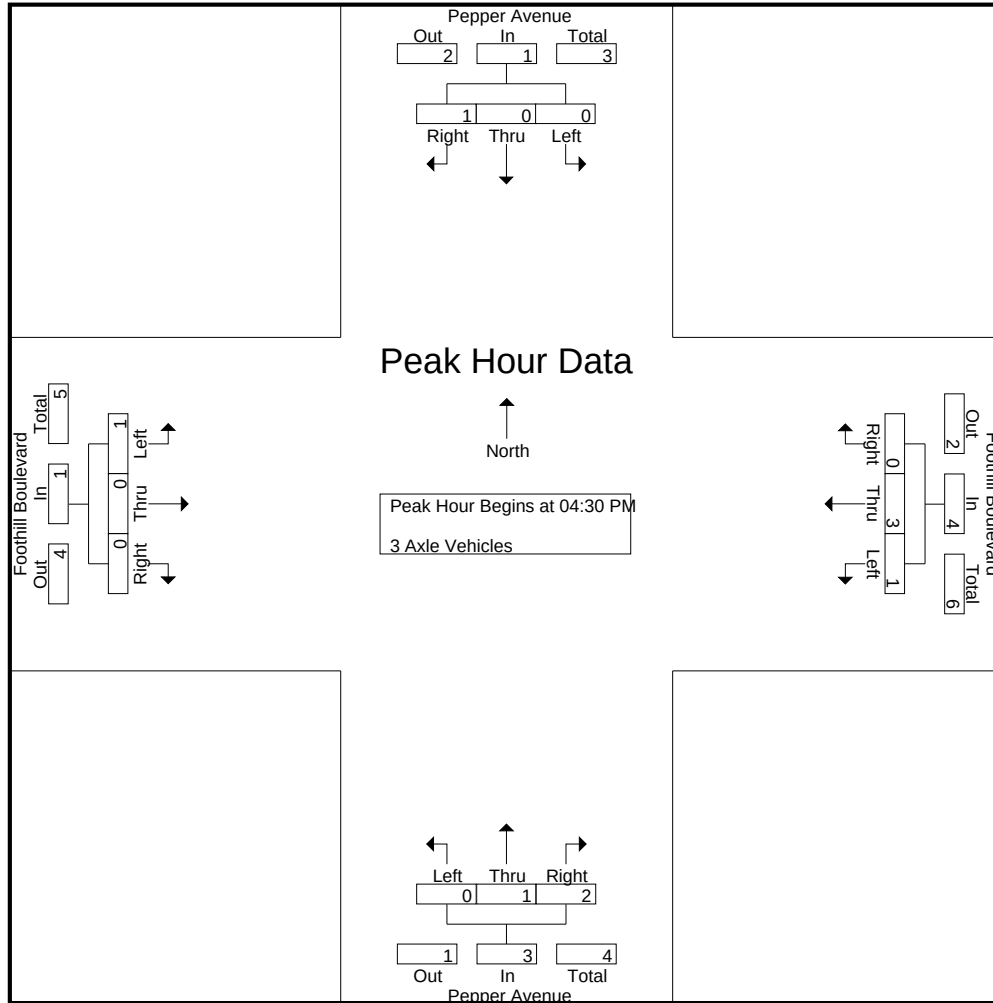
Groups Printed- 3 Axle Vehicles

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	1	1	3	0	0	3	0	0	0	0	0	0	1	1	5
04:15 PM	0	0	0	0	3	1	0	4	0	0	2	2	0	0	0	0	6
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	2
Total	0	0	1	1	6	2	0	8	0	0	3	3	0	0	1	1	13
05:00 PM	0	0	1	1	0	2	0	2	0	1	0	1	1	0	0	1	5
05:15 PM	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	2
05:30 PM	0	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0	2
05:45 PM	0	0	0	0	0	2	0	2	1	0	1	2	0	0	0	0	4
Total	0	0	1	1	2	4	0	6	1	2	2	5	1	0	0	1	13
Grand Total	0	0	2	2	8	6	0	14	1	2	5	8	1	0	1	2	26
Apprch %	0	0	100		57.1	42.9	0		12.5	25	62.5		50	0	50		
Total %	0	0	7.7	7.7	30.8	23.1	0	53.8	3.8	7.7	19.2	30.8	3.8	0	3.8	7.7	

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	2
05:00 PM	0	0	1	1	0	2	0	2	0	1	0	1	1	0	0	1	5
05:15 PM	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	2
Total Volume	0	0	1	1	1	3	0	4	0	1	2	3	1	0	0	1	9
% App. Total	0	0	100		25	75	0		0	33.3	66.7		100	0	0		
PHF	.000	.000	.250	.250	.250	.375	.000	.500	.000	.250	.500	.750	.250	.000	.000	.250	.450

City of San Bernardino
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Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0
+30 mins.	0	0	1	1	0	2	0	2	0	1	0	1	1	0	0	1
+45 mins.	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0
Total Volume	0	0	1	1	1	3	0	4	0	1	2	3	1	0	0	1
% App. Total	0	0	100		25	75	0		0	33.3	66.7		100	0	0	
PHF	.000	.000	.250	.250	.250	.375	.000	.500	.000	.250	.500	.750	.250	.000	.000	.250

City of San Bernardino
N/S: Pepper Avenue
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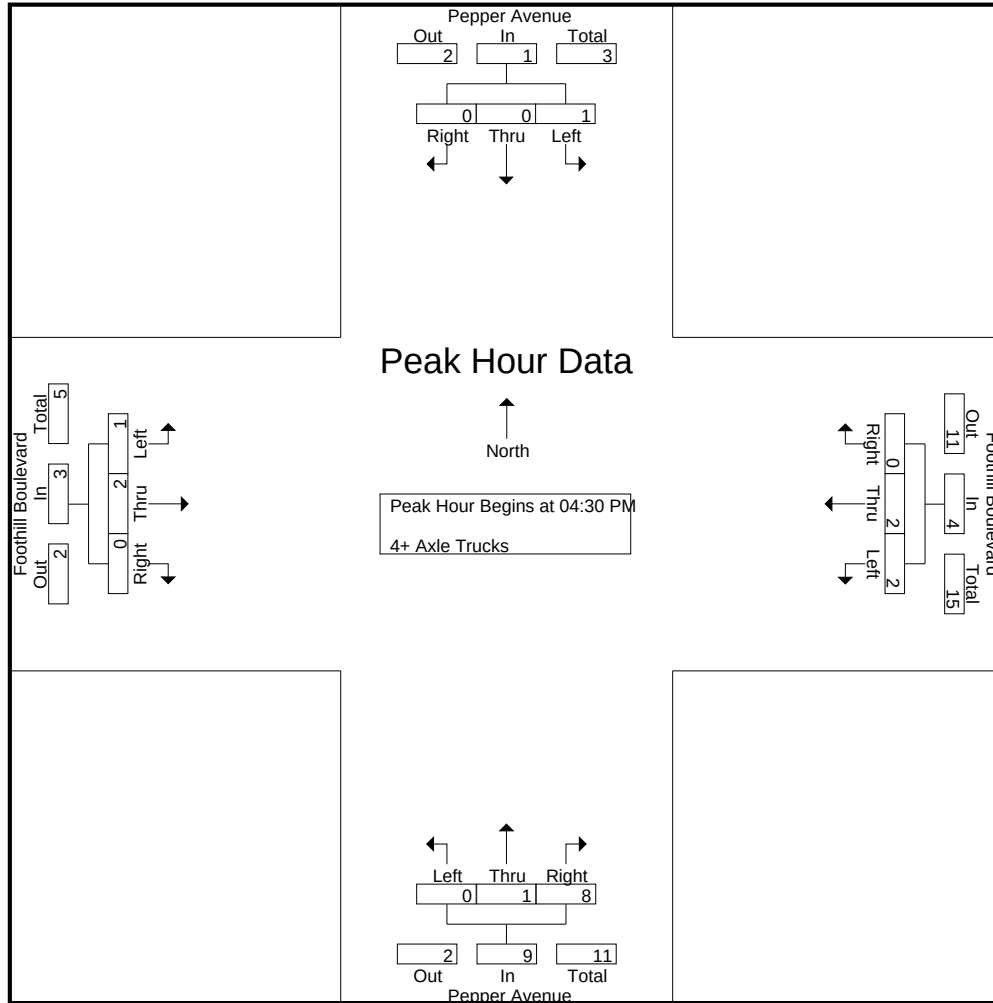
Groups Printed- 4+ Axle Trucks

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	1	0	0	1	0	0	2	2	0	0	0	0	3
04:15 PM	0	1	0	1	1	2	0	3	0	0	4	4	0	0	0	0	8
04:30 PM	0	0	0	0	0	1	0	1	0	1	4	5	1	2	0	3	9
04:45 PM	1	0	0	1	0	1	0	1	0	0	2	2	0	0	0	0	4
Total	1	1	0	2	2	4	0	6	0	1	12	13	1	2	0	3	24
05:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	1	0	0	1	0	0	2	2	0	0	0	0	3
05:30 PM	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Total	0	0	0	0	3	0	0	3	1	0	3	4	0	0	0	0	7
Grand Total	1	1	0	2	5	4	0	9	1	1	15	17	1	2	0	3	31
Apprch %	50	50	0		55.6	44.4	0		5.9	5.9	88.2		33.3	66.7	0		
Total %	3.2	3.2	0	6.5	16.1	12.9	0	29	3.2	3.2	48.4	54.8	3.2	6.5	0	9.7	

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	1	0	1	0	1	4	5	1	2	0	3	9
04:45 PM	1	0	0	1	0	1	0	1	0	0	2	2	0	0	0	0	4
05:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	1	0	0	1	0	0	2	2	0	0	0	0	3
Total Volume	1	0	0	1	2	2	0	4	0	1	8	9	1	2	0	3	17
% App. Total	100	0	0		50	50	0		0	11.1	88.9		33.3	66.7	0		
PHF	.250	.000	.000	.250	.500	.500	.000	1.00	.000	.250	.500	.450	.250	.250	.000	.250	.472

City of San Bernardino
N/S: Pepper Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 01_SBC_Pep_FH PM
Site Code : 22524137
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Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	0	1	0	1	0	1	4	5	1	2	0	3
+15 mins.	1	0	0	1	0	1	0	1	0	0	2	2	0	0	0	0
+30 mins.	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	1	0	0	1	0	0	2	2	0	0	0	0
Total Volume	1	0	0	1	2	2	0	4	0	1	8	9	1	2	0	3
% App. Total	100	0	0		50	50	0		0	11.1	88.9		33.3	66.7	0	
PHF	.250	.000	.000	.250	.500	.500	.000	1.000	.000	.250	.500	.450	.250	.250	.000	.250

Location: San Bernardino
 N/S: Pepper Avenue
 E/W: Foothill Boulevard



Date: 2/13/2024
 Day: Tuesday

PEDESTRIANS

		North Leg Pepper Avenue Pedestrians	East Leg Foothill Boulevard Pedestrians	South Leg Pepper Avenue Pedestrians	West Leg Foothill Boulevard Pedestrians	
	7:00 AM	0	0	0	0	0
	7:15 AM	0	0	1	0	1
	7:30 AM	2	0	0	0	2
	7:45 AM	0	0	0	0	0
	8:00 AM	1	0	0	0	1
	8:15 AM	2	0	0	1	3
	8:30 AM	0	0	1	0	1
	8:45 AM	1	0	4	1	6
	TOTAL VOLUMES:	6	0	6	2	14

		North Leg Pepper Avenue Pedestrians	East Leg Foothill Boulevard Pedestrians	South Leg Pepper Avenue Pedestrians	West Leg Foothill Boulevard Pedestrians	
	4:00 PM	3	4	1	0	8
	4:15 PM	1	0	2	2	5
	4:30 PM	2	0	4	1	7
	4:45 PM	1	1	4	0	6
	5:00 PM	1	1	0	1	3
	5:15 PM	2	0	3	0	5
	5:30 PM	0	1	3	1	5
	5:45 PM	2	1	2	4	9
	TOTAL VOLUMES:	12	8	19	9	48

Location: San Bernardino
 N/S: Pepper Avenue
 E/W: Foothill Boulevard



Date: 2/13/2024
 Day: Tuesday

BICYCLES

		Southbound Pepper Avenue			Westbound Foothill Boulevard			Northbound Pepper Avenue			Eastbound Foothill Boulevard			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
TOTAL VOLUMES:		0	0	1	0	0	0	0	0	0	0	1	1	3

		Southbound Pepper Avenue			Westbound Foothill Boulevard			Northbound Pepper Avenue			Eastbound Foothill Boulevard			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	4:15 PM	0	0	0	0	1	0	1	0	0	0	2	1	5
	4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:		0	0	1	0	2	0	1	0	0	0	4	1	9

City of San Bernardino
N/S: Meridian Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 02_SBC_Mer_FH AM
Site Code : 22524137
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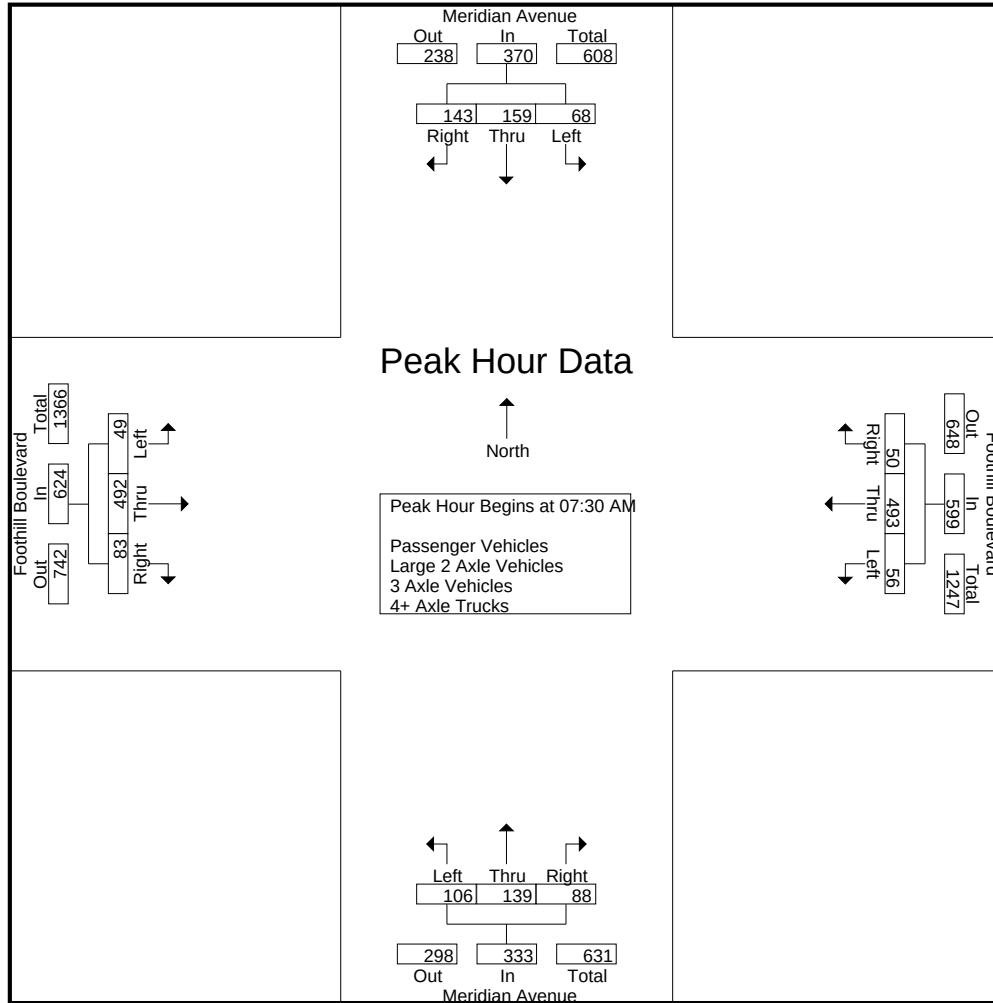
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Meridian Avenue Southbound				Foothill Boulevard Westbound				Meridian Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	15	30	20	65	7	80	5	92	7	12	9	28	4	51	4	59	244
07:15 AM	24	31	22	77	9	110	13	132	17	29	13	59	5	88	8	101	369
07:30 AM	22	38	43	103	18	131	17	166	26	48	20	94	15	104	8	127	490
07:45 AM	20	40	28	88	17	151	10	178	42	34	26	102	12	154	26	192	560
Total	81	139	113	333	51	472	45	568	92	123	68	283	36	397	46	479	1663
08:00 AM	15	40	46	101	10	95	13	118	21	31	22	74	12	145	33	190	483
08:15 AM	11	41	26	78	11	116	10	137	17	26	20	63	10	89	16	115	393
08:30 AM	11	23	32	66	19	105	14	138	10	23	25	58	9	93	15	117	379
08:45 AM	9	34	23	66	7	117	11	135	10	20	10	40	14	83	13	110	351
Total	46	138	127	311	47	433	48	528	58	100	77	235	45	410	77	532	1606
Grand Total	127	277	240	644	98	905	93	1096	150	223	145	518	81	807	123	1011	3269
Apprch %	19.7	43	37.3		8.9	82.6	8.5		29	43.1	28		8	79.8	12.2		
Total %	3.9	8.5	7.3	19.7	3	27.7	2.8	33.5	4.6	6.8	4.4	15.8	2.5	24.7	3.8	30.9	
Passenger Vehicles	120	277	234	631	95	863	85	1043	147	218	142	507	78	740	120	938	3119
% Passenger Vehicles	94.5	100	97.5	98	96.9	95.4	91.4	95.2	98	97.8	97.9	97.9	96.3	91.7	97.6	92.8	95.4
Large 2 Axle Vehicles	2	0	6	8	3	21	4	28	2	5	2	9	1	22	3	26	71
% Large 2 Axle Vehicles	1.6	0	2.5	1.2	3.1	2.3	4.3	2.6	1.3	2.2	1.4	1.7	1.2	2.7	2.4	2.6	2.2
3 Axle Vehicles	2	0	0	2	0	8	2	10	1	0	0	1	2	20	0	22	35
% 3 Axle Vehicles	1.6	0	0	0.3	0	0.9	2.2	0.9	0.7	0	0	0.2	2.5	2.5	0	2.2	1.1
4+ Axle Trucks	3	0	0	3	0	13	2	15	0	0	1	1	0	25	0	25	44
% 4+ Axle Trucks	2.4	0	0	0.5	0	1.4	2.2	1.4	0	0	0.7	0.2	0	3.1	0	2.5	1.3

	Meridian Avenue Southbound				Foothill Boulevard Westbound				Meridian Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	22	38	43	103	18	131	17	166	26	48	20	94	15	104	8	127	490
07:45 AM	20	40	28	88	17	151	10	178	42	34	26	102	12	154	26	192	560
08:00 AM	15	40	46	101	10	95	13	118	21	31	22	74	12	145	33	190	483
08:15 AM	11	41	26	78	11	116	10	137	17	26	20	63	10	89	16	115	393
Total Volume	68	159	143	370	56	493	50	599	106	139	88	333	49	492	83	624	1926
% App. Total	18.4	43	38.6		9.3	82.3	8.3		31.8	41.7	26.4		7.9	78.8	13.3		
PHF	.773	.970	.777	.898	.778	.816	.735	.841	.631	.724	.846	.816	.817	.799	.629	.813	.860

City of San Bernardino
N/S: Meridian Avenue
E/W: Foothill Boulevard
Weather: Clear

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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	22	38	43	103	18	131	17	166	26	48	20	94	15	104	8	127
+15 mins.	20	40	28	88	17	151	10	178	42	34	26	102	12	154	26	192
+30 mins.	15	40	46	101	10	95	13	118	21	31	22	74	12	145	33	190
+45 mins.	11	41	26	78	11	116	10	137	17	26	20	63	10	89	16	115
Total Volume	68	159	143	370	56	493	50	599	106	139	88	333	49	492	83	624
% App. Total	18.4	43	38.6		9.3	82.3	8.3		31.8	41.7	26.4		7.9	78.8	13.3	
PHF	.773	.970	.777	.898	.778	.816	.735	.841	.631	.724	.846	.816	.817	.799	.629	.813

City of San Bernardino
N/S: Meridian Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 02_SBC_Mer_FH AM
Site Code : 22524137
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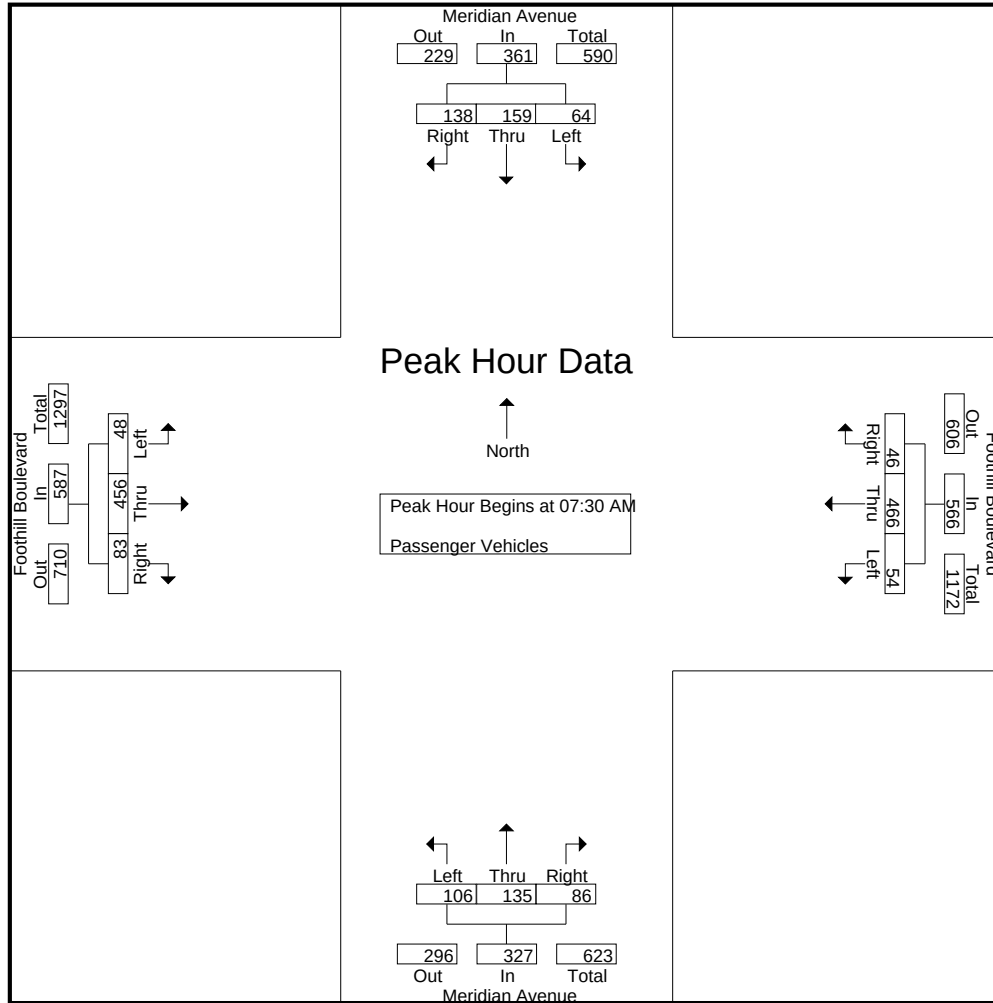
Groups Printed- Passenger Vehicles

	Meridian Avenue Southbound				Foothill Boulevard Westbound				Meridian Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	15	30	20	65	7	77	5	89	6	12	9	27	4	46	2	52	233
07:15 AM	22	31	22	75	8	109	12	129	15	28	12	55	4	80	8	92	351
07:30 AM	21	38	41	100	17	123	16	156	26	47	19	92	14	96	8	118	466
07:45 AM	17	40	28	85	17	146	9	172	42	34	25	101	12	144	26	182	540
Total	75	139	111	325	49	455	42	546	89	121	65	275	34	366	44	444	1590
08:00 AM	15	40	43	98	9	91	12	112	21	30	22	73	12	133	33	178	461
08:15 AM	11	41	26	78	11	106	9	126	17	24	20	61	10	83	16	109	374
08:30 AM	10	23	31	64	19	96	14	129	10	23	25	58	9	82	14	105	356
08:45 AM	9	34	23	66	7	115	8	130	10	20	10	40	13	76	13	102	338
Total	45	138	123	306	46	408	43	497	58	97	77	232	44	374	76	494	1529
Grand Total	120	277	234	631	95	863	85	1043	147	218	142	507	78	740	120	938	3119
Apprch %	19	43.9	37.1		9.1	82.7	8.1		29	43	28		8.3	78.9	12.8		
Total %	3.8	8.9	7.5	20.2	3	27.7	2.7	33.4	4.7	7	4.6	16.3	2.5	23.7	3.8	30.1	

	Meridian Avenue Southbound				Foothill Boulevard Westbound				Meridian Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	21	38	41	100	17	123	16	156	26	47	19	92	14	96	8	118	466
07:45 AM	17	40	28	85	17	146	9	172	42	34	25	101	12	144	26	182	540
08:00 AM	15	40	43	98	9	91	12	112	21	30	22	73	12	133	33	178	461
08:15 AM	11	41	26	78	11	106	9	126	17	24	20	61	10	83	16	109	374
Total Volume	64	159	138	361	54	466	46	566	106	135	86	327	48	456	83	587	1841
% App. Total	17.7	44	38.2		9.5	82.3	8.1		32.4	41.3	26.3		8.2	77.7	14.1		
PHF	.762	.970	.802	.903	.794	.798	.719	.823	.631	.718	.860	.809	.857	.792	.629	.806	.852

City of San Bernardino
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	21	38	41	100	17	123	16	156	26	47	19	92	14	96	8	118
+15 mins.	17	40	28	85	17	146	9	172	42	34	25	101	12	144	26	182
+30 mins.	15	40	43	98	9	91	12	112	21	30	22	73	12	133	33	178
+45 mins.	11	41	26	78	11	106	9	126	17	24	20	61	10	83	16	109
Total Volume	64	159	138	361	54	466	46	566	106	135	86	327	48	456	83	587
% App. Total	17.7	44	38.2		9.5	82.3	8.1		32.4	41.3	26.3		8.2	77.7	14.1	
PHF	.762	.970	.802	.903	.794	.798	.719	.823	.631	.718	.860	.809	.857	.792	.629	.806

City of San Bernardino
N/S: Meridian Avenue
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Weather: Clear

File Name : 02_SBC_Mer_FH AM
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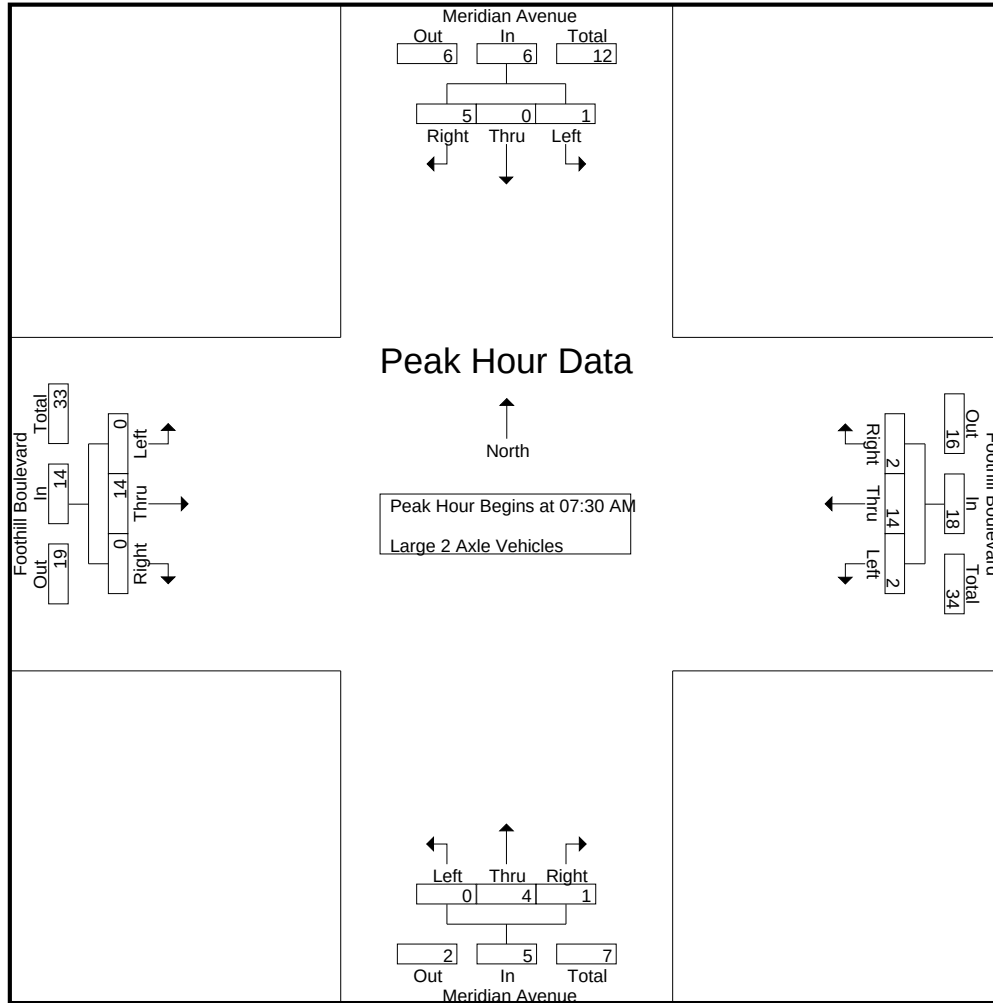
Groups Printed- Large 2 Axle Vehicles

	Meridian Avenue Southbound				Foothill Boulevard Westbound				Meridian Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	2	0	2	1	0	0	1	0	1	2	3	6
07:15 AM	1	0	0	1	1	1	1	3	1	1	1	3	0	4	0	4	11
07:30 AM	1	0	2	3	1	6	0	7	0	1	1	2	0	2	0	2	14
07:45 AM	0	0	0	0	0	2	1	3	0	0	0	0	0	6	0	6	9
Total	2	0	2	4	2	11	2	15	2	2	2	6	0	13	2	15	40
08:00 AM	0	0	3	3	1	2	0	3	0	1	0	1	0	4	0	4	11
08:15 AM	0	0	0	0	0	4	1	5	0	2	0	2	0	2	0	2	9
08:30 AM	0	0	1	1	0	3	0	3	0	0	0	0	0	2	1	3	7
08:45 AM	0	0	0	0	0	1	1	2	0	0	0	0	1	1	0	2	4
Total	0	0	4	4	1	10	2	13	0	3	0	3	1	9	1	11	31
Grand Total	2	0	6	8	3	21	4	28	2	5	2	9	1	22	3	26	71
Apprch %	25	0	75		10.7	75	14.3		22.2	55.6	22.2		3.8	84.6	11.5		
Total %	2.8	0	8.5	11.3	4.2	29.6	5.6	39.4	2.8	7	2.8	12.7	1.4	31	4.2	36.6	

	Meridian Avenue Southbound				Foothill Boulevard Westbound				Meridian Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	1	0	2	3	1	6	0	7	0	1	1	2	0	2	0	2	14
07:45 AM	0	0	0	0	0	2	1	3	0	0	0	0	0	6	0	6	9
08:00 AM	0	0	3	3	1	2	0	3	0	1	0	1	0	4	0	4	11
08:15 AM	0	0	0	0	0	4	1	5	0	2	0	2	0	2	0	2	9
Total Volume	1	0	5	6	2	14	2	18	0	4	1	5	0	14	0	14	43
% App. Total	16.7	0	83.3		11.1	77.8	11.1		0	80	20		0	100	0		
PHF	.250	.000	.417	.500	.500	.583	.500	.643	.000	.500	.250	.625	.000	.583	.000	.583	.768

City of San Bernardino
N/S: Meridian Avenue
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Weather: Clear

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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	1	0	2	3	1	6	0	7	0	1	1	2	0	2	0	2
+15 mins.	0	0	0	0	0	2	1	3	0	0	0	0	0	6	0	6
+30 mins.	0	0	3	3	1	2	0	3	0	1	0	1	0	4	0	4
+45 mins.	0	0	0	0	0	4	1	5	0	2	0	2	0	2	0	2
Total Volume	1	0	5	6	2	14	2	18	0	4	1	5	0	14	0	14
% App. Total	16.7	0	83.3		11.1	77.8	11.1		0	80	20		0	100	0	
PHF	.250	.000	.417	.500	.500	.583	.500	.643	.000	.500	.250	.625	.000	.583	.000	.583

City of San Bernardino
N/S: Meridian Avenue
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File Name : 02_SBC_Mer_FH AM
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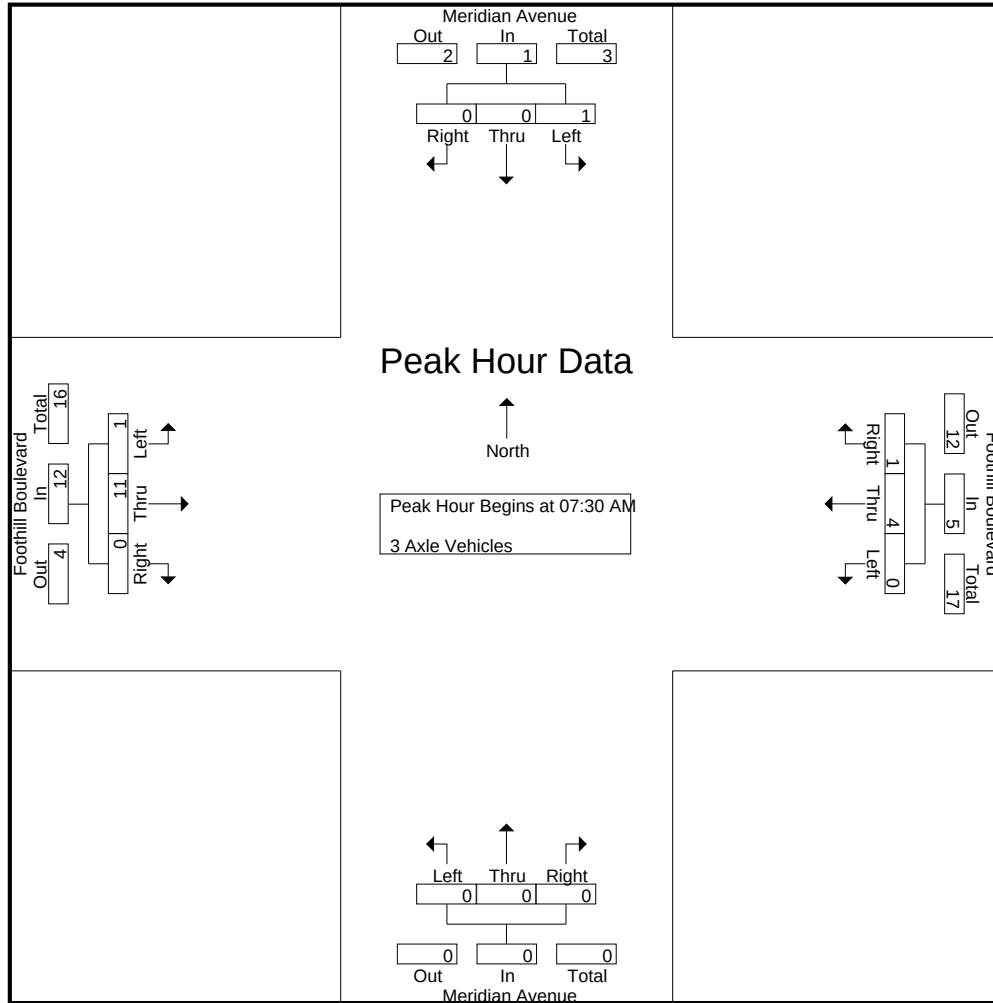
Groups Printed- 3 Axle Vehicles

	Meridian Avenue Southbound				Foothill Boulevard Westbound				Meridian Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3
07:15 AM	1	0	0	1	0	0	0	0	1	0	0	1	1	2	0	3	5
07:30 AM	0	0	0	0	0	1	1	2	0	0	0	0	1	2	0	3	5
07:45 AM	1	0	0	1	0	1	0	1	0	0	0	0	0	2	0	2	4
Total	2	0	0	2	0	2	1	3	1	0	0	1	2	9	0	11	17
08:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	4	0	4	5
08:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3	4
08:30 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	1	0	1	4
08:45 AM	0	0	0	0	0	1	1	2	0	0	0	0	0	3	0	3	5
Total	0	0	0	0	0	6	1	7	0	0	0	0	0	11	0	11	18
Grand Total	2	0	0	2	0	8	2	10	1	0	0	1	2	20	0	22	35
Apprch %	100	0	0		0	80	20		100	0	0		9.1	90.9	0		
Total %	5.7	0	0	5.7	0	22.9	5.7	28.6	2.9	0	0	2.9	5.7	57.1	0	62.9	

	Meridian Avenue Southbound				Foothill Boulevard Westbound				Meridian Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	1	1	2	0	0	0	0	1	2	0	3	5
07:45 AM	1	0	0	1	0	1	0	1	0	0	0	0	0	2	0	2	4
08:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	4	0	4	5
08:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3	4
Total Volume	1	0	0	1	0	4	1	5	0	0	0	0	1	11	0	12	18
% App. Total	100	0	0		0	80	20		0	0	0		8.3	91.7	0		
PHF	.250	.000	.000	.250	.000	1.00	.250	.625	.000	.000	.000	.000	.250	.688	.000	.750	.900

City of San Bernardino
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	0	1	1	2	0	0	0	0	1	2	0	3
+15 mins.	1	0	0	1	0	1	0	1	0	0	0	0	0	2	0	2
+30 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	4	0	4
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3
Total Volume	1	0	0	1	0	4	1	5	0	0	0	0	1	11	0	12
% App. Total	100	0	0		0	80	20		0	0	0		8.3	91.7	0	
PHF	.250	.000	.000	.250	.000	1.000	.250	.625	.000	.000	.000	.000	.250	.688	.000	.750

City of San Bernardino
N/S: Meridian Avenue
E/W: Foothill Boulevard
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File Name : 02_SBC_Mer_FH AM
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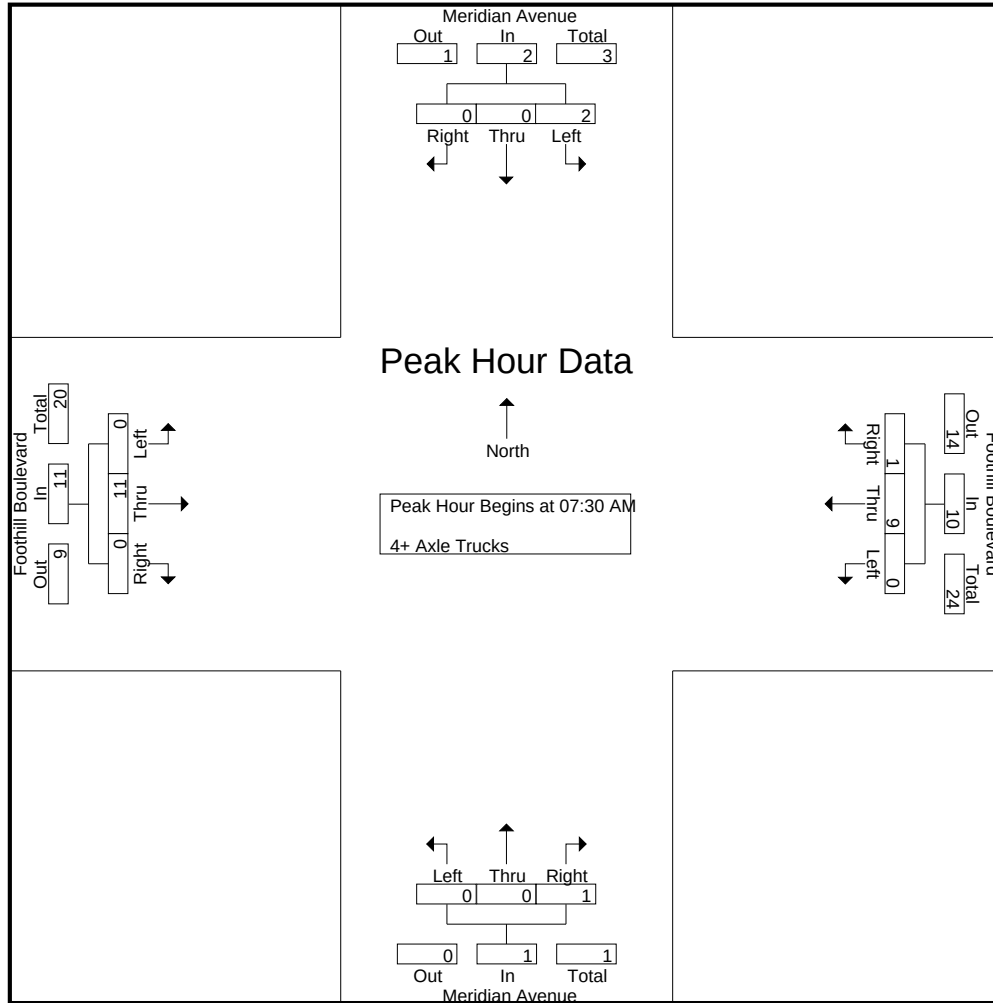
Groups Printed- 4+ Axle Trucks

	Meridian Avenue Southbound				Foothill Boulevard Westbound				Meridian Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
07:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	4	0	4	5
07:45 AM	2	0	0	2	0	2	0	2	0	0	1	1	0	2	0	2	7
Total	2	0	0	2	0	4	0	4	0	0	1	1	0	9	0	9	16
08:00 AM	0	0	0	0	0	1	1	2	0	0	0	0	0	4	0	4	6
08:15 AM	0	0	0	0	0	5	0	5	0	0	0	0	0	1	0	1	6
08:30 AM	1	0	0	1	0	3	0	3	0	0	0	0	0	8	0	8	12
08:45 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	3	0	3	4
Total	1	0	0	1	0	9	2	11	0	0	0	0	0	16	0	16	28
Grand Total	3	0	0	3	0	13	2	15	0	0	1	1	0	25	0	25	44
Apprch %	100	0	0		0	86.7	13.3		0	0	100		0	100	0		
Total %	6.8	0	0	6.8	0	29.5	4.5	34.1	0	0	2.3	2.3	0	56.8	0	56.8	

	Meridian Avenue Southbound				Foothill Boulevard Westbound				Meridian Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	4	0	4	5
07:45 AM	2	0	0	2	0	2	0	2	0	0	1	1	0	2	0	2	7
08:00 AM	0	0	0	0	0	1	1	2	0	0	0	0	0	4	0	4	6
08:15 AM	0	0	0	0	0	5	0	5	0	0	0	0	0	1	0	1	6
Total Volume	2	0	0	2	0	9	1	10	0	0	1	1	0	11	0	11	24
% App. Total	100	0	0		0	90	10		0	0	100		0	100	0		
PHF	.250	.000	.000	.250	.000	.450	.250	.500	.000	.000	.250	.250	.000	.688	.000	.688	.857

City of San Bernardino
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	4	0	4
+15 mins.	2	0	0	2	0	2	0	2	0	0	1	1	0	2	0	2
+30 mins.	0	0	0	0	0	1	1	2	0	0	0	0	0	4	0	4
+45 mins.	0	0	0	0	0	5	0	5	0	0	0	0	0	1	0	1
Total Volume	2	0	0	2	0	9	1	10	0	0	1	1	0	11	0	11
% App. Total	100	0	0		0	90	10		0	0	100		0	100	0	
PHF	.250	.000	.000	.250	.000	.450	.250	.500	.000	.000	.250	.250	.000	.688	.000	.688

City of San Bernardino
N/S: Meridian Avenue
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File Name : 02_SBC_Mer_FH PM
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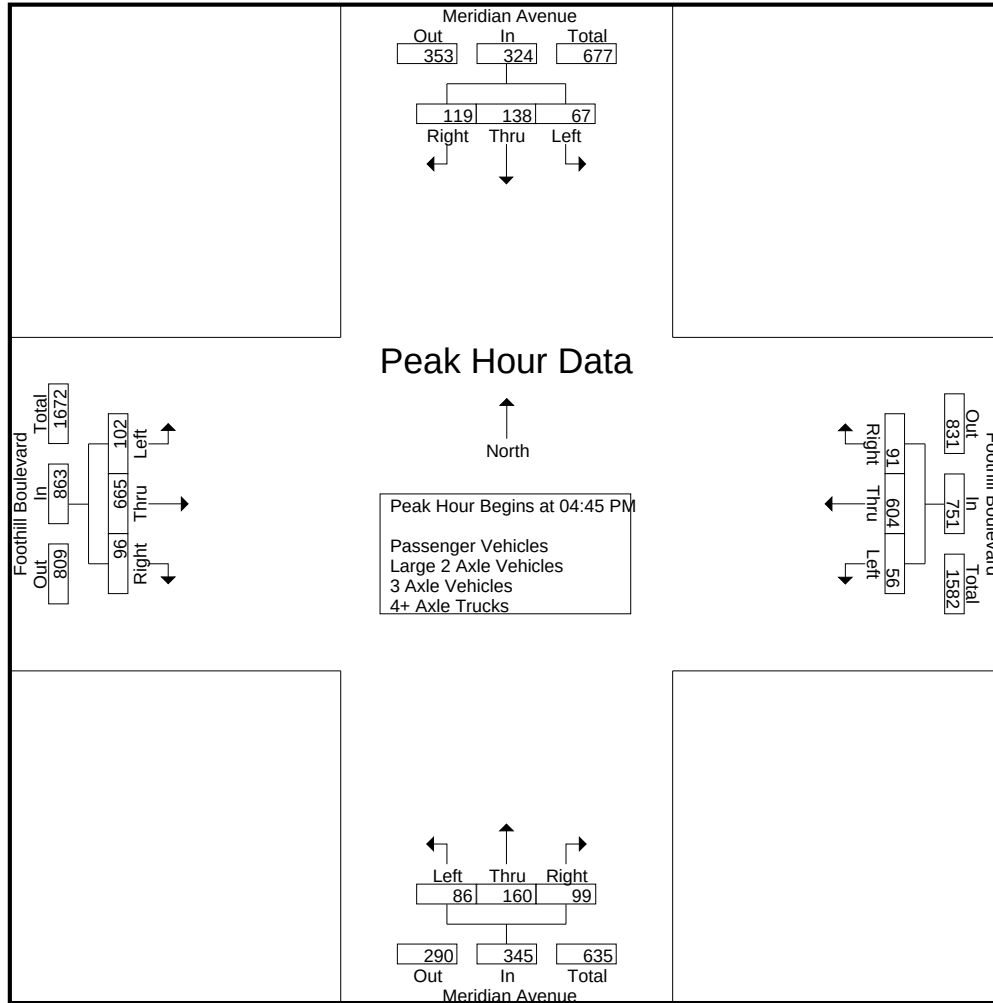
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Meridian Avenue Southbound				Foothill Boulevard Westbound				Meridian Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	18	36	32	86	17	126	15	158	16	43	24	83	16	136	19	171	498
04:15 PM	14	32	40	86	15	130	8	153	14	40	19	73	28	138	17	183	495
04:30 PM	16	44	39	99	18	109	19	146	16	32	27	75	31	164	22	217	537
04:45 PM	15	36	24	75	18	133	18	169	22	39	20	81	23	155	29	207	532
Total	63	148	135	346	68	498	60	626	68	154	90	312	98	593	87	778	2062
05:00 PM	18	23	32	73	10	164	24	198	25	43	29	97	25	197	16	238	606
05:15 PM	19	36	29	84	13	164	22	199	19	43	28	90	35	170	25	230	603
05:30 PM	15	43	34	92	15	143	27	185	20	35	22	77	19	143	26	188	542
05:45 PM	12	29	23	64	17	142	12	171	19	43	30	92	27	138	20	185	512
Total	64	131	118	313	55	613	85	753	83	164	109	356	106	648	87	841	2263
Grand Total	127	279	253	659	123	1111	145	1379	151	318	199	668	204	1241	174	1619	4325
Apprch %	19.3	42.3	38.4		8.9	80.6	10.5		22.6	47.6	29.8		12.6	76.7	10.7		
Total %	2.9	6.5	5.8	15.2	2.8	25.7	3.4	31.9	3.5	7.4	4.6	15.4	4.7	28.7	4	37.4	
Passenger Vehicles	125	278	251	654	121	1071	145	1337	150	315	198	663	204	1202	174	1580	4234
% Passenger Vehicles	98.4	99.6	99.2	99.2	98.4	96.4	100	97	99.3	99.1	99.5	99.3	100	96.9	100	97.6	97.9
Large 2 Axle Vehicles	1	1	2	4	2	18	0	20	1	3	1	5	0	13	0	13	42
% Large 2 Axle Vehicles	0.8	0.4	0.8	0.6	1.6	1.6	0	1.5	0.7	0.9	0.5	0.7	0	1	0	0.8	1
3 Axle Vehicles	1	0	0	1	0	13	0	13	0	0	0	0	0	7	0	7	21
% 3 Axle Vehicles	0.8	0	0	0.2	0	1.2	0	0.9	0	0	0	0	0	0.6	0	0.4	0.5
4+ Axle Trucks	0	0	0	0	0	9	0	9	0	0	0	0	0	19	0	19	28
% 4+ Axle Trucks	0	0	0	0	0	0.8	0	0.7	0	0	0	0	0	1.5	0	1.2	0.6

	Meridian Avenue Southbound				Foothill Boulevard Westbound				Meridian Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	15	36	24	75	18	133	18	169	22	39	20	81	23	155	29	207	532
05:00 PM	18	23	32	73	10	164	24	198	25	43	29	97	25	197	16	238	606
05:15 PM	19	36	29	84	13	164	22	199	19	43	28	90	35	170	25	230	603
05:30 PM	15	43	34	92	15	143	27	185	20	35	22	77	19	143	26	188	542
Total Volume	67	138	119	324	56	604	91	751	86	160	99	345	102	665	96	863	2283
% App. Total	20.7	42.6	36.7		7.5	80.4	12.1		24.9	46.4	28.7		11.8	77.1	11.1		
PHF	.882	.802	.875	.880	.778	.921	.843	.943	.860	.930	.853	.889	.729	.844	.828	.907	.942

City of San Bernardino
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				05:00 PM				05:00 PM				04:30 PM			
+0 mins.	18	36	32	86	10	164	24	198	25	43	29	97	31	164	22	217
+15 mins.	14	32	40	86	13	164	22	199	19	43	28	90	23	155	29	207
+30 mins.	16	44	39	99	15	143	27	185	20	35	22	77	25	197	16	238
+45 mins.	15	36	24	75	17	142	12	171	19	43	30	92	35	170	25	230
Total Volume	63	148	135	346	55	613	85	753	83	164	109	356	114	686	92	892
% App. Total	18.2	42.8	39		7.3	81.4	11.3		23.3	46.1	30.6		12.8	76.9	10.3	
PHF	.875	.841	.844	.874	.809	.934	.787	.946	.830	.953	.908	.918	.814	.871	.793	.937

City of San Bernardino
N/S: Meridian Avenue
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File Name : 02_SBC_Mer_FH PM
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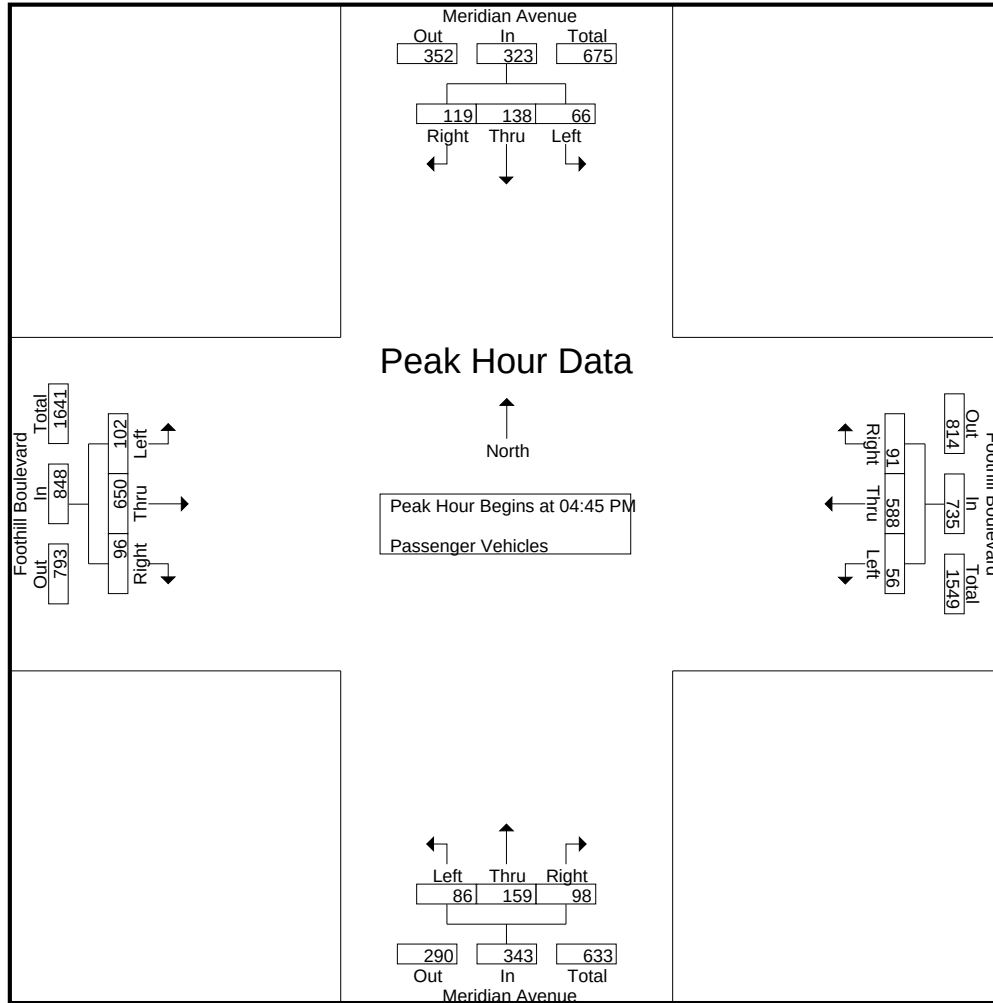
Groups Printed- Passenger Vehicles

	Meridian Avenue Southbound				Foothill Boulevard Westbound				Meridian Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	17	36	32	85	17	121	15	153	15	43	24	82	16	131	19	166	486
04:15 PM	14	32	38	84	13	119	8	140	14	39	19	72	28	133	17	178	474
04:30 PM	16	44	39	99	18	106	19	143	16	31	27	74	31	153	22	206	522
04:45 PM	15	36	24	75	18	129	18	165	22	38	20	80	23	148	29	200	520
Total	62	148	133	343	66	475	60	601	67	151	90	308	98	565	87	750	2002
05:00 PM	18	23	32	73	10	156	24	190	25	43	28	96	25	195	16	236	595
05:15 PM	19	36	29	84	13	163	22	198	19	43	28	90	35	166	25	226	598
05:30 PM	14	43	34	91	15	140	27	182	20	35	22	77	19	141	26	186	536
05:45 PM	12	28	23	63	17	137	12	166	19	43	30	92	27	135	20	182	503
Total	63	130	118	311	55	596	85	736	83	164	108	355	106	637	87	830	2232
Grand Total	125	278	251	654	121	1071	145	1337	150	315	198	663	204	1202	174	1580	4234
Apprch %	19.1	42.5	38.4		9.1	80.1	10.8		22.6	47.5	29.9		12.9	76.1	11		
Total %	3	6.6	5.9	15.4	2.9	25.3	3.4	31.6	3.5	7.4	4.7	15.7	4.8	28.4	4.1	37.3	

	Meridian Avenue Southbound				Foothill Boulevard Westbound				Meridian Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	15	36	24	75	18	129	18	165	22	38	20	80	23	148	29	200	520
05:00 PM	18	23	32	73	10	156	24	190	25	43	28	96	25	195	16	236	595
05:15 PM	19	36	29	84	13	163	22	198	19	43	28	90	35	166	25	226	598
05:30 PM	14	43	34	91	15	140	27	182	20	35	22	77	19	141	26	186	536
Total Volume	66	138	119	323	56	588	91	735	86	159	98	343	102	650	96	848	2249
% App. Total	20.4	42.7	36.8		7.6	80	12.4		25.1	46.4	28.6		12	76.7	11.3		
PHF	.868	.802	.875	.887	.778	.902	.843	.928	.860	.924	.875	.893	.729	.833	.828	.898	.940

City of San Bernardino
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Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	15	36	24	75	18	129	18	165	22	38	20	80	23	148	29	200
+15 mins.	18	23	32	73	10	156	24	190	25	43	28	96	25	195	16	236
+30 mins.	19	36	29	84	13	163	22	198	19	43	28	90	35	166	25	226
+45 mins.	14	43	34	91	15	140	27	182	20	35	22	77	19	141	26	186
Total Volume	66	138	119	323	56	588	91	735	86	159	98	343	102	650	96	848
% App. Total	20.4	42.7	36.8		7.6	80	12.4		25.1	46.4	28.6		12	76.7	11.3	
PHF	.868	.802	.875	.887	.778	.902	.843	.928	.860	.924	.875	.893	.729	.833	.828	.898

City of San Bernardino
N/S: Meridian Avenue
E/W: Foothill Boulevard
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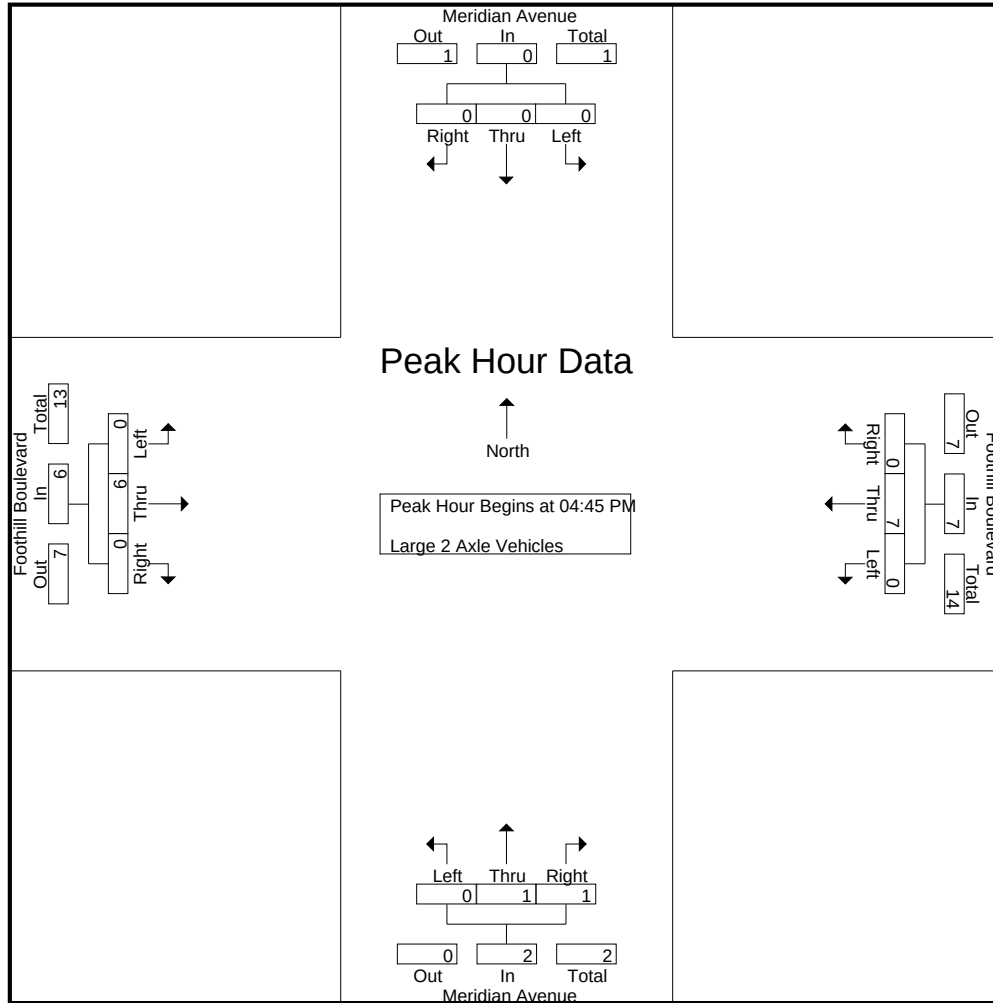
Groups Printed- Large 2 Axle Vehicles

	Meridian Avenue Southbound				Foothill Boulevard Westbound				Meridian Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	0	0	1	0	2	0	2	1	0	0	1	0	2	0	2	6
04:15 PM	0	0	2	2	2	3	0	5	0	1	0	1	0	0	0	0	8
04:30 PM	0	0	0	0	0	3	0	3	0	1	0	1	0	4	0	4	8
04:45 PM	0	0	0	0	0	2	0	2	0	1	0	1	0	1	0	1	4
Total	1	0	2	3	2	10	0	12	1	3	0	4	0	7	0	7	26
05:00 PM	0	0	0	0	0	2	0	2	0	0	1	1	0	2	0	2	5
05:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
05:30 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
05:45 PM	0	1	0	1	0	3	0	3	0	0	0	0	0	1	0	1	5
Total	0	1	0	1	0	8	0	8	0	0	1	1	0	6	0	6	16
Grand Total	1	1	2	4	2	18	0	20	1	3	1	5	0	13	0	13	42
Apprch %	25	25	50		10	90	0		20	60	20		0	100	0		
Total %	2.4	2.4	4.8	9.5	4.8	42.9	0	47.6	2.4	7.1	2.4	11.9	0	31	0	31	

	Meridian Avenue Southbound				Foothill Boulevard Westbound				Meridian Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	2	0	2	0	1	0	1	0	1	0	1	4
05:00 PM	0	0	0	0	0	2	0	2	0	0	1	1	0	2	0	2	5
05:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
05:30 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
Total Volume	0	0	0	0	0	7	0	7	0	1	1	2	0	6	0	6	15
% App. Total	0	0	0		0	100	0		0	50	50		0	100	0		
PHF	.000	.000	.000	.000	.000	.875	.000	.875	.000	.250	.250	.500	.000	.750	.000	.750	.750

City of San Bernardino
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Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	0	2	0	2	0	1	0	1	0	1	0	1
+15 mins.	0	0	0	0	0	2	0	2	0	0	1	1	0	2	0	2
+30 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
+45 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2
Total Volume	0	0	0	0	0	7	0	7	0	1	1	2	0	6	0	6
% App. Total	0	0	0	0	0	100	0		0	50	50		0	100	0	
PHF	.000	.000	.000	.000	.000	.875	.000	.875	.000	.250	.250	.500	.000	.750	.000	.750

City of San Bernardino
N/S: Meridian Avenue
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File Name : 02_SBC_Mer_FH PM
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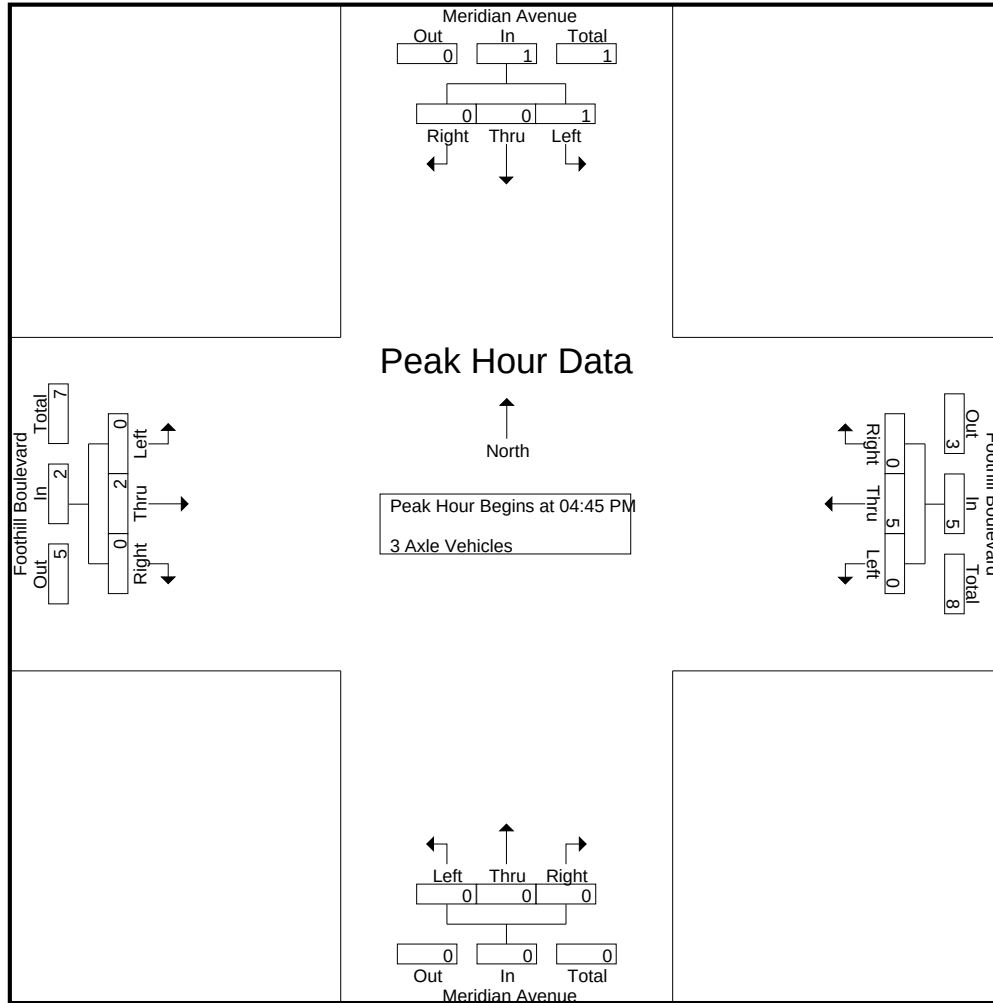
Groups Printed- 3 Axle Vehicles

	Meridian Avenue Southbound				Foothill Boulevard Westbound				Meridian Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	1	0	1	4
04:15 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	2	0	2	5
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
Total	0	0	0	0	0	7	0	7	0	0	0	0	0	5	0	5	12
05:00 PM	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	4
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
05:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
Total	1	0	0	1	0	6	0	6	0	0	0	0	0	2	0	2	9
Grand Total	1	0	0	1	0	13	0	13	0	0	0	0	0	7	0	7	21
Apprch %	100	0	0		0	100	0		0	0	0		0	100	0		
Total %	4.8	0	0	4.8	0	61.9	0	61.9	0	0	0	0	0	33.3	0	33.3	

	Meridian Avenue Southbound				Foothill Boulevard Westbound				Meridian Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
05:00 PM	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	4
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
05:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	1	0	0	1	0	5	0	5	0	0	0	0	0	2	0	2	8
% App. Total	100	0	0		0	100	0		0	0	0		0	100	0		
PHF	.250	.000	.000	.250	.000	.313	.000	.313	.000	.000	.000	.000	.000	.500	.000	.500	.500

City of San Bernardino
N/S: Meridian Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 02_SBC_Mer_FH PM
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Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
+45 mins.	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	0	1	0	5	0	5	0	0	0	0	0	2	0	2
% App. Total	100	0	0		0	100	0		0	0	0		0	100	0	
PHF	.250	.000	.000	.250	.000	.313	.000	.313	.000	.000	.000	.000	.000	.500	.000	.500

City of San Bernardino
N/S: Meridian Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 02_SBC_Mer_FH PM
Site Code : 22524137
Start Date : 2/13/2024
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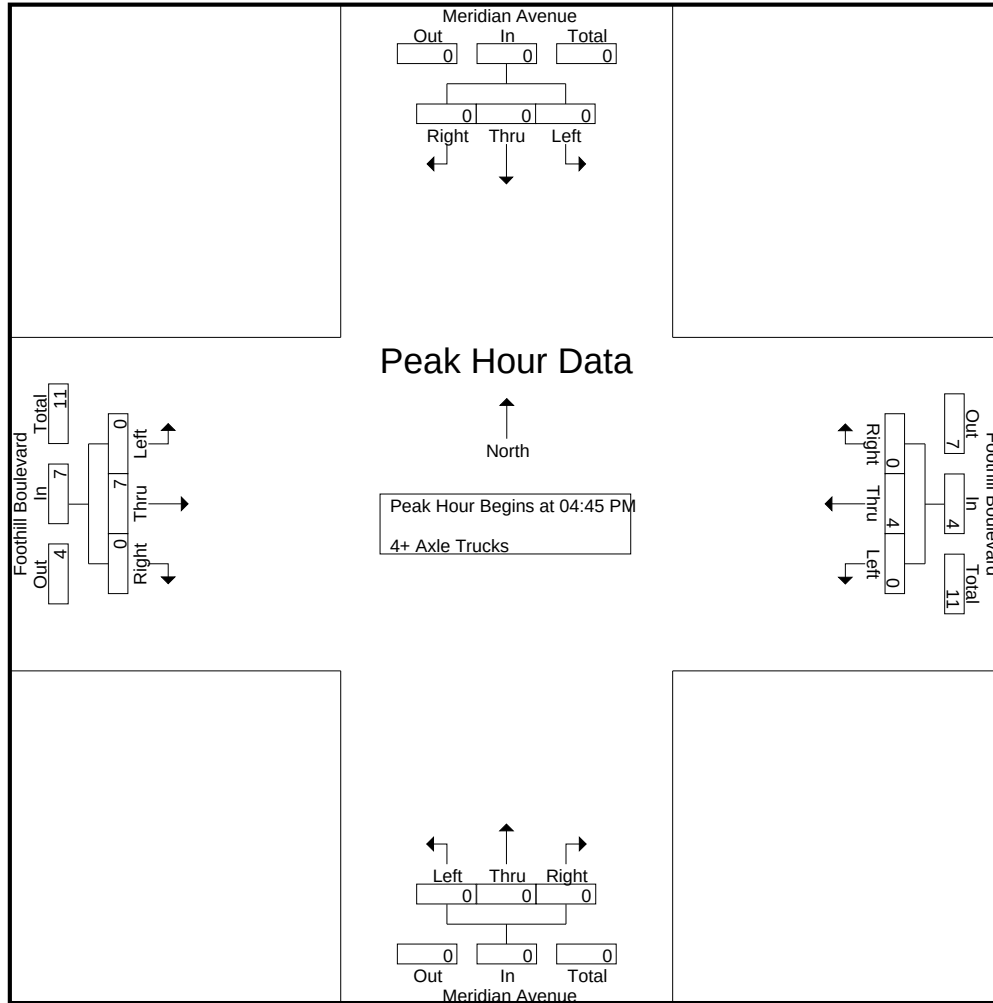
Groups Printed- 4+ Axle Trucks

	Meridian Avenue Southbound				Foothill Boulevard Westbound				Meridian Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
04:15 PM	0	0	0	0	0	5	0	5	0	0	0	0	0	3	0	3	8
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	6
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	5	0	5	6
Total	0	0	0	0	0	6	0	6	0	0	0	0	0	16	0	16	22
05:00 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
05:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	3	0	3	0	0	0	0	0	3	0	3	6
Grand Total	0	0	0	0	0	9	0	9	0	0	0	0	0	19	0	19	28
Apprch %	0	0	0		0	100	0		0	0	0		0	100	0		
Total %	0	0	0	0	0	32.1	0	32.1	0	0	0	0	0	67.9	0	67.9	

	Meridian Avenue Southbound				Foothill Boulevard Westbound				Meridian Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	5	0	5	6
05:00 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
05:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	4	0	4	0	0	0	0	0	7	0	7	11
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.350	.000	.350	.458

City of San Bernardino
N/S: Meridian Avenue
E/W: Foothill Boulevard
Weather: Clear

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Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	5	0	5
+15 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	4	0	4	0	0	0	0	0	7	0	7
% App. Total	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.350	.000	.350

Location: San Bernardino
 N/S: Meridian Avenue
 E/W: Foothill Boulevard



Date: 2/13/2024
 Day: Tuesday

PEDESTRIANS

	North Leg Meridian Avenue Pedestrians	East Leg Foothill Boulevard Pedestrians	South Leg Meridian Avenue Pedestrians	West Leg Foothill Boulevard Pedestrians	
7:00 AM	0	0	1	1	2
7:15 AM	0	1	0	0	1
7:30 AM	3	1	0	0	4
7:45 AM	0	0	2	4	6
8:00 AM	0	1	0	2	3
8:15 AM	2	1	0	1	4
8:30 AM	1	0	0	0	1
8:45 AM	1	0	0	0	1
TOTAL VOLUMES:	7	4	3	8	22

	North Leg Meridian Avenue Pedestrians	East Leg Foothill Boulevard Pedestrians	South Leg Meridian Avenue Pedestrians	West Leg Foothill Boulevard Pedestrians	
4:00 PM	1	1	3	2	7
4:15 PM	1	2	4	2	9
4:30 PM	1	1	3	2	7
4:45 PM	0	1	2	6	9
5:00 PM	0	1	0	3	4
5:15 PM	2	0	1	1	4
5:30 PM	3	1	1	0	5
5:45 PM	2	1	1	7	11
TOTAL VOLUMES:	10	8	15	23	56

Location: San Bernardino
 N/S: Meridian Avenue
 E/W: Foothill Boulevard



Date: 2/13/2024
 Day: Tuesday

BICYCLES

		Southbound Meridian Avenue			Westbound Foothill Boulevard			Northbound Meridian Avenue			Eastbound Foothill Boulevard			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
TOTAL VOLUMES:		0	0	0	0	2	0	0	0	0	0	0	0	2

		Southbound Meridian Avenue			Westbound Foothill Boulevard			Northbound Meridian Avenue			Eastbound Foothill Boulevard			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	4:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	2
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	2
	4:30 PM	0	0	0	0	1	0	0	0	0	0	0	1	2
	4:45 PM	0	1	1	0	1	0	0	0	1	1	0	1	6
	5:00 PM	0	1	0	0	0	0	0	0	1	0	0	0	2
	5:15 PM	0	0	0	0	1	0	0	4	0	0	0	0	5
	5:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	5:45 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
TOTAL VOLUMES:		0	3	1	1	4	0	0	5	2	1	1	4	22

City of San Bernardino
N/S: Dallas Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 03_SBC_Dal_FH AM
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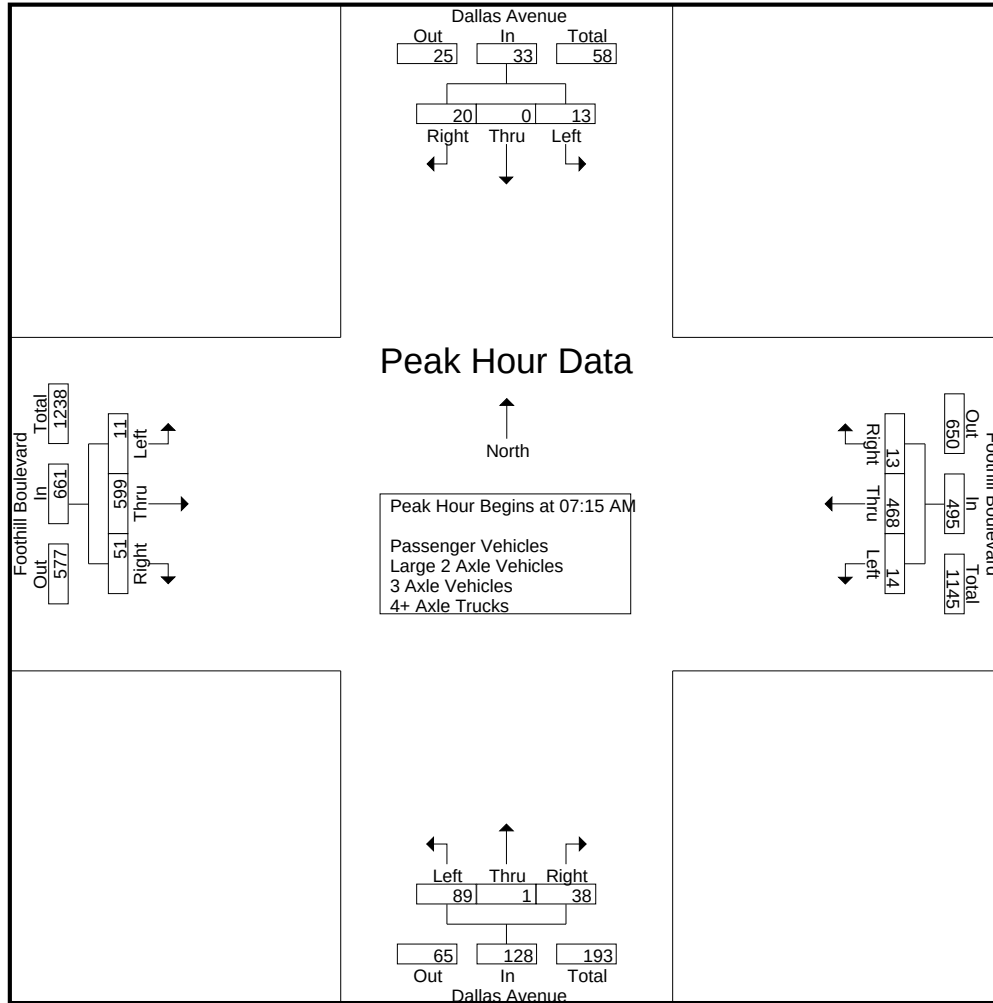
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Dallas Avenue Southbound				Foothill Boulevard Westbound				Dallas Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	2	0	7	9	1	59	0	60	14	0	6	20	1	86	5	92	181
07:15 AM	1	0	5	6	3	98	2	103	25	0	8	33	1	112	4	117	259
07:30 AM	8	0	7	15	2	142	3	147	40	0	12	52	1	141	11	153	367
07:45 AM	2	0	6	8	4	128	4	136	16	1	8	25	4	192	16	212	381
Total	13	0	25	38	10	427	9	446	95	1	34	130	7	531	36	574	1188
08:00 AM	2	0	2	4	5	100	4	109	8	0	10	18	5	154	20	179	310
08:15 AM	4	0	1	5	4	103	1	108	9	0	14	23	3	107	10	120	256
08:30 AM	6	0	7	13	3	113	1	117	17	0	6	23	3	98	5	106	259
08:45 AM	8	0	4	12	1	104	1	106	7	0	4	11	0	91	15	106	235
Total	20	0	14	34	13	420	7	440	41	0	34	75	11	450	50	511	1060
Grand Total	33	0	39	72	23	847	16	886	136	1	68	205	18	981	86	1085	2248
Apprch %	45.8	0	54.2		2.6	95.6	1.8		66.3	0.5	33.2		1.7	90.4	7.9		
Total %	1.5	0	1.7	3.2	1	37.7	0.7	39.4	6	0	3	9.1	0.8	43.6	3.8	48.3	
Passenger Vehicles	32	0	38	70	22	801	13	836	135	1	68	204	17	919	86	1022	2132
% Passenger Vehicles	97	0	97.4	97.2	95.7	94.6	81.2	94.4	99.3	100	100	99.5	94.4	93.7	100	94.2	94.8
Large 2 Axle Vehicles	1	0	1	2	1	17	3	21	1	0	0	1	1	27	0	28	52
% Large 2 Axle Vehicles	3	0	2.6	2.8	4.3	2	18.8	2.4	0.7	0	0	0.5	5.6	2.8	0	2.6	2.3
3 Axle Vehicles	0	0	0	0	0	8	0	8	0	0	0	0	0	14	0	14	22
% 3 Axle Vehicles	0	0	0	0	0	0.9	0	0.9	0	0	0	0	0	1.4	0	1.3	1
4+ Axle Trucks	0	0	0	0	0	21	0	21	0	0	0	0	0	21	0	21	42
% 4+ Axle Trucks	0	0	0	0	0	2.5	0	2.4	0	0	0	0	0	2.1	0	1.9	1.9

	Dallas Avenue Southbound				Foothill Boulevard Westbound				Dallas Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	1	0	5	6	3	98	2	103	25	0	8	33	1	112	4	117	259
07:30 AM	8	0	7	15	2	142	3	147	40	0	12	52	1	141	11	153	367
07:45 AM	2	0	6	8	4	128	4	136	16	1	8	25	4	192	16	212	381
08:00 AM	2	0	2	4	5	100	4	109	8	0	10	18	5	154	20	179	310
Total Volume	13	0	20	33	14	468	13	495	89	1	38	128	11	599	51	661	1317
% App. Total	39.4	0	60.6		2.8	94.5	2.6		69.5	0.8	29.7		1.7	90.6	7.7		
PHF	.406	.000	.714	.550	.700	.824	.813	.842	.556	.250	.792	.615	.550	.780	.638	.779	.864

City of San Bernardino
N/S: Dallas Avenue
E/W: Foothill Boulevard
Weather: Clear

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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:30 AM				07:00 AM				07:30 AM			
+0 mins.	2	0	7	9	2	142	3	147	14	0	6	20	1	141	11	153
+15 mins.	1	0	5	6	4	128	4	136	25	0	8	33	4	192	16	212
+30 mins.	8	0	7	15	5	100	4	109	40	0	12	52	5	154	20	179
+45 mins.	2	0	6	8	4	103	1	108	16	1	8	25	3	107	10	120
Total Volume	13	0	25	38	15	473	12	500	95	1	34	130	13	594	57	664
% App. Total	34.2	0	65.8		3	94.6	2.4		73.1	0.8	26.2		2	89.5	8.6	
PHF	.406	.000	.893	.633	.750	.833	.750	.850	.594	.250	.708	.625	.650	.773	.713	.783

City of San Bernardino
N/S: Dallas Avenue
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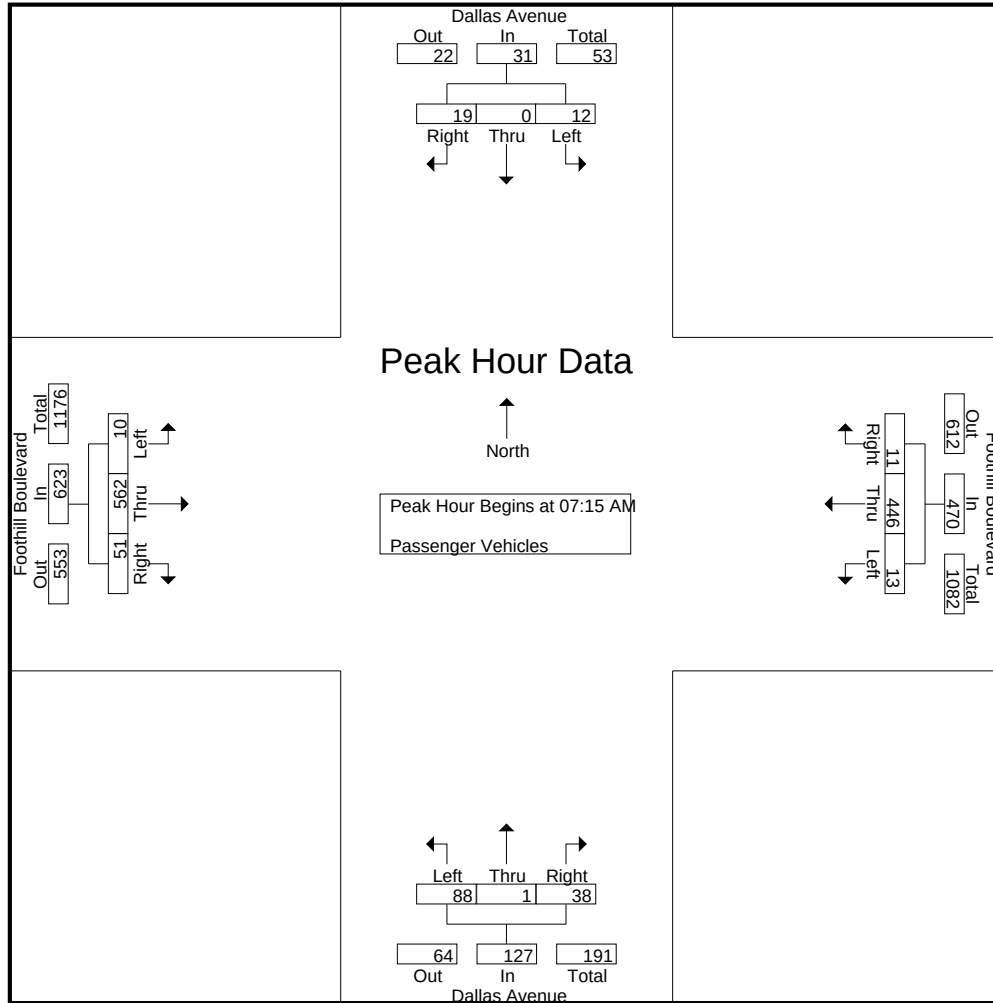
Groups Printed- Passenger Vehicles

	Dallas Avenue Southbound				Foothill Boulevard Westbound				Dallas Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	2	0	7	9	1	54	0	55	14	0	6	20	1	77	5	83	167
07:15 AM	0	0	5	5	3	91	1	95	25	0	8	33	0	107	4	111	244
07:30 AM	8	0	6	14	1	136	3	140	40	0	12	52	1	132	11	144	350
07:45 AM	2	0	6	8	4	124	4	132	15	1	8	24	4	181	16	201	365
Total	12	0	24	36	9	405	8	422	94	1	34	129	6	497	36	539	1126
08:00 AM	2	0	2	4	5	95	3	103	8	0	10	18	5	142	20	167	292
08:15 AM	4	0	1	5	4	98	0	102	9	0	14	23	3	100	10	113	243
08:30 AM	6	0	7	13	3	107	1	111	17	0	6	23	3	94	5	102	249
08:45 AM	8	0	4	12	1	96	1	98	7	0	4	11	0	86	15	101	222
Total	20	0	14	34	13	396	5	414	41	0	34	75	11	422	50	483	1006
Grand Total	32	0	38	70	22	801	13	836	135	1	68	204	17	919	86	1022	2132
Apprch %	45.7	0	54.3		2.6	95.8	1.6		66.2	0.5	33.3		1.7	89.9	8.4		
Total %	1.5	0	1.8	3.3	1	37.6	0.6	39.2	6.3	0	3.2	9.6	0.8	43.1	4	47.9	

	Dallas Avenue Southbound				Foothill Boulevard Westbound				Dallas Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	5	5	3	91	1	95	25	0	8	33	0	107	4	111	244
07:30 AM	8	0	6	14	1	136	3	140	40	0	12	52	1	132	11	144	350
07:45 AM	2	0	6	8	4	124	4	132	15	1	8	24	4	181	16	201	365
08:00 AM	2	0	2	4	5	95	3	103	8	0	10	18	5	142	20	167	292
Total Volume	12	0	19	31	13	446	11	470	88	1	38	127	10	562	51	623	1251
% App. Total	38.7	0	61.3		2.8	94.9	2.3		69.3	0.8	29.9		1.6	90.2	8.2		
PHF	.375	.000	.792	.554	.650	.820	.688	.839	.550	.250	.792	.611	.500	.776	.638	.775	.857

City of San Bernardino
N/S: Dallas Avenue
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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	5	5	3	91	1	95	25	0	8	33	0	107	4	111
+15 mins.	8	0	6	14	1	136	3	140	40	0	12	52	1	132	11	144
+30 mins.	2	0	6	8	4	124	4	132	15	1	8	24	4	181	16	201
+45 mins.	2	0	2	4	5	95	3	103	8	0	10	18	5	142	20	167
Total Volume	12	0	19	31	13	446	11	470	88	1	38	127	10	562	51	623
% App. Total	38.7	0	61.3		2.8	94.9	2.3		69.3	0.8	29.9		1.6	90.2	8.2	
PHF	.375	.000	.792	.554	.650	.820	.688	.839	.550	.250	.792	.611	.500	.776	.638	.775

City of San Bernardino
N/S: Dallas Avenue
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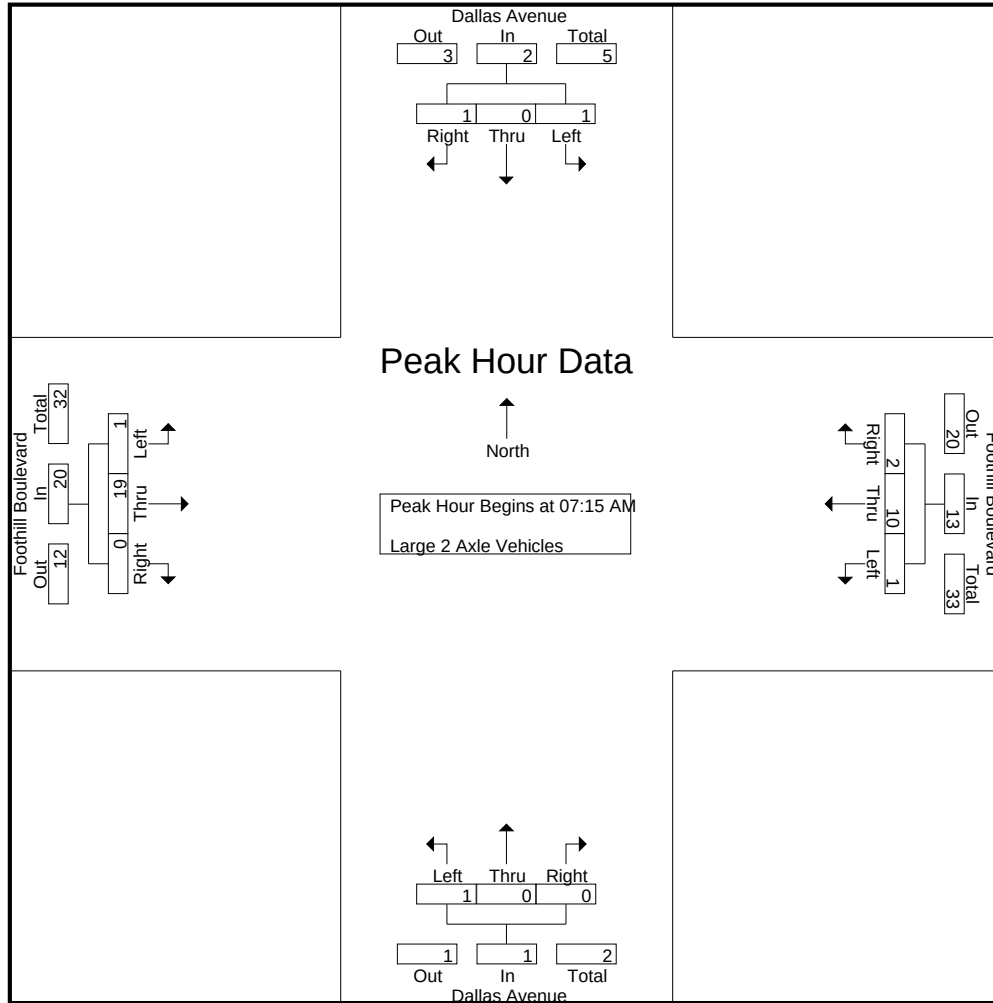
Groups Printed- Large 2 Axle Vehicles

	Dallas Avenue Southbound				Foothill Boulevard Westbound				Dallas Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	4	0	4	0	0	0	0	0	4	0	4	8
07:15 AM	1	0	0	1	0	3	1	4	0	0	0	0	1	4	0	5	10
07:30 AM	0	0	1	1	1	4	0	5	0	0	0	0	0	5	0	5	11
07:45 AM	0	0	0	0	0	1	0	1	1	0	0	1	0	6	0	6	8
Total	1	0	1	2	1	12	1	14	1	0	0	1	1	19	0	20	37
08:00 AM	0	0	0	0	0	2	1	3	0	0	0	0	0	4	0	4	7
08:15 AM	0	0	0	0	0	1	1	2	0	0	0	0	0	1	0	1	3
08:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
08:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
Total	0	0	0	0	0	5	2	7	0	0	0	0	0	8	0	8	15
Grand Total	1	0	1	2	1	17	3	21	1	0	0	1	1	27	0	28	52
Apprch %	50	0	50		4.8	81	14.3		100	0	0		3.6	96.4	0		
Total %	1.9	0	1.9	3.8	1.9	32.7	5.8	40.4	1.9	0	0	1.9	1.9	51.9	0	53.8	

	Dallas Avenue Southbound				Foothill Boulevard Westbound				Dallas Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	1	0	0	1	0	3	1	4	0	0	0	0	1	4	0	5	10
07:30 AM	0	0	1	1	1	4	0	5	0	0	0	0	0	5	0	5	11
07:45 AM	0	0	0	0	0	1	0	1	1	0	0	1	0	6	0	6	8
08:00 AM	0	0	0	0	0	2	1	3	0	0	0	0	0	4	0	4	7
Total Volume	1	0	1	2	1	10	2	13	1	0	0	1	1	19	0	20	36
% App. Total	50	0	50		7.7	76.9	15.4		100	0	0		5	95	0		
PHF	.250	.000	.250	.500	.250	.625	.500	.650	.250	.000	.000	.250	.250	.792	.000	.833	.818

City of San Bernardino
N/S: Dallas Avenue
E/W: Foothill Boulevard
Weather: Clear

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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	1	0	0	1	0	3	1	4	0	0	0	0	1	4	0	5
+15 mins.	0	0	1	1	1	4	0	5	0	0	0	0	0	5	0	5
+30 mins.	0	0	0	0	0	1	0	1	1	0	0	1	0	6	0	6
+45 mins.	0	0	0	0	0	2	1	3	0	0	0	0	0	4	0	4
Total Volume	1	0	1	2	1	10	2	13	1	0	0	1	1	19	0	20
% App. Total	50	0	50		7.7	76.9	15.4		100	0	0		5	95	0	
PHF	.250	.000	.250	.500	.250	.625	.500	.650	.250	.000	.000	.250	.250	.792	.000	.833

City of San Bernardino
N/S: Dallas Avenue
E/W: Foothill Boulevard
Weather: Clear

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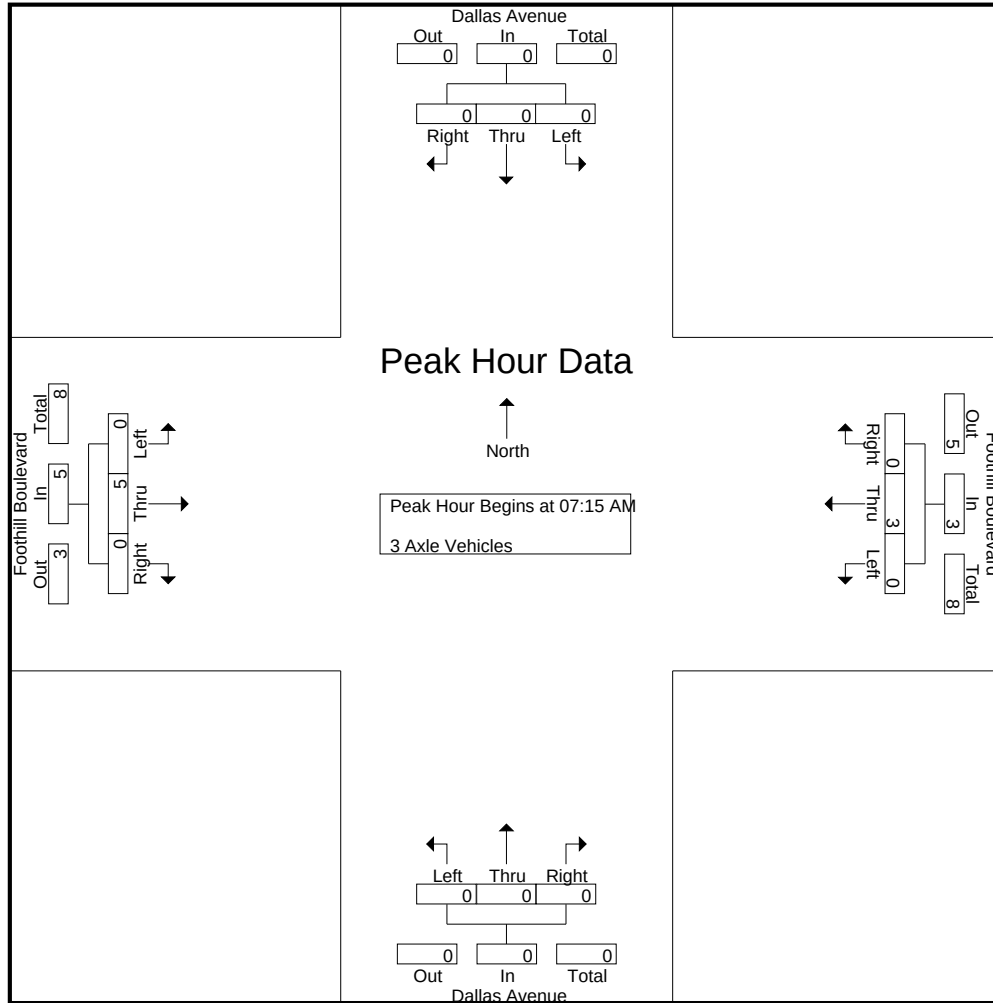
Groups Printed- 3 Axle Vehicles

	Dallas Avenue Southbound				Foothill Boulevard Westbound				Dallas Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	4
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
07:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
Total	0	0	0	0	0	1	0	1	0	0	0	0	0	7	0	7	8
08:00 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
08:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
08:30 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
08:45 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
Total	0	0	0	0	0	7	0	7	0	0	0	0	0	7	0	7	14
Grand Total	0	0	0	0	0	8	0	8	0	0	0	0	0	14	0	14	22
Apprch %	0	0	0		0	100	0		0	0	0		0	100	0		
Total %	0	0	0	0	0	36.4	0	36.4	0	0	0	0	0	63.6	0	63.6	

	Dallas Avenue Southbound				Foothill Boulevard Westbound				Dallas Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
07:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
08:00 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
Total Volume	0	0	0	0	0	3	0	3	0	0	0	0	0	5	0	5	8
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.375	.000	.375	.000	.000	.000	.000	.000	.625	.000	.625	.500

City of San Bernardino
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Weather: Clear

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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
+30 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2
+45 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2
Total Volume	0	0	0	0	0	3	0	3	0	0	0	0	0	5	0	5
% App. Total	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0
PHF	.000	.000	.000	.000	.000	.375	.000	.375	.000	.000	.000	.000	.000	.625	.000	.625

City of San Bernardino
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E/W: Foothill Boulevard
Weather: Clear

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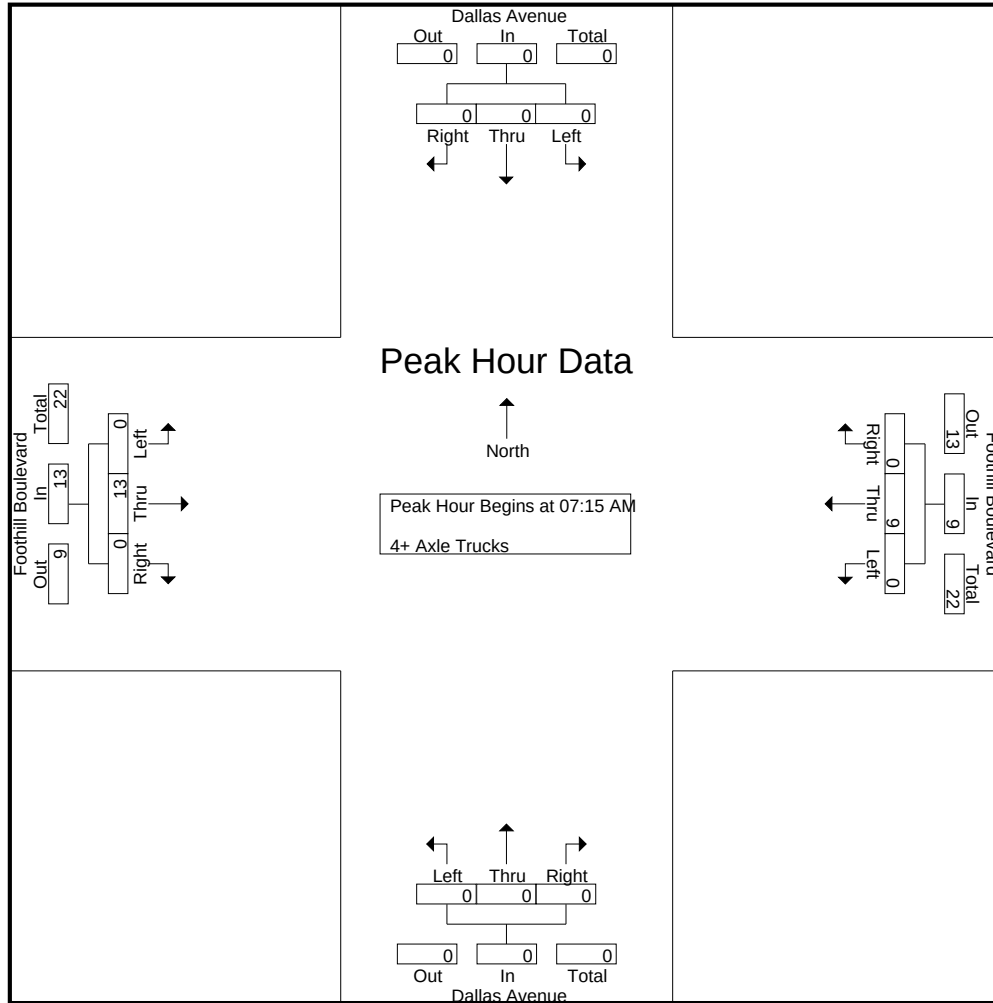
Groups Printed- 4+ Axle Trucks

	Dallas Avenue Southbound				Foothill Boulevard Westbound				Dallas Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
07:15 AM	0	0	0	0	0	4	0	4	0	0	0	0	0	1	0	1	5
07:30 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0	3	5
07:45 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0	3	5
Total	0	0	0	0	0	9	0	9	0	0	0	0	0	8	0	8	17
08:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	6	0	6	7
08:15 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	4	0	4	7
08:30 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	1	0	1	4
08:45 AM	0	0	0	0	0	5	0	5	0	0	0	0	0	2	0	2	7
Total	0	0	0	0	0	12	0	12	0	0	0	0	0	13	0	13	25
Grand Total	0	0	0	0	0	21	0	21	0	0	0	0	0	21	0	21	42
Apprch %	0	0	0		0	100	0		0	0	0		0	100	0		
Total %	0	0	0		0	50	0		0	0	0		0	50	0		

	Dallas Avenue Southbound				Foothill Boulevard Westbound				Dallas Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	4	0	4	0	0	0	0	0	1	0	1	5
07:30 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0	3	5
07:45 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0	3	5
08:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	6	0	6	7
Total Volume	0	0	0	0	0	9	0	9	0	0	0	0	0	13	0	13	22
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.563	.000	.563	.000	.000	.000	.000	.000	.542	.000	.542	.786

City of San Bernardino
N/S: Dallas Avenue
E/W: Foothill Boulevard
Weather: Clear

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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	4	0	4	0	0	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0	3
+30 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0	3
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	6	0	6
Total Volume	0	0	0	0	0	9	0	9	0	0	0	0	0	13	0	13
% App. Total	0	0	0	0	0	100	0	100	0	0	0	0	0	100	0	100
PHF	.000	.000	.000	.000	.000	.563	.000	.563	.000	.000	.000	.000	.000	.542	.000	.542

City of San Bernardino
N/S: Dallas Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 03_SBC_Dal_FH PM
Site Code : 22524137
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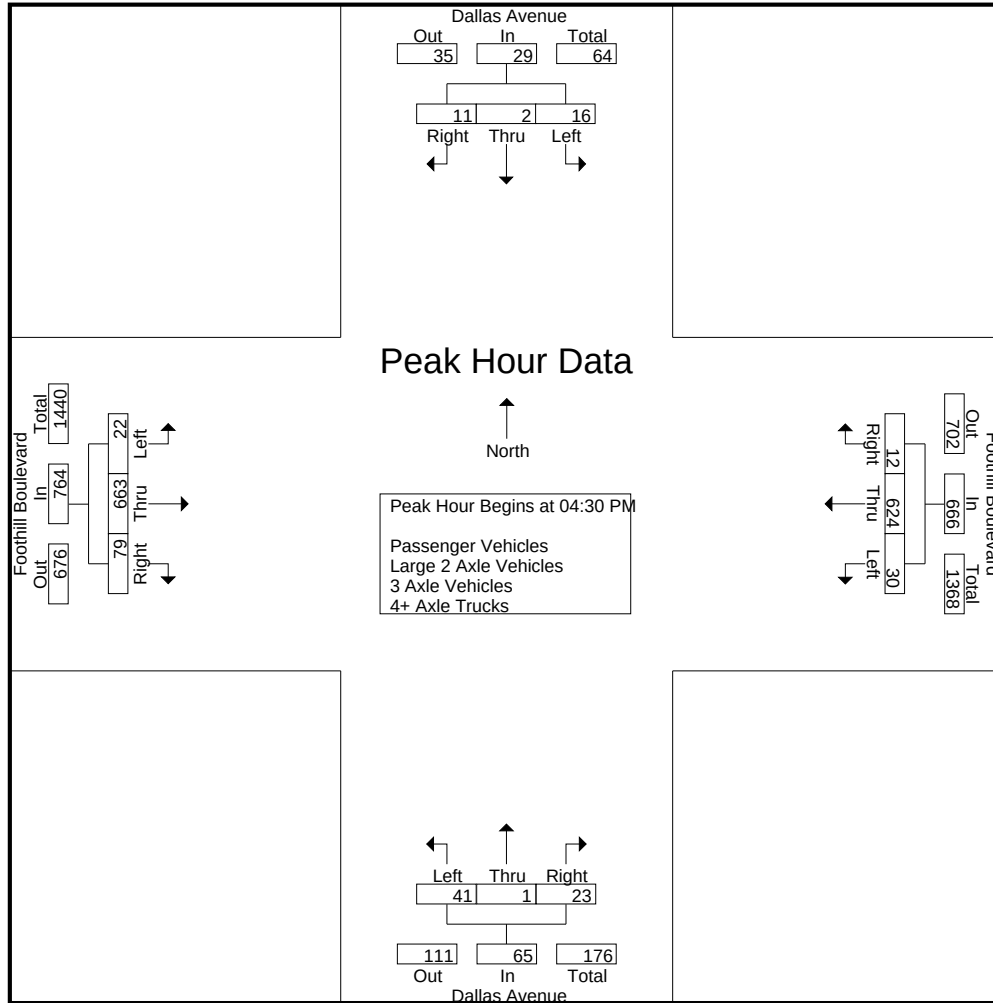
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Dallas Avenue Southbound				Foothill Boulevard Westbound				Dallas Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	3	0	2	5	4	154	3	161	9	0	5	14	8	180	15	203	383
04:15 PM	1	0	3	4	10	142	5	157	7	0	10	17	1	164	13	178	356
04:30 PM	3	0	2	5	4	150	5	159	10	0	2	12	3	170	21	194	370
04:45 PM	0	1	3	4	8	169	0	177	6	1	9	16	8	147	19	174	371
Total	7	1	10	18	26	615	13	654	32	1	26	59	20	661	68	749	1480
05:00 PM	7	0	5	12	9	166	6	181	10	0	7	17	4	186	17	207	417
05:15 PM	6	1	1	8	9	139	1	149	15	0	5	20	7	160	22	189	366
05:30 PM	1	0	4	5	2	134	6	142	14	0	15	29	7	133	13	153	329
05:45 PM	2	0	6	8	11	150	4	165	7	0	6	13	9	164	22	195	381
Total	16	1	16	33	31	589	17	637	46	0	33	79	27	643	74	744	1493
Grand Total	23	2	26	51	57	1204	30	1291	78	1	59	138	47	1304	142	1493	2973
Apprch %	45.1	3.9	51		4.4	93.3	2.3		56.5	0.7	42.8		3.1	87.3	9.5		
Total %	0.8	0.1	0.9	1.7	1.9	40.5	1	43.4	2.6	0	2	4.6	1.6	43.9	4.8	50.2	
Passenger Vehicles	22	2	25	49	57	1166	30	1253	78	1	59	138	47	1263	142	1452	2892
% Passenger Vehicles	95.7	100	96.2	96.1	100	96.8	100	97.1	100	100	100	100	100	96.9	100	97.3	97.3
Large 2 Axle Vehicles	1	0	1	2	0	18	0	18	0	0	0	0	0	17	0	17	37
% Large 2 Axle Vehicles	4.3	0	3.8	3.9	0	1.5	0	1.4	0	0	0	0	0	1.3	0	1.1	1.2
3 Axle Vehicles	0	0	0	0	0	10	0	10	0	0	0	0	0	7	0	7	17
% 3 Axle Vehicles	0	0	0	0	0	0.8	0	0.8	0	0	0	0	0	0.5	0	0.5	0.6
4+ Axle Trucks	0	0	0	0	0	10	0	10	0	0	0	0	0	17	0	17	27
% 4+ Axle Trucks	0	0	0	0	0	0.8	0	0.8	0	0	0	0	0	1.3	0	1.1	0.9

	Dallas Avenue Southbound				Foothill Boulevard Westbound				Dallas Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	3	0	2	5	4	150	5	159	10	0	2	12	3	170	21	194	370
04:45 PM	0	1	3	4	8	169	0	177	6	1	9	16	8	147	19	174	371
05:00 PM	7	0	5	12	9	166	6	181	10	0	7	17	4	186	17	207	417
05:15 PM	6	1	1	8	9	139	1	149	15	0	5	20	7	160	22	189	366
Total Volume	16	2	11	29	30	624	12	666	41	1	23	65	22	663	79	764	1524
% App. Total	55.2	6.9	37.9		4.5	93.7	1.8		63.1	1.5	35.4		2.9	86.8	10.3		
PHF	.571	.500	.550	.604	.833	.923	.500	.920	.683	.250	.639	.813	.688	.891	.898	.923	.914

City of San Bernardino
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				04:15 PM				04:45 PM				04:30 PM			
+0 mins.	7	0	5	12	10	142	5	157	6	1	9	16	3	170	21	194
+15 mins.	6	1	1	8	4	150	5	159	10	0	7	17	8	147	19	174
+30 mins.	1	0	4	5	8	169	0	177	15	0	5	20	4	186	17	207
+45 mins.	2	0	6	8	9	166	6	181	14	0	15	29	7	160	22	189
Total Volume	16	1	16	33	31	627	16	674	45	1	36	82	22	663	79	764
% App. Total	48.5	3	48.5		4.6	93	2.4		54.9	1.2	43.9		2.9	86.8	10.3	
PHF	.571	.250	.667	.688	.775	.928	.667	.931	.750	.250	.600	.707	.688	.891	.898	.923

City of San Bernardino
N/S: Dallas Avenue
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File Name : 03_SBC_Dal_FH PM
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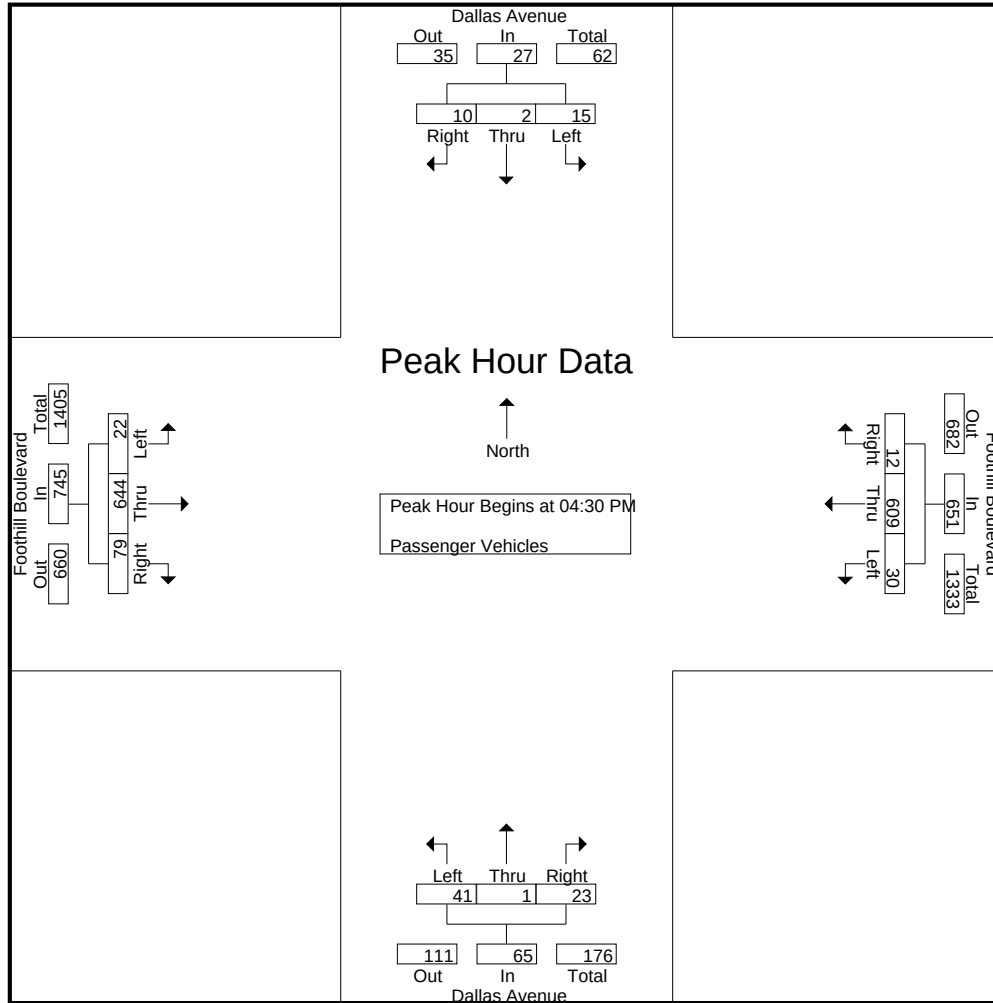
Groups Printed- Passenger Vehicles

	Dallas Avenue Southbound				Foothill Boulevard Westbound				Dallas Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	3	0	2	5	4	151	3	158	9	0	5	14	8	173	15	196	373
04:15 PM	1	0	3	4	10	136	5	151	7	0	10	17	1	157	13	171	343
04:30 PM	3	0	1	4	4	146	5	155	10	0	2	12	3	163	21	187	358
04:45 PM	0	1	3	4	8	163	0	171	6	1	9	16	8	142	19	169	360
Total	7	1	9	17	26	596	13	635	32	1	26	59	20	635	68	723	1434
05:00 PM	6	0	5	11	9	164	6	179	10	0	7	17	4	182	17	203	410
05:15 PM	6	1	1	8	9	136	1	146	15	0	5	20	7	157	22	186	360
05:30 PM	1	0	4	5	2	129	6	137	14	0	15	29	7	129	13	149	320
05:45 PM	2	0	6	8	11	141	4	156	7	0	6	13	9	160	22	191	368
Total	15	1	16	32	31	570	17	618	46	0	33	79	27	628	74	729	1458
Grand Total	22	2	25	49	57	1166	30	1253	78	1	59	138	47	1263	142	1452	2892
Apprch %	44.9	4.1	51		4.5	93.1	2.4		56.5	0.7	42.8		3.2	87	9.8		
Total %	0.8	0.1	0.9	1.7	2	40.3	1	43.3	2.7	0	2	4.8	1.6	43.7	4.9	50.2	

	Dallas Avenue Southbound				Foothill Boulevard Westbound				Dallas Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	3	0	1	4	4	146	5	155	10	0	2	12	3	163	21	187	358
04:45 PM	0	1	3	4	8	163	0	171	6	1	9	16	8	142	19	169	360
05:00 PM	6	0	5	11	9	164	6	179	10	0	7	17	4	182	17	203	410
05:15 PM	6	1	1	8	9	136	1	146	15	0	5	20	7	157	22	186	360
Total Volume	15	2	10	27	30	609	12	651	41	1	23	65	22	644	79	745	1488
% App. Total	55.6	7.4	37		4.6	93.5	1.8		63.1	1.5	35.4		3	86.4	10.6		
PHF	.625	.500	.500	.614	.833	.928	.500	.909	.683	.250	.639	.813	.688	.885	.898	.917	.907

City of San Bernardino
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Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	3	0	1	4	4	146	5	155	10	0	2	12	3	163	21	187
+15 mins.	0	1	3	4	8	163	0	171	6	1	9	16	8	142	19	169
+30 mins.	6	0	5	11	9	164	6	179	10	0	7	17	4	182	17	203
+45 mins.	6	1	1	8	9	136	1	146	15	0	5	20	7	157	22	186
Total Volume	15	2	10	27	30	609	12	651	41	1	23	65	22	644	79	745
% App. Total	55.6	7.4	37		4.6	93.5	1.8		63.1	1.5	35.4		3	86.4	10.6	
PHF	.625	.500	.500	.614	.833	.928	.500	.909	.683	.250	.639	.813	.688	.885	.898	.917

City of San Bernardino
N/S: Dallas Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 03_SBC_Dal_FH PM
Site Code : 22524137
Start Date : 2/13/2024
Page No : 1

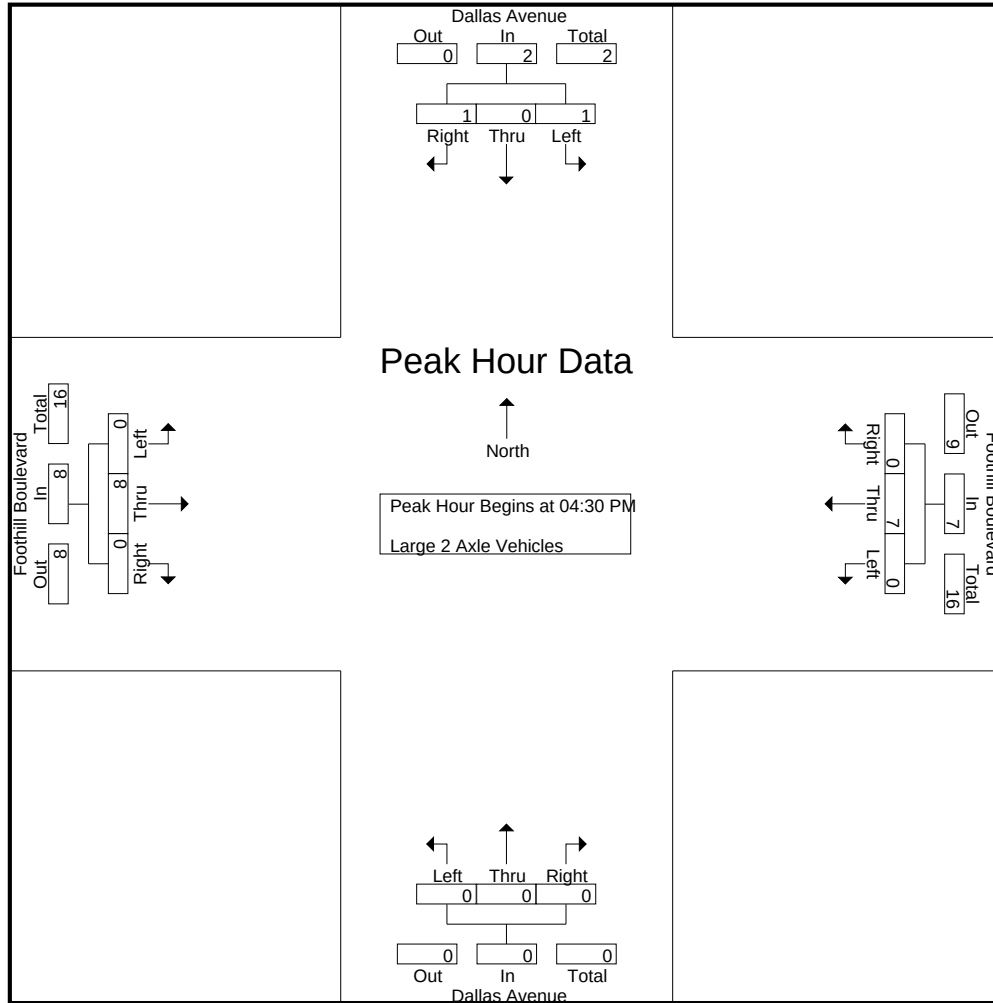
Groups Printed- Large 2 Axle Vehicles

	Dallas Avenue Southbound				Foothill Boulevard Westbound				Dallas Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	4	0	4	5
04:15 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	4	0	4	7
04:30 PM	0	0	1	1	0	2	0	2	0	0	0	0	0	3	0	3	6
04:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
Total	0	0	1	1	0	8	0	8	0	0	0	0	0	13	0	13	22
05:00 PM	1	0	0	1	0	2	0	2	0	0	0	0	0	2	0	2	5
05:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
05:30 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	1	0	1	4
05:45 PM	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	4
Total	1	0	0	1	0	10	0	10	0	0	0	0	0	4	0	4	15
Grand Total	1	0	1	2	0	18	0	18	0	0	0	0	0	17	0	17	37
Apprch %	50	0	50		0	100	0		0	0	0		0	100	0		
Total %	2.7	0	2.7	5.4	0	48.6	0	48.6	0	0	0	0	0	45.9	0	45.9	

	Dallas Avenue Southbound				Foothill Boulevard Westbound				Dallas Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	1	1	0	2	0	2	0	0	0	0	0	3	0	3	6
04:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
05:00 PM	1	0	0	1	0	2	0	2	0	0	0	0	0	2	0	2	5
05:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
Total Volume	1	0	1	2	0	7	0	7	0	0	0	0	0	8	0	8	17
% App. Total	50	0	50		0	100	0		0	0	0		0	100	0		
PHF	.250	.000	.250	.500	.000	.875	.000	.875	.000	.000	.000	.000	.000	.667	.000	.667	.708

City of San Bernardino
N/S: Dallas Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 03_SBC_Dal_FH PM
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Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	1	1	0	2	0	2	0	0	0	0	0	3	0	3
+15 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2
+30 mins.	1	0	0	1	0	2	0	2	0	0	0	0	0	2	0	2
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
Total Volume	1	0	1	2	0	7	0	7	0	0	0	0	0	8	0	8
% App. Total	50	0	50		0	100	0		0	0	0		0	100	0	
PHF	.250	.000	.250	.500	.000	.875	.000	.875	.000	.000	.000	.000	.000	.667	.000	.667

City of San Bernardino
N/S: Dallas Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 03_SBC_Dal_FH PM
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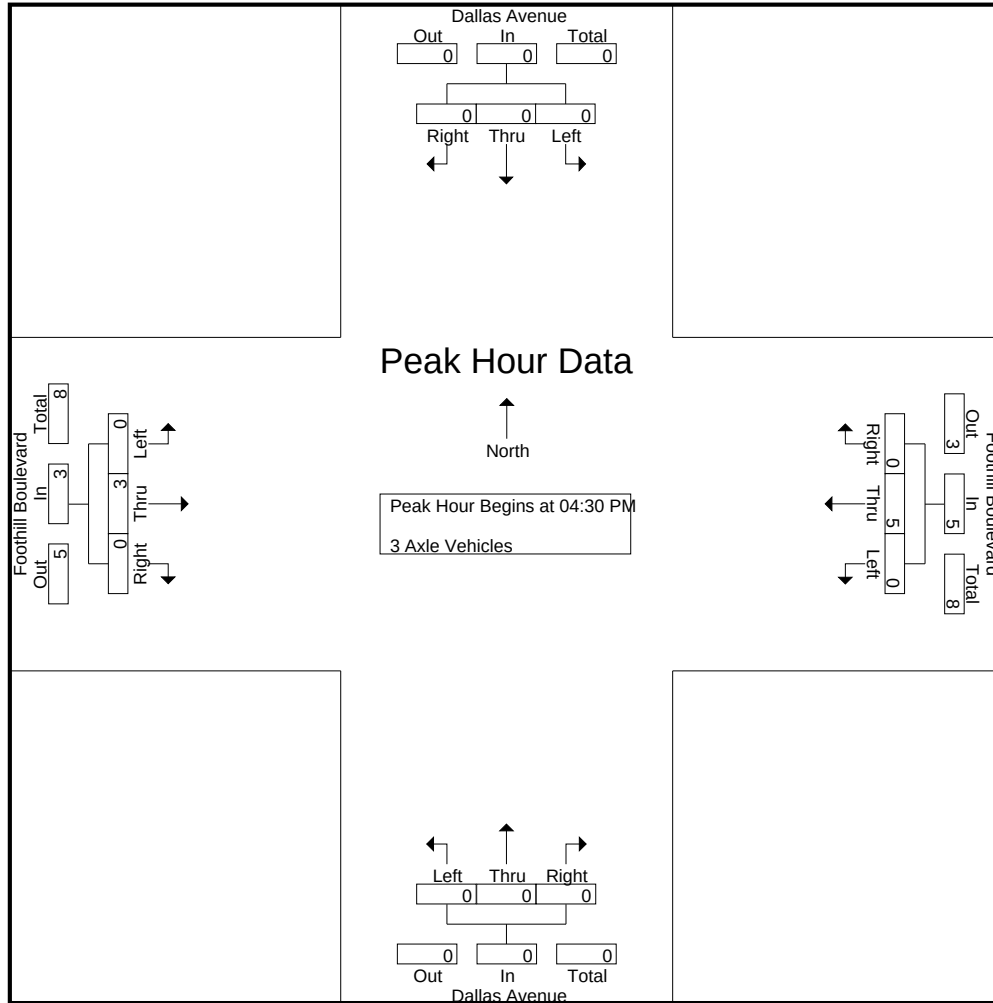
Groups Printed- 3 Axle Vehicles

	Dallas Avenue Southbound				Foothill Boulevard Westbound				Dallas Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
04:15 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	1	0	1	4
04:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
04:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
Total	0	0	0	0	0	7	0	7	0	0	0	0	0	6	0	6	13
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
Total	0	0	0	0	0	3	0	3	0	0	0	0	0	1	0	1	4
Grand Total	0	0	0	0	0	10	0	10	0	0	0	0	0	7	0	7	17
Apprch %	0	0	0		0	100	0		0	0	0		0	100	0		
Total %	0	0	0	0	0	58.8	0	58.8	0	0	0	0	0	41.2	0	41.2	

	Dallas Avenue Southbound				Foothill Boulevard Westbound				Dallas Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
04:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	5	0	5	0	0	0	0	0	3	0	3	8
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.625	.000	.625	.000	.000	.000	.000	.000	.375	.000	.375	.667

City of San Bernardino
N/S: Dallas Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 03_SBC_Dal_FH PM
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Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2
+15 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	5	0	5	0	0	0	0	0	3	0	3
% App. Total	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0
PHF	.000	.000	.000	.000	.000	.625	.000	.625	.000	.000	.000	.000	.000	.375	.000	.375

City of San Bernardino
N/S: Dallas Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 03_SBC_Dal_FH PM
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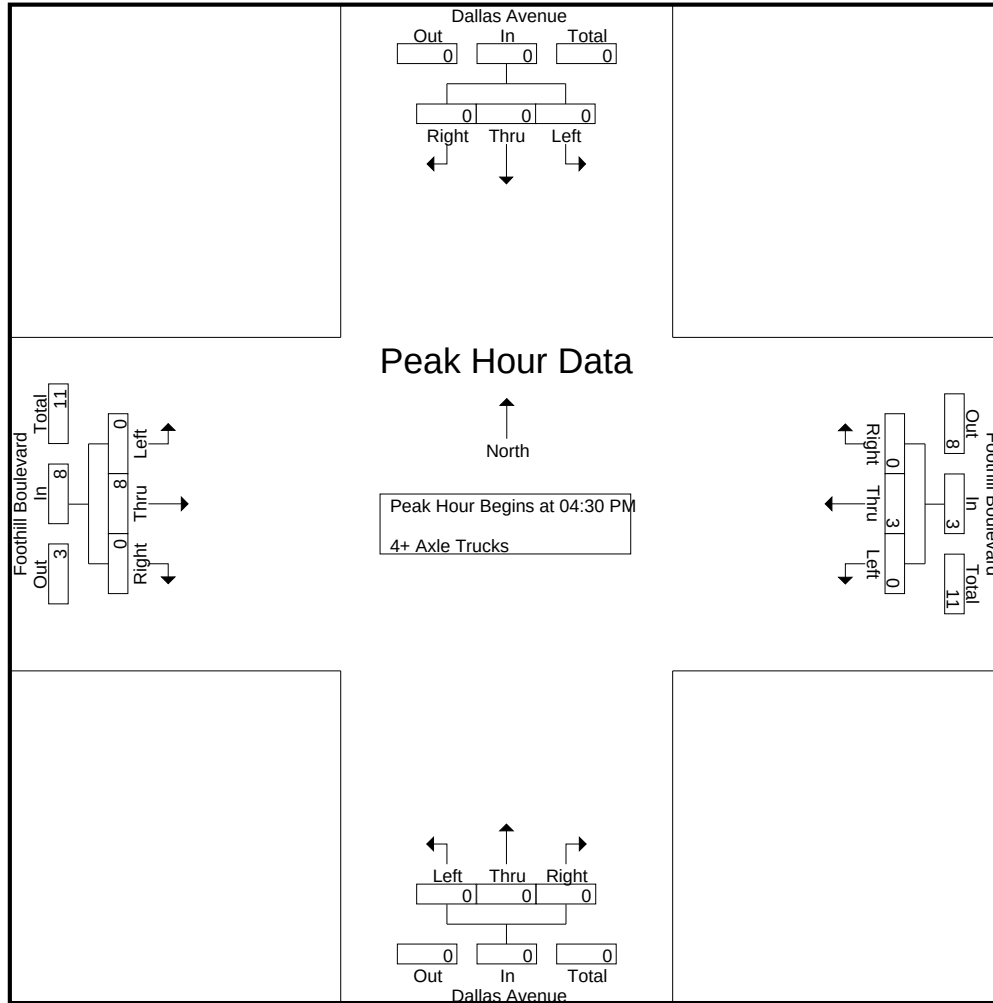
Groups Printed- 4+ Axle Trucks

	Dallas Avenue Southbound				Foothill Boulevard Westbound				Dallas Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
04:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
04:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
Total	0	0	0	0	0	4	0	4	0	0	0	0	0	7	0	7	11
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
05:30 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0	3	5
05:45 PM	0	0	0	0	0	4	0	4	0	0	0	0	0	3	0	3	7
Total	0	0	0	0	0	6	0	6	0	0	0	0	0	10	0	10	16
Grand Total	0	0	0	0	0	10	0	10	0	0	0	0	0	17	0	17	27
Apprch %	0	0	0		0	100	0		0	0	0		0	100	0		
Total %	0	0	0	0	0	37	0	37	0	0	0	0	0	63	0	63	

	Dallas Avenue Southbound				Foothill Boulevard Westbound				Dallas Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
04:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
Total Volume	0	0	0	0	0	3	0	3	0	0	0	0	0	8	0	8	11
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.375	.000	.375	.000	.000	.000	.000	.000	1.00	.000	1.00	.688

City of San Bernardino
N/S: Dallas Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 03_SBC_Dal_FH PM
Site Code : 22524137
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Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2
+15 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Total Volume	0	0	0	0	0	3	0	3	0	0	0	0	0	8	0	8
% App. Total	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0
PHF	.000	.000	.000	.000	.000	.375	.000	.375	.000	.000	.000	.000	.000	1.000	.000	1.000

Location: San Bernardino
 N/S: Dallas Avenue
 E/W: Foothill Boulevard



Date: 2/13/2024
 Day: Tuesday

PEDESTRIANS

	North Leg Dallas Avenue	East Leg Foothill Boulevard	South Leg Dallas Avenue	West Leg Foothill Boulevard	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	1	0	1
7:30 AM	0	0	1	0	1
7:45 AM	0	0	1	0	1
8:00 AM	0	0	1	0	1
8:15 AM	0	0	0	0	0
8:30 AM	2	0	0	0	2
8:45 AM	1	0	0	1	2
TOTAL VOLUMES:	3	0	4	1	8

	North Leg Dallas Avenue	East Leg Foothill Boulevard	South Leg Dallas Avenue	West Leg Foothill Boulevard	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	1	0	1	0	2
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	1	0	0	0	1
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	2	0	1	0	3

Location: San Bernardino
 N/S: Dallas Avenue
 E/W: Foothill Boulevard



Date: 2/13/2024
 Day: Tuesday

BICYCLES

	Southbound Dallas Avenue			Westbound Foothill Boulevard			Northbound Dallas Avenue			Eastbound Foothill Boulevard			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	1	0	0	0	2	0	0	0	0	0	2	0	5

	Southbound Dallas Avenue			Westbound Foothill Boulevard			Northbound Dallas Avenue			Eastbound Foothill Boulevard			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
TOTAL VOLUMES:	0	1	0	0	2	2	0	0	0	1	3	0	9

City of San Bernardino
N/S: Macy Street
E/W: Foothill Boulevard
Weather: Clear

File Name : 04_SBC_Macy_FH AM
Site Code : 22524137
Start Date : 2/13/2024
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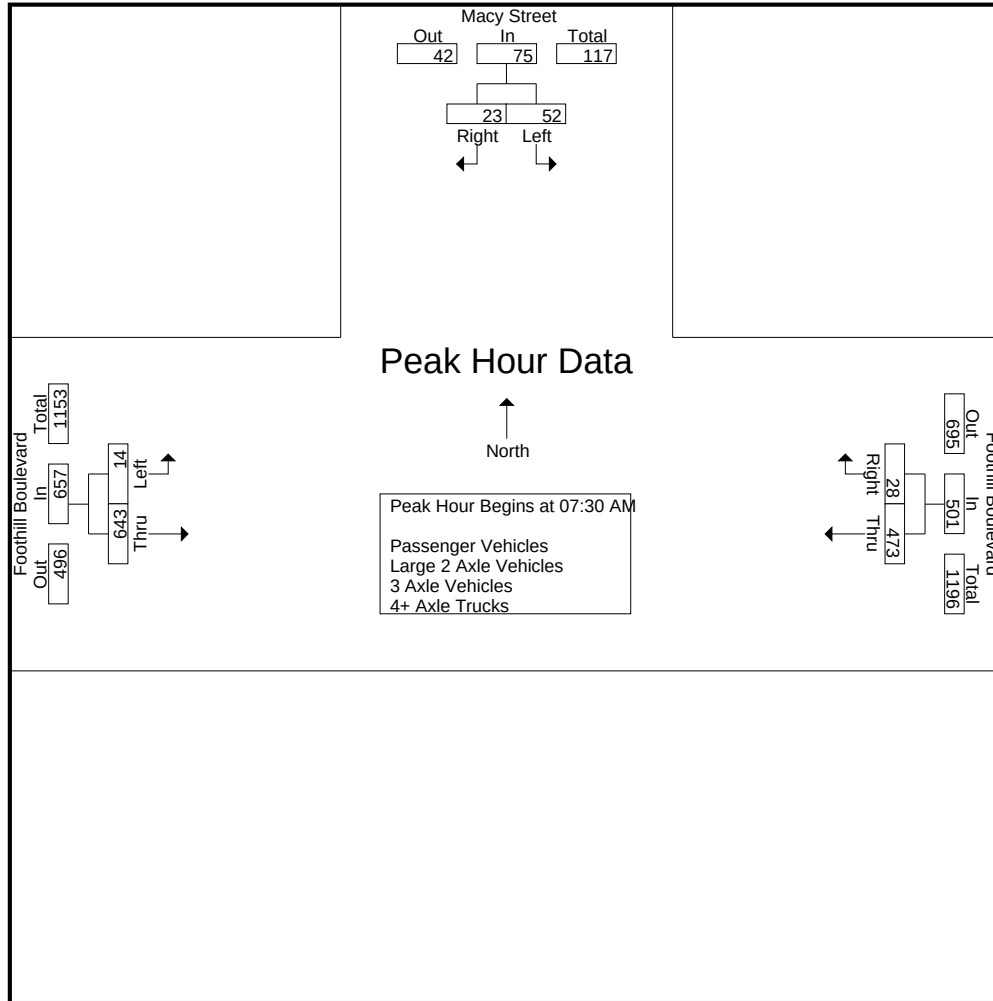
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Macy Street Southbound			Foothill Boulevard Westbound			Foothill Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	14	1	15	57	4	61	1	92	93	169
07:15 AM	12	4	16	101	5	106	2	111	113	235
07:30 AM	15	5	20	141	5	146	2	162	164	330
07:45 AM	13	6	19	126	6	132	6	197	203	354
Total	54	16	70	425	20	445	11	562	573	1088
08:00 AM	12	6	18	101	6	107	3	162	165	290
08:15 AM	12	6	18	105	11	116	3	122	125	259
08:30 AM	11	4	15	113	10	123	4	106	110	248
08:45 AM	14	2	16	102	3	105	3	100	103	224
Total	49	18	67	421	30	451	13	490	503	1021
Grand Total	103	34	137	846	50	896	24	1052	1076	2109
Apprch %	75.2	24.8		94.4	5.6		2.2	97.8		
Total %	4.9	1.6	6.5	40.1	2.4	42.5	1.1	49.9	51	
Passenger Vehicles	102	34	136	797	49	846	23	991	1014	1996
% Passenger Vehicles	99	100	99.3	94.2	98	94.4	95.8	94.2	94.2	94.6
Large 2 Axle Vehicles	1	0	1	19	1	20	1	28	29	50
% Large 2 Axle Vehicles	1	0	0.7	2.2	2	2.2	4.2	2.7	2.7	2.4
3 Axle Vehicles	0	0	0	7	0	7	0	13	13	20
% 3 Axle Vehicles	0	0	0	0.8	0	0.8	0	1.2	1.2	0.9
4+ Axle Trucks	0	0	0	23	0	23	0	20	20	43
% 4+ Axle Trucks	0	0	0	2.7	0	2.6	0	1.9	1.9	2

	Macy Street Southbound			Foothill Boulevard Westbound			Foothill Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	15	5	20	141	5	146	2	162	164	330
07:45 AM	13	6	19	126	6	132	6	197	203	354
08:00 AM	12	6	18	101	6	107	3	162	165	290
08:15 AM	12	6	18	105	11	116	3	122	125	259
Total Volume	52	23	75	473	28	501	14	643	657	1233
% App. Total	69.3	30.7		94.4	5.6		2.1	97.9		
PHF	.867	.958	.938	.839	.636	.858	.583	.816	.809	.871

City of San Bernardino
N/S: Macy Street
E/W: Foothill Boulevard
Weather: Clear

File Name : 04_SBC_Macy_FH AM
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:30 AM			07:30 AM			07:30 AM		
+0 mins.	15	5	20	141	5	146	2	162	164
+15 mins.	13	6	19	126	6	132	6	197	203
+30 mins.	12	6	18	101	6	107	3	162	165
+45 mins.	12	6	18	105	11	116	3	122	125
Total Volume	52	23	75	473	28	501	14	643	657
% App. Total	69.3	30.7		94.4	5.6		2.1	97.9	
PHF	.867	.958	.938	.839	.636	.858	.583	.816	.809

City of San Bernardino
N/S: Macy Street
E/W: Foothill Boulevard
Weather: Clear

File Name : 04_SBC_Macy_FH AM
Site Code : 22524137
Start Date : 2/13/2024
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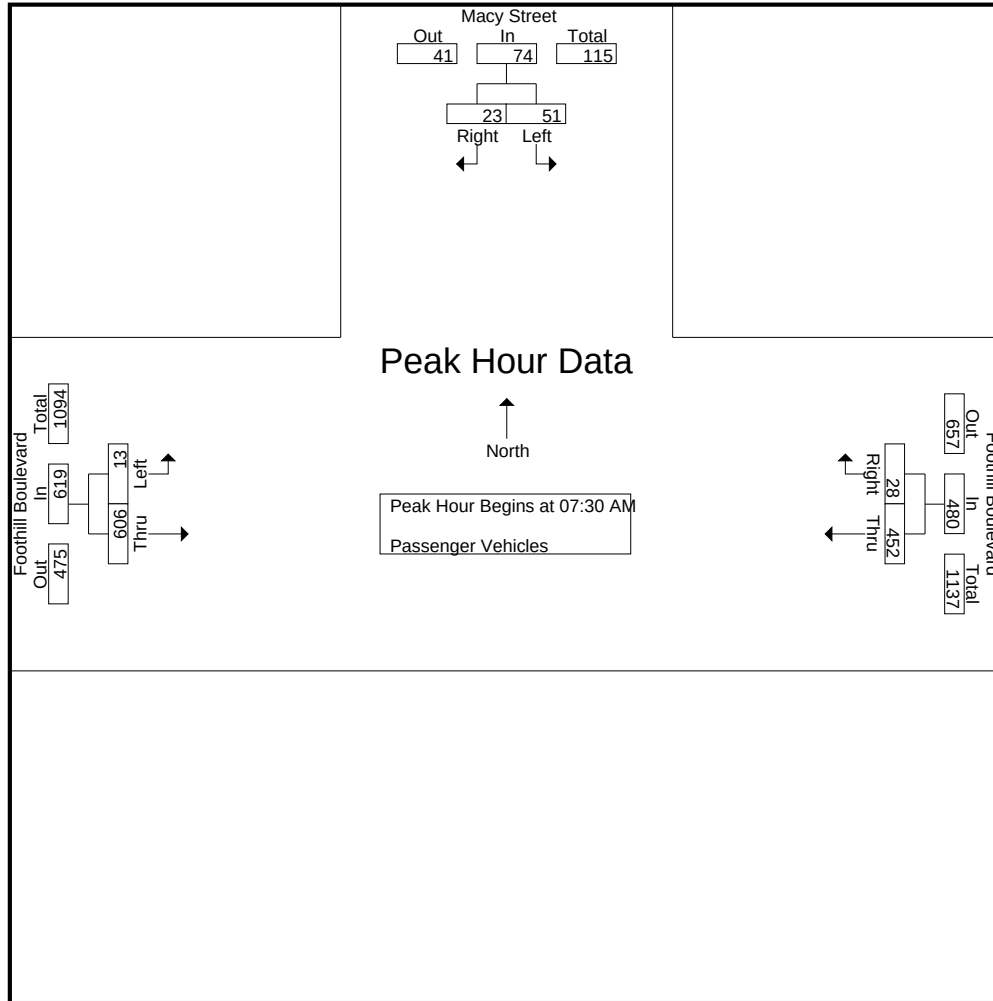
Groups Printed- Passenger Vehicles

	Macy Street Southbound			Foothill Boulevard Westbound			Foothill Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	14	1	15	52	4	56	1	82	83	154
07:15 AM	12	4	16	92	5	97	2	105	107	220
07:30 AM	15	5	20	136	5	141	2	154	156	317
07:45 AM	13	6	19	122	6	128	6	186	192	339
Total	54	16	70	402	20	422	11	527	538	1030
08:00 AM	11	6	17	95	6	101	2	151	153	271
08:15 AM	12	6	18	99	11	110	3	115	118	246
08:30 AM	11	4	15	107	9	116	4	103	107	238
08:45 AM	14	2	16	94	3	97	3	95	98	211
Total	48	18	66	395	29	424	12	464	476	966
Grand Total	102	34	136	797	49	846	23	991	1014	1996
Apprch %	75	25		94.2	5.8		2.3	97.7		
Total %	5.1	1.7	6.8	39.9	2.5	42.4	1.2	49.6	50.8	

	Macy Street Southbound			Foothill Boulevard Westbound			Foothill Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	15	5	20	136	5	141	2	154	156	317
07:45 AM	13	6	19	122	6	128	6	186	192	339
08:00 AM	11	6	17	95	6	101	2	151	153	271
08:15 AM	12	6	18	99	11	110	3	115	118	246
Total Volume	51	23	74	452	28	480	13	606	619	1173
% App. Total	68.9	31.1		94.2	5.8		2.1	97.9		
PHF	.850	.958	.925	.831	.636	.851	.542	.815	.806	.865

City of San Bernardino
N/S: Macy Street
E/W: Foothill Boulevard
Weather: Clear

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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM			07:30 AM			07:30 AM		
+0 mins.	15	5	20	136	5	141	2	154	156
+15 mins.	13	6	19	122	6	128	6	186	192
+30 mins.	11	6	17	95	6	101	2	151	153
+45 mins.	12	6	18	99	11	110	3	115	118
Total Volume	51	23	74	452	28	480	13	606	619
% App. Total	68.9	31.1		94.2	5.8		2.1	97.9	
PHF	.850	.958	.925	.831	.636	.851	.542	.815	.806

City of San Bernardino
N/S: Macy Street
E/W: Foothill Boulevard
Weather: Clear

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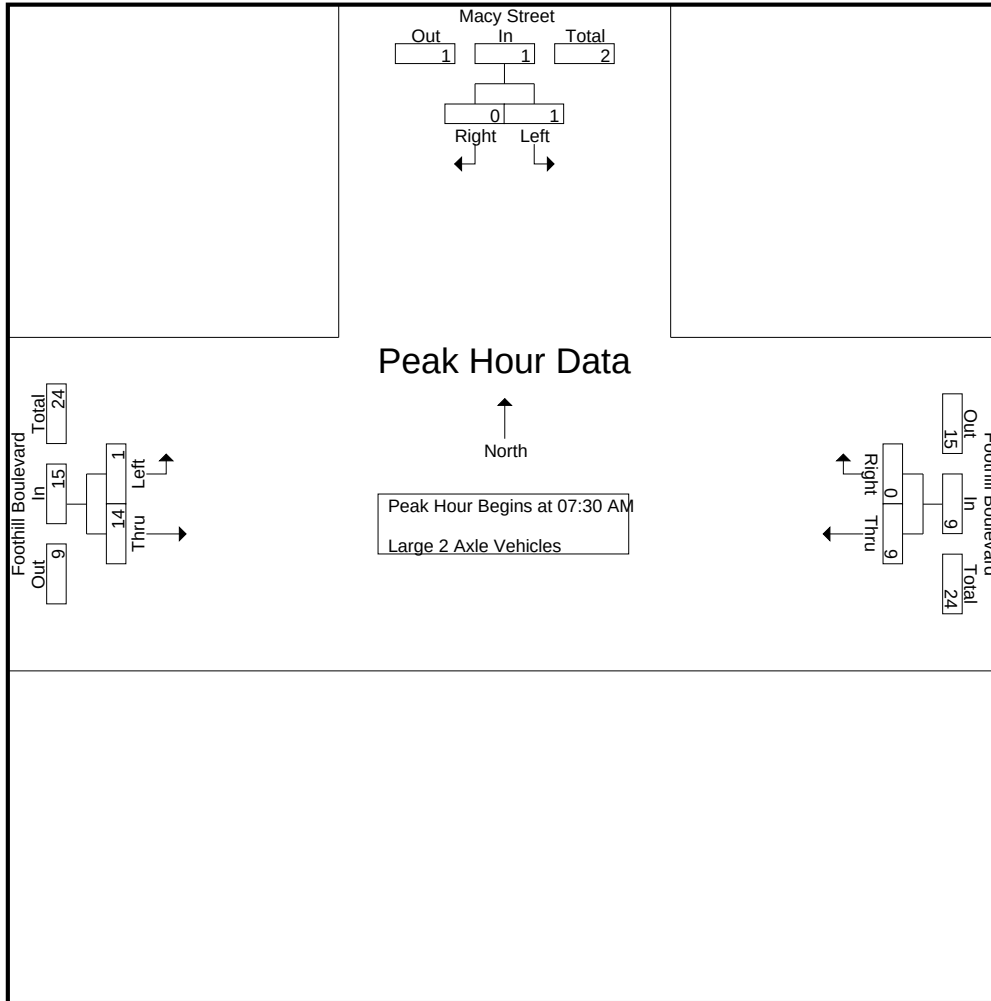
Groups Printed- Large 2 Axle Vehicles

	Macy Street Southbound			Foothill Boulevard Westbound			Foothill Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	0	0	0	4	0	4	0	6	6	10
07:15 AM	0	0	0	4	0	4	0	5	5	9
07:30 AM	0	0	0	3	0	3	0	4	4	7
07:45 AM	0	0	0	1	0	1	0	6	6	7
Total	0	0	0	12	0	12	0	21	21	33
08:00 AM	1	0	1	3	0	3	1	3	4	8
08:15 AM	0	0	0	2	0	2	0	1	1	3
08:30 AM	0	0	0	1	1	2	0	1	1	3
08:45 AM	0	0	0	1	0	1	0	2	2	3
Total	1	0	1	7	1	8	1	7	8	17
Grand Total	1	0	1	19	1	20	1	28	29	50
Apprch %	100	0		95	5		3.4	96.6		
Total %	2	0	2	38	2	40	2	56	58	

	Macy Street Southbound			Foothill Boulevard Westbound			Foothill Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	0	0	0	3	0	3	0	4	4	7
07:45 AM	0	0	0	1	0	1	0	6	6	7
08:00 AM	1	0	1	3	0	3	1	3	4	8
08:15 AM	0	0	0	2	0	2	0	1	1	3
Total Volume	1	0	1	9	0	9	1	14	15	25
% App. Total	100	0		100	0		6.7	93.3		
PHF	.250	.000	.250	.750	.000	.750	.250	.583	.625	.781

City of San Bernardino
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM			07:30 AM			07:30 AM		
+0 mins.	0	0	0	3	0	3	0	4	4
+15 mins.	0	0	0	1	0	1	0	6	6
+30 mins.	1	0	1	3	0	3	1	3	4
+45 mins.	0	0	0	2	0	2	0	1	1
Total Volume	1	0	1	9	0	9	1	14	15
% App. Total	100	0		100	0		6.7	93.3	
PHF	.250	.000	.250	.750	.000	.750	.250	.583	.625

City of San Bernardino
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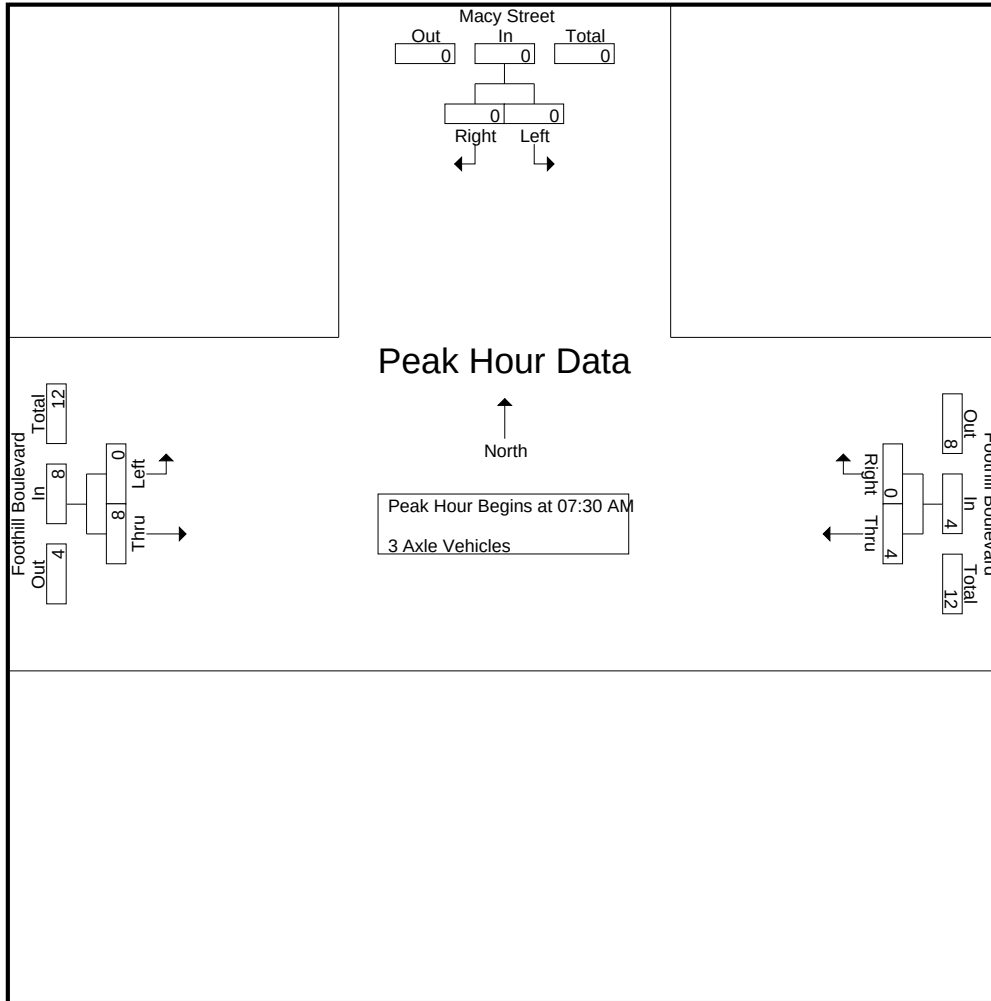
Groups Printed- 3 Axle Vehicles

	Macy Street Southbound			Foothill Boulevard Westbound			Foothill Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	3	3	3
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	1	1	1
07:45 AM	0	0	0	1	0	1	0	3	3	4
Total	0	0	0	1	0	1	0	7	7	8
08:00 AM	0	0	0	2	0	2	0	2	2	4
08:15 AM	0	0	0	1	0	1	0	2	2	3
08:30 AM	0	0	0	2	0	2	0	1	1	3
08:45 AM	0	0	0	1	0	1	0	1	1	2
Total	0	0	0	6	0	6	0	6	6	12
Grand Total	0	0	0	7	0	7	0	13	13	20
Apprch %	0	0		100	0		0	100		
Total %	0	0	0	35	0	35	0	65	65	

	Macy Street Southbound			Foothill Boulevard Westbound			Foothill Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	0	0	0	0	0	0	0	1	1	1
07:45 AM	0	0	0	1	0	1	0	3	3	4
08:00 AM	0	0	0	2	0	2	0	2	2	4
08:15 AM	0	0	0	1	0	1	0	2	2	3
Total Volume	0	0	0	4	0	4	0	8	8	12
% App. Total	0	0		100	0		0	100		
PHF	.000	.000	.000	.500	.000	.500	.000	.667	.667	.750

City of San Bernardino
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Weather: Clear

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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM			07:30 AM			07:30 AM		
+0 mins.	0	0	0	0	0	0	0	1	1
+15 mins.	0	0	0	1	0	1	0	3	3
+30 mins.	0	0	0	2	0	2	0	2	2
+45 mins.	0	0	0	1	0	1	0	2	2
Total Volume	0	0	0	4	0	4	0	8	8
% App. Total	0	0	0	100	0	0	0	100	0
PHF	.000	.000	.000	.500	.000	.500	.000	.667	.667

City of San Bernardino
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E/W: Foothill Boulevard
Weather: Clear

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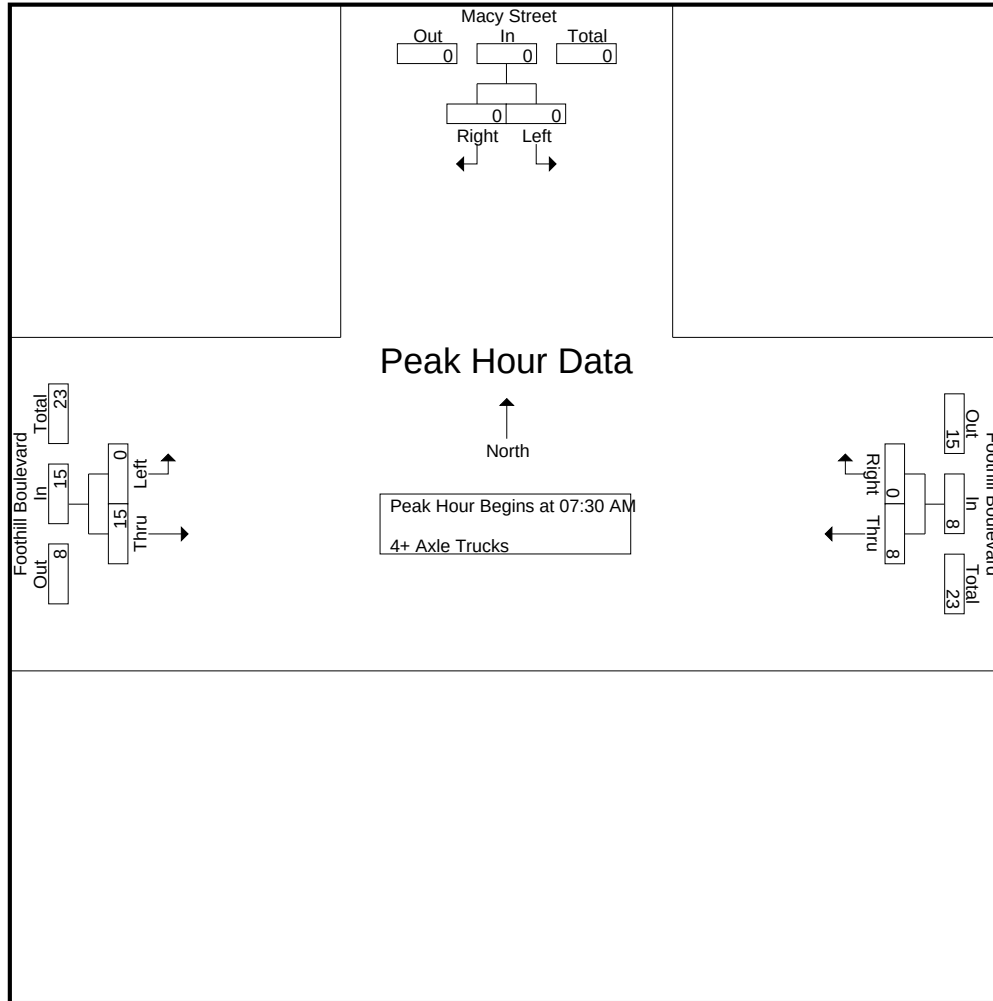
Groups Printed- 4+ Axle Trucks

	Macy Street Southbound			Foothill Boulevard Westbound			Foothill Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	0	0	0	1	0	1	0	1	1	2
07:15 AM	0	0	0	5	0	5	0	1	1	6
07:30 AM	0	0	0	2	0	2	0	3	3	5
07:45 AM	0	0	0	2	0	2	0	2	2	4
Total	0	0	0	10	0	10	0	7	7	17
08:00 AM	0	0	0	1	0	1	0	6	6	7
08:15 AM	0	0	0	3	0	3	0	4	4	7
08:30 AM	0	0	0	3	0	3	0	1	1	4
08:45 AM	0	0	0	6	0	6	0	2	2	8
Total	0	0	0	13	0	13	0	13	13	26
Grand Total	0	0	0	23	0	23	0	20	20	43
Apprch %	0	0		100	0		0	100		
Total %	0	0	0	53.5	0	53.5	0	46.5	46.5	

	Macy Street Southbound			Foothill Boulevard Westbound			Foothill Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	0	0	0	2	0	2	0	3	3	5
07:45 AM	0	0	0	2	0	2	0	2	2	4
08:00 AM	0	0	0	1	0	1	0	6	6	7
08:15 AM	0	0	0	3	0	3	0	4	4	7
Total Volume	0	0	0	8	0	8	0	15	15	23
% App. Total	0	0		100	0		0	100		
PHF	.000	.000	.000	.667	.000	.667	.000	.625	.625	.821

City of San Bernardino
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM			07:30 AM			07:30 AM		
+0 mins.	0	0	0	2	0	2	0	3	3
+15 mins.	0	0	0	2	0	2	0	2	2
+30 mins.	0	0	0	1	0	1	0	6	6
+45 mins.	0	0	0	3	0	3	0	4	4
Total Volume	0	0	0	8	0	8	0	15	15
% App. Total	0	0	0	100	0	100	0	100	100
PHF	.000	.000	.000	.667	.000	.667	.000	.625	.625

City of San Bernardino
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Weather: Clear

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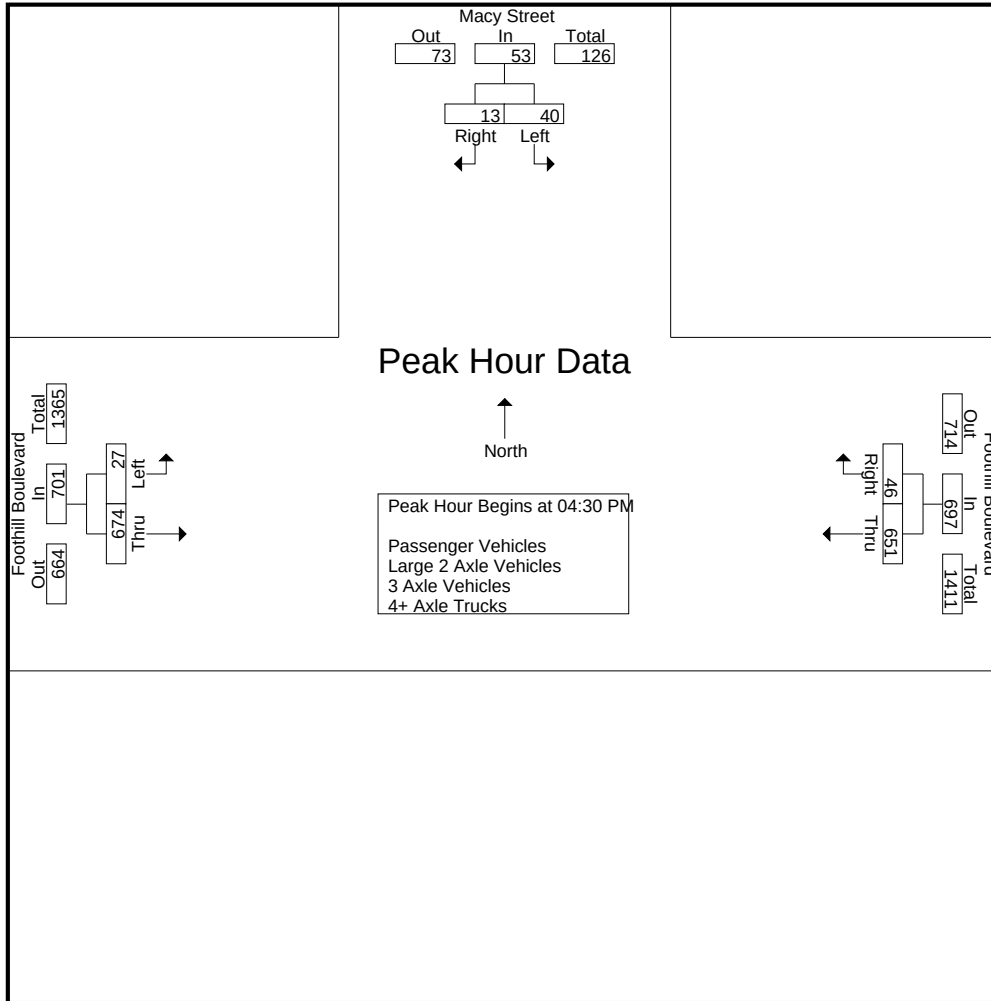
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Macy Street Southbound			Foothill Boulevard Westbound			Foothill Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	6	3	9	163	11	174	7	174	181	364
04:15 PM	6	0	6	154	7	161	8	165	173	340
04:30 PM	10	4	14	155	11	166	8	161	169	349
04:45 PM	6	3	9	175	10	185	6	164	170	364
Total	28	10	38	647	39	686	29	664	693	1417
05:00 PM	8	3	11	174	14	188	6	184	190	389
05:15 PM	16	3	19	147	11	158	7	165	172	349
05:30 PM	9	1	10	145	14	159	1	156	157	326
05:45 PM	5	3	8	167	15	182	4	167	171	361
Total	38	10	48	633	54	687	18	672	690	1425
Grand Total	66	20	86	1280	93	1373	47	1336	1383	2842
Apprch %	76.7	23.3		93.2	6.8		3.4	96.6		
Total %	2.3	0.7	3	45	3.3	48.3	1.7	47	48.7	
Passenger Vehicles	66	20	86	1245	93	1338	46	1293	1339	2763
% Passenger Vehicles	100	100	100	97.3	100	97.5	97.9	96.8	96.8	97.2
Large 2 Axle Vehicles	0	0	0	16	0	16	0	20	20	36
% Large 2 Axle Vehicles	0	0	0	1.2	0	1.2	0	1.5	1.4	1.3
3 Axle Vehicles	0	0	0	9	0	9	1	6	7	16
% 3 Axle Vehicles	0	0	0	0.7	0	0.7	2.1	0.4	0.5	0.6
4+ Axle Trucks	0	0	0	10	0	10	0	17	17	27
% 4+ Axle Trucks	0	0	0	0.8	0	0.7	0	1.3	1.2	1

	Macy Street Southbound			Foothill Boulevard Westbound			Foothill Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	10	4	14	155	11	166	8	161	169	349
04:45 PM	6	3	9	175	10	185	6	164	170	364
05:00 PM	8	3	11	174	14	188	6	184	190	389
05:15 PM	16	3	19	147	11	158	7	165	172	349
Total Volume	40	13	53	651	46	697	27	674	701	1451
% App. Total	75.5	24.5		93.4	6.6		3.9	96.1		
PHF	.625	.813	.697	.930	.821	.927	.844	.916	.922	.933

City of San Bernardino
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			04:15 PM			04:15 PM		
+0 mins.	10	4	14	154	7	161	8	165	173
+15 mins.	6	3	9	155	11	166	8	161	169
+30 mins.	8	3	11	175	10	185	6	164	170
+45 mins.	16	3	19	174	14	188	6	184	190
Total Volume	40	13	53	658	42	700	28	674	702
% App. Total	75.5	24.5		94	6		4	96	
PHF	.625	.813	.697	.940	.750	.931	.875	.916	.924

City of San Bernardino
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Weather: Clear

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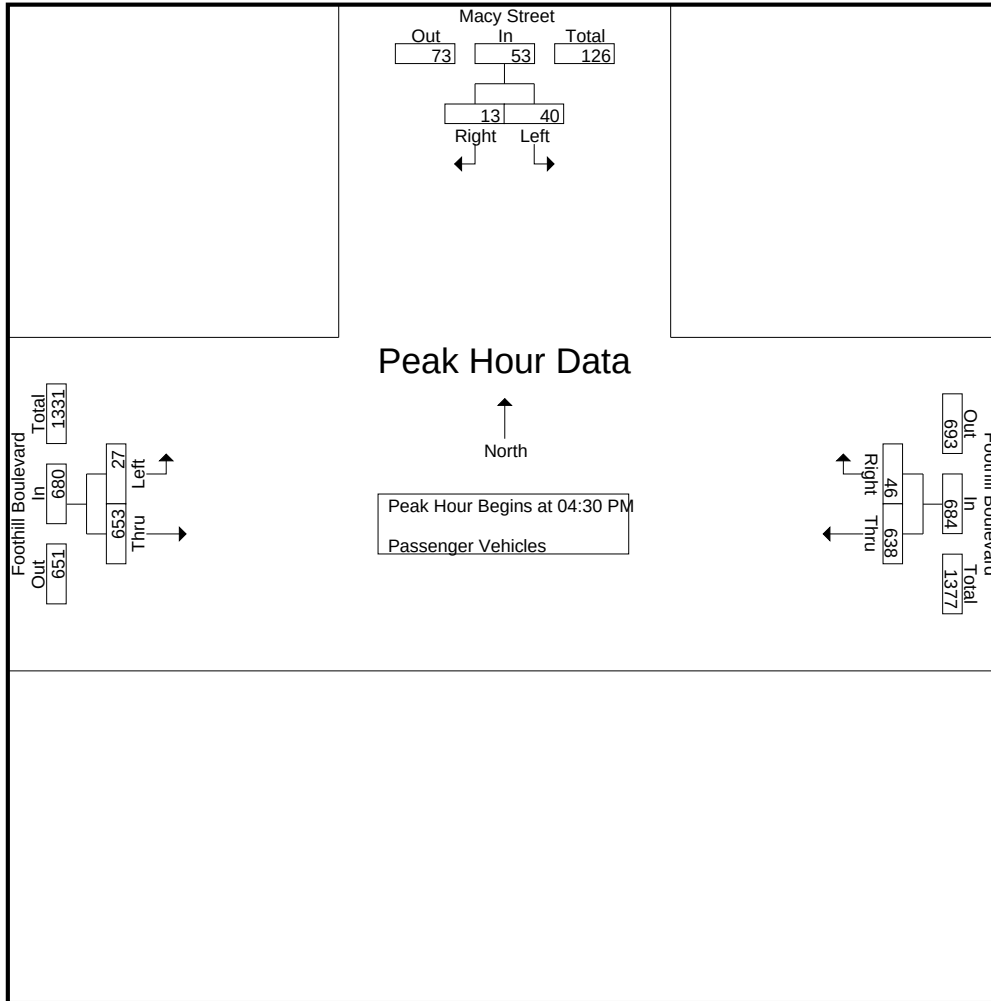
Groups Printed- Passenger Vehicles

	Macy Street Southbound			Foothill Boulevard Westbound			Foothill Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	6	3	9	161	11	172	7	166	173	354
04:15 PM	6	0	6	148	7	155	7	161	168	329
04:30 PM	10	4	14	152	11	163	8	154	162	339
04:45 PM	6	3	9	169	10	179	6	159	165	353
Total	28	10	38	630	39	669	28	640	668	1375
05:00 PM	8	3	11	172	14	186	6	178	184	381
05:15 PM	16	3	19	145	11	156	7	162	169	344
05:30 PM	9	1	10	140	14	154	1	152	153	317
05:45 PM	5	3	8	158	15	173	4	161	165	346
Total	38	10	48	615	54	669	18	653	671	1388
Grand Total	66	20	86	1245	93	1338	46	1293	1339	2763
Apprch %	76.7	23.3		93	7		3.4	96.6		
Total %	2.4	0.7	3.1	45.1	3.4	48.4	1.7	46.8	48.5	

	Macy Street Southbound			Foothill Boulevard Westbound			Foothill Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	10	4	14	152	11	163	8	154	162	339
04:45 PM	6	3	9	169	10	179	6	159	165	353
05:00 PM	8	3	11	172	14	186	6	178	184	381
05:15 PM	16	3	19	145	11	156	7	162	169	344
Total Volume	40	13	53	638	46	684	27	653	680	1417
% App. Total	75.5	24.5		93.3	6.7		4	96		
PHF	.625	.813	.697	.927	.821	.919	.844	.917	.924	.930

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Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			04:30 PM		
+0 mins.	10	4	14	152	11	163	8	154	162
+15 mins.	6	3	9	169	10	179	6	159	165
+30 mins.	8	3	11	172	14	186	6	178	184
+45 mins.	16	3	19	145	11	156	7	162	169
Total Volume	40	13	53	638	46	684	27	653	680
% App. Total	75.5	24.5		93.3	6.7		4	96	
PHF	.625	.813	.697	.927	.821	.919	.844	.917	.924

City of San Bernardino
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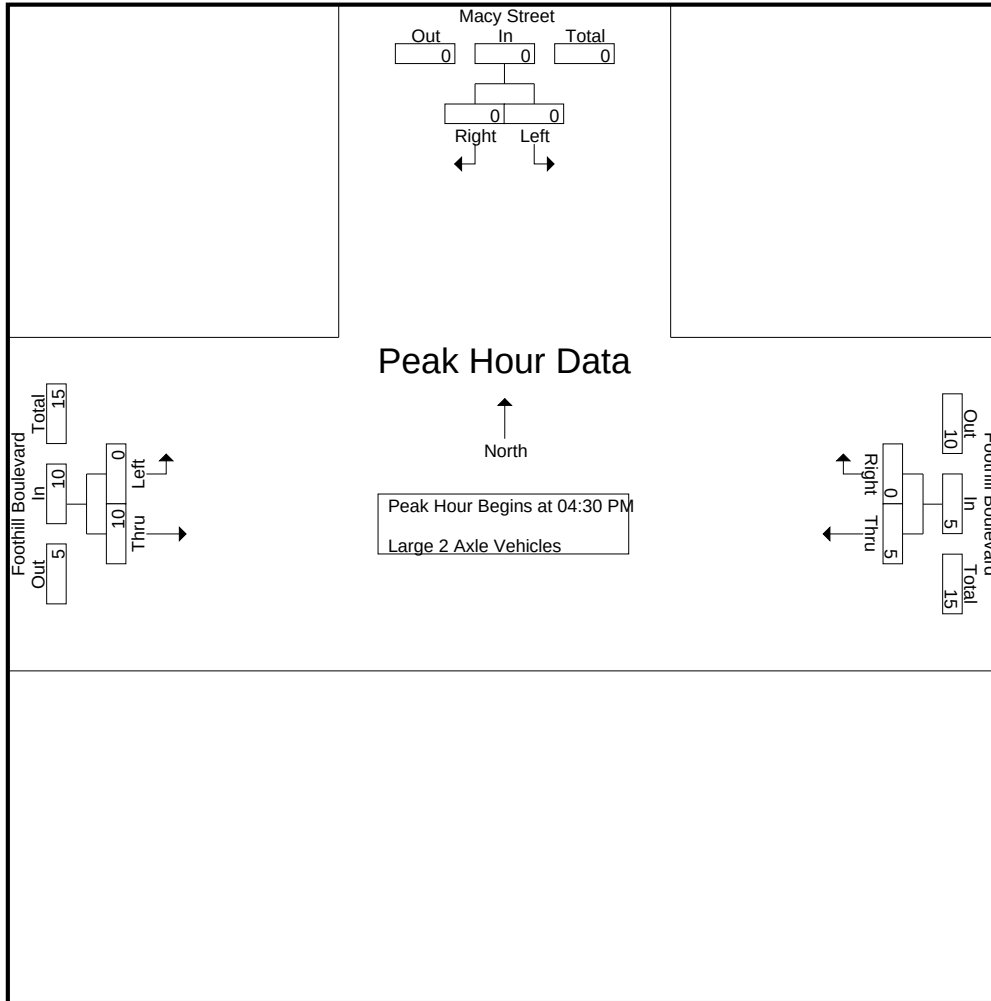
Groups Printed- Large 2 Axle Vehicles

	Macy Street Southbound			Foothill Boulevard Westbound			Foothill Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	0	0	0	1	0	1	0	5	5	6
04:15 PM	0	0	0	3	0	3	0	2	2	5
04:30 PM	0	0	0	1	0	1	0	3	3	4
04:45 PM	0	0	0	2	0	2	0	2	2	4
Total	0	0	0	7	0	7	0	12	12	19
05:00 PM	0	0	0	2	0	2	0	4	4	6
05:15 PM	0	0	0	0	0	0	0	1	1	1
05:30 PM	0	0	0	3	0	3	0	2	2	5
05:45 PM	0	0	0	4	0	4	0	1	1	5
Total	0	0	0	9	0	9	0	8	8	17
Grand Total	0	0	0	16	0	16	0	20	20	36
Apprch %	0	0		100	0		0	100		
Total %	0	0	0	44.4	0	44.4	0	55.6	55.6	

	Macy Street Southbound			Foothill Boulevard Westbound			Foothill Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	0	0	0	1	0	1	0	3	3	4
04:45 PM	0	0	0	2	0	2	0	2	2	4
05:00 PM	0	0	0	2	0	2	0	4	4	6
05:15 PM	0	0	0	0	0	0	0	1	1	1
Total Volume	0	0	0	5	0	5	0	10	10	15
% App. Total	0	0		100	0		0	100		
PHF	.000	.000	.000	.625	.000	.625	.000	.625	.625	.625

City of San Bernardino
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Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			04:30 PM		
+0 mins.	0	0	0	1	0	1	0	3	3
+15 mins.	0	0	0	2	0	2	0	2	2
+30 mins.	0	0	0	2	0	2	0	4	4
+45 mins.	0	0	0	0	0	0	0	1	1
Total Volume	0	0	0	5	0	5	0	10	10
% App. Total	0	0	0	100	0	100	0	100	100
PHF	.000	.000	.000	.625	.000	.625	.000	.625	.625

City of San Bernardino
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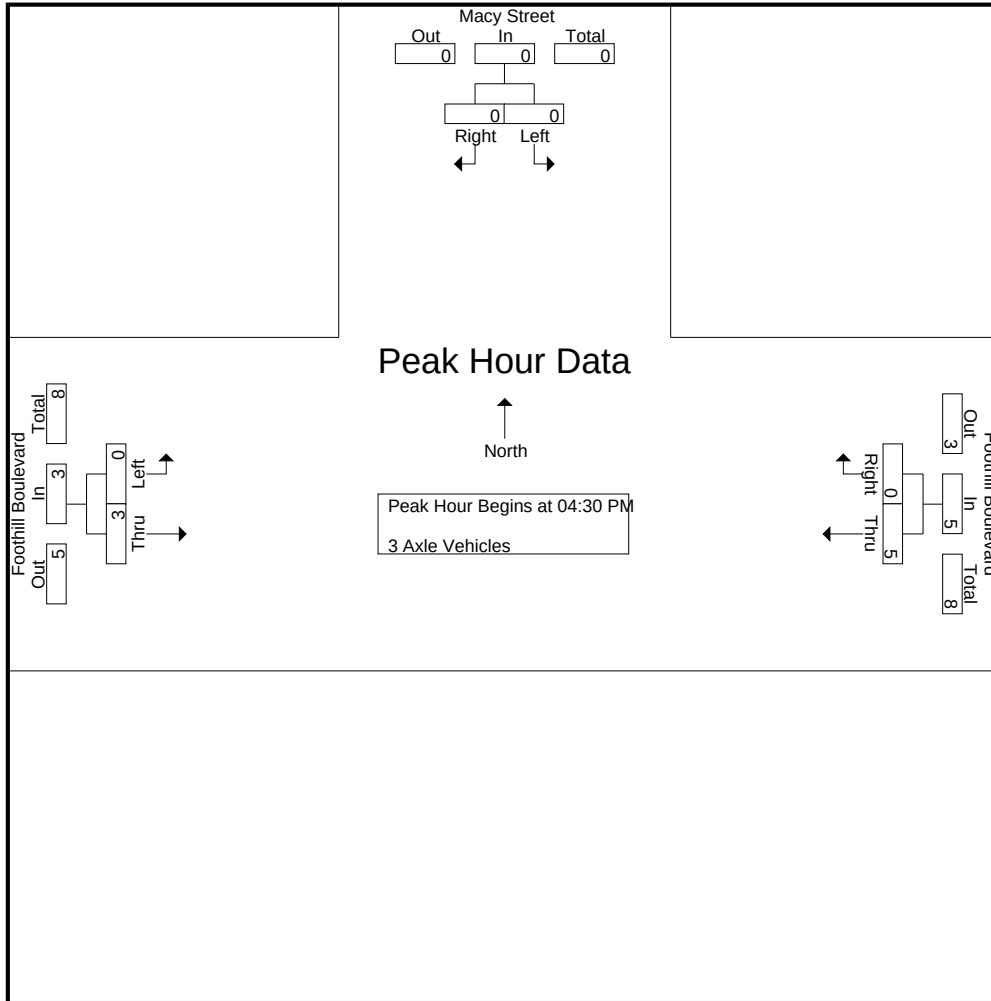
Groups Printed- 3 Axle Vehicles

	Macy Street Southbound			Foothill Boulevard Westbound			Foothill Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	2	2	2
04:15 PM	0	0	0	3	0	3	1	1	2	5
04:30 PM	0	0	0	1	0	1	0	2	2	3
04:45 PM	0	0	0	2	0	2	0	1	1	3
Total	0	0	0	6	0	6	1	6	7	13
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	2	0	2	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	1	0	1	0	0	0	1
Total	0	0	0	3	0	3	0	0	0	3
Grand Total	0	0	0	9	0	9	1	6	7	16
Apprch %	0	0		100	0		14.3	85.7		
Total %	0	0	0	56.2	0	56.2	6.2	37.5	43.8	

	Macy Street Southbound			Foothill Boulevard Westbound			Foothill Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	0	0	0	1	0	1	0	2	2	3
04:45 PM	0	0	0	2	0	2	0	1	1	3
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	2	0	2	0	0	0	2
Total Volume	0	0	0	5	0	5	0	3	3	8
% App. Total	0	0		100	0		0	100		
PHF	.000	.000	.000	.625	.000	.625	.000	.375	.375	.667

City of San Bernardino
N/S: Macy Street
E/W: Foothill Boulevard
Weather: Clear

File Name : 04_SBC_Macy_FH PM
Site Code : 22524137
Start Date : 2/13/2024
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Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			04:30 PM		
+0 mins.	0	0	0	1	0	1	0	2	2
+15 mins.	0	0	0	2	0	2	0	1	1
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	2	0	2	0	0	0
Total Volume	0	0	0	5	0	5	0	3	3
% App. Total	0	0	0	100	0	100	0	100	100
PHF	.000	.000	.000	.625	.000	.625	.000	.375	.375

City of San Bernardino
N/S: Macy Street
E/W: Foothill Boulevard
Weather: Clear

File Name : 04_SBC_Macy_FH PM
Site Code : 22524137
Start Date : 2/13/2024
Page No : 1

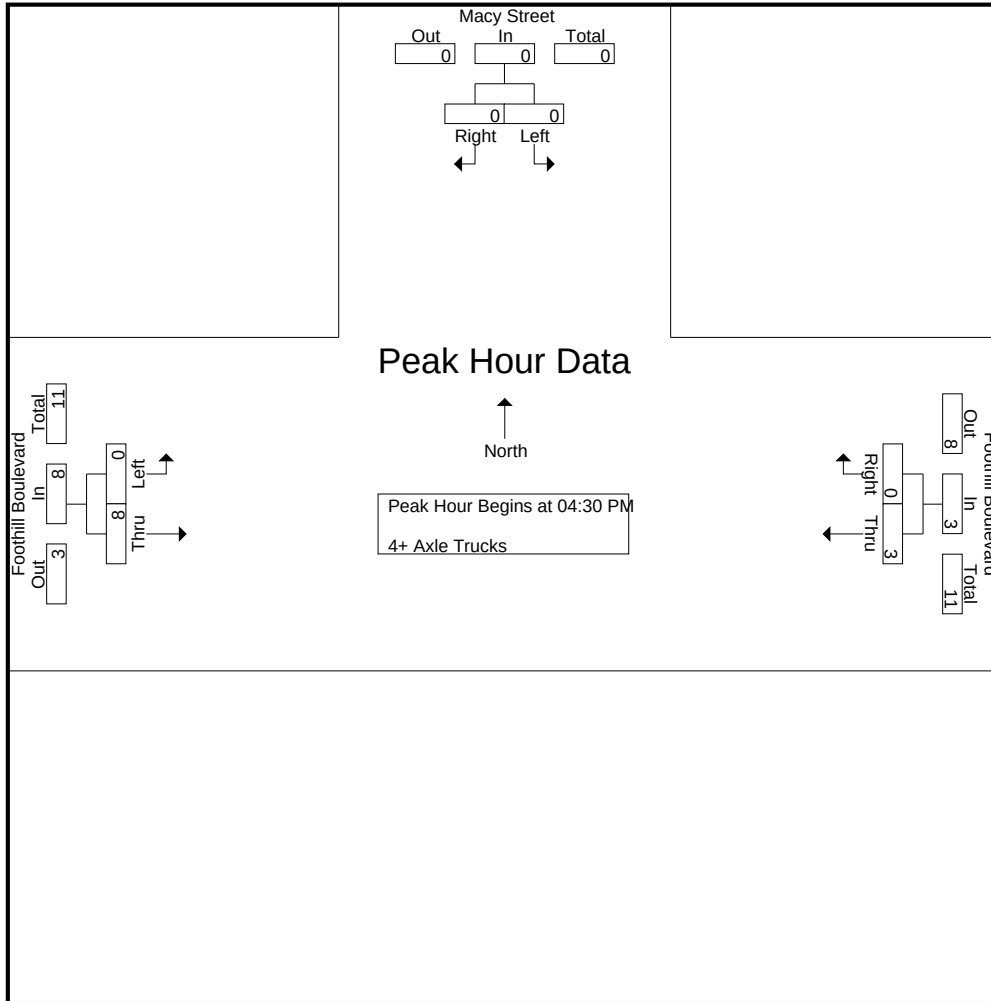
Groups Printed- 4+ Axle Trucks

	Macy Street Southbound			Foothill Boulevard Westbound			Foothill Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	0	0	0	1	0	1	0	1	1	2
04:15 PM	0	0	0	0	0	0	0	1	1	1
04:30 PM	0	0	0	1	0	1	0	2	2	3
04:45 PM	0	0	0	2	0	2	0	2	2	4
Total	0	0	0	4	0	4	0	6	6	10
05:00 PM	0	0	0	0	0	0	0	2	2	2
05:15 PM	0	0	0	0	0	0	0	2	2	2
05:30 PM	0	0	0	2	0	2	0	2	2	4
05:45 PM	0	0	0	4	0	4	0	5	5	9
Total	0	0	0	6	0	6	0	11	11	17
Grand Total	0	0	0	10	0	10	0	17	17	27
Apprch %	0	0		100	0		0	100		
Total %	0	0	0	37	0	37	0	63	63	

	Macy Street Southbound			Foothill Boulevard Westbound			Foothill Boulevard Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	0	0	0	1	0	1	0	2	2	3
04:45 PM	0	0	0	2	0	2	0	2	2	4
05:00 PM	0	0	0	0	0	0	0	2	2	2
05:15 PM	0	0	0	0	0	0	0	2	2	2
Total Volume	0	0	0	3	0	3	0	8	8	11
% App. Total	0	0		100	0		0	100		
PHF	.000	.000	.000	.375	.000	.375	.000	1.00	1.00	.688

City of San Bernardino
N/S: Macy Street
E/W: Foothill Boulevard
Weather: Clear

File Name : 04_SBC_Macy_FH PM
Site Code : 22524137
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Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			04:30 PM		
+0 mins.	0	0	0	1	0	1	0	2	2
+15 mins.	0	0	0	2	0	2	0	2	2
+30 mins.	0	0	0	0	0	0	0	2	2
+45 mins.	0	0	0	0	0	0	0	2	2
Total Volume	0	0	0	3	0	3	0	8	8
% App. Total	0	0		100	0		0	100	
PHF	.000	.000	.000	.375	.000	.375	.000	1.000	1.000

Location: San Bernardino
 N/S: Macy Street
 E/W: Foothill Boulevard



Date: 2/13/2024
 Day: Tuesday

PEDESTRIANS

		North Leg Macy Street	East Leg Foothill Boulevard	South Leg Macy Street	West Leg Foothill Boulevard	
		Pedestrians	Pedestrians	Pedestrians	Pedestrians	
	7:00 AM	0	0	0	0	0
	7:15 AM	0	0	0	0	0
	7:30 AM	0	0	0	0	0
	7:45 AM	0	0	0	0	0
	8:00 AM	0	0	0	0	0
	8:15 AM	1	1	0	0	2
	8:30 AM	2	0	0	0	2
	8:45 AM	0	0	0	0	0
	TOTAL VOLUMES:	3	1	0	0	4

		North Leg Macy Street	East Leg Foothill Boulevard	South Leg Macy Street	West Leg Foothill Boulevard	
		Pedestrians	Pedestrians	Pedestrians	Pedestrians	
	4:00 PM	0	0	0	0	0
	4:15 PM	0	1	0	0	1
	4:30 PM	0	0	0	0	0
	4:45 PM	0	0	0	0	0
	5:00 PM	1	0	0	0	1
	5:15 PM	0	1	0	0	1
	5:30 PM	2	0	0	0	2
	5:45 PM	0	0	0	0	0
	TOTAL VOLUMES:	3	2	0	0	5

Location: San Bernardino
 N/S: Macy Street
 E/W: Foothill Boulevard



Date: 2/13/2024
 Day: Tuesday

BICYCLES

		Southbound Macy Street			Westbound Foothill Boulevard			Northbound Macy Street			Eastbound Foothill Boulevard			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
	8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:		0	0	0	0	1	0	0	0	0	0	3	0	4

		Southbound Macy Street			Westbound Foothill Boulevard			Northbound Macy Street			Eastbound Foothill Boulevard			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	4:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
	4:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
	5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	1	0	0	0	0	0	0	0	1	0	2
TOTAL VOLUMES:		0	0	3	0	2	0	0	0	0	0	4	0	9

City of San Bernardino
N/S: Rancho Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 05_SBC_Ran_FH AM
Site Code : 22524137
Start Date : 2/13/2024
Page No : 1

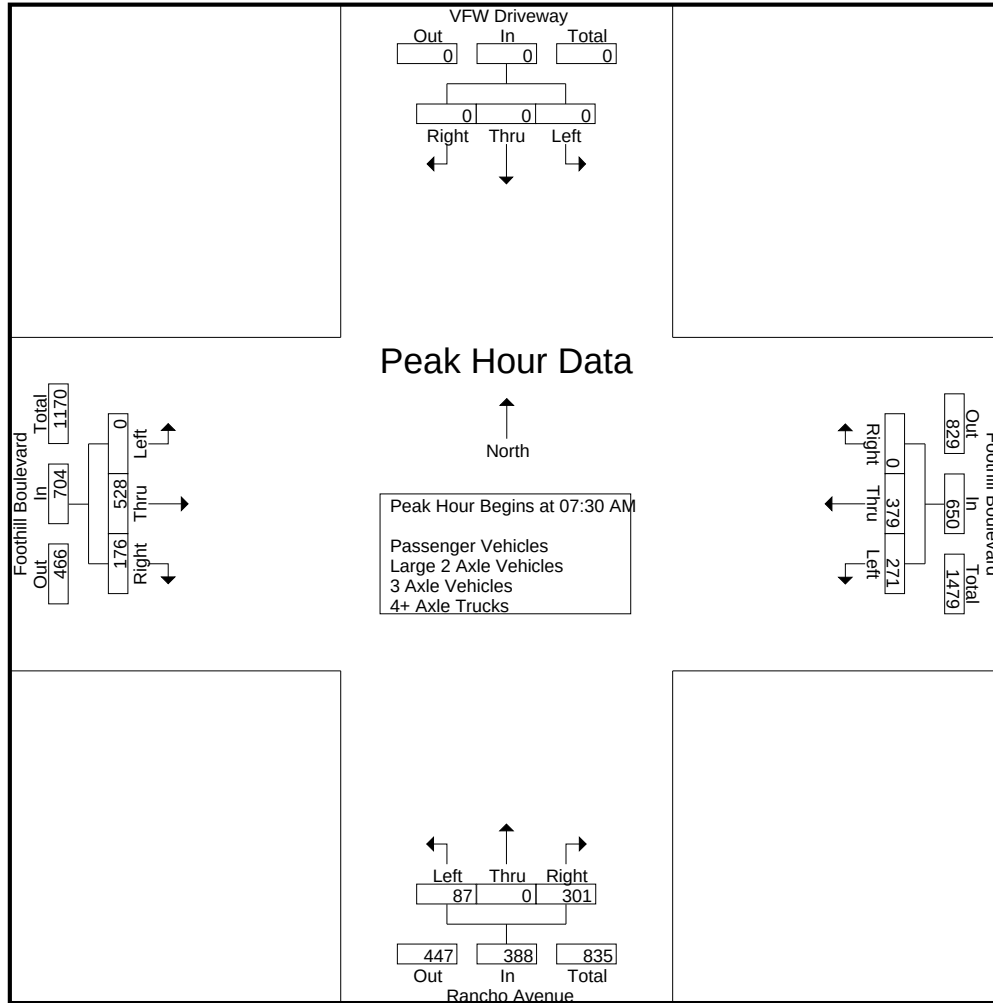
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	VFW Driveway Southbound				Foothill Boulevard Westbound				Rancho Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	59	66	0	125	9	0	50	59	0	80	32	112	296
07:15 AM	0	0	0	0	75	81	0	156	23	0	42	65	0	85	48	133	354
07:30 AM	0	0	0	0	78	93	0	171	14	0	68	82	0	112	61	173	426
07:45 AM	0	0	0	0	78	106	0	184	22	0	68	90	0	163	47	210	484
Total	0	0	0	0	290	346	0	636	68	0	228	296	0	440	188	628	1560
08:00 AM	0	0	0	0	47	93	0	140	23	0	76	99	0	144	43	187	426
08:15 AM	0	0	0	0	68	87	0	155	28	0	89	117	0	109	25	134	406
08:30 AM	0	0	0	0	64	101	0	165	23	0	59	82	1	100	35	136	383
08:45 AM	0	0	0	0	49	109	0	158	30	0	51	81	0	95	28	123	362
Total	0	0	0	0	228	390	0	618	104	0	275	379	1	448	131	580	1577
Grand Total	0	0	0	0	518	736	0	1254	172	0	503	675	1	888	319	1208	3137
Apprch %	0	0	0		41.3	58.7	0		25.5	0	74.5		0.1	73.5	26.4		
Total %	0	0	0	0	16.5	23.5	0	40	5.5	0	16	21.5	0	28.3	10.2	38.5	
Passenger Vehicles	0	0	0	0	391	707	0	1098	160	0	390	550	1	830	304	1135	2783
% Passenger Vehicles	0	0	0	0	75.5	96.1	0	87.6	93	0	77.5	81.5	100	93.5	95.3	94	88.7
Large 2 Axle Vehicles	0	0	0	0	6	12	0	18	0	0	6	6	0	14	6	20	44
% Large 2 Axle Vehicles	0	0	0	0	1.2	1.6	0	1.4	0	0	1.2	0.9	0	1.6	1.9	1.7	1.4
3 Axle Vehicles	0	0	0	0	35	6	0	41	9	0	85	94	0	22	3	25	160
% 3 Axle Vehicles	0	0	0	0	6.8	0.8	0	3.3	5.2	0	16.9	13.9	0	2.5	0.9	2.1	5.1
4+ Axle Trucks	0	0	0	0	86	11	0	97	3	0	22	25	0	22	6	28	150
% 4+ Axle Trucks	0	0	0	0	16.6	1.5	0	7.7	1.7	0	4.4	3.7	0	2.5	1.9	2.3	4.8

	VFW Driveway Southbound				Foothill Boulevard Westbound				Rancho Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	78	93	0	171	14	0	68	82	0	112	61	173	426
07:45 AM	0	0	0	0	78	106	0	184	22	0	68	90	0	163	47	210	484
08:00 AM	0	0	0	0	47	93	0	140	23	0	76	99	0	144	43	187	426
08:15 AM	0	0	0	0	68	87	0	155	28	0	89	117	0	109	25	134	406
Total Volume	0	0	0	0	271	379	0	650	87	0	301	388	0	528	176	704	1742
% App. Total	0	0	0		41.7	58.3	0		22.4	0	77.6		0	75	25		
PHF	.000	.000	.000	.000	.869	.894	.000	.883	.777	.000	.846	.829	.000	.810	.721	.838	.900

City of San Bernardino
N/S: Rancho Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 05_SBC_Ran_FH AM
Site Code : 22524137
Start Date : 2/13/2024
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:15 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	75	81	0	156	14	0	68	82	0	112	61	173
+15 mins.	0	0	0	0	78	93	0	171	22	0	68	90	0	163	47	210
+30 mins.	0	0	0	0	78	106	0	184	23	0	76	99	0	144	43	187
+45 mins.	0	0	0	0	47	93	0	140	28	0	89	117	0	109	25	134
Total Volume	0	0	0	0	278	373	0	651	87	0	301	388	0	528	176	704
% App. Total	0	0	0	0	42.7	57.3	0		22.4	0	77.6		0	75	25	
PHF	.000	.000	.000	.000	.891	.880	.000	.885	.777	.000	.846	.829	.000	.810	.721	.838

City of San Bernardino
N/S: Rancho Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 05_SBC_Ran_FH AM
Site Code : 22524137
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Page No : 1

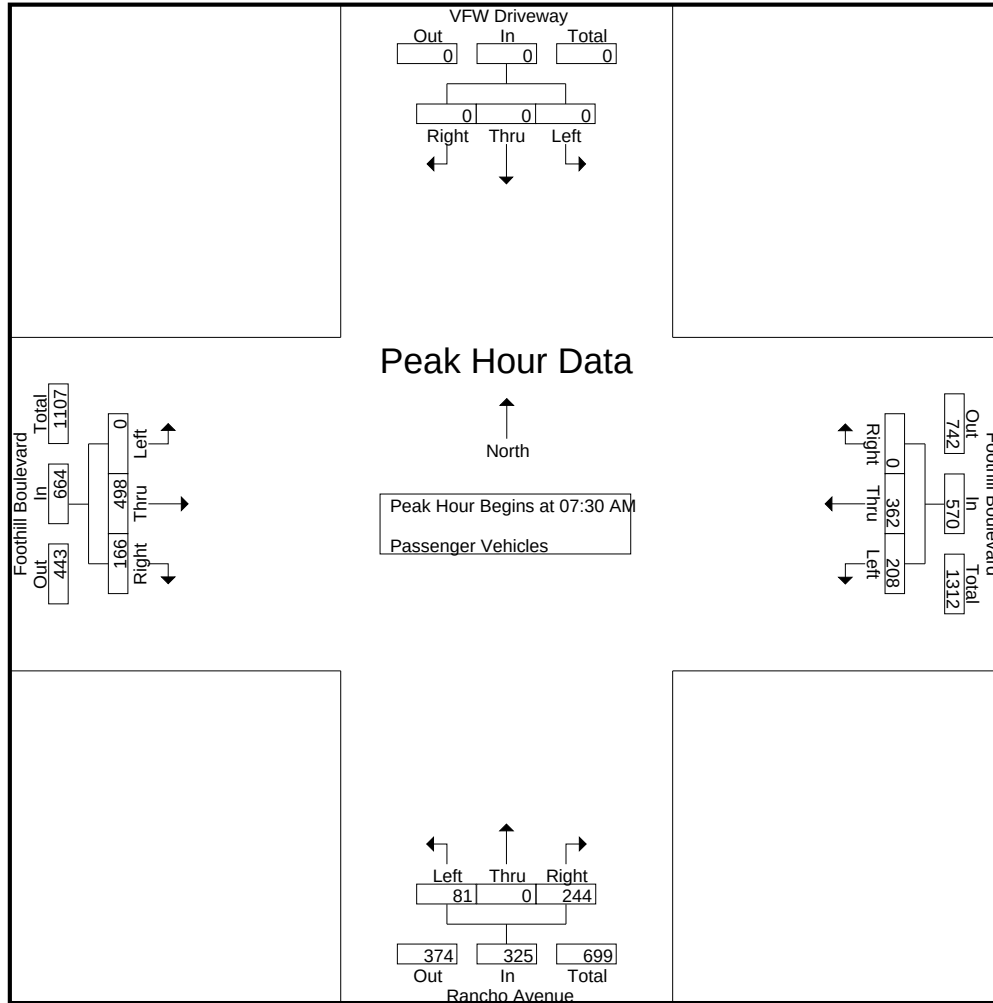
Groups Printed- Passenger Vehicles

	VFW Driveway Southbound				Foothill Boulevard Westbound				Rancho Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	37	66	0	103	9	0	26	35	0	74	32	106	244
07:15 AM	0	0	0	0	51	78	0	129	22	0	22	44	0	81	46	127	300
07:30 AM	0	0	0	0	56	91	0	147	13	0	45	58	0	104	58	162	367
07:45 AM	0	0	0	0	58	102	0	160	22	0	59	81	0	155	43	198	439
Total	0	0	0	0	202	337	0	539	66	0	152	218	0	414	179	593	1350
08:00 AM	0	0	0	0	35	87	0	122	20	0	62	82	0	134	41	175	379
08:15 AM	0	0	0	0	59	82	0	141	26	0	78	104	0	105	24	129	374
08:30 AM	0	0	0	0	57	96	0	153	18	0	53	71	1	90	33	124	348
08:45 AM	0	0	0	0	38	105	0	143	30	0	45	75	0	87	27	114	332
Total	0	0	0	0	189	370	0	559	94	0	238	332	1	416	125	542	1433
Grand Total	0	0	0	0	391	707	0	1098	160	0	390	550	1	830	304	1135	2783
Apprch %	0	0	0		35.6	64.4	0		29.1	0	70.9		0.1	73.1	26.8		
Total %	0	0	0	0	14	25.4	0	39.5	5.7	0	14	19.8	0	29.8	10.9	40.8	

	VFW Driveway Southbound				Foothill Boulevard Westbound				Rancho Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	56	91	0	147	13	0	45	58	0	104	58	162	367
07:45 AM	0	0	0	0	58	102	0	160	22	0	59	81	0	155	43	198	439
08:00 AM	0	0	0	0	35	87	0	122	20	0	62	82	0	134	41	175	379
08:15 AM	0	0	0	0	59	82	0	141	26	0	78	104	0	105	24	129	374
Total Volume	0	0	0	0	208	362	0	570	81	0	244	325	0	498	166	664	1559
% App. Total	0	0	0		36.5	63.5	0		24.9	0	75.1		0	75	25		
PHF	.000	.000	.000	.000	.881	.887	.000	.891	.779	.000	.782	.781	.000	.803	.716	.838	.888

City of San Bernardino
N/S: Rancho Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 05_SBC_Ran_FH AM
Site Code : 22524137
Start Date : 2/13/2024
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	56	91	0	147	13	0	45	58	0	104	58	162
+15 mins.	0	0	0	0	58	102	0	160	22	0	59	81	0	155	43	198
+30 mins.	0	0	0	0	35	87	0	122	20	0	62	82	0	134	41	175
+45 mins.	0	0	0	0	59	82	0	141	26	0	78	104	0	105	24	129
Total Volume	0	0	0	0	208	362	0	570	81	0	244	325	0	498	166	664
% App. Total	0	0	0	0	36.5	63.5	0		24.9	0	75.1		0	75	25	
PHF	.000	.000	.000	.000	.881	.887	.000	.891	.779	.000	.782	.781	.000	.803	.716	.838

City of San Bernardino
N/S: Rancho Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 05_SBC_Ran_FH AM
Site Code : 22524137
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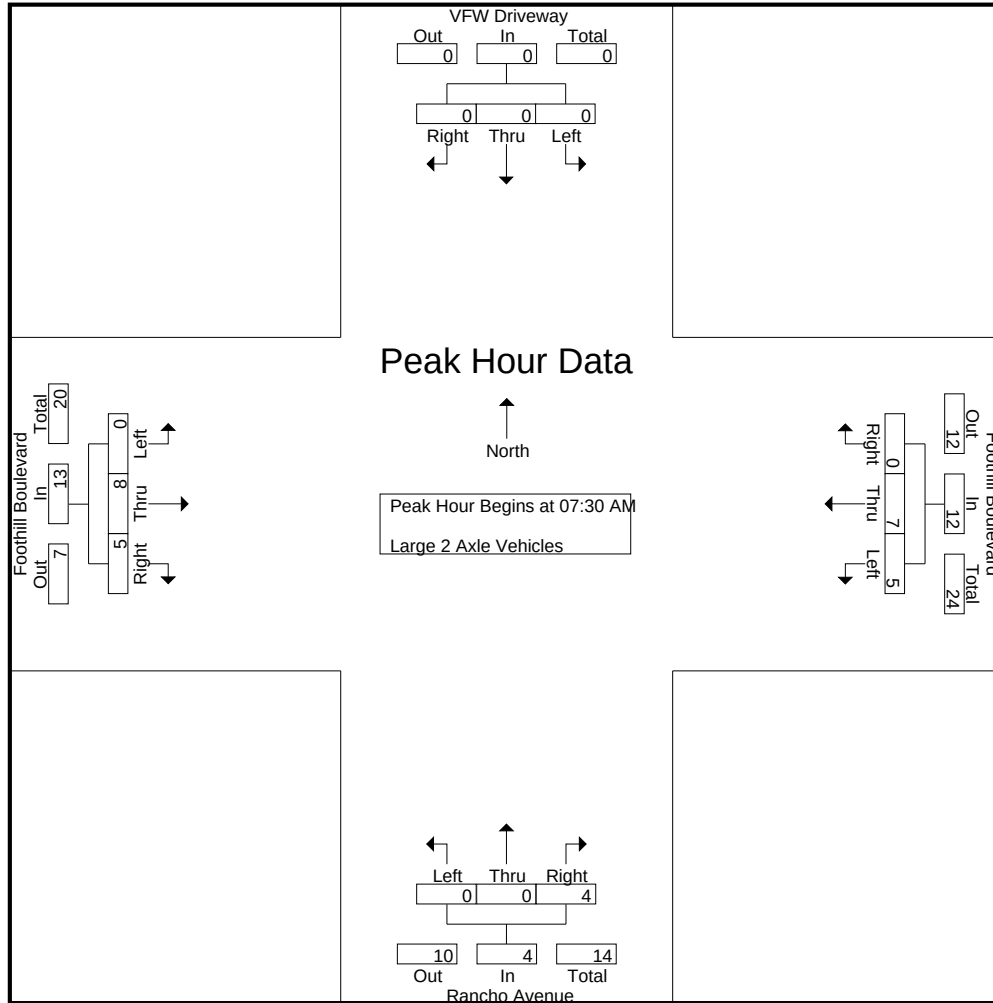
Groups Printed- Large 2 Axle Vehicles

	VFW Driveway Southbound				Foothill Boulevard Westbound				Rancho Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
07:15 AM	0	0	0	0	1	2	0	3	0	0	1	1	0	2	0	2	6
07:30 AM	0	0	0	0	1	1	0	2	0	0	1	1	0	2	2	4	7
07:45 AM	0	0	0	0	2	1	0	3	0	0	1	1	0	4	2	6	10
Total	0	0	0	0	4	4	0	8	0	0	3	3	0	10	4	14	25
08:00 AM	0	0	0	0	1	1	0	2	0	0	1	1	0	0	1	1	4
08:15 AM	0	0	0	0	1	4	0	5	0	0	1	1	0	2	0	2	8
08:30 AM	0	0	0	0	0	1	0	1	0	0	1	1	0	1	0	1	3
08:45 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	1	2	4
Total	0	0	0	0	2	8	0	10	0	0	3	3	0	4	2	6	19
Grand Total	0	0	0	0	6	12	0	18	0	0	6	6	0	14	6	20	44
Apprch %	0	0	0		33.3	66.7	0		0	0	100		0	70	30		
Total %	0	0	0	0	13.6	27.3	0	40.9	0	0	13.6	13.6	0	31.8	13.6	45.5	

	VFW Driveway Southbound				Foothill Boulevard Westbound				Rancho Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	1	1	0	2	0	0	1	1	0	2	2	4	7
07:45 AM	0	0	0	0	2	1	0	3	0	0	1	1	0	4	2	6	10
08:00 AM	0	0	0	0	1	1	0	2	0	0	1	1	0	0	1	1	4
08:15 AM	0	0	0	0	1	4	0	5	0	0	1	1	0	2	0	2	8
Total Volume	0	0	0	0	5	7	0	12	0	0	4	4	0	8	5	13	29
% App. Total	0	0	0		41.7	58.3	0		0	0	100		0	61.5	38.5		
PHF	.000	.000	.000	.000	.625	.438	.000	.600	.000	.000	1.00	1.00	.000	.500	.625	.542	.725

City of San Bernardino
N/S: Rancho Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 05_SBC_Ran_FH AM
Site Code : 22524137
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	1	1	0	2	0	0	1	1	0	2	2	4
+15 mins.	0	0	0	0	2	1	0	3	0	0	1	1	0	4	2	6
+30 mins.	0	0	0	0	1	1	0	2	0	0	1	1	0	0	1	1
+45 mins.	0	0	0	0	1	4	0	5	0	0	1	1	0	2	0	2
Total Volume	0	0	0	0	5	7	0	12	0	0	4	4	0	8	5	13
% App. Total	0	0	0	0	41.7	58.3	0		0	0	100		0	61.5	38.5	
PHF	.000	.000	.000	.000	.625	.438	.000	.600	.000	.000	1.000	1.000	.000	.500	.625	.542

City of San Bernardino
N/S: Rancho Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 05_SBC_Ran_FH AM
Site Code : 22524137
Start Date : 2/13/2024
Page No : 1

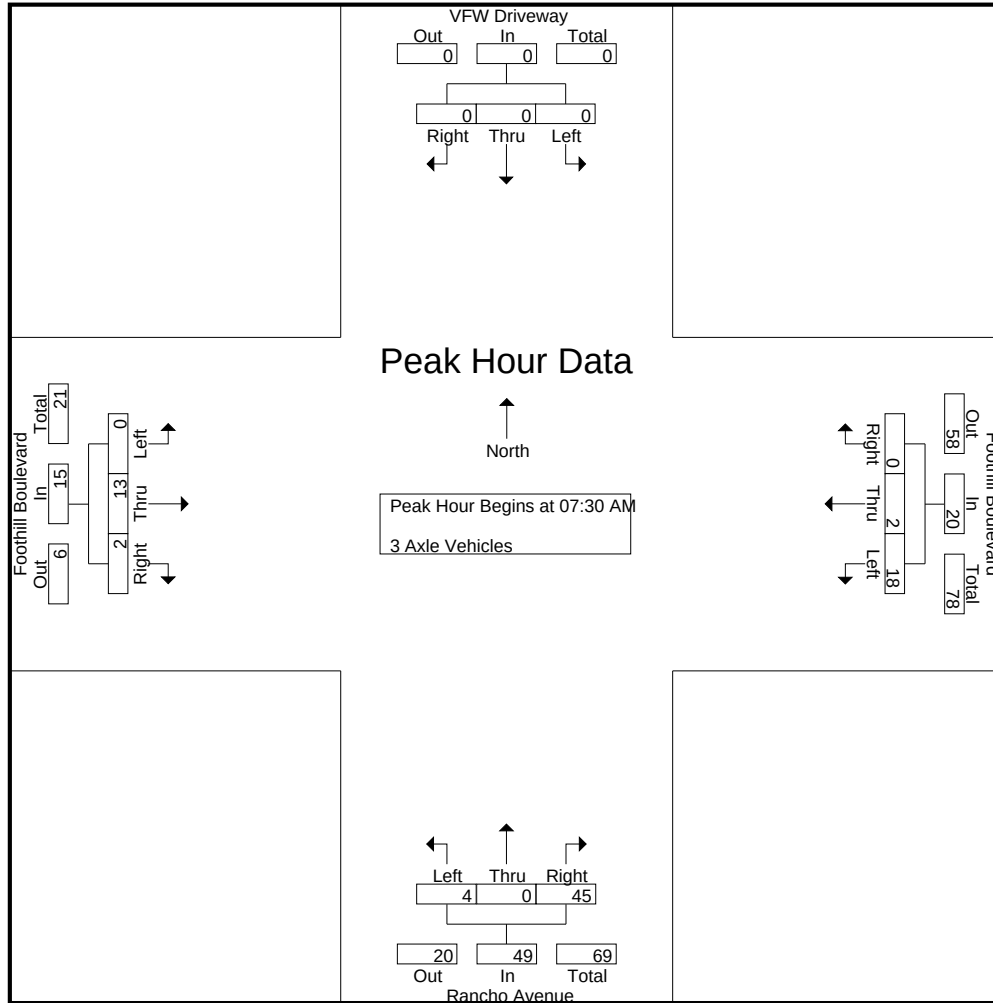
Groups Printed- 3 Axle Vehicles

	VFW Driveway Southbound				Foothill Boulevard Westbound				Rancho Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	4	0	0	4	0	0	21	21	0	3	0	3	28
07:15 AM	0	0	0	0	6	0	0	6	1	0	14	15	0	1	1	2	23
07:30 AM	0	0	0	0	7	0	0	7	1	0	20	21	0	3	0	3	31
07:45 AM	0	0	0	0	5	1	0	6	0	0	7	7	0	3	0	3	16
Total	0	0	0	0	22	1	0	23	2	0	62	64	0	10	1	11	98
08:00 AM	0	0	0	0	4	1	0	5	2	0	10	12	0	6	1	7	24
08:15 AM	0	0	0	0	2	0	0	2	1	0	8	9	0	1	1	2	13
08:30 AM	0	0	0	0	1	3	0	4	4	0	1	5	0	2	0	2	11
08:45 AM	0	0	0	0	6	1	0	7	0	0	4	4	0	3	0	3	14
Total	0	0	0	0	13	5	0	18	7	0	23	30	0	12	2	14	62
Grand Total	0	0	0	0	35	6	0	41	9	0	85	94	0	22	3	25	160
Apprch %	0	0	0		85.4	14.6	0		9.6	0	90.4		0	88	12		
Total %	0	0	0	0	21.9	3.8	0	25.6	5.6	0	53.1	58.8	0	13.8	1.9	15.6	

	VFW Driveway Southbound				Foothill Boulevard Westbound				Rancho Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	7	0	0	7	1	0	20	21	0	3	0	3	31
07:45 AM	0	0	0	0	5	1	0	6	0	0	7	7	0	3	0	3	16
08:00 AM	0	0	0	0	4	1	0	5	2	0	10	12	0	6	1	7	24
08:15 AM	0	0	0	0	2	0	0	2	1	0	8	9	0	1	1	2	13
Total Volume	0	0	0	0	18	2	0	20	4	0	45	49	0	13	2	15	84
% App. Total	0	0	0		90	10	0		8.2	0	91.8		0	86.7	13.3		
PHF	.000	.000	.000	.000	.643	.500	.000	.714	.500	.000	.563	.583	.000	.542	.500	.536	.677

City of San Bernardino
N/S: Rancho Avenue
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File Name : 05_SBC_Ran_FH AM
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	7	0	0	7	1	0	20	21	0	3	0	3
+15 mins.	0	0	0	0	5	1	0	6	0	0	7	7	0	3	0	3
+30 mins.	0	0	0	0	4	1	0	5	2	0	10	12	0	6	1	7
+45 mins.	0	0	0	0	2	0	0	2	1	0	8	9	0	1	1	2
Total Volume	0	0	0	0	18	2	0	20	4	0	45	49	0	13	2	15
% App. Total	0	0	0	0	90	10	0		8.2	0	91.8		0	86.7	13.3	
PHF	.000	.000	.000	.000	.643	.500	.000	.714	.500	.000	.563	.583	.000	.542	.500	.536

City of San Bernardino
N/S: Rancho Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 05_SBC_Ran_FH AM
Site Code : 22524137
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Page No : 1

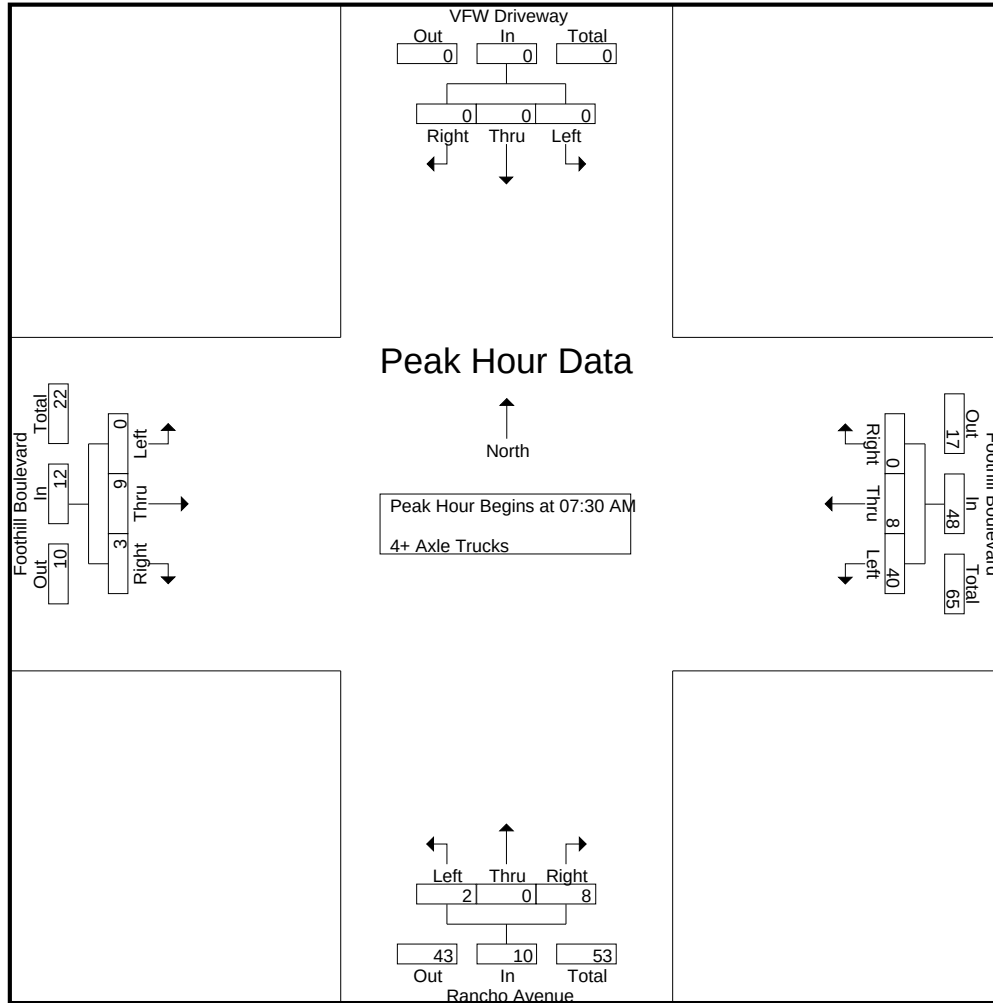
Groups Printed- 4+ Axle Trucks

	VFW Driveway Southbound				Foothill Boulevard Westbound				Rancho Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	18	0	0	18	0	0	3	3	0	1	0	1	22
07:15 AM	0	0	0	0	17	1	0	18	0	0	5	5	0	1	1	2	25
07:30 AM	0	0	0	0	14	1	0	15	0	0	2	2	0	3	1	4	21
07:45 AM	0	0	0	0	13	2	0	15	0	0	1	1	0	1	2	3	19
Total	0	0	0	0	62	4	0	66	0	0	11	11	0	6	4	10	87
08:00 AM	0	0	0	0	7	4	0	11	1	0	3	4	0	4	0	4	19
08:15 AM	0	0	0	0	6	1	0	7	1	0	2	3	0	1	0	1	11
08:30 AM	0	0	0	0	6	1	0	7	1	0	4	5	0	7	2	9	21
08:45 AM	0	0	0	0	5	1	0	6	0	0	2	2	0	4	0	4	12
Total	0	0	0	0	24	7	0	31	3	0	11	14	0	16	2	18	63
Grand Total	0	0	0	0	86	11	0	97	3	0	22	25	0	22	6	28	150
Apprch %	0	0	0		88.7	11.3	0		12	0	88		0	78.6	21.4		
Total %	0	0	0	0	57.3	7.3	0	64.7	2	0	14.7	16.7	0	14.7	4	18.7	

	VFW Driveway Southbound				Foothill Boulevard Westbound				Rancho Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	14	1	0	15	0	0	2	2	0	3	1	4	21
07:45 AM	0	0	0	0	13	2	0	15	0	0	1	1	0	1	2	3	19
08:00 AM	0	0	0	0	7	4	0	11	1	0	3	4	0	4	0	4	19
08:15 AM	0	0	0	0	6	1	0	7	1	0	2	3	0	1	0	1	11
Total Volume	0	0	0	0	40	8	0	48	2	0	8	10	0	9	3	12	70
% App. Total	0	0	0		83.3	16.7	0		20	0	80		0	75	25		
PHF	.000	.000	.000	.000	.714	.500	.000	.800	.500	.000	.667	.625	.000	.563	.375	.750	.833

City of San Bernardino
N/S: Rancho Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 05_SBC_Ran_FH AM
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	14	1	0	15	0	0	2	2	0	3	1	4
+15 mins.	0	0	0	0	13	2	0	15	0	0	1	1	0	1	2	3
+30 mins.	0	0	0	0	7	4	0	11	1	0	3	4	0	4	0	4
+45 mins.	0	0	0	0	6	1	0	7	1	0	2	3	0	1	0	1
Total Volume	0	0	0	0	40	8	0	48	2	0	8	10	0	9	3	12
% App. Total	0	0	0	0	83.3	16.7	0		20	0	80		0	75	25	
PHF	.000	.000	.000	.000	.714	.500	.000	.800	.500	.000	.667	.625	.000	.563	.375	.750

City of San Bernardino
N/S: Rancho Avenue
E/W: Foothill Boulevard
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File Name : 05_SBC_Ran_FH PM
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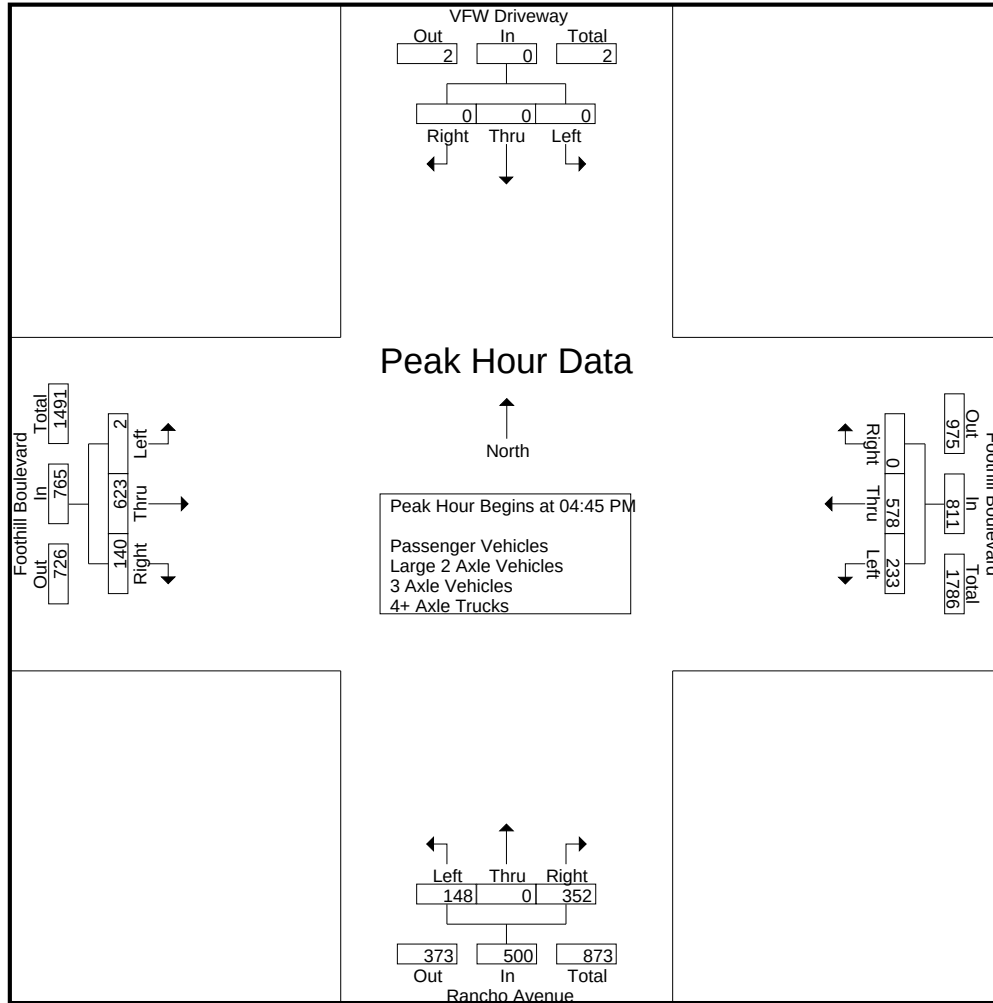
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	VFW Driveway Southbound				Foothill Boulevard Westbound				Rancho Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	58	125	0	183	18	0	73	91	0	133	28	161	435
04:15 PM	0	0	0	0	50	162	0	212	31	0	81	112	0	131	29	160	484
04:30 PM	0	0	0	0	63	130	0	193	26	0	62	88	0	164	27	191	472
04:45 PM	0	0	0	0	43	125	0	168	35	0	104	139	0	147	41	188	495
Total	0	0	0	0	214	542	0	756	110	0	320	430	0	575	125	700	1886
05:00 PM	0	0	0	0	69	169	0	238	26	0	77	103	0	188	36	224	565
05:15 PM	0	0	0	0	56	147	0	203	46	0	74	120	1	162	34	197	520
05:30 PM	0	0	0	0	65	137	0	202	41	0	97	138	1	126	29	156	496
05:45 PM	0	0	0	0	49	135	0	184	31	0	76	107	1	135	38	174	465
Total	0	0	0	0	239	588	0	827	144	0	324	468	3	611	137	751	2046
Grand Total	0	0	0	0	453	1130	0	1583	254	0	644	898	3	1186	262	1451	3932
Apprch %	0	0	0		28.6	71.4	0		28.3	0	71.7		0.2	81.7	18.1		
Total %	0	0	0	0	11.5	28.7	0	40.3	6.5	0	16.4	22.8	0.1	30.2	6.7	36.9	
Passenger Vehicles	0	0	0	0	407	1095	0	1502	252	0	607	859	3	1145	256	1404	3765
% Passenger Vehicles	0	0	0	0	89.8	96.9	0	94.9	99.2	0	94.3	95.7	100	96.5	97.7	96.8	95.8
Large 2 Axle Vehicles	0	0	0	0	4	13	0	17	0	0	3	3	0	17	5	22	42
% Large 2 Axle Vehicles	0	0	0	0	0.9	1.2	0	1.1	0	0	0.5	0.3	0	1.4	1.9	1.5	1.1
3 Axle Vehicles	0	0	0	0	24	15	0	39	0	0	12	12	0	7	1	8	59
% 3 Axle Vehicles	0	0	0	0	5.3	1.3	0	2.5	0	0	1.9	1.3	0	0.6	0.4	0.6	1.5
4+ Axle Trucks	0	0	0	0	18	7	0	25	2	0	22	24	0	17	0	17	66
% 4+ Axle Trucks	0	0	0	0	4	0.6	0	1.6	0.8	0	3.4	2.7	0	1.4	0	1.2	1.7

	VFW Driveway Southbound				Foothill Boulevard Westbound				Rancho Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	43	125	0	168	35	0	104	139	0	147	41	188	495
05:00 PM	0	0	0	0	69	169	0	238	26	0	77	103	0	188	36	224	565
05:15 PM	0	0	0	0	56	147	0	203	46	0	74	120	1	162	34	197	520
05:30 PM	0	0	0	0	65	137	0	202	41	0	97	138	1	126	29	156	496
Total Volume	0	0	0	0	233	578	0	811	148	0	352	500	2	623	140	765	2076
% App. Total	0	0	0		28.7	71.3	0		29.6	0	70.4		0.3	81.4	18.3		
PHF	.000	.000	.000	.000	.844	.855	.000	.852	.804	.000	.846	.899	.500	.828	.854	.854	.919

City of San Bernardino
N/S: Rancho Avenue
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				05:00 PM				04:45 PM				04:30 PM			
+0 mins.	0	0	0	0	69	169	0	238	35	0	104	139	0	164	27	191
+15 mins.	0	0	0	0	56	147	0	203	26	0	77	103	0	147	41	188
+30 mins.	0	0	0	0	65	137	0	202	46	0	74	120	0	188	36	224
+45 mins.	0	0	0	0	49	135	0	184	41	0	97	138	1	162	34	197
Total Volume	0	0	0	0	239	588	0	827	148	0	352	500	1	661	138	800
% App. Total	0	0	0	0	28.9	71.1	0		29.6	0	70.4		0.1	82.6	17.2	
PHF	.000	.000	.000	.000	.866	.870	.000	.869	.804	.000	.846	.899	.250	.879	.841	.893

City of San Bernardino
N/S: Rancho Avenue
E/W: Foothill Boulevard
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File Name : 05_SBC_Ran_FH PM
Site Code : 22524137
Start Date : 2/13/2024
Page No : 1

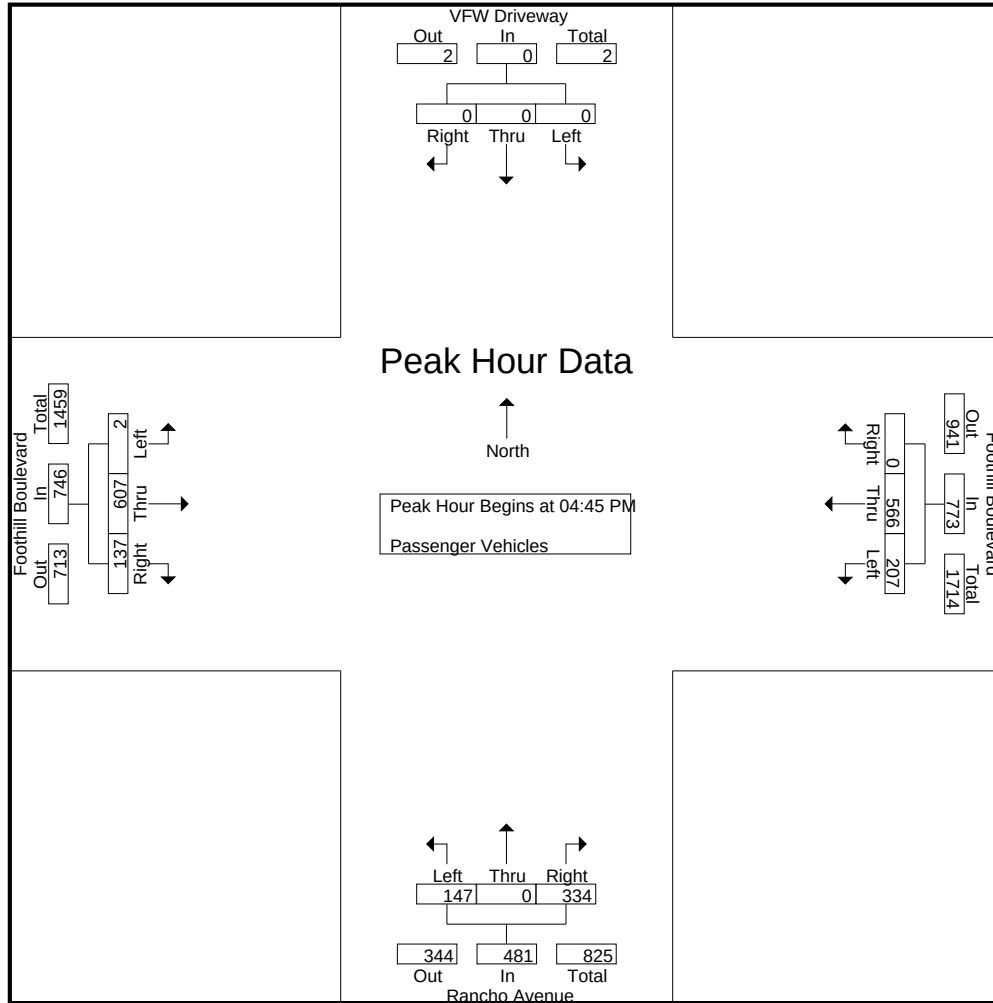
Groups Printed- Passenger Vehicles

	VFW Driveway Southbound				Foothill Boulevard Westbound				Rancho Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	51	119	0	170	18	0	68	86	0	126	25	151	407
04:15 PM	0	0	0	0	46	151	0	197	30	0	79	109	0	127	29	156	462
04:30 PM	0	0	0	0	58	128	0	186	26	0	58	84	0	153	27	180	450
04:45 PM	0	0	0	0	40	123	0	163	35	0	100	135	0	140	40	180	478
Total	0	0	0	0	195	521	0	716	109	0	305	414	0	546	121	667	1797
05:00 PM	0	0	0	0	61	163	0	224	25	0	76	101	0	186	35	221	546
05:15 PM	0	0	0	0	51	145	0	196	46	0	65	111	1	158	33	192	499
05:30 PM	0	0	0	0	55	135	0	190	41	0	93	134	1	123	29	153	477
05:45 PM	0	0	0	0	45	131	0	176	31	0	68	99	1	132	38	171	446
Total	0	0	0	0	212	574	0	786	143	0	302	445	3	599	135	737	1968
Grand Total	0	0	0	0	407	1095	0	1502	252	0	607	859	3	1145	256	1404	3765
Apprch %	0	0	0		27.1	72.9	0		29.3	0	70.7		0.2	81.6	18.2		
Total %	0	0	0		10.8	29.1	0	39.9	6.7	0	16.1	22.8	0.1	30.4	6.8	37.3	

	VFW Driveway Southbound				Foothill Boulevard Westbound				Rancho Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	40	123	0	163	35	0	100	135	0	140	40	180	478
05:00 PM	0	0	0	0	61	163	0	224	25	0	76	101	0	186	35	221	546
05:15 PM	0	0	0	0	51	145	0	196	46	0	65	111	1	158	33	192	499
05:30 PM	0	0	0	0	55	135	0	190	41	0	93	134	1	123	29	153	477
Total Volume	0	0	0	0	207	566	0	773	147	0	334	481	2	607	137	746	2000
% App. Total	0	0	0		26.8	73.2	0		30.6	0	69.4		0.3	81.4	18.4		
PHF	.000	.000	.000	.000	.848	.868	.000	.863	.799	.000	.835	.891	.500	.816	.856	.844	.916

City of San Bernardino
N/S: Rancho Avenue
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File Name : 05_SBC_Ran_FH PM
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Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	40	123	0	163	35	0	100	135	0	140	40	180
+15 mins.	0	0	0	0	61	163	0	224	25	0	76	101	0	186	35	221
+30 mins.	0	0	0	0	51	145	0	196	46	0	65	111	1	158	33	192
+45 mins.	0	0	0	0	55	135	0	190	41	0	93	134	1	123	29	153
Total Volume	0	0	0	0	207	566	0	773	147	0	334	481	2	607	137	746
% App. Total	0	0	0	0	26.8	73.2	0		30.6	0	69.4		0.3	81.4	18.4	
PHF	.000	.000	.000	.000	.848	.868	.000	.863	.799	.000	.835	.891	.500	.816	.856	.844

City of San Bernardino
N/S: Rancho Avenue
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File Name : 05_SBC_Ran_FH PM
Site Code : 22524137
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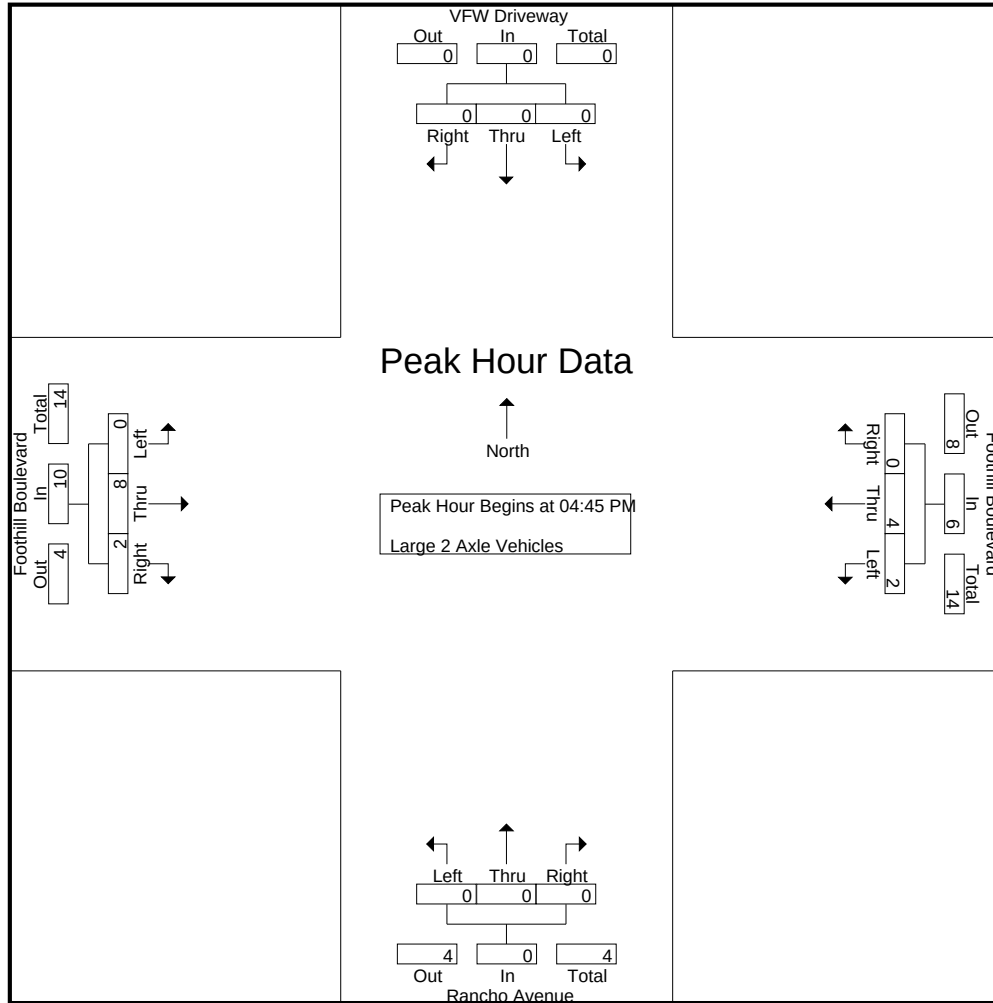
Groups Printed- Large 2 Axle Vehicles

	VFW Driveway Southbound				Foothill Boulevard Westbound				Rancho Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	1	4	0	5	0	0	2	2	0	4	3	7	14
04:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	4	0	4	6
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3	4
Total	0	0	0	0	1	9	0	10	0	0	2	2	0	11	3	14	26
05:00 PM	0	0	0	0	1	1	0	2	0	0	0	0	0	2	1	3	5
05:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	1	2	4
05:30 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	2	0	2	3
05:45 PM	0	0	0	0	1	1	0	2	0	0	1	1	0	1	0	1	4
Total	0	0	0	0	3	4	0	7	0	0	1	1	0	6	2	8	16
Grand Total	0	0	0	0	4	13	0	17	0	0	3	3	0	17	5	22	42
Apprch %	0	0	0		23.5	76.5	0		0	0	100		0	77.3	22.7		
Total %	0	0	0	0	9.5	31	0	40.5	0	0	7.1	7.1	0	40.5	11.9	52.4	

	VFW Driveway Southbound				Foothill Boulevard Westbound				Rancho Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3	4
05:00 PM	0	0	0	0	1	1	0	2	0	0	0	0	0	2	1	3	5
05:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	1	2	4
05:30 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	2	0	2	3
Total Volume	0	0	0	0	2	4	0	6	0	0	0	0	0	8	2	10	16
% App. Total	0	0	0		33.3	66.7	0		0	0	0		0	80	20		
PHF	.000	.000	.000	.000	.500	.500	.000	.750	.000	.000	.000	.000	.000	.667	.500	.833	.800

City of San Bernardino
N/S: Rancho Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 05_SBC_Ran_FH PM
Site Code : 22524137
Start Date : 2/13/2024
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3
+15 mins.	0	0	0	0	1	1	0	2	0	0	0	0	0	2	1	3
+30 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	1	1	2
+45 mins.	0	0	0	0	1	0	0	1	0	0	0	0	0	2	0	2
Total Volume	0	0	0	0	2	4	0	6	0	0	0	0	0	8	2	10
% App. Total	0	0	0	0	33.3	66.7	0		0	0	0	0	0	80	20	
PHF	.000	.000	.000	.000	.500	.500	.000	.750	.000	.000	.000	.000	.000	.667	.500	.833

City of San Bernardino
N/S: Rancho Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 05_SBC_Ran_FH PM
Site Code : 22524137
Start Date : 2/13/2024
Page No : 1

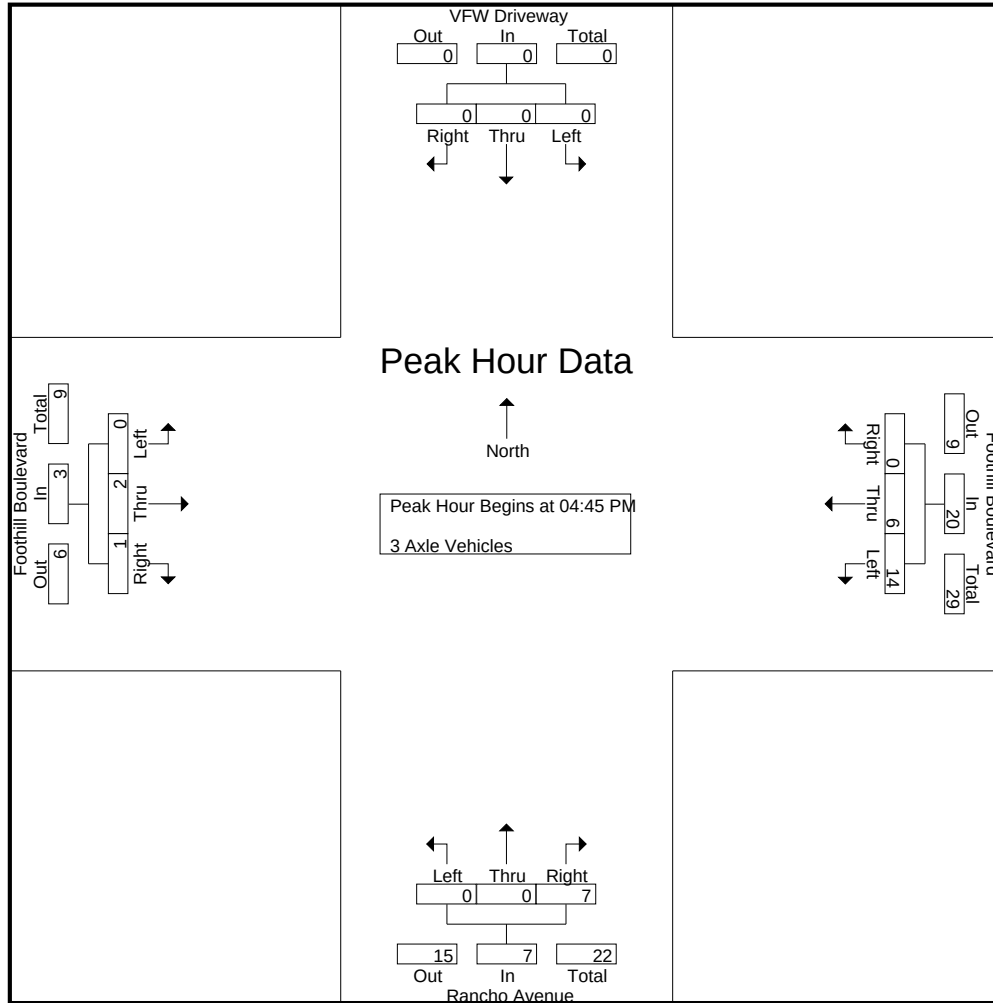
Groups Printed- 3 Axle Vehicles

	VFW Driveway Southbound				Foothill Boulevard Westbound				Rancho Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	5	2	0	7	0	0	2	2	0	1	0	1	10
04:15 PM	0	0	0	0	2	5	0	7	0	0	0	0	0	1	0	1	8
04:30 PM	0	0	0	0	2	0	0	2	0	0	0	0	0	2	0	2	4
04:45 PM	0	0	0	0	1	1	0	2	0	0	1	1	0	0	1	1	4
Total	0	0	0	0	10	8	0	18	0	0	3	3	0	4	1	5	26
05:00 PM	0	0	0	0	5	4	0	9	0	0	0	0	0	0	0	0	9
05:15 PM	0	0	0	0	4	0	0	4	0	0	3	3	0	1	0	1	8
05:30 PM	0	0	0	0	4	1	0	5	0	0	3	3	0	1	0	1	9
05:45 PM	0	0	0	0	1	2	0	3	0	0	3	3	0	1	0	1	7
Total	0	0	0	0	14	7	0	21	0	0	9	9	0	3	0	3	33
Grand Total	0	0	0	0	24	15	0	39	0	0	12	12	0	7	1	8	59
Apprch %	0	0	0		61.5	38.5	0		0	0	100		0	87.5	12.5		
Total %	0	0	0	0	40.7	25.4	0	66.1	0	0	20.3	20.3	0	11.9	1.7	13.6	

	VFW Driveway Southbound				Foothill Boulevard Westbound				Rancho Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	1	1	0	2	0	0	1	1	0	0	1	1	4
05:00 PM	0	0	0	0	5	4	0	9	0	0	0	0	0	0	0	0	9
05:15 PM	0	0	0	0	4	0	0	4	0	0	3	3	0	1	0	1	8
05:30 PM	0	0	0	0	4	1	0	5	0	0	3	3	0	1	0	1	9
Total Volume	0	0	0	0	14	6	0	20	0	0	7	7	0	2	1	3	30
% App. Total	0	0	0		70	30	0		0	0	100		0	66.7	33.3		
PHF	.000	.000	.000	.000	.700	.375	.000	.556	.000	.000	.583	.583	.000	.500	.250	.750	.833

City of San Bernardino
N/S: Rancho Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 05_SBC_Ran_FH PM
Site Code : 22524137
Start Date : 2/13/2024
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	1	1	0	2	0	0	1	1	0	0	1	1
+15 mins.	0	0	0	0	5	4	0	9	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	4	0	0	4	0	0	3	3	0	1	0	1
+45 mins.	0	0	0	0	4	1	0	5	0	0	3	3	0	1	0	1
Total Volume	0	0	0	0	14	6	0	20	0	0	7	7	0	2	1	3
% App. Total	0	0	0	0	70	30	0		0	0	100		0	66.7	33.3	
PHF	.000	.000	.000	.000	.700	.375	.000	.556	.000	.000	.583	.583	.000	.500	.250	.750

City of San Bernardino
N/S: Rancho Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 05_SBC_Ran_FH PM
Site Code : 22524137
Start Date : 2/13/2024
Page No : 1

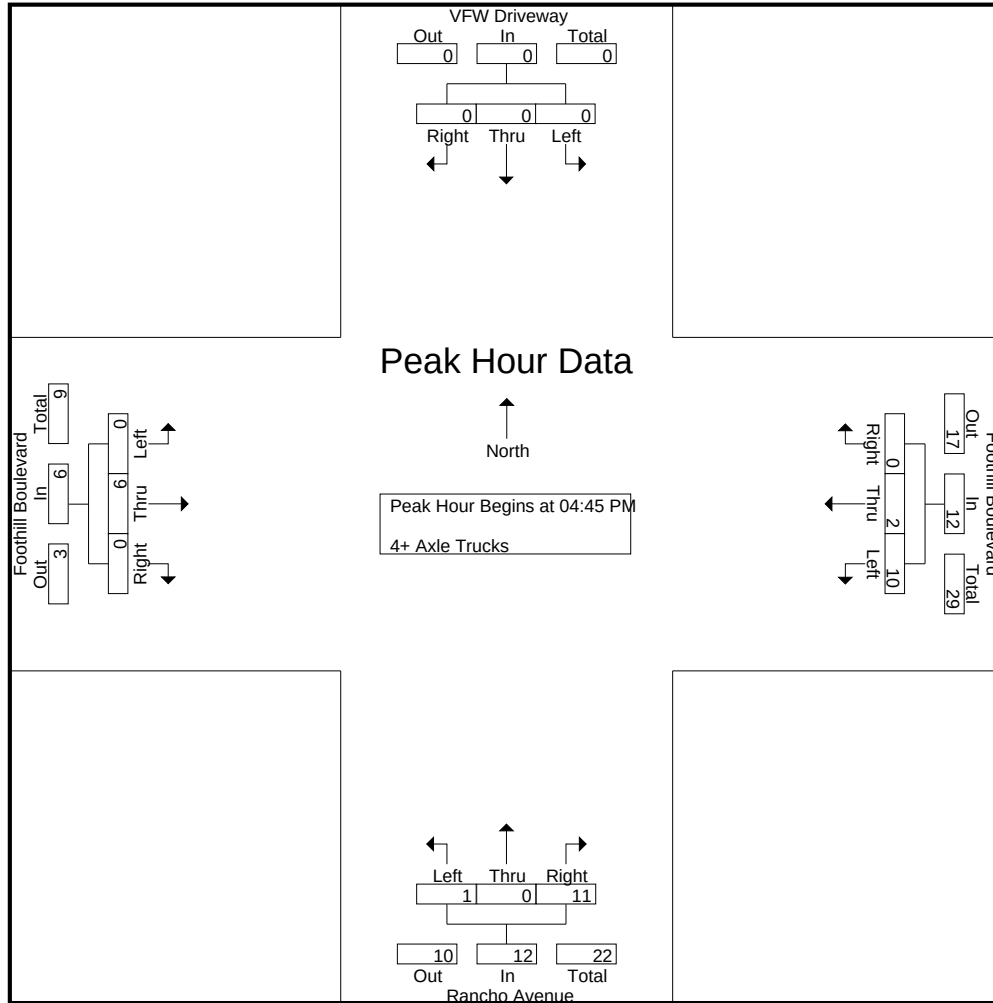
Groups Printed- 4+ Axle Trucks

	VFW Driveway Southbound				Foothill Boulevard Westbound				Rancho Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	1	0	0	1	0	0	1	1	0	2	0	2	4
04:15 PM	0	0	0	0	2	4	0	6	1	0	2	3	0	3	0	3	12
04:30 PM	0	0	0	0	3	0	0	3	0	0	4	4	0	5	0	5	12
04:45 PM	0	0	0	0	2	0	0	2	0	0	3	3	0	4	0	4	9
Total	0	0	0	0	8	4	0	12	1	0	10	11	0	14	0	14	37
05:00 PM	0	0	0	0	2	1	0	3	1	0	1	2	0	0	0	0	5
05:15 PM	0	0	0	0	1	0	0	1	0	0	6	6	0	2	0	2	9
05:30 PM	0	0	0	0	5	1	0	6	0	0	1	1	0	0	0	0	7
05:45 PM	0	0	0	0	2	1	0	3	0	0	4	4	0	1	0	1	8
Total	0	0	0	0	10	3	0	13	1	0	12	13	0	3	0	3	29
Grand Total	0	0	0	0	18	7	0	25	2	0	22	24	0	17	0	17	66
Apprch %	0	0	0		72	28	0		8.3	0	91.7		0	100	0		
Total %	0	0	0	0	27.3	10.6	0	37.9	3	0	33.3	36.4	0	25.8	0	25.8	

	VFW Driveway Southbound				Foothill Boulevard Westbound				Rancho Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	2	0	0	2	0	0	3	3	0	4	0	4	9
05:00 PM	0	0	0	0	2	1	0	3	1	0	1	2	0	0	0	0	5
05:15 PM	0	0	0	0	1	0	0	1	0	0	6	6	0	2	0	2	9
05:30 PM	0	0	0	0	5	1	0	6	0	0	1	1	0	0	0	0	7
Total Volume	0	0	0	0	10	2	0	12	1	0	11	12	0	6	0	6	30
% App. Total	0	0	0		83.3	16.7	0		8.3	0	91.7		0	100	0		
PHF	.000	.000	.000	.000	.500	.500	.000	.500	.250	.000	.458	.500	.000	.375	.000	.375	.833

City of San Bernardino
N/S: Rancho Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 05_SBC_Ran_FH PM
Site Code : 22524137
Start Date : 2/13/2024
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	2	0	0	2	0	0	3	3	0	4	0	4
+15 mins.	0	0	0	0	2	1	0	3	1	0	1	2	0	0	0	0
+30 mins.	0	0	0	0	1	0	0	1	0	0	6	6	0	2	0	2
+45 mins.	0	0	0	0	5	1	0	6	0	0	1	1	0	0	0	0
Total Volume	0	0	0	0	10	2	0	12	1	0	11	12	0	6	0	6
% App. Total	0	0	0	0	83.3	16.7	0		8.3	0	91.7		0	100	0	
PHF	.000	.000	.000	.000	.500	.500	.000	.500	.250	.000	.458	.500	.000	.375	.000	.375

Location: San Bernardino
 N/S: Rancho Avenue
 E/W: Foothill Boulevard



Date: 2/13/2024
 Day: Tuesday

PEDESTRIANS

	North Leg VFW Driveway	East Leg Foothill Boulevard	South Leg Rancho Avenue	West Leg Foothill Boulevard	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	1	0	1
8:15 AM	1	0	0	0	1
8:30 AM	0	0	1	0	1
8:45 AM	1	0	0	0	1
TOTAL VOLUMES:	2	0	2	0	4

	North Leg VFW Driveway	East Leg Foothill Boulevard	South Leg Rancho Avenue	West Leg Foothill Boulevard	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	1	0	0	0	1
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	1	0	0	1	2
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	2	0	0	1	3

Location: San Bernardino
 N/S: Rancho Avenue
 E/W: Foothill Boulevard



Date: 2/13/2024
 Day: Tuesday

BICYCLES

	Southbound VFW Driveway			Westbound Foothill Boulevard			Northbound Rancho Avenue			Eastbound Foothill Boulevard			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	1	0	0	0	1	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
TOTAL VOLUMES:	0	0	0	0	2	0	0	0	1	0	0	0	3

	Southbound VFW Driveway			Westbound Foothill Boulevard			Northbound Rancho Avenue			Eastbound Foothill Boulevard			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
4:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	2
5:00 PM	0	0	0	1	1	0	1	0	0	0	0	0	3
5:15 PM	0	0	0	0	0	0	1	0	0	0	1	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	1	1	1	0	4	0	0	0	2	0	9

PRE-CONSTRUCTION COUNT

City of Rialto
N/S: Pepper Avenue
E/W: Foothill Boulevard (SR-66)
Weather: Clear

File Name : 09_RLT_Pep_Foot 3-28 AM
Site Code : 23623985
Start Date : 3/28/2023
Page No : 1

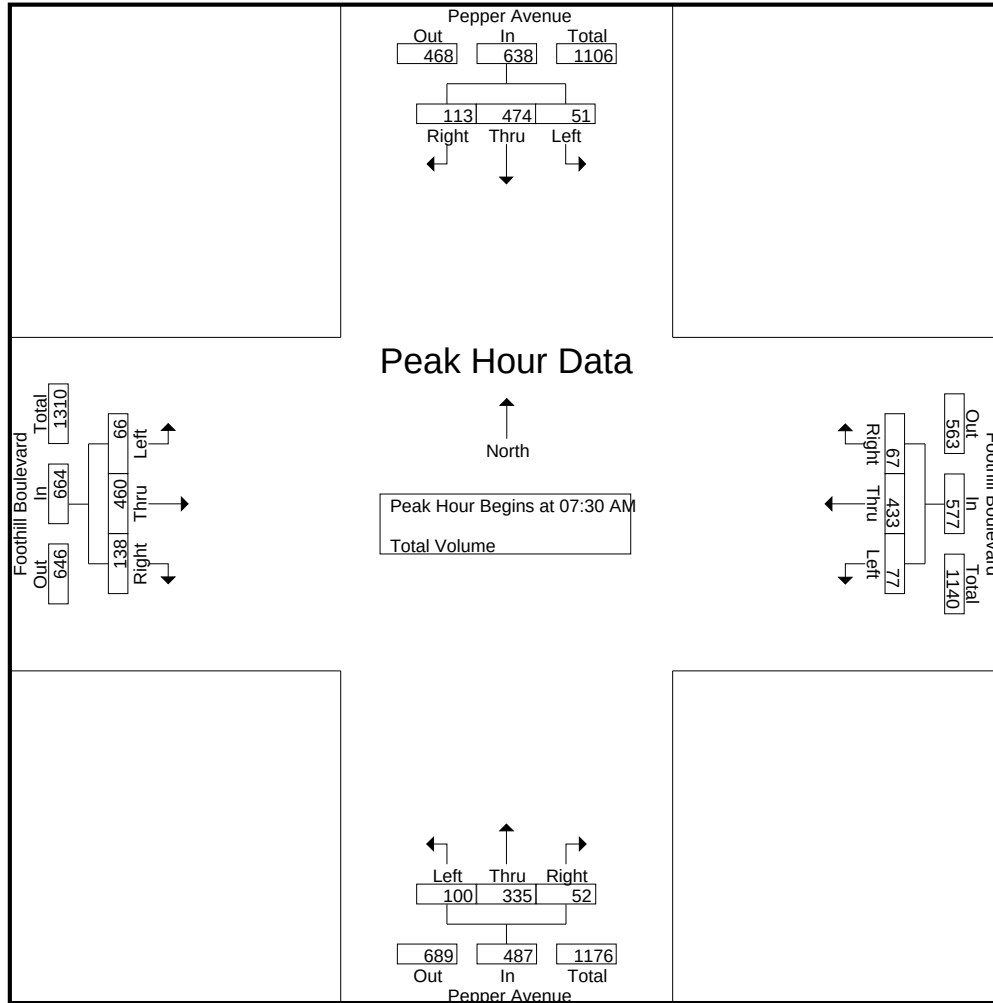
Groups Printed- Total Volume

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	10	84	23	117	15	57	13	85	11	48	15	74	5	52	10	67	343
07:15 AM	11	131	22	164	30	66	15	111	12	71	8	91	12	68	27	107	473
07:30 AM	15	157	36	208	20	112	23	155	20	113	7	140	14	83	32	129	632
07:45 AM	9	107	33	149	22	133	22	177	26	82	9	117	23	173	50	246	689
Total	45	479	114	638	87	368	73	528	69	314	39	422	54	376	119	549	2137
08:00 AM	19	116	27	162	15	80	8	103	24	92	18	134	15	112	35	162	561
08:15 AM	8	94	17	119	20	108	14	142	30	48	18	96	14	92	21	127	484
08:30 AM	10	81	31	122	15	84	11	110	23	59	14	96	11	81	20	112	440
08:45 AM	18	67	33	118	12	94	10	116	19	49	17	85	19	78	24	121	440
Total	55	358	108	521	62	366	43	471	96	248	67	411	59	363	100	522	1925
Grand Total	100	837	222	1159	149	734	116	999	165	562	106	833	113	739	219	1071	4062
Apprch %	8.6	72.2	19.2		14.9	73.5	11.6		19.8	67.5	12.7		10.6	69	20.4		
Total %	2.5	20.6	5.5	28.5	3.7	18.1	2.9	24.6	4.1	13.8	2.6	20.5	2.8	18.2	5.4	26.4	

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	15	157	36	208	20	112	23	155	20	113	7	140	14	83	32	129	632
07:45 AM	9	107	33	149	22	133	22	177	26	82	9	117	23	173	50	246	689
08:00 AM	19	116	27	162	15	80	8	103	24	92	18	134	15	112	35	162	561
08:15 AM	8	94	17	119	20	108	14	142	30	48	18	96	14	92	21	127	484
Total Volume	51	474	113	638	77	433	67	577	100	335	52	487	66	460	138	664	2366
% App. Total	8	74.3	17.7		13.3	75	11.6		20.5	68.8	10.7		9.9	69.3	20.8		
PHF	.671	.755	.785	.767	.875	.814	.728	.815	.833	.741	.722	.870	.717	.665	.690	.675	.858

City of Rialto
N/S: Pepper Avenue
E/W: Foothill Boulevard (SR-66)
Weather: Clear

File Name : 09_RLT_Pep_Foot 3-28 AM
Site Code : 23623985
Start Date : 3/28/2023
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	11	131	22	164	20	112	23	155	20	113	7	140	14	83	32	129
+15 mins.	15	157	36	208	22	133	22	177	26	82	9	117	23	173	50	246
+30 mins.	9	107	33	149	15	80	8	103	24	92	18	134	15	112	35	162
+45 mins.	19	116	27	162	20	108	14	142	30	48	18	96	14	92	21	127
Total Volume	54	511	118	683	77	433	67	577	100	335	52	487	66	460	138	664
% App. Total	7.9	74.8	17.3		13.3	75	11.6		20.5	68.8	10.7		9.9	69.3	20.8	
PHF	.711	.814	.819	.821	.875	.814	.728	.815	.833	.741	.722	.870	.717	.665	.690	.675

City of Rialto
N/S: Pepper Avenue
E/W: Foothill Boulevard (SR-66)
Weather: Clear

File Name : 09_RLT_Pep_Foot 3-28 PM
Site Code : 23623985
Start Date : 3/28/2023
Page No : 1

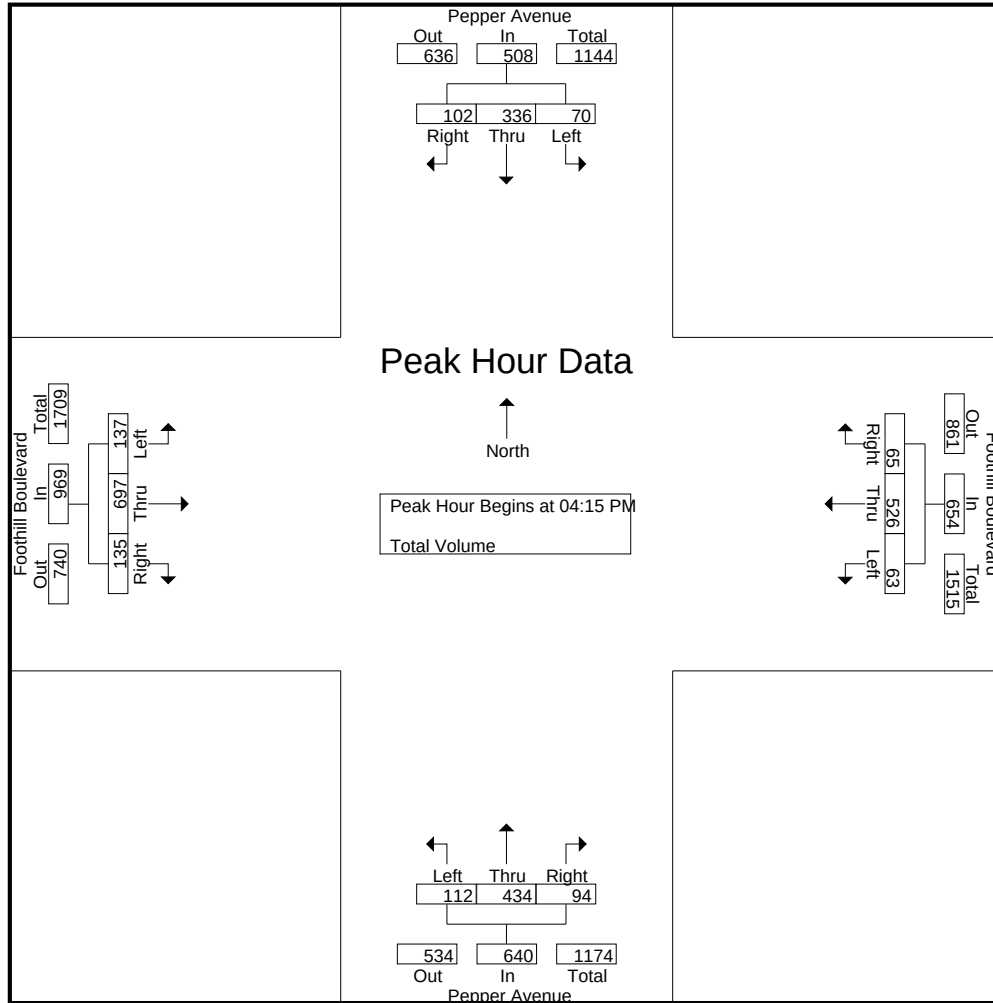
Groups Printed- Total Volume

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	13	77	39	129	8	121	19	148	34	116	19	169	32	137	27	196	642
04:15 PM	20	60	25	105	20	135	12	167	34	116	33	183	42	197	31	270	725
04:30 PM	11	91	27	129	8	117	17	142	27	124	22	173	32	155	33	220	664
04:45 PM	19	85	23	127	18	139	18	175	22	89	18	129	31	158	30	219	650
Total	63	313	114	490	54	512	66	632	117	445	92	654	137	647	121	905	2681
05:00 PM	20	100	27	147	17	135	18	170	29	105	21	155	32	187	41	260	732
05:15 PM	14	86	21	121	19	133	19	171	36	110	20	166	31	150	47	228	686
05:30 PM	17	79	36	132	19	131	13	163	23	120	16	159	27	166	29	222	676
05:45 PM	9	88	32	129	17	129	15	161	26	86	19	131	37	136	24	197	618
Total	60	353	116	529	72	528	65	665	114	421	76	611	127	639	141	907	2712
Grand Total	123	666	230	1019	126	1040	131	1297	231	866	168	1265	264	1286	262	1812	5393
Apprch %	12.1	65.4	22.6		9.7	80.2	10.1		18.3	68.5	13.3		14.6	71	14.5		
Total %	2.3	12.3	4.3	18.9	2.3	19.3	2.4	24	4.3	16.1	3.1	23.5	4.9	23.8	4.9	33.6	

	Pepper Avenue Southbound				Foothill Boulevard Westbound				Pepper Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	20	60	25	105	20	135	12	167	34	116	33	183	42	197	31	270	725
04:30 PM	11	91	27	129	8	117	17	142	27	124	22	173	32	155	33	220	664
04:45 PM	19	85	23	127	18	139	18	175	22	89	18	129	31	158	30	219	650
05:00 PM	20	100	27	147	17	135	18	170	29	105	21	155	32	187	41	260	732
Total Volume	70	336	102	508	63	526	65	654	112	434	94	640	137	697	135	969	2771
% App. Total	13.8	66.1	20.1		9.6	80.4	9.9		17.5	67.8	14.7		14.1	71.9	13.9		
PHF	.875	.840	.944	.864	.788	.946	.903	.934	.824	.875	.712	.874	.815	.885	.823	.897	.946

City of Rialto
N/S: Pepper Avenue
E/W: Foothill Boulevard (SR-66)
Weather: Clear

File Name : 09_RLT_Pep_Foot 3-28 PM
Site Code : 23623985
Start Date : 3/28/2023
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				04:45 PM				04:00 PM				04:15 PM			
+0 mins.	20	100	27	147	18	139	18	175	34	116	19	169	42	197	31	270
+15 mins.	14	86	21	121	17	135	18	170	34	116	33	183	32	155	33	220
+30 mins.	17	79	36	132	19	133	19	171	27	124	22	173	31	158	30	219
+45 mins.	9	88	32	129	19	131	13	163	22	89	18	129	32	187	41	260
Total Volume	60	353	116	529	73	538	68	679	117	445	92	654	137	697	135	969
% App. Total	11.3	66.7	21.9		10.8	79.2	10		17.9	68	14.1		14.1	71.9	13.9	
PHF	.750	.883	.806	.900	.961	.968	.895	.970	.860	.897	.697	.893	.815	.885	.823	.897

APPENDIX D

INTERSECTION LEVEL OF SERVICE WORKSHEETS

EXISTING

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Existing
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	567	158	103	636	69	109	417	67	53	587	116
Future Volume (vph)	68	567	158	103	636	69	109	417	67	53	587	116
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		0	90		100	100		0	95		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.979			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	1710	3348	0	1710	3334	0
Flt Permitted	0.950			0.950			0.257			0.398		
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	463	3348	0	716	3334	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			178			62		22			28	
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1312			1319			737			789	
Travel Time (s)		17.9			18.0			11.2			12.0	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	79	659	184	120	740	80	127	485	78	62	683	135
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	659	184	120	740	80	127	563	0	62	818	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		

Lanes, Volumes, Timings

1: Pepper Ave & Foothill Blvd

Existing
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	9.5	33.0	33.0	9.5	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (s)	11.4	33.0	33.0	19.4	41.0	41.0	42.6	42.6		42.6	42.6	
Total Split (%)	12.0%	34.7%	34.7%	20.4%	43.2%	43.2%	44.8%	44.8%		44.8%	44.8%	
Maximum Green (s)	7.4	29.0	29.0	15.4	37.0	37.0	38.6	38.6		38.6	38.6	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0	22.0		30.0	30.0	22.0	22.0		30.0	30.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effect Green (s)	5.4	23.2	23.2	9.1	24.4	24.4	36.9	36.9		36.9	36.9	
Actuated g/C Ratio	0.06	0.27	0.27	0.11	0.29	0.29	0.44	0.44		0.44	0.44	
v/c Ratio	0.73	0.70	0.33	0.65	0.75	0.16	0.63	0.38		0.19	0.55	
Control Delay (s/veh)	79.5	33.5	6.5	54.5	32.2	8.8	39.1	17.7		19.8	20.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	79.5	33.5	6.5	54.5	32.2	8.8	39.1	17.7		19.8	20.3	
LOS	E	C	A	D	C	A	D	B		B	C	
Approach Delay (s/veh)		32.1			33.1			21.7			20.3	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 84.8

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay (s/veh): 27.3

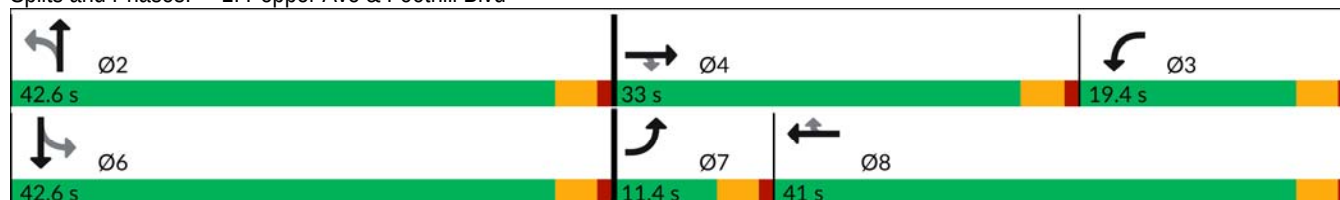
Intersection LOS: C

Intersection Capacity Utilization 70.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Pepper Ave & Foothill Blvd

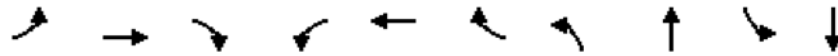


Queues

1: Pepper Ave & Foothill Blvd

Existing

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	79	659	184	120	740	80	127	563	62	818
v/c Ratio	0.73	0.70	0.33	0.65	0.75	0.16	0.63	0.38	0.19	0.55
Control Delay (s/veh)	79.5	33.5	6.5	54.5	32.2	8.8	39.1	17.7	19.8	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	79.5	33.5	6.5	54.5	32.2	8.8	39.1	17.7	19.8	20.3
Queue Length 50th (ft)	42	172	2	62	186	7	51	100	20	161
Queue Length 95th (ft)	#122	232	45	118	231	34	#149	161	54	246
Internal Link Dist (ft)		1232			1239			657		709
Turn Bay Length (ft)	150			90		100	100		95	
Base Capacity (vph)	109	1097	612	272	1423	672	201	1469	311	1466
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.60	0.30	0.44	0.52	0.12	0.63	0.38	0.20	0.56

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

1: Pepper Ave & Foothill Blvd

Existing
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	567	158	103	636	69	109	417	67	53	587	116
Future Volume (veh/h)	68	567	158	103	636	69	109	417	67	53	587	116
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	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	79	659	184	120	740	80	127	485	78	62	683	135
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	46	793	354	100	900	402	304	1405	225	414	1354	267
Arrive On Green	0.03	0.23	0.23	0.06	0.26	0.26	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	679	2952	473	861	2847	562
Grp Volume(v), veh/h	79	659	184	120	740	80	127	280	283	62	410	408
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	679	1710	1715	861	1710	1699
Q Serve(g_s), s	2.1	14.1	8.1	4.5	15.6	3.1	12.2	7.9	8.0	3.7	12.7	12.7
Cycle Q Clear(g_c), s	2.1	14.1	8.1	4.5	15.6	3.1	25.0	7.9	8.0	11.7	12.7	12.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		0.33
Lane Grp Cap(c), veh/h	46	793	354	100	900	402	304	814	816	414	814	808
V/C Ratio(X)	1.71	0.83	0.52	1.20	0.82	0.20	0.42	0.34	0.35	0.15	0.50	0.50
Avail Cap(c_a), veh/h	120	1200	535	299	1556	694	304	814	816	414	814	808
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.4	28.1	25.8	36.2	26.6	22.0	22.5	12.6	12.7	16.3	13.9	13.9
Incr Delay (d2), s/veh	357.2	3.1	1.2	109.9	1.9	0.2	4.2	1.2	1.2	0.8	2.2	2.2
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	5.4	5.5	2.8	4.8	5.9	1.0	2.1	2.8	2.9	0.7	4.6	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	394.6	31.2	27.0	146.1	28.6	22.3	26.7	13.8	13.8	17.1	16.1	16.2
LnGrp LOS	F	C	C	F	C	C	C	B	B	B	B	B
Approach Vol, veh/h	922			940			690			880		
Approach Delay, s/veh	61.5			43.1			16.2			16.2		
Approach LOS	E			D			B			B		
Timer - Assigned Phs												
	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	42.6		10.5	23.8		42.6	8.1	26.3				
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s	38.6		15.4	29.0		38.6	7.4	37.0				
Max Q Clear Time (g_c+I1), s	27.0		6.5	16.1		14.7	4.1	17.6				
Green Ext Time (p_c), s	3.2		0.2	3.7		5.3	0.0	4.6				
Intersection Summary												
HCM 7th Control Delay, s/veh				35.7								
HCM 7th LOS				D								
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Existing
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	500	83	56	514	50	106	139	88	68	159	143
Future Volume (vph)	49	500	83	56	514	50	106	139	88	68	159	143
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	102		100	117		100	0		50	0		50
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.979			0.985	
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	0	1762	1530	0	1773	1530
Flt Permitted	0.950			0.950				0.754			0.828	
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	0	1357	1530	0	1490	1530
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			90			57			103			115
Link Speed (mph)		50			50			40			25	
Link Distance (ft)		1319			1149			784			796	
Travel Time (s)		18.0			15.7			13.4			21.7	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	57	581	97	65	598	58	123	162	102	79	185	166
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	581	97	65	598	58	0	285	102	0	264	166
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		6

Lanes, Volumes, Timings

2: Meridian Ave & Foothill Blvd

Existing
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	9.5	29.0	29.0	9.5	41.0	41.0	29.0	29.0	29.0	41.0	41.0	41.0
Total Split (s)	12.0	37.7	37.7	15.3	41.0	41.0	42.0	42.0	42.0	42.0	42.0	42.0
Total Split (%)	12.6%	39.7%	39.7%	16.1%	43.2%	43.2%	44.2%	44.2%	44.2%	44.2%	44.2%	44.2%
Maximum Green (s)	8.0	33.7	33.7	11.3	37.0	37.0	38.0	38.0	38.0	38.0	38.0	38.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		30.0	30.0	18.0	18.0	18.0	30.0	30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effect Green (s)	5.3	17.1	17.1	6.2	20.3	20.3		36.7	36.7		36.7	36.7
Actuated g/C Ratio	0.07	0.23	0.23	0.08	0.27	0.27		0.48	0.48		0.48	0.48
v/c Ratio	0.47	0.75	0.23	0.46	0.65	0.12		0.43	0.12		0.36	0.20
Control Delay (s/veh)	51.1	34.6	8.3	46.6	28.7	7.3		18.3	4.0		16.9	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)	51.1	34.6	8.3	46.6	28.7	7.3		18.3	4.0		16.9	6.3
LOS	D	C	A	D	C	A		B	A		B	A
Approach Delay (s/veh)		32.5			28.7			14.6			12.9	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 75.9

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay (s/veh): 24.5

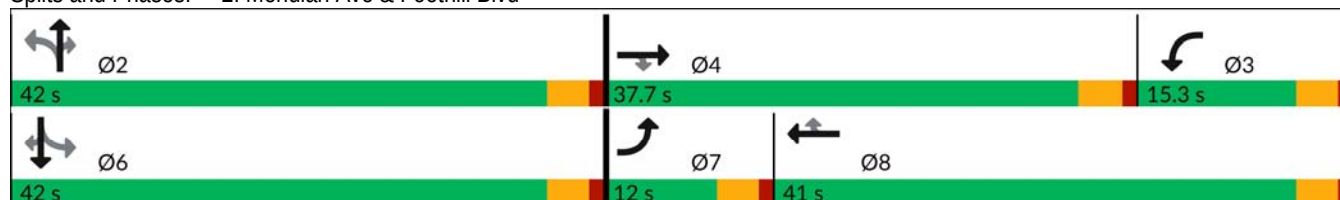
Intersection LOS: C

Intersection Capacity Utilization 65.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Meridian Ave & Foothill Blvd

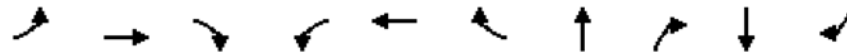


Queues

2: Meridian Ave & Foothill Blvd

Existing

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	57	581	97	65	598	58	285	102	264	166
v/c Ratio	0.47	0.75	0.23	0.46	0.65	0.12	0.43	0.12	0.36	0.20
Control Delay (s/veh)	51.1	34.6	8.3	46.6	28.7	7.3	18.3	4.0	16.9	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	51.1	34.6	8.3	46.6	28.7	7.3	18.3	4.0	16.9	6.3
Queue Length 50th (ft)	27	138	3	31	143	0	88	0	79	13
Queue Length 95th (ft)	#67	190	35	71	184	24	180	26	161	51
Internal Link Dist (ft)		1239			1069		704		716	
Turn Bay Length (ft)	102		100	117		100		50		50
Base Capacity (vph)	137	1457	703	213	1608	749	656	793	720	799
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.40	0.14	0.31	0.37	0.08	0.43	0.13	0.37	0.21

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

2: Meridian Ave & Foothill Blvd

Existing
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	500	83	56	514	50	106	139	88	68	159	143
Future Volume (veh/h)	49	500	83	56	514	50	106	139	88	68	159	143
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	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	57	581	97	65	598	58	123	162	102	79	185	166
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	33	727	324	44	748	334	73	67	775	66	119	775
Arrive On Green	0.02	0.21	0.21	0.03	0.22	0.22	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	0	132	1525	0	234	1525
Grp Volume(v), veh/h	57	581	97	65	598	58	285	0	102	264	0	166
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	132	0	1525	234	0	1525
Q Serve(g_s), s	1.4	11.4	3.8	1.8	11.7	2.2	0.0	0.0	2.5	0.0	0.0	4.3
Cycle Q Clear(g_c), s	1.4	11.4	3.8	1.8	11.7	2.2	36.0	0.0	2.5	36.0	0.0	4.3
Prop In Lane	1.00		1.00	1.00		1.00	0.43		1.00	0.30		1.00
Lane Grp Cap(c), veh/h	33	727	324	44	748	334	140	0	775	185	0	775
V/C Ratio(X)	1.72	0.80	0.30	1.49	0.80	0.17	2.04	0.00	0.13	1.43	0.00	0.21
Avail Cap(c_a), veh/h	145	1530	682	225	1689	753	140	0	775	185	0	775
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.7	26.5	23.5	34.5	26.2	22.5	18.8	0.0	9.2	19.8	0.0	9.6
Incr Delay (d2), s/veh	348.8	2.1	0.5	244.4	2.0	0.2	492.6	0.0	0.4	221.3	0.0	0.6
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	3.7	4.3	1.3	3.7	4.4	0.7	20.1	0.0	0.7	13.1	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	383.6	28.6	24.0	278.9	28.2	22.7	511.4	0.0	9.5	241.1	0.0	10.3
LnGrp LOS	F	C	C	F	C	C	F		A	F		B
Approach Vol, veh/h	735				721		387				430	
Approach Delay, s/veh	55.5				50.4		379.1				152.0	
Approach LOS	E				D		F				F	
Timer - Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	42.0		7.8	21.1	42.0		7.4	21.5				
Change Period (Y+Rc), s	4.0		4.0	4.0	4.0		4.0	4.0				
Max Green Setting (Gmax), s	38.0		11.3	33.7	38.0		8.0	37.0				
Max Q Clear Time (g_c+l1), s	38.0		3.8	13.4	38.0		3.4	13.7				
Green Ext Time (p_c), s	0.0		0.1	3.6	0.0		0.0	3.8				
Intersection Summary												
HCM 7th Control Delay, s/veh	127.2											
HCM 7th LOS	F											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
3: Dallas Ave & Foothill Blvd

Existing
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	607	51	14	489	13	89	1	38	13	0	20
Future Volume (vph)	11	607	51	14	489	13	89	1	38	13	0	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		101	150		50	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.960			0.918	
Flt Protected	0.950			0.950				0.966			0.981	
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	0	1669	0	0	1621	0
Flt Permitted	0.950			0.950				0.966			0.981	
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	0	1669	0	0	1621	0
Link Speed (mph)		50			50			25			25	
Link Distance (ft)		1149			1043			345			383	
Travel Time (s)		15.7			14.2			9.4			10.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	13	706	59	16	569	15	103	1	44	15	0	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	706	59	16	569	15	0	148	0	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	40.9%						ICU Level of Service A					
Analysis Period (min)	15											

HCM 7th TWSC
3: Dallas Ave & Foothill Blvd

Existing
AM Peak Hour

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	607	51	14	489	13	89	1	38	13	0	20
Future Vol, veh/h	11	607	51	14	489	13	89	1	38	13	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	101	150	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	13	706	59	16	569	15	103	1	44	15	0	23

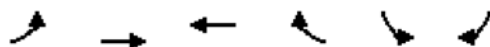
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	584	0	0	765	0	0	1048	1348	353	980	1392	284
Stage 1	-	-	-	-	-	-	731	731	-	601	601	-
Stage 2	-	-	-	-	-	-	317	616	-	379	791	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1001	-	-	857	-	-	185	152	649	207	143	719
Stage 1	-	-	-	-	-	-	384	430	-	459	492	-
Stage 2	-	-	-	-	-	-	674	485	-	620	404	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1001	-	-	857	-	-	173	148	649	186	139	719
Mov Cap-2 Maneuver	-	-	-	-	-	-	335	326	-	369	311	-
Stage 1	-	-	-	-	-	-	379	425	-	450	483	-
Stage 2	-	-	-	-	-	-	640	476	-	569	399	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.14			0.25			19.73			12.42		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	391	1001	-	-	857	-	-	523
HCM Lane V/C Ratio	0.38	0.013	-	-	0.019	-	-	0.073
HCM Control Delay (s/veh)	19.7	8.6	-	-	9.3	-	-	12.4
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.7	0	-	-	0.1	-	-	0.2

Lanes, Volumes, Timings
4: Foothill Blvd & Macy St

Existing
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	15	650	491	29	56	26
Future Volume (vph)	15	650	491	29	56	26
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)	84			50	0	50
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1710	3420	3420	1530	1710	1530
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1710	3420	3420	1530	1710	1530
Link Speed (mph)		50	50		30	
Link Distance (ft)		1043	2212		376	
Travel Time (s)		14.2	30.2		8.5	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	17	747	564	33	64	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	747	564	33	64	30
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes	Yes			
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	32.3%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
4: Foothill Blvd & Macy St

Existing
AM Peak Hour

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	650	491	29	56	26
Future Vol, veh/h	15	650	491	29	56	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	84	-	-	50	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	17	747	564	33	64	30
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	598	0	-	0	972	282
Stage 1	-	-	-	-	564	-
Stage 2	-	-	-	-	408	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	989	-	-	-	253	721
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	646	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	989	-	-	-	249	721
Mov Cap-2 Maneuver	-	-	-	-	377	-
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	646	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0.2	0		14.51		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	989	-	-	-	377	721
HCM Lane V/C Ratio	0.017	-	-	-	0.171	0.041
HCM Control Delay (s/veh)	8.7	-	-	-	16.5	10.2
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile O(veh)	0.1	-	-	-	0.6	0.1

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Existing
AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↘	↑↑	↘	↗
Traffic Volume (vph)	533	176	271	380	87	301
Future Volume (vph)	533	176	271	380	87	301
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)		100	89		0	215
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3420	1530	1710	3420	1710	1530
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3420	1530	1710	3420	1710	1530
Link Speed (mph)	30			30	30	
Link Distance (ft)	2212			735	518	
Travel Time (s)	50.3			16.7	11.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	592	196	301	422	97	334
Shared Lane Traffic (%)						
Lane Group Flow (vph)	592	196	301	422	97	334
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	51.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
5: Rancho Ave & Foothill Blvd

Existing
AM Peak Hour

Intersection						
Int Delay, s/veh	5.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑↗	↑↖	↑↑	↑↖	↑↗
Traffic Vol, veh/h	533	176	271	380	87	301
Future Vol, veh/h	533	176	271	380	87	301
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	89	-	0	215
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	592	196	301	422	97	334
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	788	0	1406	296
Stage 1	-	-	-	-	592	-
Stage 2	-	-	-	-	813	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	841	-	133	706
Stage 1	-	-	-	-	521	-
Stage 2	-	-	-	-	401	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	841	-	~ 85	706
Mov Cap-2 Maneuver	-	-	-	-	228	-
Stage 1	-	-	-	-	521	-
Stage 2	-	-	-	-	258	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		4.85		18.49	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	228	706	-	-	841	-
HCM Lane V/C Ratio	0.424	0.474	-	-	0.358	-
HCM Control Delay (s/veh)	31.9	14.6	-	-	11.7	-
HCM Lane LOS	D	B	-	-	B	-
HCM 95th %tile Q(veh)	2	2.6	-	-	1.6	-
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Existing
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	812	141	78	699	67	115	509	97	72	396	105
Future Volume (vph)	155	812	141	78	699	67	115	509	97	72	396	105
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		0	90		100	100		0	95		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.976			0.968	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	1710	3338	0	1710	3311	0
Flt Permitted	0.950			0.950			0.411			0.341		
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	740	3338	0	614	3311	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			148			57		26			40	
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1312			1319			737			789	
Travel Time (s)		17.9			18.0			11.2			12.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	163	855	148	82	736	71	121	536	102	76	417	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	855	148	82	736	71	121	638	0	76	528	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		

Lanes, Volumes, Timings

1: Pepper Ave & Foothill Blvd

Existing
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	9.5	33.0	33.0	9.5	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (s)	13.0	39.0	39.0	15.0	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (%)	13.7%	41.1%	41.1%	15.8%	43.2%	43.2%	43.2%	43.2%		43.2%	43.2%	
Maximum Green (s)	9.0	35.0	35.0	11.0	37.0	37.0	37.0	37.0		37.0	37.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0	22.0		30.0	30.0	22.0	22.0		30.0	30.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effect Green (s)	7.1	28.2	28.2	6.9	25.8	25.8	35.3	35.3		35.3	35.3	
Actuated g/C Ratio	0.08	0.33	0.33	0.08	0.30	0.30	0.41	0.41		0.41	0.41	
v/c Ratio	1.16	0.76	0.24	0.59	0.71	0.14	0.40	0.46		0.30	0.38	
Control Delay (s/veh)	167.8	31.9	5.0	58.3	30.8	8.3	25.6	20.4		24.4	18.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	167.8	31.9	5.0	58.3	30.8	8.3	25.6	20.4		24.4	18.7	
LOS	F	C	A	E	C	A	C	C		C	B	
Approach Delay (s/veh)		47.5			31.6			21.3			19.4	
Approach LOS		D			C			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 86.3

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.16

Intersection Signal Delay (s/veh): 32.6

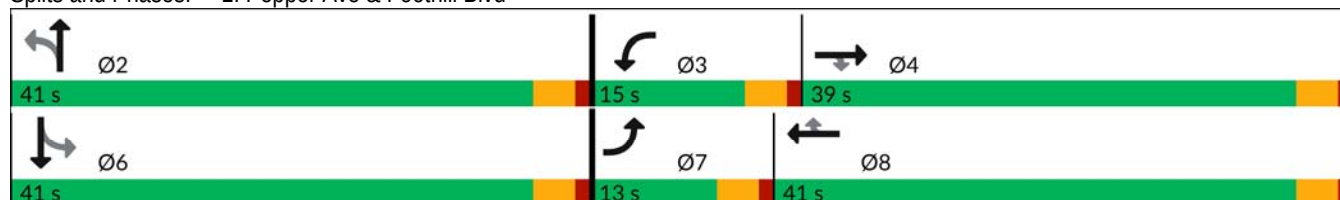
Intersection LOS: C

Intersection Capacity Utilization 73.4%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Pepper Ave & Foothill Blvd

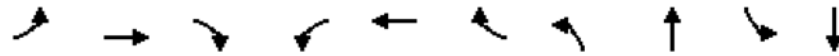


Queues

1: Pepper Ave & Foothill Blvd

Existing

PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	163	855	148	82	736	71	121	638	76	528
v/c Ratio	1.16	0.76	0.24	0.59	0.71	0.14	0.40	0.46	0.30	0.38
Control Delay (s/veh)	167.8	31.9	5.0	58.3	30.8	8.3	25.6	20.4	24.4	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	167.8	31.9	5.0	58.3	30.8	8.3	25.6	20.4	24.4	18.7
Queue Length 50th (ft)	~110	226	0	44	185	5	47	127	28	97
Queue Length 95th (ft)	#253	304	40	96	244	33	109	202	73	159
Internal Link Dist (ft)		1232			1239			657		709
Turn Bay Length (ft)	150			90		100	100		95	
Base Capacity (vph)	140	1318	680	180	1398	659	302	1380	251	1377
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.16	0.65	0.22	0.46	0.53	0.11	0.40	0.46	0.30	0.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

1: Pepper Ave & Foothill Blvd

Existing
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	812	141	78	699	67	115	509	97	72	396	105
Future Volume (veh/h)	155	812	141	78	699	67	115	509	97	72	396	105
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	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	163	855	148	82	736	71	121	536	102	76	417	111
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	97	1019	454	47	920	410	396	1278	242	347	1193	314
Arrive On Green	0.06	0.30	0.30	0.03	0.27	0.27	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	889	2868	544	803	2677	706
Grp Volume(v), veh/h	163	855	148	82	736	71	121	319	319	76	265	263
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	889	1710	1702	803	1710	1673
Q Serve(g_s), s	4.4	18.4	5.9	2.2	15.8	2.8	8.1	10.0	10.1	5.6	8.0	8.1
Cycle Q Clear(g_c), s	4.4	18.4	5.9	2.2	15.8	2.8	16.3	10.0	10.1	15.7	8.0	8.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		0.42
Lane Grp Cap(c), veh/h	97	1019	454	47	920	410	396	762	758	347	762	745
V/C Ratio(X)	1.68	0.84	0.33	1.74	0.80	0.17	0.31	0.42	0.42	0.22	0.35	0.35
Avail Cap(c_a), veh/h	153	1436	641	196	1523	680	396	762	758	347	762	745
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	25.8	21.4	38.2	26.8	22.0	19.7	14.8	14.9	20.2	14.3	14.3
Incr Delay (d2), s/veh	347.9	3.2	0.4	349.6	1.7	0.2	2.0	1.7	1.7	1.5	1.3	1.3
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	11.1	7.0	1.9	5.4	5.9	0.9	1.7	3.7	3.7	1.1	2.9	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	384.9	29.0	21.9	387.8	28.4	22.2	21.7	16.5	16.6	21.7	15.5	15.6
LnGrp LOS	F	C	C	F	C	C	C	B	B	C	B	B
Approach Vol, veh/h	1166				889		759				604	
Approach Delay, s/veh	77.9				61.1		17.4				16.4	
Approach LOS	E				E		B				B	
Timer - Assigned Phs	2		3		4		6		7		8	
Phs Duration (G+Y+Rc), s	41.0		8.2		29.4		41.0		10.4		27.2	
Change Period (Y+Rc), s	4.0		4.0		4.0		4.0		4.0		4.0	
Max Green Setting (Gmax), s	37.0		11.0		35.0		37.0		9.0		37.0	
Max Q Clear Time (g_c+I1), s	18.3		4.2		20.4		17.7		6.4		17.8	
Green Ext Time (p_c), s	4.1		0.1		5.0		3.2		0.1		4.5	
Intersection Summary												
HCM 7th Control Delay, s/veh			49.2									
HCM 7th LOS			D									
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings

2: Meridian Ave & Foothill Blvd

Existing
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	688	96	56	619	91	86	160	99	67	138	119
Future Volume (vph)	102	688	96	56	619	91	86	160	99	67	138	119
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	102		100	117		100	0		50	0		50
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.983			0.984	
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	0	1769	1530	0	1771	1530
Flt Permitted	0.950			0.950				0.817			0.824	
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	0	1471	1530	0	1483	1530
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			77			84			103			105
Link Speed (mph)		50			50			40			25	
Link Distance (ft)		1319			1149			784			796	
Travel Time (s)		18.0			15.7			13.4			21.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	109	732	102	60	659	97	91	170	105	71	147	127
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	732	102	60	659	97	0	261	105	0	218	127
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		6

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Existing
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	9.5	29.0	29.0	9.5	41.0	41.0	29.0	29.0	29.0	41.0	41.0	41.0
Total Split (s)	13.0	38.9	38.9	15.1	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0
Total Split (%)	13.7%	40.9%	40.9%	15.9%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%
Maximum Green (s)	9.0	34.9	34.9	11.1	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		30.0	30.0	18.0	18.0	18.0	30.0	30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effect Green (s)	6.9	26.8	26.8	6.2	21.6	21.6		35.3	35.3		35.3	35.3
Actuated g/C Ratio	0.08	0.33	0.33	0.08	0.26	0.26		0.43	0.43		0.43	0.43
v/c Ratio	0.75	0.65	0.18	0.46	0.73	0.20		0.41	0.14		0.34	0.17
Control Delay (s/veh)	72.0	27.8	9.1	50.1	32.2	7.6		20.5	4.7		19.3	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)	72.0	27.8	9.1	50.1	32.2	7.6		20.5	4.7		19.3	6.1
LOS	E	C	A	D	C	A		C	A		B	A
Approach Delay (s/veh)		30.9			30.6			16.0			14.5	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 81.9

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay (s/veh): 26.3

Intersection LOS: C

Intersection Capacity Utilization 69.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Meridian Ave & Foothill Blvd



Queues
2: Meridian Ave & Foothill Blvd

Existing
PM Peak Hour

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	109	732	102	60	659	97	261	105	218	127
v/c Ratio	0.75	0.65	0.18	0.46	0.73	0.20	0.41	0.14	0.34	0.17
Control Delay (s/veh)	72.0	27.8	9.1	50.1	32.2	7.6	20.5	4.7	19.3	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	72.0	27.8	9.1	50.1	32.2	7.6	20.5	4.7	19.3	6.1
Queue Length 50th (ft)	55	181	9	30	161	5	88	1	71	6
Queue Length 95th (ft)	#162	253	45	73	215	38	189	33	156	45
Internal Link Dist (ft)	1239			1069			704		716	
Turn Bay Length (ft)	102		100	117		100		50		50
Base Capacity (vph)	147	1384	665	191	1473	706	633	717	638	718
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.53	0.15	0.31	0.45	0.14	0.41	0.15	0.34	0.18

Intersection Summary

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

HCM 7th Signalized Intersection Summary

2: Meridian Ave & Foothill Blvd

Existing
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	688	96	56	619	91	86	160	99	67	138	119
Future Volume (veh/h)	102	688	96	56	619	91	86	160	99	67	138	119
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	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	109	732	102	60	659	97	91	170	105	71	147	127
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	57	896	400	36	853	381	66	91	722	65	101	722
Arrive On Green	0.03	0.26	0.26	0.02	0.25	0.25	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	0	192	1525	0	213	1525
Grp Volume(v), veh/h	109	732	102	60	659	97	261	0	105	218	0	127
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	192	0	1525	213	0	1525
Q Serve(g_s), s	2.5	14.9	3.9	1.5	13.2	3.8	0.0	0.0	2.9	0.0	0.0	3.5
Cycle Q Clear(g_c), s	2.5	14.9	3.9	1.5	13.2	3.8	35.0	0.0	2.9	35.0	0.0	3.5
Prop In Lane	1.00		1.00	1.00		1.00	0.35		1.00	0.33		1.00
Lane Grp Cap(c), veh/h	57	896	400	36	853	381	157	0	722	165	0	722
V/C Ratio(X)	1.91	0.82	0.26	1.68	0.77	0.25	1.67	0.00	0.15	1.32	0.00	0.18
Avail Cap(c_a), veh/h	162	1522	679	211	1620	722	157	0	722	165	0	722
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.7	25.6	21.6	36.2	25.8	22.2	18.0	0.0	11.0	18.9	0.0	11.2
Incr Delay (d2), s/veh	437.2	1.9	0.3	330.2	1.5	0.3	326.2	0.0	0.4	179.4	0.0	0.5
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	7.9	5.5	1.3	3.9	4.9	1.2	15.5	0.0	0.9	9.8	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	473.0	27.5	21.9	366.4	27.3	22.6	344.2	0.0	11.4	198.3	0.0	11.7
LnGrp LOS	F	C	C	F	C	C	F		B	F		B
Approach Vol, veh/h	943				816		366				345	
Approach Delay, s/veh	78.4				51.7		248.7				129.6	
Approach LOS	E				D		F				F	
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	41.0		7.5	25.4		41.0	8.5	24.4				
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s	37.0		11.1	34.9		37.0	9.0	37.0				
Max Q Clear Time (g_c+I1), s	37.0		3.5	16.9		37.0	4.5	15.2				
Green Ext Time (p_c), s	0.0		0.1	4.5		0.0	0.1	4.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	102.0											
HCM 7th LOS	F											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
3: Dallas Ave & Foothill Blvd

Existing
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	686	79	30	639	12	41	1	23	16	2	11
Future Volume (vph)	22	686	79	30	639	12	41	1	23	16	2	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		101	150		50	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.952			0.949	
Flt Protected	0.950			0.950				0.969			0.973	
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	0	1660	0	0	1662	0
Flt Permitted	0.950			0.950				0.969			0.973	
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	0	1660	0	0	1662	0
Link Speed (mph)		50			50			25			25	
Link Distance (ft)		1149			1043			345			383	
Travel Time (s)		15.7			14.2			9.4			10.4	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	24	754	87	33	702	13	45	1	25	18	2	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	754	87	33	702	13	0	71	0	0	32	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	41.4%											
Analysis Period (min)	15											
	ICU Level of Service A											

HCM 7th TWSC
3: Dallas Ave & Foothill Blvd

Existing
PM Peak Hour

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	686	79	30	639	12	41	1	23	16	2	11
Future Vol, veh/h	22	686	79	30	639	12	41	1	23	16	2	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	101	150	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	24	754	87	33	702	13	45	1	25	18	2	12

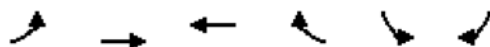
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	715	0	0	841	0	0	1220	1584	377	1194	1657	351
Stage 1	-	-	-	-	-	-	802	802	-	768	768	-
Stage 2	-	-	-	-	-	-	418	781	-	426	889	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	894	-	-	803	-	-	138	110	626	145	99	651
Stage 1	-	-	-	-	-	-	348	399	-	365	414	-
Stage 2	-	-	-	-	-	-	588	408	-	582	364	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	894	-	-	803	-	-	126	102	626	129	92	651
Mov Cap-2 Maneuver	-	-	-	-	-	-	290	271	-	295	252	-
Stage 1	-	-	-	-	-	-	339	388	-	350	397	-
Stage 2	-	-	-	-	-	-	551	391	-	542	354	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.26			0.43			17.57			15.74		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	357	894	-	-	803	-	-	367
HCM Lane V/C Ratio	0.2	0.027	-	-	0.041	-	-	0.087
HCM Control Delay (s/veh)	17.6	9.1	-	-	9.7	-	-	15.7
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0.1	-	-	0.3

Lanes, Volumes, Timings
4: Foothill Blvd & Macy St

Existing
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	30	694	664	51	42	15
Future Volume (vph)	30	694	664	51	42	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)	84			50	0	50
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1710	3420	3420	1530	1710	1530
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1710	3420	3420	1530	1710	1530
Link Speed (mph)		50	50		30	
Link Distance (ft)		1043	2212		376	
Travel Time (s)		14.2	30.2		8.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	32	746	714	55	45	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	746	714	55	45	16
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes	Yes			
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	39.6%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
4: Foothill Blvd & Macy St

Existing
PM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	694	664	51	42	15
Future Vol, veh/h	30	694	664	51	42	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	84	-	-	50	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	32	746	714	55	45	16
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	769	0	-	0	1152	357
Stage 1	-	-	-	-	714	-
Stage 2	-	-	-	-	438	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	854	-	-	-	194	645
Stage 1	-	-	-	-	452	-
Stage 2	-	-	-	-	624	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	854	-	-	-	187	645
Mov Cap-2 Maneuver	-	-	-	-	315	-
Stage 1	-	-	-	-	435	-
Stage 2	-	-	-	-	624	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0.39	0		16.33		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	854	-	-	-	315	645
HCM Lane V/C Ratio	0.038	-	-	-	0.143	0.025
HCM Control Delay (s/veh)	9.4	-	-	-	18.3	10.7
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile O(veh)	0.1	-	-	-	0.5	0.1

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Existing
PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	626	140	233	584	148	352
Future Volume (vph)	626	140	233	584	148	352
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)		100	89		0	215
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3420	1530	1710	3420	1710	1530
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3420	1530	1710	3420	1710	1530
Link Speed (mph)	30			30	30	
Link Distance (ft)	2212			735	518	
Travel Time (s)	50.3			16.7	11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	680	152	253	635	161	383
Shared Lane Traffic (%)						
Lane Group Flow (vph)	680	152	253	635	161	383
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	55.5%			ICU Level of Service B		
Analysis Period (min)	15					

HCM 7th TWSC
5: Rancho Ave & Foothill Blvd

Existing
PM Peak Hour

Intersection						
Int Delay, s/veh	7.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↘	↑↑	↘	↗
Traffic Vol, veh/h	626	140	233	584	148	352
Future Vol, veh/h	626	140	233	584	148	352
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	89	-	0	215
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	680	152	253	635	161	383
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	833	0	1504	340
Stage 1	-	-	-	-	680	-
Stage 2	-	-	-	-	824	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	809	-	~ 114	662
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	396	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	809	-	~ 78	662
Mov Cap-2 Maneuver	-	-	-	-	232	-
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	272	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		3.27		27	
HCM LOS					D	
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	232	662	-	-	809	-
HCM Lane V/C Ratio	0.692	0.578	-	-	0.313	-
HCM Control Delay (s/veh)	49.3	17.6	-	-	11.5	-
HCM Lane LOS	E	C	-	-	B	-
HCM 95th %tile Q(veh)	4.5	3.7	-	-	1.3	-
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

EXISTING PLUS AMBIENT GROWTH

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Existing Plus Ambient Growth
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	593	167	109	652	73	116	439	71	56	621	123
Future Volume (vph)	72	593	167	109	652	73	116	439	71	56	621	123
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		0	90		100	100		0	95		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.979			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	1710	3348	0	1710	3334	0
Flt Permitted	0.950			0.950			0.234			0.379		
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	421	3348	0	682	3334	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			163			64		22			28	
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1312			1319			737			789	
Travel Time (s)		17.9			18.0			11.2			12.0	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	84	690	194	127	758	85	135	510	83	65	722	143
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	690	194	127	758	85	135	593	0	65	865	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Existing Plus Ambient Growth
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	9.5	33.0	33.0	9.5	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (s)	11.6	33.0	33.0	19.6	41.0	41.0	42.4	42.4		42.4	42.4	
Total Split (%)	12.2%	34.7%	34.7%	20.6%	43.2%	43.2%	44.6%	44.6%		44.6%	44.6%	
Maximum Green (s)	7.6	29.0	29.0	15.6	37.0	37.0	38.4	38.4		38.4	38.4	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0	22.0		30.0	30.0	22.0	22.0		30.0	30.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effect Green (s)	5.6	21.2	21.2	9.6	25.2	25.2	36.7	36.7		36.7	36.7	
Actuated g/C Ratio	0.07	0.25	0.25	0.11	0.29	0.29	0.43	0.43		0.43	0.43	
v/c Ratio	0.75	0.81	0.38	0.66	0.75	0.17	0.75	0.41		0.22	0.59	
Control Delay (s/veh)	81.4	39.0	9.0	54.6	32.1	8.9	52.4	18.6		20.8	21.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	81.4	39.0	9.0	54.6	32.1	8.9	52.4	18.6		20.8	21.5	
LOS	F	D	A	D	C	A	D	B		C	C	
Approach Delay (s/veh)		36.7			33.1			24.9			21.5	
Approach LOS		D			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 85.6

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay (s/veh): 29.4

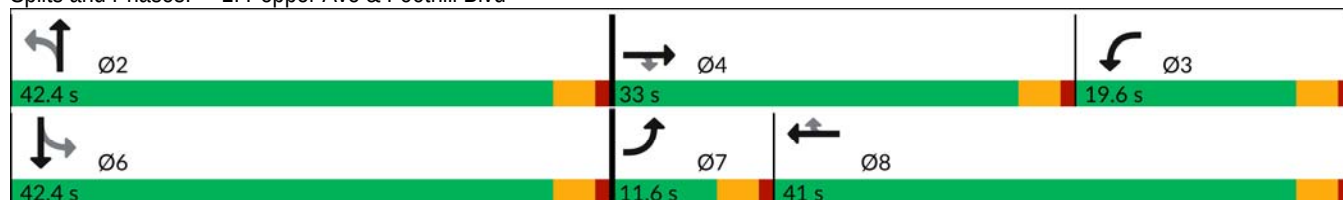
Intersection LOS: C

Intersection Capacity Utilization 72.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Pepper Ave & Foothill Blvd

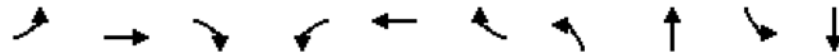


Queues

Existing Plus Ambient Growth

1: Pepper Ave & Foothill Blvd

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	84	690	194	127	758	85	135	593	65	865
v/c Ratio	0.75	0.81	0.38	0.66	0.75	0.17	0.75	0.41	0.22	0.59
Control Delay (s/veh)	81.4	39.0	9.0	54.6	32.1	8.9	52.4	18.6	20.8	21.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	81.4	39.0	9.0	54.6	32.1	8.9	52.4	18.6	20.8	21.5
Queue Length 50th (ft)	46	183	13	67	192	8	60	110	22	179
Queue Length 95th (ft)	#128	245	59	123	238	35	#174	171	56	266
Internal Link Dist (ft)		1232			1239			657		709
Turn Bay Length (ft)	150			90		100	100		95	
Base Capacity (vph)	112	1087	597	273	1409	667	180	1446	292	1444
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.63	0.32	0.47	0.54	0.13	0.75	0.41	0.22	0.60

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

1: Pepper Ave & Foothill Blvd

Existing Plus Ambient Growth

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	593	167	109	652	73	116	439	71	56	621	123
Future Volume (veh/h)	72	593	167	109	652	73	116	439	71	56	621	123
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	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	84	690	194	127	758	85	135	510	83	65	722	143
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	48	825	368	96	920	410	281	1386	225	393	1338	265
Arrive On Green	0.03	0.24	0.24	0.06	0.27	0.27	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	650	2947	478	837	2845	563
Grp Volume(v), veh/h	84	690	194	127	758	85	135	295	298	65	434	431
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	650	1710	1714	837	1710	1699
Q Serve(g_s), s	2.2	14.8	8.6	4.3	16.1	3.3	14.4	8.5	8.6	4.2	13.9	13.9
Cycle Q Clear(g_c), s	2.2	14.8	8.6	4.3	16.1	3.3	28.4	8.5	8.6	12.8	13.9	13.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		0.33
Lane Grp Cap(c), veh/h	48	825	368	96	920	410	281	804	806	393	804	799
V/C Ratio(X)	1.74	0.84	0.53	1.33	0.82	0.21	0.48	0.37	0.37	0.17	0.54	0.54
Avail Cap(c_a), veh/h	124	1193	532	301	1547	690	281	804	806	393	804	799
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	27.9	25.5	36.5	26.6	21.9	24.6	13.1	13.1	17.2	14.5	14.6
Incr Delay (d2), s/veh	372.2	3.6	1.2	161.6	1.9	0.2	5.8	1.3	1.3	0.9	2.6	2.6
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	5.8	5.8	2.9	6.0	6.1	1.1	2.4	3.1	3.1	0.8	5.1	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	409.8	31.5	26.7	198.2	28.5	22.1	30.4	14.4	14.4	18.1	17.1	17.2
LnGrp LOS	F	C	C	F	C	C	C	B	B	B	B	B
Approach Vol, veh/h	968				970				728			
Approach Delay, s/veh	63.4				50.2				17.4			
Approach LOS	E				D				B			
Timer - Assigned Phs	2		3		4		6		7		8	
Phs Duration (G+Y+Rc), s	42.4		10.3		24.7		42.4		8.2		26.8	
Change Period (Y+Rc), s	4.0		4.0		4.0		4.0		4.0		4.0	
Max Green Setting (Gmax), s	38.4		15.6		29.0		38.4		7.6		37.0	
Max Q Clear Time (g_c+l1), s	30.4		6.3		16.8		15.9		4.2		18.1	
Green Ext Time (p_c), s	2.8		0.2		3.8		5.6		0.0		4.7	
Intersection Summary												
HCM 7th Control Delay, s/veh			38.6									
HCM 7th LOS			D									
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Existing Plus Ambient Growth

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	522	88	59	523	53	112	147	93	72	169	152
Future Volume (vph)	52	522	88	59	523	53	112	147	93	72	169	152
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	102		100	117		100	0		50	0		50
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.979			0.985	
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	0	1762	1530	0	1773	1530
Flt Permitted	0.950			0.950				0.744			0.820	
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	0	1339	1530	0	1476	1530
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			91			58			103			115
Link Speed (mph)		50			50			40			25	
Link Distance (ft)		1319			1149			784			796	
Travel Time (s)		18.0			15.7			13.4			21.7	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	60	607	102	69	608	62	130	171	108	84	197	177
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	607	102	69	608	62	0	301	108	0	281	177
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane				Yes								
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		6

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Existing Plus Ambient Growth

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	9.0	29.0	29.0	9.0	41.0	41.0	29.0	29.0	29.0	41.0	41.0	41.0
Total Split (s)	12.0	38.0	38.0	15.0	41.0	41.0	42.0	42.0	42.0	42.0	42.0	42.0
Total Split (%)	12.6%	40.0%	40.0%	15.8%	43.2%	43.2%	44.2%	44.2%	44.2%	44.2%	44.2%	44.2%
Maximum Green (s)	8.0	34.0	34.0	11.0	37.0	37.0	38.0	38.0	38.0	38.0	38.0	38.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		30.0	30.0	18.0	18.0	18.0	30.0	30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effect Green (s)	5.3	17.7	17.7	6.3	18.7	18.7		36.8	36.8		36.8	36.8
Actuated g/C Ratio	0.07	0.23	0.23	0.08	0.24	0.24		0.48	0.48		0.48	0.48
v/c Ratio	0.50	0.76	0.24	0.48	0.72	0.14		0.46	0.13		0.39	0.22
Control Delay (s/veh)	53.3	34.9	8.6	48.2	32.1	7.9		19.4	4.4		17.8	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)	53.3	34.9	8.6	48.2	32.1	7.9		19.4	4.4		17.8	7.0
LOS	D	C	A	D	C	A		B	A		B	A
Approach Delay (s/veh)		32.9			31.6			15.5			13.7	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 76.6

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay (s/veh): 25.8

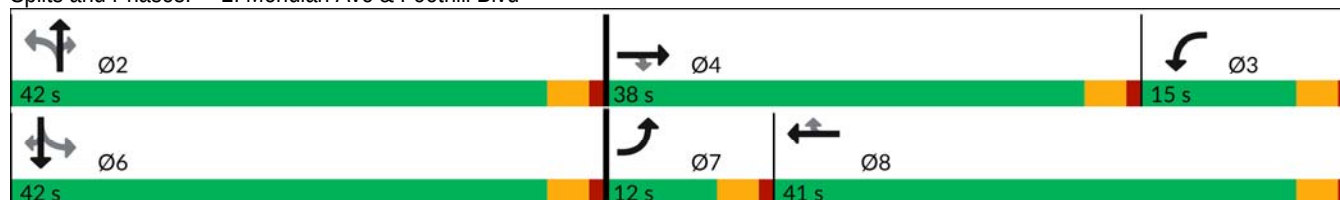
Intersection LOS: C

Intersection Capacity Utilization 67.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Meridian Ave & Foothill Blvd

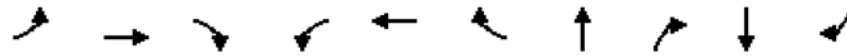


Queues

Existing Plus Ambient Growth

2: Meridian Ave & Foothill Blvd

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	60	607	102	69	608	62	301	108	281	177
v/c Ratio	0.50	0.76	0.24	0.48	0.72	0.14	0.46	0.13	0.39	0.22
Control Delay (s/veh)	53.3	34.9	8.6	48.2	32.1	7.9	19.4	4.4	17.8	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	53.3	34.9	8.6	48.2	32.1	7.9	19.4	4.4	17.8	7.0
Queue Length 50th (ft)	29	146	4	33	145	2	98	1	87	16
Queue Length 95th (ft)	#75	197	37	75	187	26	196	29	174	57
Internal Link Dist (ft)		1239			1069		704		716	
Turn Bay Length (ft)	102		100	117		100		50		50
Base Capacity (vph)	136	1459	704	205	1595	744	642	787	708	794
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.42	0.14	0.34	0.38	0.08	0.47	0.14	0.40	0.22

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

2: Meridian Ave & Foothill Blvd

Existing Plus Ambient Growth

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	522	88	59	523	53	112	147	93	72	169	152
Future Volume (veh/h)	52	522	88	59	523	53	112	147	93	72	169	152
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	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	60	607	102	69	608	62	130	171	108	84	197	177
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	36	757	338	41	769	343	72	66	767	65	118	767
Arrive On Green	0.02	0.22	0.22	0.02	0.22	0.22	0.50	0.50	0.50	0.50	0.50	0.50
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	0	132	1525	0	234	1525
Grp Volume(v), veh/h	60	607	102	69	608	62	301	0	108	281	0	177
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	132	0	1525	234	0	1525
Q Serve(g_s), s	1.5	12.0	4.0	1.7	12.0	2.4	0.0	0.0	2.7	0.0	0.0	4.7
Cycle Q Clear(g_c), s	1.5	12.0	4.0	1.7	12.0	2.4	36.0	0.0	2.7	36.0	0.0	4.7
Prop In Lane	1.00		1.00	1.00		1.00	0.43		1.00	0.30		1.00
Lane Grp Cap(c), veh/h	36	757	338	41	769	343	138	0	767	183	0	767
V/C Ratio(X)	1.69	0.80	0.30	1.66	0.79	0.18	2.18	0.00	0.14	1.53	0.00	0.23
Avail Cap(c_a), veh/h	144	1529	682	216	1672	746	138	0	767	183	0	767
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.0	26.4	23.3	34.9	26.2	22.4	19.2	0.0	9.5	19.9	0.0	10.0
Incr Delay (d2), s/veh	334.8	2.0	0.5	320.5	1.9	0.3	553.3	0.0	0.4	266.1	0.0	0.7
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	3.9	4.5	1.3	4.4	4.5	0.8	22.2	0.0	0.8	15.3	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	369.9	28.4	23.8	355.4	28.0	22.7	572.5	0.0	9.9	286.1	0.0	10.7
LnGrp LOS	F	C	C	F	C	C	F		A	F		B
Approach Vol, veh/h	769			739			409			458		
Approach Delay, s/veh	54.4			58.1			424.0			179.6		
Approach LOS	D			E			F			F		
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	42.0		7.7	21.8		42.0		7.5	22.1			
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0		4.0	4.0			
Max Green Setting (Gmax), s	38.0		11.0	34.0		38.0		8.0	37.0			
Max Q Clear Time (g_c+I1), s	38.0		3.7	14.0		38.0		3.5	14.0			
Green Ext Time (p_c), s	0.0		0.1	3.8		0.0		0.0	3.8			
Intersection Summary												
HCM 7th Control Delay, s/veh				143.4								
HCM 7th LOS				F								
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
3: Dallas Ave & Foothill Blvd

Existing Plus Ambient Growth

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	635	54	15	496	14	94	1	40	14	0	21
Future Volume (vph)	12	635	54	15	496	14	94	1	40	14	0	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		101	150		50	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.960			0.919	
Flt Protected	0.950			0.950				0.966			0.980	
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	0	1669	0	0	1621	0
Flt Permitted	0.950			0.950				0.966			0.980	
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	0	1669	0	0	1621	0
Link Speed (mph)		50			50			25			25	
Link Distance (ft)		1149			1043			345			383	
Travel Time (s)		15.7			14.2			9.4			10.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	14	738	63	17	577	16	109	1	47	16	0	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	738	63	17	577	16	0	157	0	0	40	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 42.3%

ICU Level of Service A

Analysis Period (min) 15

HCM 7th TWSC
3: Dallas Ave & Foothill Blvd

Existing Plus Ambient Growth
AM Peak Hour

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	635	54	15	496	14	94	1	40	14	0	21
Future Vol, veh/h	12	635	54	15	496	14	94	1	40	14	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	101	150	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	14	738	63	17	577	16	109	1	47	16	0	24

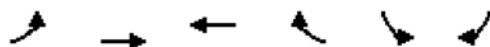
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	593	0	0	801	0	0	1090	1394	369	1009	1441	288
Stage 1	-	-	-	-	-	-	766	766	-	612	612	-
Stage 2	-	-	-	-	-	-	323	628	-	398	829	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	993	-	-	831	-	-	172	143	634	197	134	714
Stage 1	-	-	-	-	-	-	366	415	-	452	487	-
Stage 2	-	-	-	-	-	-	669	479	-	605	388	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	993	-	-	831	-	-	161	138	634	176	129	714
Mov Cap-2 Maneuver	-	-	-	-	-	-	320	315	-	359	298	-
Stage 1	-	-	-	-	-	-	361	409	-	443	477	-
Stage 2	-	-	-	-	-	-	632	469	-	551	383	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.15			0.27			21.34			12.64		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	375	993	-	-	831	-	-	512
HCM Lane V/C Ratio	0.419	0.014	-	-	0.021	-	-	0.08
HCM Control Delay (s/veh)	21.3	8.7	-	-	9.4	-	-	12.6
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	2	0	-	-	0.1	-	-	0.3

Lanes, Volumes, Timings
4: Foothill Blvd & Macy St

Existing Plus Ambient Growth
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	15	682	501	30	55	24
Future Volume (vph)	15	682	501	30	55	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)	84			50	0	50
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1710	3420	3420	1530	1710	1530
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1710	3420	3420	1530	1710	1530
Link Speed (mph)		50	50		30	
Link Distance (ft)		1043	2212		376	
Travel Time (s)		14.2	30.2		8.5	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	17	784	576	34	63	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	784	576	34	63	28
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes	Yes			
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 33.2% ICU Level of Service A

Analysis Period (min) 15

HCM 7th TWSC
4: Foothill Blvd & Macy St

Existing Plus Ambient Growth
AM Peak Hour

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	682	501	30	55	24
Future Vol, veh/h	15	682	501	30	55	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	84	-	-	50	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	17	784	576	34	63	28
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	610	0	-	0	1002	288
Stage 1	-	-	-	-	576	-
Stage 2	-	-	-	-	426	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	978	-	-	-	242	715
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	632	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	978	-	-	-	238	715
Mov Cap-2 Maneuver	-	-	-	-	368	-
Stage 1	-	-	-	-	522	-
Stage 2	-	-	-	-	632	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0.19	0		14.81		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	978	-	-	-	368	715
HCM Lane V/C Ratio	0.018	-	-	-	0.172	0.039
HCM Control Delay (s/veh)	8.7	-	-	-	16.8	10.2
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6	0.1

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Existing Plus Ambient Growth
AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↙	↑↑	↙	↗
Traffic Volume (vph)	560	187	287	402	92	319
Future Volume (vph)	560	187	287	402	92	319
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)		100	89		0	215
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3420	1530	1710	3420	1710	1530
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3420	1530	1710	3420	1710	1530
Link Speed (mph)	30			30	30	
Link Distance (ft)	2212			735	518	
Travel Time (s)	50.3			16.7	11.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	622	208	319	447	102	354
Shared Lane Traffic (%)						
Lane Group Flow (vph)	622	208	319	447	102	354
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	53.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
5: Rancho Ave & Foothill Blvd

Existing Plus Ambient Growth
AM Peak Hour

Intersection						
Int Delay, s/veh	6.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↘	↑↑	↘	↗
Traffic Vol, veh/h	560	187	287	402	92	319
Future Vol, veh/h	560	187	287	402	92	319
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	89	-	0	215
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	622	208	319	447	102	354
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	830	0	1483	311
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	861	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	811	-	118	691
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	379	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	811	-	~ 72	691
Mov Cap-2 Maneuver	-	-	-	-	205	-
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	230	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		5.12		20.8	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	205	691	-	-	811	-
HCM Lane V/C Ratio	0.499	0.513	-	-	0.393	-
HCM Control Delay (s/veh)	38.9	15.6	-	-	12.3	-
HCM Lane LOS	E	C	-	-	B	-
HCM 95th %tile Q(veh)	2.5	3	-	-	1.9	-
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Existing Plus Ambient Growth
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	836	149	83	725	71	122	538	103	76	417	111
Future Volume (vph)	164	836	149	83	725	71	122	538	103	76	417	111
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		0	90		100	100		0	95		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.976			0.968	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	1710	3338	0	1710	3311	0
Flt Permitted	0.950			0.950			0.392			0.319		
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	706	3338	0	574	3311	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			157			57		26			40	
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1312			1319			737			789	
Travel Time (s)		17.9			18.0			11.2			12.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	173	880	157	87	763	75	128	566	108	80	439	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	173	880	157	87	763	75	128	674	0	80	556	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Existing Plus Ambient Growth
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	9.5	33.0	33.0	9.5	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (s)	13.0	40.4	40.4	13.6	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (%)	13.7%	42.5%	42.5%	14.3%	43.2%	43.2%	43.2%	43.2%		43.2%	43.2%	
Maximum Green (s)	9.0	36.4	36.4	9.6	37.0	37.0	37.0	37.0		37.0	37.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0	22.0		30.0	30.0	22.0	22.0		30.0	30.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effect Green (s)	7.1	29.0	29.0	6.7	26.3	26.3	35.3	35.3		35.3	35.3	
Actuated g/C Ratio	0.08	0.33	0.33	0.08	0.30	0.30	0.41	0.41		0.41	0.41	
v/c Ratio	1.24	0.76	0.25	0.66	0.73	0.14	0.44	0.49		0.34	0.40	
Control Delay (s/veh)	195.2	31.6	4.7	65.5	31.3	8.8	27.3	20.9		25.8	19.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	195.2	31.6	4.7	65.5	31.3	8.8	27.3	20.9		25.8	19.1	
LOS	F	C	A	E	C	A	C	C		C	B	
Approach Delay (s/veh)		51.5			32.7			22.0			20.0	
Approach LOS		D			C			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 86.7

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.24

Intersection Signal Delay (s/veh): 34.4

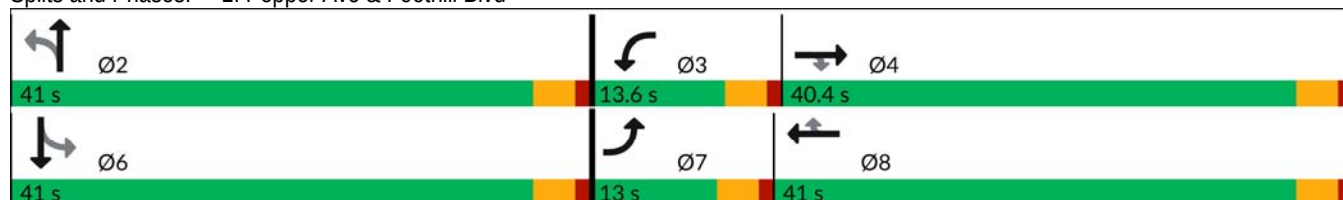
Intersection LOS: C

Intersection Capacity Utilization 75.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Pepper Ave & Foothill Blvd

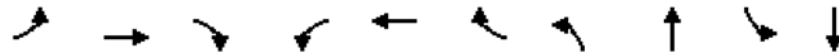


Queues

Existing Plus Ambient Growth

1: Pepper Ave & Foothill Blvd

PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	173	880	157	87	763	75	128	674	80	556
v/c Ratio	1.24	0.76	0.25	0.66	0.73	0.14	0.44	0.49	0.34	0.40
Control Delay (s/veh)	195.2	31.6	4.7	65.5	31.3	8.8	27.3	20.9	25.8	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	195.2	31.6	4.7	65.5	31.3	8.8	27.3	20.9	25.8	19.1
Queue Length 50th (ft)	~123	236	0	48	194	7	51	139	31	105
Queue Length 95th (ft)	#268	307	40	#120	255	36	119	215	79	169
Internal Link Dist (ft)		1232			1239			657		709
Turn Bay Length (ft)	150			90		100	100		95	
Base Capacity (vph)	139	1366	705	150	1390	655	287	1372	233	1370
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.24	0.64	0.22	0.58	0.55	0.11	0.45	0.49	0.34	0.41

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

1: Pepper Ave & Foothill Blvd

Existing Plus Ambient Growth

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	836	149	83	725	71	122	538	103	76	417	111
Future Volume (veh/h)	164	836	149	83	725	71	122	538	103	76	417	111
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	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	173	880	157	87	763	75	128	566	108	80	439	117
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	108	1049	468	49	931	415	374	1258	239	324	1175	310
Arrive On Green	0.06	0.31	0.31	0.03	0.27	0.27	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	866	2867	545	777	2676	707
Grp Volume(v), veh/h	173	880	157	87	763	75	128	337	337	80	279	277
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	866	1710	1702	777	1710	1673
Q Serve(g_s), s	5.0	19.1	6.3	2.3	16.7	3.0	9.3	11.0	11.0	6.4	8.7	8.9
Cycle Q Clear(g_c), s	5.0	19.1	6.3	2.3	16.7	3.0	18.2	11.0	11.0	17.5	8.7	8.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		0.42
Lane Grp Cap(c), veh/h	108	1049	468	49	931	415	374	751	747	324	751	734
V/C Ratio(X)	1.60	0.84	0.34	1.78	0.82	0.18	0.34	0.45	0.45	0.25	0.37	0.38
Avail Cap(c_a), veh/h	151	1476	658	163	1501	670	374	751	747	324	751	734
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	25.8	21.4	38.7	27.2	22.2	21.1	15.6	15.6	21.7	15.0	15.0
Incr Delay (d2), s/veh	308.3	3.1	0.4	372.6	2.0	0.2	2.5	1.9	2.0	1.8	1.4	1.5
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	11.2	7.3	2.1	5.9	6.3	1.0	2.0	4.1	4.1	1.2	3.3	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	345.6	28.9	21.8	411.3	29.2	22.4	23.6	17.6	17.6	23.6	16.4	16.5
LnGrp LOS	F	C	C	F	C	C	C	B	B	C	B	B
Approach Vol, veh/h	1210			925			802			636		
Approach Delay, s/veh	73.3			64.5			18.5			17.4		
Approach LOS	E			E			B			B		
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	41.0		8.3	30.5		41.0	11.0	27.7				
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s	37.0		9.6	36.4		37.0	9.0	37.0				
Max Q Clear Time (g_c+l1), s	20.2		4.3	21.1		19.5	7.0	18.7				
Green Ext Time (p_c), s	4.2		0.1	5.3		3.4	0.1	4.7				
Intersection Summary												
HCM 7th Control Delay, s/veh	48.8											
HCM 7th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Existing Plus Ambient Growth
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	705	102	59	640	96	91	170	105	71	146	126
Future Volume (vph)	108	705	102	59	640	96	91	170	105	71	146	126
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	102		100	117		100	0		50	0		50
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.983			0.984	
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	0	1769	1530	0	1771	1530
Flt Permitted	0.950			0.950				0.809			0.814	
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	0	1456	1530	0	1465	1530
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			80			85			103			104
Link Speed (mph)		50			50			40			25	
Link Distance (ft)		1319			1149			784			796	
Travel Time (s)		18.0			15.7			13.4			21.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	115	750	109	63	681	102	97	181	112	76	155	134
Shared Lane Traffic (%)												
Lane Group Flow (vph)	115	750	109	63	681	102	0	278	112	0	231	134
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		6

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Existing Plus Ambient Growth
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	9.5	29.0	29.0	9.5	41.0	41.0	29.0	29.0	29.0	41.0	41.0	41.0
Total Split (s)	13.0	38.8	38.8	15.2	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0
Total Split (%)	13.7%	40.8%	40.8%	16.0%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%
Maximum Green (s)	9.0	34.8	34.8	11.2	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		30.0	30.0	18.0	18.0	18.0	30.0	30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effect Green (s)	7.1	25.1	25.1	6.4	22.3	22.3		35.3	35.3		35.3	35.3
Actuated g/C Ratio	0.09	0.30	0.30	0.08	0.27	0.27		0.43	0.43		0.43	0.43
v/c Ratio	0.79	0.72	0.21	0.47	0.73	0.21		0.44	0.15		0.37	0.18
Control Delay (s/veh)	76.5	30.9	9.4	50.5	32.3	7.9		21.6	5.4		20.2	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)	76.5	30.9	9.4	50.5	32.3	7.9		21.6	5.4		20.2	6.7
LOS	E	C	A	D	C	A		C	A		C	A
Approach Delay (s/veh)		34.0			30.8			17.0			15.3	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 82.8

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay (s/veh): 27.7

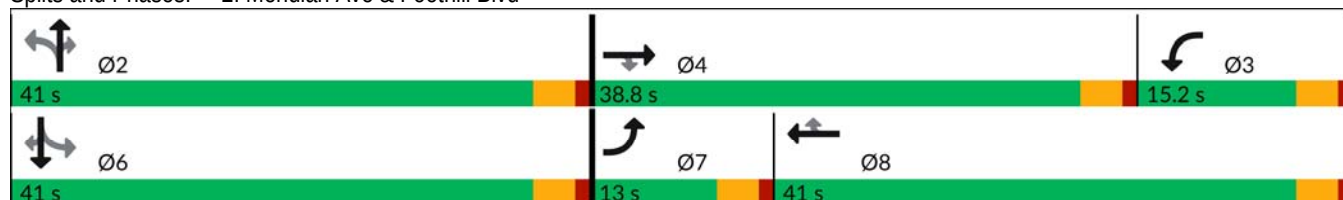
Intersection LOS: C

Intersection Capacity Utilization 72.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Meridian Ave & Foothill Blvd



Queues

Existing Plus Ambient Growth

2: Meridian Ave & Foothill Blvd

PM Peak Hour

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	115	750	109	63	681	102	278	112	231	134
v/c Ratio	0.79	0.72	0.21	0.47	0.73	0.21	0.44	0.15	0.37	0.18
Control Delay (s/veh)	76.5	30.9	9.4	50.5	32.3	7.9	21.6	5.4	20.2	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	76.5	30.9	9.4	50.5	32.3	7.9	21.6	5.4	20.2	6.7
Queue Length 50th (ft)	59	187	11	32	167	6	97	3	78	9
Queue Length 95th (ft)	#174	260	48	77	223	40	206	38	169	50
Internal Link Dist (ft)	1239			1069			704		716	
Turn Bay Length (ft)	102		100	117		100		50		50
Base Capacity (vph)	145	1366	659	191	1457	700	620	711	624	711
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.55	0.17	0.33	0.47	0.15	0.45	0.16	0.37	0.19

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

2: Meridian Ave & Foothill Blvd

Existing Plus Ambient Growth

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	705	102	59	640	96	91	170	105	71	146	126
Future Volume (veh/h)	108	705	102	59	640	96	91	170	105	71	146	126
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	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	115	750	109	63	681	102	97	181	112	76	155	134
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	58	915	408	38	874	390	65	90	716	64	98	716
Arrive On Green	0.03	0.27	0.27	0.02	0.26	0.26	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	0	192	1525	0	210	1525
Grp Volume(v), veh/h	115	750	109	63	681	102	278	0	112	231	0	134
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	192	0	1525	210	0	1525
Q Serve(g_s), s	2.5	15.3	4.2	1.6	13.8	4.0	0.0	0.0	3.1	0.0	0.0	3.8
Cycle Q Clear(g_c), s	2.5	15.3	4.2	1.6	13.8	4.0	35.0	0.0	3.1	35.0	0.0	3.8
Prop In Lane	1.00		1.00	1.00		1.00	0.35		1.00	0.33		1.00
Lane Grp Cap(c), veh/h	58	915	408	38	874	390	155	0	716	162	0	716
V/C Ratio(X)	1.97	0.82	0.27	1.67	0.78	0.26	1.79	0.00	0.16	1.42	0.00	0.19
Avail Cap(c_a), veh/h	161	1504	671	211	1605	716	155	0	716	162	0	716
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.0	25.6	21.6	36.5	25.8	22.2	18.1	0.0	11.3	18.8	0.0	11.5
Incr Delay (d2), s/veh	469.3	1.9	0.3	323.9	1.5	0.4	381.1	0.0	0.5	221.7	0.0	0.6
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	8.6	5.7	1.4	4.0	5.1	1.3	17.7	0.0	1.0	11.6	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	505.3	27.5	21.9	360.4	27.4	22.5	399.2	0.0	11.8	240.6	0.0	12.1
LnGrp LOS	F	C	C	F	C	C	F		B	F		B
Approach Vol, veh/h	974		846				390		365			
Approach Delay, s/veh	83.3		51.6				287.9		156.7			
Approach LOS	F		D				F		F			
Timer - Assigned Phs	2		3		4		6		7		8	
Phs Duration (G+Y+Rc), s	41.0		7.6		25.9		41.0		8.5		25.1	
Change Period (Y+Rc), s	4.0		4.0		4.0		4.0		4.0		4.0	
Max Green Setting (Gmax), s	37.0		11.2		34.8		37.0		9.0		37.0	
Max Q Clear Time (g_c+I1), s	37.0		3.6		17.3		37.0		4.5		15.8	
Green Ext Time (p_c), s	0.0		0.1		4.6		0.0		0.1		4.4	
Intersection Summary												
HCM 7th Control Delay, s/veh	114.3											
HCM 7th LOS	F											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
3: Dallas Ave & Foothill Blvd

Existing Plus Ambient Growth

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	23	703	84	32	661	13	43	1	24	17	2	12
Future Volume (vph)	23	703	84	32	661	13	43	1	24	17	2	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		101	150		50	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.953			0.948	
Flt Protected	0.950			0.950				0.969			0.973	
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	0	1662	0	0	1660	0
Flt Permitted	0.950			0.950				0.969			0.973	
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	0	1662	0	0	1660	0
Link Speed (mph)		50			50			25			25	
Link Distance (ft)		1149			1043			345			383	
Travel Time (s)		15.7			14.2			9.4			10.4	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	25	773	92	35	726	14	47	1	26	19	2	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	773	92	35	726	14	0	74	0	0	34	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 43.4% ICU Level of Service A

Analysis Period (min) 15

HCM 7th TWSC
3: Dallas Ave & Foothill Blvd

Existing Plus Ambient Growth
PM Peak Hour

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	703	84	32	661	13	43	1	24	17	2	12
Future Vol, veh/h	23	703	84	32	661	13	43	1	24	17	2	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	101	150	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	25	773	92	35	726	14	47	1	26	19	2	13
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	741	0	0	865	0	0	1258	1634	386	1234	1712	363
Stage 1	-	-	-	-	-	-	823	823	-	797	797	-
Stage 2	-	-	-	-	-	-	435	811	-	437	915	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	875	-	-	787	-	-	130	102	618	135	91	639
Stage 1	-	-	-	-	-	-	338	391	-	351	402	-
Stage 2	-	-	-	-	-	-	575	396	-	573	354	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	875	-	-	787	-	-	117	95	618	119	85	639
Mov Cap-2 Maneuver	-	-	-	-	-	-	280	261	-	283	241	-
Stage 1	-	-	-	-	-	-	328	379	-	335	384	-
Stage 2	-	-	-	-	-	-	535	378	-	531	344	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.26			0.44			18.23			16.2		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	346	875	-	-	787	-	-	356				
HCM Lane V/C Ratio	0.216	0.029	-	-	0.045	-	-	0.096				
HCM Control Delay (s/veh)	18.2	9.2	-	-	9.8	-	-	16.2				
HCM Lane LOS	C	A	-	-	A	-	-	C				
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0.1	-	-	0.3				

Lanes, Volumes, Timings
4: Foothill Blvd & Macy St

Existing Plus Ambient Growth
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	29	714	690	49	42	14
Future Volume (vph)	29	714	690	49	42	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)	84			50	0	50
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1710	3420	3420	1530	1710	1530
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1710	3420	3420	1530	1710	1530
Link Speed (mph)		50	50		30	
Link Distance (ft)		1043	2212		376	
Travel Time (s)		14.2	30.2		8.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	31	768	742	53	45	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	31	768	742	53	45	15
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes	Yes			
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 38.8% ICU Level of Service A

Analysis Period (min) 15

HCM 7th TWSC
4: Foothill Blvd & Macy St

Existing Plus Ambient Growth
PM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	29	714	690	49	42	14
Future Vol, veh/h	29	714	690	49	42	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	84	-	-	50	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	31	768	742	53	45	15
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	795	0	-	0	1188	371
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	446	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	836	-	-	-	184	632
Stage 1	-	-	-	-	437	-
Stage 2	-	-	-	-	618	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	836	-	-	-	177	632
Mov Cap-2 Maneuver	-	-	-	-	305	-
Stage 1	-	-	-	-	421	-
Stage 2	-	-	-	-	618	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0.37	0		16.85		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	836	-	-	-	305	632
HCM Lane V/C Ratio	0.037	-	-	-	0.148	0.024
HCM Control Delay (s/veh)	9.5	-	-	-	18.9	10.8
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5	0.1

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Existing Plus Ambient Growth
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↙	↑↑	↙	↗
Traffic Volume (vph)	660	148	247	613	157	373
Future Volume (vph)	660	148	247	613	157	373
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)		100	89		0	215
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3420	1530	1710	3420	1710	1530
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3420	1530	1710	3420	1710	1530
Link Speed (mph)	30			30	30	
Link Distance (ft)	2212			735	518	
Travel Time (s)	50.3			16.7	11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	717	161	268	666	171	405
Shared Lane Traffic (%)						
Lane Group Flow (vph)	717	161	268	666	171	405
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	57.9%			ICU Level of Service B		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	9.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	660	148	247	613	157	373
Future Vol, veh/h	660	148	247	613	157	373
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	89	-	0	215
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	717	161	268	666	171	405
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	878	0	1587	359
Stage 1	-	-	-	-	717	-
Stage 2	-	-	-	-	870	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	778	-	~ 101	644
Stage 1	-	-	-	-	450	-
Stage 2	-	-	-	-	375	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	778	-	~ 66	644
Mov Cap-2 Maneuver	-	-	-	-	211	-
Stage 1	-	-	-	-	450	-
Stage 2	-	-	-	-	246	-
Approach	EB	WB	NB			
HCM Control Delay, s/v	0	3.46	34.2			
HCM LOS	D					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	211	644	-	-	778	-
HCM Lane V/C Ratio	0.809	0.63	-	-	0.345	-
HCM Control Delay (s/veh)	68.8	19.6	-	-	12	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	5.9	4.4	-	-	1.5	-
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

OPENING YEAR (2026) WITHOUT PROJECT

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Opening Year Without Project
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	601	167	109	673	73	116	442	71	56	622	123
Future Volume (vph)	72	601	167	109	673	73	116	442	71	56	622	123
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		0	90		100	100		0	95		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.979			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	1710	3348	0	1710	3334	0
Flt Permitted	0.950			0.950			0.232			0.375		
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	418	3348	0	675	3334	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			157			62		22			28	
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1312			1319			737			789	
Travel Time (s)		17.9			18.0			11.2			12.0	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	84	699	194	127	783	85	135	514	83	65	723	143
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	699	194	127	783	85	135	597	0	65	866	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Opening Year Without Project
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	9.5	33.0	33.0	9.5	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (s)	11.6	33.5	33.5	19.1	41.0	41.0	42.4	42.4		42.4	42.4	
Total Split (%)	12.2%	35.3%	35.3%	20.1%	43.2%	43.2%	44.6%	44.6%		44.6%	44.6%	
Maximum Green (s)	7.6	29.5	29.5	15.1	37.0	37.0	38.4	38.4		38.4	38.4	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0	22.0		30.0	30.0	22.0	22.0		30.0	30.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effect Green (s)	5.6	21.5	21.5	9.8	25.7	25.7	36.7	36.7		36.7	36.7	
Actuated g/C Ratio	0.07	0.25	0.25	0.11	0.30	0.30	0.43	0.43		0.43	0.43	
v/c Ratio	0.75	0.81	0.38	0.65	0.76	0.17	0.76	0.41		0.22	0.60	
Control Delay (s/veh)	81.9	39.0	9.5	54.0	32.6	9.1	54.0	18.8		21.0	21.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	81.9	39.0	9.5	54.0	32.6	9.1	54.0	18.8		21.0	21.8	
LOS	F	D	A	D	C	A	D	B		C	C	
Approach Delay (s/veh)		36.9			33.3			25.3			21.8	
Approach LOS		D			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 86.1

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay (s/veh): 29.7

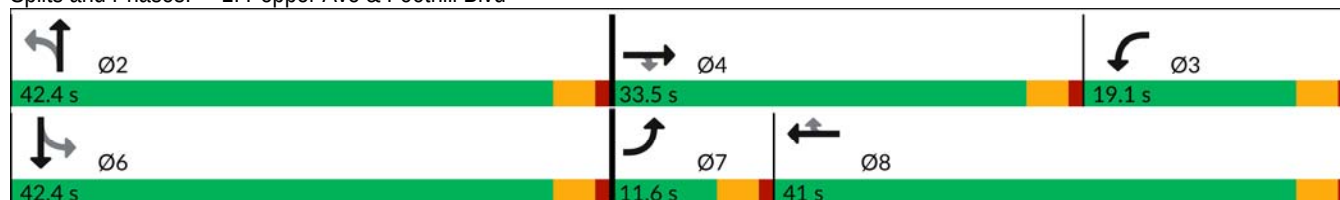
Intersection LOS: C

Intersection Capacity Utilization 73.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Pepper Ave & Foothill Blvd



Queues

Opening Year Without Project

1: Pepper Ave & Foothill Blvd

AM Peak Hour

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	84	699	194	127	783	85	135	597	65	866
v/c Ratio	0.75	0.81	0.38	0.65	0.76	0.17	0.76	0.41	0.22	0.60
Control Delay (s/veh)	81.9	39.0	9.5	54.0	32.6	9.1	54.0	18.8	21.0	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	81.9	39.0	9.5	54.0	32.6	9.1	54.0	18.8	21.0	21.8
Queue Length 50th (ft)	46	186	15	67	200	9	61	111	22	180
Queue Length 95th (ft)	#128	247	61	124	247	36	#174	172	57	266
Internal Link Dist (ft)		1232			1239			657		709
Turn Bay Length (ft)	150			90		100	100		95	
Base Capacity (vph)	112	1100	598	261	1400	663	177	1438	287	1435
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.64	0.32	0.49	0.56	0.13	0.76	0.42	0.23	0.60

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

1: Pepper Ave & Foothill Blvd

Opening Year Without Project

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	601	167	109	673	73	116	442	71	56	622	123
Future Volume (veh/h)	72	601	167	109	673	73	116	442	71	56	622	123
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	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	84	699	194	127	783	85	135	514	83	65	723	143
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	48	835	372	104	945	422	276	1373	221	386	1325	262
Arrive On Green	0.03	0.24	0.24	0.06	0.28	0.28	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	649	2950	474	834	2846	563
Grp Volume(v), veh/h	84	699	194	127	783	85	135	297	300	65	434	432
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	649	1710	1715	834	1710	1699
Q Serve(g_s), s	2.2	15.2	8.6	4.7	16.8	3.3	14.7	8.8	8.9	4.3	14.2	14.2
Cycle Q Clear(g_c), s	2.2	15.2	8.6	4.7	16.8	3.3	29.0	8.8	8.9	13.1	14.2	14.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		0.33
Lane Grp Cap(c), veh/h	48	835	372	104	945	422	276	796	798	386	796	791
V/C Ratio(X)	1.75	0.84	0.52	1.23	0.83	0.20	0.49	0.37	0.38	0.17	0.55	0.55
Avail Cap(c_a), veh/h	123	1203	536	287	1530	683	276	796	798	386	796	791
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	28.1	25.6	36.7	26.6	21.7	25.4	13.5	13.5	17.8	15.0	15.0
Incr Delay (d2), s/veh	375.7	3.6	1.1	119.5	2.1	0.2	6.1	1.3	1.4	0.9	2.7	2.7
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	5.9	6.0	2.9	5.3	6.3	1.1	2.5	3.2	3.2	0.8	5.3	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	413.7	31.7	26.7	156.3	28.7	21.9	31.5	14.9	14.9	18.7	17.7	17.7
LnGrp LOS	F	C	C	F	C	C	C	B	B	B	B	B
Approach Vol, veh/h	977		995				732		931			
Approach Delay, s/veh	63.6		44.4				17.9		17.8			
Approach LOS	E		D				B		B			
Timer - Assigned Phs	2		3		4		6		7		8	
Phs Duration (G+Y+Rc), s	42.4		10.7		25.1		42.4		8.2		27.6	
Change Period (Y+Rc), s	4.0		4.0		4.0		4.0		4.0		4.0	
Max Green Setting (Gmax), s	38.4		15.1		29.5		38.4		7.6		37.0	
Max Q Clear Time (g_c+I1), s	31.0		6.7		17.2		16.2		4.2		18.8	
Green Ext Time (p_c), s	2.6		0.2		3.9		5.6		0.0		4.8	
Intersection Summary												
HCM 7th Control Delay, s/veh	37.4											
HCM 7th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Opening Year Without Project

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	530	88	59	544	53	112	147	93	72	169	152
Future Volume (vph)	52	530	88	59	544	53	112	147	93	72	169	152
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	102		100	117		100	0		50	0		50
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.979			0.985	
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	0	1762	1530	0	1773	1530
Flt Permitted	0.950			0.950				0.741			0.820	
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	0	1334	1530	0	1476	1530
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			90			57			103			115
Link Speed (mph)		50			50			40			25	
Link Distance (ft)		1319			1149			784			796	
Travel Time (s)		18.0			15.7			13.4			21.7	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	60	616	102	69	633	62	130	171	108	84	197	177
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	616	102	69	633	62	0	301	108	0	281	177
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		6

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Opening Year Without Project

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	9.0	29.0	29.0	9.0	41.0	41.0	29.0	29.0	29.0	41.0	41.0	41.0
Total Split (s)	12.0	38.0	38.0	15.0	41.0	41.0	42.0	42.0	42.0	42.0	42.0	42.0
Total Split (%)	12.6%	40.0%	40.0%	15.8%	43.2%	43.2%	44.2%	44.2%	44.2%	44.2%	44.2%	44.2%
Maximum Green (s)	8.0	34.0	34.0	11.0	37.0	37.0	38.0	38.0	38.0	38.0	38.0	38.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		30.0	30.0	18.0	18.0	18.0	30.0	30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effect Green (s)	5.3	18.0	18.0	6.4	19.1	19.1		36.8	36.8		36.8	36.8
Actuated g/C Ratio	0.07	0.23	0.23	0.08	0.25	0.25		0.48	0.48		0.48	0.48
v/c Ratio	0.50	0.77	0.23	0.48	0.74	0.14		0.47	0.13		0.39	0.22
Control Delay (s/veh)	53.6	34.9	8.7	48.2	32.7	8.0		19.6	4.5		17.9	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)	53.6	34.9	8.7	48.2	32.7	8.0		19.6	4.5		17.9	7.1
LOS	D	C	A	D	C	A		B	A		B	A
Approach Delay (s/veh)		33.0			32.1			15.7			13.8	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 77

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay (s/veh): 26.1

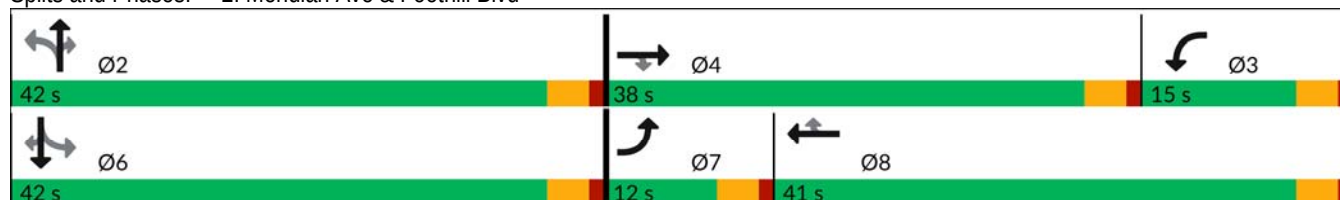
Intersection LOS: C

Intersection Capacity Utilization 68.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Meridian Ave & Foothill Blvd



Queues

Opening Year Without Project

2: Meridian Ave & Foothill Blvd

AM Peak Hour

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	60	616	102	69	633	62	301	108	281	177
v/c Ratio	0.50	0.77	0.23	0.48	0.74	0.14	0.47	0.13	0.39	0.22
Control Delay (s/veh)	53.6	34.9	8.7	48.2	32.7	8.0	19.6	4.5	17.9	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	53.6	34.9	8.7	48.2	32.7	8.0	19.6	4.5	17.9	7.1
Queue Length 50th (ft)	29	149	5	33	153	2	99	1	88	16
Queue Length 95th (ft)	#75	201	37	75	196	26	198	29	175	57
Internal Link Dist (ft)	1239		1069		704		716			
Turn Bay Length (ft)	102		100	117		100		50		50
Base Capacity (vph)	136	1451	701	204	1587	740	636	784	704	790
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.42	0.15	0.34	0.40	0.08	0.47	0.14	0.40	0.22

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

2: Meridian Ave & Foothill Blvd

Opening Year Without Project

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	530	88	59	544	53	112	147	93	72	169	152
Future Volume (veh/h)	52	530	88	59	544	53	112	147	93	72	169	152
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	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	60	616	102	69	633	62	130	171	108	84	197	177
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	36	766	342	46	787	351	72	66	762	65	117	762
Arrive On Green	0.02	0.22	0.22	0.03	0.23	0.23	0.50	0.50	0.50	0.50	0.50	0.50
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	0	132	1525	0	234	1525
Grp Volume(v), veh/h	60	616	102	69	633	62	301	0	108	281	0	177
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	132	0	1525	234	0	1525
Q Serve(g_s), s	1.5	12.3	4.0	1.9	12.6	2.4	0.0	0.0	2.7	0.0	0.0	4.7
Cycle Q Clear(g_c), s	1.5	12.3	4.0	1.9	12.6	2.4	36.0	0.0	2.7	36.0	0.0	4.7
Prop In Lane	1.00		1.00	1.00		1.00	0.43		1.00	0.30		1.00
Lane Grp Cap(c), veh/h	36	766	342	46	787	351	137	0	762	182	0	762
V/C Ratio(X)	1.69	0.80	0.30	1.50	0.80	0.18	2.19	0.00	0.14	1.55	0.00	0.23
Avail Cap(c_a), veh/h	143	1518	677	214	1661	741	137	0	762	182	0	762
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.3	26.5	23.3	35.1	26.2	22.3	19.4	0.0	9.7	20.0	0.0	10.2
Incr Delay (d2), s/veh	333.7	2.0	0.5	247.6	2.0	0.2	560.4	0.0	0.4	271.0	0.0	0.7
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	3.9	4.6	1.3	3.9	4.7	0.8	22.3	0.0	0.8	15.5	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	369.0	28.5	23.7	282.6	28.2	22.5	579.8	0.0	10.1	291.0	0.0	10.9
LnGrp LOS	F	C	C	F	C	C	F		B	F		B
Approach Vol, veh/h	778			764			409			458		
Approach Delay, s/veh	54.1			50.7			429.4			182.7		
Approach LOS	D			D			F			F		
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	42.0		7.9	22.1		42.0	7.5	22.6				
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s	38.0		11.0	34.0		38.0	8.0	37.0				
Max Q Clear Time (g_c+I1), s	38.0		3.9	14.3		38.0	3.5	14.6				
Green Ext Time (p_c), s	0.0		0.1	3.9		0.0	0.0	4.0				
Intersection Summary												
HCM 7th Control Delay, s/veh				141.2								
HCM 7th LOS				F								
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
3: Dallas Ave & Foothill Blvd

Opening Year Without Project

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	643	54	15	517	14	94	1	40	14	0	21
Future Volume (vph)	12	643	54	15	517	14	94	1	40	14	0	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		101	150		50	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.960			0.919	
Flt Protected	0.950			0.950				0.966			0.980	
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	0	1669	0	0	1621	0
Flt Permitted	0.950			0.950				0.966			0.980	
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	0	1669	0	0	1621	0
Link Speed (mph)		50			50			25			25	
Link Distance (ft)		1149			1043			345			383	
Travel Time (s)		15.7			14.2			9.4			10.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	14	748	63	17	601	16	109	1	47	16	0	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	748	63	17	601	16	0	157	0	0	40	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	42.5%						ICU Level of Service A					
Analysis Period (min)	15											

HCM 7th TWSC
3: Dallas Ave & Foothill Blvd

Opening Year Without Project
AM Peak Hour

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	643	54	15	517	14	94	1	40	14	0	21
Future Vol, veh/h	12	643	54	15	517	14	94	1	40	14	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	101	150	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	14	748	63	17	601	16	109	1	47	16	0	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	617	0	0	810	0	0	1111	1428	374	1038	1474	301
Stage 1	-	-	-	-	-	-	776	776	-	636	636	-
Stage 2	-	-	-	-	-	-	335	652	-	402	838	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	972	-	-	824	-	-	166	136	629	188	128	702
Stage 1	-	-	-	-	-	-	361	411	-	437	475	-
Stage 2	-	-	-	-	-	-	658	467	-	601	384	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	972	-	-	824	-	-	155	131	629	167	123	702
Mov Cap-2 Maneuver	-	-	-	-	-	-	315	309	-	349	293	-
Stage 1	-	-	-	-	-	-	356	405	-	428	465	-
Stage 2	-	-	-	-	-	-	621	457	-	547	379	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.15			0.26			21.75			12.84		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	369	972	-	-	824	-	-	500
HCM Lane V/C Ratio	0.425	0.014	-	-	0.021	-	-	0.081
HCM Control Delay (s/veh)	21.8	8.8	-	-	9.5	-	-	12.8
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	2.1	0	-	-	0.1	-	-	0.3

Lanes, Volumes, Timings
4: Foothill Blvd & Macy St

Opening Year Without Project
AM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		 	 			
Traffic Volume (vph)	16	689	519	31	59	27
Future Volume (vph)	16	689	519	31	59	27
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)	84			50	0	50
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1710	3420	3420	1530	1710	1530
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1710	3420	3420	1530	1710	1530
Link Speed (mph)		50	50		30	
Link Distance (ft)		1043	2212		376	
Travel Time (s)		14.2	30.2		8.5	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	18	792	597	36	68	31
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	792	597	36	68	31
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes	Yes			
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	33.6%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
4: Foothill Blvd & Macy St

Opening Year Without Project
AM Peak Hour

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	16	689	519	31	59	27
Future Vol, veh/h	16	689	519	31	59	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	84	-	-	50	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	18	792	597	36	68	31

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	632	0	-	0	1029
Stage 1	-	-	-	-	597
Stage 2	-	-	-	-	433
Critical Hdwy	4.1	-	-	-	6.8
Critical Hdwy Stg 1	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	5.8
Follow-up Hdwy	2.2	-	-	-	3.5
Pot Cap-1 Maneuver	960	-	-	-	233
Stage 1	-	-	-	-	518
Stage 2	-	-	-	-	627
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	960	-	-	-	228
Mov Cap-2 Maneuver	-	-	-	-	359
Stage 1	-	-	-	-	509
Stage 2	-	-	-	-	627

Approach	EB	WB	SB
HCM Control Delay, s/v	0.2	0	15.16
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	960	-	-	-	359	704
HCM Lane V/C Ratio	0.019	-	-	-	0.189	0.044
HCM Control Delay (s/veh)	8.8	-	-	-	17.4	10.3
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7	0.1

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Opening Year Without Project
AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	565	187	287	403	92	319
Future Volume (vph)	565	187	287	403	92	319
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)		100	89		0	215
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3420	1530	1710	3420	1710	1530
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3420	1530	1710	3420	1710	1530
Link Speed (mph)	30			30	30	
Link Distance (ft)	2212			735	518	
Travel Time (s)	50.3			16.7	11.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	628	208	319	448	102	354
Shared Lane Traffic (%)						
Lane Group Flow (vph)	628	208	319	448	102	354
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	53.6%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
5: Rancho Ave & Foothill Blvd

Opening Year Without Project
AM Peak Hour

Intersection						
Int Delay, s/veh	6.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↗	↘	↑↑	↘	↗
Traffic Vol, veh/h	565	187	287	403	92	319
Future Vol, veh/h	565	187	287	403	92	319
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	89	-	0	215
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	628	208	319	448	102	354
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	836	0	1489	314
Stage 1	-	-	-	-	628	-
Stage 2	-	-	-	-	862	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	807	-	117	688
Stage 1	-	-	-	-	500	-
Stage 2	-	-	-	-	379	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	807	-	~ 71	688
Mov Cap-2 Maneuver	-	-	-	-	204	-
Stage 1	-	-	-	-	500	-
Stage 2	-	-	-	-	229	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		5.14		20.93	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	204	688	-	-	807	-
HCM Lane V/C Ratio	0.501	0.515	-	-	0.395	-
HCM Control Delay (s/veh)	39.2	15.7	-	-	12.3	-
HCM Lane LOS	E	C	-	-	B	-
HCM 95th %tile Q(veh)	2.5	3	-	-	1.9	-
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Opening Year Without Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	859	149	83	740	71	122	539	103	76	420	111
Future Volume (vph)	164	859	149	83	740	71	122	539	103	76	420	111
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		0	90		100	100		0	95		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.976			0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	1710	3338	0	1710	3314	0
Flt Permitted	0.950			0.950			0.388			0.316		
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	698	3338	0	569	3314	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			157			57		26			40	
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1312			1319			737			789	
Travel Time (s)		17.9			18.0			11.2			12.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	173	904	157	87	779	75	128	567	108	80	442	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	173	904	157	87	779	75	128	675	0	80	559	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Opening Year Without Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	9.5	33.0	33.0	9.5	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (s)	13.0	40.4	40.4	13.6	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (%)	13.7%	42.5%	42.5%	14.3%	43.2%	43.2%	43.2%	43.2%		43.2%	43.2%	
Maximum Green (s)	9.0	36.4	36.4	9.6	37.0	37.0	37.0	37.0		37.0	37.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0	22.0		30.0	30.0	22.0	22.0		30.0	30.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effect Green (s)	7.0	29.8	29.8	6.7	27.0	27.0	35.2	35.2		35.2	35.2	
Actuated g/C Ratio	0.08	0.34	0.34	0.08	0.31	0.31	0.40	0.40		0.40	0.40	
v/c Ratio	1.26	0.77	0.25	0.66	0.73	0.14	0.45	0.49		0.34	0.41	
Control Delay (s/veh)	199.5	31.7	4.7	66.2	31.1	8.8	27.9	21.3		26.3	19.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	199.5	31.7	4.7	66.2	31.1	8.8	27.9	21.3		26.3	19.4	
LOS	F	C	A	E	C	A	C	C		C	B	
Approach Delay (s/veh)		51.9			32.7			22.4			20.3	
Approach LOS		D			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 87.4

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.26

Intersection Signal Delay (s/veh): 34.7

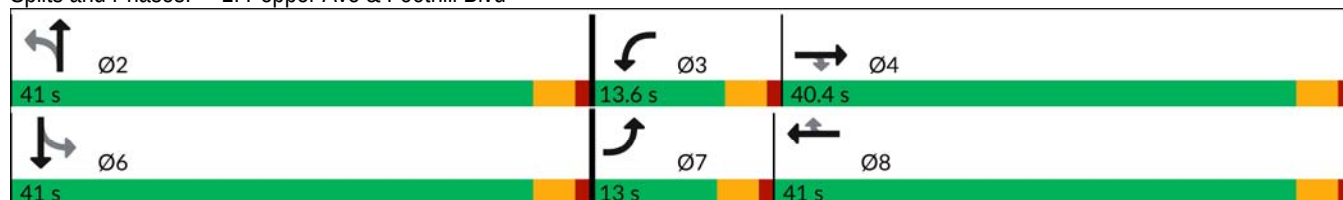
Intersection LOS: C

Intersection Capacity Utilization 76.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Pepper Ave & Foothill Blvd

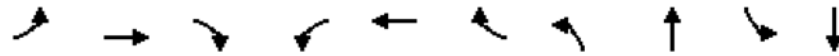


Queues

Opening Year Without Project

1: Pepper Ave & Foothill Blvd

PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	173	904	157	87	779	75	128	675	80	559
v/c Ratio	1.26	0.77	0.25	0.66	0.73	0.14	0.45	0.49	0.34	0.41
Control Delay (s/veh)	199.5	31.7	4.7	66.2	31.1	8.8	27.9	21.3	26.3	19.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	199.5	31.7	4.7	66.2	31.1	8.8	27.9	21.3	26.3	19.4
Queue Length 50th (ft)	~125	245	0	48	198	7	52	142	31	108
Queue Length 95th (ft)	#268	317	40	#120	262	36	120	215	79	170
Internal Link Dist (ft)		1232			1239			657		709
Turn Bay Length (ft)	150			90		100	100		95	
Base Capacity (vph)	137	1353	700	149	1377	650	281	1360	229	1358
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.26	0.67	0.22	0.58	0.57	0.12	0.46	0.50	0.35	0.41

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

1: Pepper Ave & Foothill Blvd

Opening Year Without Project

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	859	149	83	740	71	122	539	103	76	420	111
Future Volume (veh/h)	164	859	149	83	740	71	122	539	103	76	420	111
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	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	173	904	157	87	779	75	128	567	108	80	442	117
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	108	1071	477	49	952	424	368	1247	237	318	1165	306
Arrive On Green	0.06	0.31	0.31	0.03	0.28	0.28	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	864	2867	545	776	2680	704
Grp Volume(v), veh/h	173	904	157	87	779	75	128	337	338	80	281	278
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	864	1710	1702	776	1710	1673
Q Serve(g_s), s	5.1	19.9	6.3	2.3	17.1	3.0	9.5	11.2	11.3	6.5	8.9	9.1
Cycle Q Clear(g_c), s	5.1	19.9	6.3	2.3	17.1	3.0	18.6	11.2	11.3	17.8	8.9	9.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		0.42
Lane Grp Cap(c), veh/h	108	1071	477	49	952	424	368	744	740	318	744	728
V/C Ratio(X)	1.60	0.84	0.33	1.79	0.82	0.18	0.35	0.45	0.46	0.25	0.38	0.38
Avail Cap(c_a), veh/h	149	1462	652	162	1487	663	368	744	740	318	744	728
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	25.8	21.2	39.1	27.1	22.0	21.7	16.0	16.0	22.3	15.4	15.4
Incr Delay (d2), s/veh	307.8	3.5	0.4	376.1	2.1	0.2	2.6	2.0	2.0	1.9	1.5	1.5
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	11.2	7.6	2.1	6.0	6.5	1.0	2.0	4.2	4.2	1.3	3.3	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	345.5	29.3	21.6	415.1	29.3	22.2	24.3	18.0	18.0	24.2	16.8	16.9
LnGrp LOS	F	C	C	F	C	C	C	B	B	C	B	B
Approach Vol, veh/h	1234			941			803			639		
Approach Delay, s/veh	72.6			64.4			19.0			17.8		
Approach LOS	E			E			B			B		
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	41.0		8.3	31.2		41.0		11.0	28.4			
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0		4.0	4.0			
Max Green Setting (Gmax), s	37.0		9.6	36.4		37.0		9.0	37.0			
Max Q Clear Time (g_c+l1), s	20.6		4.3	21.9		19.8		7.1	19.1			
Green Ext Time (p_c), s	4.2		0.1	5.3		3.4		0.1	4.7			
Intersection Summary												
HCM 7th Control Delay, s/veh	48.9											
HCM 7th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Opening Year Without Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	728	102	59	655	96	91	170	105	71	146	126
Future Volume (vph)	108	728	102	59	655	96	91	170	105	71	146	126
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	102		100	117		100	0		50	0		50
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.983			0.984	
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	0	1769	1530	0	1771	1530
Flt Permitted	0.950			0.950				0.809			0.813	
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	0	1456	1530	0	1463	1530
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			78			83			103			104
Link Speed (mph)		50			50			40			25	
Link Distance (ft)		1319			1149			784			796	
Travel Time (s)		18.0			15.7			13.4			21.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	115	774	109	63	697	102	97	181	112	76	155	134
Shared Lane Traffic (%)												
Lane Group Flow (vph)	115	774	109	63	697	102	0	278	112	0	231	134
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		6

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Opening Year Without Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	9.5	29.0	29.0	9.5	41.0	41.0	29.0	29.0	29.0	41.0	41.0	41.0
Total Split (s)	13.0	38.8	38.8	15.2	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0
Total Split (%)	13.7%	40.8%	40.8%	16.0%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%
Maximum Green (s)	9.0	34.8	34.8	11.2	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		30.0	30.0	18.0	18.0	18.0	30.0	30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effect Green (s)	7.1	25.7	25.7	6.4	22.9	22.9		35.3	35.3		35.3	35.3
Actuated g/C Ratio	0.09	0.31	0.31	0.08	0.27	0.27		0.42	0.42		0.42	0.42
v/c Ratio	0.79	0.73	0.20	0.48	0.74	0.21		0.45	0.15		0.37	0.18
Control Delay (s/veh)	77.6	31.1	9.5	51.3	32.3	8.1		22.0	5.4		20.6	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)	77.6	31.1	9.5	51.3	32.3	8.1		22.0	5.4		20.6	6.8
LOS	E	C	A	D	C	A		C	A		C	A
Approach Delay (s/veh)		34.2			30.9			17.3			15.6	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 83.4

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay (s/veh): 28.0

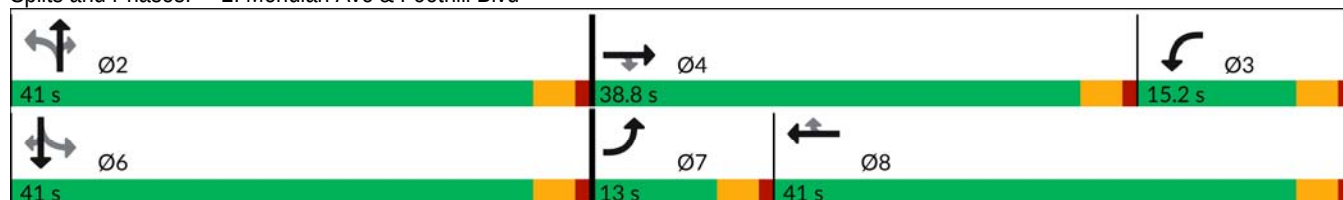
Intersection LOS: C

Intersection Capacity Utilization 72.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Meridian Ave & Foothill Blvd



Queues

Opening Year Without Project

2: Meridian Ave & Foothill Blvd

PM Peak Hour

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	115	774	109	63	697	102	278	112	231	134
v/c Ratio	0.79	0.73	0.20	0.48	0.74	0.21	0.45	0.15	0.37	0.18
Control Delay (s/veh)	77.6	31.1	9.5	51.3	32.3	8.1	22.0	5.4	20.6	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	77.6	31.1	9.5	51.3	32.3	8.1	22.0	5.4	20.6	6.8
Queue Length 50th (ft)	60	195	12	32	172	7	99	3	79	9
Queue Length 95th (ft)	#176	270	49	77	230	41	208	38	171	50
Internal Link Dist (ft)	1239			1069			704		716	
Turn Bay Length (ft)	102		100	117		100		50		50
Base Capacity (vph)	144	1356	653	190	1447	695	616	707	619	707
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.57	0.17	0.33	0.48	0.15	0.45	0.16	0.37	0.19

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

2: Meridian Ave & Foothill Blvd

Opening Year Without Project

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	728	102	59	655	96	91	170	105	71	146	126
Future Volume (veh/h)	108	728	102	59	655	96	91	170	105	71	146	126
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	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	115	774	109	63	697	102	97	181	112	76	155	134
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	58	939	419	38	898	401	64	89	709	64	97	709
Arrive On Green	0.03	0.27	0.27	0.02	0.26	0.26	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	0	192	1525	0	210	1525
Grp Volume(v), veh/h	115	774	109	63	697	102	278	0	112	231	0	134
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	192	0	1525	210	0	1525
Q Serve(g_s), s	2.5	16.0	4.2	1.7	14.2	4.0	0.0	0.0	3.2	0.0	0.0	3.9
Cycle Q Clear(g_c), s	2.5	16.0	4.2	1.7	14.2	4.0	35.0	0.0	3.2	35.0	0.0	3.9
Prop In Lane	1.00		1.00	1.00		1.00	0.35		1.00	0.33		1.00
Lane Grp Cap(c), veh/h	58	939	419	38	898	401	154	0	709	161	0	709
V/C Ratio(X)	1.98	0.82	0.26	1.67	0.78	0.25	1.81	0.00	0.16	1.44	0.00	0.19
Avail Cap(c_a), veh/h	159	1489	664	209	1589	709	154	0	709	161	0	709
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.4	25.6	21.4	36.8	25.7	21.9	18.4	0.0	11.7	18.9	0.0	11.8
Incr Delay (d2), s/veh	475.0	2.2	0.3	323.4	1.5	0.3	389.1	0.0	0.5	227.9	0.0	0.6
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	8.6	6.0	1.4	4.0	5.3	1.3	17.9	0.0	1.0	11.7	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	511.3	27.8	21.7	360.2	27.2	22.3	407.6	0.0	12.1	246.8	0.0	12.4
LnGrp LOS	F	C	C	F	C	C	F		B	F		B
Approach Vol, veh/h	998			862			390			365		
Approach Delay, s/veh	82.9			51.0			294.0			160.8		
Approach LOS	F			D			F			F		
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	41.0		7.7	26.7		41.0		8.5	25.8			
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0		4.0	4.0			
Max Green Setting (Gmax), s	37.0		11.2	34.8		37.0		9.0	37.0			
Max Q Clear Time (g_c+I1), s	37.0		3.7	18.0		37.0		4.5	16.2			
Green Ext Time (p_c), s	0.0		0.1	4.7		0.0		0.1	4.5			
Intersection Summary												
HCM 7th Control Delay, s/veh				114.7								
HCM 7th LOS				F								
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
3: Dallas Ave & Foothill Blvd

Opening Year Without Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	726	84	32	676	13	43	1	24	17	2	12
Future Volume (vph)	23	726	84	32	676	13	43	1	24	17	2	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		101	150		50	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.953			0.948	
Flt Protected	0.950			0.950				0.969			0.973	
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	0	1662	0	0	1660	0
Flt Permitted	0.950			0.950				0.969			0.973	
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	0	1662	0	0	1660	0
Link Speed (mph)		50			50			25			25	
Link Distance (ft)		1149			1043			345			383	
Travel Time (s)		15.7			14.2			9.4			10.4	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	25	798	92	35	743	14	47	1	26	19	2	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	798	92	35	743	14	0	74	0	0	34	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	43.4%						ICU Level of Service A					
Analysis Period (min)	15											

HCM 7th TWSC
3: Dallas Ave & Foothill Blvd

Opening Year Without Project
PM Peak Hour

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	726	84	32	676	13	43	1	24	17	2	12
Future Vol, veh/h	23	726	84	32	676	13	43	1	24	17	2	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	101	150	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	25	798	92	35	743	14	47	1	26	19	2	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	757	0	0	890	0	0	1291	1676	399	1263	1754	371
Stage 1	-	-	-	-	-	-	848	848	-	813	813	-
Stage 2	-	-	-	-	-	-	443	827	-	450	941	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	863	-	-	770	-	-	123	96	606	129	86	632
Stage 1	-	-	-	-	-	-	326	380	-	343	395	-
Stage 2	-	-	-	-	-	-	569	389	-	564	345	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	863	-	-	770	-	-	110	89	606	113	80	632
Mov Cap-2 Maneuver	-	-	-	-	-	-	271	254	-	275	234	-
Stage 1	-	-	-	-	-	-	317	369	-	327	377	-
Stage 2	-	-	-	-	-	-	529	371	-	522	335	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.26			0.44			18.75			16.49		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	336	863	-	-	770	-	-	347
HCM Lane V/C Ratio	0.222	0.029	-	-	0.046	-	-	0.098
HCM Control Delay (s/veh)	18.8	9.3	-	-	9.9	-	-	16.5
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0.1	-	-	0.3

Lanes, Volumes, Timings
4: Foothill Blvd & Macy St

Opening Year Without Project
PM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		 	 			
Traffic Volume (vph)	32	734	703	54	44	16
Future Volume (vph)	32	734	703	54	44	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)	84			50	0	50
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1710	3420	3420	1530	1710	1530
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1710	3420	3420	1530	1710	1530
Link Speed (mph)		50	50		30	
Link Distance (ft)		1043	2212		376	
Travel Time (s)		14.2	30.2		8.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	34	789	756	58	47	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	789	756	58	47	17
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes	Yes			
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	41.4%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
4: Foothill Blvd & Macy St

Opening Year Without Project
PM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	32	734	703	54	44	16
Future Vol, veh/h	32	734	703	54	44	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	84	-	-	50	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	34	789	756	58	47	17

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	814	0	0 1219 378
Stage 1	-	-	- 756 -
Stage 2	-	-	- 463 -
Critical Hdwy	4.1	-	- 6.8 6.9
Critical Hdwy Stg 1	-	-	- 5.8 -
Critical Hdwy Stg 2	-	-	- 5.8 -
Follow-up Hdwy	2.2	-	- 3.5 3.3
Pot Cap-1 Maneuver	822	-	- 175 626
Stage 1	-	-	- 430 -
Stage 2	-	-	- 606 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	822	-	- 168 626
Mov Cap-2 Maneuver	-	-	- 296 -
Stage 1	-	-	- 412 -
Stage 2	-	-	- 606 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.4	0	17.17
HCM LOS	C		

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	822	-	-	-	296	626
HCM Lane V/C Ratio	0.042	-	-	-	0.16	0.028
HCM Control Delay (s/veh)	9.6	-	-	-	19.4	10.9
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6	0.1

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Opening Year Without Project
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↙	↑↑	↙	↗
Traffic Volume (vph)	663	148	247	619	157	373
Future Volume (vph)	663	148	247	619	157	373
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)		100	89		0	215
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3420	1530	1710	3420	1710	1530
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3420	1530	1710	3420	1710	1530
Link Speed (mph)	30			30	30	
Link Distance (ft)	2212			735	518	
Travel Time (s)	50.3			16.7	11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	721	161	268	673	171	405
Shared Lane Traffic (%)						
Lane Group Flow (vph)	721	161	268	673	171	405
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	58.0%			ICU Level of Service B		
Analysis Period (min)	15					

HCM 7th TWSC
5: Rancho Ave & Foothill Blvd

Opening Year Without Project
PM Peak Hour

Intersection						
Int Delay, s/veh	9.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	663	148	247	619	157	373
Future Vol, veh/h	663	148	247	619	157	373
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	89	-	0	215
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	721	161	268	673	171	405
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	882	0	1594	360
Stage 1	-	-	-	-	721	-
Stage 2	-	-	-	-	873	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	776	-	~ 100	642
Stage 1	-	-	-	-	448	-
Stage 2	-	-	-	-	374	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	776	-	~ 65	642
Mov Cap-2 Maneuver	-	-	-	-	210	-
Stage 1	-	-	-	-	448	-
Stage 2	-	-	-	-	244	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		3.45		34.56	
HCM LOS	D					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	210	642	-	-	776	-
HCM Lane V/C Ratio	0.813	0.631	-	-	0.346	-
HCM Control Delay (s/veh)	69.8	19.7	-	-	12.1	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	5.9	4.5	-	-	1.6	-
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

OPENING YEAR (2026) WITH PROJECT

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Opening Year With Project
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	604	167	124	684	91	116	442	77	62	622	123
Future Volume (vph)	72	604	167	124	684	91	116	442	77	62	622	123
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		0	90		100	100		0	95		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.978			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	1710	3345	0	1710	3334	0
Flt Permitted	0.950			0.950			0.229			0.369		
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	412	3345	0	664	3334	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			151			76		24			28	
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1312			1319			737			789	
Travel Time (s)		17.9			18.0			11.2			12.0	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	84	702	194	144	795	106	135	514	90	72	723	143
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	702	194	144	795	106	135	604	0	72	866	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Opening Year With Project
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	9.5	33.0	33.0	9.5	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (s)	11.6	35.1	35.1	17.5	41.0	41.0	42.4	42.4		42.4	42.4	
Total Split (%)	12.2%	36.9%	36.9%	18.4%	43.2%	43.2%	44.6%	44.6%		44.6%	44.6%	
Maximum Green (s)	7.6	31.1	31.1	13.5	37.0	37.0	38.4	38.4		38.4	38.4	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0	22.0		30.0	30.0	22.0	22.0		30.0	30.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effect Green (s)	5.6	22.3	22.3	9.7	26.4	26.4	36.6	36.6		36.6	36.6	
Actuated g/C Ratio	0.06	0.26	0.26	0.11	0.30	0.30	0.42	0.42		0.42	0.42	
v/c Ratio	0.76	0.79	0.38	0.75	0.76	0.20	0.77	0.42		0.25	0.60	
Control Delay (s/veh)	83.6	37.6	9.7	63.5	32.3	9.0	56.8	19.1		21.9	22.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	83.6	37.6	9.7	63.5	32.3	9.0	56.8	19.1		21.9	22.1	
LOS	F	D	A	E	C	A	E	B		C	C	
Approach Delay (s/veh)		36.1			34.3			26.0			22.1	
Approach LOS		D			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 86.7

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay (s/veh): 30.0

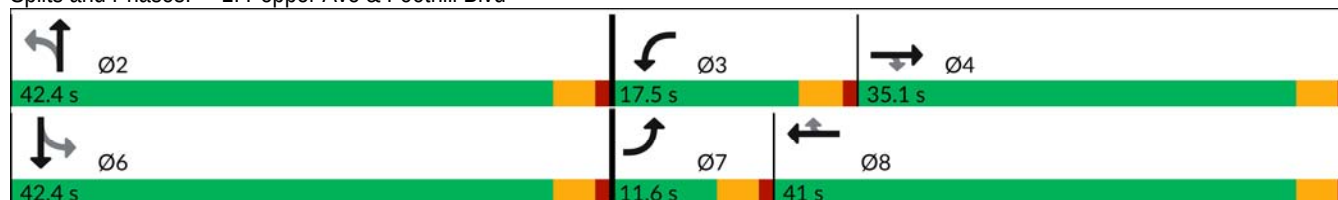
Intersection LOS: C

Intersection Capacity Utilization 73.9%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Pepper Ave & Foothill Blvd

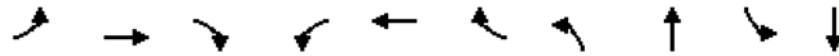


Queues

Opening Year With Project

1: Pepper Ave & Foothill Blvd

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	84	702	194	144	795	106	135	604	72	866
v/c Ratio	0.76	0.79	0.38	0.75	0.76	0.20	0.77	0.42	0.25	0.60
Control Delay (s/veh)	83.6	37.6	9.7	63.5	32.3	9.0	56.8	19.1	21.9	22.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	83.6	37.6	9.7	63.5	32.3	9.0	56.8	19.1	21.9	22.1
Queue Length 50th (ft)	47	192	18	78	204	12	64	117	26	188
Queue Length 95th (ft)	#128	241	63	#159	252	42	#176	174	62	266
Internal Link Dist (ft)		1232			1239			657		709
Turn Bay Length (ft)	150			90		100	100		95	
Base Capacity (vph)	111	1154	616	228	1389	666	174	1426	280	1424
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.61	0.31	0.63	0.57	0.16	0.78	0.42	0.26	0.61

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

1: Pepper Ave & Foothill Blvd

Opening Year With Project

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	604	167	124	684	91	116	442	77	62	622	123
Future Volume (veh/h)	72	604	167	124	684	91	116	442	77	62	622	123
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	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	84	702	194	144	795	106	135	514	90	72	723	143
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	48	859	383	98	960	428	273	1347	235	379	1317	260
Arrive On Green	0.03	0.25	0.25	0.06	0.28	0.28	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	649	2911	508	829	2846	563
Grp Volume(v), veh/h	84	702	194	144	795	106	135	301	303	72	434	432
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	649	1710	1709	829	1710	1699
Q Serve(g_s), s	2.2	15.2	8.6	4.5	17.1	4.2	14.9	9.0	9.1	4.9	14.4	14.4
Cycle Q Clear(g_c), s	2.2	15.2	8.6	4.5	17.1	4.2	29.3	9.0	9.1	14.0	14.4	14.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		0.33
Lane Grp Cap(c), veh/h	48	859	383	98	960	428	273	791	790	379	791	786
V/C Ratio(X)	1.75	0.82	0.51	1.47	0.83	0.25	0.49	0.38	0.38	0.19	0.55	0.55
Avail Cap(c_a), veh/h	122	1265	564	251	1521	679	273	791	790	379	791	786
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	27.7	25.3	37.1	26.5	21.9	25.8	13.8	13.8	18.4	15.2	15.2
Incr Delay (d2), s/veh	377.6	2.7	1.0	227.3	2.2	0.3	6.3	1.4	1.4	1.1	2.7	2.8
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	5.9	5.9	2.9	8.0	6.5	1.4	2.6	3.3	3.3	1.0	5.4	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	415.8	30.5	26.3	264.3	28.7	22.2	32.1	15.2	15.2	19.5	18.0	18.0
LnGrp LOS	F	C	C	F	C	C	C	B	B	B	B	B
Approach Vol, veh/h	980			1045			739			938		
Approach Delay, s/veh	62.7			60.5			18.3			18.1		
Approach LOS	E			E			B			B		
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	42.4		10.5	25.8		42.4	8.2	28.1				
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s	38.4		13.5	31.1		38.4	7.6	37.0				
Max Q Clear Time (g_c+l1), s	31.3		6.5	17.2		16.4	4.2	19.1				
Green Ext Time (p_c), s	2.6		0.2	4.2		5.6	0.0	4.9				
Intersection Summary												
HCM 7th Control Delay, s/veh	41.9											
HCM 7th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Opening Year With Project
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	545	88	59	588	57	112	147	93	73	169	152
Future Volume (vph)	52	545	88	59	588	57	112	147	93	73	169	152
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	102		100	117		100	0		50	0		50
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.979			0.985	
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	0	1762	1530	0	1773	1530
Flt Permitted	0.950			0.950				0.734			0.818	
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	0	1321	1530	0	1472	1530
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			87			57			103			115
Link Speed (mph)		50			50			40			25	
Link Distance (ft)		1319			1149			784			796	
Travel Time (s)		18.0			15.7			13.4			21.7	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	60	634	102	69	684	66	130	171	108	85	197	177
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	634	102	69	684	66	0	301	108	0	282	177
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		6

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Opening Year With Project
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	9.0	29.0	29.0	9.0	41.0	41.0	29.0	29.0	29.0	41.0	41.0	41.0
Total Split (s)	12.0	38.0	38.0	15.0	41.0	41.0	42.0	42.0	42.0	42.0	42.0	42.0
Total Split (%)	12.6%	40.0%	40.0%	15.8%	43.2%	43.2%	44.2%	44.2%	44.2%	44.2%	44.2%	44.2%
Maximum Green (s)	8.0	34.0	34.0	11.0	37.0	37.0	38.0	38.0	38.0	38.0	38.0	38.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		30.0	30.0	18.0	18.0	18.0	30.0	30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effect Green (s)	5.3	18.6	18.6	6.6	19.9	19.9		36.7	36.7		36.7	36.7
Actuated g/C Ratio	0.07	0.24	0.24	0.08	0.26	0.26		0.47	0.47		0.47	0.47
v/c Ratio	0.51	0.77	0.23	0.47	0.78	0.15		0.48	0.13		0.40	0.22
Control Delay (s/veh)	54.7	35.0	9.1	47.6	33.7	8.6		20.3	4.5		18.4	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)	54.7	35.0	9.1	47.6	33.7	8.6		20.3	4.5		18.4	7.2
LOS	D	D	A	D	C	A		C	A		B	A
Approach Delay (s/veh)		33.2			32.9			16.2			14.2	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 77.8

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay (s/veh): 26.8

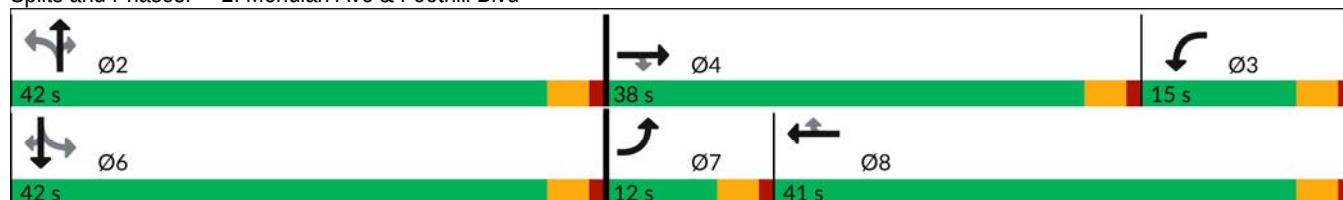
Intersection LOS: C

Intersection Capacity Utilization 69.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Meridian Ave & Foothill Blvd



Queues

Opening Year With Project

2: Meridian Ave & Foothill Blvd

AM Peak Hour

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	60	634	102	69	684	66	301	108	282	177
v/c Ratio	0.51	0.77	0.23	0.47	0.78	0.15	0.48	0.13	0.40	0.22
Control Delay (s/veh)	54.7	35.0	9.1	47.6	33.7	8.6	20.3	4.5	18.4	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	54.7	35.0	9.1	47.6	33.7	8.6	20.3	4.5	18.4	7.2
Queue Length 50th (ft)	29	156	6	33	168	3	102	1	91	17
Queue Length 95th (ft)	#76	207	38	75	213	29	201	29	178	58
Internal Link Dist (ft)	1239		1069		704		716			
Turn Bay Length (ft)	102	100		117	100		50		50	
Base Capacity (vph)	134	1434	692	201	1569	732	623	776	694	782
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.44	0.15	0.34	0.44	0.09	0.48	0.14	0.41	0.23

Intersection Summary

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

HCM 7th Signalized Intersection Summary

2: Meridian Ave & Foothill Blvd

Opening Year With Project

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	545	88	59	588	57	112	147	93	73	169	152
Future Volume (veh/h)	52	545	88	59	588	57	112	147	93	73	169	152
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	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	60	634	102	69	684	66	130	171	108	85	197	177
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	36	783	349	66	843	376	70	64	745	64	113	745
Arrive On Green	0.02	0.23	0.23	0.04	0.25	0.25	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	0	132	1525	0	231	1525
Grp Volume(v), veh/h	60	634	102	69	684	66	301	0	108	282	0	177
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	132	0	1525	231	0	1525
Q Serve(g_s), s	1.5	12.9	4.1	2.8	13.9	2.5	0.0	0.0	2.9	0.0	0.0	5.0
Cycle Q Clear(g_c), s	1.5	12.9	4.1	2.8	13.9	2.5	36.0	0.0	2.9	36.0	0.0	5.0
Prop In Lane	1.00		1.00	1.00		1.00	0.43		1.00	0.30		1.00
Lane Grp Cap(c), veh/h	36	783	349	66	843	376	134	0	745	177	0	745
V/C Ratio(X)	1.68	0.81	0.29	1.05	0.81	0.18	2.24	0.00	0.14	1.60	0.00	0.24
Avail Cap(c_a), veh/h	140	1485	662	209	1624	724	134	0	745	177	0	745
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.1	26.9	23.5	35.4	26.2	21.9	20.2	0.0	10.4	20.1	0.0	10.9
Incr Delay (d2), s/veh	330.5	2.1	0.5	64.1	1.9	0.2	582.7	0.0	0.4	293.6	0.0	0.8
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	3.9	4.9	1.4	2.3	5.2	0.8	22.8	0.0	0.9	16.2	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	366.6	29.0	23.9	99.5	28.1	22.1	603.0	0.0	10.8	313.7	0.0	11.7
LnGrp LOS	F	C	C	F	C	C	F		B	F		B
Approach Vol, veh/h	796				819		409				459	
Approach Delay, s/veh	53.8				33.6		446.6				197.3	
Approach LOS	D				C		F				F	
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	42.0		8.8	22.9		42.0	7.5	24.2				
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s	38.0		11.0	34.0		38.0	8.0	37.0				
Max Q Clear Time (g_c+I1), s	38.0		4.8	14.9		38.0	3.5	15.9				
Green Ext Time (p_c), s	0.0		0.1	3.9		0.0	0.0	4.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	138.4											
HCM 7th LOS	F											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
3: Dallas Ave & Foothill Blvd

Opening Year With Project

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	649	54	15	535	17	94	1	40	21	0	51
Future Volume (vph)	22	649	54	15	535	17	94	1	40	21	0	51
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		101	150		50	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.960			0.904	
Flt Protected	0.950			0.950				0.966			0.986	
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	0	1669	0	0	1604	0
Flt Permitted	0.950			0.950				0.966			0.986	
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	0	1669	0	0	1604	0
Link Speed (mph)		50			50			25			25	
Link Distance (ft)		1149			1043			345			383	
Travel Time (s)		15.7			14.2			9.4			10.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	26	755	63	17	622	20	109	1	47	24	0	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	755	63	17	622	20	0	157	0	0	83	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	44.1%						ICU Level of Service A					
Analysis Period (min)	15											

HCM 7th TWSC
3: Dallas Ave & Foothill Blvd

Opening Year With Project
AM Peak Hour

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	649	54	15	535	17	94	1	40	21	0	51
Future Vol, veh/h	22	649	54	15	535	17	94	1	40	21	0	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	101	150	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	26	755	63	17	622	20	109	1	47	24	0	59

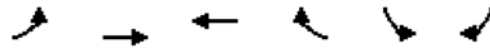
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	642	0	0	817	0	0	1152	1483	377	1086	1526	311
Stage 1	-	-	-	-	-	-	806	806	-	657	657	-
Stage 2	-	-	-	-	-	-	346	677	-	429	869	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	952	-	-	819	-	-	155	126	626	173	119	691
Stage 1	-	-	-	-	-	-	346	398	-	425	465	-
Stage 2	-	-	-	-	-	-	649	455	-	580	372	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	952	-	-	819	-	-	135	120	626	152	113	691
Mov Cap-2 Maneuver	-	-	-	-	-	-	294	293	-	334	280	-
Stage 1	-	-	-	-	-	-	337	387	-	416	455	-
Stage 2	-	-	-	-	-	-	580	446	-	521	362	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.27			0.25			23.5			13.13		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	349	952	-	-	819	-	-	527
HCM Lane V/C Ratio	0.45	0.027	-	-	0.021	-	-	0.159
HCM Control Delay (s/veh)	23.5	8.9	-	-	9.5	-	-	13.1
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	2.2	0.1	-	-	0.1	-	-	0.6

Lanes, Volumes, Timings
4: Foothill Blvd & Macy St

Opening Year With Project
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	22	696	522	35	70	45
Future Volume (vph)	22	696	522	35	70	45
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)	84			50	0	50
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1710	3420	3420	1530	1710	1530
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1710	3420	3420	1530	1710	1530
Link Speed (mph)		50	50		30	
Link Distance (ft)		1043	2212		376	
Travel Time (s)		14.2	30.2		8.5	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	25	800	600	40	80	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	800	600	40	80	52
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes	Yes			
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	34.4%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
4: Foothill Blvd & Macy St

Opening Year With Project
AM Peak Hour

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	22	696	522	35	70	45
Future Vol, veh/h	22	696	522	35	70	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	84	-	-	50	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	25	800	600	40	80	52
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	640	0	-	0	1051	300
Stage 1	-	-	-	-	600	-
Stage 2	-	-	-	-	451	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	954	-	-	-	226	702
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	615	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	954	-	-	-	220	702
Mov Cap-2 Maneuver	-	-	-	-	351	-
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	615	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0.27	0		15.25		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	954	-	-	-	351	702
HCM Lane V/C Ratio	0.027	-	-	-	0.229	0.074
HCM Control Delay (s/veh)	8.9	-	-	-	18.3	10.5
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.9	0.2

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Opening Year With Project
AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↙	↑↑	↙	↗
Traffic Volume (vph)	579	191	287	408	93	319
Future Volume (vph)	579	191	287	408	93	319
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)		100	89		0	215
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3420	1530	1710	3420	1710	1530
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3420	1530	1710	3420	1710	1530
Link Speed (mph)	30			30	30	
Link Distance (ft)	2212			735	518	
Travel Time (s)	50.3			16.7	11.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	643	212	319	453	103	354
Shared Lane Traffic (%)						
Lane Group Flow (vph)	643	212	319	453	103	354
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 54.1%				ICU Level of Service A		
Analysis Period (min) 15						

HCM 7th TWSC
5: Rancho Ave & Foothill Blvd

Opening Year With Project
AM Peak Hour

Intersection						
Int Delay, s/veh	6.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Vol, veh/h	579	191	287	408	93	319
Future Vol, veh/h	579	191	287	408	93	319
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	89	-	0	215
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	643	212	319	453	103	354
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	856	0	1508	322
Stage 1	-	-	-	-	643	-
Stage 2	-	-	-	-	864	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	793	-	114	680
Stage 1	-	-	-	-	491	-
Stage 2	-	-	-	-	378	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	793	-	~ 68	680
Mov Cap-2 Maneuver	-	-	-	-	201	-
Stage 1	-	-	-	-	491	-
Stage 2	-	-	-	-	226	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		5.19		21.49	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	201	680	-	-	793	-
HCM Lane V/C Ratio	0.515	0.521	-	-	0.402	-
HCM Control Delay (s/veh)	40.6	15.9	-	-	12.6	-
HCM Lane LOS	E	C	-	-	B	-
HCM 95th %tile Q(veh)	2.6	3	-	-	2	-
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Lanes, Volumes, Timings
6: Macy St & Project Dwy

Opening Year With Project
AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	29	9	47	89	0
Future Volume (vph)	0	29	9	47	89	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.992		
Satd. Flow (prot)	1557	0	0	1786	1800	0
Flt Permitted				0.992		
Satd. Flow (perm)	1557	0	0	1786	1800	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	167			376	501	
Travel Time (s)	4.6			10.3	13.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	32	10	51	97	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	0	0	61	97	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 23.1%				ICU Level of Service A		
Analysis Period (min) 15						

HCM 7th TWSC
6: Macy St & Project Dwy

Opening Year With Project
AM Peak Hour

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	29	9	47	89	0
Future Vol, veh/h	0	29	9	47	89	0
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, %	0	0	0	0	0	0
Mvmt Flow	0	32	10	51	97	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	167	97	97	0	-	0
Stage 1	97	-	-	-	-	-
Stage 2	71	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	828	965	1509	-	-	-
Stage 1	932	-	-	-	-	-
Stage 2	957	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	822	965	1509	-	-	-
Mov Cap-2 Maneuver	822	-	-	-	-	-
Stage 1	926	-	-	-	-	-
Stage 2	957	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/v	8.86	1.19		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	289	-	965	-	-	
HCM Lane V/C Ratio	0.006	-	0.033	-	-	
HCM Control Delay (s/veh)	7.4	0	8.9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Lanes, Volumes, Timings
7: Dallas Ave & Project Dwy

Opening Year With Project
AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	37	4	27	13	1	35
Future Volume (vph)	37	4	27	13	1	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.988		0.956			
Flt Protected	0.957					0.999
Satd. Flow (prot)	1702	0	1721	0	0	1798
Flt Permitted	0.957					0.999
Satd. Flow (perm)	1702	0	1721	0	0	1798
Link Speed (mph)	25		25			25
Link Distance (ft)	162		383			414
Travel Time (s)	4.4		10.4			11.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	4	29	14	1	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	44	0	43	0	0	39
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	16.7%		ICU Level of Service A			
Analysis Period (min)	15					

HCM 7th TWSC
7: Dallas Ave & Project Dwy

Opening Year With Project
AM Peak Hour

Intersection						
Int Delay, s/veh	3.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	37	4	27	13	1	35
Future Vol, veh/h	37	4	27	13	1	35
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, %	0	0	0	0	0	0
Mvmt Flow	40	4	29	14	1	38
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	77	36	0	0	43	0
Stage 1	36	-	-	-	-	-
Stage 2	40	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	931	1042	-	-	1578	-
Stage 1	991	-	-	-	-	-
Stage 2	987	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	931	1042	-	-	1578	-
Mov Cap-2 Maneuver	931	-	-	-	-	-
Stage 1	991	-	-	-	-	-
Stage 2	987	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v	9.02	0		0.2		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	941	50	-	
HCM Lane V/C Ratio	-	-	0.047	0.001	-	
HCM Control Delay (s/veh)	-	-	9	7.3	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Opening Year With Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	869	149	93	746	81	122	539	120	93	420	111
Future Volume (vph)	164	869	149	93	746	81	122	539	120	93	420	111
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		0	90		100	100		0	95		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.973			0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	1710	3328	0	1710	3314	0
Flt Permitted	0.950			0.950			0.386			0.303		
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	695	3328	0	545	3314	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			157			62		32			40	
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1312			1319			737			789	
Travel Time (s)		17.9			18.0			11.2			12.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	173	915	157	98	785	85	128	567	126	98	442	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	173	915	157	98	785	85	128	693	0	98	559	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		

Lanes, Volumes, Timings

1: Pepper Ave & Foothill Blvd

Opening Year With Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	9.5	33.0	33.0	9.5	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (s)	13.0	39.4	39.4	14.6	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (%)	13.7%	41.5%	41.5%	15.4%	43.2%	43.2%	43.2%	43.2%		43.2%	43.2%	
Maximum Green (s)	9.0	35.4	35.4	10.6	37.0	37.0	37.0	37.0		37.0	37.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0	22.0		30.0	30.0	22.0	22.0		30.0	30.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effect Green (s)	7.0	30.0	30.0	7.4	27.9	27.9	35.2	35.2		35.2	35.2	
Actuated g/C Ratio	0.08	0.34	0.34	0.08	0.32	0.32	0.40	0.40		0.40	0.40	
v/c Ratio	1.27	0.78	0.25	0.69	0.72	0.16	0.46	0.51		0.45	0.41	
Control Delay (s/veh)	204.8	32.6	4.7	65.9	30.7	8.9	28.6	21.8		30.3	19.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	204.8	32.6	4.7	65.9	30.7	8.9	28.6	21.8		30.3	19.9	
LOS	F	C	A	E	C	A	C	C		C	B	
Approach Delay (s/veh)		53.1			32.4			22.9			21.5	
Approach LOS		D			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 88.3

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.27

Intersection Signal Delay (s/veh): 35.3

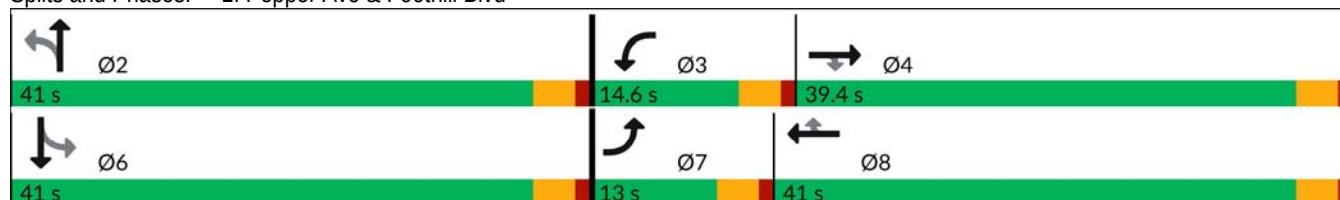
Intersection LOS: D

Intersection Capacity Utilization 77.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Pepper Ave & Foothill Blvd

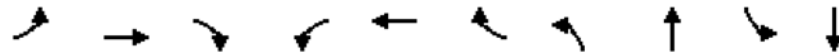


Queues

Opening Year With Project

1: Pepper Ave & Foothill Blvd

PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	173	915	157	98	785	85	128	693	98	559
v/c Ratio	1.27	0.78	0.25	0.69	0.72	0.16	0.46	0.51	0.45	0.41
Control Delay (s/veh)	204.8	32.6	4.7	65.9	30.7	8.9	28.6	21.8	30.3	19.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	204.8	32.6	4.7	65.9	30.7	8.9	28.6	21.8	30.3	19.9
Queue Length 50th (ft)	~129	254	0	55	201	9	54	150	41	112
Queue Length 95th (ft)	#268	328	41	#127	264	39	120	221	99	170
Internal Link Dist (ft)		1232			1239			657		709
Turn Bay Length (ft)	150			90		100	100		95	
Base Capacity (vph)	136	1302	679	167	1365	647	277	1347	217	1346
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.27	0.70	0.23	0.59	0.58	0.13	0.46	0.51	0.45	0.42

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

1: Pepper Ave & Foothill Blvd

Opening Year With Project

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	869	149	93	746	81	122	539	120	93	420	111
Future Volume (veh/h)	164	869	149	93	746	81	122	539	120	93	420	111
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	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	173	915	157	98	785	85	128	567	126	98	442	117
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	108	1074	479	52	961	428	366	1205	267	308	1161	305
Arrive On Green	0.06	0.31	0.31	0.03	0.28	0.28	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	864	2783	616	763	2680	704
Grp Volume(v), veh/h	173	915	157	98	785	85	128	348	345	98	281	278
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	864	1710	1689	763	1710	1673
Q Serve(g_s), s	5.1	20.3	6.4	2.4	17.3	3.4	9.6	11.7	11.8	8.5	9.0	9.1
Cycle Q Clear(g_c), s	5.1	20.3	6.4	2.4	17.3	3.4	18.7	11.7	11.8	20.3	9.0	9.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.36	1.00		0.42
Lane Grp Cap(c), veh/h	108	1074	479	52	961	428	366	741	732	308	741	725
V/C Ratio(X)	1.59	0.85	0.33	1.89	0.82	0.20	0.35	0.47	0.47	0.32	0.38	0.38
Avail Cap(c_a), veh/h	148	1413	630	182	1481	661	366	741	732	308	741	725
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.9	26.0	21.2	39.2	27.1	22.1	21.9	16.3	16.3	23.5	15.5	15.6
Incr Delay (d2), s/veh	306.5	4.1	0.4	419.3	2.1	0.2	2.6	2.1	2.2	2.7	1.5	1.5
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	11.2	7.9	2.1	7.0	6.6	1.1	2.0	4.4	4.4	1.6	3.4	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	344.3	30.0	21.6	458.4	29.3	22.4	24.6	18.4	18.5	26.2	17.0	17.1
LnGrp LOS	F	C	C	F	C	C	C	B	B	C	B	B
Approach Vol, veh/h	1245			968			821			657		
Approach Delay, s/veh	72.6			72.1			19.4			18.4		
Approach LOS	E			E			B			B		
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	41.0		8.4	31.4		41.0	11.1	28.7				
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s	37.0		10.6	35.4		37.0	9.0	37.0				
Max Q Clear Time (g_c+I1), s	20.7		4.4	22.3		22.3	7.1	19.3				
Green Ext Time (p_c), s	4.3		0.1	5.1		3.3	0.1	4.8				
Intersection Summary												
HCM 7th Control Delay, s/veh	51.0											
HCM 7th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Opening Year With Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	772	102	59	681	98	91	170	105	74	146	126
Future Volume (vph)	108	772	102	59	681	98	91	170	105	74	146	126
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	102		100	117		100	0		50	0		50
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.983			0.983	
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	0	1769	1530	0	1769	1530
Flt Permitted	0.950			0.950				0.807			0.807	
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	0	1453	1530	0	1453	1530
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			73			82			103			103
Link Speed (mph)		50			50			40			25	
Link Distance (ft)		1319			1149			784			796	
Travel Time (s)		18.0			15.7			13.4			21.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	115	821	109	63	724	104	97	181	112	79	155	134
Shared Lane Traffic (%)												
Lane Group Flow (vph)	115	821	109	63	724	104	0	278	112	0	234	134
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		6

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Opening Year With Project

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	9.5	29.0	29.0	9.5	41.0	41.0	29.0	29.0	29.0	41.0	41.0	41.0
Total Split (s)	13.0	38.8	38.8	15.2	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0
Total Split (%)	13.7%	40.8%	40.8%	16.0%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%
Maximum Green (s)	9.0	34.8	34.8	11.2	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		30.0	30.0	18.0	18.0	18.0	30.0	30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effect Green (s)	7.1	26.9	26.9	6.3	24.0	24.0		35.3	35.3		35.3	35.3
Actuated g/C Ratio	0.08	0.32	0.32	0.07	0.28	0.28		0.42	0.42		0.42	0.42
v/c Ratio	0.80	0.75	0.20	0.49	0.74	0.21		0.45	0.16		0.38	0.19
Control Delay (s/veh)	80.1	31.5	10.1	52.4	32.0	8.3		22.6	5.5		21.3	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)	80.1	31.5	10.1	52.4	32.0	8.3		22.6	5.5		21.3	7.0
LOS	F	C	B	D	C	A		C	A		C	A
Approach Delay (s/veh)		34.7			30.7			17.8			16.1	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 84.5

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay (s/veh): 28.4

Intersection LOS: C

Intersection Capacity Utilization 73.9%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 2: Meridian Ave & Foothill Blvd

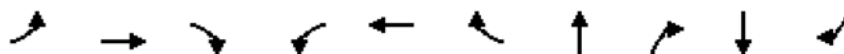


Queues

Opening Year With Project

2: Meridian Ave & Foothill Blvd

PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	115	821	109	63	724	104	278	112	234	134
v/c Ratio	0.80	0.75	0.20	0.49	0.74	0.21	0.45	0.16	0.38	0.19
Control Delay (s/veh)	80.1	31.5	10.1	52.4	32.0	8.3	22.6	5.5	21.3	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	80.1	31.5	10.1	52.4	32.0	8.3	22.6	5.5	21.3	7.0
Queue Length 50th (ft)	61	211	14	33	181	8	103	3	84	9
Queue Length 95th (ft)	#176	290	51	77	239	42	208	38	173	50
Internal Link Dist (ft)		1239			1069		704		716	
Turn Bay Length (ft)	102		100	117		100		50		50
Base Capacity (vph)	142	1337	642	187	1427	686	606	698	606	698
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.61	0.17	0.34	0.51	0.15	0.46	0.16	0.39	0.19

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

2: Meridian Ave & Foothill Blvd

Opening Year With Project

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	772	102	59	681	98	91	170	105	74	146	126
Future Volume (veh/h)	108	772	102	59	681	98	91	170	105	74	146	126
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	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	115	821	109	63	724	104	97	181	112	79	155	134
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	57	984	439	38	945	422	63	87	695	63	92	695
Arrive On Green	0.03	0.29	0.29	0.02	0.28	0.28	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	0	192	1525	0	202	1525
Grp Volume(v), veh/h	115	821	109	63	724	104	278	0	112	234	0	134
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	192	0	1525	202	0	1525
Q Serve(g_s), s	2.6	17.3	4.2	1.7	14.9	4.1	0.0	0.0	3.3	0.0	0.0	4.0
Cycle Q Clear(g_c), s	2.6	17.3	4.2	1.7	14.9	4.1	35.0	0.0	3.3	35.0	0.0	4.0
Prop In Lane	1.00		1.00	1.00		1.00	0.35		1.00	0.34		1.00
Lane Grp Cap(c), veh/h	57	984	439	38	945	422	151	0	695	155	0	695
V/C Ratio(X)	2.00	0.83	0.25	1.66	0.77	0.25	1.85	0.00	0.16	1.51	0.00	0.19
Avail Cap(c_a), veh/h	156	1461	652	205	1559	695	151	0	695	155	0	695
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.1	25.6	21.0	37.6	25.5	21.6	19.2	0.0	12.3	18.8	0.0	12.5
Incr Delay (d2), s/veh	486.2	2.8	0.3	322.7	1.3	0.3	404.9	0.0	0.5	261.4	0.0	0.6
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	8.7	6.5	1.4	4.1	5.5	1.3	18.3	0.0	1.0	12.7	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	523.3	28.4	21.3	360.3	26.8	21.9	424.0	0.0	12.8	280.2	0.0	13.1
LnGrp LOS	F	C	C	F	C	C	F		B	F		B
Approach Vol, veh/h	1045			891			390			368		
Approach Delay, s/veh	82.1			49.8			305.9			182.9		
Approach LOS	F			D			F			F		
Timer - Assigned Phs	2			3			4			6		
Phs Duration (G+Y+Rc), s	41.0			7.7			28.1			41.0		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	37.0			11.2			34.8			37.0		
Max Q Clear Time (g_c+I1), s	37.0			3.7			19.3			37.0		
Green Ext Time (p_c), s	0.0			0.1			4.8			0.0		
Intersection Summary												
HCM 7th Control Delay, s/veh	117.6											
HCM 7th LOS	F											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
3: Dallas Ave & Foothill Blvd

Opening Year With Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	53	743	84	32	686	20	43	1	24	21	2	30
Future Volume (vph)	53	743	84	32	686	20	43	1	24	21	2	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	150		101	150		50	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.953			0.923	
Flt Protected	0.950			0.950				0.969			0.981	
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	0	1662	0	0	1630	0
Flt Permitted	0.950			0.950				0.969			0.981	
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	0	1662	0	0	1630	0
Link Speed (mph)		50			50			25			25	
Link Distance (ft)		1149			1043			345			383	
Travel Time (s)		15.7			14.2			9.4			10.4	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	58	816	92	35	754	22	47	1	26	23	2	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	816	92	35	754	22	0	74	0	0	58	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	46.6%						ICU Level of Service A					
Analysis Period (min)	15											

HCM 7th TWSC
3: Dallas Ave & Foothill Blvd

Opening Year With Project
PM Peak Hour

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	53	743	84	32	686	20	43	1	24	21	2	30
Future Vol, veh/h	53	743	84	32	686	20	43	1	24	21	2	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	101	150	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	58	816	92	35	754	22	47	1	26	23	2	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	776	0	0	909	0	0	1381	1779	408	1349	1849	377
Stage 1	-	-	-	-	-	-	933	933	-	824	824	-
Stage 2	-	-	-	-	-	-	448	846	-	525	1025	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	849	-	-	758	-	-	105	83	598	111	75	626
Stage 1	-	-	-	-	-	-	290	348	-	338	390	-
Stage 2	-	-	-	-	-	-	565	381	-	509	315	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	849	-	-	758	-	-	88	74	598	94	67	626
Mov Cap-2 Maneuver	-	-	-	-	-	-	231	222	-	256	210	-
Stage 1	-	-	-	-	-	-	270	324	-	322	372	-
Stage 2	-	-	-	-	-	-	507	363	-	451	293	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.58	0.43	21.29	16.16
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	295	849	-	-	758	-	-	380
HCM Lane V/C Ratio	0.253	0.069	-	-	0.046	-	-	0.153
HCM Control Delay (s/veh)	21.3	9.6	-	-	10	-	-	16.2
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1	0.2	-	-	0.1	-	-	0.5

Lanes, Volumes, Timings
4: Foothill Blvd & Macy St

Opening Year With Project
PM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		 	 			
Traffic Volume (vph)	49	738	710	64	50	26
Future Volume (vph)	49	738	710	64	50	26
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)	84			50	0	50
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1710	3420	3420	1530	1710	1530
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1710	3420	3420	1530	1710	1530
Link Speed (mph)		50	50		30	
Link Distance (ft)		1043	2212		376	
Travel Time (s)		14.2	30.2		8.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	53	794	763	69	54	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	794	763	69	54	28
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes	Yes			
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	42.4%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
4: Foothill Blvd & Macy St

Opening Year With Project
PM Peak Hour

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	49	738	710	64	50	26
Future Vol, veh/h	49	738	710	64	50	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	84	-	-	50	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	53	794	763	69	54	28
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	832	0	-	0	1266	382
Stage 1	-	-	-	-	763	-
Stage 2	-	-	-	-	502	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	809	-	-	-	164	622
Stage 1	-	-	-	-	426	-
Stage 2	-	-	-	-	579	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	809	-	-	-	153	622
Mov Cap-2 Maneuver	-	-	-	-	282	-
Stage 1	-	-	-	-	398	-
Stage 2	-	-	-	-	579	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0.61	0		17.45		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	809	-	-	-	282	622
HCM Lane V/C Ratio	0.065	-	-	-	0.191	0.045
HCM Control Delay (s/veh)	9.8	-	-	-	20.8	11.1
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.7	0.1

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Opening Year With Project
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↙	↑↑	↙	↗
Traffic Volume (vph)	671	150	247	632	160	373
Future Volume (vph)	671	150	247	632	160	373
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)		100	89		0	215
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3420	1530	1710	3420	1710	1530
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3420	1530	1710	3420	1710	1530
Link Speed (mph)	30			30	30	
Link Distance (ft)	2212			735	518	
Travel Time (s)	50.3			16.7	11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	729	163	268	687	174	405
Shared Lane Traffic (%)						
Lane Group Flow (vph)	729	163	268	687	174	405
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	58.4%			ICU Level of Service B		
Analysis Period (min)	15					

HCM 7th TWSC
5: Rancho Ave & Foothill Blvd

Opening Year With Project
PM Peak Hour

Intersection						
Int Delay, s/veh	10.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	671	150	247	632	160	373
Future Vol, veh/h	671	150	247	632	160	373
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	89	-	0	215
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	729	163	268	687	174	405
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	892	0	1610	365
Stage 1	-	-	-	-	729	-
Stage 2	-	-	-	-	880	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	768	-	~ 97	638
Stage 1	-	-	-	-	443	-
Stage 2	-	-	-	-	371	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	768	-	~ 63	638
Mov Cap-2 Maneuver	-	-	-	-	207	-
Stage 1	-	-	-	-	443	-
Stage 2	-	-	-	-	241	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		3.42		36.54	
HCM LOS	E					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	207	638	-	-	768	-
HCM Lane V/C Ratio	0.84	0.636	-	-	0.349	-
HCM Control Delay (s/veh)	75.2	20	-	-	12.2	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	6.3	4.5	-	-	1.6	-
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Lanes, Volumes, Timings
6: Macy St & Project Dwy

Opening Year With Project
PM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	16	26	85	60	0
Future Volume (vph)	0	16	26	85	60	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.988		
Satd. Flow (prot)	1557	0	0	1778	1800	0
Flt Permitted				0.988		
Satd. Flow (perm)	1557	0	0	1778	1800	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	167			376	501	
Travel Time (s)	4.6			10.3	13.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	17	28	92	65	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	0	120	65	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	26.2%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
6: Macy St & Project Dwy

Opening Year With Project
PM Peak Hour

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	16	26	85	60	0
Future Vol, veh/h	0	16	26	85	60	0
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, %	0	0	0	0	0	0
Mvmt Flow	0	17	28	92	65	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	214	65	65	0	-	0
Stage 1	65	-	-	-	-	-
Stage 2	149	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	779	1004	1550	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	884	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	764	1004	1550	-	-	-
Mov Cap-2 Maneuver	764	-	-	-	-	-
Stage 1	944	-	-	-	-	-
Stage 2	884	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/v	8.65	1.73		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	422	-	1004	-	-	
HCM Lane V/C Ratio	0.018	-	0.017	-	-	
HCM Control Delay (s/veh)	7.4	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

Lanes, Volumes, Timings
7: Dallas Ave & Project Dwy

Opening Year With Project
PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	22	2	37	37	3	31
Future Volume (vph)	22	2	37	37	3	31
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990		0.932			
Flt Protected	0.956					0.996
Satd. Flow (prot)	1704	0	1678	0	0	1793
Flt Permitted	0.956					0.996
Satd. Flow (perm)	1704	0	1678	0	0	1793
Link Speed (mph)	25		25			25
Link Distance (ft)	162		383			414
Travel Time (s)	4.4		10.4			11.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	2	40	40	3	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	0	80	0	0	37
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	17.8%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
7: Dallas Ave & Project Dwy

Opening Year With Project
PM Peak Hour

Intersection						
Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	2	37	37	3	31
Future Vol, veh/h	22	2	37	37	3	31
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, %	0	0	0	0	0	0
Mvmt Flow	24	2	40	40	3	34
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	101	60	0	0	80	0
Stage 1	60	-	-	-	-	-
Stage 2	40	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	903	1011	-	-	1530	-
Stage 1	967	-	-	-	-	-
Stage 2	987	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	901	1011	-	-	1530	-
Mov Cap-2 Maneuver	901	-	-	-	-	-
Stage 1	967	-	-	-	-	-
Stage 2	985	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v	9.08	0		0.65		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	909	159	-	
HCM Lane V/C Ratio	-	-	0.029	0.002	-	
HCM Control Delay (s/veh)	-	-	9.1	7.4	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

YEAR 2040 WITHOUT PROJECT

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Year 2040 Without Project
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	886	178	139	783	75	123	568	104	80	458	117
Future Volume (vph)	172	886	178	139	783	75	123	568	104	80	458	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	90		100	100		0	95		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.977			0.970	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3610	1615	1805	3610	1615	1805	3527	0	1805	3502	0
Flt Permitted	0.950			0.950			0.354			0.293		
Satd. Flow (perm)	1805	3610	1615	1805	3610	1615	673	3527	0	557	3502	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			187			57		25			38	
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1312			1319			737			789	
Travel Time (s)		17.9			18.0			11.2			12.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	181	933	187	146	824	79	129	598	109	84	482	123
Shared Lane Traffic (%)												
Lane Group Flow (vph)	181	933	187	146	824	79	129	707	0	84	605	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Year 2040 Without Project
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	9.5	33.0	33.0	9.5	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (s)	13.0	36.9	36.9	17.1	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (%)	13.7%	38.8%	38.8%	18.0%	43.2%	43.2%	43.2%	43.2%		43.2%	43.2%	
Maximum Green (s)	9.0	32.9	32.9	13.1	37.0	37.0	37.0	37.0		37.0	37.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0	22.0		30.0	30.0	22.0	22.0		30.0	30.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effect Green (s)	7.0	27.2	27.2	9.5	29.7	29.7	35.2	35.2		35.2	35.2	
Actuated g/C Ratio	0.08	0.30	0.30	0.11	0.33	0.33	0.39	0.39		0.39	0.39	
v/c Ratio	1.28	0.85	0.30	0.76	0.69	0.13	0.49	0.50		0.38	0.43	
Control Delay (s/veh)	208.7	38.4	5.0	65.9	29.2	8.9	30.5	22.5		28.5	20.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	208.7	38.4	5.0	65.9	29.2	8.9	30.5	22.5		28.5	20.8	
LOS	F	D	A	E	C	A	C	C		C	C	
Approach Delay (s/veh)		57.4			32.9			23.8			21.8	
Approach LOS		E			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 90

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.28

Intersection Signal Delay (s/veh): 37.2

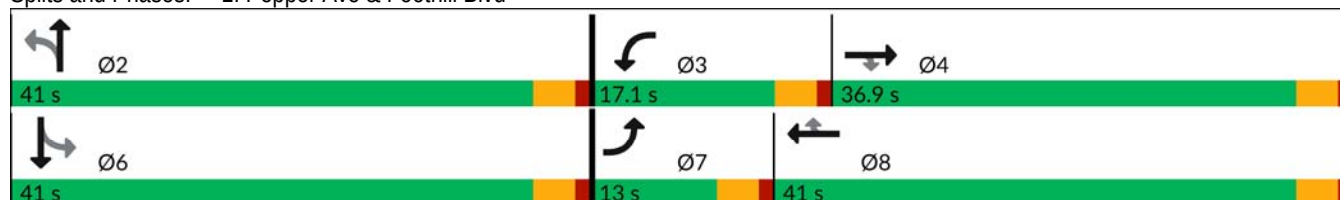
Intersection LOS: D

Intersection Capacity Utilization 77.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Pepper Ave & Foothill Blvd

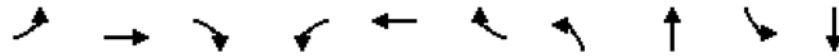


Queues

Year 2040 Without Project

1: Pepper Ave & Foothill Blvd

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	181	933	187	146	824	79	129	707	84	605
v/c Ratio	1.28	0.85	0.30	0.76	0.69	0.13	0.49	0.50	0.38	0.43
Control Delay (s/veh)	208.7	38.4	5.0	65.9	29.2	8.9	30.5	22.5	28.5	20.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	208.7	38.4	5.0	65.9	29.2	8.9	30.5	22.5	28.5	20.8
Queue Length 50th (ft)	~143	267	0	85	210	8	59	164	36	132
Queue Length 95th (ft)	#276	343	46	#171	274	38	123	223	83	183
Internal Link Dist (ft)		1232			1239			657		709
Turn Bay Length (ft)	150			90		100	100		95	
Base Capacity (vph)	141	1246	680	223	1411	666	263	1394	218	1392
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.28	0.75	0.28	0.65	0.58	0.12	0.49	0.51	0.39	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

Year 2040 Without Project

1: Pepper Ave & Foothill Blvd

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	886	178	139	783	75	123	568	104	80	458	117
Future Volume (veh/h)	172	886	178	139	783	75	123	568	104	80	458	117
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	181	933	187	146	824	79	129	598	109	84	482	123
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	122	1085	484	112	1064	474	337	1285	234	297	1201	305
Arrive On Green	0.07	0.30	0.30	0.06	0.29	0.29	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	828	3050	555	753	2852	723
Grp Volume(v), veh/h	181	933	187	146	824	79	129	353	354	84	304	301
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	828	1805	1800	753	1805	1770
Q Serve(g_s), s	5.6	20.3	7.6	5.1	17.3	3.0	10.7	11.7	11.8	7.5	9.7	9.9
Cycle Q Clear(g_c), s	5.6	20.3	7.6	5.1	17.3	3.0	20.6	11.7	11.8	19.3	9.7	9.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		0.41
Lane Grp Cap(c), veh/h	122	1085	484	112	1064	474	337	760	758	297	760	745
V/C Ratio(X)	1.48	0.86	0.39	1.31	0.77	0.17	0.38	0.46	0.47	0.28	0.40	0.40
Avail Cap(c_a), veh/h	152	1342	599	242	1521	678	337	760	758	297	760	745
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.7	27.4	23.0	39.0	26.8	21.7	24.0	17.3	17.3	24.3	16.7	16.8
Incr Delay (d2), s/veh	255.2	4.9	0.5	161.0	1.6	0.2	3.3	2.0	2.1	2.4	1.6	1.6
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	11.0	8.5	2.7	7.1	6.9	1.1	2.2	4.7	4.7	1.4	3.9	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	293.9	32.4	23.5	200.0	28.4	21.9	27.2	19.3	19.4	26.7	18.3	18.4
LnGrp LOS	F	C	C	F	C	C	C	B	B	C	B	B
Approach Vol, veh/h	1301			1049			836			689		
Approach Delay, s/veh	67.5			51.8			20.6			19.4		
Approach LOS	E			D			C			B		
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	41.0		11.1	31.0		41.0	11.6	30.5				
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s	37.0		13.1	32.9		37.0	9.0	37.0				
Max Q Clear Time (g_c+I1), s	22.6		7.1	22.3		21.3	7.6	19.3				
Green Ext Time (p_c), s	4.2		0.2	4.7		3.5	0.1	5.0				
Intersection Summary												
HCM 7th Control Delay, s/veh				44.6								
HCM 7th LOS				D								
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Year 2040 Without Project
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	749	107	81	694	101	117	179	110	89	175	161
Future Volume (vph)	113	749	107	81	694	101	117	179	110	89	175	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	102		100	117		100	0		50	0		50
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.981			0.983	
Satd. Flow (prot)	1805	3610	1615	1805	3610	1615	0	1864	1615	0	1868	1615
Flt Permitted	0.950			0.950				0.717			0.762	
Satd. Flow (perm)	1805	3610	1615	1805	3610	1615	0	1362	1615	0	1448	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			79			83			103			109
Link Speed (mph)		50			50			40			25	
Link Distance (ft)		1319			1149			784			796	
Travel Time (s)		18.0			15.7			13.4			21.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	119	788	113	85	731	106	123	188	116	94	184	169
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	788	113	85	731	106	0	311	116	0	278	169
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		6

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Year 2040 Without Project
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	9.0	29.0	29.0	9.0	41.0	41.0	29.0	29.0	29.0	41.0	41.0	41.0
Total Split (s)	13.0	39.0	39.0	15.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0
Total Split (%)	13.7%	41.1%	41.1%	15.8%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%
Maximum Green (s)	9.0	35.0	35.0	11.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		30.0	30.0	18.0	18.0	18.0	30.0	30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effect Green (s)	7.0	25.4	25.4	6.9	23.0	23.0		35.3	35.3		35.3	35.3
Actuated g/C Ratio	0.08	0.30	0.30	0.08	0.28	0.28		0.42	0.42		0.42	0.42
v/c Ratio	0.78	0.71	0.20	0.57	0.73	0.21		0.53	0.15		0.45	0.22
Control Delay (s/veh)	75.0	30.7	9.8	54.0	31.7	8.4		24.1	5.6		21.9	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)	75.0	30.7	9.8	54.0	31.7	8.4		24.1	5.6		21.9	8.1
LOS	E	C	A	D	C	A		C	A		C	A
Approach Delay (s/veh)		33.6			31.2			19.1			16.8	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 83.4

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay (s/veh): 27.9

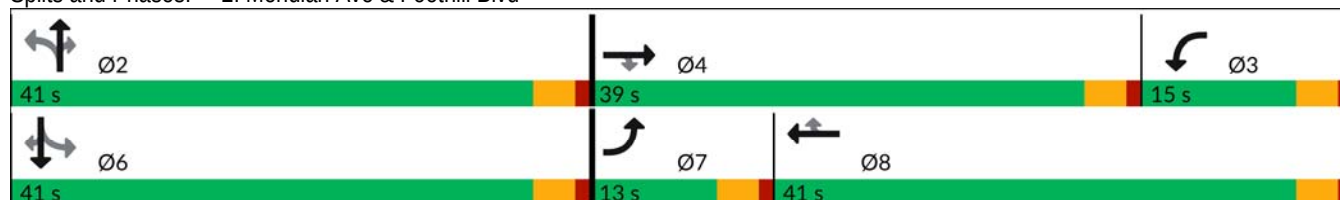
Intersection LOS: C

Intersection Capacity Utilization 75.5%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 2: Meridian Ave & Foothill Blvd

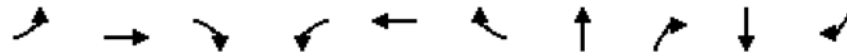


Queues

Year 2040 Without Project

2: Meridian Ave & Foothill Blvd

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	119	788	113	85	731	106	311	116	278	169
v/c Ratio	0.78	0.71	0.20	0.57	0.73	0.21	0.53	0.15	0.45	0.22
Control Delay (s/veh)	75.0	30.7	9.8	54.0	31.7	8.4	24.1	5.6	21.9	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	75.0	30.7	9.8	54.0	31.7	8.4	24.1	5.6	21.9	8.1
Queue Length 50th (ft)	62	200	13	43	181	9	117	4	100	18
Queue Length 95th (ft)	#174	270	51	97	238	43	240	39	204	66
Internal Link Dist (ft)		1239			1069		704		716	
Turn Bay Length (ft)	102		100	117		100		50		50
Base Capacity (vph)	152	1439	691	196	1526	731	576	742	612	746
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.55	0.16	0.43	0.48	0.15	0.54	0.16	0.45	0.23

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

Year 2040 Without Project

2: Meridian Ave & Foothill Blvd

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	749	107	81	694	101	117	179	110	89	175	161
Future Volume (veh/h)	113	749	107	81	694	101	117	179	110	89	175	161
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	119	788	113	85	731	106	123	188	116	94	184	169
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	62	970	433	52	950	424	67	77	747	64	99	747
Arrive On Green	0.03	0.27	0.27	0.03	0.26	0.26	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	0	166	1610	0	212	1610
Grp Volume(v), veh/h	119	788	113	85	731	106	311	0	116	278	0	169
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	166	0	1610	212	0	1610
Q Serve(g_s), s	2.6	15.4	4.2	2.2	14.1	3.9	0.0	0.0	3.1	0.0	0.0	4.7
Cycle Q Clear(g_c), s	2.6	15.4	4.2	2.2	14.1	3.9	35.0	0.0	3.1	35.0	0.0	4.7
Prop In Lane	1.00		1.00	1.00		1.00	0.40		1.00	0.34		1.00
Lane Grp Cap(c), veh/h	62	970	433	52	950	424	144	0	747	162	0	747
V/C Ratio(X)	1.92	0.81	0.26	1.64	0.77	0.25	2.17	0.00	0.16	1.71	0.00	0.23
Avail Cap(c_a), veh/h	168	1579	704	216	1675	747	144	0	747	162	0	747
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.4	25.8	21.7	36.6	25.7	21.9	19.8	0.0	11.7	19.1	0.0	12.1
Incr Delay (d2), s/veh	443.6	1.7	0.3	307.1	1.4	0.3	547.0	0.0	0.4	345.1	0.0	0.7
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	8.7	6.0	1.4	5.3	5.5	1.4	23.0	0.0	1.0	17.2	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	480.0	27.5	22.0	343.7	27.0	22.2	566.8	0.0	12.1	364.2	0.0	12.8
LnGrp LOS	F	C	C	F	C	C	F		B	F		B
Approach Vol, veh/h	1020			922			427			447		
Approach Delay, s/veh	79.7			55.7			416.1			231.3		
Approach LOS	E			E			F			F		
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	41.0		8.2	26.3		41.0		8.6	25.8			
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0		4.0	4.0			
Max Green Setting (Gmax), s	37.0		11.0	35.0		37.0		9.0	37.0			
Max Q Clear Time (g_c+I1), s	37.0		4.2	17.4		37.0		4.6	16.1			
Green Ext Time (p_c), s	0.0		0.1	4.9		0.0		0.1	4.7			
Intersection Summary												
HCM 7th Control Delay, s/veh	146.9											
HCM 7th LOS	F											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
3: Dallas Ave & Foothill Blvd

Year 2040 Without Project
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	767	88	34	702	17	99	1	42	18	2	25
Future Volume (vph)	24	767	88	34	702	17	99	1	42	18	2	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		101	150		50	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.960			0.925	
Flt Protected	0.950			0.950				0.966			0.980	
Satd. Flow (prot)	1805	3610	1615	1805	3610	1615	0	1762	0	0	1722	0
Flt Permitted	0.950			0.950				0.966			0.980	
Satd. Flow (perm)	1805	3610	1615	1805	3610	1615	0	1762	0	0	1722	0
Link Speed (mph)		50			50			25			25	
Link Distance (ft)		1149			1043			345			383	
Travel Time (s)		15.7			14.2			9.4			10.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	807	93	36	739	18	104	1	44	19	2	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	807	93	36	739	18	0	149	0	0	47	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	52.0%						ICU Level of Service A					
Analysis Period (min)	15											

HCM 7th TWSC
3: Dallas Ave & Foothill Blvd

Year 2040 Without Project
AM Peak Hour

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	767	88	34	702	17	99	1	42	18	2	25
Future Vol, veh/h	24	767	88	34	702	17	99	1	42	18	2	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	101	150	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	25	807	93	36	739	18	104	1	44	19	2	26

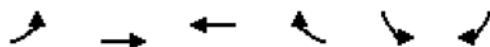
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	757	0	0	900	0	0	1300	1686	404	1265	1761	369
Stage 1	-	-	-	-	-	-	858	858	-	811	811	-
Stage 2	-	-	-	-	-	-	442	828	-	455	951	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	863	-	-	763	-	-	121	95	602	128	85	633
Stage 1	-	-	-	-	-	-	322	376	-	344	396	-
Stage 2	-	-	-	-	-	-	570	388	-	560	341	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	863	-	-	763	-	-	106	88	602	109	79	633
Mov Cap-2 Maneuver	-	-	-	-	-	-	266	252	-	272	232	-
Stage 1	-	-	-	-	-	-	313	365	-	328	377	-
Stage 2	-	-	-	-	-	-	517	370	-	502	331	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.25			0.45			25.92			15.38		
HCM LOS							D			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	318	863	-	-	763	-	-	394
HCM Lane V/C Ratio	0.469	0.029	-	-	0.047	-	-	0.12
HCM Control Delay (s/veh)	25.9	9.3	-	-	9.9	-	-	15.4
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	2.4	0.1	-	-	0.1	-	-	0.4

Lanes, Volumes, Timings
4: Foothill Blvd & Macy St

Year 2040 Without Project
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	32	803	743	53	67	32
Future Volume (vph)	32	803	743	53	67	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	84			50	0	50
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1805	3610	3610	1615	1805	1615
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1805	3610	3610	1615	1805	1615
Link Speed (mph)		50	50		30	
Link Distance (ft)		1043	2212		376	
Travel Time (s)		14.2	30.2		8.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	845	782	56	71	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	845	782	56	71	34
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes	Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	40.3%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
4: Foothill Blvd & Macy St

Year 2040 Without Project
AM Peak Hour

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	32	803	743	53	67	32
Future Vol, veh/h	32	803	743	53	67	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	84	-	-	50	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	34	845	782	56	71	34
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	838	0	-	0	1272	391
Stage 1	-	-	-	-	782	-
Stage 2	-	-	-	-	490	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	805	-	-	-	162	613
Stage 1	-	-	-	-	417	-
Stage 2	-	-	-	-	587	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	805	-	-	-	155	613
Mov Cap-2 Maneuver	-	-	-	-	284	-
Stage 1	-	-	-	-	399	-
Stage 2	-	-	-	-	587	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0.37	0		18.38		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	805	-	-	-	284	613
HCM Lane V/C Ratio	0.042	-	-	-	0.248	0.055
HCM Control Delay (s/veh)	9.7	-	-	-	21.8	11.2
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile O(veh)	0.1	-	-	-	1	0.2

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Year 2040 Without Project
AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↙	↑↑	↙	↗
Traffic Volume (vph)	698	418	409	645	204	400
Future Volume (vph)	698	418	409	645	204	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	89		0	215
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3610	1615	1805	3610	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3610	1615	1805	3610	1805	1615
Link Speed (mph)	30			30	30	
Link Distance (ft)	2212			735	518	
Travel Time (s)	50.3			16.7	11.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	735	440	431	679	215	421
Shared Lane Traffic (%)						
Lane Group Flow (vph)	735	440	431	679	215	421
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 68.3%				ICU Level of Service C		
Analysis Period (min) 15						

HCM 7th TWSC
5: Rancho Ave & Foothill Blvd

Year 2040 Without Project
AM Peak Hour

Intersection						
Int Delay, s/veh	88.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	698	418	409	645	204	400
Future Vol, veh/h	698	418	409	645	204	400
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	89	-	0	215
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	735	440	431	679	215	421
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1175	0	1935	367
Stage 1	-	-	-	-	735	-
Stage 2	-	-	-	-	1201	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	602	-	~ 59	635
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	252	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	602	-	~ 17	635
Mov Cap-2 Maneuver	-	-	-	-	~ 67	-
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	~ 72	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		9.54		\$ 391.29	
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	67	635	-	-	602	-
HCM Lane V/C Ratio	3.191	0.663	-	-	0.715	-
HCM Control Delay (s/veh)	\$ 1117.2	21.1	-	-	24.6	-
HCM Lane LOS	F	C	-	-	C	-
HCM 95th %tile Q(veh)	22.1	5	-	-	5.9	-
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Year 2040 Without Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	187	964	175	114	789	77	127	464	115	59	653	129
Future Volume (vph)	187	964	175	114	789	77	127	464	115	59	653	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	90		100	100		0	95		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.970			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3610	1615	1805	3610	1615	1805	3502	0	1805	3520	0
Flt Permitted	0.950			0.950			0.230			0.350		
Satd. Flow (perm)	1805	3610	1615	1805	3610	1615	437	3502	0	665	3520	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			122			57		36			27	
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1312			1319			737			789	
Travel Time (s)		17.9			18.0			11.2			12.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	197	1015	184	120	831	81	134	488	121	62	687	136
Shared Lane Traffic (%)												
Lane Group Flow (vph)	197	1015	184	120	831	81	134	609	0	62	823	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Year 2040 Without Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	9.5	33.0	33.0	9.5	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (s)	13.0	38.6	38.6	15.4	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (%)	13.7%	40.6%	40.6%	16.2%	43.2%	43.2%	43.2%	43.2%		43.2%	43.2%	
Maximum Green (s)	9.0	34.6	34.6	11.4	37.0	37.0	37.0	37.0		37.0	37.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0	22.0		30.0	30.0	22.0	22.0		30.0	30.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effect Green (s)	7.0	29.1	29.1	8.2	30.3	30.3	35.2	35.2		35.2	35.2	
Actuated g/C Ratio	0.08	0.32	0.32	0.09	0.33	0.33	0.39	0.39		0.39	0.39	
v/c Ratio	1.40	0.87	0.30	0.73	0.68	0.14	0.79	0.44		0.24	0.59	
Control Delay (s/veh)	255.5	38.5	10.0	67.5	29.0	9.0	60.9	21.2		23.8	24.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	255.5	38.5	10.0	67.5	29.0	9.0	60.9	21.2		23.8	24.2	
LOS	F	D	B	E	C	A	E	C		C	C	
Approach Delay (s/veh)		65.4			32.0			28.4			24.3	
Approach LOS		E			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 90.6

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.41

Intersection Signal Delay (s/veh): 41.1

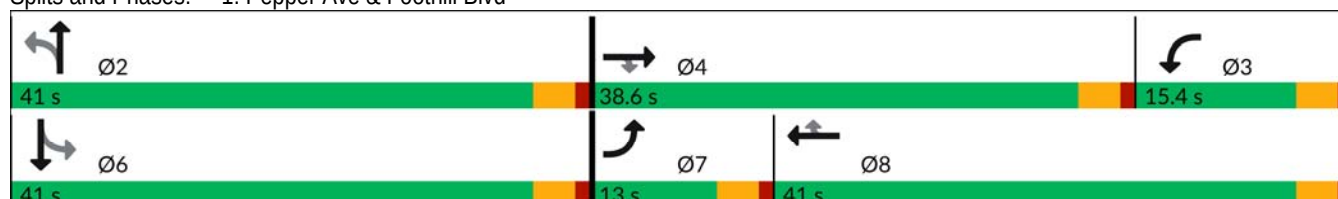
Intersection LOS: D

Intersection Capacity Utilization 82.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Pepper Ave & Foothill Blvd

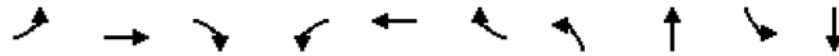


Queues

Year 2040 Without Project

1: Pepper Ave & Foothill Blvd

PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	197	1015	184	120	831	81	134	609	62	823
v/c Ratio	1.40	0.87	0.30	0.73	0.68	0.14	0.79	0.44	0.24	0.59
Control Delay (s/veh)	255.5	38.5	10.0	67.5	29.0	9.0	60.9	21.2	23.8	24.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	255.5	38.5	10.0	67.5	29.0	9.0	60.9	21.2	23.8	24.2
Queue Length 50th (ft)	~164	291	25	71	213	9	72	135	26	203
Queue Length 95th (ft)	#302	372	74	#150	277	39	#184	185	60	268
Internal Link Dist (ft)		1232			1239			657		709
Turn Bay Length (ft)	150			90		100	100		95	
Base Capacity (vph)	140	1305	661	188	1401	661	169	1381	258	1382
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.41	0.78	0.28	0.64	0.59	0.12	0.79	0.44	0.24	0.60

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

Year 2040 Without Project

1: Pepper Ave & Foothill Blvd

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	964	175	114	789	77	127	464	115	59	653	129
Future Volume (veh/h)	187	964	175	114	789	77	127	464	115	59	653	129
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	197	1015	184	120	831	81	134	488	121	62	687	136
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	133	1176	524	59	1028	459	258	1217	300	339	1273	252
Arrive On Green	0.07	0.33	0.33	0.03	0.28	0.28	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	676	2870	707	825	3004	594
Grp Volume(v), veh/h	197	1015	184	120	831	81	134	306	303	62	413	410
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	676	1805	1773	825	1805	1793
Q Serve(g_s), s	6.0	21.8	7.2	2.7	17.7	3.1	15.3	9.7	9.8	4.7	14.1	14.1
Cycle Q Clear(g_c), s	6.0	21.8	7.2	2.7	17.7	3.1	29.4	9.7	9.8	14.5	14.1	14.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.40	1.00		0.33
Lane Grp Cap(c), veh/h	133	1176	524	59	1028	459	258	765	751	339	765	760
V/C Ratio(X)	1.49	0.86	0.35	2.04	0.81	0.18	0.52	0.40	0.40	0.18	0.54	0.54
Avail Cap(c_a), veh/h	153	1425	636	206	1530	683	258	765	751	339	765	760
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	26.1	21.2	39.9	27.4	22.2	28.7	16.5	16.5	21.6	17.8	17.8
Incr Delay (d2), s/veh	254.5	4.9	0.4	488.7	2.0	0.2	7.3	1.6	1.6	1.2	2.7	2.7
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	11.9	9.0	2.5	9.1	7.1	1.1	2.8	3.9	3.9	0.9	5.7	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	292.8	31.0	21.6	528.7	29.5	22.4	36.0	18.1	18.1	22.8	20.5	20.5
LnGrp LOS	F	C	C	F	C	C	D	B	B	C	C	C
Approach Vol, veh/h	1396			1032			743			885		
Approach Delay, s/veh	66.7			87.0			21.3			20.7		
Approach LOS	E			F			C			C		
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	41.0		8.7	32.9		41.0		12.0	29.5			
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0		4.0	4.0			
Max Green Setting (Gmax), s	37.0		11.4	34.6		37.0		9.0	37.0			
Max Q Clear Time (g_c+I1), s	31.4		4.7	23.8		16.5		8.0	19.7			
Green Ext Time (p_c), s	2.2		0.1	5.1		5.1		0.0	5.0			
Intersection Summary												
HCM 7th Control Delay, s/veh	53.5											
HCM 7th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Year 2040 Without Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	833	109	62	713	100	118	177	112	75	177	160
Future Volume (vph)	115	833	109	62	713	100	118	177	112	75	177	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	102		100	117		100	0		50	0		50
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.980			0.985	
Satd. Flow (prot)	1805	3610	1615	1805	3610	1615	0	1862	1615	0	1872	1615
Flt Permitted	0.950			0.950				0.719			0.811	
Satd. Flow (perm)	1805	3610	1615	1805	3610	1615	0	1366	1615	0	1541	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72			80			103			114
Link Speed (mph)		50			50			40			25	
Link Distance (ft)		1319			1149			784			796	
Travel Time (s)		18.0			15.7			13.4			21.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	121	877	115	65	751	105	124	186	118	79	186	168
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	877	115	65	751	105	0	310	118	0	265	168
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		6

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Year 2040 Without Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	9.5	29.0	29.0	9.5	41.0	41.0	29.0	29.0	29.0	41.0	41.0	41.0
Total Split (s)	13.0	39.1	39.1	14.9	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0
Total Split (%)	13.7%	41.2%	41.2%	15.7%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%
Maximum Green (s)	9.0	35.1	35.1	10.9	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		30.0	30.0	18.0	18.0	18.0	30.0	30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effect Green (s)	7.1	27.5	27.5	6.2	24.5	24.5		35.3	35.3		35.3	35.3
Actuated g/C Ratio	0.08	0.32	0.32	0.07	0.29	0.29		0.42	0.42		0.42	0.42
v/c Ratio	0.81	0.75	0.20	0.49	0.72	0.20		0.54	0.16		0.41	0.22
Control Delay (s/veh)	79.2	30.9	10.6	52.3	30.9	8.4		25.2	5.9		21.9	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)	79.2	30.9	10.6	52.3	30.9	8.4		25.2	5.9		21.9	8.0
LOS	E	C	B	D	C	A		C	A		C	A
Approach Delay (s/veh)		34.1			29.9			19.9			16.5	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 85

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay (s/veh): 28.1

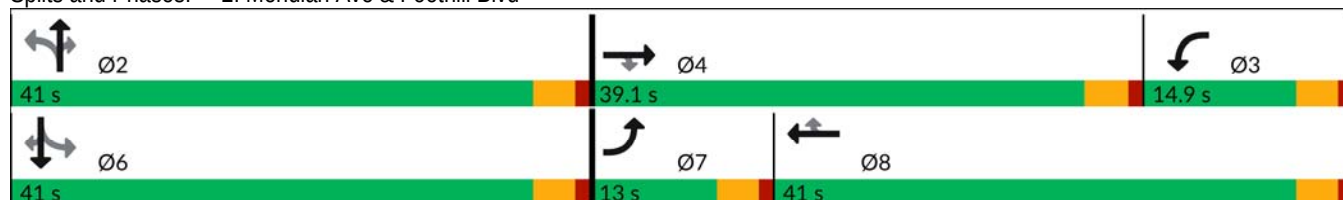
Intersection LOS: C

Intersection Capacity Utilization 76.5%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 2: Meridian Ave & Foothill Blvd



Queues

Year 2040 Without Project

2: Meridian Ave & Foothill Blvd

PM Peak Hour

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	121	877	115	65	751	105	310	118	265	168
v/c Ratio	0.81	0.75	0.20	0.49	0.72	0.20	0.54	0.16	0.41	0.22
Control Delay (s/veh)	79.2	30.9	10.6	52.3	30.9	8.4	25.2	5.9	21.9	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	79.2	30.9	10.6	52.3	30.9	8.4	25.2	5.9	21.9	8.0
Queue Length 50th (ft)	65	226	16	34	187	10	123	5	98	17
Queue Length 95th (ft)	#180	306	55	79	246	43	243	41	194	64
Internal Link Dist (ft)	1239			1069			704		716	
Turn Bay Length (ft)	102		100	117		100		50		50
Base Capacity (vph)	149	1417	677	190	1498	717	567	730	639	737
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.62	0.17	0.34	0.50	0.15	0.55	0.16	0.41	0.23

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

2: Meridian Ave & Foothill Blvd

Year 2040 Without Project

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	833	109	62	713	100	118	177	112	75	177	160
Future Volume (veh/h)	115	833	109	62	713	100	118	177	112	75	177	160
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	121	877	115	65	751	105	124	186	118	79	186	168
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	61	1060	473	41	1020	455	65	74	727	60	115	727
Arrive On Green	0.03	0.29	0.29	0.02	0.28	0.28	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	0	163	1610	0	255	1610
Grp Volume(v), veh/h	121	877	115	65	751	105	310	0	118	265	0	168
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	163	0	1610	255	0	1610
Q Serve(g_s), s	2.6	17.6	4.2	1.8	14.6	3.9	0.0	0.0	3.4	0.0	0.0	5.0
Cycle Q Clear(g_c), s	2.6	17.6	4.2	1.8	14.6	3.9	35.0	0.0	3.4	35.0	0.0	5.0
Prop In Lane	1.00		1.00	1.00		1.00	0.40		1.00	0.30		1.00
Lane Grp Cap(c), veh/h	61	1060	473	41	1020	455	139	0	727	175	0	727
V/C Ratio(X)	1.97	0.83	0.24	1.58	0.74	0.23	2.24	0.00	0.16	1.51	0.00	0.23
Avail Cap(c_a), veh/h	163	1541	687	208	1630	727	139	0	727	175	0	727
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.5	25.6	20.8	37.9	25.2	21.4	21.0	0.0	12.6	21.0	0.0	13.0
Incr Delay (d2), s/veh	469.6	2.6	0.3	283.0	1.1	0.3	579.7	0.0	0.5	256.9	0.0	0.7
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	9.1	7.0	1.4	4.0	5.7	1.3	23.6	0.0	1.1	14.5	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	507.1	28.1	21.1	320.8	26.3	21.6	600.7	0.0	13.1	277.9	0.0	13.8
LnGrp LOS	F	C	C	F	C	C	F		B	F		B
Approach Vol, veh/h	1113			921			428			433		
Approach Delay, s/veh	79.5			46.5			438.7			175.4		
Approach LOS	E			D			F			F		
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	41.0		7.8	28.8		41.0	8.6	27.9				
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s	37.0		10.9	35.1		37.0	9.0	37.0				
Max Q Clear Time (g_c+l1), s	37.0		3.8	19.6		37.0	4.6	16.6				
Green Ext Time (p_c), s	0.0		0.1	5.2		0.0	0.1	4.8				
Intersection Summary												
HCM 7th Control Delay, s/veh	136.4											
HCM 7th LOS	F											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
3: Dallas Ave & Foothill Blvd

Year 2040 Without Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	857	87	33	745	15	99	1	42	19	2	22
Future Volume (vph)	25	857	87	33	745	15	99	1	42	19	2	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		101	150		50	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.960			0.931	
Flt Protected	0.950			0.950				0.966			0.978	
Satd. Flow (prot)	1805	3610	1615	1805	3610	1615	0	1762	0	0	1730	0
Flt Permitted	0.950			0.950				0.966			0.978	
Satd. Flow (perm)	1805	3610	1615	1805	3610	1615	0	1762	0	0	1730	0
Link Speed (mph)		50			50			25			25	
Link Distance (ft)		1149			1043			345			383	
Travel Time (s)		15.7			14.2			9.4			10.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	902	92	35	784	16	104	1	44	20	2	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	902	92	35	784	16	0	149	0	0	45	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	50.2%						ICU Level of Service A					
Analysis Period (min)	15											

HCM 7th TWSC
3: Dallas Ave & Foothill Blvd

Year 2040 Without Project
PM Peak Hour

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	857	87	33	745	15	99	1	42	19	2	22
Future Vol, veh/h	25	857	87	33	745	15	99	1	42	19	2	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	101	150	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	26	902	92	35	784	16	104	1	44	20	2	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	800	0	0	994	0	0	1417	1824	451	1358	1900	392
Stage 1	-	-	-	-	-	-	955	955	-	854	854	-
Stage 2	-	-	-	-	-	-	463	869	-	504	1046	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	832	-	-	704	-	-	~ 99	78	561	109	70	613
Stage 1	-	-	-	-	-	-	282	340	-	324	378	-
Stage 2	-	-	-	-	-	-	554	372	-	524	308	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	832	-	-	704	-	-	~ 87	72	561	92	64	613
Mov Cap-2 Maneuver	-	-	-	-	-	-	235	230	-	252	210	-
Stage 1	-	-	-	-	-	-	273	329	-	308	359	-
Stage 2	-	-	-	-	-	-	504	354	-	466	298	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.24	0.43	30.92	16.6
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	284	832	-	-	704	-	-	356
HCM Lane V/C Ratio	0.526	0.032	-	-	0.049	-	-	0.127
HCM Control Delay (s/veh)	30.9	9.5	-	-	10.4	-	-	16.6
HCM Lane LOS	D	A	-	-	B	-	-	C
HCM 95th %tile Q(veh)	2.8	0.1	-	-	0.2	-	-	0.4

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lanes, Volumes, Timings
4: Foothill Blvd & Macy St

Year 2040 Without Project
PM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	50	838	763	70	72	28
Future Volume (vph)	50	838	763	70	72	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	84			50	0	50
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1805	3610	3610	1615	1805	1615
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1805	3610	3610	1615	1805	1615
Link Speed (mph)		50	50		30	
Link Distance (ft)		1043	2212		376	
Travel Time (s)		14.2	30.2		8.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	882	803	74	76	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	882	803	74	76	29
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes	Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	43.4%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
4: Foothill Blvd & Macy St

Year 2040 Without Project
PM Peak Hour

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	838	763	70	72	28
Future Vol, veh/h	50	838	763	70	72	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	84	-	-	50	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	53	882	803	74	76	29
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	877	0	-	0	1349	402
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	546	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	779	-	-	-	144	604
Stage 1	-	-	-	-	406	-
Stage 2	-	-	-	-	550	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	779	-	-	-	135	604
Mov Cap-2 Maneuver	-	-	-	-	263	-
Stage 1	-	-	-	-	379	-
Stage 2	-	-	-	-	550	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0.56	0		20.52		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	779	-	-	-	263	604
HCM Lane V/C Ratio	0.068	-	-	-	0.288	0.049
HCM Control Delay (s/veh)	10	-	-	-	24.1	11.3
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1.2	0.2

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Year 2040 Without Project
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↙	↑↑	↙	↗
Traffic Volume (vph)	709	318	295	649	341	419
Future Volume (vph)	709	318	295	649	341	419
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	89		0	215
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3610	1615	1805	3610	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3610	1615	1805	3610	1805	1615
Link Speed (mph)	30			30	30	
Link Distance (ft)	2212			735	518	
Travel Time (s)	50.3			16.7	11.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	746	335	311	683	359	441
Shared Lane Traffic (%)						
Lane Group Flow (vph)	746	335	311	683	359	441
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 69.8%				ICU Level of Service C		
Analysis Period (min) 15						

HCM 7th TWSC
5: Rancho Ave & Foothill Blvd

Year 2040 Without Project
PM Peak Hour

Intersection						
Int Delay, s/veh	85.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	709	318	295	649	341	419
Future Vol, veh/h	709	318	295	649	341	419
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	89	-	0	215
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	746	335	311	683	359	441
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1081	0	1709	373
Stage 1	-	-	-	-	746	-
Stage 2	-	-	-	-	963	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	653	-	~ 84	630
Stage 1	-	-	-	-	435	-
Stage 2	-	-	-	-	~ 336	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	653	-	~ 44	630
Mov Cap-2 Maneuver	-	-	-	-	~ 157	-
Stage 1	-	-	-	-	435	-
Stage 2	-	-	-	-	~ 176	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		4.82		\$ 301.32	
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	157	630	-	-	653	-
HCM Lane V/C Ratio	2.283	0.7	-	-	0.476	-
HCM Control Delay (s/veh)	\$ 643.4	22.9	-	-	15.4	-
HCM Lane LOS	F	C	-	-	C	-
HCM 95th %tile Q(veh)	29.7	5.7	-	-	2.6	-
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

YEAR 2040 WITH PROJECT

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Year 2040 With Project
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	889	178	154	794	93	123	568	110	86	458	117
Future Volume (vph)	172	889	178	154	794	93	123	568	110	86	458	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	90		100	100		0	95		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.976			0.970	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3610	1615	1805	3610	1615	1805	3523	0	1805	3502	0
Flt Permitted	0.950			0.950			0.352			0.287		
Satd. Flow (perm)	1805	3610	1615	1805	3610	1615	669	3523	0	545	3502	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			187			67		27			38	
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1312			1319			737			789	
Travel Time (s)		17.9			18.0			11.2			12.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	181	936	187	162	836	98	129	598	116	91	482	123
Shared Lane Traffic (%)												
Lane Group Flow (vph)	181	936	187	162	836	98	129	714	0	91	605	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Year 2040 With Project
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	9.5	33.0	33.0	9.5	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (s)	13.0	36.1	36.1	17.9	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (%)	13.7%	38.0%	38.0%	18.8%	43.2%	43.2%	43.2%	43.2%		43.2%	43.2%	
Maximum Green (s)	9.0	32.1	32.1	13.9	37.0	37.0	37.0	37.0		37.0	37.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0	22.0		30.0	30.0	22.0	22.0		30.0	30.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effect Green (s)	7.0	27.1	27.1	10.3	30.4	30.4	35.2	35.2		35.2	35.2	
Actuated g/C Ratio	0.08	0.30	0.30	0.11	0.34	0.34	0.39	0.39		0.39	0.39	
v/c Ratio	1.29	0.86	0.30	0.79	0.69	0.16	0.49	0.51		0.43	0.43	
Control Delay (s/veh)	212.4	39.8	5.1	66.8	29.1	9.0	31.0	22.8		30.3	21.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	212.4	39.8	5.1	66.8	29.1	9.0	31.0	22.8		30.3	21.1	
LOS	F	D	A	E	C	A	C	C		C	C	
Approach Delay (s/veh)		58.9			32.9			24.1			22.3	
Approach LOS		E			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 90.7

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.29

Intersection Signal Delay (s/veh): 37.7

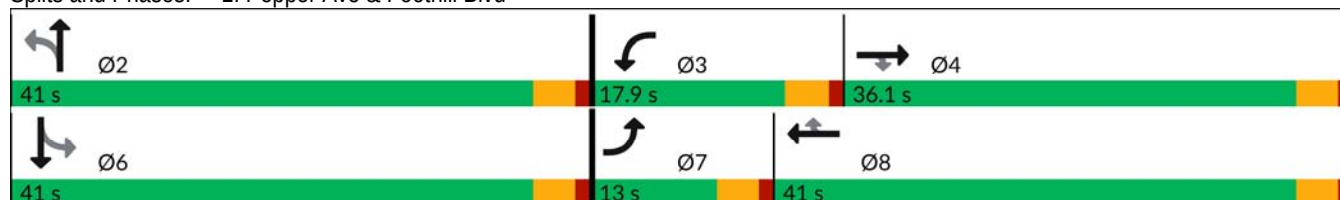
Intersection LOS: D

Intersection Capacity Utilization 78.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Pepper Ave & Foothill Blvd

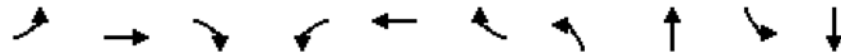


Queues

Year 2040 With Project

1: Pepper Ave & Foothill Blvd

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	181	936	187	162	836	98	129	714	91	605
v/c Ratio	1.29	0.86	0.30	0.79	0.69	0.16	0.49	0.51	0.43	0.43
Control Delay (s/veh)	212.4	39.8	5.1	66.8	29.1	9.0	31.0	22.8	30.3	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	212.4	39.8	5.1	66.8	29.1	9.0	31.0	22.8	30.3	21.1
Queue Length 50th (ft)	~145	272	0	95	214	12	60	169	41	134
Queue Length 95th (ft)	#276	350	46	#188	279	45	123	225	92	183
Internal Link Dist (ft)		1232			1239			657		709
Turn Bay Length (ft)	150			90		100	100		95	
Base Capacity (vph)	140	1204	663	238	1400	667	259	1383	211	1381
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.29	0.78	0.28	0.68	0.60	0.15	0.50	0.52	0.43	0.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

1: Pepper Ave & Foothill Blvd

Year 2040 With Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	889	178	154	794	93	123	568	110	86	458	117
Future Volume (veh/h)	172	889	178	154	794	93	123	568	110	86	458	117
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	181	936	187	162	836	98	129	598	116	91	482	123
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	121	1069	477	149	1125	502	324	1238	240	282	1170	297
Arrive On Green	0.07	0.30	0.30	0.08	0.31	0.31	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	828	3016	584	748	2852	723
Grp Volume(v), veh/h	181	936	187	162	836	98	129	357	357	91	304	301
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	828	1805	1795	748	1805	1770
Q Serve(g_s), s	5.7	21.0	7.9	7.0	17.7	3.8	11.2	12.4	12.5	8.7	10.2	10.3
Cycle Q Clear(g_c), s	5.7	21.0	7.9	7.0	17.7	3.8	21.5	12.4	12.5	21.2	10.2	10.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		0.41
Lane Grp Cap(c), veh/h	121	1069	477	149	1125	502	324	741	736	282	741	726
V/C Ratio(X)	1.49	0.88	0.39	1.09	0.74	0.20	0.40	0.48	0.48	0.32	0.41	0.41
Avail Cap(c_a), veh/h	148	1274	568	252	1481	661	324	741	736	282	741	726
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	28.5	23.9	39.1	26.3	21.5	25.5	18.5	18.5	26.3	17.8	17.9
Incr Delay (d2), s/veh	260.9	6.2	0.5	73.6	1.4	0.2	3.6	2.2	2.3	3.0	1.7	1.7
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	11.2	9.1	2.8	6.0	7.0	1.3	2.4	5.1	5.1	1.7	4.2	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	300.7	34.7	24.4	112.8	27.7	21.7	29.1	20.7	20.8	29.3	19.5	19.6
LnGrp LOS	F	C	C	F	C	C	C	C	C	C	B	B
Approach Vol, veh/h	1304			1096			843			696		
Approach Delay, s/veh	70.2			39.8			22.0			20.8		
Approach LOS	E			D			C			C		
Timer - Assigned Phs		2	3	4	6		7	8				
Phs Duration (G+Y+Rc), s		41.0	13.0	31.3	41.0		11.7	32.6				
Change Period (Y+Rc), s		4.0	4.0	4.0	4.0		4.0	4.0				
Max Green Setting (Gmax), s		37.0	13.9	32.1	37.0		9.0	37.0				
Max Q Clear Time (g_c+I1), s		23.5	9.0	23.0	23.2		7.7	19.7				
Green Ext Time (p_c), s		4.1	0.2	4.2	3.4		0.1	5.1				
Intersection Summary												
HCM 7th Control Delay, s/veh			42.7									
HCM 7th LOS			D									
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Year 2040 With Project
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	764	107	81	738	105	117	179	110	90	175	161
Future Volume (vph)	113	764	107	81	738	105	117	179	110	90	175	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	102		100	117		100	0		50	0		50
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.981			0.983	
Satd. Flow (prot)	1805	3610	1615	1805	3610	1615	0	1864	1615	0	1868	1615
Flt Permitted	0.950			0.950				0.709			0.752	
Satd. Flow (perm)	1805	3610	1615	1805	3610	1615	0	1347	1615	0	1429	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			78			81			103			109
Link Speed (mph)		50			50			40			25	
Link Distance (ft)		1319			1149			784			796	
Travel Time (s)		18.0			15.7			13.4			21.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	119	804	113	85	777	111	123	188	116	95	184	169
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	804	113	85	777	111	0	311	116	0	279	169
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		6

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Year 2040 With Project
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	9.0	29.0	29.0	9.0	41.0	41.0	29.0	29.0	29.0	41.0	41.0	41.0
Total Split (s)	13.0	39.0	39.0	15.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0
Total Split (%)	13.7%	41.1%	41.1%	15.8%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%
Maximum Green (s)	9.0	35.0	35.0	11.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		30.0	30.0	18.0	18.0	18.0	30.0	30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effect Green (s)	7.0	26.3	26.3	6.9	23.9	23.9		35.2	35.2		35.2	35.2
Actuated g/C Ratio	0.08	0.31	0.31	0.08	0.28	0.28		0.42	0.42		0.42	0.42
v/c Ratio	0.79	0.71	0.20	0.57	0.75	0.21		0.55	0.15		0.46	0.22
Control Delay (s/veh)	76.2	30.4	9.8	54.7	32.3	8.9		25.0	5.7		22.7	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)	76.2	30.4	9.8	54.7	32.3	8.9		25.0	5.7		22.7	8.3
LOS	E	C	A	D	C	A		C	A		C	A
Approach Delay (s/veh)		33.5			31.7			19.8			17.3	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 84.3

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay (s/veh): 28.3

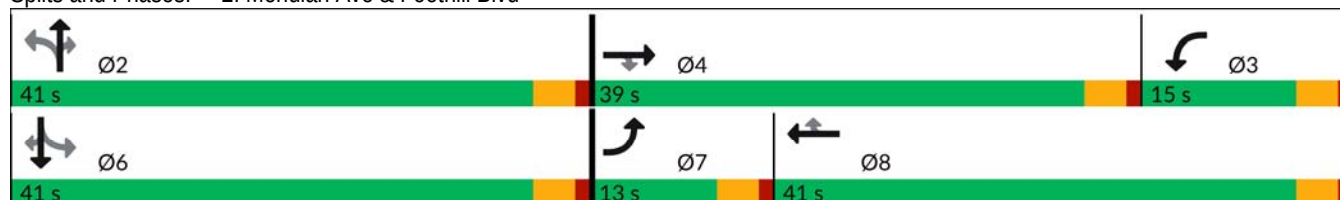
Intersection LOS: C

Intersection Capacity Utilization 76.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 2: Meridian Ave & Foothill Blvd

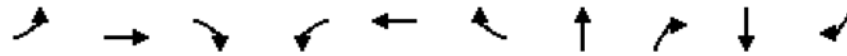


Queues

Year 2040 With Project

2: Meridian Ave & Foothill Blvd

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	119	804	113	85	777	111	311	116	279	169
v/c Ratio	0.79	0.71	0.20	0.57	0.75	0.21	0.55	0.15	0.46	0.22
Control Delay (s/veh)	76.2	30.4	9.8	54.7	32.3	8.9	25.0	5.7	22.7	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	76.2	30.4	9.8	54.7	32.3	8.9	25.0	5.7	22.7	8.3
Queue Length 50th (ft)	62	205	14	43	195	11	119	4	102	18
Queue Length 95th (ft)	#176	276	51	98	255	46	246	40	211	68
Internal Link Dist (ft)		1239			1069		704		716	
Turn Bay Length (ft)	102		100	117		100		50		50
Base Capacity (vph)	150	1422	683	194	1508	722	562	734	597	738
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.57	0.17	0.44	0.52	0.15	0.55	0.16	0.47	0.23

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

2: Meridian Ave & Foothill Blvd

Year 2040 With Project

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	764	107	81	738	105	117	179	110	90	175	161
Future Volume (veh/h)	113	764	107	81	738	105	117	179	110	90	175	161
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	119	804	113	85	777	111	123	188	116	95	184	169
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	62	986	440	52	966	431	66	77	742	64	97	742
Arrive On Green	0.03	0.27	0.27	0.03	0.27	0.27	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	0	166	1610	0	210	1610
Grp Volume(v), veh/h	119	804	113	85	777	111	311	0	116	279	0	169
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	166	0	1610	210	0	1610
Q Serve(g_s), s	2.6	15.8	4.2	2.2	15.2	4.1	0.0	0.0	3.2	0.0	0.0	4.8
Cycle Q Clear(g_c), s	2.6	15.8	4.2	2.2	15.2	4.1	35.0	0.0	3.2	35.0	0.0	4.8
Prop In Lane	1.00		1.00	1.00		1.00	0.40		1.00	0.34		1.00
Lane Grp Cap(c), veh/h	62	986	440	52	966	431	143	0	742	160	0	742
V/C Ratio(X)	1.92	0.82	0.26	1.65	0.80	0.26	2.18	0.00	0.16	1.74	0.00	0.23
Avail Cap(c_a), veh/h	167	1569	700	215	1664	742	143	0	742	160	0	742
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.7	25.8	21.6	36.9	25.9	21.9	20.0	0.0	11.9	19.0	0.0	12.3
Incr Delay (d2), s/veh	447.3	1.9	0.3	308.5	1.6	0.3	553.2	0.0	0.4	357.0	0.0	0.7
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	8.7	6.2	1.4	5.3	6.0	1.4	23.2	0.0	1.0	17.5	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	483.9	27.6	21.9	345.4	27.6	22.2	573.2	0.0	12.3	376.1	0.0	13.0
LnGrp LOS	F	C	C	F	C	C	F		B	F		B
Approach Vol, veh/h	1036			973			427			448		
Approach Delay, s/veh	79.4			54.7			420.9			239.1		
Approach LOS	E			D			F			F		
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	41.0		8.2	26.7		41.0	8.6	26.3				
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s	37.0		11.0	35.0		37.0	9.0	37.0				
Max Q Clear Time (g_c+I1), s	37.0		4.2	17.8		37.0	4.6	17.2				
Green Ext Time (p_c), s	0.0		0.1	4.9		0.0	0.1	5.0				
Intersection Summary												
HCM 7th Control Delay, s/veh	146.4											
HCM 7th LOS	F											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
3: Dallas Ave & Foothill Blvd

Year 2040 With Project
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	34	773	88	34	720	20	99	1	42	25	2	55
Future Volume (vph)	34	773	88	34	720	20	99	1	42	25	2	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		101	150		50	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.960			0.909	
Flt Protected	0.950			0.950				0.966			0.985	
Satd. Flow (prot)	1805	3610	1615	1805	3610	1615	0	1762	0	0	1701	0
Flt Permitted	0.950			0.950				0.966			0.985	
Satd. Flow (perm)	1805	3610	1615	1805	3610	1615	0	1762	0	0	1701	0
Link Speed (mph)		50			50			25			25	
Link Distance (ft)		1149			1043			345			383	
Travel Time (s)		15.7			14.2			9.4			10.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	36	814	93	36	758	21	104	1	44	26	2	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	814	93	36	758	21	0	149	0	0	86	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 53.0% ICU Level of Service A

Analysis Period (min) 15

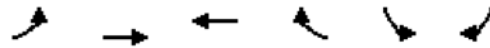
HCM 7th TWSC
3: Dallas Ave & Foothill Blvd

Year 2040 With Project
AM Peak Hour

Intersection												
Int Delay, s/veh	3.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	773	88	34	720	20	99	1	42	25	2	55
Future Vol, veh/h	34	773	88	34	720	20	99	1	42	25	2	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	101	150	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	36	814	93	36	758	21	104	1	44	26	2	58
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	779	0	0	906	0	0	1337	1736	407	1308	1807	379
Stage 1	-	-	-	-	-	-	885	885	-	829	829	-
Stage 2	-	-	-	-	-	-	452	851	-	479	978	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	847	-	-	759	-	-	113	88	599	119	80	625
Stage 1	-	-	-	-	-	-	310	366	-	335	388	-
Stage 2	-	-	-	-	-	-	562	379	-	542	331	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	847	-	-	759	-	-	~ 93	81	599	100	73	625
Mov Cap-2 Maneuver	-	-	-	-	-	-	248	239	-	262	223	-
Stage 1	-	-	-	-	-	-	297	350	-	319	370	-
Stage 2	-	-	-	-	-	-	483	362	-	479	317	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.36			0.44			28.31			15.59		
HCM LOS							D			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	300	847	-	-	759	-	-	426				
HCM Lane V/C Ratio	0.498	0.042	-	-	0.047	-	-	0.203				
HCM Control Delay (s/veh)	28.3	9.4	-	-	10	-	-	15.6				
HCM Lane LOS	D	A	-	-	A	-	-	C				
HCM 95th %tile Q(veh)	2.6	0.1	-	-	0.1	-	-	0.7				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s				+: Computation Not Defined				*: All major volume in platoon		

Lanes, Volumes, Timings
4: Foothill Blvd & Macy St

Year 2040 With Project
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	38	810	746	57	78	50
Future Volume (vph)	38	810	746	57	78	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	84			50	0	50
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1805	3610	3610	1615	1805	1615
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1805	3610	3610	1615	1805	1615
Link Speed (mph)		50	50		30	
Link Distance (ft)		1043	2212		376	
Travel Time (s)		14.2	30.2		8.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	853	785	60	82	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	853	785	60	82	53
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes	Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	43.3%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
4: Foothill Blvd & Macy St

Year 2040 With Project
AM Peak Hour

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	38	810	746	57	78	50
Future Vol, veh/h	38	810	746	57	78	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	84	-	-	50	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	40	853	785	60	82	53

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	845	0	-	0	1292
Stage 1	-	-	-	-	785
Stage 2	-	-	-	-	506
Critical Hdwy	4.1	-	-	-	6.8
Critical Hdwy Stg 1	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	5.8
Follow-up Hdwy	2.2	-	-	-	3.5
Pot Cap-1 Maneuver	800	-	-	-	157
Stage 1	-	-	-	-	415
Stage 2	-	-	-	-	576
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	800	-	-	-	150
Mov Cap-2 Maneuver	-	-	-	-	278
Stage 1	-	-	-	-	394
Stage 2	-	-	-	-	576

Approach	EB	WB	SB
HCM Control Delay, s/v	0.44	0	18.63
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	800	-	-	-	278	612
HCM Lane V/C Ratio	0.05	-	-	-	0.295	0.086
HCM Control Delay (s/veh)	9.7	-	-	-	23.2	11.4
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1.2	0.3

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Year 2040 With Project
AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↘	↑↑	↘	↗
Traffic Volume (vph)	712	422	409	650	205	400
Future Volume (vph)	712	422	409	650	205	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	89		0	215
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3610	1615	1805	3610	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3610	1615	1805	3610	1805	1615
Link Speed (mph)	30			30	30	
Link Distance (ft)	2212			735	518	
Travel Time (s)	50.3			16.7	11.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	749	444	431	684	216	421
Shared Lane Traffic (%)						
Lane Group Flow (vph)	749	444	431	684	216	421
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 68.7%				ICU Level of Service C		
Analysis Period (min) 15						

HCM 7th TWSC
5: Rancho Ave & Foothill Blvd

Year 2040 With Project
AM Peak Hour

Intersection						
Int Delay, s/veh	94.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	712	422	409	650	205	400
Future Vol, veh/h	712	422	409	650	205	400
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	89	-	0	215
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	749	444	431	684	216	421
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1194	0	1953	375
Stage 1	-	-	-	-	749	-
Stage 2	-	-	-	-	1203	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	592	-	~ 57	629
Stage 1	-	-	-	-	433	-
Stage 2	-	-	-	-	251	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	592	-	~ 16	629
Mov Cap-2 Maneuver	-	-	-	-	~ 64	-
Stage 1	-	-	-	-	433	-
Stage 2	-	-	-	-	~ 68	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		9.88		\$ 419.44	
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	64	629	-	-	592	-
HCM Lane V/C Ratio	3.356	0.67	-	-	0.727	-
HCM Control Delay (s/veh)	\$ 1195.8	21.6	-	-	25.6	-
HCM Lane LOS	F	C	-	-	D	-
HCM 95th %tile Q(veh)	22.5	5.1	-	-	6.1	-
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Lanes, Volumes, Timings
6: Macy St & Project Dwy

Year 2040 With Project
AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	29	9	83	102	0
Future Volume (vph)	0	29	9	83	102	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.995		
Satd. Flow (prot)	1644	0	0	1890	1900	0
Flt Permitted				0.995		
Satd. Flow (perm)	1644	0	0	1890	1900	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	167			376	501	
Travel Time (s)	4.6			10.3	13.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	31	9	87	107	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	31	0	0	96	107	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 24.9%				ICU Level of Service A		
Analysis Period (min) 15						

HCM 7th TWSC
6: Macy St & Project Dwy

Year 2040 With Project
AM Peak Hour

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	29	9	83	102	0
Future Vol, veh/h	0	29	9	83	102	0
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	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	31	9	87	107	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	214	107	107	0	-	0
Stage 1	107	-	-	-	-	-
Stage 2	106	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	779	952	1496	-	-	-
Stage 1	922	-	-	-	-	-
Stage 2	923	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	774	952	1496	-	-	-
Mov Cap-2 Maneuver	774	-	-	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	923	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/v	8.91	0.73		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	176	-	952	-	-	
HCM Lane V/C Ratio	0.006	-	0.032	-	-	
HCM Control Delay (s/veh)	7.4	0	8.9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Lanes, Volumes, Timings
7: Dallas Ave & Project Dwy

Year 2040 With Project
AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	37	4	39	13	1	41
Future Volume (vph)	37	4	39	13	1	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.987		0.966			
Flt Protected	0.957					0.999
Satd. Flow (prot)	1795	0	1835	0	0	1898
Flt Permitted	0.957					0.999
Satd. Flow (perm)	1795	0	1835	0	0	1898
Link Speed (mph)	25		25			25
Link Distance (ft)	162		383			414
Travel Time (s)	4.4		10.4			11.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	39	4	41	14	1	43
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	0	55	0	0	44
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	16.7%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
7: Dallas Ave & Project Dwy

Year 2040 With Project
AM Peak Hour

Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	37	4	39	13	1	41
Future Vol, veh/h	37	4	39	13	1	41
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	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	39	4	41	14	1	43
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	93	48	0	0	55	0
Stage 1	48	-	-	-	-	-
Stage 2	45	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	912	1027	-	-	1563	-
Stage 1	980	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	911	1027	-	-	1563	-
Mov Cap-2 Maneuver	911	-	-	-	-	-
Stage 1	980	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v	9.1	0		0.17		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	921	43	-	
HCM Lane V/C Ratio	-	-	0.047	0.001	-	
HCM Control Delay (s/veh)	-	-	9.1	7.3	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Year 2040 With Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	187	974	175	124	795	87	127	464	132	76	653	129
Future Volume (vph)	187	974	175	124	795	87	127	464	132	76	653	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	90		100	100		0	95		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.967			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3610	1615	1805	3610	1615	1805	3491	0	1805	3520	0
Flt Permitted	0.950			0.950			0.228			0.337		
Satd. Flow (perm)	1805	3610	1615	1805	3610	1615	433	3491	0	640	3520	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			121			63		44			27	
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1312			1319			737			789	
Travel Time (s)		17.9			18.0			11.2			12.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	197	1025	184	131	837	92	134	488	139	80	687	136
Shared Lane Traffic (%)												
Lane Group Flow (vph)	197	1025	184	131	837	92	134	627	0	80	823	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		

Lanes, Volumes, Timings
1: Pepper Ave & Foothill Blvd

Year 2040 With Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	9.5	33.0	33.0	9.5	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (s)	13.0	38.1	38.1	15.9	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (%)	13.7%	40.1%	40.1%	16.7%	43.2%	43.2%	43.2%	43.2%		43.2%	43.2%	
Maximum Green (s)	9.0	34.1	34.1	11.9	37.0	37.0	37.0	37.0		37.0	37.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0	22.0		30.0	30.0	22.0	22.0		30.0	30.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effect Green (s)	7.0	29.2	29.2	8.7	30.9	30.9	35.1	35.1		35.1	35.1	
Actuated g/C Ratio	0.08	0.32	0.32	0.10	0.34	0.34	0.39	0.39		0.39	0.39	
v/c Ratio	1.41	0.88	0.30	0.76	0.68	0.15	0.80	0.45		0.32	0.59	
Control Delay (s/veh)	258.9	39.9	10.2	68.8	28.9	9.1	63.5	21.3		26.1	24.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	258.9	39.9	10.2	68.8	28.9	9.1	63.5	21.3		26.1	24.5	
LOS	F	D	B	E	C	A	E	C		C	C	
Approach Delay (s/veh)		66.7			32.1			28.8			24.7	
Approach LOS		E			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 91.1

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.42

Intersection Signal Delay (s/veh): 41.7

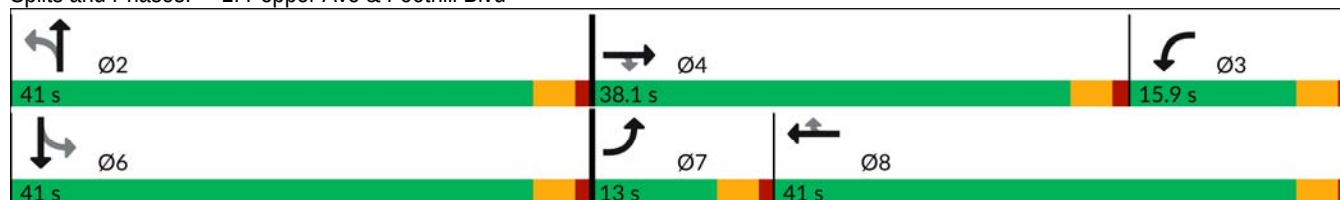
Intersection LOS: D

Intersection Capacity Utilization 83.0%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Pepper Ave & Foothill Blvd

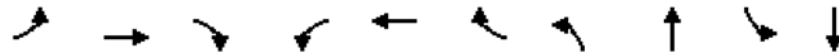


Queues

Year 2040 With Project

1: Pepper Ave & Foothill Blvd

PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	197	1025	184	131	837	92	134	627	80	823
v/c Ratio	1.41	0.88	0.30	0.76	0.68	0.15	0.80	0.45	0.32	0.59
Control Delay (s/veh)	258.9	39.9	10.2	68.8	28.9	9.1	63.5	21.3	26.1	24.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	258.9	39.9	10.2	68.8	28.9	9.1	63.5	21.3	26.1	24.5
Queue Length 50th (ft)	~165	297	26	78	215	11	73	139	34	204
Queue Length 95th (ft)	#302	380	75	#162	279	43	#185	190	76	268
Internal Link Dist (ft)		1232			1239			657		709
Turn Bay Length (ft)	150			90		100	100		95	
Base Capacity (vph)	139	1276	649	197	1392	661	166	1373	246	1374
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.42	0.80	0.28	0.66	0.60	0.14	0.81	0.46	0.33	0.60

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

1: Pepper Ave & Foothill Blvd

Year 2040 With Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	974	175	124	795	87	127	464	132	76	653	129
Future Volume (veh/h)	187	974	175	124	795	87	127	464	132	76	653	129
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	197	1025	184	131	837	92	134	488	139	80	687	136
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	132	1174	524	76	1063	474	251	1160	328	323	1255	248
Arrive On Green	0.07	0.33	0.33	0.04	0.29	0.29	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	676	2777	786	811	3004	594
Grp Volume(v), veh/h	197	1025	184	131	837	92	134	316	311	80	413	410
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	676	1805	1758	811	1805	1793
Q Serve(g_s), s	6.1	22.4	7.3	3.5	17.8	3.6	15.7	10.4	10.5	6.5	14.5	14.5
Cycle Q Clear(g_c), s	6.1	22.4	7.3	3.5	17.8	3.6	30.2	10.4	10.5	17.0	14.5	14.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.45	1.00		0.33
Lane Grp Cap(c), veh/h	132	1174	524	76	1063	474	251	754	735	323	754	749
V/C Ratio(X)	1.49	0.87	0.35	1.72	0.79	0.19	0.53	0.42	0.42	0.25	0.55	0.55
Avail Cap(c_a), veh/h	151	1383	617	214	1508	673	251	754	735	323	754	749
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	26.6	21.5	40.1	27.1	22.1	29.8	17.2	17.3	23.3	18.4	18.4
Incr Delay (d2), s/veh	256.9	5.7	0.4	342.9	1.9	0.2	7.9	1.7	1.8	1.8	2.8	2.9
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	12.0	9.5	2.5	8.7	7.2	1.3	2.9	4.2	4.1	1.3	5.9	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	295.7	32.3	21.9	383.0	29.0	22.3	37.7	18.9	19.0	25.1	21.3	21.3
LnGrp LOS	F	C	C	F	C	C	D	B	B	C	C	C
Approach Vol, veh/h	1406		1060				761		903			
Approach Delay, s/veh	67.9		72.2				22.3		21.6			
Approach LOS	E		E				C		C			
Timer - Assigned Phs	2		3		4		6		7		8	
Phs Duration (G+Y+Rc), s	41.0		9.5		33.2		41.0		12.1		30.6	
Change Period (Y+Rc), s	4.0		4.0		4.0		4.0		4.0		4.0	
Max Green Setting (Gmax), s	37.0		11.9		34.1		37.0		9.0		37.0	
Max Q Clear Time (g_c+l1), s	32.2		5.5		24.4		19.0		8.1		19.8	
Green Ext Time (p_c), s	2.0		0.1		4.8		5.0		0.0		5.1	
Intersection Summary												
HCM 7th Control Delay, s/veh	50.5											
HCM 7th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Year 2040 With Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	877	109	62	739	102	118	177	112	78	177	160
Future Volume (vph)	115	877	109	62	739	102	118	177	112	78	177	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	102		100	117		100	0		50	0		50
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.980			0.985	
Satd. Flow (prot)	1805	3610	1615	1805	3610	1615	0	1862	1615	0	1872	1615
Flt Permitted	0.950			0.950				0.707			0.789	
Satd. Flow (perm)	1805	3610	1615	1805	3610	1615	0	1343	1615	0	1499	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			69			78			103			113
Link Speed (mph)		50			50			40			25	
Link Distance (ft)		1319			1149			784			796	
Travel Time (s)		18.0			15.7			13.4			21.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	121	923	115	65	778	107	124	186	118	82	186	168
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	923	115	65	778	107	0	310	118	0	268	168
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		6

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Year 2040 With Project

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	9.5	29.0	29.0	9.5	41.0	41.0	29.0	29.0	29.0	41.0	41.0	41.0
Total Split (s)	13.0	39.1	39.1	14.9	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0
Total Split (%)	13.7%	41.2%	41.2%	15.7%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%	43.2%
Maximum Green (s)	9.0	35.1	35.1	10.9	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		30.0	30.0	18.0	18.0	18.0	30.0	30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	0
Act Effect Green (s)	7.1	28.7	28.7	6.3	25.8	25.8		35.3	35.3		35.3	35.3
Actuated g/C Ratio	0.08	0.33	0.33	0.07	0.30	0.30		0.41	0.41		0.41	0.41
v/c Ratio	0.82	0.76	0.19	0.49	0.72	0.19		0.56	0.16		0.43	0.23
Control Delay (s/veh)	81.8	31.4	10.9	52.9	30.7	8.7		26.3	6.0		22.9	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)	81.8	31.4	10.9	52.9	30.7	8.7		26.3	6.0		22.9	8.2
LOS	F	C	B	D	C	A		C	A		C	A
Approach Delay (s/veh)		34.7			29.8			20.8			17.3	
Approach LOS		C			C			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 86.2

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay (s/veh): 28.6

Intersection LOS: C

Intersection Capacity Utilization 77.9%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 2: Meridian Ave & Foothill Blvd



Queues

2: Meridian Ave & Foothill Blvd

Year 2040 With Project

PM Peak Hour

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	121	923	115	65	778	107	310	118	268	168
v/c Ratio	0.82	0.76	0.19	0.49	0.72	0.19	0.56	0.16	0.43	0.23
Control Delay (s/veh)	81.8	31.4	10.9	52.9	30.7	8.7	26.3	6.0	22.9	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	81.8	31.4	10.9	52.9	30.7	8.7	26.3	6.0	22.9	8.2
Queue Length 50th (ft)	66	242	18	35	195	11	128	5	103	18
Queue Length 95th (ft)	#180	326	56	79	256	46	245	41	198	65
Internal Link Dist (ft)	1239			1069			704		716	
Turn Bay Length (ft)	102		100	117		100		50		50
Base Capacity (vph)	147	1396	666	187	1476	706	549	721	612	727
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.66	0.17	0.35	0.53	0.15	0.56	0.16	0.44	0.23

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

2: Meridian Ave & Foothill Blvd

Year 2040 With Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	877	109	62	739	102	118	177	112	78	177	160
Future Volume (veh/h)	115	877	109	62	739	102	118	177	112	78	177	160
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	121	923	115	65	778	107	124	186	118	82	186	168
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	61	1102	492	41	1063	474	64	72	714	60	109	714
Arrive On Green	0.03	0.31	0.31	0.02	0.29	0.29	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	0	163	1610	0	246	1610
Grp Volume(v), veh/h	121	923	115	65	778	107	310	0	118	268	0	168
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	163	0	1610	246	0	1610
Q Serve(g_s), s	2.6	18.8	4.2	1.8	15.3	4.0	0.0	0.0	3.5	0.0	0.0	5.1
Cycle Q Clear(g_c), s	2.6	18.8	4.2	1.8	15.3	4.0	35.0	0.0	3.5	35.0	0.0	5.1
Prop In Lane	1.00		1.00	1.00		1.00	0.40		1.00	0.31		1.00
Lane Grp Cap(c), veh/h	61	1102	492	41	1063	474	136	0	714	169	0	714
V/C Ratio(X)	1.99	0.84	0.23	1.58	0.73	0.23	2.28	0.00	0.17	1.59	0.00	0.24
Avail Cap(c_a), veh/h	161	1515	676	204	1602	714	136	0	714	169	0	714
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.1	25.6	20.5	38.5	25.0	21.0	21.7	0.0	13.2	20.9	0.0	13.6
Incr Delay (d2), s/veh	480.5	3.1	0.2	283.4	1.0	0.2	597.3	0.0	0.5	291.1	0.0	0.8
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	9.2	7.6	1.4	4.0	5.9	1.4	23.9	0.0	1.2	15.5	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	518.7	28.7	20.7	321.9	26.0	21.3	618.9	0.0	13.7	312.0	0.0	14.4
LnGrp LOS	F	C	C	F	C	C	F		B	F		B
Approach Vol, veh/h	1159			950			428			436		
Approach Delay, s/veh	79.1			45.7			452.1			197.3		
Approach LOS	E			D			F			F		
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	41.0		7.8	30.1		41.0	8.6	29.2				
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s	37.0		10.9	35.1		37.0	9.0	37.0				
Max Q Clear Time (g_c+I1), s	37.0		3.8	20.8		37.0	4.6	17.3				
Green Ext Time (p_c), s	0.0		0.1	5.3		0.0	0.1	5.0				
Intersection Summary												
HCM 7th Control Delay, s/veh	139.4											
HCM 7th LOS	F											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
3: Dallas Ave & Foothill Blvd

Year 2040 With Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	874	87	33	755	22	99	1	42	23	2	40
Future Volume (vph)	55	874	87	33	755	22	99	1	42	23	2	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		101	150		50	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.960			0.917	
Flt Protected	0.950			0.950				0.966			0.983	
Satd. Flow (prot)	1805	3610	1615	1805	3610	1615	0	1762	0	0	1713	0
Flt Permitted	0.950			0.950				0.966			0.983	
Satd. Flow (perm)	1805	3610	1615	1805	3610	1615	0	1762	0	0	1713	0
Link Speed (mph)		50			50			25			25	
Link Distance (ft)		1149			1043			345			383	
Travel Time (s)		15.7			14.2			9.4			10.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	920	92	35	795	23	104	1	44	24	2	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	920	92	35	795	23	0	149	0	0	68	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	57.3%						ICU Level of Service B					
Analysis Period (min)	15											

HCM 7th TWSC
3: Dallas Ave & Foothill Blvd

Year 2040 With Project
PM Peak Hour

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	874	87	33	755	22	99	1	42	23	2	40
Future Vol, veh/h	55	874	87	33	755	22	99	1	42	23	2	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	101	150	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	58	920	92	35	795	23	104	1	44	24	2	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	818	0	0	1012	0	0	1504	1923	460	1441	1992	397
Stage 1	-	-	-	-	-	-	1036	1036	-	864	864	-
Stage 2	-	-	-	-	-	-	468	887	-	576	1127	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	819	-	-	693	-	-	~ 85	68	554	95	61	608
Stage 1	-	-	-	-	-	-	251	311	-	319	374	-
Stage 2	-	-	-	-	-	-	550	365	-	475	282	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	819	-	-	693	-	-	~ 69	60	554	77	54	608
Mov Cap-2 Maneuver	-	-	-	-	-	-	202	202	-	234	187	-
Stage 1	-	-	-	-	-	-	234	289	-	303	355	-
Stage 2	-	-	-	-	-	-	483	347	-	404	262	-

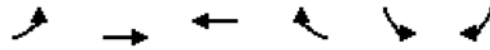
Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.53	0.43	39.13	16.86
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	249	819	-	-	693	-	-	372
HCM Lane V/C Ratio	0.601	0.071	-	-	0.05	-	-	0.184
HCM Control Delay (s/veh)	39.1	9.7	-	-	10.5	-	-	16.9
HCM Lane LOS	E	A	-	-	B	-	-	C
HCM 95th %tile Q(veh)	3.5	0.2	-	-	0.2	-	-	0.7

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lanes, Volumes, Timings
4: Foothill Blvd & Macy St

Year 2040 With Project
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	67	842	770	80	78	38
Future Volume (vph)	67	842	770	80	78	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	84			50	0	50
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1805	3610	3610	1615	1805	1615
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1805	3610	3610	1615	1805	1615
Link Speed (mph)		50	50		30	
Link Distance (ft)		1043	2212		376	
Travel Time (s)		14.2	30.2		8.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	71	886	811	84	82	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	71	886	811	84	82	40
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes	Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	44.3%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
4: Foothill Blvd & Macy St

Year 2040 With Project
PM Peak Hour

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	67	842	770	80	78	38
Future Vol, veh/h	67	842	770	80	78	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	84	-	-	50	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	71	886	811	84	82	40
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	895	0	-	0	1395	405
Stage 1	-	-	-	-	811	-
Stage 2	-	-	-	-	584	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	767	-	-	-	135	601
Stage 1	-	-	-	-	403	-
Stage 2	-	-	-	-	526	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	767	-	-	-	122	601
Mov Cap-2 Maneuver	-	-	-	-	250	-
Stage 1	-	-	-	-	366	-
Stage 2	-	-	-	-	526	-
Approach	EB	WB	SB			
HCM Control Delay, s/v 0.75		0	21.39			
HCM LOS			C			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	767	-	-	-	250	601
HCM Lane V/C Ratio	0.092	-	-	-	0.328	0.067
HCM Control Delay (s/veh)	10.2	-	-	-	26.2	11.4
HCM Lane LOS	B	-	-	-	D	B
HCM 95th %tile Q(veh)	0.3	-	-	-	1.4	0.2

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Year 2040 With Project
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↙	↑↑	↙	↗
Traffic Volume (vph)	717	320	295	662	344	419
Future Volume (vph)	717	320	295	662	344	419
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	89		0	215
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3610	1615	1805	3610	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3610	1615	1805	3610	1805	1615
Link Speed (mph)	30			30	30	
Link Distance (ft)	2212			735	518	
Travel Time (s)	50.3			16.7	11.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	755	337	311	697	362	441
Shared Lane Traffic (%)						
Lane Group Flow (vph)	755	337	311	697	362	441
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	70.2%			ICU Level of Service C		
Analysis Period (min)	15					

HCM 7th TWSC
5: Rancho Ave & Foothill Blvd

Year 2040 With Project
PM Peak Hour

Intersection						
Int Delay, s/veh	88.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	717	320	295	662	344	419
Future Vol, veh/h	717	320	295	662	344	419
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	89	-	0	215
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	755	337	311	697	362	441
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1092	0	1724	377
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	969	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	647	-	~ 82	626
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	~ 333	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	647	-	~ 42	626
Mov Cap-2 Maneuver	-	-	-	-	~ 155	-
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	~ 173	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		4.81		\$ 314.85	
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	155	626	-	-	647	-
HCM Lane V/C Ratio	2.341	0.704	-	-	0.48	-
HCM Control Delay (s/veh)	\$ 670	23.3	-	-	15.6	-
HCM Lane LOS	F	C	-	-	C	-
HCM 95th %tile Q(veh)	30.4	5.7	-	-	2.6	-
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Lanes, Volumes, Timings
6: Macy St & Project Dwy

Year 2040 With Project
PM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	16	26	120	99	0
Future Volume (vph)	0	16	26	120	99	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.991		
Satd. Flow (prot)	1644	0	0	1883	1900	0
Flt Permitted				0.991		
Satd. Flow (perm)	1644	0	0	1883	1900	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	167			376	501	
Travel Time (s)	4.6			10.3	13.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	17	27	126	104	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	0	153	104	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	27.8%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
6: Macy St & Project Dwy

Year 2040 With Project
PM Peak Hour

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	16	26	120	99	0
Future Vol, veh/h	0	16	26	120	99	0
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	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	17	27	126	104	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	285	104	104	0	-	0
Stage 1	104	-	-	-	-	-
Stage 2	181	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	709	956	1500	-	-	-
Stage 1	925	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	695	956	1500	-	-	-
Mov Cap-2 Maneuver	695	-	-	-	-	-
Stage 1	907	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/v	8.83	1.33		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	321	-	956	-	-	
HCM Lane V/C Ratio	0.018	-	0.018	-	-	
HCM Control Delay (s/veh)	7.4	0	8.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

Lanes, Volumes, Timings
7: Dallas Ave & Project Dwy

Year 2040 With Project
PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	22	2	40	37	3	37
Future Volume (vph)	22	2	40	37	3	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.989		0.935			
Flt Protected	0.956					0.996
Satd. Flow (prot)	1796	0	1776	0	0	1892
Flt Permitted	0.956					0.996
Satd. Flow (perm)	1796	0	1776	0	0	1892
Link Speed (mph)	25		25			25
Link Distance (ft)	162		383			414
Travel Time (s)	4.4		10.4			11.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	23	2	42	39	3	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	0	81	0	0	42
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 17.8%				ICU Level of Service A		
Analysis Period (min) 15						

HCM 7th TWSC
7: Dallas Ave & Project Dwy

Year 2040 With Project
PM Peak Hour

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	2	40	37	3	37
Future Vol, veh/h	22	2	40	37	3	37
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	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	23	2	42	39	3	39
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	107	62	0	0	81	0
Stage 1	62	-	-	-	-	-
Stage 2	45	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	896	1009	-	-	1529	-
Stage 1	966	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	894	1009	-	-	1529	-
Mov Cap-2 Maneuver	894	-	-	-	-	-
Stage 1	966	-	-	-	-	-
Stage 2	980	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v	9.1	0		0.55		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	902	135	-	
HCM Lane V/C Ratio	-	-	0.028	0.002	-	
HCM Control Delay (s/veh)	-	-	9.1	7.4	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

**OPENING YEAR (2026) WITH PROJECT
WITH IMPROVEMENTS**

**YEAR 2040 WITH PROJECT
WITHOUT IMPROVEMENTS**

**YEAR 2040 WITH PROJECT
WITH IMPROVEMENTS**

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Opening Year With Project With Improvements

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	545	88	59	588	57	112	147	93	73	169	152
Future Volume (vph)	52	545	88	59	588	57	112	147	93	73	169	152
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	102		100	117		100	0		50	0		50
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.942			0.929	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	1710	1696	0	1710	1672	0
Flt Permitted	0.950			0.950			0.462			0.559		
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	832	1696	0	1006	1672	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			89			57		38			54	
Link Speed (mph)		50			50			40			25	
Link Distance (ft)		1319			1149			784			796	
Travel Time (s)		18.0			15.7			13.4			21.7	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	60	634	102	69	684	66	130	171	108	85	197	177
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	634	102	69	684	66	130	279	0	85	374	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane				Yes								
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Opening Year With Project With Improvements

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	9.0	29.0	29.0	9.0	41.0	41.0	29.0	29.0		41.0	41.0	
Total Split (s)	13.0	39.0	39.0	15.0	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (%)	13.7%	41.1%	41.1%	15.8%	43.2%	43.2%	43.2%	43.2%		43.2%	43.2%	
Maximum Green (s)	9.0	35.0	35.0	11.0	37.0	37.0	37.0	37.0		37.0	37.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		18.0	18.0		30.0	30.0	18.0	18.0		30.0	30.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effect Green (s)	5.6	18.6	18.6	6.3	21.5	21.5	35.7	35.7		35.7	35.7	
Actuated g/C Ratio	0.07	0.24	0.24	0.08	0.28	0.28	0.47	0.47		0.47	0.47	
v/c Ratio	0.48	0.76	0.23	0.49	0.71	0.14	0.33	0.34		0.18	0.46	
Control Delay (s/veh)	49.9	33.7	8.6	48.2	29.7	8.6	19.6	14.9		16.8	16.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	49.9	33.7	8.6	48.2	29.7	8.6	19.6	14.9		16.8	16.3	
LOS	D	C	A	D	C	A	B	B		B	B	
Approach Delay (s/veh)		31.8			29.6			16.5			16.5	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 76.5

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay (s/veh): 25.7

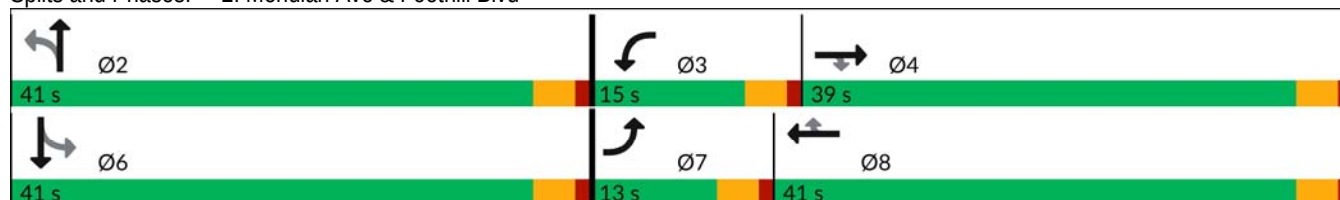
Intersection LOS: C

Intersection Capacity Utilization 67.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Meridian Ave & Foothill Blvd



Queues

Opening Year With Project With Improvements

2: Meridian Ave & Foothill Blvd

AM Peak Hour

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	60	634	102	69	684	66	130	279	85	374
v/c Ratio	0.48	0.76	0.23	0.49	0.71	0.14	0.33	0.34	0.18	0.46
Control Delay (s/veh)	49.9	33.7	8.6	48.2	29.7	8.6	19.6	14.9	16.8	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	49.9	33.7	8.6	48.2	29.7	8.6	19.6	14.9	16.8	16.3
Queue Length 50th (ft)	29	152	5	33	165	3	40	73	24	105
Queue Length 95th (ft)	68	204	37	74	214	29	96	149	62	205
Internal Link Dist (ft)		1239			1069			704		716
Turn Bay Length (ft)	102		100	117		100				
Base Capacity (vph)	159	1506	723	205	1598	745	388	812	469	810
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.42	0.14	0.34	0.43	0.09	0.34	0.34	0.18	0.46
Intersection Summary										

HCM 7th Signalized Intersection Summary

2: Meridian Ave & Foothill Blvd

Opening Year With Project With Improvements

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	545	88	59	588	57	112	147	93	73	169	152
Future Volume (veh/h)	52	545	88	59	588	57	112	147	93	73	169	152
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	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	60	634	102	69	684	66	130	171	108	85	197	177
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	36	835	372	41	847	378	440	498	315	525	422	379
Arrive On Green	0.02	0.24	0.24	0.02	0.25	0.25	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1024	1031	651	1118	874	785
Grp Volume(v), veh/h	60	634	102	69	684	66	130	0	279	85	0	374
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1024	0	1683	1118	0	1659
Q Serve(g_s), s	1.5	12.5	3.9	1.8	13.6	2.5	7.0	0.0	7.4	3.7	0.0	10.9
Cycle Q Clear(g_c), s	1.5	12.5	3.9	1.8	13.6	2.5	17.9	0.0	7.4	11.1	0.0	10.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.39	1.00		0.47
Lane Grp Cap(c), veh/h	36	835	372	41	847	378	440	0	813	525	0	801
V/C Ratio(X)	1.68	0.76	0.27	1.66	0.81	0.17	0.30	0.00	0.34	0.16	0.00	0.47
Avail Cap(c_a), veh/h	166	1558	695	213	1652	737	440	0	813	525	0	801
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.5	25.4	22.2	35.3	25.6	21.4	18.5	0.0	11.6	15.0	0.0	12.5
Incr Delay (d2), s/veh	332.9	1.5	0.4	320.5	1.9	0.2	1.7	0.0	1.2	0.7	0.0	1.9
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	3.9	4.6	1.3	4.4	5.1	0.8	1.7	0.0	2.6	1.0	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	368.4	26.9	22.6	355.9	27.5	21.7	20.2	0.0	12.7	15.7	0.0	14.4
LnGrp LOS	F	C	C	F	C	C	C		B	B		B
Approach Vol, veh/h	796				819				409		459	
Approach Delay, s/veh	52.0				54.7				15.1		14.7	
Approach LOS	D				D				B		B	
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	41.0		7.8	23.7		41.0	7.5	23.9				
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s	37.0		11.0	35.0		37.0	9.0	37.0				
Max Q Clear Time (g_c+I1), s	19.9		3.8	14.5		13.1	3.5	15.6				
Green Ext Time (p_c), s	2.0		0.1	4.0		3.0	0.0	4.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	39.9											
HCM 7th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Opening Year With Project With Improvements

AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	579	191	287	408	93	319
Future Volume (vph)	579	191	287	408	93	319
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)		100	89		0	215
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3420	1530	1710	3420	1710	1530
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3420	1530	1710	3420	1710	1530
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		178				354
Link Speed (mph)	30			30	30	
Link Distance (ft)	2212			735	518	
Travel Time (s)	50.3			16.7	11.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	643	212	319	453	103	354
Shared Lane Traffic (%)						
Lane Group Flow (vph)	643	212	319	453	103	354
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Opening Year With Project With Improvements

AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	4	4	3	8	2	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	7.0	5.0	5.0
Minimum Split (s)	22.5	22.5	9.5	41.0	34.0	34.0
Total Split (s)	22.5	22.5	23.0	45.5	34.5	34.5
Total Split (%)	28.1%	28.1%	28.8%	56.9%	43.1%	43.1%
Maximum Green (s)	18.5	18.5	18.5	41.5	30.5	30.5
Yellow Time (s)	3.0	3.0	3.5	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0
Total Lost Time (s)	6.0	6.0	6.5	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		30.0	23.0	23.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effect Green (s)	15.1	15.1	14.6	36.4	7.0	7.0
Actuated g/C Ratio	0.27	0.27	0.26	0.65	0.13	0.13
v/c Ratio	0.69	0.38	0.70	0.20	0.47	0.70
Control Delay (s/veh)	23.3	7.4	30.1	4.3	31.0	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.3	7.4	30.1	4.3	31.0	11.7
LOS	C	A	C	A	C	B
Approach Delay (s/veh)	19.4			15.0	16.1	
Approach LOS	B			B	B	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 55.6

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay (s/veh): 17.1

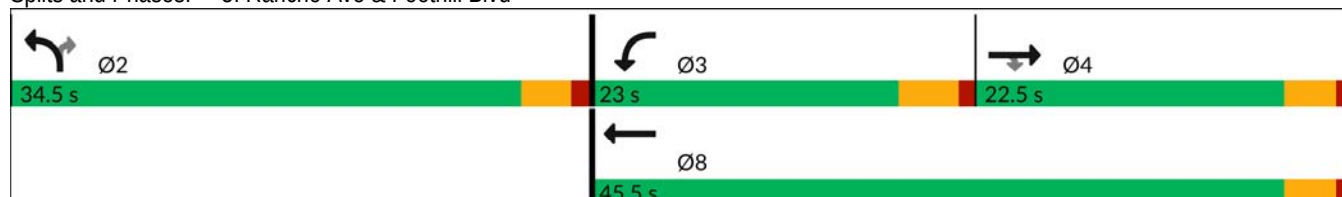
Intersection LOS: B

Intersection Capacity Utilization 54.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 5: Rancho Ave & Foothill Blvd



Queues

Opening Year With Project With Improvements

5: Rancho Ave & Foothill Blvd

AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	643	212	319	453	103	354
v/c Ratio	0.69	0.38	0.70	0.20	0.47	0.70
Control Delay (s/veh)	23.3	7.4	30.1	4.3	31.0	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.3	7.4	30.1	4.3	31.0	11.7
Queue Length 50th (ft)	102	9	98	24	34	0
Queue Length 95th (ft)	172	56	#218	51	74	62
Internal Link Dist (ft)	2132			655	438	
Turn Bay Length (ft)		100	89			215
Base Capacity (vph)	1030	585	515	2467	890	966
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.36	0.62	0.18	0.12	0.37

Intersection Summary

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

HCM 7th Signalized Intersection Summary

5: Rancho Ave & Foothill Blvd

Opening Year With Project With Improvements

AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↵	↑↑	↵	↑
Traffic Volume (veh/h)	579	191	287	408	93	319
Future Volume (veh/h)	579	191	287	408	93	319
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	643	212	319	453	103	354
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	777	347	330	1830	431	384
Arrive On Green	0.23	0.23	0.19	0.54	0.25	0.25
Sat Flow, veh/h	3510	1525	1714	3510	1714	1525
Grp Volume(v), veh/h	643	212	319	453	103	354
Grp Sat Flow(s),veh/h/ln	1710	1525	1714	1710	1714	1525
Q Serve(g_s), s	10.1	7.0	10.4	4.0	2.7	12.7
Cycle Q Clear(g_c), s	10.1	7.0	10.4	4.0	2.7	12.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	777	347	330	1830	431	384
V/C Ratio(X)	0.83	0.61	0.97	0.25	0.24	0.92
Avail Cap(c_a), veh/h	1003	447	503	2401	869	773
HCM Platoon Ratio	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	1.00
Uniform Delay (d), s/veh	20.7	19.5	22.5	7.0	16.8	20.5
Incr Delay (d2), s/veh	4.6	1.7	25.3	0.1	0.3	9.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	2.4	6.1	1.2	1.0	5.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	25.3	21.3	47.9	7.1	17.0	30.0
LnGrp LOS	C	C	D	A	B	C
Approach Vol, veh/h	855			772	457	
Approach Delay, s/veh	24.3			23.9	27.1	
Approach LOS	C			C	C	
Timer - Assigned Phs	2		3	4	8	
Phs Duration (G+Y+Rc), s	20.1		17.3	18.8	36.1	
Change Period (Y+Rc), s	4.0		4.5	4.0	4.0	
Max Green Setting (Gmax), s	30.5		18.5	18.5	41.5	
Max Q Clear Time (g_c+I1), s	14.7		12.4	12.1	6.0	
Green Ext Time (p_c), s	1.4		0.5	2.7	3.3	
Intersection Summary						
HCM 7th Control Delay, s/veh			24.8			
HCM 7th LOS			C			

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Opening Year With Project With Improvements

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	772	102	59	681	98	91	170	105	74	146	126
Future Volume (vph)	108	772	102	59	681	98	91	170	105	74	146	126
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	102		100	117		100	0		50	0		50
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.943			0.930	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1710	3420	1530	1710	3420	1530	1710	1697	0	1710	1674	0
Flt Permitted	0.950			0.950			0.524			0.519		
Satd. Flow (perm)	1710	3420	1530	1710	3420	1530	943	1697	0	934	1674	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			73			82		37			52	
Link Speed (mph)		50			50			40			25	
Link Distance (ft)		1319			1149			784			796	
Travel Time (s)		18.0			15.7			13.4			21.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	115	821	109	63	724	104	97	181	112	79	155	134
Shared Lane Traffic (%)												
Lane Group Flow (vph)	115	821	109	63	724	104	97	293	0	79	289	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane				Yes								
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Opening Year With Project With Improvements

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	9.5	29.0	29.0	9.5	41.0	41.0	29.0	29.0		41.0	41.0	
Total Split (s)	13.0	38.8	38.8	15.2	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (%)	13.7%	40.8%	40.8%	16.0%	43.2%	43.2%	43.2%	43.2%		43.2%	43.2%	
Maximum Green (s)	9.0	34.8	34.8	11.2	37.0	37.0	37.0	37.0		37.0	37.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		18.0	18.0		30.0	30.0	18.0	18.0		30.0	30.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effect Green (s)	7.1	26.9	26.9	6.3	24.0	24.0	35.3	35.3		35.3	35.3	
Actuated g/C Ratio	0.08	0.32	0.32	0.07	0.28	0.28	0.42	0.42		0.42	0.42	
v/c Ratio	0.80	0.75	0.20	0.49	0.74	0.21	0.24	0.40		0.20	0.39	
Control Delay (s/veh)	80.1	31.5	10.1	52.4	32.0	8.3	20.6	18.5		20.1	17.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	80.1	31.5	10.1	52.4	32.0	8.3	20.6	18.5		20.1	17.4	
LOS	F	C	B	D	C	A	C	B		C	B	
Approach Delay (s/veh)		34.7			30.7			19.1			18.0	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 84.5

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay (s/veh): 28.8

Intersection LOS: C

Intersection Capacity Utilization 68.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Meridian Ave & Foothill Blvd

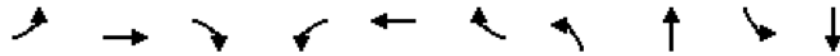


Queues

Opening Year With Project With Improvements

2: Meridian Ave & Foothill Blvd

PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	115	821	109	63	724	104	97	293	79	289
v/c Ratio	0.80	0.75	0.20	0.49	0.74	0.21	0.24	0.40	0.20	0.39
Control Delay (s/veh)	80.1	31.5	10.1	52.4	32.0	8.3	20.6	18.5	20.1	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	80.1	31.5	10.1	52.4	32.0	8.3	20.6	18.5	20.1	17.4
Queue Length 50th (ft)	61	211	14	33	181	8	32	91	26	83
Queue Length 95th (ft)	#176	290	51	77	239	42	82	188	68	178
Internal Link Dist (ft)		1239			1069			704		716
Turn Bay Length (ft)	102		100	117		100				
Base Capacity (vph)	142	1337	642	187	1427	686	393	729	390	728
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.61	0.17	0.34	0.51	0.15	0.25	0.40	0.20	0.40

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

2: Meridian Ave & Foothill Blvd

Opening Year With Project With Improvements

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	772	102	59	681	98	91	170	105	74	146	126
Future Volume (veh/h)	108	772	102	59	681	98	91	170	105	74	146	126
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	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	115	821	109	63	724	104	97	181	112	79	155	134
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	57	984	439	38	945	422	472	474	293	470	406	351
Arrive On Green	0.03	0.29	0.29	0.02	0.28	0.28	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1107	1040	644	1103	891	770
Grp Volume(v), veh/h	115	821	109	63	724	104	97	0	293	79	0	289
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1107	0	1684	1103	0	1661
Q Serve(g_s), s	2.6	17.3	4.2	1.7	14.9	4.1	4.9	0.0	8.8	3.9	0.0	8.8
Cycle Q Clear(g_c), s	2.6	17.3	4.2	1.7	14.9	4.1	13.7	0.0	8.8	12.7	0.0	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.38	1.00		0.46
Lane Grp Cap(c), veh/h	57	984	439	38	945	422	472	0	768	470	0	757
V/C Ratio(X)	2.00	0.83	0.25	1.66	0.77	0.25	0.21	0.00	0.38	0.17	0.00	0.38
Avail Cap(c_a), veh/h	156	1461	652	205	1559	695	472	0	768	470	0	757
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.1	25.6	21.0	37.6	25.5	21.6	18.3	0.0	13.8	18.0	0.0	13.8
Incr Delay (d2), s/veh	486.2	2.8	0.3	322.7	1.3	0.3	1.0	0.0	1.4	0.8	0.0	1.5
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	8.7	6.5	1.4	4.1	5.5	1.3	1.3	0.0	3.2	1.1	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	523.3	28.4	21.3	360.3	26.8	21.9	19.3	0.0	15.2	18.7	0.0	15.2
LnGrp LOS	F	C	C	F	C	C	B		B	B		B
Approach Vol, veh/h	1045			891			390			368		
Approach Delay, s/veh	82.1			49.8			16.2			16.0		
Approach LOS	F			D			B			B		
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	41.0		7.7	28.1		41.0	8.6	27.2				
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s	37.0		11.2	34.8		37.0	9.0	37.0				
Max Q Clear Time (g_c+I1), s	15.7		3.7	19.3		14.7	4.6	16.9				
Green Ext Time (p_c), s	2.0		0.1	4.8		2.2	0.1	4.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	52.9											
HCM 7th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Opening Year With Project With Improvements
PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	671	150	247	632	160	373
Future Volume (vph)	671	150	247	632	160	373
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (ft)		100	89		0	215
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3420	1530	1710	3420	1710	1530
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3420	1530	1710	3420	1710	1530
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		125				405
Link Speed (mph)	30			30	30	
Link Distance (ft)	2212			735	518	
Travel Time (s)	50.3			16.7	11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	729	163	268	687	174	405
Shared Lane Traffic (%)						
Lane Group Flow (vph)	729	163	268	687	174	405
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Opening Year With Project With Improvements
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	4	4	3	8	2	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	7.0	5.0	5.0
Minimum Split (s)	22.5	22.5	9.5	42.0	34.0	34.0
Total Split (s)	25.0	25.0	20.0	45.0	35.0	35.0
Total Split (%)	31.3%	31.3%	25.0%	56.3%	43.8%	43.8%
Maximum Green (s)	21.0	21.0	16.0	41.0	31.0	31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		31.0	23.0	23.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effect Green (s)	16.9	16.9	12.8	35.8	9.4	9.4
Actuated g/C Ratio	0.29	0.29	0.22	0.62	0.16	0.16
v/c Ratio	0.72	0.30	0.70	0.32	0.62	0.68
Control Delay (s/veh)	23.5	7.7	34.3	5.8	33.7	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.5	7.7	34.3	5.8	33.7	9.6
LOS	C	A	C	A	C	A
Approach Delay (s/veh)	20.7			13.9	16.9	
Approach LOS	C			B	B	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 57.4

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay (s/veh): 17.1

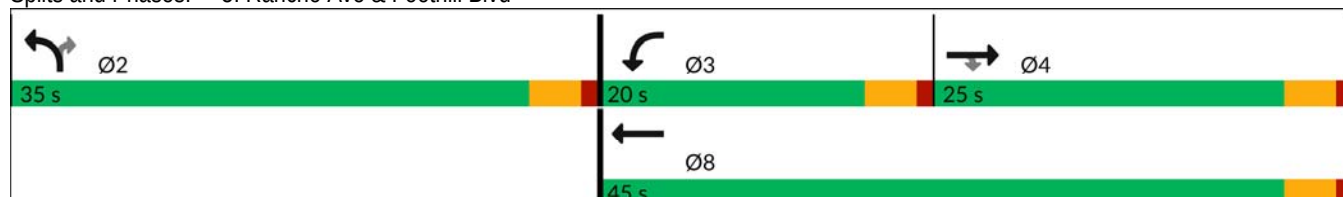
Intersection LOS: B

Intersection Capacity Utilization 58.4%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: Rancho Ave & Foothill Blvd



Queues

Opening Year With Project With Improvements

5: Rancho Ave & Foothill Blvd

PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	729	163	268	687	174	405
v/c Ratio	0.72	0.30	0.70	0.32	0.62	0.68
Control Delay (s/veh)	23.5	7.7	34.3	5.8	33.7	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.5	7.7	34.3	5.8	33.7	9.6
Queue Length 50th (ft)	119	10	89	47	61	0
Queue Length 95th (ft)	196	51	#205	93	115	64
Internal Link Dist (ft)	2132			655	438	
Turn Bay Length (ft)		100	89			215
Base Capacity (vph)	1153	598	424	2368	880	984
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.27	0.63	0.29	0.20	0.41

Intersection Summary

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

HCM 7th Signalized Intersection Summary

5: Rancho Ave & Foothill Blvd

Opening Year With Project With Improvements

PM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Volume (veh/h)	671	150	247	632	160	373
Future Volume (veh/h)	671	150	247	632	160	373
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	729	163	268	687	174	405
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	867	387	273	1753	492	438
Arrive On Green	0.25	0.25	0.16	0.51	0.29	0.29
Sat Flow, veh/h	3510	1525	1714	3510	1714	1525
Grp Volume(v), veh/h	729	163	268	687	174	405
Grp Sat Flow(s),veh/h/ln	1710	1525	1714	1710	1714	1525
Q Serve(g_s), s	12.1	5.4	9.3	7.3	4.8	15.4
Cycle Q Clear(g_c), s	12.1	5.4	9.3	7.3	4.8	15.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	867	387	273	1753	492	438
V/C Ratio(X)	0.84	0.42	0.98	0.39	0.35	0.92
Avail Cap(c_a), veh/h	1084	484	400	2226	830	738
HCM Platoon Ratio	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	1.00
Uniform Delay (d), s/veh	21.2	18.7	25.1	8.9	17.0	20.7
Incr Delay (d2), s/veh	5.0	0.7	33.6	0.1	0.4	11.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	1.8	6.1	2.3	1.8	6.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	26.2	19.4	58.7	9.0	17.4	31.9
LnGrp LOS	C	B	E	A	B	C
Approach Vol, veh/h	892			955	579	
Approach Delay, s/veh	25.0			23.0	27.5	
Approach LOS	C			C	C	
Timer - Assigned Phs	2		3	4	8	
Phs Duration (G+Y+Rc), s	23.2		15.5	21.2	36.7	
Change Period (Y+Rc), s	4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s	31.0		16.0	21.0	41.0	
Max Q Clear Time (g_c+I1), s	17.4		11.3	14.1	9.3	
Green Ext Time (p_c), s	1.8		0.3	3.1	5.3	
Intersection Summary						
HCM 7th Control Delay, s/veh			24.8			
HCM 7th LOS			C			

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Year 2040 Without Project With Improvements

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	749	107	81	694	101	117	179	110	89	175	161
Future Volume (vph)	113	749	107	81	694	101	117	179	110	89	175	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	102		100	117		100	0		50	0		50
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.943			0.928	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3610	1615	1805	3610	1615	1805	1792	0	1805	1763	0
Flt Permitted	0.950			0.950			0.457			0.511		
Satd. Flow (perm)	1805	3610	1615	1805	3610	1615	868	1792	0	971	1763	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			79			83		37			55	
Link Speed (mph)		50			50			40			25	
Link Distance (ft)		1319			1149			784			796	
Travel Time (s)		18.0			15.7			13.4			21.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	119	788	113	85	731	106	123	188	116	94	184	169
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	788	113	85	731	106	123	304	0	94	353	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane				Yes								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Year 2040 Without Project With Improvements

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	9.0	29.0	29.0	9.0	41.0	41.0	29.0	29.0		41.0	41.0	
Total Split (s)	13.0	39.0	39.0	15.0	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (%)	13.7%	41.1%	41.1%	15.8%	43.2%	43.2%	43.2%	43.2%		43.2%	43.2%	
Maximum Green (s)	9.0	35.0	35.0	11.0	37.0	37.0	37.0	37.0		37.0	37.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		18.0	18.0		30.0	30.0	18.0	18.0		30.0	30.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effect Green (s)	7.0	25.4	25.4	6.9	23.0	23.0	35.3	35.3		35.3	35.3	
Actuated g/C Ratio	0.08	0.30	0.30	0.08	0.28	0.28	0.42	0.42		0.42	0.42	
v/c Ratio	0.78	0.71	0.20	0.57	0.73	0.21	0.33	0.39		0.22	0.45	
Control Delay (s/veh)	75.0	30.7	9.8	54.0	31.7	8.4	21.7	17.7		19.6	18.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	75.0	30.7	9.8	54.0	31.7	8.4	21.7	17.7		19.6	18.0	
LOS	E	C	A	D	C	A	C	B		B	B	
Approach Delay (s/veh)		33.6			31.2			18.9			18.4	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 83.4

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay (s/veh): 28.2

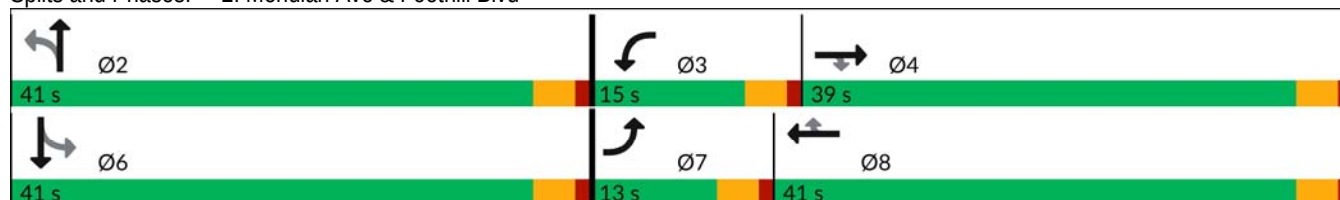
Intersection LOS: C

Intersection Capacity Utilization 71.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Meridian Ave & Foothill Blvd



Queues

Year 2040 Without Project With Improvements

2: Meridian Ave & Foothill Blvd

AM Peak Hour

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	119	788	113	85	731	106	123	304	94	353
v/c Ratio	0.78	0.71	0.20	0.57	0.73	0.21	0.33	0.39	0.22	0.45
Control Delay (s/veh)	75.0	30.7	9.8	54.0	31.7	8.4	21.7	17.7	19.6	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	75.0	30.7	9.8	54.0	31.7	8.4	21.7	17.7	19.6	18.0
Queue Length 50th (ft)	62	200	13	43	181	9	42	91	30	105
Queue Length 95th (ft)	#174	270	51	97	238	43	103	190	78	218
Internal Link Dist (ft)	1239			1069			704			716
Turn Bay Length (ft)	102		100	117		100				
Base Capacity (vph)	152	1439	691	196	1526	731	367	779	410	777
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.55	0.16	0.43	0.48	0.15	0.34	0.39	0.23	0.45

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

2: Meridian Ave & Foothill Blvd

Year 2040 Without Project With Improvements

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	749	107	81	694	101	117	179	110	89	175	161
Future Volume (veh/h)	113	749	107	81	694	101	117	179	110	89	175	161
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	119	788	113	85	731	106	123	188	116	94	184	169
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	62	970	433	52	950	424	438	510	315	482	423	389
Arrive On Green	0.03	0.27	0.27	0.03	0.26	0.26	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1044	1099	678	1092	912	837
Grp Volume(v), veh/h	119	788	113	85	731	106	123	0	304	94	0	353
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1044	0	1778	1092	0	1749
Q Serve(g_s), s	2.6	15.4	4.2	2.2	14.1	3.9	6.8	0.0	8.3	4.6	0.0	10.2
Cycle Q Clear(g_c), s	2.6	15.4	4.2	2.2	14.1	3.9	17.0	0.0	8.3	12.9	0.0	10.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.38	1.00		0.48
Lane Grp Cap(c), veh/h	62	970	433	52	950	424	438	0	825	482	0	812
V/C Ratio(X)	1.92	0.81	0.26	1.64	0.77	0.25	0.28	0.00	0.37	0.20	0.00	0.43
Avail Cap(c_a), veh/h	168	1579	704	216	1675	747	438	0	825	482	0	812
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.4	25.8	21.7	36.6	25.7	21.9	19.3	0.0	13.1	17.3	0.0	13.6
Incr Delay (d2), s/veh	443.6	1.7	0.3	307.1	1.4	0.3	1.6	0.0	1.3	0.9	0.0	1.7
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	8.7	6.0	1.4	5.3	5.5	1.4	1.7	0.0	3.2	1.2	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	480.0	27.5	22.0	343.7	27.0	22.2	20.9	0.0	14.3	18.2	0.0	15.3
LnGrp LOS	F	C	C	F	C	C	C		B	B		B
Approach Vol, veh/h	1020			922			427			447		
Approach Delay, s/veh	79.7			55.7			16.2			15.9		
Approach LOS	E			E			B			B		
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	41.0		8.2	26.3		41.0	8.6	25.8				
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s	37.0		11.0	35.0		37.0	9.0	37.0				
Max Q Clear Time (g_c+I1), s	19.0		4.2	17.4		14.9	4.6	16.1				
Green Ext Time (p_c), s	2.1		0.1	4.9		2.8	0.1	4.7				
Intersection Summary												
HCM 7th Control Delay, s/veh	52.1											
HCM 7th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Year 2040 Without Project With Improvements
AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	698	418	409	645	204	400
Future Volume (vph)	698	418	409	645	204	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	89		0	215
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3610	1615	1805	3610	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3610	1615	1805	3610	1805	1615
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		292				421
Link Speed (mph)	30			30	30	
Link Distance (ft)	2212			735	518	
Travel Time (s)	50.3			16.7	11.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	735	440	431	679	215	421
Shared Lane Traffic (%)						
Lane Group Flow (vph)	735	440	431	679	215	421
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Year 2040 Without Project With Improvements

AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	4	4	3	8	2	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	7.0	5.0	5.0
Minimum Split (s)	22.5	22.5	9.5	42.0	34.0	34.0
Total Split (s)	26.0	26.0	29.0	55.0	35.0	35.0
Total Split (%)	28.9%	28.9%	32.2%	61.1%	38.9%	38.9%
Maximum Green (s)	22.0	22.0	25.0	51.0	31.0	31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		31.0	23.0	23.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effect Green (s)	19.2	19.2	20.9	46.2	12.0	12.0
Actuated g/C Ratio	0.27	0.27	0.30	0.66	0.17	0.17
v/c Ratio	0.74	0.67	0.80	0.28	0.69	0.67
Control Delay (s/veh)	30.2	14.6	37.5	5.9	40.6	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.2	14.6	37.5	5.9	40.6	9.0
LOS	C	B	D	A	D	A
Approach Delay (s/veh)	24.4			18.2	19.7	
Approach LOS	C			B	B	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 70.4

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay (s/veh): 21.0

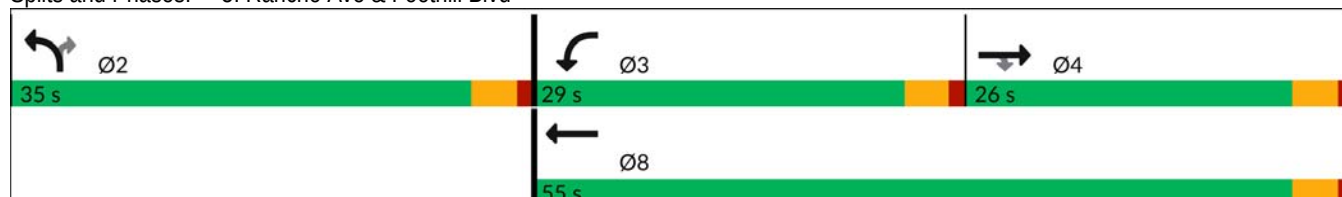
Intersection LOS: C

Intersection Capacity Utilization 68.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Rancho Ave & Foothill Blvd



Queues

Year 2040 Without Project With Improvements

5: Rancho Ave & Foothill Blvd

AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	735	440	431	679	215	421
v/c Ratio	0.74	0.67	0.80	0.28	0.69	0.67
Control Delay (s/veh)	30.2	14.6	37.5	5.9	40.6	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.2	14.6	37.5	5.9	40.6	9.0
Queue Length 50th (ft)	157	53	172	54	93	0
Queue Length 95th (ft)	#253	166	#350	102	160	70
Internal Link Dist (ft)	2132			655	438	
Turn Bay Length (ft)		100	89			215
Base Capacity (vph)	1041	674	599	2552	755	920
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.65	0.72	0.27	0.28	0.46

Intersection Summary

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

HCM 7th Signalized Intersection Summary

5: Rancho Ave & Foothill Blvd

Year 2040 Without Project With Improvements

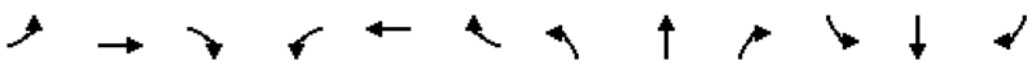
AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↵	↑↑	↵	↑
Traffic Volume (veh/h)	698	418	409	645	204	400
Future Volume (veh/h)	698	418	409	645	204	400
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	735	440	431	679	215	421
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	911	407	442	2066	500	445
Arrive On Green	0.25	0.25	0.24	0.57	0.28	0.28
Sat Flow, veh/h	3705	1610	1810	3705	1810	1610
Grp Volume(v), veh/h	735	440	431	679	215	421
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1810	1610
Q Serve(g_s), s	15.1	20.0	18.7	7.9	7.7	20.3
Cycle Q Clear(g_c), s	15.1	20.0	18.7	7.9	7.7	20.3
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	911	407	442	2066	500	445
V/C Ratio(X)	0.81	1.08	0.98	0.33	0.43	0.95
Avail Cap(c_a), veh/h	911	407	525	2233	662	589
HCM Platoon Ratio	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	1.00
Uniform Delay (d), s/veh	27.8	29.6	29.7	8.9	23.5	28.1
Incr Delay (d2), s/veh	5.4	68.5	30.9	0.1	0.6	21.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	15.1	11.6	2.8	3.3	10.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	33.2	98.1	60.6	9.0	24.1	49.1
LnGrp LOS	C	F	E	A	C	D
Approach Vol, veh/h	1175			1110	636	
Approach Delay, s/veh	57.5			29.1	40.7	
Approach LOS	E			C	D	
Timer - Assigned Phs	2		3	4	8	
Phs Duration (G+Y+Rc), s	27.9		25.3	26.0	51.3	
Change Period (Y+Rc), s	4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s	31.0		25.0	22.0	51.0	
Max Q Clear Time (g_c+I1), s	22.3		20.7	22.0	9.9	
Green Ext Time (p_c), s	1.6		0.6	0.0	5.5	
Intersection Summary						
HCM 7th Control Delay, s/veh			43.0			
HCM 7th LOS			D			

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Year 2040 Without Project With Improvements

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	833	109	62	713	100	118	177	112	75	177	160
Future Volume (vph)	115	833	109	62	713	100	118	177	112	75	177	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	102		100	117		100	0		50	0		50
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.942			0.929	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3610	1615	1805	3610	1615	1805	1790	0	1805	1765	0
Flt Permitted	0.950			0.950			0.450			0.506		
Satd. Flow (perm)	1805	3610	1615	1805	3610	1615	855	1790	0	961	1765	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72			80		38			54	
Link Speed (mph)		50			50			40			25	
Link Distance (ft)		1319			1149			784			796	
Travel Time (s)		18.0			15.7			13.4			21.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	121	877	115	65	751	105	124	186	118	79	186	168
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	877	115	65	751	105	124	304	0	79	354	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Year 2040 Without Project With Improvements

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	9.5	29.0	29.0	9.5	41.0	41.0	29.0	29.0		41.0	41.0	
Total Split (s)	13.0	39.1	39.1	14.9	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (%)	13.7%	41.2%	41.2%	15.7%	43.2%	43.2%	43.2%	43.2%		43.2%	43.2%	
Maximum Green (s)	9.0	35.1	35.1	10.9	37.0	37.0	37.0	37.0		37.0	37.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		18.0	18.0		30.0	30.0	18.0	18.0		30.0	30.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effect Green (s)	7.1	27.5	27.5	6.2	24.5	24.5	35.3	35.3		35.3	35.3	
Actuated g/C Ratio	0.08	0.32	0.32	0.07	0.29	0.29	0.42	0.42		0.42	0.42	
v/c Ratio	0.81	0.75	0.20	0.49	0.72	0.20	0.34	0.39		0.19	0.46	
Control Delay (s/veh)	79.2	30.9	10.6	52.3	30.9	8.4	23.0	18.5		20.2	18.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	79.2	30.9	10.6	52.3	30.9	8.4	23.0	18.5		20.2	18.9	
LOS	E	C	B	D	C	A	C	B		C	B	
Approach Delay (s/veh)		34.1			29.9			19.9			19.2	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 85

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay (s/veh): 28.4

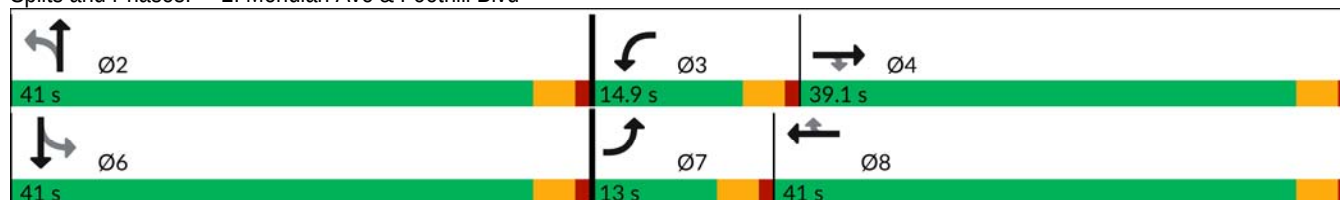
Intersection LOS: C

Intersection Capacity Utilization 72.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Meridian Ave & Foothill Blvd



Queues

Year 2040 Without Project With Improvements

2: Meridian Ave & Foothill Blvd

PM Peak Hour

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	121	877	115	65	751	105	124	304	79	354
v/c Ratio	0.81	0.75	0.20	0.49	0.72	0.20	0.34	0.39	0.19	0.46
Control Delay (s/veh)	79.2	30.9	10.6	52.3	30.9	8.4	23.0	18.5	20.2	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	79.2	30.9	10.6	52.3	30.9	8.4	23.0	18.5	20.2	18.9
Queue Length 50th (ft)	65	226	16	34	187	10	45	96	26	112
Queue Length 95th (ft)	#180	306	55	79	246	43	106	193	68	224
Internal Link Dist (ft)	1239			1069			704			716
Turn Bay Length (ft)	102		100	117		100				
Base Capacity (vph)	149	1417	677	190	1498	717	355	765	398	764
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.62	0.17	0.34	0.50	0.15	0.35	0.40	0.20	0.46

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

2: Meridian Ave & Foothill Blvd

Year 2040 Without Project With Improvements

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	833	109	62	713	100	118	177	112	75	177	160
Future Volume (veh/h)	115	833	109	62	713	100	118	177	112	75	177	160
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	121	877	115	65	751	105	124	186	118	79	186	168
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	61	1060	473	41	1020	455	419	491	311	462	415	375
Arrive On Green	0.03	0.29	0.29	0.02	0.28	0.28	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1043	1087	689	1092	920	831
Grp Volume(v), veh/h	121	877	115	65	751	105	124	0	304	79	0	354
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1043	0	1776	1092	0	1750
Q Serve(g_s), s	2.6	17.6	4.2	1.8	14.6	3.9	7.2	0.0	8.8	4.0	0.0	10.8
Cycle Q Clear(g_c), s	2.6	17.6	4.2	1.8	14.6	3.9	18.0	0.0	8.8	12.8	0.0	10.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.39	1.00		0.47
Lane Grp Cap(c), veh/h	61	1060	473	41	1020	455	419	0	802	462	0	790
V/C Ratio(X)	1.97	0.83	0.24	1.58	0.74	0.23	0.30	0.00	0.38	0.17	0.00	0.45
Avail Cap(c_a), veh/h	163	1541	687	208	1630	727	419	0	802	462	0	790
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.5	25.6	20.8	37.9	25.2	21.4	20.8	0.0	14.1	18.3	0.0	14.6
Incr Delay (d2), s/veh	469.6	2.6	0.3	283.0	1.1	0.3	1.8	0.0	1.4	0.8	0.0	1.8
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	9.1	7.0	1.4	4.0	5.7	1.3	1.8	0.0	3.4	1.1	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	507.1	28.1	21.1	320.8	26.3	21.6	22.6	0.0	15.4	19.1	0.0	16.5
LnGrp LOS	F	C	C	F	C	C	C		B	B		B
Approach Vol, veh/h	1113			921			428			433		
Approach Delay, s/veh	79.5			46.5			17.5			16.9		
Approach LOS	E			D			B			B		
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	41.0		7.8	28.8		41.0	8.6	27.9				
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s	37.0		10.9	35.1		37.0	9.0	37.0				
Max Q Clear Time (g_c+I1), s	20.0		3.8	19.6		14.8	4.6	16.6				
Green Ext Time (p_c), s	2.1		0.1	5.2		2.7	0.1	4.8				
Intersection Summary												
HCM 7th Control Delay, s/veh	50.5											
HCM 7th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Year 2040 Without Project With Improvements
PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	709	318	295	649	341	419
Future Volume (vph)	709	318	295	649	341	419
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	89		0	215
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3610	1615	1805	3610	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3610	1615	1805	3610	1805	1615
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		247				441
Link Speed (mph)	30			30	30	
Link Distance (ft)	2212			735	518	
Travel Time (s)	50.3			16.7	11.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	746	335	311	683	359	441
Shared Lane Traffic (%)						
Lane Group Flow (vph)	746	335	311	683	359	441
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Year 2040 Without Project With Improvements
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	4	4	3	8	2	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	7.0	5.0	5.0
Minimum Split (s)	22.5	22.5	9.5	41.0	34.0	34.0
Total Split (s)	24.0	24.0	21.0	45.0	35.0	35.0
Total Split (%)	30.0%	30.0%	26.3%	56.3%	43.8%	43.8%
Maximum Green (s)	20.0	20.0	17.0	41.0	31.0	31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		30.0	23.0	23.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effect Green (s)	17.3	17.3	14.3	37.7	16.9	16.9
Actuated g/C Ratio	0.26	0.26	0.21	0.56	0.25	0.25
v/c Ratio	0.79	0.55	0.80	0.33	0.78	0.59
Control Delay (s/veh)	32.4	11.2	45.3	9.2	36.1	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.4	11.2	45.3	9.2	36.1	5.9
LOS	C	B	D	A	D	A
Approach Delay (s/veh)	25.9			20.6	19.5	
Approach LOS	C			C	B	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 66.8

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay (s/veh): 22.3

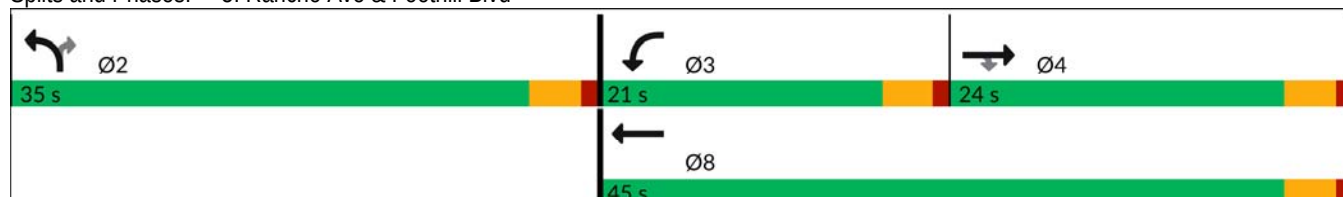
Intersection LOS: C

Intersection Capacity Utilization 69.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Rancho Ave & Foothill Blvd



Queues

Year 2040 Without Project With Improvements

5: Rancho Ave & Foothill Blvd

PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	746	335	311	683	359	441
v/c Ratio	0.79	0.55	0.80	0.33	0.78	0.59
Control Delay (s/veh)	32.4	11.2	45.3	9.2	36.1	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.4	11.2	45.3	9.2	36.1	5.9
Queue Length 50th (ft)	152	29	123	71	140	0
Queue Length 95th (ft)	#283	112	#289	137	226	59
Internal Link Dist (ft)	2132			655	438	
Turn Bay Length (ft)		100	89			215
Base Capacity (vph)	990	622	412	2145	797	959
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.54	0.75	0.32	0.45	0.46

Intersection Summary

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

HCM 7th Signalized Intersection Summary

5: Rancho Ave & Foothill Blvd

Year 2040 Without Project With Improvements

PM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Volume (veh/h)	709	318	295	649	341	419
Future Volume (veh/h)	709	318	295	649	341	419
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	746	335	311	683	359	441
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	876	391	318	1849	544	484
Arrive On Green	0.24	0.24	0.18	0.51	0.30	0.30
Sat Flow, veh/h	3705	1610	1810	3705	1810	1610
Grp Volume(v), veh/h	746	335	311	683	359	441
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1810	1610
Q Serve(g_s), s	12.7	12.8	11.0	7.3	11.1	16.9
Cycle Q Clear(g_c), s	12.7	12.8	11.0	7.3	11.1	16.9
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	876	391	318	1849	544	484
V/C Ratio(X)	0.85	0.86	0.98	0.37	0.66	0.91
Avail Cap(c_a), veh/h	1013	452	423	2194	818	728
HCM Platoon Ratio	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	1.00
Uniform Delay (d), s/veh	23.2	23.2	26.3	9.4	19.6	21.6
Incr Delay (d2), s/veh	6.3	13.6	33.2	0.1	1.4	11.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	6.0	7.4	2.5	4.5	7.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	29.5	36.8	59.5	9.5	20.9	32.9
LnGrp LOS	C	D	E	A	C	C
Approach Vol, veh/h	1081			994	800	
Approach Delay, s/veh	31.8			25.2	27.5	
Approach LOS	C			C	C	
Timer - Assigned Phs	2		3	4	8	
Phs Duration (G+Y+Rc), s	25.3		17.3	21.6	38.9	
Change Period (Y+Rc), s	4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s	31.0		17.0	20.0	41.0	
Max Q Clear Time (g_c+I1), s	18.9		13.0	14.8	9.3	
Green Ext Time (p_c), s	2.4		0.4	2.8	5.3	
Intersection Summary						
HCM 7th Control Delay, s/veh			28.3			
HCM 7th LOS			C			

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Year 2040 With Project With Improvements

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	764	107	81	738	105	117	179	110	90	175	161
Future Volume (vph)	113	764	107	81	738	105	117	179	110	90	175	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	102		100	117		100	0		50	0		50
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.943			0.928	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3610	1615	1805	3610	1615	1805	1792	0	1805	1763	0
Flt Permitted	0.950			0.950			0.454			0.507		
Satd. Flow (perm)	1805	3610	1615	1805	3610	1615	863	1792	0	963	1763	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			78			81		37			55	
Link Speed (mph)		50			50			40			25	
Link Distance (ft)		1319			1149			784			796	
Travel Time (s)		18.0			15.7			13.4			21.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	119	804	113	85	777	111	123	188	116	95	184	169
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	804	113	85	777	111	123	304	0	95	353	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Year 2040 With Project With Improvements

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	9.0	29.0	29.0	9.0	41.0	41.0	29.0	29.0		41.0	41.0	
Total Split (s)	13.0	39.0	39.0	15.0	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (%)	13.7%	41.1%	41.1%	15.8%	43.2%	43.2%	43.2%	43.2%		43.2%	43.2%	
Maximum Green (s)	9.0	35.0	35.0	11.0	37.0	37.0	37.0	37.0		37.0	37.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		18.0	18.0		30.0	30.0	18.0	18.0		30.0	30.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effect Green (s)	7.0	26.3	26.3	6.9	23.9	23.9	35.2	35.2		35.2	35.2	
Actuated g/C Ratio	0.08	0.31	0.31	0.08	0.28	0.28	0.42	0.42		0.42	0.42	
v/c Ratio	0.79	0.71	0.20	0.57	0.75	0.21	0.34	0.39		0.23	0.45	
Control Delay (s/veh)	76.2	30.4	9.8	54.7	32.3	8.9	22.3	18.2		20.2	18.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	76.2	30.4	9.8	54.7	32.3	8.9	22.3	18.2		20.2	18.4	
LOS	E	C	A	D	C	A	C	B		C	B	
Approach Delay (s/veh)		33.5			31.7			19.4			18.9	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 84.3

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay (s/veh): 28.5

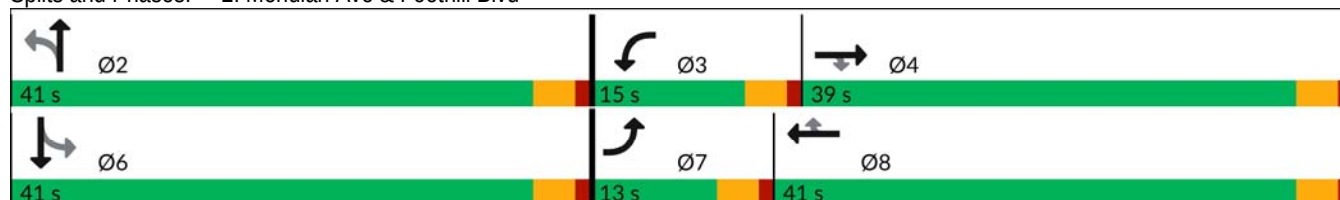
Intersection LOS: C

Intersection Capacity Utilization 72.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Meridian Ave & Foothill Blvd

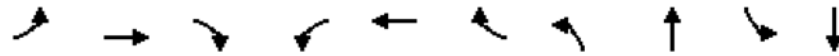


Queues

Year 2040 With Project With Improvements

2: Meridian Ave & Foothill Blvd

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	119	804	113	85	777	111	123	304	95	353
v/c Ratio	0.79	0.71	0.20	0.57	0.75	0.21	0.34	0.39	0.23	0.45
Control Delay (s/veh)	76.2	30.4	9.8	54.7	32.3	8.9	22.3	18.2	20.2	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	76.2	30.4	9.8	54.7	32.3	8.9	22.3	18.2	20.2	18.4
Queue Length 50th (ft)	62	205	14	43	195	11	42	93	31	107
Queue Length 95th (ft)	#176	276	51	98	255	46	106	194	80	222
Internal Link Dist (ft)		1239			1069			704		716
Turn Bay Length (ft)	102		100	117		100				
Base Capacity (vph)	150	1422	683	194	1508	722	360	770	402	768
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.57	0.17	0.44	0.52	0.15	0.34	0.39	0.24	0.46

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

Year 2040 With Project With Improvements

2: Meridian Ave & Foothill Blvd

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	764	107	81	738	105	117	179	110	90	175	161
Future Volume (veh/h)	113	764	107	81	738	105	117	179	110	90	175	161
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	119	804	113	85	777	111	123	188	116	95	184	169
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	62	986	440	52	966	431	434	507	313	477	420	386
Arrive On Green	0.03	0.27	0.27	0.03	0.27	0.27	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1044	1099	678	1092	912	837
Grp Volume(v), veh/h	119	804	113	85	777	111	123	0	304	95	0	353
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1044	0	1778	1092	0	1749
Q Serve(g_s), s	2.6	15.8	4.2	2.2	15.2	4.1	6.8	0.0	8.4	4.7	0.0	10.3
Cycle Q Clear(g_c), s	2.6	15.8	4.2	2.2	15.2	4.1	17.2	0.0	8.4	13.1	0.0	10.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.38	1.00		0.48
Lane Grp Cap(c), veh/h	62	986	440	52	966	431	434	0	820	477	0	807
V/C Ratio(X)	1.92	0.82	0.26	1.65	0.80	0.26	0.28	0.00	0.37	0.20	0.00	0.44
Avail Cap(c_a), veh/h	167	1569	700	215	1664	742	434	0	820	477	0	807
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.7	25.8	21.6	36.9	25.9	21.9	19.6	0.0	13.3	17.6	0.0	13.8
Incr Delay (d2), s/veh	447.3	1.9	0.3	308.5	1.6	0.3	1.6	0.0	1.3	0.9	0.0	1.7
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	8.7	6.2	1.4	5.3	6.0	1.4	1.7	0.0	3.2	1.3	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	483.9	27.6	21.9	345.4	27.6	22.2	21.2	0.0	14.6	18.5	0.0	15.5
LnGrp LOS	F	C	C	F	C	C	C		B	B		B
Approach Vol, veh/h	1036			973			427			448		
Approach Delay, s/veh	79.4			54.7			16.5			16.2		
Approach LOS	E			D			B			B		
Timer - Assigned Phs	2			3			4			6		
Phs Duration (G+Y+Rc), s	41.0			8.2			26.7			41.0		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	37.0			11.0			35.0			37.0		
Max Q Clear Time (g_c+I1), s	19.2			4.2			17.8			15.1		
Green Ext Time (p_c), s	2.1			0.1			4.9			2.8		
Intersection Summary												
HCM 7th Control Delay, s/veh	51.9											
HCM 7th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
3: Dallas Ave & Foothill Blvd

Year 2040 With Project With Improvements

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	773	88	34	720	20	99	1	42	25	2	55
Future Volume (vph)	34	773	88	34	720	20	99	1	42	25	2	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		101	150		50	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.960			0.909	
Flt Protected	0.950			0.950				0.966			0.985	
Satd. Flow (prot)	1805	3610	1615	1805	3610	1615	0	1762	0	0	1701	0
Flt Permitted	0.364			0.345				0.738			0.856	
Satd. Flow (perm)	692	3610	1615	656	3610	1615	0	1346	0	0	1478	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82			13		31			58	
Link Speed (mph)		50			50			25			25	
Link Distance (ft)		1149			1043			345			383	
Travel Time (s)		15.7			14.2			9.4			10.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	36	814	93	36	758	21	104	1	44	26	2	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	814	93	36	758	21	0	149	0	0	86	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		6			

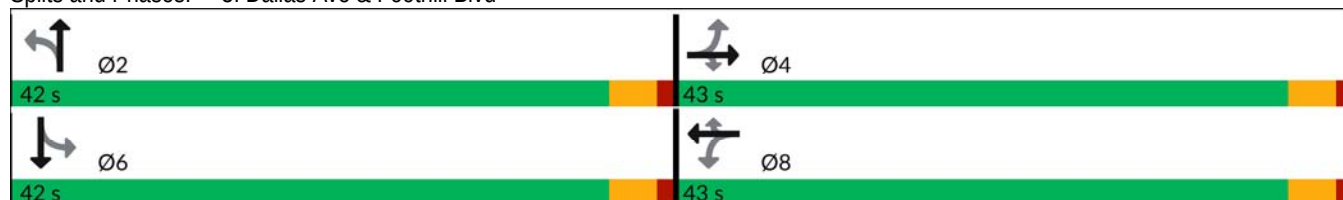
Lanes, Volumes, Timings
3: Dallas Ave & Foothill Blvd

Year 2040 With Project With Improvements

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	24.0	24.0	24.0	41.0	41.0	41.0	24.0	24.0		41.0	41.0	
Total Split (s)	43.0	43.0	43.0	43.0	43.0	43.0	42.0	42.0		42.0	42.0	
Total Split (%)	50.6%	50.6%	50.6%	50.6%	50.6%	50.6%	49.4%	49.4%		49.4%	49.4%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	38.0	38.0		38.0	38.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0			2.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	13.0	13.0	13.0	30.0	30.0	30.0	13.0	13.0		30.0	30.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	12.3	12.3	12.3	12.3	12.3	12.3		7.1			7.1	
Actuated g/C Ratio	0.39	0.39	0.39	0.39	0.39	0.39		0.22			0.22	
v/c Ratio	0.13	0.58	0.13	0.14	0.54	0.03		0.45			0.22	
Control Delay (s/veh)	8.0	9.7	3.1	8.2	9.3	4.7		14.7			7.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay (s/veh)	8.0	9.7	3.1	8.2	9.3	4.7		14.7			7.5	
LOS	A	A	A	A	A	A		B			A	
Approach Delay (s/veh)		9.0			9.1			14.7			7.5	
Approach LOS		A			A			B			A	
Intersection Summary												
Area Type:	Other											
Cycle Length: 85												
Actuated Cycle Length: 31.8												
Natural Cycle: 85												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.59												
Intersection Signal Delay (s/veh): 9.4												
Intersection Capacity Utilization 53.0%												
Analysis Period (min) 15												
Intersection LOS: A												
ICU Level of Service A												

Splits and Phases: 3: Dallas Ave & Foothill Blvd



Queues

Year 2040 With Project With Improvements

3: Dallas Ave & Foothill Blvd

AM Peak Hour

								
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	36	814	93	36	758	21	149	86
v/c Ratio	0.13	0.58	0.13	0.14	0.54	0.03	0.45	0.22
Control Delay (s/veh)	8.0	9.7	3.1	8.2	9.3	4.7	14.7	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.0	9.7	3.1	8.2	9.3	4.7	14.7	7.5
Queue Length 50th (ft)	3	47	1	3	43	1	16	3
Queue Length 95th (ft)	17	103	18	17	95	9	59	28
Internal Link Dist (ft)		1069			963		265	303
Turn Bay Length (ft)	150		101	150		50		
Base Capacity (vph)	674	3518	1576	639	3518	1574	1306	1435
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.23	0.06	0.06	0.22	0.01	0.11	0.06
Intersection Summary								

HCM 7th Signalized Intersection Summary

Year 2040 With Project With Improvements

3: Dallas Ave & Foothill Blvd

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	773	88	34	720	20	99	1	42	25	2	55
Future Volume (veh/h)	34	773	88	34	720	20	99	1	42	25	2	55
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	36	814	93	36	758	21	104	1	44	26	2	58
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	429	1486	663	399	1486	663	360	38	78	199	55	190
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	704	3610	1610	625	3610	1610	861	217	452	210	318	1095
Grp Volume(v), veh/h	36	814	93	36	758	21	149	0	0	86	0	0
Grp Sat Flow(s),veh/h/ln	704	1805	1610	625	1805	1610	1529	0	0	1624	0	0
Q Serve(g_s), s	1.2	4.9	1.0	1.3	4.5	0.2	1.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.7	4.9	1.0	6.3	4.5	0.2	2.4	0.0	0.0	1.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.70		0.30	0.30		0.67
Lane Grp Cap(c), veh/h	429	1486	663	399	1486	663	476	0	0	443	0	0
V/C Ratio(X)	0.08	0.55	0.14	0.09	0.51	0.03	0.31	0.00	0.00	0.19	0.00	0.00
Avail Cap(c_a), veh/h	1041	4622	2061	942	4622	2061	2011	0	0	2094	0	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	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.4	6.5	5.3	8.8	6.3	5.1	10.8	0.0	0.0	10.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.3	0.1	0.1	0.3	0.0	0.4	0.0	0.0	0.2	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	0.6	0.1	0.1	0.5	0.0	0.7	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	8.5	6.8	5.4	8.9	6.6	5.1	11.2	0.0	0.0	10.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B			B		
Approach Vol, veh/h	943			815			149			86		
Approach Delay, s/veh	6.7			6.7			11.2			10.6		
Approach LOS	A			A			B			B		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	11.0			17.9			11.0			17.9		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	38.0			39.0			38.0			39.0		
Max Q Clear Time (g_c+I1), s	4.4			7.7			3.3			8.3		
Green Ext Time (p_c), s	1.0			6.2			0.5			5.5		
Intersection Summary												
HCM 7th Control Delay, s/veh				7.2								
HCM 7th LOS				A								
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Year 2040 With Project With Improvements

AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↗
Traffic Volume (vph)	712	422	409	650	205	400
Future Volume (vph)	712	422	409	650	205	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	89		0	215
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3610	1615	1805	3610	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3610	1615	1805	3610	1805	1615
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		289				421
Link Speed (mph)	30			30	30	
Link Distance (ft)	2212			735	518	
Travel Time (s)	50.3			16.7	11.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	749	444	431	684	216	421
Shared Lane Traffic (%)						
Lane Group Flow (vph)	749	444	431	684	216	421
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Year 2040 With Project With Improvements

AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	4	4	3	8	2	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	7.0	5.0	5.0
Minimum Split (s)	22.5	22.5	9.5	42.5	34.5	34.5
Total Split (s)	26.2	26.2	29.0	55.2	34.8	34.8
Total Split (%)	29.1%	29.1%	32.2%	61.3%	38.7%	38.7%
Maximum Green (s)	21.7	21.7	24.5	50.7	30.3	30.3
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		31.0	23.0	23.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effect Green (s)	19.3	19.3	21.1	47.0	12.2	12.2
Actuated g/C Ratio	0.27	0.27	0.29	0.65	0.17	0.17
v/c Ratio	0.77	0.69	0.81	0.29	0.71	0.67
Control Delay (s/veh)	32.5	15.7	39.7	6.3	41.9	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.5	15.7	39.7	6.3	41.9	9.1
LOS	C	B	D	A	D	A
Approach Delay (s/veh)	26.3			19.2	20.2	
Approach LOS	C			B	C	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 72.3

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay (s/veh): 22.3

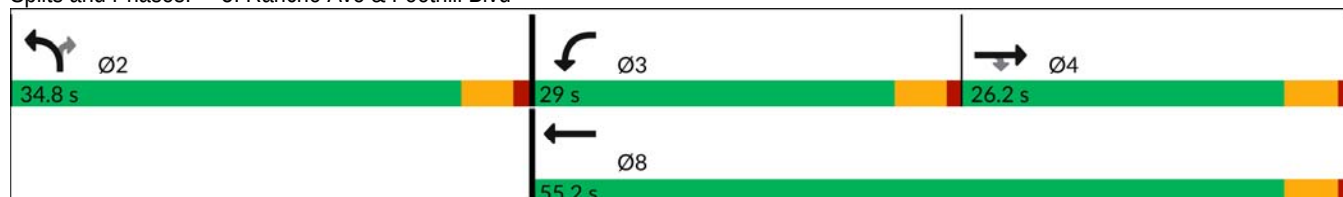
Intersection LOS: C

Intersection Capacity Utilization 69.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Rancho Ave & Foothill Blvd



Queues

Year 2040 With Project With Improvements

5: Rancho Ave & Foothill Blvd

AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	749	444	431	684	216	421
v/c Ratio	0.77	0.69	0.81	0.29	0.71	0.67
Control Delay (s/veh)	32.5	15.7	39.7	6.3	41.9	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.5	15.7	39.7	6.3	41.9	9.1
Queue Length 50th (ft)	165	57	177	58	95	0
Queue Length 95th (ft)	#280	175	#362	108	162	70
Internal Link Dist (ft)	2132			655	438	
Turn Bay Length (ft)		100	89			215
Base Capacity (vph)	993	653	567	2455	713	892
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.68	0.76	0.28	0.30	0.47

Intersection Summary

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

HCM 7th Signalized Intersection Summary

5: Rancho Ave & Foothill Blvd

Year 2040 With Project With Improvements

AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↑
Traffic Volume (veh/h)	712	422	409	650	205	400
Future Volume (veh/h)	712	422	409	650	205	400
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	749	444	431	684	216	421
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	875	390	439	2041	497	442
Arrive On Green	0.24	0.24	0.24	0.57	0.27	0.27
Sat Flow, veh/h	3705	1610	1810	3705	1810	1610
Grp Volume(v), veh/h	749	444	431	684	216	421
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1810	1610
Q Serve(g_s), s	16.1	19.7	19.2	8.3	8.0	20.9
Cycle Q Clear(g_c), s	16.1	19.7	19.2	8.3	8.0	20.9
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	875	390	439	2041	497	442
V/C Ratio(X)	0.86	1.14	0.98	0.34	0.43	0.95
Avail Cap(c_a), veh/h	875	390	501	2164	630	561
HCM Platoon Ratio	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	1.00
Uniform Delay (d), s/veh	29.4	30.8	30.6	9.5	24.3	28.9
Incr Delay (d2), s/veh	8.4	88.4	33.5	0.1	0.6	23.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	16.9	12.1	3.0	3.4	10.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	37.8	119.2	64.1	9.6	24.9	52.4
LnGrp LOS	D	F	E	A	C	D
Approach Vol, veh/h	1193			1115 637		
Approach Delay, s/veh	68.1			30.7 43.1		
Approach LOS	E			C D		
Timer - Assigned Phs	2		3	4	8	
Phs Duration (G+Y+Rc), s	28.8		26.2	26.2	52.4	
Change Period (Y+Rc), s	4.5		4.5	4.5	4.5	
Max Green Setting (Gmax), s	30.3		24.5	21.7	50.7	
Max Q Clear Time (g_c+I1), s	22.9		21.2	21.7	10.3	
Green Ext Time (p_c), s	1.5		0.5	0.0	5.5	
Intersection Summary						
HCM 7th Control Delay, s/veh			48.5			
HCM 7th LOS			D			

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Year 2040 With Project With Improvements

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	877	109	62	739	102	118	177	112	78	177	160
Future Volume (vph)	115	877	109	62	739	102	118	177	112	78	177	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	102		100	117		100	0		50	0		50
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.942			0.929	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3610	1615	1805	3610	1615	1805	1790	0	1805	1765	0
Flt Permitted	0.950			0.950			0.445			0.501		
Satd. Flow (perm)	1805	3610	1615	1805	3610	1615	846	1790	0	952	1765	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			69			78		38			54	
Link Speed (mph)		50			50			40			25	
Link Distance (ft)		1319			1149			784			796	
Travel Time (s)		18.0			15.7			13.4			21.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	121	923	115	65	778	107	124	186	118	82	186	168
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	923	115	65	778	107	124	304	0	82	354	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		

Lanes, Volumes, Timings
2: Meridian Ave & Foothill Blvd

Year 2040 With Project With Improvements

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	9.5	29.0	29.0	9.5	41.0	41.0	29.0	29.0		41.0	41.0	
Total Split (s)	13.0	39.1	39.1	14.9	41.0	41.0	41.0	41.0		41.0	41.0	
Total Split (%)	13.7%	41.2%	41.2%	15.7%	43.2%	43.2%	43.2%	43.2%		43.2%	43.2%	
Maximum Green (s)	9.0	35.1	35.1	10.9	37.0	37.0	37.0	37.0		37.0	37.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Max	Max		Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		18.0	18.0		30.0	30.0	18.0	18.0		30.0	30.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effect Green (s)	7.1	28.7	28.7	6.3	25.8	25.8	35.3	35.3		35.3	35.3	
Actuated g/C Ratio	0.08	0.33	0.33	0.07	0.30	0.30	0.41	0.41		0.41	0.41	
v/c Ratio	0.82	0.76	0.19	0.49	0.72	0.19	0.35	0.40		0.21	0.46	
Control Delay (s/veh)	81.8	31.4	10.9	52.9	30.7	8.7	23.7	19.0		20.8	19.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	81.8	31.4	10.9	52.9	30.7	8.7	23.7	19.0		20.8	19.5	
LOS	F	C	B	D	C	A	C	B		C	B	
Approach Delay (s/veh)		34.7			29.8			20.4			19.8	
Approach LOS		C			C			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 86.2

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay (s/veh): 28.9

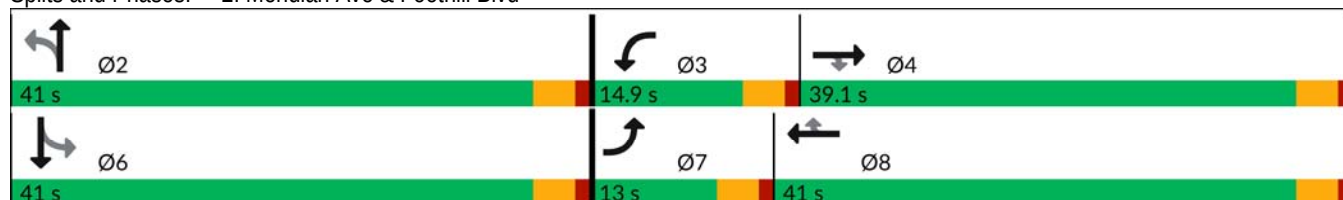
Intersection LOS: C

Intersection Capacity Utilization 74.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 2: Meridian Ave & Foothill Blvd



Queues

Year 2040 With Project With Improvements

2: Meridian Ave & Foothill Blvd

PM Peak Hour

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	121	923	115	65	778	107	124	304	82	354
v/c Ratio	0.82	0.76	0.19	0.49	0.72	0.19	0.35	0.40	0.21	0.46
Control Delay (s/veh)	81.8	31.4	10.9	52.9	30.7	8.7	23.7	19.0	20.8	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	81.8	31.4	10.9	52.9	30.7	8.7	23.7	19.0	20.8	19.5
Queue Length 50th (ft)	66	242	18	35	195	11	46	100	28	116
Queue Length 95th (ft)	#180	326	56	79	256	46	107	193	70	224
Internal Link Dist (ft)	1239			1069			704			716
Turn Bay Length (ft)	102		100	117		100				
Base Capacity (vph)	147	1396	666	187	1476	706	346	754	389	754
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.66	0.17	0.35	0.53	0.15	0.36	0.40	0.21	0.47

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

Year 2040 With Project With Improvements

2: Meridian Ave & Foothill Blvd

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	877	109	62	739	102	118	177	112	78	177	160
Future Volume (veh/h)	115	877	109	62	739	102	118	177	112	78	177	160
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	121	923	115	65	778	107	124	186	118	82	186	168
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	61	1102	492	41	1063	474	407	482	306	450	408	369
Arrive On Green	0.03	0.31	0.31	0.02	0.29	0.29	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1043	1087	689	1092	920	831
Grp Volume(v), veh/h	121	923	115	65	778	107	124	0	304	82	0	354
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1043	0	1776	1092	0	1750
Q Serve(g_s), s	2.6	18.8	4.2	1.8	15.3	4.0	7.4	0.0	9.1	4.3	0.0	11.1
Cycle Q Clear(g_c), s	2.6	18.8	4.2	1.8	15.3	4.0	18.5	0.0	9.1	13.4	0.0	11.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.39	1.00		0.47
Lane Grp Cap(c), veh/h	61	1102	492	41	1063	474	407	0	788	450	0	777
V/C Ratio(X)	1.99	0.84	0.23	1.58	0.73	0.23	0.30	0.00	0.39	0.18	0.00	0.46
Avail Cap(c_a), veh/h	161	1515	676	204	1602	714	407	0	788	450	0	777
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.1	25.6	20.5	38.5	25.0	21.0	21.8	0.0	14.7	19.2	0.0	15.3
Incr Delay (d2), s/veh	480.5	3.1	0.2	283.4	1.0	0.2	1.9	0.0	1.4	0.9	0.0	1.9
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	9.2	7.6	1.4	4.0	5.9	1.4	1.9	0.0	3.6	1.2	0.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	518.7	28.7	20.7	321.9	26.0	21.3	23.7	0.0	16.2	20.1	0.0	17.2
LnGrp LOS	F	C	C	F	C	C	C		B	C		B
Approach Vol, veh/h	1159			950			428			436		
Approach Delay, s/veh	79.1			45.7			18.3			17.8		
Approach LOS	E			D			B			B		
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	41.0		7.8	30.1		41.0	8.6	29.2				
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s	37.0		10.9	35.1		37.0	9.0	37.0				
Max Q Clear Time (g_c+I1), s	20.5		3.8	20.8		15.4	4.6	17.3				
Green Ext Time (p_c), s	2.1		0.1	5.3		2.7	0.1	5.0				
Intersection Summary												
HCM 7th Control Delay, s/veh				50.7								
HCM 7th LOS				D								
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
3: Dallas Ave & Foothill Blvd

Year 2040 With Project With Improvements

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	874	87	33	755	22	99	1	42	23	2	40
Future Volume (vph)	55	874	87	33	755	22	99	1	42	23	2	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		101	150		50	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.960			0.917	
Flt Protected	0.950			0.950				0.966			0.983	
Satd. Flow (prot)	1805	3610	1615	1805	3610	1615	0	1762	0	0	1713	0
Flt Permitted	0.350			0.282				0.749			0.846	
Satd. Flow (perm)	665	3610	1615	536	3610	1615	0	1366	0	0	1474	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			58			10		26			42	
Link Speed (mph)		50			50			25			25	
Link Distance (ft)		1149			1043			345			383	
Travel Time (s)		15.7			14.2			9.4			10.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	920	92	35	795	23	104	1	44	24	2	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	920	92	35	795	23	0	149	0	0	68	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		6			

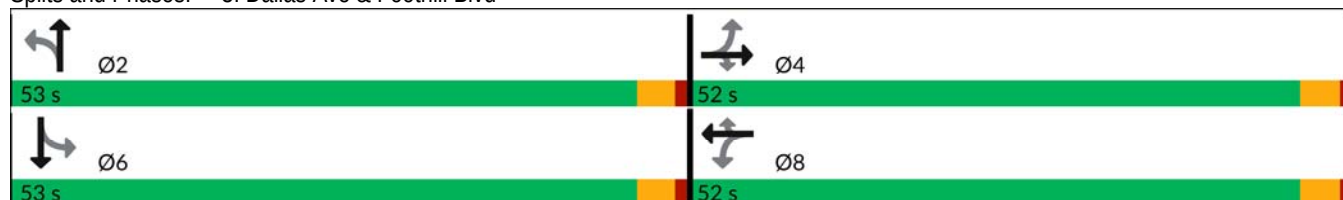
Lanes, Volumes, Timings
3: Dallas Ave & Foothill Blvd

Year 2040 With Project With Improvements

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	24.0	24.0	24.0	52.0	52.0	52.0	24.0	24.0		52.0	52.0	
Total Split (s)	52.0	52.0	52.0	52.0	52.0	52.0	53.0	53.0		53.0	53.0	
Total Split (%)	49.5%	49.5%	49.5%	49.5%	49.5%	49.5%	50.5%	50.5%		50.5%	50.5%	
Maximum Green (s)	48.0	48.0	48.0	48.0	48.0	48.0	49.0	49.0		49.0	49.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0			2.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	13.0	13.0	13.0	41.0	41.0	41.0	13.0	13.0		41.0	41.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	14.2	14.2	14.2	14.2	14.2	14.2		7.8			7.8	
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41	0.41		0.23			0.23	
v/c Ratio	0.21	0.62	0.13	0.15	0.53	0.03		0.45			0.18	
Control Delay (s/veh)	9.1	10.1	4.0	8.7	9.2	5.2		15.7			8.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay (s/veh)	9.1	10.1	4.0	8.7	9.2	5.2		15.7			8.3	
LOS	A	B	A	A	A	A		B			A	
Approach Delay (s/veh)		9.6			9.1			15.7			8.3	
Approach LOS		A			A			B			A	
Intersection Summary												
Area Type:	Other											
Cycle Length: 105												
Actuated Cycle Length: 34.5												
Natural Cycle: 105												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.62												
Intersection Signal Delay (s/veh): 9.8						Intersection LOS: A						
Intersection Capacity Utilization 59.8%						ICU Level of Service B						
Analysis Period (min) 15												

Splits and Phases: 3: Dallas Ave & Foothill Blvd



Queues

Year 2040 With Project With Improvements

3: Dallas Ave & Foothill Blvd

PM Peak Hour

								
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	58	920	92	35	795	23	149	68
v/c Ratio	0.21	0.62	0.13	0.15	0.53	0.03	0.45	0.18
Control Delay (s/veh)	9.1	10.1	4.0	8.7	9.2	5.2	15.7	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.1	10.1	4.0	8.7	9.2	5.2	15.7	8.3
Queue Length 50th (ft)	6	60	3	3	49	1	19	4
Queue Length 95th (ft)	25	126	22	18	105	10	65	27
Internal Link Dist (ft)		1069			963		265	303
Turn Bay Length (ft)	150		101	150		50		
Base Capacity (vph)	663	3599	1610	534	3599	1610	1366	1474
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.26	0.06	0.07	0.22	0.01	0.11	0.05
Intersection Summary								

HCM 7th Signalized Intersection Summary

3: Dallas Ave & Foothill Blvd

Year 2040 With Project With Improvements

PM Peak Hour

																								
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR												
Lane Configurations																								
Traffic Volume (veh/h)	55	874	87	33	755	22	99	1	42	23	2	40												
Future Volume (veh/h)	55	874	87	33	755	22	99	1	42	23	2	40												
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900												
Adj Flow Rate, veh/h	58	920	92	35	795	23	104	1	44	24	2	42												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95												
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0												
Cap, veh/h	438	1668	744	385	1668	744	329	34	71	199	54	160												
Arrive On Green	0.46	0.46	0.46	0.46	0.46	0.46	0.16	0.16	0.16	0.16	0.16	0.16												
Sat Flow, veh/h	679	3610	1610	566	3610	1610	859	217	451	285	342	1012												
Grp Volume(v), veh/h	58	920	92	35	795	23	149	0	0	68	0	0												
Grp Sat Flow(s),veh/h/ln	679	1805	1610	566	1805	1610	1527	0	0	1638	0	0												
Q Serve(g_s), s	2.0	5.8	1.0	1.5	4.8	0.2	1.6	0.0	0.0	0.0	0.0	0.0												
Cycle Q Clear(g_c), s	6.8	5.8	1.0	7.3	4.8	0.2	2.7	0.0	0.0	1.1	0.0	0.0												
Prop In Lane	1.00		1.00	1.00		1.00	0.70		0.30	0.35		0.62												
Lane Grp Cap(c), veh/h	438	1668	744	385	1668	744	435	0	0	413	0	0												
V/C Ratio(X)	0.13	0.55	0.12	0.09	0.48	0.03	0.34	0.00	0.00	0.16	0.00	0.00												
Avail Cap(c_a), veh/h	1113	5255	2344	947	5255	2344	2358	0	0	2445	0	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	1.00	1.00	0.00	0.00	1.00	0.00	0.00												
Uniform Delay (d), s/veh	8.2	6.1	4.9	8.8	5.9	4.6	12.3	0.0	0.0	11.7	0.0	0.0												
Incr Delay (d2), s/veh	0.1	0.3	0.1	0.1	0.2	0.0	0.5	0.0	0.0	0.2	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	0.2	0.6	0.1	0.1	0.5	0.0	0.8	0.0	0.0	0.4	0.0	0.0												
Unsig. Movement Delay, s/veh																								
LnGrp Delay(d), s/veh	8.4	6.4	4.9	8.9	6.1	4.7	12.7	0.0	0.0	11.8	0.0	0.0												
LnGrp LOS	A	A	A	A	A	A	B			B														
Approach Vol, veh/h	1070			853			149			68														
Approach Delay, s/veh	6.4			6.2			12.7			11.8														
Approach LOS	A			A			B			B														
Timer - Assigned Phs	2			4			6			8														
Phs Duration (G+Y+Rc), s	11.0			20.6			11.0			20.6														
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0														
Max Green Setting (Gmax), s	49.0			48.0			49.0			48.0														
Max Q Clear Time (g_c+l1), s	4.7			8.8			3.1			9.3														
Green Ext Time (p_c), s	1.0			7.8			0.4			6.1														
Intersection Summary																								
HCM 7th Control Delay, s/veh				6.9																				
HCM 7th LOS				A																				
Notes																								
User approved pedestrian interval to be less than phase max green.																								

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Year 2040 With Project With Improvements

PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↵	↑↑	↵	↑
Traffic Volume (vph)	717	320	295	662	344	419
Future Volume (vph)	717	320	295	662	344	419
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	89		0	215
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3610	1615	1805	3610	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3610	1615	1805	3610	1805	1615
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		246				441
Link Speed (mph)	30			30	30	
Link Distance (ft)	2212			735	518	
Travel Time (s)	50.3			16.7	11.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	755	337	311	697	362	441
Shared Lane Traffic (%)						
Lane Group Flow (vph)	755	337	311	697	362	441
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2

Lanes, Volumes, Timings
5: Rancho Ave & Foothill Blvd

Year 2040 With Project With Improvements

PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	4	4	3	8	2	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	7.0	5.0	5.0
Minimum Split (s)	22.5	22.5	9.5	41.0	34.0	34.0
Total Split (s)	24.0	24.0	21.0	45.0	35.0	35.0
Total Split (%)	30.0%	30.0%	26.3%	56.3%	43.8%	43.8%
Maximum Green (s)	20.0	20.0	17.0	41.0	31.0	31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0	2.0	2.0	2.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		30.0	23.0	23.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effect Green (s)	17.4	17.4	14.3	37.8	17.0	17.0
Actuated g/C Ratio	0.26	0.26	0.21	0.56	0.25	0.25
v/c Ratio	0.80	0.56	0.80	0.34	0.78	0.59
Control Delay (s/veh)	32.9	11.4	45.6	9.3	36.3	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.9	11.4	45.6	9.3	36.3	5.9
LOS	C	B	D	A	D	A
Approach Delay (s/veh)	26.3			20.6	19.6	
Approach LOS	C			C	B	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 67

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay (s/veh): 22.5

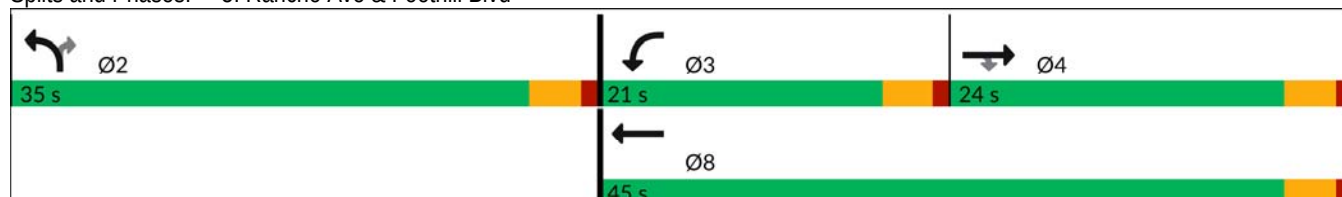
Intersection LOS: C

Intersection Capacity Utilization 70.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Rancho Ave & Foothill Blvd



Queues

Year 2040 With Project With Improvements

5: Rancho Ave & Foothill Blvd

PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	755	337	311	697	362	441
v/c Ratio	0.80	0.56	0.80	0.34	0.78	0.59
Control Delay (s/veh)	32.9	11.4	45.6	9.3	36.3	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.9	11.4	45.6	9.3	36.3	5.9
Queue Length 50th (ft)	154	30	124	74	141	0
Queue Length 95th (ft)	#290	115	#290	141	227	58
Internal Link Dist (ft)	2132			655	438	
Turn Bay Length (ft)		100	89			215
Base Capacity (vph)	985	619	410	2135	793	957
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.54	0.76	0.33	0.46	0.46

Intersection Summary

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

HCM 7th Signalized Intersection Summary

5: Rancho Ave & Foothill Blvd

Year 2040 With Project With Improvements

PM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Volume (veh/h)	717	320	295	662	344	419
Future Volume (veh/h)	717	320	295	662	344	419
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	755	337	311	697	362	441
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	879	392	318	1851	544	484
Arrive On Green	0.24	0.24	0.18	0.51	0.30	0.30
Sat Flow, veh/h	3705	1610	1810	3705	1810	1610
Grp Volume(v), veh/h	755	337	311	697	362	441
Grp Sat Flow(s),veh/h/ln	1805	1610	1810	1805	1810	1610
Q Serve(g_s), s	12.9	12.9	11.0	7.5	11.3	17.0
Cycle Q Clear(g_c), s	12.9	12.9	11.0	7.5	11.3	17.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	879	392	318	1851	544	484
V/C Ratio(X)	0.86	0.86	0.98	0.38	0.67	0.91
Avail Cap(c_a), veh/h	1010	451	422	2189	816	726
HCM Platoon Ratio	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	1.00
Uniform Delay (d), s/veh	23.3	23.3	26.4	9.5	19.7	21.7
Incr Delay (d2), s/veh	6.8	13.9	33.3	0.1	1.4	11.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	6.0	7.4	2.5	4.6	7.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	30.1	37.2	59.7	9.6	21.1	33.0
LnGrp LOS	C	D	E	A	C	C
Approach Vol, veh/h	1092			1008	803	
Approach Delay, s/veh	32.3			25.1	27.6	
Approach LOS	C			C	C	
Timer - Assigned Phs	2		3	4	8	
Phs Duration (G+Y+Rc), s	25.3		17.3	21.7	39.0	
Change Period (Y+Rc), s	4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s	31.0		17.0	20.0	41.0	
Max Q Clear Time (g_c+I1), s	19.0		13.0	14.9	9.5	
Green Ext Time (p_c), s	2.4		0.4	2.8	5.4	
Intersection Summary						
HCM 7th Control Delay, s/veh			28.5			
HCM 7th LOS			C			

APPENDIX E

TRAVEL DEMAND MODEL PLOTS

SBTAM 2016
San Bernardino
Daily Flow



SBTAM 2016
San Bernardino
Daily Truck Flow



SBTAM 2016
San Bernardino
Peak AM Flow



SBTAM 2016
San Bernardino
AM Peak Truck Flow



SBTAM 2016
San Bernardino
Peak PM Flow



SBTAM 2016
San Bernardino
PM Peak Truck Flow



SBTAM 2040
San Bernardino
Daily Flow



SBTAM 2040
San Bernardino
Daily Truck Flow



SBTAM 2040
San Bernardino
Peak AM Flow



SBTAM 2040
San Bernardino
AM Peak Truck Flow



SBTAM 2040
San Bernardino
Peak PM Flow



SBTAM 2040
San Bernardino
PM Peak Truck Flow



APPENDIX F

POST PROCESSING WORKSHEETS

AVERAGE DAILY TRAFFIC

ID	INTERSECTION	LEG	MODEL 2016 ADT	EXISTING 2024 ADT	MODEL 2040 ADT	FUTURE 2040 ADT ¹	OPENING 2026 ADT	ADJUSTED BUILDOUT ADT ²
1	Pepper Avenue at: Foothill Boulevard	North	7,776	11,700	9,043	12,540	12,410	12,540
		South	16,576	13,000	18,008	19,810	13,790	19,810
		East	20,828	20,300	26,209	28,830	21,540	28,830
		West	25,171	23,000	28,883	31,770	24,400	31,770
2	Meridian Avenue at: Foothill Boulevard	North	5,173	7,800	3,089	7,800	8,280	8,300
		South	5,734	7,300	6,698	7,940	7,740	7,940
		East	23,686	18,600	30,870	33,960	19,730	33,960
		West	20,828	19,600	26,209	28,830	20,790	28,830
3	Dallas Avenue at: Foothill Boulevard	North	-	800	-	800	850	850
		South	-	2,000	-	2,000	2,120	2,130
		East	23,686	16,200	30,870	33,960	17,190	33,960
		West	23,686	17,000	30,870	33,960	18,040	33,960
4	Macy Street at: Foothill Boulevard	North	4,030	1,400	5,554	6,110	1,490	6,110
		South	-	-	-	-	-	-
		East	23,899	16,700	31,291	34,420	17,720	34,420
		West	23,686	16,100	30,870	33,960	17,080	33,960
5	N Rancho Avenue at: Foothill Boulevard	North	-	-	-	-	-	-
		South	7,306	10,800	13,132	14,450	11,460	14,450
		East	22,388	21,600	24,669	27,140	22,920	27,140
		West	24,877	17,500	31,349	34,480	18,570	34,480
6	Macy Street at: Project Driveway	North	4,030	1,400	5,554	6,110	1,490	6,110
		South	4,030	1,400	5,554	6,110	1,490	6,110
		East	-	-	-	-	-	-
		West	-	-	-	-	-	-
7	Dallas Avenue at: Project Driveway	North	-	800	-	800	850	850
		South	-	800	-	800	850	850
		East	-	-	-	-	-	-
		West	-	-	-	-	-	-

Notes:

1. Future volumes adjusted for minimum 10% growth over existing average daily traffic volumes.
2. Future volumes adjusted for minimum 5% growth over opening year daily traffic volumes.

Pepper Avenue (NS) / Foothill Boulevard (EW) - #1											
MORNING PEAK HOUR						EVENING PEAK HOUR					
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):						EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):					
2024						2024					
		51	399	9				88	342	27	
		<	v	>				<	v	>	
	63	^			^ 34		152	^			^ 52
	544	>			< 593		779	>			< 674
	153	v			v 95		140	v			v 73
		<	^	>				<	^	>	
		106	292	49				115	333	74	
EXISTING PEAK HOUR COUNT YEAR (AUTOS):						EXISTING PEAK HOUR COUNT YEAR (AUTOS):					
2024						2024					
			459	389					457	537	
			v	^					v	^	
	750	<	IN =	2388	< 722		877	<	IN =	2849	< 799
	760	>	OUT =	2388	> 602		1071	>	OUT =	2849	> 880
			v	^					v	^	
			647	447					555	522	
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):						EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):					
		11	17	6				2	2	5	
		<	v	>				<	v	>	
	3	^			^ 4		7	^			^ 0
	25	>			< 41		18	>			< 20
	9	v			v 18		2	v			v 11
PCE FACTORS BY AXLE:						PCE FACTORS BY AXLE:					
2:	1.5	3:	2.0	4+:	3.0	2:	1.5	3:	2	4+:	3.0
			6	8	45				0	7	28
TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):						TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):					
2024						2024					
		62	416	15				90	344	32	
		<	v	>				<	v	>	
	66	^			^ 38		159	^			^ 52
	569	>			< 634		797	>			< 694
	162	v			v 113		142	v			v 84
		<	^	>				<	^	>	
		112	300	94				115	340	102	
FUTURE PEAK PERIOD MODEL YEAR (AUTO):						FUTURE PEAK PERIOD MODEL YEAR (AUTO):					
2040						2040					
			958	873					1484	1747	
			v	^					v	^	
	2626	<	IN =	7741	< 2161		4330	<	IN =	12295	< 3354
	3059	>	OUT =	7742	> 2577		4942	>	OUT =	12295	> 4014
			v	^					v	^	
			1666	1563					2204	2515	
FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):						FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):					
2040						2040					
		14	20					22	25		
		v	^					v	^		
	66	<	IN =	167	< 62		69	<	IN =	243	< 64
	55	>	OUT =	166	> 55		127	>	OUT =	243	> 112
			v	^					v	^	
			25	36					37	30	
FUTURE PEAK HOUR MODEL YEAR (PCEs):						FUTURE PEAK HOUR MODEL YEAR (PCEs):					
PHF FOR CARS: 0.38						PHF FOR CARS: 0.28					
PHF FOR TRUCKS: 0.333						PHF FOR TRUCKS: 0.25					
			369	338					421	495	
			v	^					v	^	
	1020	<	IN =	2997	< 842		1230	<	IN =	3503	< 955
	1181	>	OUT =	2997	> 998		1416	>	OUT =	3503	> 1152
			v	^					v	^	
			641	606					626	712	
PRORATED GROWTH (PCEs): 2024 TO 2040						PRORATED GROWTH (PCEs): 2024 TO 2040					
16 YEARS						16 YEARS					
			30	50					60	70	
			v	^					v	^	
	50	<			< 120		120	<			< 110
	130	>			> 130		200	>			> 190
			v	^					v	^	
			50	10					40	50	
NEW PROJECTED VOLUMES (PCEs): 2040						NEW PROJECTED VOLUMES (PCEs): 2040					
			520	450					530	620	
			v	^					v	^	
	860	<			< 910		1020	<			< 940
	930	>			> 810		1300	>			> 1120
			v	^					v	^	
			740	520					610	610	
ADT BY LEG:						ADT BY LEG:					
2040						2040					
			12,540						12,540		
			N						N		
	31,770	W	LEG	E	28,830		31,770	W	LEG	E	28,830
			S						S		
			19,810						19,810		

Meridian Avenue (NS) / Foothill Boulevard (EW) - #2											
MORNING PEAK HOUR						EVENING PEAK HOUR					
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):						EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):					
2024						2024					
		138	159	64				119	138	66	
		<	v	>				<	v	>	
	48	^			^ 46		102	^			^ 91
	456	>			< 466		650	>			< 588
	83	v			v 54		96	v			v 56
		<	^	>				<	^	>	
		106	135	86				86	159	98	
EXISTING PEAK HOUR COUNT YEAR (AUTOS):						EXISTING PEAK HOUR COUNT YEAR (AUTOS):					
2024						2024					
			361	229					323	352	
			v	^					v	^	
	710	<	IN =	1841	< 566		793	<	IN =	2249	< 735
	587	>	OUT =	1841	> 606		848	>	OUT =	2249	> 814
			v	^					v	^	
			296	327					290	343	
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCES):						EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCES):					
		8	0	10				0	0	2	
		<	v	>				<	v	>	
	2	^			^ 8		0	^			^ 0
	76	>			< 56		34	>			< 33
	0	v			v 3		0	v			v 0
PCE FACTORS BY AXLE:						PCE FACTORS BY AXLE:					
2:	1.5	3:	2.0	4+:	3.0	2:	1.5	3:	2	4+:	3.0
			0	6	5				0	2	2
TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCES):						TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCES):					
2024						2024					
		146	159	74				119	138	68	
		<	v	>				<	v	>	
	50	^			^ 54		102	^			^ 91
	532	>			< 522		684	>			< 621
	83	v			v 57		96	v			v 56
		<	^	>				<	^	>	
		106	141	91				86	161	100	
FUTURE PEAK PERIOD MODEL YEAR (AUTO):						FUTURE PEAK PERIOD MODEL YEAR (AUTO):					
2040						2040					
			350	250					262	732	
			v	^					v	^	
	2161	<	IN =	6356	< 2991		3354	<	IN =	9704	< 4188
	2577	>	OUT =	6355	> 2892		4014	>	OUT =	9704	> 4405
			v	^					v	^	
			1052	438					1213	1240	
FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCES):						FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCES):					
2040						2040					
			10	9					8	12	
			v	^					v	^	
	62	<	IN =	172	< 98		64	<	IN =	248	< 105
	55	>	OUT =	173	> 60		112	>	OUT =	249	> 122
			v	^					v	^	
			42	9					51	23	
FUTURE PEAK HOUR MODEL YEAR (PCES):						FUTURE PEAK HOUR MODEL YEAR (PCES):					
PHF FOR CARS: 0.38						PHF FOR CARS: 0.28					
PHF FOR TRUCKS: 0.333						PHF FOR TRUCKS: 0.25					
			136	98					75	208	
			v	^					v	^	
	842	<	IN =	2473	< 1169		955	<	IN =	2779	< 1199
	998	>	OUT =	2473	> 1119		1152	>	OUT =	2779	> 1264
			v	^					v	^	
			414	169					352	353	
PRORATED GROWTH (PCES): 2024 TO 2040						PRORATED GROWTH (PCES): 2024 TO 2040					
16 YEARS						16 YEARS					
			30	10					20	30	
			v	^					v	^	
	120	<			< 210		110	<			< 110
	130	>			> 130		190	>			> 170
			v	^					v	^	
			40	10					20	30	
NEW PROJECTED VOLUMES (PCES): 2040						NEW PROJECTED VOLUMES (PCES): 2040					
			410	260					350	380	
			v	^					v	^	
	890	<			< 840		940	<			< 880
	800	>			> 830		1070	>			> 1020
			v	^					v	^	
			340	350					310	380	
ADT BY LEG:						ADT BY LEG:					
2040						2040					
			7,800						7,800		
			N						N		
	28,830	W	LEG	E	33,960		28,830	W	LEG	E	33,960
			S						S		
			7,940						7,940		

North Rancho Avenue (NS) / Foothill Boulevard (EW) - #5											
MORNING PEAK HOUR						EVENING PEAK HOUR					
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):						EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):					
2024						2024					
	19	0	12				10	2	15		
	<	v	>				<	v	>		
10	^			^	11	22	^			^	12
562	>			<	446	644	>			<	609
51	v			v	13	79	v			v	30
	<	^	>				<	^	>		
88	1	38				41	1	23			
EXISTING PEAK HOUR COUNT YEAR (AUTOS):						EXISTING PEAK HOUR COUNT YEAR (AUTOS):					
2024						2024					
	31	22					27	35			
	v	^					v	^			
553	<	IN =	1251	<	470	660	<	IN =	1488	<	651
623	>	OUT =	1251	>	612	745	>	OUT =	1488	>	682
	v	^					v	^			
64			127				111	65			
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):						EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):					
	2	0	2				2	0	2		
	<	v	>				<	v	>		
2	^			^	3	0	^			^	0
78	>			<	48	42	>			<	30
0	v			v	2	0	v			v	0
PCE FACTORS BY AXLE:						PCE FACTORS BY AXLE:					
2:	1.5	3:	2.0	4+:	3.0	2:	1.5	3:	2	4+:	3.0
	2	0	0				0	0	0		
TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):						TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):					
2024						2024					
	21	0	14				12	2	17		
	<	v	>				<	v	>		
12	^			^	14	22	^			^	12
640	>			<	494	686	>			<	639
51	v			v	15	79	v			v	30
	<	^	>				<	^	>		
90	1	38				41	1	23			
FUTURE PEAK PERIOD MODEL YEAR (AUTO):						FUTURE PEAK PERIOD MODEL YEAR (AUTO):					
2040						2040					
	29	28					32	33			
	v	^					v	^			
2991	<	IN =	5912	<	2991	4188	<	IN =	8625	<	4188
2892	>	OUT =	5911	>	2892	4405	>	OUT =	8626	>	4405
	v	^					v	^			
0			0				0	0			
FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):						FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):					
2040						2040					
	0	0					0	0			
	v	^					v	^			
98	<	IN =	158	<	98	105	<	IN =	227	<	105
60	>	OUT =	158	>	60	122	>	OUT =	227	>	122
	v	^					v	^			
0			0				0	0			
FUTURE PEAK HOUR MODEL YEAR (PCEs):						FUTURE PEAK HOUR MODEL YEAR (PCEs):					
PHF FOR CARS: 0.38						PHF FOR CARS: 0.28					
PHF FOR TRUCKS: 0.333						PHF FOR TRUCKS: 0.25					
	11	11					9	9			
	v	^					v	^			
1169	<	IN =	2299	<	1169	1199	<	IN =	2472	<	1199
1119	>	OUT =	2299	>	1119	1264	>	OUT =	2472	>	1264
	v	^					v	^			
0			0				0	0			
PRORATED GROWTH (PCEs): 2024 TO 2040						PRORATED GROWTH (PCEs): 2024 TO 2040					
16 YEARS						16 YEARS					
	0	0					0	0			
	v	^					v	^			
210	<			<	210	110	<			<	110
130	>			>	130	170	>			>	170
	v	^					v	^			
0			0				0	0			
NEW PROJECTED VOLUMES (PCEs): 2040						NEW PROJECTED VOLUMES (PCEs): 2040					
	40	30					30	40			
	v	^					v	^			
820	<			<	730	800	<			<	790
830	>			>	820	960	>			>	900
	v	^					v	^			
70			130				110	70			
ADT BY LEG:						ADT BY LEG:					
2040						2040					
	680						680				
	N						N				
33,960	W	LEG	E	33,960		33,960	W	LEG	E	33,960	
	S						S				
	10,800						10,800				

Macy Street (NS) / Foothill Boulevard (EW) - #4											
MORNING PEAK HOUR						EVENING PEAK HOUR					
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS): 2024						EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS): 2024					
		23	0	51			13	0	40		
		<	v	>			<	v	>		
	13	^			^ 28		27	^			^ 46
	606	>			< 452		653	>			< 638
	0	v			v 0		0	v			v 0
		<	^	>			<	^	>		
		0	0	0			0	0	0		
EXISTING PEAK HOUR COUNT YEAR (AUTOS): 2024						EXISTING PEAK HOUR COUNT YEAR (AUTOS): 2024					
			74	41				53	73		
			v	^				v	^		
	475	<	IN =	1173	< 480		651	<	IN =	1417	< 684
	619	>	OUT =	1173	> 657		680	>	OUT =	1417	> 693
			v	^				v	^		
			0	0				0	0		
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCES):						EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCES):					
		0	3	2			0	0	0		
		<	v	>			<	v	>		
	2	^			^ 0		0	^			^ 0
	82	>			< 46		45	>			< 27
	0	v			v 0		0	v			v 0
PCE FACTORS BY AXLE:						PCE FACTORS BY AXLE:					
2:	1.5	3:	2.0	4+:	3.0	2:	1.5	3:	2	4+:	3.0
			0	0	0				0	0	0
TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCES): 2024						TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCES): 2024					
		23	3	53			13	0	40		
		<	v	>			<	v	>		
	15	^			^ 28		27	^			^ 46
	688	>			< 498		698	>			< 665
	0	v			v 0		0	v			v 0
		<	^	>			<	^	>		
		0	0	0			0	0	0		
FUTURE PEAK PERIOD MODEL YEAR (AUTO): 2040						FUTURE PEAK PERIOD MODEL YEAR (AUTO): 2040					
			642	319				707	948		
			v	^				v	^		
	2991	<	IN =	6391	< 2857		4188	<	IN =	9505	< 4393
	2892	>	OUT =	6392	> 3082		4405	>	OUT =	9504	> 4368
			v	^				v	^		
			0	0				0	0		
FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCES): 2040						FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCES): 2040					
			21	17				23	22		
			v	^				v	^		
	98	<	IN =	179	< 98		105	<	IN =	250	< 105
	60	>	OUT =	179	> 64		122	>	OUT =	250	> 123
			v	^				v	^		
			0	0				0	0		
FUTURE PEAK HOUR MODEL YEAR (PCES): PHF FOR CARS: 0.38						FUTURE PEAK HOUR MODEL YEAR (PCES): PHF FOR CARS: 0.28					
			251	127				204	271		
			v	^				v	^		
	1169	<	IN =	2488	< 1118		1199	<	IN =	2724	< 1256
	1119	>	OUT =	2489	> 1192		1264	>	OUT =	2724	> 1254
			v	^				v	^		
			0	0				0	0		
PRORATED GROWTH (PCES): 2024 TO 2040 16 YEARS						PRORATED GROWTH (PCES): 2024 TO 2040 16 YEARS					
			20	30				50	50		
			v	^				v	^		
	210	<			< 210		110	<			< 120
	130	>			> 130		170	>			> 170
			v	^				v	^		
			0	0				0	0		
NEW PROJECTED VOLUMES (PCES): 2040						NEW PROJECTED VOLUMES (PCES): 2040					
			100	70				100	120		
			v	^				v	^		
	730	<			< 740		790	<			< 830
	830	>			> 870		900	>			> 910
			v	^				v	^		
			0	0				0	0		
ADT BY LEG: 2040						ADT BY LEG: 2040					
			6,110					6,110			
			N					N			
	33,960	W	LEG	E	34,420		33,960	W	LEG	E	34,420
			S					S			
			0					0			

North Rancho Avenue (NS) / Foothill Boulevard (EW) - #5											
MORNING PEAK HOUR						EVENING PEAK HOUR					
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS): 2024						EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS): 2024					
		0	0	0			0	0	0		
		<	v	>			<	v	>		
	0	^			^ 0		2	^			^ 0
	498	>			< 362		607	>			< 566
	166	v			v 208		137	v			v 207
		<	^	>			<	^	>		
	81	0	244				147	0	334		
EXISTING PEAK HOUR COUNT YEAR (AUTOS): 2024						EXISTING PEAK HOUR COUNT YEAR (AUTOS): 2024					
			0	0				0	2		
			v	^				v	^		
	443	<	IN =	1559	< 570		713	<	IN =	2000	< 773
	664	>	OUT =	1559	> 742		746	>	OUT =	2000	> 941
			v	^				v	^		
			374	325					344	481	
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCES):						EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCES):					
		0	0	0				0	0	0	
		<	v	>				<	v	>	
	0	^			^ 0		0	^			^ 0
	65	>			< 39		34	>			< 24
	21	v			v 164		5	v			v 61
PCE FACTORS BY AXLE:						PCE FACTORS BY AXLE:					
2:	1.5	3:	2.0	4+:	3.0	2:	1.5	3:	2	4+:	3.0
			14	0	120				3	0	47
TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCES): 2024						TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCES): 2024					
		0	0	0				0	0	0	
		<	v	>				<	v	>	
	0	^			^ 0		2	^			^ 0
	563	>			< 401		641	>			< 590
	187	v			v 372		142	v			v 268
		<	^	>				<	^	>	
	95	0	364					150	0	381	
FUTURE PEAK PERIOD MODEL YEAR (AUTO): 2040						FUTURE PEAK PERIOD MODEL YEAR (AUTO): 2040					
			0	0				0	0		
			v	^				v	^		
	2491	<	IN =	6858	< 2026		5284	<	IN =	10597	< 3684
	3865	>	OUT =	6858	> 2531		4667	>	OUT =	10597	> 3322
			v	^				v	^		
			1836	967					1991	2246	
FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCES): 2040						FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCES): 2040					
			0	0				0	0		
			v	^				v	^		
	100	<	IN =	217	< 82		132	<	IN =	289	< 83
	108	>	OUT =	216	> 52		152	>	OUT =	289	> 94
			v	^				v	^		
			64	27					63	54	
FUTURE PEAK HOUR MODEL YEAR (PCES): PHF FOR CARS: 0.38 PHF FOR TRUCKS: 0.333						FUTURE PEAK HOUR MODEL YEAR (PCES): PHF FOR CARS: 0.28 PHF FOR TRUCKS: 0.25					
			0	0				0	0		
			v	^				v	^		
	980	<	IN =	2678	< 797		1513	<	IN =	3039	< 1052
	1505	>	OUT =	2678	> 979		1345	>	OUT =	3039	> 954
			v	^				v	^		
			719	376					573	642	
PRORATED GROWTH (PCES): 2024 TO 2040 16 YEARS						PRORATED GROWTH (PCES): 2024 TO 2040 16 YEARS					
			0	0				0	0		
			v	^				v	^		
	150	<			< 50		250	<			< 60
	270	>			> 60		250	>			> 70
			v	^				v	^		
			250	100					170	200	
NEW PROJECTED VOLUMES (PCES): 2040						NEW PROJECTED VOLUMES (PCES): 2040					
			0	0				0	0		
			v	^				v	^		
	650	<			< 820		990	<			< 920
	1020	>			> 990		1040	>			> 1090
			v	^				v	^		
			810	560					580	730	
ADT BY LEG: 2040						ADT BY LEG: 2040					
			0					0			
			N					N			
	34,480	W	LEG	E	27,140		34,480	W	LEG	E	27,140
			S					S			
			14,450						14,450		

APPENDIX G

TRAFFIC SIGNAL WARRANTS

WARRANT 3, PEAK HOUR (Rural Areas)

Traffic Conditions = **Existing - AM**

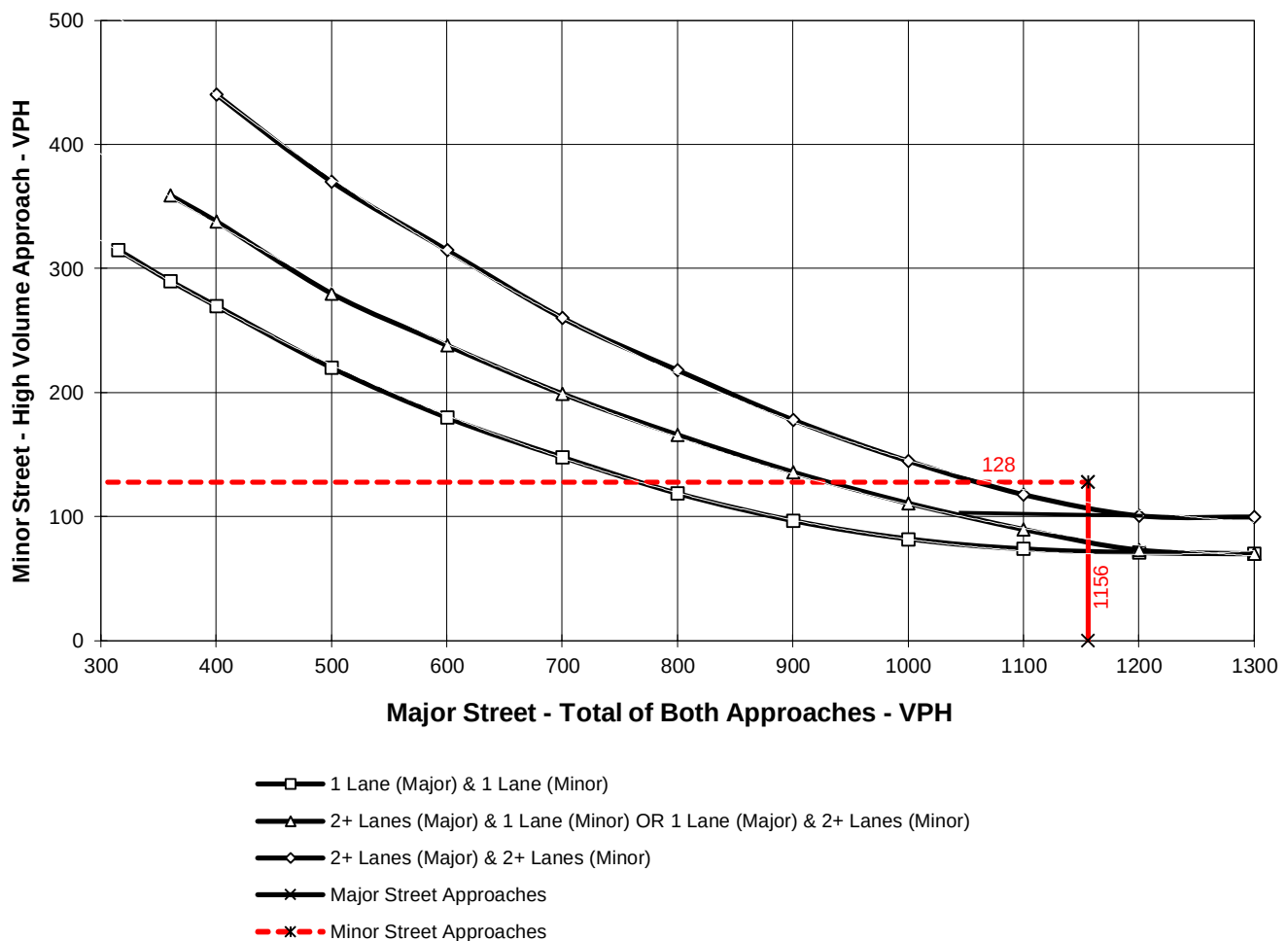
Major Street Name = **Foothill Boulevard**

Total of Both Approaches (VPH) = **1156**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Dallas Avenue**

High Volume Approach (VPH) = **128**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



Note:

* - 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.
Major street approaches with less than 300 vph are low volume and outside the graph boundaries.

WARRANT 3, PEAK HOUR (Rural Areas)

Traffic Conditions = **Existing - PM**

Major Street Name = **Foothill Boulevard**

Total of Both Approaches (VPH) = **1430**

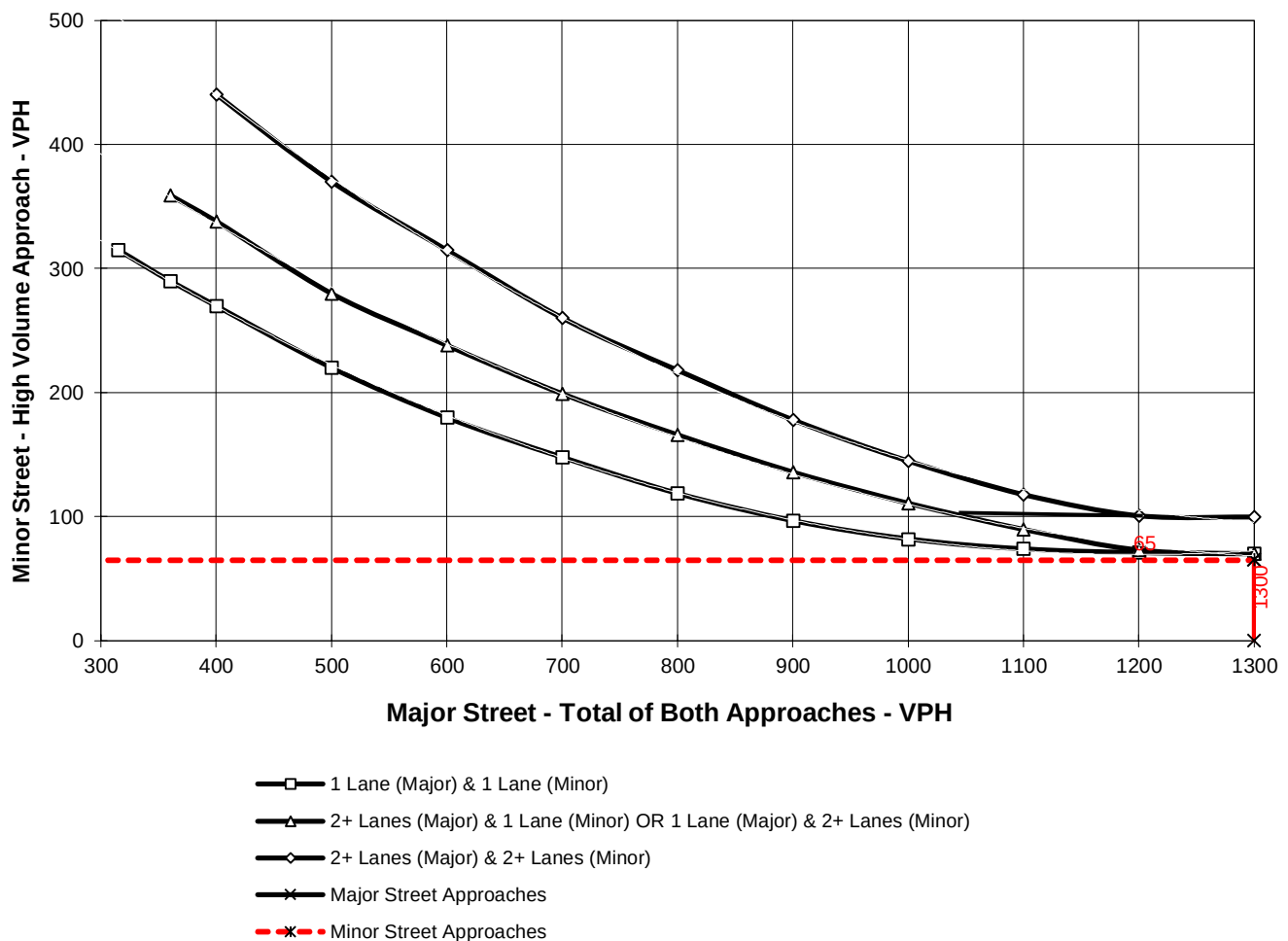
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Dallas Avenue**

High Volume Approach (VPH) = **65**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



Note:

* - 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and

100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Major street approaches with less than 300 vph are low volume and outside the graph boundaries.

WARRANT 3, PEAK HOUR (Rural Areas)

Traffic Conditions = **Year 2040 - PM**

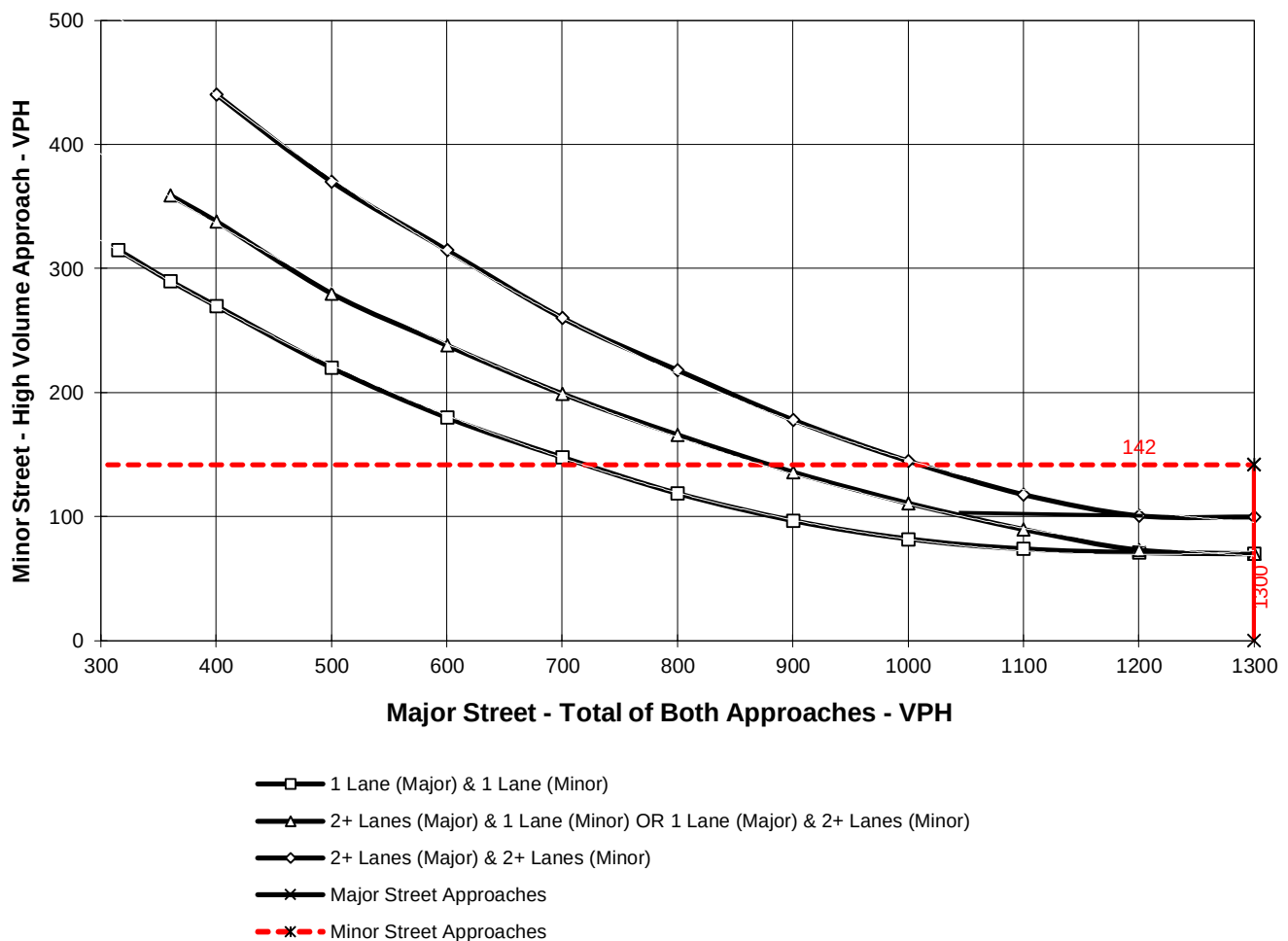
Major Street Name = **Foothill Boulevard**

Total of Both Approaches (VPH) = **1762**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Dallas Avenue**

High Volume Approach (VPH) = **142**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



Note:

* - 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.
Major street approaches with less than 300 vph are low volume and outside the graph boundaries.

WARRANT 3, PEAK HOUR (Rural Areas)

Traffic Conditions = **Existing - AM**

Major Street Name = **Foothill Boulevard**

Total of Both Approaches (VPH) = **1354**

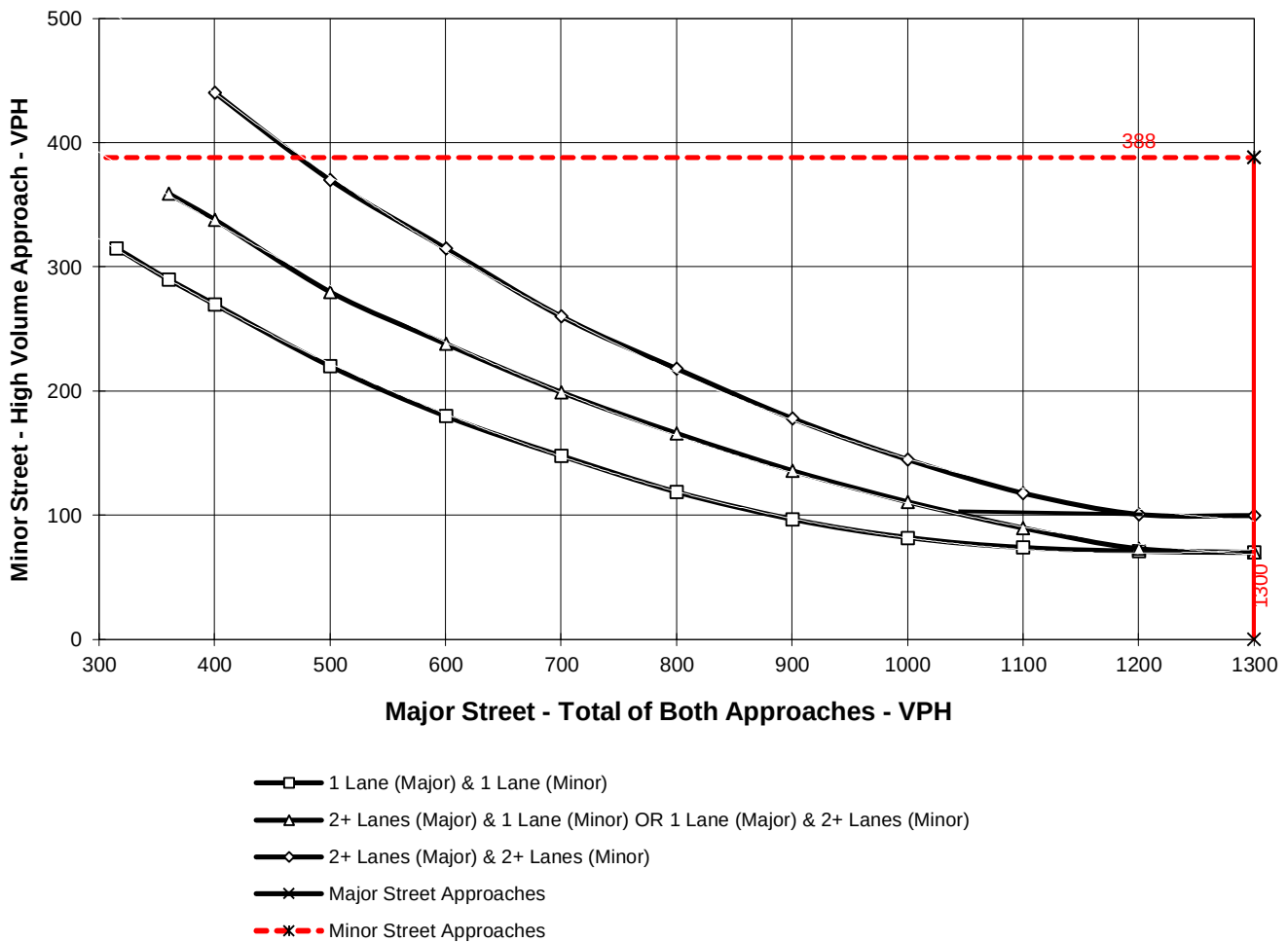
Number of Approach Lanes Major Street = **2**

Minor Street Name = **N Rancho Avenue**

High Volume Approach (VPH) = **388**

Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



Note:

* - 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Major street approaches with less than 300 vph are low volume and outside the graph boundaries.

WARRANT 3, PEAK HOUR (Rural Areas)

Traffic Conditions = **Existing - PM**

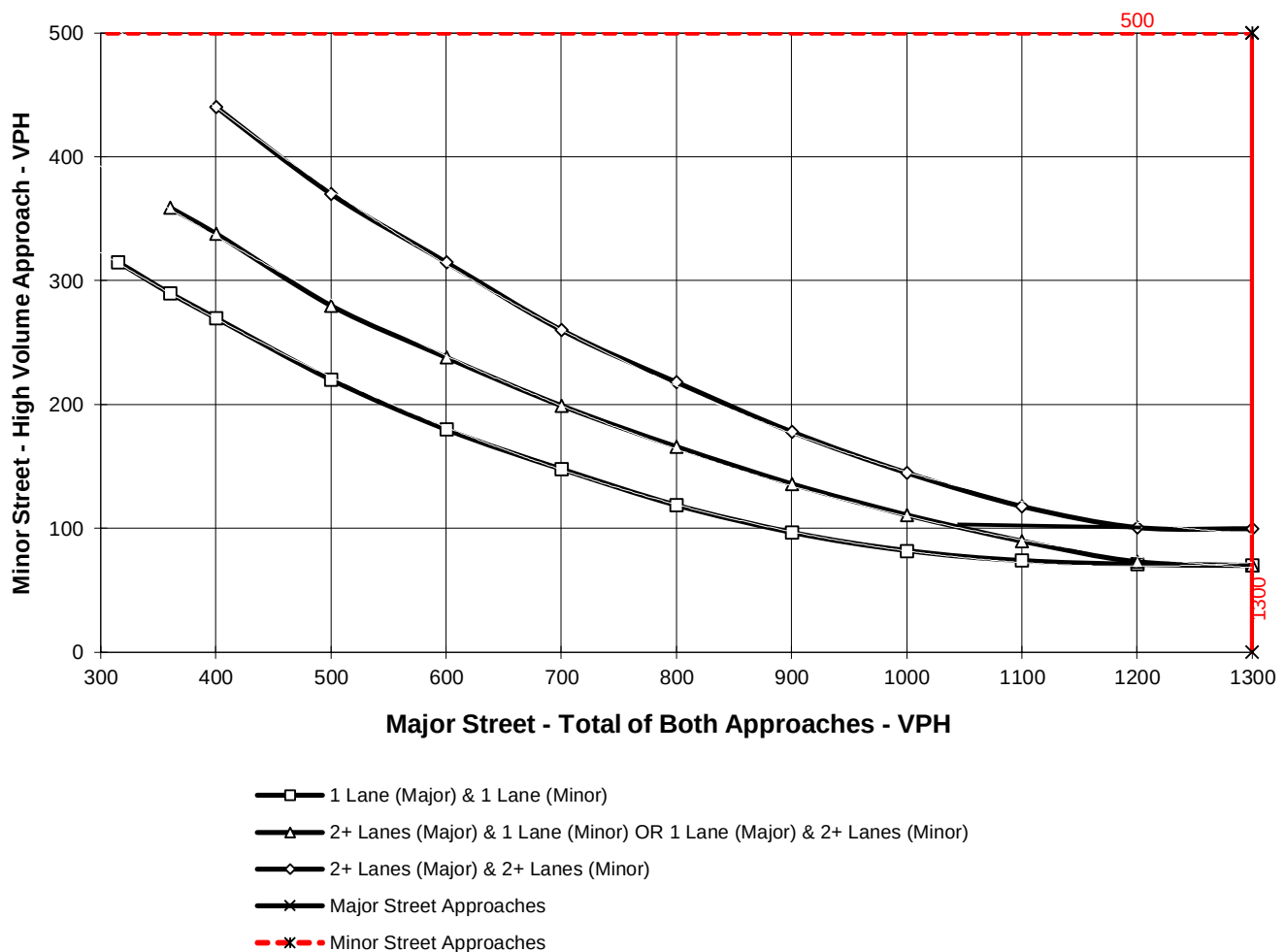
Major Street Name = **Foothill Boulevard**

Total of Both Approaches (VPH) = **1576**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **N Rancho Avenue**

High Volume Approach (VPH) = **500**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



Note:

* - 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.
Major street approaches with less than 300 vph are low volume and outside the graph boundaries.

WARRANT 3, PEAK HOUR (Rural Areas)

Traffic Conditions = Existing - AM

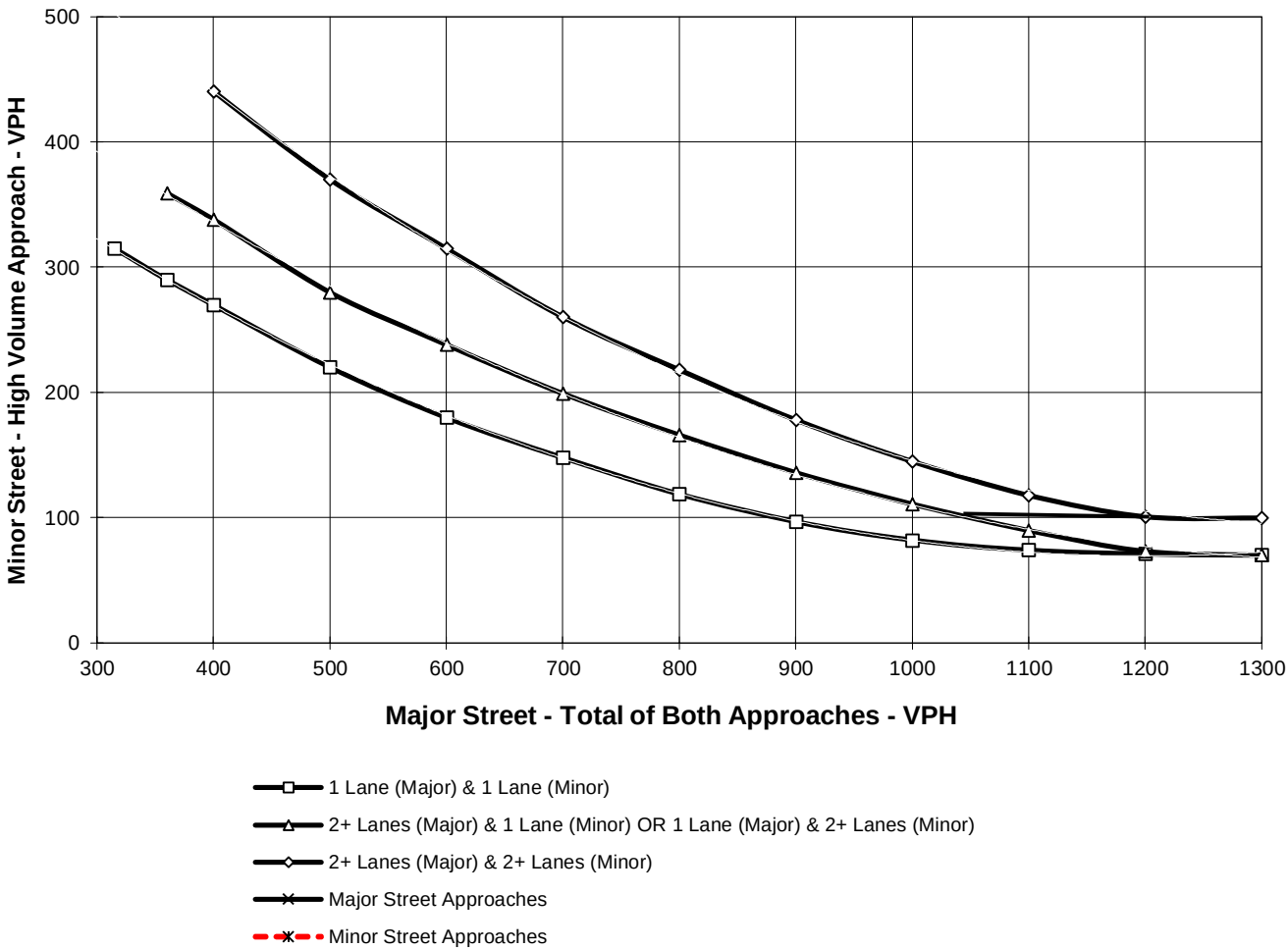
Major Street Name = Macy Street

Total of Both Approaches (VPH) = 194
Number of Approach Lanes Major Street = 1

Minor Street Name = Project Driveway

High Volume Approach (VPH) = 29
Number of Approach Lanes Minor Street = 1

SIGNAL WARRANT NOT SATISFIED



Note:

* - 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.
Major street approaches with less than 300 vph are low volume and outside the graph boundaries.

WARRANT 3, PEAK HOUR (Rural Areas)

Traffic Conditions = **Existing - PM**

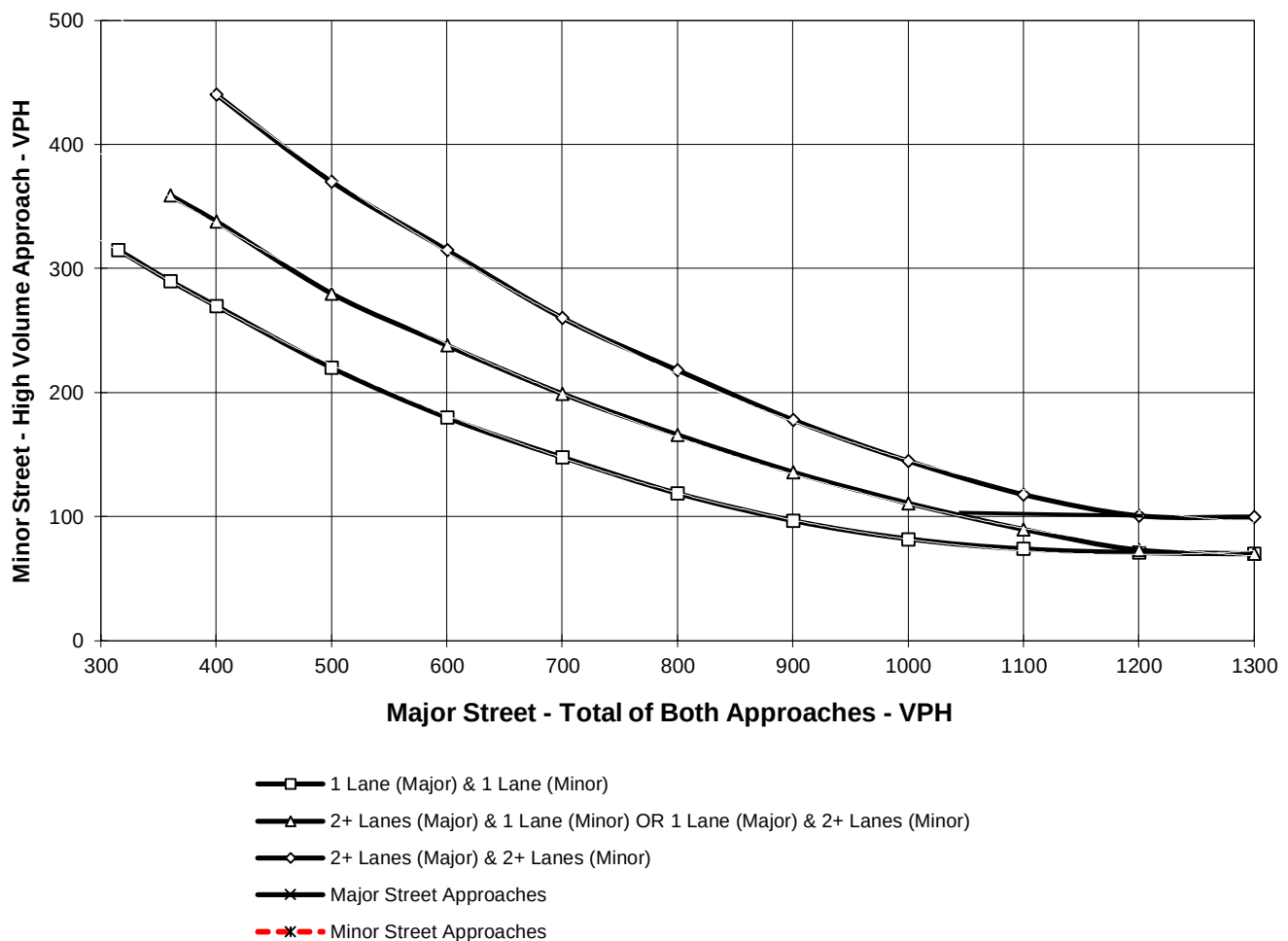
Major Street Name = **Macy Street**

Total of Both Approaches (VPH) = **245**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Project Driveway**

High Volume Approach (VPH) = **16**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



Note:

* - 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.
Major street approaches with less than 300 vph are low volume and outside the graph boundaries.

WARRANT 3, PEAK HOUR (Rural Areas)

Traffic Conditions = **Existing - AM**

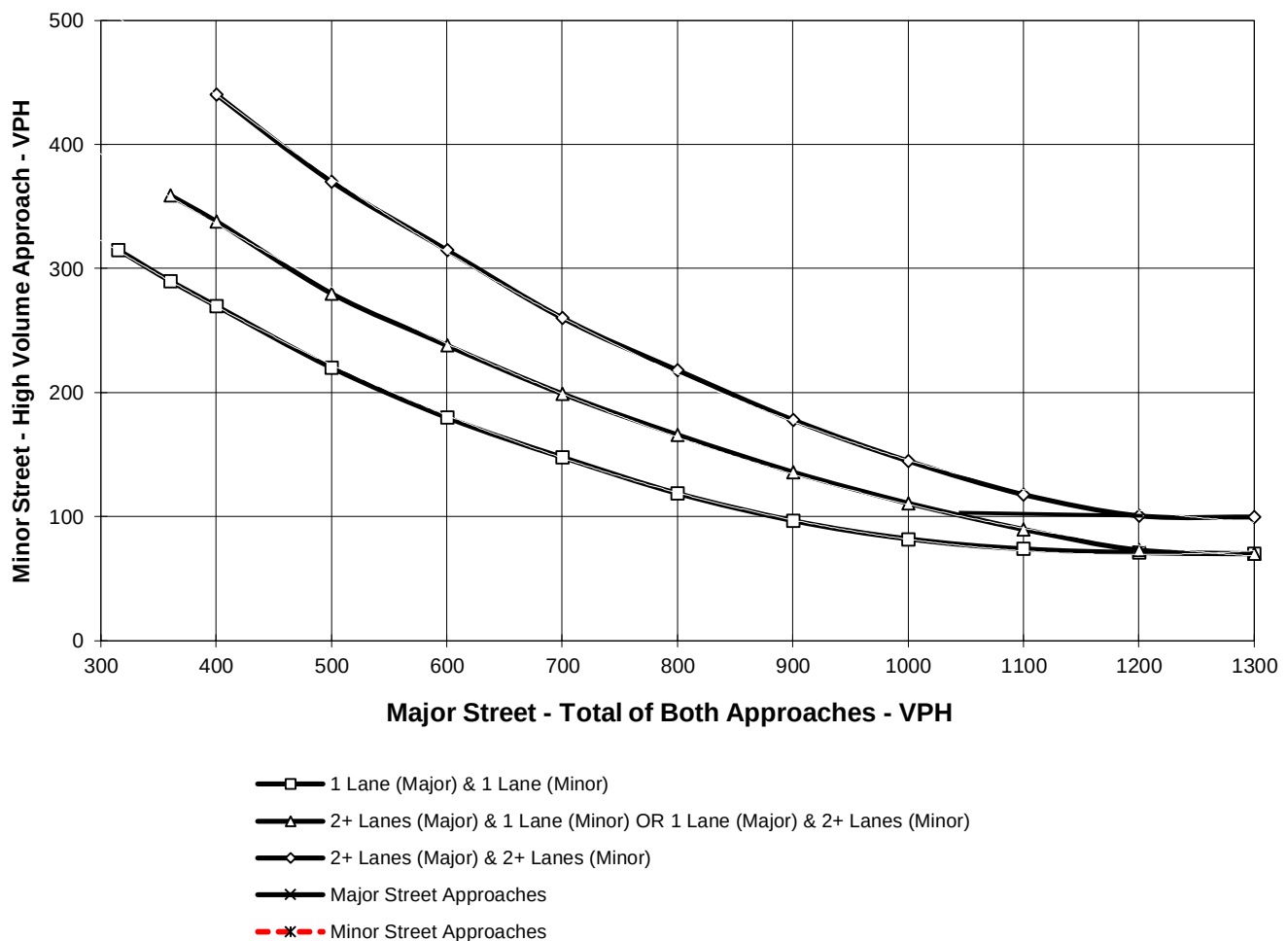
Major Street Name = **Dallas Avenue**

Total of Both Approaches (VPH) = **94**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Project Driveway**

High Volume Approach (VPH) = **41**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



Note:

* - 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane. Major street approaches with less than 300 vph are low volume and outside the graph boundaries.

WARRANT 3, PEAK HOUR (Rural Areas)

Traffic Conditions =
Existing - PM

Major Street Name =
Dallas Avenue

Minor Street Name =
Project Driveway

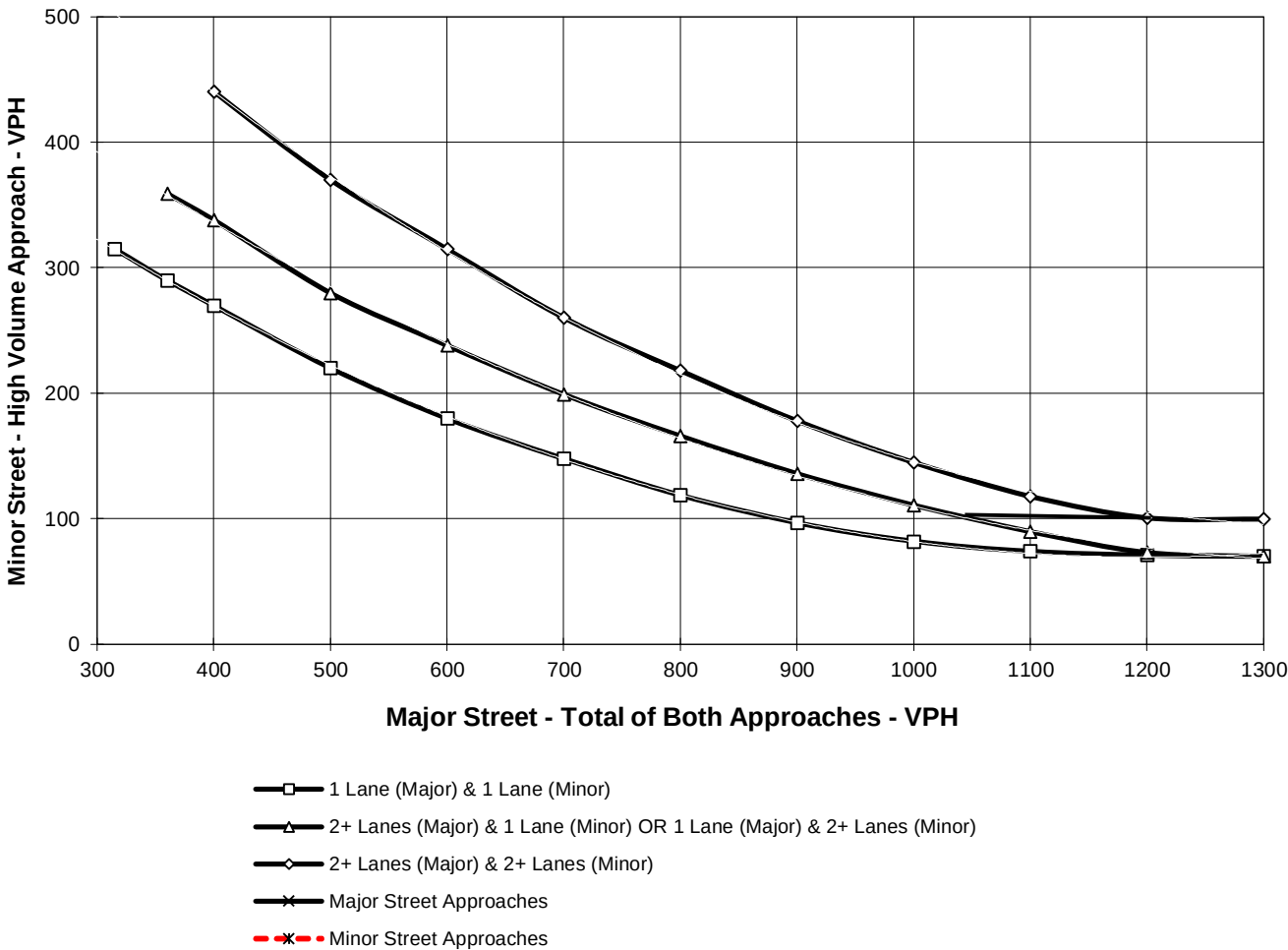
Total of Both Approaches (VPH) = 117

Number of Approach Lanes Major Street = 1

High Volume Approach (VPH) = 24

Number of Approach Lanes Minor Street = 1

SIGNAL WARRANT NOT SATISFIED



Note:

* - 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Major street approaches with less than 300 vph are low volume and outside the graph boundaries.

APPENDIX H

GATE STACKING ANALYSIS

Table H-1
Gate Stacking Analysis¹

PROJECT:	NWC Macy St and Foothill Blvd		DATE: 2024-0409	
LOCATION:	Project Access Gate		JN: 19696	
Driveway	AM Inbound		PM Inbound	
	6	7	6	7
Gate Distribution:	40%	60%	40%	60%
DEMAND RATE (q) (veh/hr)	32	48	27	41
SERVICE RATE (Q) (veh/hr/channel) ²	425	425	425	425
NO. OF SERVICE POSITIONS (N)	1	1	1	1
NO. OF STORAGE LANES (N1)	1	1	1	1
PROBABILITY OF NOT EXCEEDING (P) ³	0.05	0.05	0.05	0.05
	P'=95%	P'=95%	P'=95%	P'=95%
UTILIZATION FACTOR (q/(N*Q))	0.08	0.11	0.06	0.10
LENGTH OF QUEUED VEHICLE (L) FEET	25	25	25	25
LENGTH OF SERVICE VEHICLE (L) FEET	20	20	20	20.0
TRAFFIC INTENSITY (q/Q)	0.075	0.113	0.064	0.096
Q(M) VALUE ⁵	0.08	0.01	0.06	0.00
NO. OF VEHICLES BEING SERVED (N)	1.00	1.00	1.00	1.00
NO. OF VEHICLES IN QUEUE (M)	-0.84	-0.63	-0.91	-0.72
M = ((LN(P) - LN(Q(M)))/LN(p)) - 1	~0	~0	~0	~0
TOTAL NUMBER OF VEHICLES (N+M)	1.00	1.00	1.00	1.00
	~1	~1	~1	~1
NO. OF VEHICLES IN EACH LANE	1.00	1.00	1.00	1.00
PER LANE ((N+M)/N1) ⁶	1	1	1	1
LENGTH OF QUEUE (L) FEET	25	25	25	25

Notes:

1. Source: *Transportation and Land Development* (Institute of Transportation Engineers, 1988).
2. Service rates obtained from *Entrance-Exit Design and Control for Major Parking Facilities* (Crommelin, 1972).
3. P' = confidence interval; probability that queue will not exceed the calculated value.
4. First vehicle based on conservative 25 feet and remaining vehicles in que based on the more standard 20 feet.
5. Q(M) = interpolated table values based on number of service channels (N) and utilization factor (q/NQ) per Table 8-11 (p.231) of *Transportation And Land Development*.
6. Fractional vehicles are rounded up.



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