Appendix E
Transportation Analysis

Transportation Analysis

for the:

Perris Travel Center
Case No. P22-05002

In the City of Perris

June 2024

Kimley»Horn

TRANSPORTATION ANALYSIS FOR THE PROPOSED PERRIS TRAVEL CENTER PROJECT IN THE CITY OF PERRIS

Prepared by:

Kimley-Horn and Associates, Inc.
1100 Town and Country Road, Suite 700
Orange, California 92868

June 2024

TABLE OF CONTENTS Page

INTRODUCTION....1
Purpose and Study Objectives....1
Project Overview....1
ANALYSIS SCENARIOS AND METHODOLOGY....4
Analysis Scenarios....4
Intersection Analysis – HCM Methodology....4
Level of Service Standards....6
Thresholds of Significance....6
STUDY AREA....7
AREA CONDITIONS....7
Existing Street System....7
Existing Traffic Volumes....8
Intersection Operating Conditions....8
PROJECT TRAFFIC....13
Project Trip Generation....13
Trip Distribution and Assignment....14
EXISTING PLUS PROJECT....19
Peak Hour Operating Conditions....19
OPENING YEAR 2026 CUMULATIVE CONDITIONS....22
Cumulative Projects....22
Trip Generation....22
Trip Distribution and Assignment....22
Peak Hour Operating Conditions....23
OPENING YEAR 2026 CUMULATIVE PLUS PROJECT CONDITIONS....30
Intersection Operating Conditions....30
RECOMMENDED IMPROVEMENTS....33
SITE ACCESS ANALYSIS....40
Truck Turning....40
Driveway Spacing....40
Project Access Queuing Analysis....40
STORAGE CAPACITY AT RAMP INTERSECTIONS....42
DRIVE-THROUGH QUEUING ANALYSIS....44
VEHICLE MILES TRAVELED ANALYSIS....44
SUMMARY OF FINDINGS AND CONCLUSIONS....45

LIST OF FIGURES Page

Figure 1 – Vicinity Map 2
Figure 2 – Site Plan 3
Figure 3 – Existing Lane Configuration and Traffic Control 9
Figure 4 – City of Perris Circulation Plan 10
Figure 5 – Existing Traffic Volumes 11
Figure 6 – Non-Pass-By Project-Related Trip Distribution 16
Figure 7 – Pass-By Project-Related Trip Distribution 17
Figure 8 – Project-Related Total Trip Volumes 18
Figure 9 – Existing Plus Project Traffic Volumes 20
Figure 10 – Location of Cumulative Projects 26
Figure 11 – Cumulative Projects Traffic Volumes 27
Figure 12 – Opening Year 2026 Cumulative Traffic Volumes 28
Figure 13 – Opening Year 2026 Cumulative Plus Project Traffic Volumes 31
Figure 14 – Recommended Lane Configuration and Traffic Control 38

LIST OF TABLES Page

Table 1 – Summary of Intersection Operation – Existing Conditions 12
Table 2 – Summary of Project Trip Generation 15
Table 3 – Summary of Intersection Operation – Existing Plus Project 21
Table 4 – Summary of Cumulative Projects 24
Table 5 – Summary of Intersection Operation – Opening Year 2026 Cumulative 29
Table 6 – Summary of Intersection Operation – Opening Year 2026 Cumulative Plus Project 32
Table 7 – Summary of Intersection Operations - Opening Year 2026 Cumulative Plus Project With Menifee Conference Center Improvements 36
Table 8 – Summary of Intersection Operations - Opening Year 2026 Cumulative Plus Project With Recommended Improvements 37
Table 9 – Summary of Project Fair-Share 39
Table 10 – Summary of Project Access Queuing Analysis 41
Table 11 – Summary of Ramp Storage Capacity 43

APPENDICES

APPENDIX A: APPROVED SCOPING AGREEMENT
APPENDIX B: TRAFFIC COUNT DATA SHEETS
APPENDIX C: TRIP GENERATION DATA COLLECTION WORKSHEETS
APPENDIX D: INTERSECTION ANALYSIS WORKSHEETS
APPENDIX E: CUMULATIVE PROJECTS INFORMATION
APPENDIX F: DRIVE-THROUGH QUEUING ANALYSIS
APPENDIX G: TUMF REGIONAL PROGRAM
APPENDIX H: TRUCK TURNING DIAGRAMS

TRANSPORTATION ANALYSIS
FOR THE PROPOSED
PERRIS TRAVEL CENTER PROJECT
IN THE CITY OF PERRIS

INTRODUCTION

Purpose and Study Objectives

This transportation impact analysis has been prepared to address the traffic-related effects of the proposed Perris Travel Center project in the City of Perris. This analysis has been conducted in accordance with the City of Perris traffic requirements and the Riverside County *Transportation Analysis Guidelines* (TA Guidelines, December 2020).

This report includes a description of existing traffic conditions in the surrounding area, estimated project trip generation and distribution, future traffic growth, and an assessment of project-related effects on the transportation system. Where necessary, circulation system improvements have been identified to address project-related deficiencies at the study locations.

Project Overview

The project is located on the northwest corner of the intersection of Trumble Road and Ethanac Road. The project site is shown in its regional setting on Figure 1. The project site (approximately 14.4 acres) is currently vacant and bounded by vacant land to the north, Ethanac Road to the south, the SR-215 to the west, and Trumble Road to the east.

The project consists of the construction of a truck stop with 7 truck fueling positions, a gas station with 16 fueling positions and a convenience market, and an approximately 2,228 square-foot fast-food restaurant with a drive-through. A copy of the project site plan is provided on Figure 2.

Vehicular access for the project site would be via one passenger car unsignalized right-in-right-out (RIRO) only driveway on Ethanac Road, one passenger car full-access unsignalized driveway on Trumble Road, and one truck accessible full-access unsignalized driveway on Trumble Road. A dedicated northbound left turn lane/two-way left-turn lane is proposed at both Trumble Road driveway intersections to accommodate left turns into the project.

Based on discussion with City Staff, the Project Applicant will be installing a raised median along Ethanac Road between Trumble Road and just west of Encanto Drive. As a result, the intersection of Encanto Drive at Ethanac Road would change from a full access to a right-in-right-out (RIRO) only unsignalized intersection. Additionally, a second westbound through lane is conditioned to be added along the project frontage. These modifications have been applied to "Plus Project" conditions. The raised median installation will only take place if the Menifee Commerce Center improvements are not constructed (discussed further in the *Recommended Improvements* section of this report).

FIGURE 1
VICINITY MAP

NOT TO SCALE

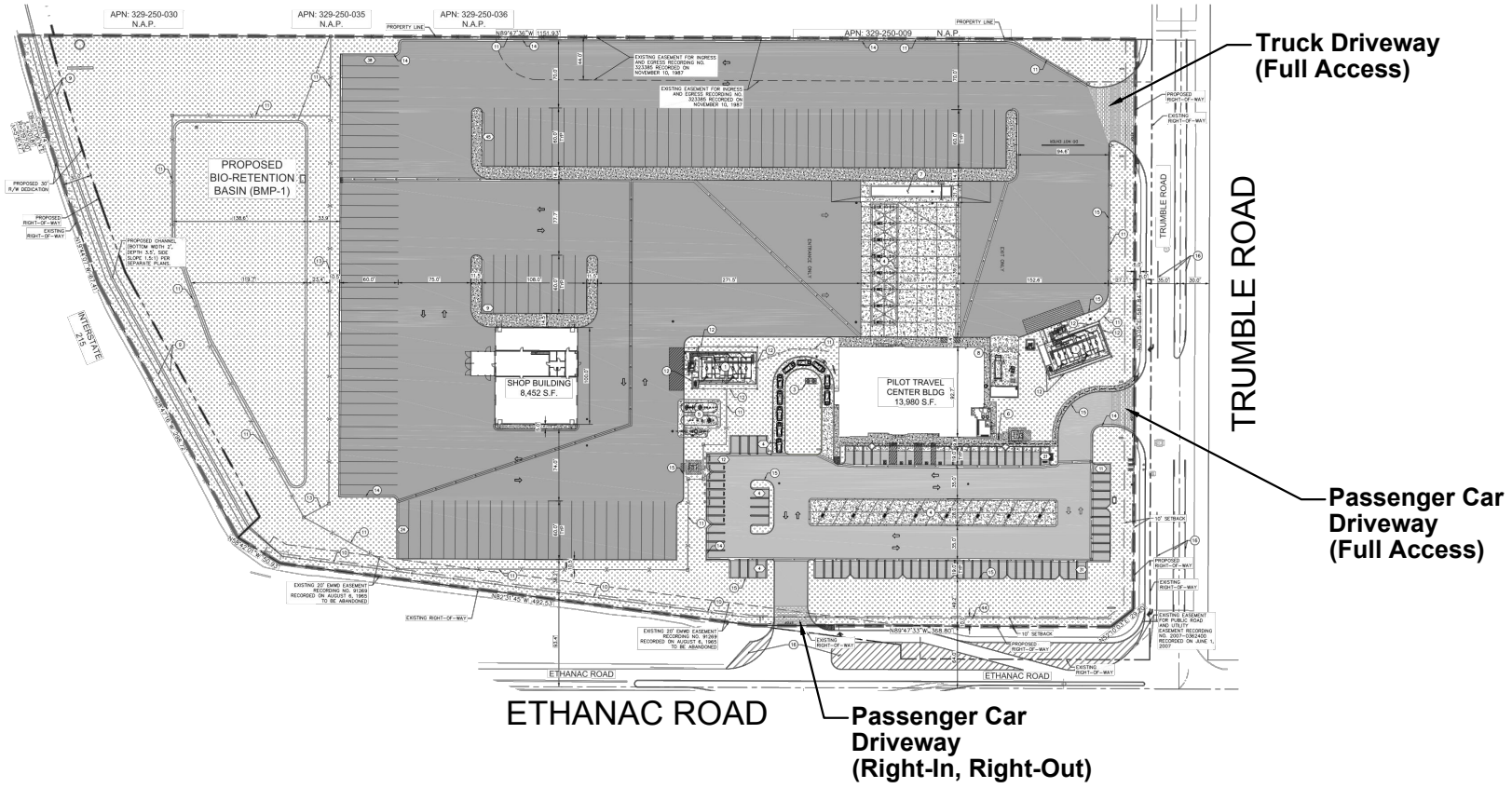


FIGURE 2
SITE PLAN

ANALYSIS SCENARIOS AND METHODOLOGY

Analysis Scenarios

Based on the Riverside County *TA Guidelines*, the study intersections will be evaluated in the morning and evening peak hours for the following conditions:

- Existing Conditions
- Existing Plus Project
- Opening Year 2026 Cumulative (Opening Year 2026 Plus Cumulative Projects)
- Opening Year 2026 Cumulative Plus Project

Intersection Analysis – HCM Methodology

This study includes evaluation of morning and evening peak hour operations at 4 study intersections and 3 proposed driveways located in the City of Perris.

Peak hour intersection operations at the study intersections and driveways were evaluated using the methods prescribed in the Highway Capacity Manual 6th Edition (HCM), consistent with the Riverside County *TA Guidelines*.

For signalized intersections, the HCM methodology estimates the average delay (in average seconds per vehicle) for each of the movements through the intersection, considering a number of factors, including the number of lanes, volume of traffic, and the signal timing phasing.

For unsignalized intersections, the HCM methodology analysis determines the worst-case delay per lane for each vehicle making any movement from the stop-controlled minor street, as well as left turns from the major street. Delay values are calculated based on the relationship between traffic on the major street and the availability of acceptable gaps in the traffic stream through which conflicting traffic movements can be made.

The HCM delay forecast translates to a Level of Service designation, ranging from LOS A to LOS F. A summary of each Level of Service and the corresponding delay is provided in the following chart.

LEVEL OF SERVICE DEFINITIONS	
Level of Service	Description
A	No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turns are made easily and nearly all drivers find freedom of operation.
B	This service level represents stable operation, where an occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel restricted within platoons of vehicles.
C	This level still represents stable operating conditions. Occasionally drivers may have to wait through more than one red signal indication, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted but not objectionably so.
D	This level encompasses a zone of increasing restriction, approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak period; however, enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.
E	Capacity occurs at the upper end of this service level. It represents the most vehicles that any particular intersection approach can accommodate. Full utilization of every signal cycle is seldom attained no matter how great the demand.
F	This level describes forced flow operations at low speeds, where volumes exceed capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially, and stoppages may occur for short or long periods of time due to the congestion. In the extreme case, both speed and volume can drop to zero.

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED AND UNSIGNALIZED INTERSECTIONS		
Level of Service	Signalized Intersection (Average delay per vehicle, in seconds) [1]	Unsignalized Intersections (Average delay per vehicle, in seconds) [2]
A	≤ 10	0 – 10
B	> 10 – 20	> 10 – 15
C	> 20 – 35	> 15 – 25
D	> 35 – 55	> 25 – 35
E	> 55 – 80	> 35 – 50
F	> 80	> 50

[1] Source: Highway Capacity Manual (HCM 6th Edition), Exhibit 18-4.

[2] Source: Highway Capacity Manual (HCM 6th Edition), Exhibits 19-1 and 20-2.

Level of Service Standards

The City of Perris Circulation Element has established the following standards regarding minimum acceptable level of service (LOS):

- LOS "D" along all City maintained roads (including intersections) and LOS "D" along I-215 and SR-74 (including intersections with local streets and roads). An exception to the local road standard is LOS "E," at intersections of any Arterials and Expressways with SR-74, the Ramona-Cajalco Expressway, or at I-215 freeway ramps.

- LOS "E" may be allowed within the boundaries of the Downtown Specific Plan Area to the extent that it would support transit-oriented development and walkable communities. Increased congestion in this area will facilitate an increase in transit ridership and encourage development of a complementary mix of land uses within a comfortable walking distance from light rail stations.

Thresholds of Significance

Traffic effects at study intersections are considered locally significant when any of the following occurs between the "without project" and the "plus project" conditions:

- A project-related effect is considered direct when a study intersection operates at an acceptable Level of Service for existing conditions (without the project) and the addition of 50 or more a.m. or p.m. peak hour project trips causes the intersection delay to increase by 2 seconds or more and causes the intersection to operate at an unacceptable Level of Service for existing plus project conditions.

- A project-related effect is considered direct when a study intersection operates at an unacceptable Level of Service for existing conditions (without the project) and the addition of 50 or more a.m. or p.m. peak hour project trips causes the intersection delay to increase by 2 seconds or more.

- A cumulative effect is considered direct when a study intersection is forecast to operate at an acceptable Level of Service without the project and with the addition of 50 or more a.m. or p.m. peak hour project trips causes the intersection delay to increase by 2 seconds or more and causes the intersection to operate at an unacceptable Level of Service.

- A cumulative effect is considered indirect when a study intersection is forecast to operate at an unacceptable Level of Service with the addition of cumulative/background traffic and the project contributes 50 or more a.m. or p.m. peak hour project trips and causes the intersection delay to increase by 2 seconds or more.

STUDY AREA

This Traffic Impact Analysis includes documentation of existing conditions, future conditions, and identification of project-related deficiencies at the following study locations:

Existing Intersections

1. SR-215 SB Ramps at Ethanac Road
2. SR-215 NB Ramps at Ethanac Road
3. Encanto Drive at Ethanac Road
4. Trumble Road at Ethanac Road

Future Project Driveways

D1. Ethanac Road at Project Driveway
D2. Trumble Road at North Driveway
D3. Trumble Road at South Driveway

The study locations were established in consultation with City of Perris staff through the Scoping Letter Agreement process. A copy of the approved Scoping Letter Agreement is provided in *Appendix A*.

AREA CONDITIONS

Existing Street System

Regional access to the site is provided primarily by the Escondido Freeway (I-215). Direct access to the project site is provided via Ethanac Road and Trumble Road.

Existing lane configurations and intersection controls at the study intersections are shown on Figure 3. A copy of the City of Perris Circulation Plan is provided on Figure 4. The following provides a description of the roadways surrounding the project site.

Ethanac Road– Ethanac Road is a four-lane divided roadway with two lanes in each direction. The posted speed limit is 40 miles per hour (mph) and on-street parking is prohibited along the roadway. Ethanac Road is designated as an Expressway in the City of Perris Circulation Element.

Trumble Road – Trumble Road is a two-lane undivided roadway with one lane in each direction; the curb-to-curb width is sufficient to accommodate a striped median/turn pockets for future project access. On-street parking is prohibited along the roadway and the posted speed limit is 35 mph. Trumble Road is designated as a Collector in the City of Perris Circulation Element.

Existing Traffic Volumes

Existing morning peak hour and evening peak hour counts were conducted at the study intersections. Traffic count data included vehicle classifications for passenger vehicles and trucks. Vehicle classifications are necessary to compute Passenger Car Equivalent (PCE) volumes, which are used in the traffic analysis to address the effects of truck traffic on intersection operations. The counts were completed in March 2024. Peak hour intersection traffic count worksheets are provided in *Appendix B*.

The PCE volumes were developed by applying a PCE factor of 1.5 for 2-axle trucks, 2.0 for 3-axle trucks, and 3.0 for trucks with 4 or more axles. PCE volumes worksheets are provided in *Appendix B.* Existing morning and evening peak hour volumes are presented on Figure 5.

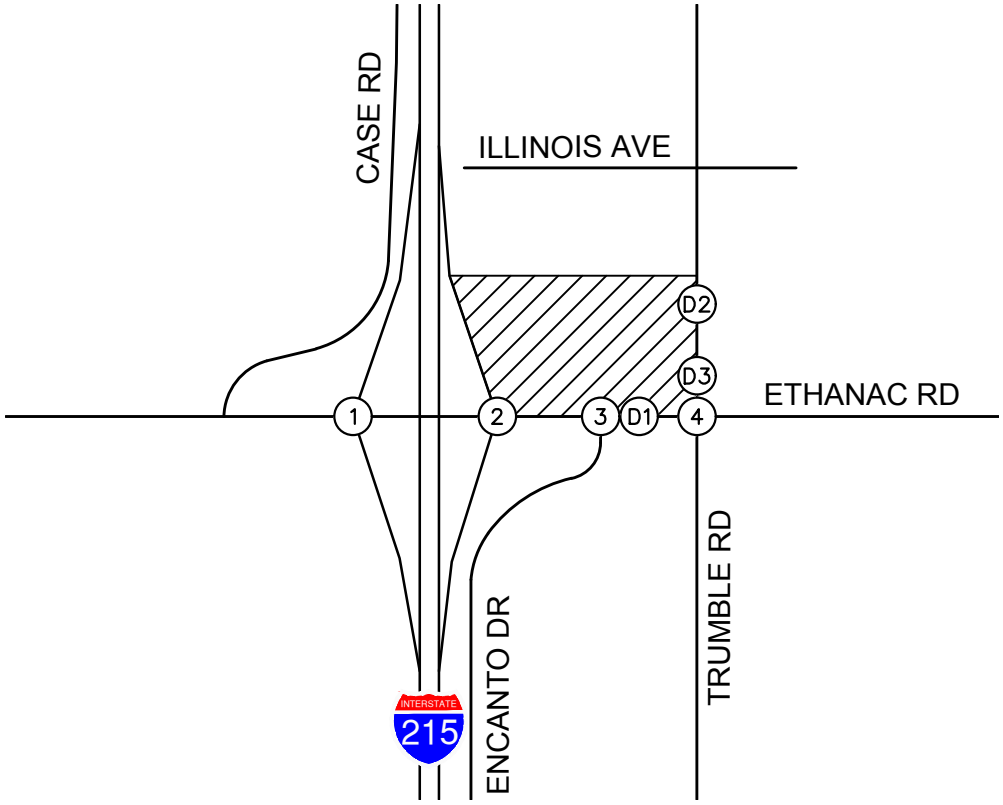
Intersection Operating Conditions

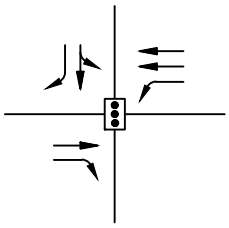
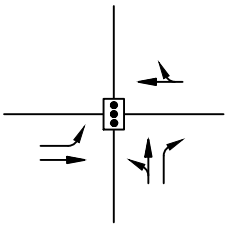
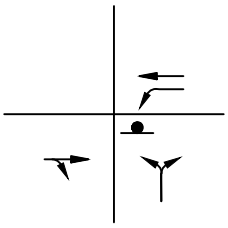
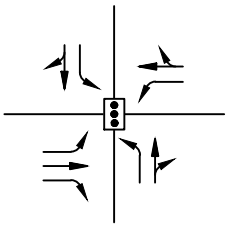
Intersection Level of Service analysis was conducted for the morning and evening peak hours using the analysis procedures and assumptions described previously in this report. The results of the intersection analysis for Existing Conditions are shown on Table 1. Copies of Existing Conditions intersection analysis worksheets are provided in *Appendix D*.

Review of this table indicates that the following study intersection currently operates at an unacceptable LOS:

- #3 – Encanto Drive at Ethanac Road: AM & PM - LOS F

The Level of Service for an unsignalized intersection is reported based on the single approach movement with the highest delay, which in this case, would be the northbound approach for intersection #3. The side street traffic at this intersection experiences delay during the peak hours while waiting for an acceptable gap in traffic on Ethanac Road. While the side street approach operates at a deficient Level of Service based on the highest delay approach, the overall intersection delay would be acceptable. Any queuing that occurs on the side street is contained on the minor intersection approach and does not impact the progression of traffic on the main arterial.



1. I-215 SB Ramps at Ethanac Rd	2. I-215 NB Ramps at Ethanac Rd	3. Encanto Dr at Ethanac Rd	4. Trumble Rd at Ethanac Rd
			
D1. Ethanac Rd at Project Driveway	D2. Trumble Rd at North Driveway	D3. Trumble Rd at South Driveway	
FUTURE INTERSECTION	FUTURE INTERSECTION	FUTURE INTERSECTION	

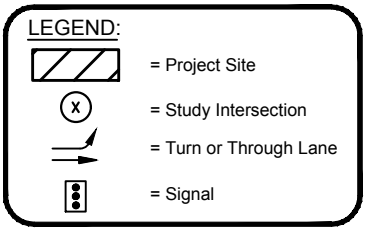


FIGURE 3
EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL

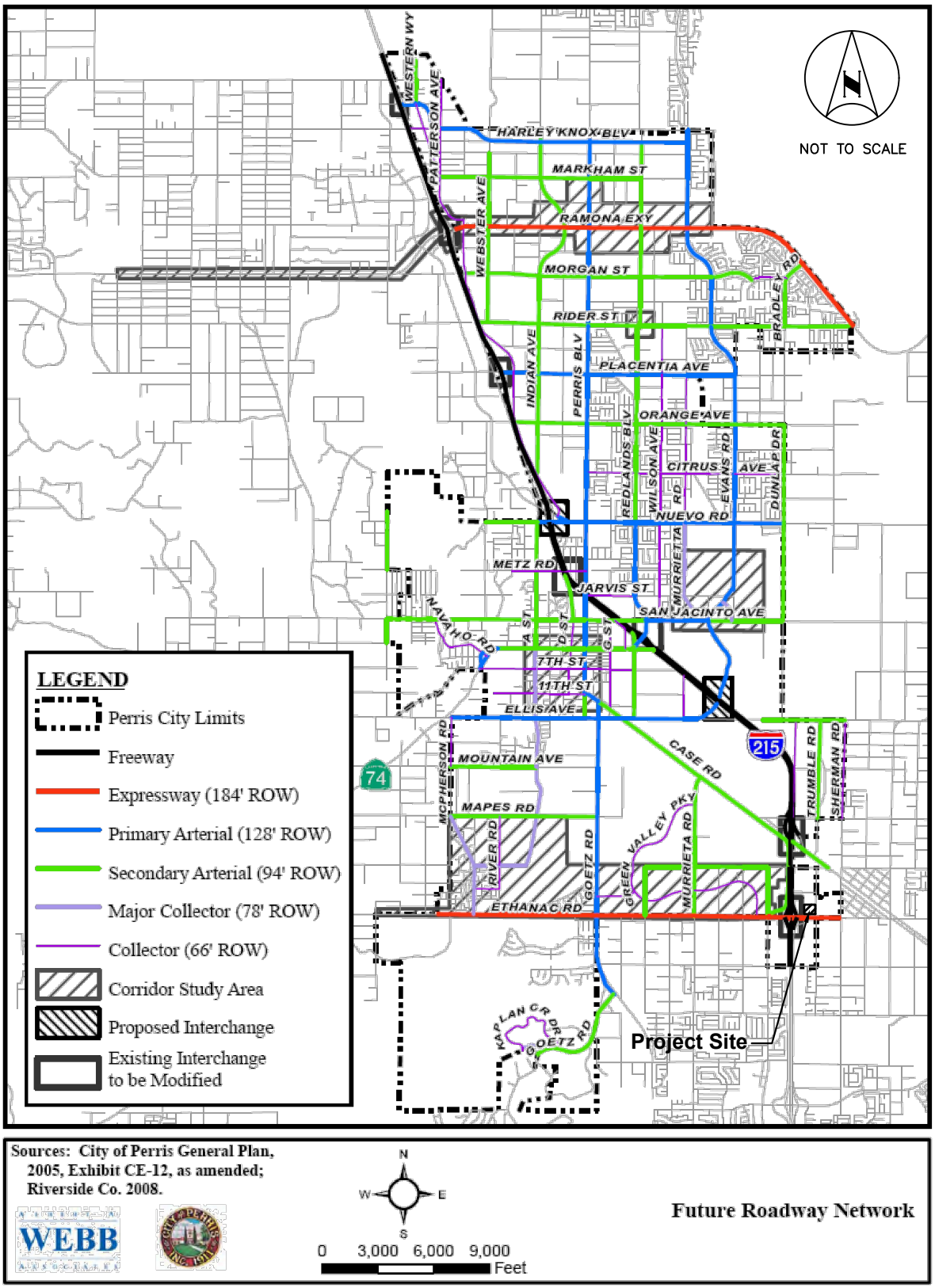
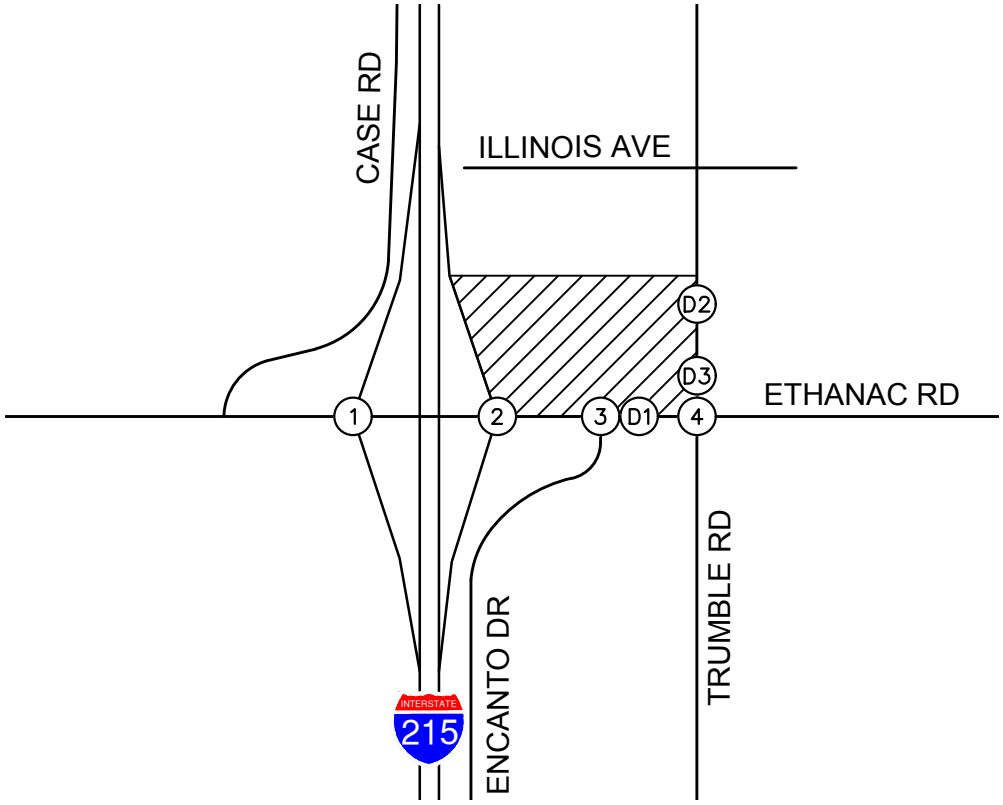


FIGURE 4
CITY OF PERRIS CIRCULATION PLAN



1. I-215 SB Ramps at Ethanac Rd	2. I-215 NB Ramps at Ethanac Rd	3. Encanto Dr at Ethanac Rd	4. Trumble Rd at Ethanac Rd
248/344 ↙ 1/5 ↓ 110/272 ↘ ←595/745 ←132/131 672/648 → 512/319 ↘	↖170/173 ←473/440 221/224 ↗ 560/660 → 247/441 ↑ 0/2 ↑ 118/195 ↑	←586/542 ←40/30 621/757 → 56/125 ↘ 59/55 ↑ 28/57 ↑	81/112 ↙ 11/8 ↓ 33/35 ↘ ↖14/24 ←502/414 ←36/18 61/75 ↗ 566/673 → 7/20 ↘ 46/45 ↑ 10/2 ↑ 29/32 ↑
D1. Ethanac Rd at Project Driveway	D2. Trumble Rd at North Driveway	D3. Trumble Rd at South Driveway	
FUTURE INTERSECTION	FUTURE INTERSECTION	FUTURE INTERSECTION	

Note: Volumes reflect PCE adjustments.

LEGEND:
= Project Site
(X) = Study Intersection
XX/YY = AM/PM Volumes

FIGURE 5
EXISTING TRAFFIC VOLUMES

TABLE 1
SUMMARY OF INTERSECTION OPERATION
EXISTING CONDITIONS

Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	SR-215 SB Ramps at Ethanac Road	S	18.7	B	21.8	C
2	SR-215 NB Ramps at Ethanac Road	S	22.2	C	29.0	C
3	Encanto Drive at Ethanac Road	U	52.8	F	58.1	F
4	Trumble Road at Ethanac Road	S	20.6	C	18.9	B
D1	Ethanac Road at Project Driveway	U	Future Intersection			
D2	Trumble Road at North Driveway	U	Future Intersection			
D3	Trumble Road at South Driveway	U	Future Intersection			

Notes:

- At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.

- At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst (highest delay) movement.

- Delay values are based on the methodology outlined in the Highway Capacity Manual, (6th Edition).

S = Signalized
U = Unsignalized

PROJECT TRAFFIC

Project Trip Generation

The number of trips anticipated to be generated by the project was approximated using site-specific, local trip generation data collected at similar travel center sites in California. Due to the unique characteristics of the proposed project, it was determined that the use of local data would most appropriately estimate the trip generation anticipated to be experienced at the project site. The methodology as outlined in the Trip Generation Handbook (3rd Edition), published by the Institute of Transportation Engineers (ITE), was followed in the development of the site-specific trip generation rate.

Detailed trip generation data was collected at the following travel center sites in June and July of 2021:

- City of Orland (4444 Commerce Lane)
- City of Patterson (2275 Sperry Avenue)
- City of Lost Hills (14808 Warren Street)

Each of these sites were confirmed to have similar uses (gas station with convenience market, fast-food drive through restaurant, and a truck stop), and to be located in similar proximity to a major freeway. The data collection included record of all driveways' ingress and egress trips, noted by vehicles classification (passenger vehicles, recreational vehicles, and heavy vehicles).

It is important to note that two distinct trip generation rates were developed to estimate the site's trip generation potential. One rate estimates the passenger vehicles/RVs per automobile fueling position, and the other estimates heavy vehicles per truck fueling position.

The truck stop land use was estimated to generate only truck trips and as such, a passenger car equivalent (PCE) factor was applied to the truck stop trips (3.0 PCE for 4+-axle trucks) to determine the total PCE trips to be generated by the truck stop land use.

It should be noted that the data at the three comparable sites was not collected during a 24-hour period (5AM to 8PM). Therefore, a daily trip rate per land use was developed by applying an adjustment factor based on the hourly percentage breakdown of daily trips for each respective land use based on Appendix A of the ITE Trip Generation Manual (11th Edition).

Trip rates and the estimated project trip generation are shown on Table 2. Copies of collected site-specific trips worksheets and summary of average trip rates are provided in Appendix C.

After applying pass-by and PCE factors, the project is estimated to generate 8,608 net new PCE trips on a daily basis, with 365 net new PCE trips in the morning peak hour, and 404 net new PCE trips in the evening peak hour.

Trip Distribution and Assignment

Project trip distribution assumptions for the project site were developed taking into account the proposed site uses, existing travel patterns, and routes to and from the freeway system. Separate distribution patterns were assumed for passenger car trips and truck trips. Primary trips are new vehicle trips that are assumed to be added to the network as a result of development of the project site. Separate project trip distributions were developed for pass-by trips for passenger cars.

Trip distribution assumptions for non-pass-by and pass-by trips are shown on Figures 6 and 7, respectively. Based on the trip distribution and assignment assumptions, the project trips to be added to the street system by the proposed project were calculated and are shown on Figure 8.

Based on discussion with City Staff, the Project Applicant will be installing a raised median along Ethanac Road between Trumble Road and just west of Encanto Drive. As a result, the intersection of Encanto Drive at Ethanac Road would change from a full access to a right-in-right-out (RIRO) only unsignalized intersection. This modification has been applied to "Plus Project" conditions.

TABLE 2
SUMMARY OF PROJECT TRIP GENERATION
PERRIS TRAVEL CENTER

Trip Generation Rates

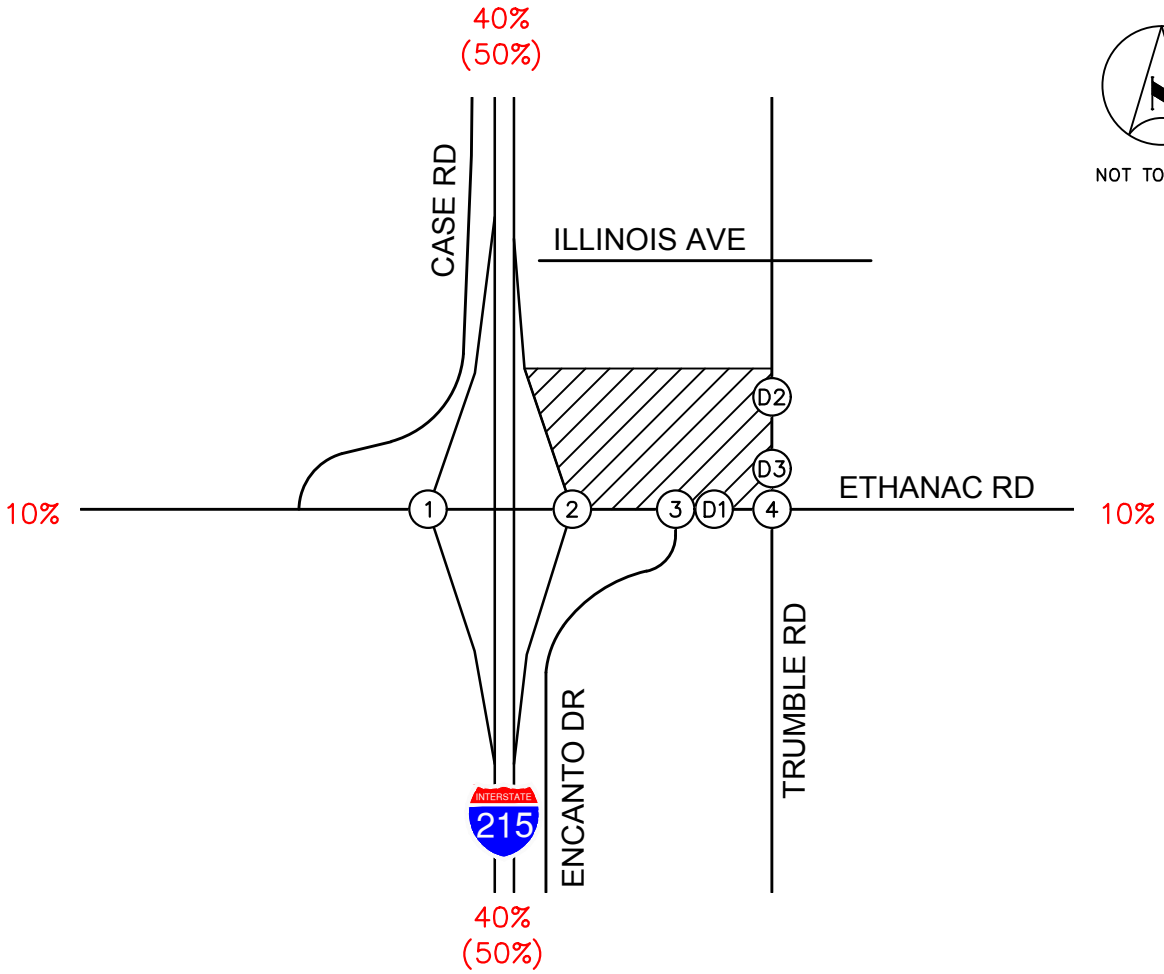
Land Use	Unit	Daily(a)	AM Peak Hour (a)			PM Peak Hour (a)		
			In	Out	Total	In	Out	Total
Convenience Store/Gas Station/Fast-Food Restaurant with Drive-Through	FP	269.460	50%	50%	13.02	50%	50%	18.29
Truck Stop	FP	255.930	49%	51%	12.40	53%	47%	13.00

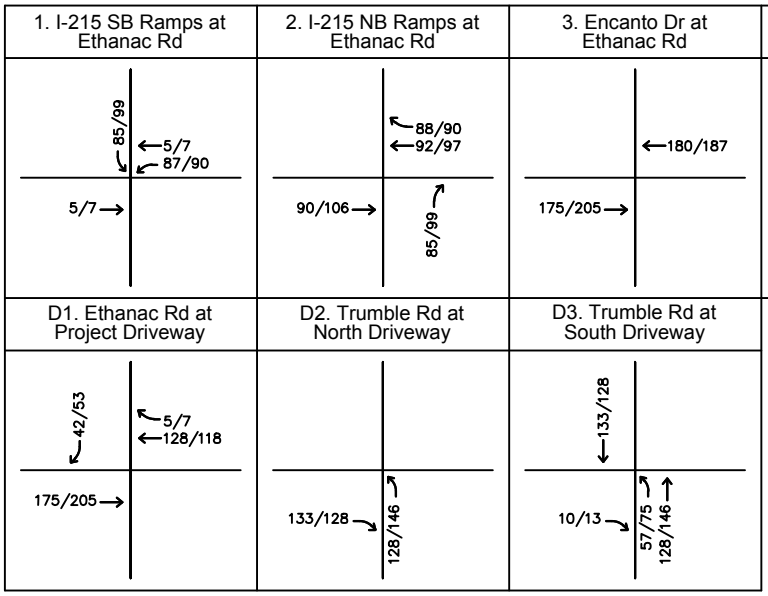
Project Trip Generation

Land Use	Quantity	Unit	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Passenger Car Trips									
Convenience Store/Gas Station/Fast-Food Restaurant with Drive-Through	16	FP	4,311	104	104	208	146	146	292
Pass-By Trips (b) (Daily: 25%, AM: 50%, PM: 55%)			-1,078	-52	-52	-104	-80	-80	-161
Truck Trips									
Truck Stop	7	FP	1,792	43	44	87	48	43	91
PCE Truck Stop (PCE Factor = 3)			5,375	128	133	260	145	128	273
Total Driveway Trips			9,686	232	237	469	291	274	565
Passenger Car			4,311	104	104	208	146	146	292
Truck PCE			5,375	128	133	260	145	128	273
Total Primary (Net New) Trips			8,608	180	185	365	210	194	404
Passenger Car			3,234	52	52	104	66	66	131
Truck PCE			5,375	128	133	260	145	128	273

Notes:
KSF = thousand square feet, FP = Fueling Position
AM and/or PM rates correspond to peak of adjacent street traffic

(a) Based on Trip Generation data at three comparable Travel Center sites (Orland, Patterson, and Lost Hills). Data collection worksheets are provided in Appendix C.
(b) Pass-by rates from ITE Trip Generation Manual, 11th Edition





Note: Volumes reflect PCE adjustments.

LEGEND:

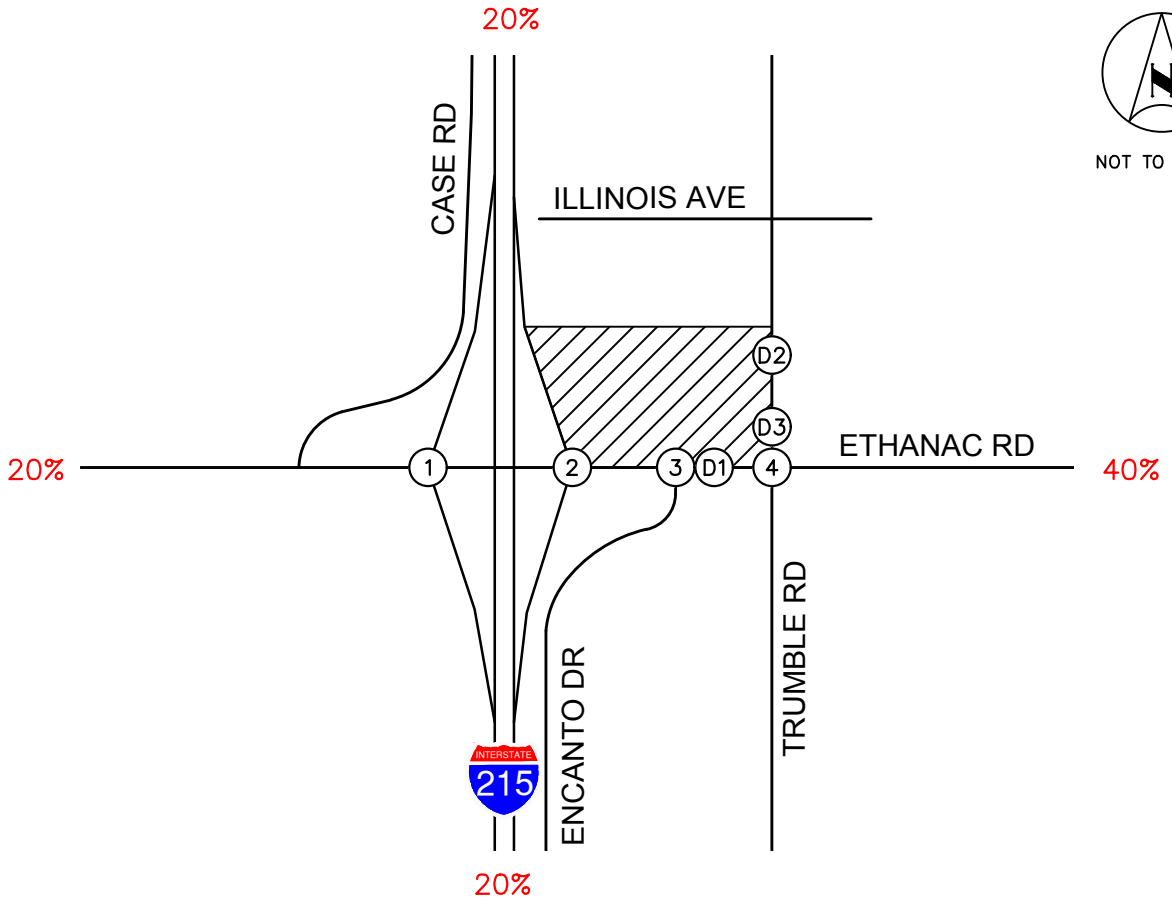
= Project Site

X = Study Intersection

XX% (YY%) = Passenger Car/(Truck) Trip Distribution Percentage

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 6
NON PASS-BY PROJECT-RELATED TRIP DISTRIBUTION



1. I-215 SB Ramps at Ethanac Rd	2. I-215 NB Ramps at Ethanac Rd	3. Encanto Dr at Ethanac Rd	4. Trumble Rd at Ethanac Rd
10/16 ↓ ← 10/16	↑ 10/16 ← 10/16; 10/16 → ; 10/16 ↑	← 20/32; 20/32 →	10/16 ↓ ; 11/17 ↓ ; 31/49 → ; −11/−17 →

D1. Ethanac Rd at Project Driveway	D2. Trumble Rd at North Driveway	D3. Trumble Rd at South Driveway
31/48 ↓ ; ↑ 21/32 ← −1/0; 20/32 →		21/33 → ; 21/33 ↑

Note: Volumes reflect PCE adjustments.

LEGEND:

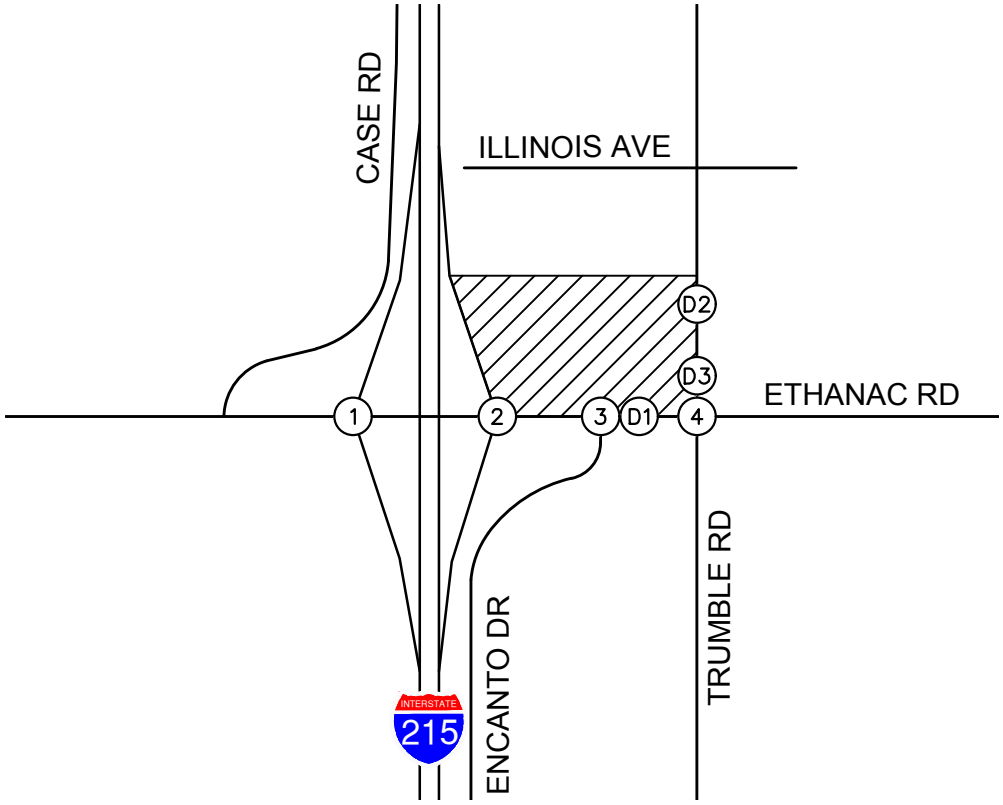
= Project Site

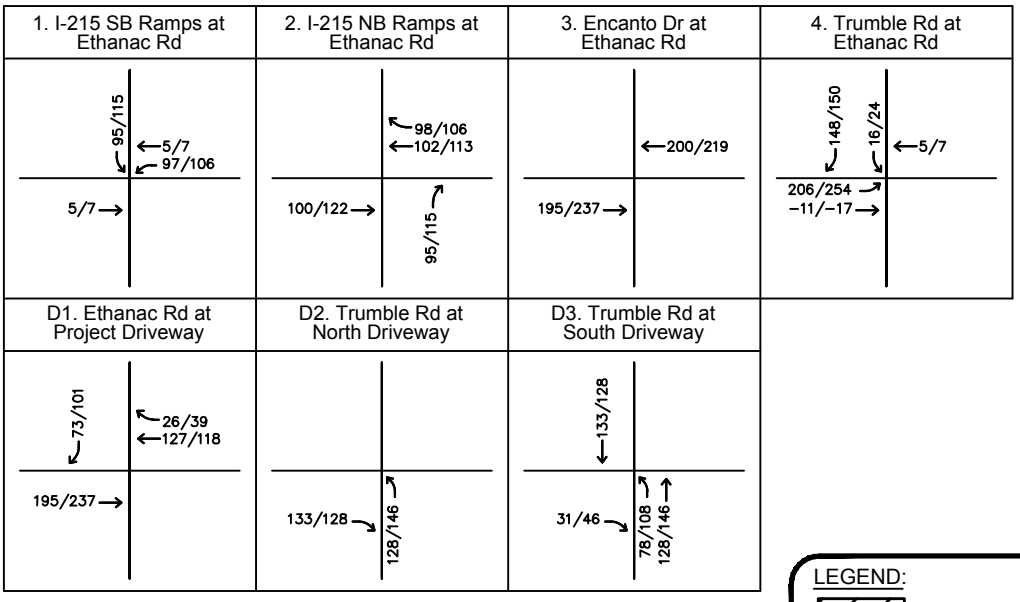
(X) = Study Intersection

XX% = Pass-By Distribution Percentage

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 7
PASS-BY PROJECT-RELATED TRIP DISTRIBUTION





Note: Volumes reflect PCE adjustments.

LEGEND:

= Project Site

(X) = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 8
PROJECT-RELATED TOTAL TRAFFIC VOLUMES

EXISTING PLUS PROJECT

Project-related traffic was added to the existing traffic volumes, and the resulting traffic volumes at the study locations are shown on Figure 9.

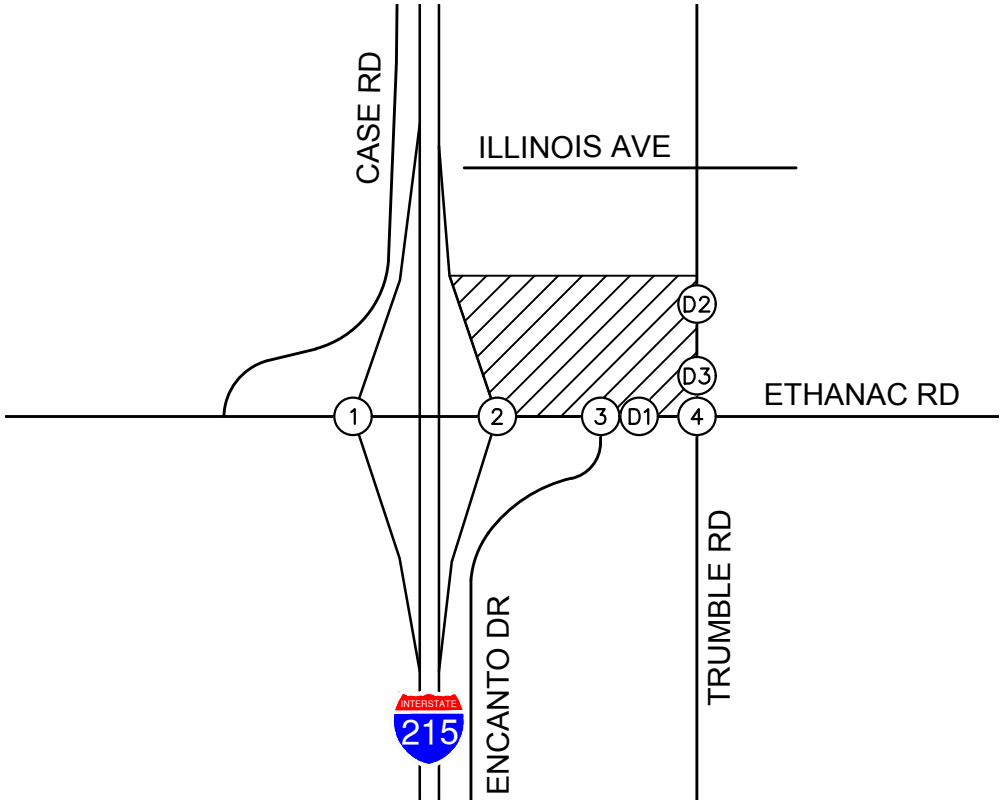
The Project Applicant will be installing a raised median along Ethanac Road between Trumble Road and just west of Encanto Drive. As a result, the intersection of Encanto Drive at Ethanac Road would change from a full access to a right-in-right-out (RIRO) only unsignalized intersection and would thereby experience an improvement in intersection operation in the Plus Project scenario. This installation will only take place if the Menifee Commerce Center improvements are not constructed (discussed further in the *Recommended Improvements* section of this report). Regardless of Menifee Commerce Center improvements, the project applicant will be conditioned to add a second westbound through lane to Ethanac Road along the project frontage.

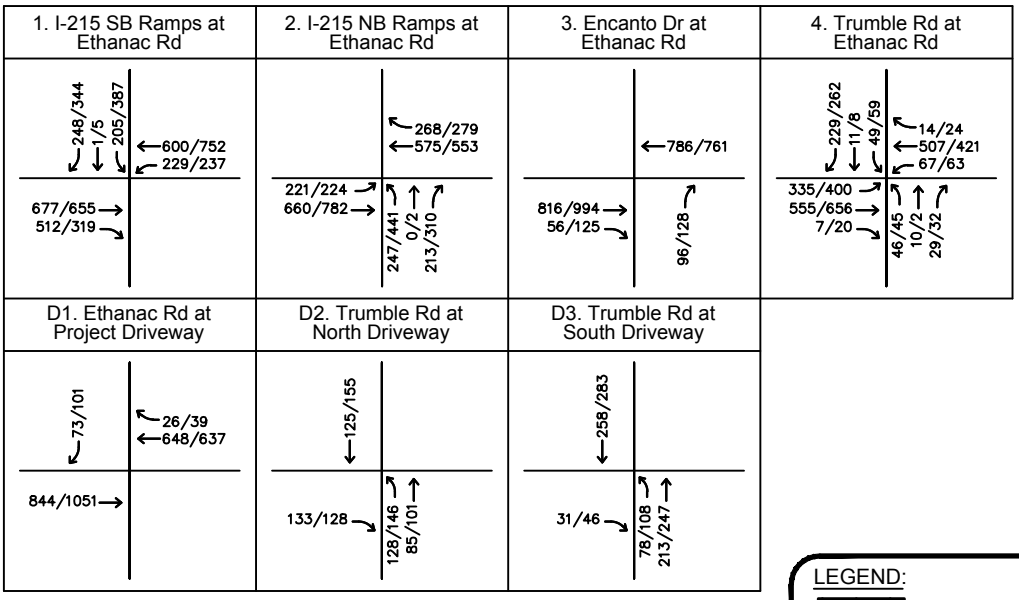
Peak Hour Operating Conditions

Intersection Level of Service analysis was conducted for the morning and evening peak hours for the Existing Plus Project conditions. The results of the intersection analysis are shown on Table 3. Copies of Existing Plus Project conditions intersection analysis worksheets are provided in *Appendix D*.

Review of this Table indicates that, with the addition of project traffic, the following intersection would operate at an unacceptable LOS:

- #3 – Encanto Drive at Ethanac Road: PM - LOS E





Note: Volumes reflect PCE adjustments.

LEGEND:

= Project Site

X = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 9
EXISTING PLUS PROJECT TRAFFIC VOLUMES

TABLE 3
SUMMARY OF INTERSECTION OPERATION
EXISTING PLUS PROJECT

Int. #	Intersection	Traffic Control	AM Peak Hour						PM Peak Hour					
			Without Project		With Project		Change in Delay	Sig Effect?	Without Project		With Project		Change in Delay	Sig Effect?
			Delay	LOS	Delay	LOS			Delay	LOS	Delay	LOS		
1	SR-215 SB Ramps at Ethanac Road	S	18.7	B	23.3	C	4.6	No	21.8	C	27.4	C	5.6	No
2	SR-215 NB Ramps at Ethanac Road	S	22.2	C	28.7	C	6.5	No	29.0	C	52.3	D	23.3	No
3	Encanto Drive at Ethanac Road	U	52.8	F	13.6[1]	B	-	No	58.1	F	16.8[1]	C	-	No
4	Trumble Road at Ethanac Road	S	20.6	C	42.1	D	21.5	No	18.9	B	35.2	D	16.3	No
D1	Ethanac Road at Project Driveway	U	-	-	11.2	B	-	No	-	-	11.4	B	-	No
D2	Trumble Road at North Driveway	U	-	-	9.6	A	-	No	-	-	9.8	A	-	No
D3	Trumble Road at South Driveway	U	-	-	9.9	A	-	No	-	-	10.2	B	-	No

Notes:

- Bold and shaded values indicate intersections operating at an unacceptable Level of Service or significant impact to intersection per City standards.
- At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
- At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst (highest delay) movement.
- Delay values are based on the methodology outlined in the Highway Capacity Manual, (6th Edition).

[1] LOS improvement under "Plus Project" conditions due to implementation of raised median along Ethanac Road between Trumble Road and just west of Encanto Drive, and 2nd westbound through lane.

OPENING YEAR 2026 CUMULATIVE CONDITIONS

The Project Opening Year (the year the project would be constructed and occupied) is anticipated to be Year 2026. Based on consultation with City staff, an ambient growth rate of 3.0% per year (6.09% total) to Opening Year 2026 was applied to existing traffic volumes. Cumulative Project traffic was also added to Opening Year 2026 volumes and is explained below.

Cumulative Projects

Information about Cumulative Projects in the area was provided by the City of Perris and City of Menifee. Cumulative Projects consist of any project that has been approved but is not yet constructed/occupied, and projects that are in various stages of the application and approval process but have not yet been approved. A summary of Cumulative Projects in the project vicinity and the trip generation associated with each is provided on Table 4. The locations of the Cumulative Projects are shown on Figure 10.

Trip Generation

Trip generation information for Cumulative Projects was derived either from approved traffic studies, where available; or developed by Kimley-Horn if approved traffic studies were not available.

Trip Distribution and Assignment

Likewise, trip distribution and assignment for the Cumulative Projects were either derived from approved traffic studies, where available; or were developed by Kimley-Horn if approved traffic studies were not available. Project information and trip distribution assumptions for Cumulative Projects are provided in *Appendix E*. Traffic volumes associated with the Cumulative Projects were compiled for each of the study intersections and are shown on Figure 11.

Ambient growth and Cumulative Project trips were added to existing traffic to develop Opening Year 2026 Cumulative forecasts. The resulting peak hour turning movement volumes at the study locations are shown in Figure 12.

Peak Hour Operating Conditions

Intersection Level of Service analysis was conducted for the morning and evening peak hours for the Opening Year 2026 Cumulative conditions. The results are shown on Table 5. Intersection analysis worksheets are provided in *Appendix D*.

Review of this table indicates that, with the addition of ambient growth and cumulative projects traffic, all intersections would operate at an unacceptable Level of Service under Opening Year 2026 conditions:

- #1 - I-215 SB Ramps at Ethanac Road: AM & PM - LOS F
- #2 - I-215 NB Ramps at Ethanac Road: AM & PM - LOS F
- #3 – Encanto Drive at Ethanac Road: AM & PM - LOS F
- #4 - Trumble Road at Ethanac Road: AM & PM - LOS F

TABLE 4
SUMMARY OF CUMULATIVE PROJECTS

Proj #	Location	Land Use	Quantity	Units	Trip Generation Estimates						
						AM Peak Hour			PM Peak Hour		
					Daily	In	Out	Total	In	Out	Total
1	Industrial Warehouse Building	Warehousing	2,300.000	KSF	3,933	301	90	391	115	299	414
2	Green Valley (SP Track 37262, 37722, 37816, Phase 2 South)	Single-Family Detached Housing	307	DU	2,898	57	170	227	192	112	304
		Multifamily Housing (Mid-Rise)	208	DU	1,132	20	55	75	56	36	92
		Shopping Center[2]	235.224	KSF	8,880	137	84	221	430	466	896
3	On-Deck	Convenience Market w/ Gasoline Pumps	6	Fueling Position	1,935	62	62	124	69	69	138
		Pass-by Trips (AM: 63%, PM:66%)				-39	-39	-78	-46	-46	-91
		Hotel	108	Room	903	30	21	51	33	32	65
		Quality Restaurant	5.500	KSF	461	3	1	4	29	14	43
		Pass-by Trips (PM:44%)							-13	-6	-19
		Fast-Food Restaurant w/o Drive-thru	3.000	KSF	1,039	45	30	75	43	43	86
		Convenience Market w/ Gasoline Pumps	12	Fueling Position	3,870	125	125	250	138	138	276
		Pass-by Trips (AM: 63%, PM:66%)				-79	-79	-158	-91	-91	-182
		Sub Total			8,208	226	200	426	254	244	498
4	Paragon Framing	High-Cube Short-Term Storage	5.000	KSF	7	0	0	0	0	0	0
		General Office Building	5.454	KSF	53	5	1	6	1	5	6
5	Motte Business Center	High-Cube Fulfillment Center - Non-Sort	1,138.638	KSF	2,061	139	33	172	71	112	183
6	MR-27 LLC (Rancon)	Single-Family Detached Housing	85	DU	802	16	47	63	53	31	84
7	Motte Country Plaza (PP2018-300)	Convenience Market w/ Gasoline Pumps	12	Fueling Position	3,870	125	125	250	138	138	276
		Pass-by Trips (AM: 63%, PM:66%)				-79	-79	-158	-91	-91	-182
		Sub Total			3,870	125	125	250	47	47	94
8	Capstone (CADO) Warehouse	Warehousing	700.037	KSF	4,716	517	122	639	343	536	879
9	Ethanac Square	Automated Car Wash	2.080	KSF	339	12	7	19	15	15	30
		Convenience Market w/ Gasoline Pumps	4	Fueling Position	1,290	42	42	84	46	46	92
10	Menifee Commerce Center	Warehousing	1,640.130	KSF	9,474	964	249	1,213	633	999	1,632
11	Villago Villas	Multifamily Housing (Low-Rise)	24	DU	176	3	8	11	8	5	13
12	Cimarron Ridge	Single-Family Detached Housing	756	DU	7,137	140	420	560	472	277	749
13	Valley Blvd Tract Map	Single-Family Detached Housing	68	DU	642	13	38	51	42	25	67
14	Sagewood (DR Horton)	Single-Family Detached Housing	174	DU	1,643	32	97	129	109	64	173
15	McLaughlin Village	Single-Family Detached Housing	126	DU	1,189	23	70	93	79	46	125
16	TTM 38128	Single-Family Detached Housing	96	DU	906	18	53	71	60	35	95
17	Talavera (KB Homes)	Single-Family Detached Housing	173	DU	1,633	32	96	128	108	63	171
18	Legado	Single-Family Detached Housing	1,061	DU	10,016	196	589	785	662	388	1,050
		Shopping Center	225.000	KSF	8,494	131	80	211	412	446	858
		Public Park	11.230	Acre	9	0	0	0	1	1	2
		Recreational Community Center	10.000	KSF	288	12	6	18	11	12	23
19	Underwood (KB Homes)	Single-Family Detached Housing	543	DU	5,126	100	301	401	339	199	538
20	Remington/McCall Mesa	Single-Family Detached Housing	264	DU	2,492	49	147	196	165	97	262
21	Stonegate (Enclave)	Single-Family Detached Housing	177	DU	1,671	33	98	131	110	65	175
22	Skyview (Woodside Homes)	Single-Family Detached Housing	246	DU	2,322	46	137	183	154	90	244
23	McCall-Encanto Gas Station	Gasoline Station w/ Convenience Market	12	Fueling Position	2,766	168	168	336	138	138	276
		Pass-by Trips (AM: 62%, PM: 56%)				-104	-104	-208	-77	-77	-155
		Fast-Food Restaurant w/ Drive-thru	3.900	KSF	1,837	80	77	157	66	61	127
		Pass-by Trips (AM: 49%, PM: 50%)				-39	-38	-77	-33	-31	-64
		Automated Car Wash	1.040	KSF	148	0	0	0	7	7	14
		Sub Total			4,751	105	103	208	101	98	199
24	McCall Plaza	Convenience Market w/ Gasoline Pumps	2	Fueling Position	645	21	21	42	23	23	46
		Pass-by Trips (AM: 63%, PM:66%)				-13	-13	-26	-15	-15	-30
		Shopping Center	1	KSF	38	1	0	1	2	2	4
		Quality Restaurant	3.100	KSF	260	2	0	2	16	8	24
		Pass-by Trips (PM:44%)							-7	-4	-11
		Fast-Food Restaurant w/o Drive-thru	3.2	KSF	1,108	48	32	80	45	45	90
		Automated Car Wash	2.080	KSF	339	12	7	19	15	15	30
		Sub Total			2,390	71	47	118	79	74	153
25	Quail Hills	Single-Family Detached Housing	152	DU	1,435	28	84	112	95	56	151
26	Goetz/Ethanac Commercial	Convenience Market w/ Gasoline Pumps	8	Fueling Position	2,580	83	83	166	92	92	184
		Pass-by Trips (AM: 63%, PM:66%)				-52	-52	-105	-61	-61	-121
		Discount Home Furnishing Superstore	3	KSF	58	1	1	2	2	2	4
		Shopping Center	7.040	KSF	266	4	3	7	13	14	27
		Pass-by Trips (PM: 34%) Retail Only							-4	-5	-9
		Sub Total			2,904	36	35	70	42	43	84
27	Barnett Warehouse	Warehousing	251.133	KSF	429	33	10	43	13	33	46
28	Nova Battery Storage (DEV2022-015)	Battery Energy Storage System	16	Employees	16	3	1	4	1	3	4
29	Vista Ridge Aparments	Multifamily Housing (Mid-Rise)	30	DU	163	3	8	11	8	5	13

Notes:

[1] *Traffic Study for Menifee Valley Specific Plan* (prepared by LSA; November 2022). Due to the expected Opening Year of the proposed project and the Opening Years for Phases 1, 2, and 3 for the Menifee Valley Specific Plan, only Phase 1 was included in the Cumulative analysis. The trips for Phases 2 and 3 are provided for informational purposes only.

[2] *Green Valley Specific Plan Amendment 2 21-05125* (prepared April 2023), *Ethanac Business Park (PLN23-0171, PLN23-0173, PLN23-0174, PLN23-0175) Traffic Study Scoping Agreement (Revision 1)* (prepared by Urban Crossroads; March 2024). Due to the expected Opening Year of the proposed project and the Opening Year for Phase 2 and SP Track 37817, 37818, 37223, PA 46,47,48 of the Green Valley Specific Plan, only Phase 1 was included in the Cumulative analysis. The trips for Phase 2 and excluded SP Tracks are provided for informational purposes only.

[3] Trip Generation estimates from *Double Butte Storage Project Transportation Assessment* (prepared by Dudek: February 2024).

DU = Dwelling Unit, KSF = 1,000 square feet, MSF = 1,000,000 square feet, FP = Fueling Position

TABLE 4
SUMMARY OF CUMULATIVE PROJECTS (CONTINUED)

Proj #	Location	Land Use	Quantity	Units	Trip Generation Estimates						
						AM Peak Hour			PM Peak Hour		
					Daily	In	Out	Total	In	Out	Total
30	LDW TTM 38346	Multifamily Housing (Mid-Rise)	162	DU	881	15	43	58	43	28	71
31	Mapes and Sherman Warehouse	Warehousing	277.578	KSF	475	36	11	47	14	36	50
32	The Village at Junipero	Multifamily Housing (Mid-Rise)	240	DU	1,306	23	64	87	64	41	105
33	United Carports Warehouse	Warehousing	58.643	KSF	100	8	2	10	3	8	11
34	Corsica Business Park	Warehousing	276.682	KSF	473	36	11	47	14	36	50
35	Wheat Warehouse	Warehousing	87.676	KSF	150	11	3	14	4	11	15
36	Northern Gateway Commerce Center	Warehousing	1,286.607	KSF	2,200	243	71	314	93	242	335
37	McLaughlin Warehouses (DEV2022-016)	Warehousing	491.467	KSF	840	64	19	83	25	64	89
38	Ares Warehouse on Murrieta	Warehousing	517.720	KSF	885	68	20	88	26	67	93
39	Ethanac and Evans Warehouse	Warehousing	137.896	KSF	236	18	5	23	7	18	25
40	Trumble and Watson Warehouse	Warehousing	327.631	KSF	560	43	13	56	16	43	59
41	Cypress and Sands Apartments	Multifamily Housing (Mid-Rise)	136	DU	740	13	36	49	36	23	59
42	TR 38132	Multifamily Housing (Mid-Rise)	173	DU	941	16	46	62	46	30	76
43	Kensington Apartments	Multifamily Housing (Mid-Rise)	221	DU	1,202	21	59	80	59	38	97
44	Menifee Valley SP (Brookfield)[1]	Phase 1 (742 Residential DU, 54 KSF Recreational Community Center, 3.2 MSF of Industrial Uses)	--	--	20,719	1,086	799	1,885	1,132	1,104	2,236
		Phases 2 and 3 (976 Residential DU, an Elementary School, 120 KSF Recreational Community Center, 2.3 MSF of Industrial Uses, 560 KSF of Commercial Uses)	--	--	36,817	1,428	1,170	2,598	1,768	1,768	3,536
		Sub Total Trips for Menifee Valley SP			57,536	2,514	1,969	4,483	2,900	2,872	5,772
45	Harvest Glen Marketplace	Convenience Market w/ Gasoline Pumps	16	Fueling Position	5,160	166	166	332	184	184	368
		Pass-by Trips (AM: 63%, PM:66%)				-105	-105	-209	-121	-121	-243
		Fast-Food Restaurant w/ Drive-thru	1.102	KSF	519	23	22	45	19	17	36
		Pass-by Trips (AM: 49%, PM: 50%)				-11	-11	-22	-10	-9	-18
		Fast-Food Restaurant w/o Drive-thru	3.268	KSF	1,131	49	33	82	46	46	92
		Automated Car Wash	3.000	KSF	489	17	10	27	21	21	42
		Sub Total			7,299	139	116	255	139	138	277
46	TR 38133	Single-Family Detached Housing	145	DU	1,369	27	80	107	90	53	143
47	McCall Square	Shopping Center	84.200	KSF	3,179	49	30	79	154	167	321
		Pass-by Trips (PM: 34%)							-52	-57	-109
		Mini-Warehouse	150.541	KSF	218	8	6	14	11	12	23
48	Green Valley (SP Track 37817, 37818, 37223, PA 46,47,48)[2]	Single-Family Detached Housing	718	DU	6,778	133	398	531	448	263	711
		Multifamily Housing (Mid-Rise)	601	DU	3,269	56	160	216	161	103	264
49	Green Valley Specific Plan - Phase 2 North[2]	Multifamily Housing (Mid-Rise)	1,183	DU	6,436	111	315	426	317	203	520
		Single-Family Detached Housing	462	DU	4,361	85	256	341	288	169	457
		Shopping Center	257.004	KSF	9,702	150	92	242	470	509	979
		Elementary School	500	Student	945	181	154	335	41	44	85
		Middle School/Junior High School	500	Student	1,065	157	134	291	42	44	86
50	Menifee Logistics (PLN23-0040)	Warehousing	411.829	KSF	704	54	16	70	21	54	75
51	TTM/TR 37358	Single-Family Detached Housing	154	DU	1,454	28	85	113	96	56	152
52	TR 31687	Single-Family Detached Housing	65	DU	614	12	36	48	41	24	65
53	Mapes and Trumble Industrial	High-Cube Fulfillment Center - Sort	396.000	KSF	2,550	279	65	344	185	290	475
54	Hillwood Ethanac	High-Cube Short-Term Storage	362.348	KSF	507	22	7	29	10	26	36
		High-Cube Cold Storage Warehouse	50.000	KSF	106	4	1	5	2	4	6
55	Motte Towne Center (DPR06-0337)	Shopping Center	286.000	KSF	10,797	167	102	269	523	567	1,090
		Pass-by Trips (PM: 34%)							-178	-193	-371
		Free Standing Discount Store	221.000	KSF	11,740	178	80	258	534	534	1,068
		Pass-by Trips (PM: 17%)							-91	-91	-182
		Sub Total			22,537	345	182	527	788	817	1,606
56	Double Butte (DEV2022-026)[3]	Battery Energy Storage System	12	Employees	24	6	6	12	6	6	12
57	Trumble & Ethanac NE Corner	Convenience Store/Gas Station - GFA (5.5 - 10k)	16	Fueling Position	5,532	253	253	506	215	215	430
		Pass-by Trips (AM: 76%, PM: 75%)				-192	-192	-385	-161	-161	-323
		Automated Car Wash	1.673	KSF	273	9	6	15	12	12	24
		Sub Total			5,805	70	67	136	66	66	132
58	CUP 23-05047	Warehousing	500.000	KSF	855	66	20	86	25	65	90
Total Project Trips					196,081	6,340	5,487	11,827	8,060	8,118	16,178

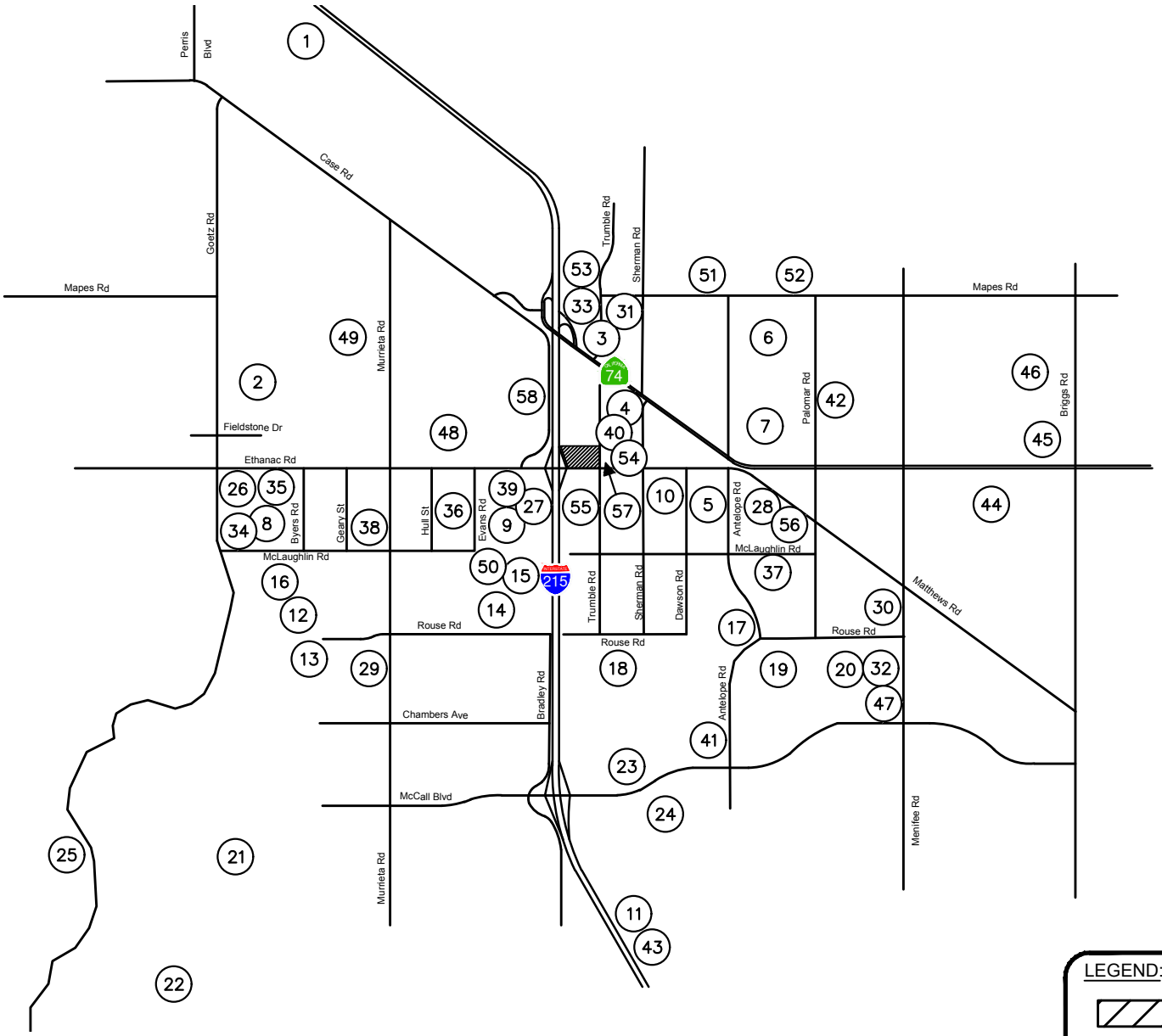
Notes:

[1] *Traffic Study for Menifee Valley Specific Plan* (prepared by LSA; November 2022). Due to the expected Opening Year of the proposed project and the Opening Years for Phases 1, 2, and 3 for the Menifee Valley Specific Plan, only Phase 1 was included in the Cumulative analysis. The trips for Phases 2 and 3 are provided for informational purposes only.

[2] *Green Valley Specific Plan Amendment 2 21-05125* (prepared April 2023), *Ethanac Business Park (PLN23-0171, PLN23-0173, PLN23-0174, PLN23-0175) Traffic Study Scoping Agreement (Revision 1)* (prepared by Urban Crossroads; March 2024). Due to the expected Opening Year of the proposed project and the Opening Year for Phase 2 and SP Track 37817, 37818, 37223, PA 46,47,48 of the Green Valley Specific Plan, only Phase 1 was included in the Cumulative analysis. The trips for Phase 2 and excluded SP Tracks are provided for informational purposes only.

[3] Trip Generation estimates from *Double Butte Storage Project Transportation Assessment* (prepared by Dudek: February 2024).

DU = Dwelling Unit, KSF = 1,000 square feet, MSF = 1,000,000 square feet, FP = Fueling Position



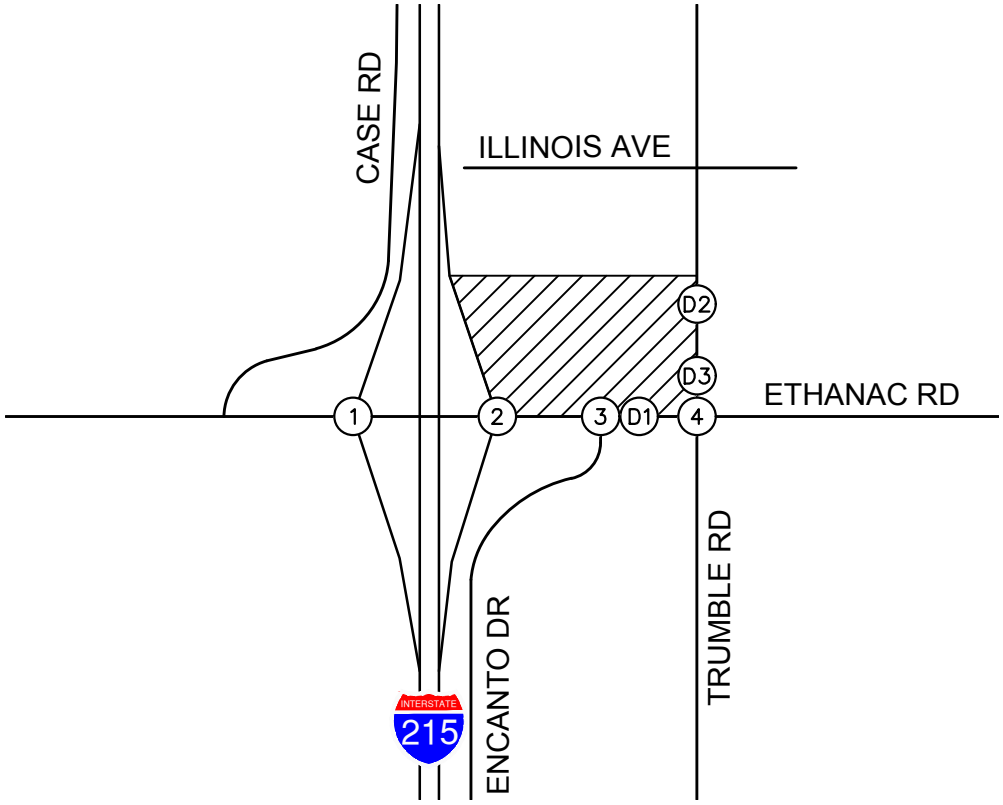
NOT TO SCALE

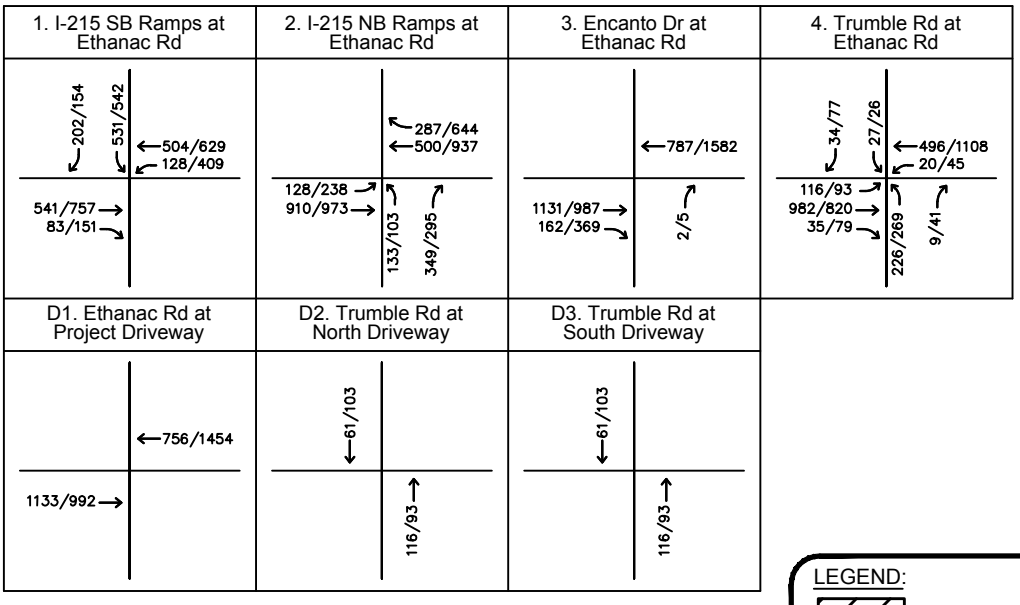
LEGEND:

= Project Site

(X) = Cumulative Project

FIGURE 10
LOCATION OF CUMULATIVE PROJECTS





Note: Volumes reflect PCE adjustments.

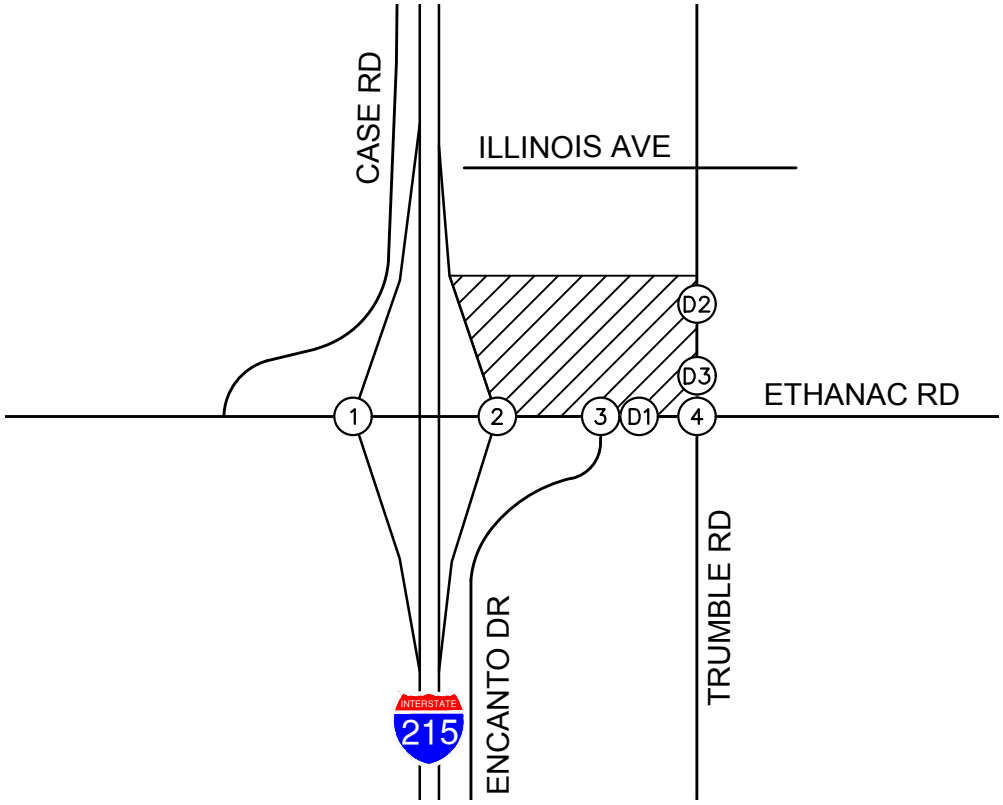
LEGEND:

= Project Site

X = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 11
CUMULATIVE PROJECTS TRAFFIC VOLUMES



1. I-215 SB Ramps at Ethanac Rd	2. I-215 NB Ramps at Ethanac Rd	3. Encanto Dr at Ethanac Rd	4. Trumble Rd at Ethanac Rd
465/519 ↙ 1/5 ↓ 648/831 ↘ 1135/1419 ← 268/548 ← 1254/1444 → 626/489 ↘	467/828 ↖ 1002/1404 ← 362/476 ↗ 1504/1673 → 395/571 ↖ 0/2 ↑ 474/502 ↗	1409/2157 ← 42/32 ↖ 1790/1790 → 221/502 ↘ 63/58 ↖ 32/65 ↗	120/196 ↙ 12/8 ↓ 62/63 ↘ 15/25 ↖ 1029/1547 ← 58/64 ← 181/173 ↗ 1582/1534 → 42/100 ↘ 275/317 ↖ 11/2 ↑ 40/75 ↗
D1. Ethanac Rd at Project Driveway	D2. Trumble Rd at North Driveway	D3. Trumble Rd at South Driveway	
FUTURE INTERSECTION	FUTURE INTERSECTION	FUTURE INTERSECTION	

Note: Volumes reflect PCE adjustments.

LEGEND:

= Project Site

(X) = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 12
OPENING YEAR 2026 CUMULATIVE TRAFFIC VOLUMES

TABLE 5
SUMMARY OF INTERSECTION OPERATION
OPENING YEAR 2026 CUMULATIVE

Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	SR-215 SB Ramps at Ethanac Road	S	151.7	F	367.4	F
2	SR-215 NB Ramps at Ethanac Road	S	211.9	F	475.3	F
3	Encanto Drive at Ethanac Road	U	>180	F	>180	F
4	Trumble Road at Ethanac Road	S	195.6	F	325.9	F
D1	Ethanac Road at Project Driveway	U	Future Intersection			
D2	Trumble Road at North Driveway	U	Future Intersection			
D3	Trumble Road at South Driveway	U	Future Intersection			

Notes:

- At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.

- At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst (highest delay) movement.

- Delay values are based on the methodology outlined in the Highway Capacity Manual, (6th Edition).

OPENING YEAR 2026 CUMULATIVE PLUS PROJECT CONDITIONS

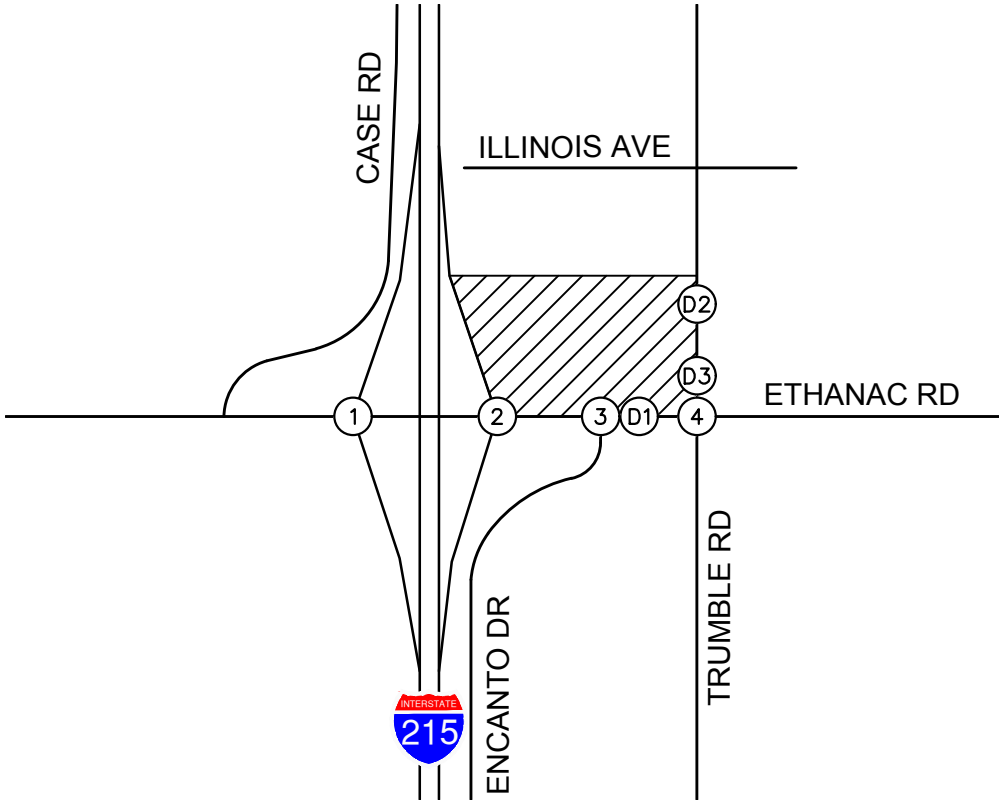
Project-related traffic was added to the Opening Year 2026 Cumulative traffic volumes, and the resulting morning and evening peak hour volumes and daily roadway volumes are presented on Figure 13.

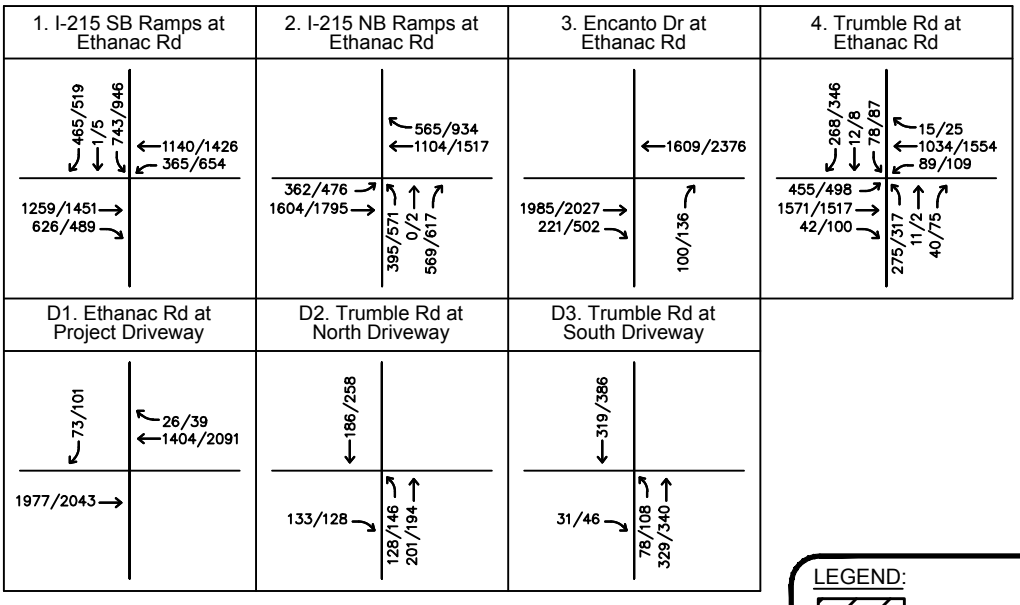
Intersection Operating Conditions

Intersection Level of Service analysis was conducted for the morning and evening peak hours for the Opening Year 2026 Cumulative Plus Project conditions. The results of the intersection analysis are shown on Table 6. Copies of intersection analysis worksheets for this scenario are provided in *Appendix D*.

Review of this Table indicates that, with the addition of project traffic, all intersections would operate at an unacceptable Level of Service under Opening Year 2026 Cumulative Plus Project conditions:

- #1 - I-215 SB Ramps at Ethanac Road: AM & PM - LOS F
- #2 - I-215 NB Ramps at Ethanac Road: AM & PM - LOS F
- #3 – Encanto Drive at Ethanac Road: AM & PM - LOS F
- #4 - Trumble Road at Ethanac Road: AM & PM - LOS F
- #D1 – Ethanac Road at Project Driveway: AM – LOS E; PM – LOS F





Note: Volumes reflect PCE adjustments.

FIGURE 13
OPENING YEAR 2026 CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES

TABLE 6
SUMMARY OF INTERSECTION OPERATION
OPENING YEAR 2026 CUMULATIVE PLUS PROJECT

Int. #	Intersection	Traffic Control	AM Peak Hour						PM Peak Hour					
			Without Project		With Project		Change in Delay	Sig Effect?	Without Project		With Project		Change in Delay	Sig Effect?
			Delay	LOS	Delay	LOS			Delay	LOS	Delay	LOS		
1	SR-215 SB Ramps at Ethanac Road	S	151.7	F	203.1	F	51.4	Yes	367.4	F	503.1	F	135.7	Yes
2	SR-215 NB Ramps at Ethanac Road	S	211.9	F	281.7	F	69.8	Yes	475.3	F	555.8	F	80.5	Yes
3	Encanto Drive at Ethanac Road	U	>180	F	44.5[1]	E	-	No	>180	F	126.4[1]	F	-	No
4	Trumble Road at Ethanac Road	S	195.6	F	250.4	F	54.8	Yes	325.9	F	480.1	F	154.2	Yes
D1	Ethanac Road at Project Driveway	U	-	-	17.5	C	-	No	-	-	38.4	E	-	No
D2	Trumble Road at North Driveway	U	-	-	10.1	B	-	No	-	-	10.7	B	-	No
D3	Trumble Road at South Driveway	U	-	-	10.3	B	-	No	-	-	11.0	B	-	No

Notes:

- Bold and shaded values indicate intersections operating at an unacceptable Level of Service or significant impact to intersection per City standards.
- At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
- At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst (highest delay) movement.
- Delay values are based on the methodology outlined in the Highway Capacity Manual, (6th Edition).

[1] LOS improvement under "Plus Project" conditions due to implementation of raised median along Ethanac Road between Trumble Road and just west of Encanto Drive, and 2nd westbound through lane.

RECOMMENDED IMPROVEMENTS

Based on the Level of Service standards and significant effect criteria discussed previously, in addition to the significant cumulative effect under Opening Year 2026 Cumulative conditions, under Opening Year 2026 Cumulative Plus Project Conditions the project would cause a significant cumulative project-related effect at the following intersections:

- #1 - I-215 SB Ramps at Ethanac Road
- #2 - I-215 NB Ramps at Ethanac Road
- #3 – Encanto Drive at Ethanac Road
- #4 - Trumble Road at Ethanac Road

The Menifee Commerce Center Project (cumulative project #10 in this analysis) is a proposed warehousing development along Ethanac Road, with buildings between Sherman Road, Dawson Road, and Trumble Road. As part of the *Menifee Commerce Center Project Traffic Impact Analysis* (Albert A. Webb Associates, August 2021) project/cumulative effects were assessed at various intersections along Ethanac Road, including intersections #1, #2, #3, and #4 in this analysis. Mitigation measures were proposed at these intersections to alleviate project/cumulative effects. Based on the anticipated construction timeline referenced in the Menifee Commerce Center study, the proposed improvements are likely to be implemented prior to the construction of the Perris Travel Center Project. Due to the projected effect of Perris Travel Center project traffic on the study intersections, the applicant will be required to pay a fair-share contribution toward Menifee Commerce Center improvements. A summary of the Menifee Commerce Center improvements are as follows:

<u>#1 - I-215 SB Ramps at Ethanac Road:</u>

- Add 2nd eastbound through lane (no widening)
- Add 2nd westbound left-turn lane (no widening)

<u>#2 - I-215 NB Ramps at Ethanac Road:</u>

- Add 2nd eastbound through lane
- Add 2nd westbound through lane
- Add a dedicated westbound right-turn lane
- Add 2nd eastbound left-turn lane

<u>#3 – Encanto Drive at Ethanac Road:</u>

- Add 2nd eastbound through lane
- Install traffic signal

<u>#4 - Trumble Road at Ethanac Road:</u>

- Add 2nd eastbound through lane

A summary of the intersection operation before and after implementation of the Menifee Conference Center improvements is provided on Table 7. While no improvements are proposed at Intersection #D1 (Ethanac Road at Project Driveway), the intersection was included in the analysis due to the effect of improvements at surrounding intersections. Review of this table indicates that Intersections #1, #2, and #4 still operate at a deficient LOS.

Further improvements are recommended under Opening Year 2026 Cumulative Plus Project conditions to address the project-related effect at the study intersections:

#1 - I-215 SB Ramps at Ethanac Road (Regional TUMF):

- Add a dedicated southbound left-turn lane
- Convert southbound shared through-left lane to a shared left-through-right lane
- Signal timing adjustments (cycle and splits)

#2 - I-215 NB Ramps at Ethanac Road (Regional TUMF):

- Add a dedicated northbound left-turn lane
- Convert northbound shared through-left lane to a shared left-through-right lane
- Signal timing adjustments (cycle and splits)

#3 – Encanto Drive at Ethanac Road:

- Signal timing adjustments (cycle and splits)

#4 - Trumble Road at Ethanac Road (Regional TUMF):

- Convert southbound shared through-right lane to dedicated through lane
- Add southbound right-turn lane
- Add southbound right-turn overlap phasing
- Add 2nd eastbound left-turn lane
- Signal timing adjustments (cycle and splits)

A summary of the intersection operation before and after implementation of the recommended improvements is provided on Table 8. Recommended lane configurations and intersection controls at study intersections are shown on Figure 14. Review of Table 8 shows Intersection #D1 (Ethanac Road at Project Driveway) operates at LOS E in the PM peak hour due to the southbound right-turn movement. The delay is the result of vehicles exiting the site. As queuing is restricted to the project site and delays are experienced onsite rather than on a public roadway, no offsite mitigation measures are recommended. Additionally, a traffic signal is not warranted at this intersection.

A copy of the Regional TUMF Program improvements is provided in *Appendix G*. Recommended improvements may include a combination of fee payments to established programs, construction of specific improvements, payment of a fair-share contribution toward future improvements, or a combination of these approaches. The project fair-share proportion for non-programmed improvements at deficient study intersections under Opening Year 2026 Cumulative Plus Project conditions is shown on Table 9. The proposed project will pay fair share for non-programmed improvements at deficient study intersections. For programmed improvements, the developer will pay into the regional transportation fee program.

TABLE 7
SUMMARY OF INTERSECTION OPERATION
MENIFEE COMMERCE CENTER IMPROVEMENTS

Int. #	Intersection	MCC Improvements	Peak Hour	Proposed Traffic Control	OPENING YEAR 2026 CUMULATIVE					
					Without Project		With Project		With MCC Improvements	
					Delay	LOS	Delay	LOS	Delay	LOS
1	SR-215 SB Ramps at Ethanac Road	•Add 2nd eastbound through lane (no widening) •Add 2nd westbound left-turn lane (no widening)	AM	S	151.7	F	203.1	F	63.1	E
			PM	S	367.4	F	503.1	F	144.4	F
2	SR-215 NB Ramps at Ethanac Road	•Add 2nd eastbound through lane •Add 2nd westbound through lane •Add a dedicated westbound right-turn lane •Add 2nd eastbound left-turn lane	AM	S	211.9	F	281.7	F	37.1	D
			PM	S	475.3	F	555.8	F	89.5	F
3	Encanto Drive at Ethanac Road	•Add 2nd eastbound through lane •Install new traffic signal	AM	S	>180	F	44.5	E	13.8	B
			PM	S	>180	F	126.4	F	37.4	D
4	Trumble Road at Ethanac Road	•Add 2nd eastbound through lane	AM	S	195.6	F	250.4	F	73.7	E
			PM	S	325.9	F	480.1	F	147.6	F
D1	Ethanac Road at Project Driveway	•No Proposed Improvements	AM	U	-	-	17.5	C	17.5	C
			PM	U	-	-	38.4	E	38.4	E

Notes:
- Bold values indicate intersections operating at an unacceptable Level of Service
- Delay values for unsignalized intersections represent the average vehicle delay on the worst (highest delay) intersection approach.

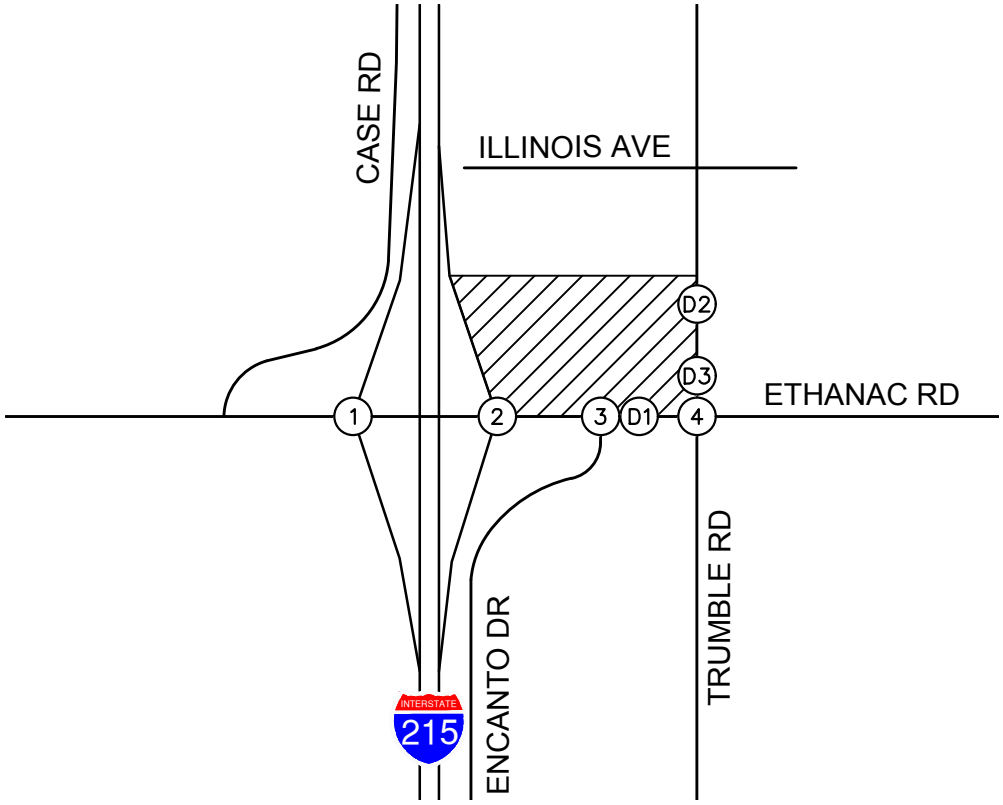
S = Signalized
U = Unsignalized
MCC = Menifee Conference Center

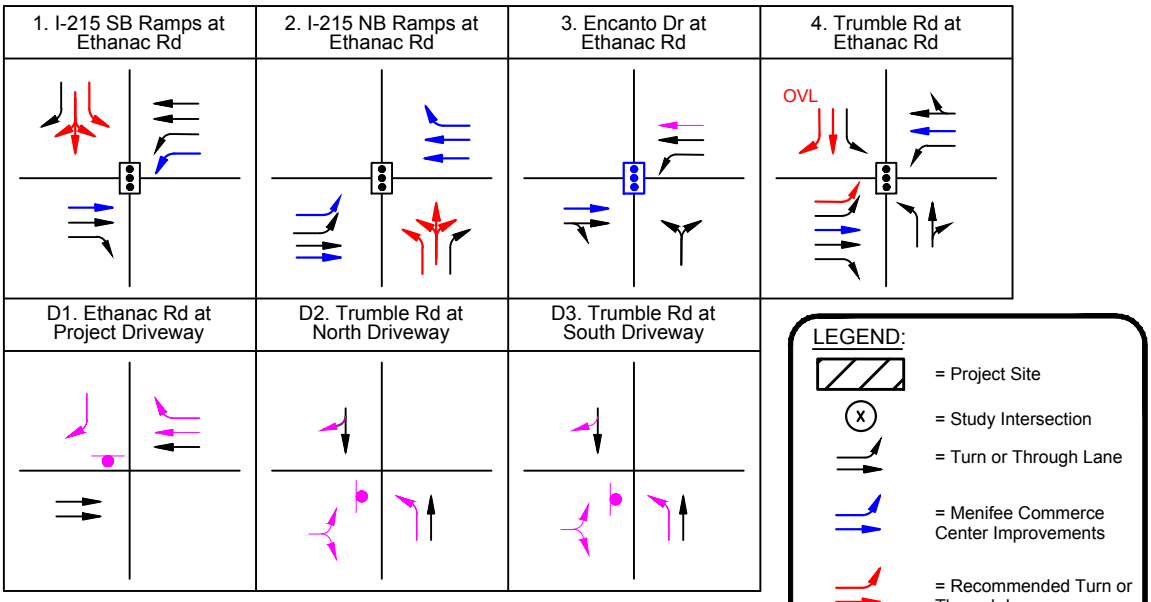
TABLE 8
SUMMARY OF INTERSECTION OPERATION
RECOMMENDED ADDITIONAL IMPROVEMENTS

Int. #	Intersection	Additional Improvements	Peak Hour	Proposed Traffic Control	OPENING YEAR 2026 CUMULATIVE			
					With MCC Improvements		With Additional Improvements	
					Delay	LOS	Delay	LOS
1	SR-215 SB Ramps at Ethanac Road	•Add a dedicated southbound left-turn lane •Convert southbound shared through-left lane to a shared left-through-right lane •Signal timing adjustments (cycle and splits)	AM	S	63.1	E	33.3	C
			PM	S	144.4	F	66.4	E
2	SR-215 NB Ramps at Ethanac Road	•Add a dedicated northbound left-turn lane •Convert northbound shared through-left lane to a shared left-through-right lane •Signal timing adjustments (cycle and splits)	AM	S	37.1	D	26.8	C
			PM	S	89.5	F	56.5	E
3	Encanto Drive at Ethanac Road	•Signal timing adjustments (cycle and splits); made in accordance with Int. #1, #2, and #4, not due to deficiency	AM	S	13.8	B	13.7	B
			PM	S	37.4	D	33.0	C
4	Trumble Road at Ethanac Road	•Convert southbound shared through-right lane to dedicated through lane •Add southbound right-turn lane •Add southbound right-turn overlap phasing •Add 2nd eastbound left-turn lane •Signal timing adjustments (cycle and splits)	AM	S	73.7	E	29.1	C
			PM	S	147.6	F	51.7	D
D1	Ethanac Road at Project Driveway	•No Proposed Improvements	AM	U	17.5	C	17.5	C
			PM	U	38.4	E	38.4	E

Notes:
- Bold values indicate intersections operating at an unacceptable Level of Service
- Delay values for unsignalized intersections represent the average vehicle delay on the worst (highest delay) intersection approach.

S = Signalized
U = Unsignalized





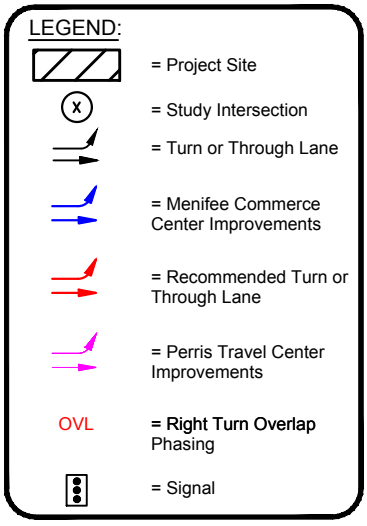


FIGURE 14
RECOMMENDED LANE CONFIGURATION AND TRAFFIC CONTROL

TABLE 9
SUMMARY OF PROJECT FAIR SHARE
OPENING YEAR 2026 CUMULATIVE PLUS PROJECT

Int. #	Intersection	AM Peak Hour					PM Peak Hour				
		Total Volume		Total	Project	Percentage of	Total Volume		Total	Project	Percentage
		2024	2026	Growth	Trips	Growth	2024	2026	Growth	Trips	of Growth
1	I-215 SB Ramps at Ethanac Road	2,270	4,512	2,242	202	9.0%	2,464	5,404	2,940	235	8.0%
2	I-215 NB Ramps at Ethanac Road	1,789	4,497	2,708	395	14.6%	2,135	5,812	3,677	456	12.4%
3	Encanto Drive at Ethanac Road	1,390	3,824	2,434	358	14.7%	1,566	4,952	3,386	437	12.9%
4	Trumble Road at Ethanac Road	1,396	3,772	2,376	463	19.5%	1,458	4,523	3,065	534	17.4%

Notes:
- Fair Share percentage is to be applied to non-programmed improvements

SITE ACCESS ANALYSIS

Vehicular access for the project site would be via one passenger car unsignalized right-in-right-out (RIRO) only driveway on Ethanac Road, one passenger car full-access unsignalized driveway on Trumble Road, and one truck accessible full-access unsignalized driveway on Trumble Road. A dedicated northbound left turn lane/two-way left-turn lane is proposed at both Trumble Road driveway intersections to accommodate left turns into the project.

Truck Turning

The proposed truck driveway (Trumble Road at North Driveway) would provide adequate space for a WB-67 design vehicle to ingress and egress from the site. Truck turning diagrams are provided in Appendix H.

Driveway Spacing

Driveway spacing for the project was evaluated based on County of Riverside Standard No. 114. Based on the standard plan, a distance of 200 feet is required between driveways. The proposed Project driveways would be at least 200 feet apart from one another and from the intersection of Trumble Road at Ethanac Road. Therefore, the minimum driveway spacing is met. A copy of the project site plan is provided on Figure 2 (previously mentioned).

Project Access Queuing Analysis

Queue lengths were assessed at the following project access points/adjacent intersections:

- Trumble Road at North Driveway
    - Northbound Left-Turn Lane
- Trumble Road at South Driveway
    - Northbound Left-Turn Lane
- Trumble Road at Ethanac Road
    - Southbound Left-Turn Pocket

As a worst-case scenario, left-turn queue lengths were analyzed for the Opening Year 2026 Cumulative Plus Project scenario. A summary of left-turn lane storage capacity, as well as 50th and 95th percentile queue lengths at the locations noted above are shown on Table 10. The table shows that all left-turn lanes would have adequate storage capacity to accommodate the 95th percentile queues under the Opening Year 2026 Cumulative Plus Project scenario.

TABLE 10
SUMMARY OF PROJECT ACCESS INTERSECTION QUEUING ANALYSIS
PERRIS TRAVEL CENTER PROJECT

Intersection	Movement	Storage Capacity (ft)	Peak Hour	Peak Hour Queue Length (ft)	
				Opening Year 2026 Cumulative Plus Project	
				50th Percentile[1]	95th Percentile
Trumble Road at North Driveway	NB Left	200	AM	-	8
			PM	-	10
Trumble Road at South Driveway	NB Left	200	AM	-	5
			PM	-	8
Trumble Road at Ethanac Road	SB Left	200	AM	55	98
			PM	58	104

Notes:
[1] The 50th percentile queue is not calculated for unsignalized intersections.

STORAGE CAPACITY AT RAMP INTERSECTIONS

Queue lengths at ramps were assessed at the following locations:

- SR-215 SB Ramps at Ethanac Road
    - Southbound Ramp
    - Westbound Left-Turn Pocket
- SR-215 NB Ramps at Ethanac Road
    - Northbound Ramp
    - Eastbound Left-Turn Pocket

A summary of ramp intersection storage capacity, as well as 50th and 95th percentile queue lengths at the locations noted above are shown on Table 11. The table shows that all left-turn pockets would have adequate storage capacity to accommodate the 95th percentile queues under both Existing and Existing Plus Project Scenarios. The table shows that the 50th and 95th percentile queues would exceed the available ramp capacity and left turn pocket capacity under Opening Year 2026 Cumulative conditions (with and without project) at the studied intersections.

With the implementation of recommended improvements, 50th and 95th percentile queues will be accommodated by the proposed configuration, except at the following location:

- #1 - SR-215 SB Ramps at Ethanac Road
    - Westbound Left Turn Pocket: PM – 17 feet/lane

It should be noted that the storage capacity at this left-turn pocket would be exceeded only 5% of the time during the evening peak hour and would be exceeded by less than one vehicle car length, which could be accommodated in the 100-foot transition area. The Vistro analysis worksheets which support this analysis are shown in *Appendix D*.

Proposed westbound and eastbound left-turn pocket storage at Intersections #1 and #2, respectively, shall be provided based on results of the queueing analysis.

TABLE 11
SUMMARY OF STORAGE CAPACITY AT RAMP INTERSECTIONS
PERRIS TRAVEL CENTER PROJECT

Intersection	Movement	Storage Capacity (ft)	Peak Hour	Peak Hour Queue Length (ft)									
				Existing		Existing Plus Project		Opening Year 2026 Cumulative		Opening Year 2026 Cumulative Plus Project		OY 2026 Cumulative Plus Project with Improvements	
				50th Percentile	95th Percentile	50th Percentile	95th Percentile	50th Percentile	95th Percentile	50th Percentile	95th Percentile	50th Percentile	95th Percentile
SR-215 SB Ramps at Ethanac Road	SB Ramp	1,370	AM	161	265	160	264	1,020	1,569	1,327	2,068	331	481
			PM	224	346	250	379	1,575	2,467	1,950	3,070	507	750
	WB Left	275*	AM	86	155	145	244	164	268	221	343	147	246
			PM	82	148	145	244	333	482	407	573	182	292[1,2]
SR-215 NB Ramps at Ethanac Road	NB Ramp	1,315	AM	152	253	151	251	750	1,172	1,062	1,674	255	386
			PM	276	412	273	408	775	1,174	1,034	1,616	415	630
	EB Left	250*	AM	136	232	136	232	529	831	529	831	146	245
			PM	135	231	135	231	907	1,426	907	1,426	146	245

Notes:
[1] The storage capactiy would be exceeded only 5% of the time in the evening peak hour.
[2] The 95th percentile queue can be accomodated in the 100-foot transition area.
*Left-turn pocket storage capacity based on existing left-turn pocket striping length. Approximately 100 feet of additional queue storage is available, but is unstriped in the existing condition.

DRIVE-THROUGH QUEUING ANALYSIS

The drive-through queuing capacity was analyzed as part of the *Drive-Through Queueing Analysis for the Proposed Perris Travel Center Project (CUP22-05002) Located at Ethanac Road and Trumble Road in the City of Perris* (February 2023). See *Appendix F* for full analysis.

VEHICLE MILES TRAVELED ANALYSIS

Senate Bill 743 (SB 743) was approved by California legislature in September 2013. SB 743 requires changes to California Environmental Quality Act (CEQA), specifically directing the Governor's Office of Planning and Research (OPR) to develop alternative metrics to the use of vehicular "Level of Service" (LOS) for evaluating transportation projects. OPR has prepared a technical advisory ("OPR" Technical Advisory) for evaluating transportation impacts in CEQA and has recommended that Vehicle Miles Traveled (VMT) replace LOS as the primary measure of transportation impacts. This analysis was prepared to document the VMT analysis for the Perris Travel Center Project following the OPR Technical Advisory (December 2018), the City of Perris traffic requirements and the Riverside County *Transportation Analysis Guidelines* (TA Guidelines, December 2020).

OPR Technical Advisory suggests that a city may screen out VMT impacts using project size, maps, transit availability, and provision of affordable housing to quickly identify when a project would be expected to cause a less than significant impact without conducting a detailed study. The City of Perris provides guidance on appropriate screening thresholds that can be used to identify when a proposed land use project is anticipated to result in a less-than-significant impact without conducting a more detailed level analysis.

Screening thresholds include a local serving land use screening. A land use project that is a local serving land use is presumed to result in a less-than-significant impact under CEQA pursuant to SB 743.

Local-serving retail projects may be presumed to have a less than significant impact absent substantial evidence to the contrary. This is because local-serving retail generally improves the convenience of shopping close to home and has the effect of reducing vehicle travel. Since the proposed project is local serving in nature it meets the local serving land use criteria. Therefore, the Project screens out and no further VMT analysis is required.

The City of Perris VMT Scoping Form for Land Use Projects is included as part of the Approved Scoping Agreement in Appendix A.

SUMMARY OF FINDINGS AND CONCLUSIONS

- The project is located on the northwest corner of the intersection of Trumble Road and Ethanac Road.

- The project consists of the construction of a truck stop with 7 truck fueling positions, a gas station with 16 fueling positions and a convenience market, and an approximately 2,228 square-foot fast-food restaurant with a drive-through.

- Vehicular access for the project site would be via three driveways. The driveway on Ethanac Road would provide right-in-right-out (RIRO) only access. The southern driveway on Trumble Road would be full access for passenger vehicles. The northern driveway on Trumble Road would provide truck ingress and egress (full access) to the project site. All project driveways would be unsignalized.

- Morning and evening peak hour operating conditions were evaluated at the study intersections for the following study scenarios:
  - Existing Conditions
  - Existing Plus Project
  - Opening Year 2026 Cumulative
  - Opening Year 2026 Cumulative Plus Project

- Existing peak hour traffic counts were collected in March 2024.

- Under Existing Conditions, the following study intersection would operate at an unacceptable Level of Service:

  - #3 – Encanto Drive at Ethanac Road

- The project is estimated to generate 8,608 net new PCE trips on a daily basis, with 365 net new PCE trips in the morning peak hour, and 404 net new PCE trips in the evening peak hour.

- The Project Applicant will be installing a raised median along Ethanac Road between Trumble Road and just west of Encanto Drive, and will be adding a second westbound through lane along the project frontage. As a result, the intersection of Encanto Drive at Ethanac Road would change from a full access to a right-in-right-out (RIRO) only unsignalized intersection.

- Project traffic was added to Existing traffic volumes to establish the conditions for Existing Project condition. Under this condition, the following study intersection would operate at an unacceptable Level of Service:

    - #3 – Encanto Drive at Ethanac Road

- The project opening year is anticipated to be Year 2026. The Opening Year 2026 includes a 3% ambient annual growth rate. Cumulative Projects traffic was added to Opening Year 2026 traffic volumes to establish the conditions for Opening Year 2026 Cumulative condition. Under this condition, the following intersections operate at an unacceptable Level of Service:

    - #1 - I-215 SB Ramps at Ethanac Road
    - #2 - I-215 NB Ramps at Ethanac Road
    - #3 – Encanto Drive at Ethanac Road
    - #4 - Trumble Road at Ethanac Road

- Project traffic was added to Opening Year 2026 traffic volumes to establish the conditions for Opening Year 2026 Cumulative Plus Project condition. Under this condition, the following intersections operate at an unacceptable Level of Service:

    - #1 - I-215 SB Ramps at Ethanac Road
    - #2 - I-215 NB Ramps at Ethanac Road
    - #3 – Encanto Drive at Ethanac Road
    - #4 - Trumble Road at Ethanac Road
    - #D1 – Ethanac Road at Project Driveway

- Based on the Riverside County *Transportation Analysis Guidelines* (TA Guidelines, December 2020) in addition to cumulative effects under Opening Year 2026 Cumulative conditions, under Opening Year 2026 Cumulative Plus Project Conditions, the project would cause a significant cumulative project-related effect at the following intersections:

    - #1 - I-215 SB Ramps at Ethanac Road
    - #2 - I-215 NB Ramps at Ethanac Road
    - #3 – Encanto Drive at Ethanac Road
    - #4 - Trumble Road at Ethanac Road

- As part of the *Menifee Commerce Center Project Traffic Impact Analysis* (Albert A. Webb Associates, August 2021) improvements at Perris Travel Center Project intersections #1, #2, #3, and #4 were proposed, and are likely to be implemented prior to the construction of the Perris Travel Center Project.

- Additional recommended improvements under applicable Opening Year 2026 Cumulative Plus Project conditions were provided to address the project's effect at study intersections.

- Recommended and MCC improvements may include a combination of fee payments to established programs, construction of specific improvements, payment of a fair-share contribution toward future improvements, or a combination of these approaches.

- With the implementation of recommended improvements, 50th and 95th percentile queues will be accommodated by the proposed configuration, except at the following location:

    - #1 - SR-215 SB Ramps at Ethanac Road – Westbound Left Turn Pocket

- Storage capacity at this left-turn pocket would be exceeded only 5% of the time during the evening peak hour and would be exceeded by less than one vehicle car length, which could be accommodated in the 100-foot transition area.

- Proposed westbound and eastbound left-turn pocket storage at Intersections #1 and #2, respectively, shall be provided based on results of the queueing analysis.

- Since the proposed project is local serving in nature it meets the local serving land use VMT screening criteria. Therefore, the Project screens out and no further VMT analysis is required.

APPENDIX **A**

APPROVED SCOPING AGREEMENT

May 18, 2022

Ms. Lupita Garcia
CITY OF PERRIS (Planning Division)
135 North "D" Street
Perris, CA 92570

Subject: Perris Travel Center Project (CUP22-05002 & 22-05003)
Traffic Study Scoping Agreement and VMT Screening Assessment Review #3, City of Perris

Introduction

RK ENGINEERING GROUP, INC. (RK) has reviewed the traffic study scoping agreement and VMT screening assessment #3 for the Perris Travel Center Project (CUP22-05002 & 22-05003). The project is located on the northwest corner of Trumble Road and Ethanac Road in the City of Perris, CA, and proposes to construct a 2,228 square-foot (SF) fast-food restaurant with drive-through, a 16-vehicle fueling position (VFP) super convenience market & gas station, and an 8 VFP truck stop. The project proposes to have three (3) access points including one (1) driveway located along Ethanac Road and two (2) driveways located along Trumble Road.

RK has reviewed the traffic study scoping agreement and VMT screening assessment #3 for the Perris Travel Center Project (CUP22-05002 & 22-05003), prepared by Kimley-Horn & Associates, dated May 13, 2022. RK has reviewed both the traffic study scoping agreement and VMT screening assessment based upon our previous May 9, 2022 comment letter. The scoping agreement and VMT Analysis followed the requirements of the City of Perris and traffic engineering criteria. RK has reviewed the traffic study scoping agreement and VMT screening assessment #3 and it is acceptable as currently written.

Comments

RK has the following comments on the traffic study scoping agreement and VMT screening assessment #3:

1. The Scoping Agreement and VMT Analysis #3 are acceptable as currently written. **The final traffic study must include the following:**

   - **Detailed exhibits that show actual turning movement volumes at all study intersections and project driveways.**
   - **The traffic study will need to provide a drive-through queuing analysis for the proposed drive-through facility.**
   - **Please include the VMT Scoping Form as an appendix to the final traffic study. The "Net Project Daily Trips" volume should be based on actual vehicles (non-PCE trips). This will not change the results of the VMT analysis.**

Conclusions

RK has reviewed the traffic study scoping agreement and VMT screening assessment #3 for the Perris Travel Center Project (CUP22-05002 & 22-05003), prepared by Kimley-Horn & Associates, dated May 13, 2022. Based upon this review, RK has determined that it is acceptable from a technical standpoint. Please have the traffic Consultant proceed with preparing the traffic study.

RK engineering group appreciates his opportunity to work with the City of Perris on this project, if you have any questions, please give me a call at area code 949-293-9639

Sincerely,
RK ENGINEERING GROUP, INC.

Robert Kahn, P.E.
Founding Principal

Justin Tucker, P.E.
Principal Engineer

Registered Civil Engineer 20285
Registered Traffic Engineer 0555

XC: Kenneth Phung, City of Perris,
Nathan Perez, City of Perris
Stuart McKibben, City of Peris
John Pourkazemi, Tri-Lake Consultants

RK17399.DOC
JN: 2126-2021-14

Exhibit B

SCOPING AGREEMENT FOR TRAFFIC IMPACT STUDY

This letter acknowledges the Riverside County Transportation Department requirements for traffic impact analysis of the following project. The analysis must follow the Riverside County Transportation Department Traffic Study Guidelines dated February 2005.

Case No. CUP22-05002 & 22-05003

Related Cases –

SP No. *Provide SP No. and list of other approved or active projects within the SP.*

EIR No.

GPA No.

CZ No.

Project Name: Perris Travel Center

Project Address: Northwest corner of Trumble Road and Ethanac Road

Project Description: Travel Center with 2,228 SF Fast-Food w/ Drive-Through, 16 Fueling Positions (FP) Super Convenience Market/Gas Station, and 8 Fueling Positions (FP) Truck Stop

	Consultant	Developer
Name:	Kimley-Horn and Associates, Inc.	Pilot Travel Center
Address:	3880 Lemon Street, Suite 420 Riverside, CA 92501	5508 Lonas Drive Knoxville, TN 37909
Telephone:	(951) 543-9869	(865) 474-2935
Fax:		

A. Trip Generation Source: ITE Trip Generation Manual, 11th Edition

Current GP Land Use	**Vacant**	Proposed Land Use	**Commercial**
Current Zoning	**Community Commercial**	Proposed Zoning	**Community Commercial**

	Current Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Trips	0	0	0	241	247	488
PM Trips	0	0	0	258	238	496

Internal Trip Allowance ☒ Yes ☐ No (**See Attachment 3** % Trip Discount)

Pass-By Trip Allowance ☒ Yes ☐ No (**See Attachment 2** % Trip Discount)

A passby trip discount of 25% is allowed for appropriate land uses. The passby trips at adjacent study area intersections and project driveways shall be indicated on a report figure.

B. Trip Geographic Distribution: (See Attachment 3)		N	S	E	W
	PC:	**40%**	**40%**	**10%**	**10%**
	Truck:	**50%**	**50%**	**0%**	**0%**

C. Background Traffic

Project Build-out Year: ***2024*** Annual Ambient Growth Rate: ***3 %***

Phase Year(s) ***N/A***

Other area projects to be analyzed: ***We will request a list of Cumulative Projects from Planning***

Model/Forecast methodology **Existing + Ambient Growth + Cumulative Projects + Project (Build-Up)**

D. Study intersections: *(NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)*

1. **SR-215 SB Ramps at Ethanac Road**
2. **SR-215 NB Ramps at Ethanac Road**
3. **Encanto Drive at Ethanac Road**
4. **Trumble Road at Ethanac Road**
5. **Ethanac Road at Project Driveway**
6. **Trumble Road at North Driveway**
7. **Trumble Road at South Driveway**
8.
9.
10.

E. Study Roadway Segments: *(NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)*

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

E. Other Jurisdictional Impacts

Is this project within a City's Sphere of Influence or one-mile radius of City boundaries? [x] Yes [ ] No

If so, name of City Jurisdiction: City of Menifee

F. Site Plan: See Attachment 1

G. Specific issues to be addressed in the Study (in addition to the standard analysis described in the Guideline) (To be filled out by Transportation Department)
(NOTE: If the traffic study states that "a traffic signal is warranted" (or "a traffic signal appears to be warranted," or similar statement) at an existing unsignalized intersection under existing conditions, 8-hour approach traffic volume information must be submitted in addition to the peak hourly turning movement counts for that intersection.)

- VMT - See Attachment 5
- Include LOS methodology from adjacent jurisdictions (where applicable).
- Off-ramp queueing analysis for all ramp study intersections.
- Peak hour traffic signal warrant will be conducted for the study intersection of Ethanac Road at Encanto Drive.
- Truck turning templates at truck driveways.

H. Existing Conditions

Traffic count data must be new or recent. Provide traffic count dates if using other than new counts.
Date of counts New counts will be collected

***NOTE* Traffic Study Submittal Form and appropriate fee must be submitted with, or prior to submittal of this form. Transportation Department staff will not process the Scoping Agreement prior to receipt of the fee.**

Recommended by:

Trevor Briggs — 5/13/2022
Consultant's Representative — Date

Approved Scoping Agreement:

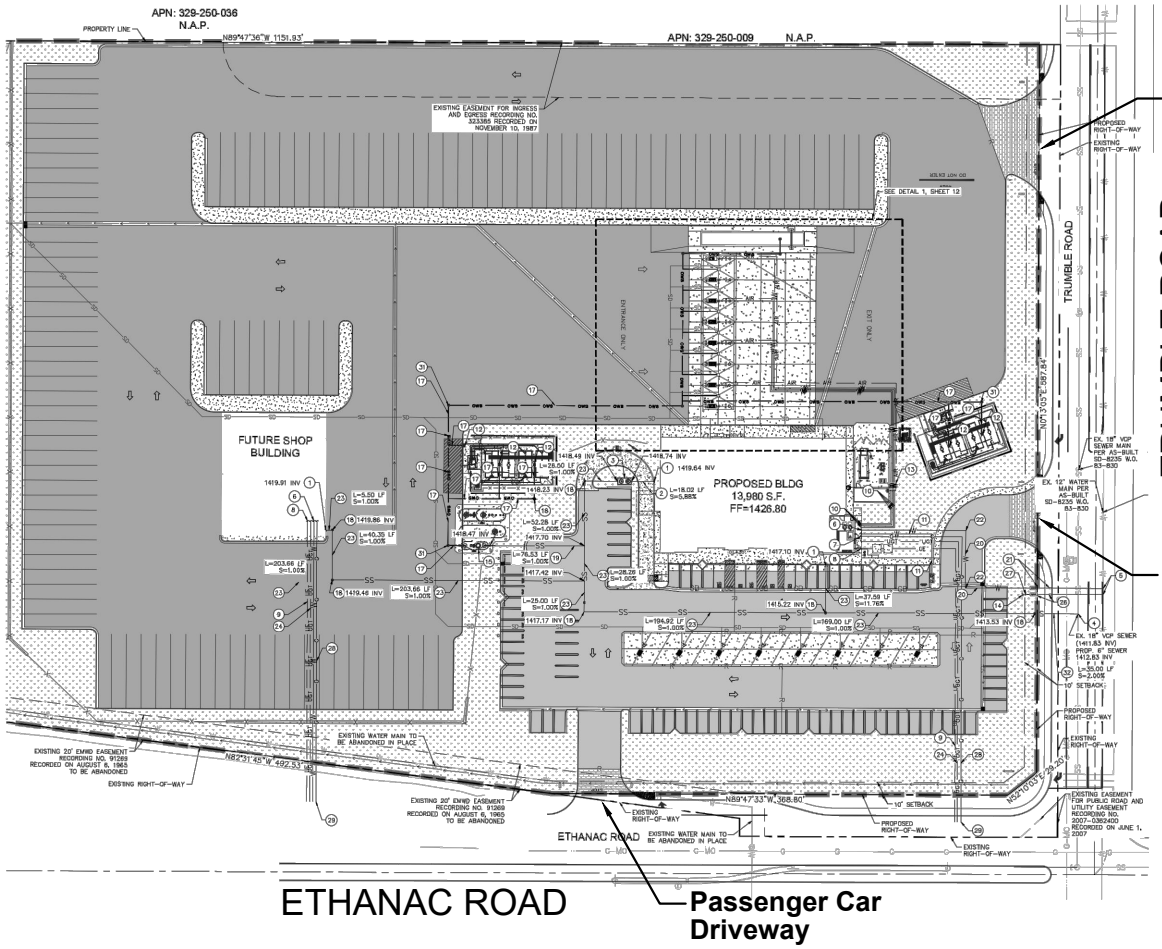
_____ — _____
Consultant Traffic Engineer for the City of Perris — Date

Scoping Agreement Submitted on 10/13/2021

Revised on 5/5/2022
5/13/2022

ATTACHMENT 1

NOT TO SCALE



PROJECT SITE PLAN

Kimley»Horn

ATTACHMENT 2
SUMMARY OF PROJECT TRIP GENERATION
PERRIS TRAVEL CENTER

Trip Generation Rates

Land Use	ITE Code (a)	Unit	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Fast-Foot Restaurant w Drive-Through Window	934	KSF	467.480	51%	49%	44.61	52%	48%	33.03
Convenience Store/Gas Station (GFA 5.5-10k)	945	FP	345.750	50%	50%	31.60	50%	50%	26.90
Truck Stop	950	FP	224.000	49%	51%	13.97	53%	47%	15.42

Project Trip Generation

Land Use	Quantity	Unit	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Passenger Car Trips									
Fast-Food Restaurant with Drive-Through	2.228	KSF	1,042	50	49	99	38	36	74
Internal Capture (b) (Daily: 10%, AM: 11%, PM: 10%)			-104	-6	-5	-11	-4	-3	-7
Pass-By Trips (c) (Daily: 25%, AM: 50%, PM: 55%)			-235	-22	-22	-44	-19	-18	-37
Convenience Store/Gas Station (GFA 5.5-10k)	16	FP	5,532	253	253	506	215	215	430
Internal Capture (b) (Daily: 10%, AM: 11%, PM: 10%)			-553	-28	-28	-56	-22	-21	-43
Pass-By Trips (c) (Daily: 50%, AM: 76%, PM: 75%)			-2,490	-171	-171	-342	-145	-145	-290
Truck Trips (d)									
Truck Stop	8	FP	1,792	55	57	112	65	58	123
PCE Truck Stop (PCE Factor = 3)			5,376	165	171	336	195	174	369
Total Driveway Trips			**11,293**	**434**	**440**	**874**	**422**	**401**	**823**
Passenger Car			5,917	269	269	538	227	227	454
Truck PCE			5,376	165	171	336	195	174	369
Total Primary (Net New) Trips			**8,568**	**241**	**247**	**488**	**258**	**238**	**496**
Passenger Car			3,192	76	76	152	63	64	127
Truck PCE			5,376	165	171	336	195	174	369

Notes:
KSF = thousand square feet, FP = Fueling Position
AM and/or PM rates correspond to peak of adjacent street traffic
(a) Trip Generation data for ITE Codes from ITE *Trip Generation Manual, 11th Edition*
(b) Internal capture rates from ITE Trip Generation Handbook, 3rd Edition NCHRP 684 Internal Trip Capture Estimation Tool
(c) Pass-by rates from ITE Trip Generation Handbook, 3rd Edition for ITE LU 934 Fast-Food Restaurant With Drive-Through Window and LU 945 Gasoline/Service Station With Convenience Market
(d) No internal capture was assumed for the Truck Stop land use, as a truck stop is assumed to include a variety of services

ATTACHMENT 3A

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Travel Center	**Organization:**	Kimley-Horn
Project Location:	Rialto	**Performed By:**	PS
Scenario Description:		**Date:**	5/13/2022
Analysis Year:		**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				506	253	253
Restaurant				99	50	49
Cinema/Entertainment				0		
Residential				0		
Hotel				0		
All Other Land Uses[2]				0		
				605	303	302

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		25	0	0	0
Restaurant	0	7		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	605	303	302
Internal Capture Percentage	11%	11%	11%
External Vehicle-Trips[5]	541	271	270
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	3%	10%
Restaurant	50%	14%
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

ATTACHMENT 3B

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Travel Center	**Organization:**	Kimley-Horn
Project Location:	Rialto	**Performed By:**	PS
Scenario Description:		**Date:**	5/13/2022
Analysis Year:		**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				430	215	215
Restaurant				74	38	36
Cinema/Entertainment				0		
Residential				0		
Hotel				0		
All Other Land Uses[2]				0		
				504	253	251

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		11	0	0	0
Restaurant	0	15		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	504	253	251
Internal Capture Percentage	10%	10%	10%
External Vehicle-Trips[5]	452	227	225
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	7%	5%
Restaurant	29%	42%
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

ATTACHMENT 3C

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Travel Center	**Organization:**	Kimley-Horn
Project Location:	Rialto	**Performed By:**	PS
Scenario Description:		**Date:**	5/13/2022
Analysis Year:		**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				5,532	2,766	2,766
Restaurant				1,042	521	521
Cinema/Entertainment				0		
Residential				0		
Hotel				0		
All Other Land Uses[2]				0		
				6,574	3,287	3,287

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		261	0	0	0
Restaurant	0	73		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	6,574	3,287	3,287
Internal Capture Percentage	10%	10%	10%
External Vehicle-Trips[5]	5,906	2,953	2,953
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	3%	9%
Restaurant	50%	14%
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

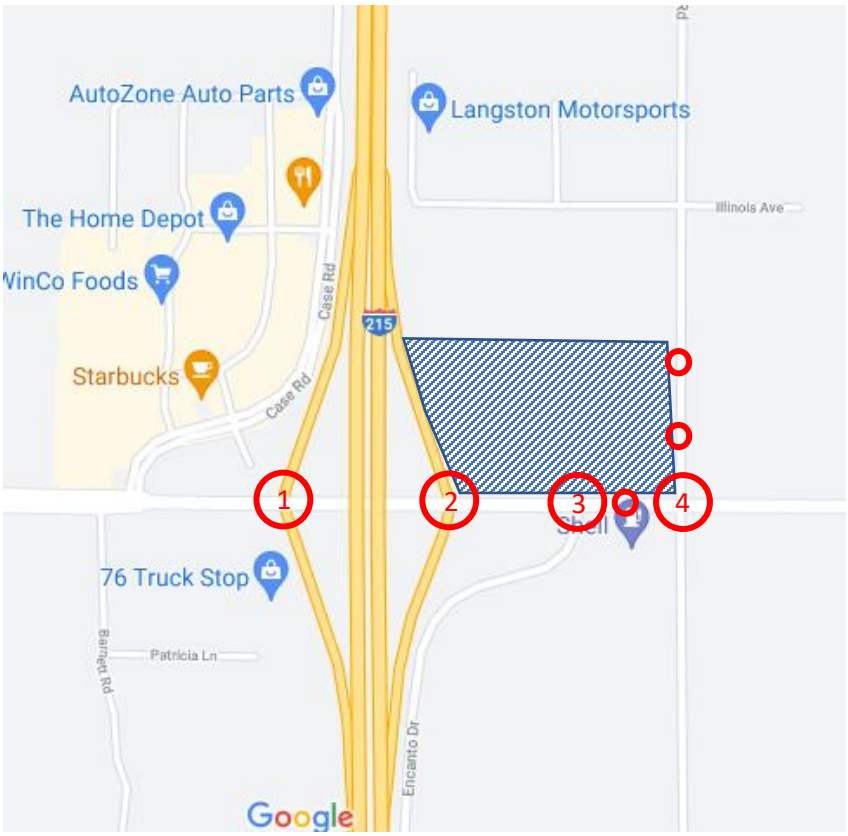
[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

ATTACHMENT 4A – PASSENGER CAR DISTRIBUTION (PRIMARY/NET NEW TRIPS)

40% (61/51)



10% (15/13)

10% (15/13)

40% (61/51)

Legend:

- Project Site
- Study Intersection
- Project Driveway

XX% - Passenger Car Distribution

(YY/ZZ) - AM/PM Primary (Net New) Trips

Study Intersections:

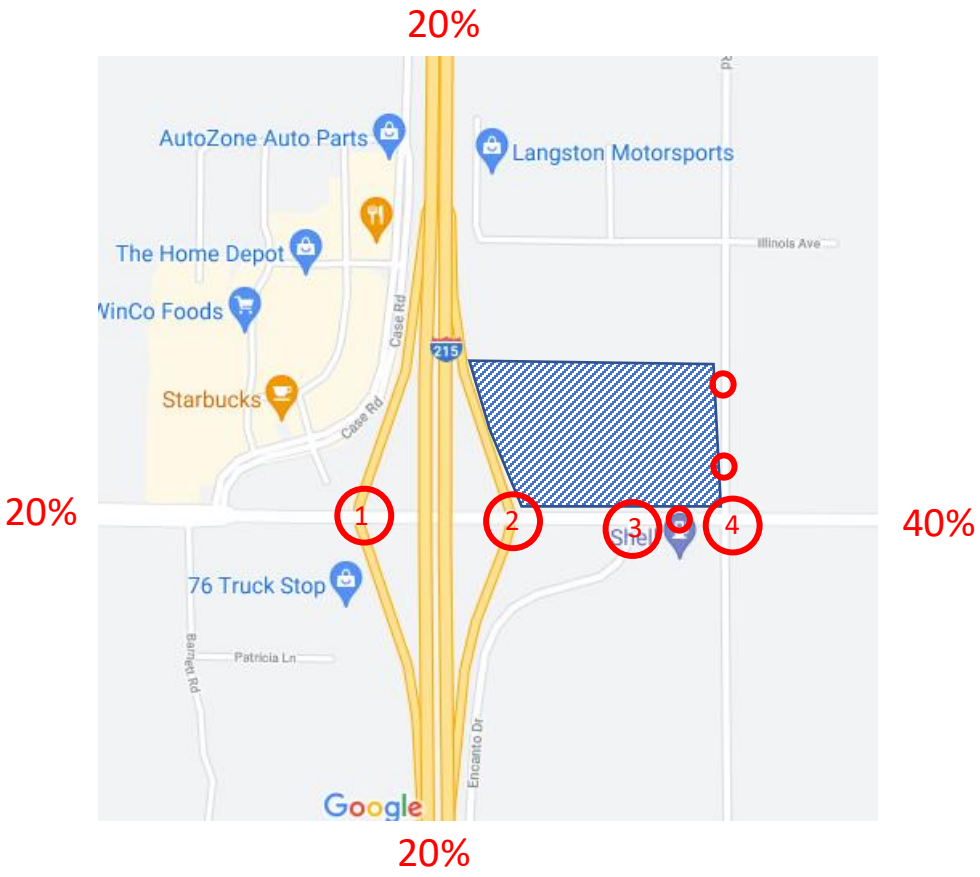
1. SR-215 SB Ramps at Ethanac Road
2. SR-215 NB Ramps at Ethanac Road
3. Encanto Drive at Ethanac Road
4. Trumble Road at Ethanac Road

D1. Ethanac Road at Project Driveway (Gas Station)

D2. Trumble Road at North Driveway (Truck Driveway)

D3. Trumble Road at South Driveway (Gas Station)

ATTACHMENT 4B – PASSENGER CAR DISTRIBUTION (PASS-BY TRIPS)



Legend:

- Project Site
- Study Intersection
- Project Driveway
- XX% - Pass-By Passenger Car Distribution

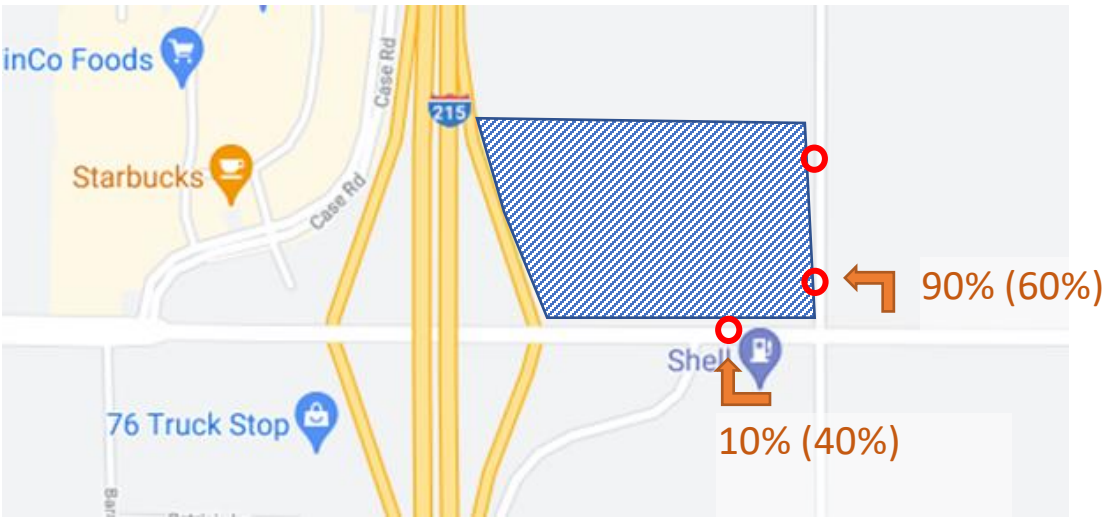
Study Intersections:

1. SR-215 SB Ramps at Ethanac Road
2. SR-215 NB Ramps at Ethanac Road
3. Encanto Drive at Ethanac Road
4. Trumble Road at Ethanac Road

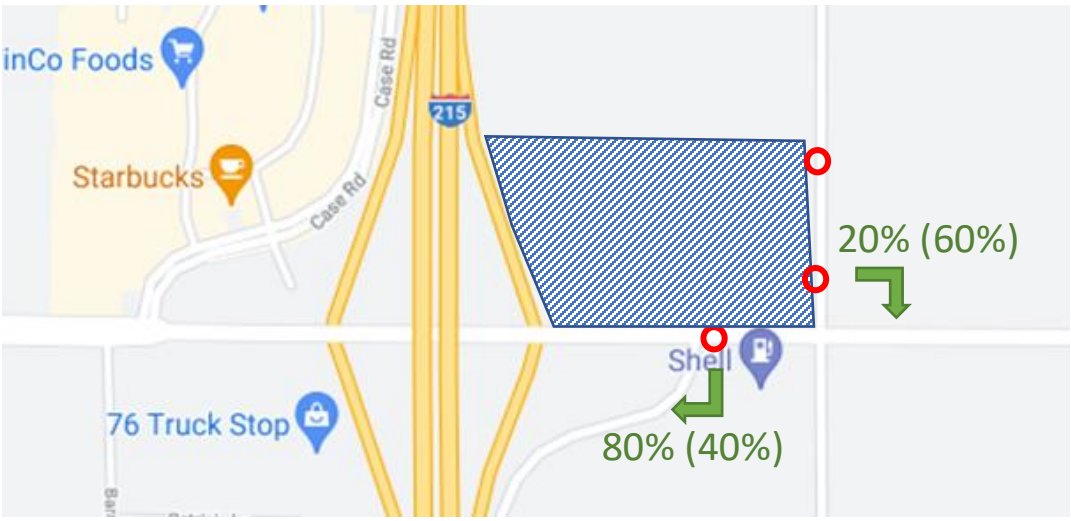
D1. Ethanac Road at Project Driveway (Gas Station)
D2. Trumble Road at North Driveway (Truck Driveway)
D3. Trumble Road at South Driveway (Gas Station)

ATTACHMENT 4C – PASSENGER CAR DISTRIBUTION (DRIVEWAYS)

Driveway Distribution - IN



Driveway Distribution - OUT

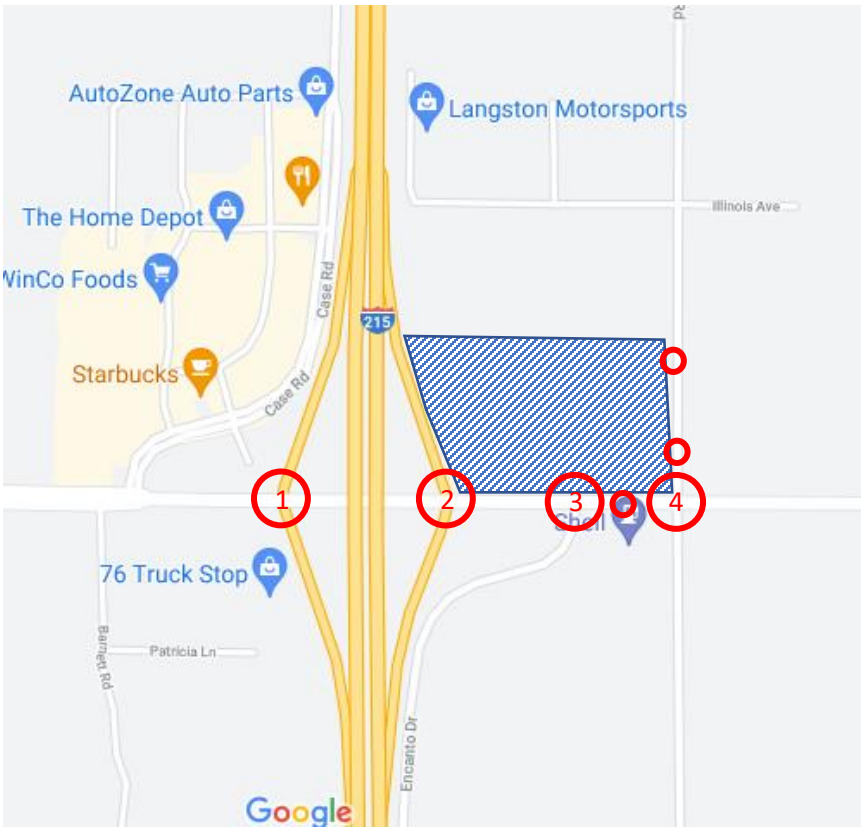


Legend:

- Project Site
- Project Driveway
- XX% (YY%) - Primary (Pass-by) Driveway Distribution

ATTACHMENT 4D – TRUCK DISTRIBUTION

50% (168/185)



50% (168/185)

Legend:

- Project Site
- Study Intersection
- Project Driveway

YY% - Pass-By Truck Distribution

(YY/ZZ) - AM/PM PCE Trips

Study Intersections:

1. SR-215 SB Ramps at Ethanac Road
2. SR-215 NB Ramps at Ethanac Road
3. Encanto Drive at Ethanac Road
4. Trumble Road at Ethanac Road

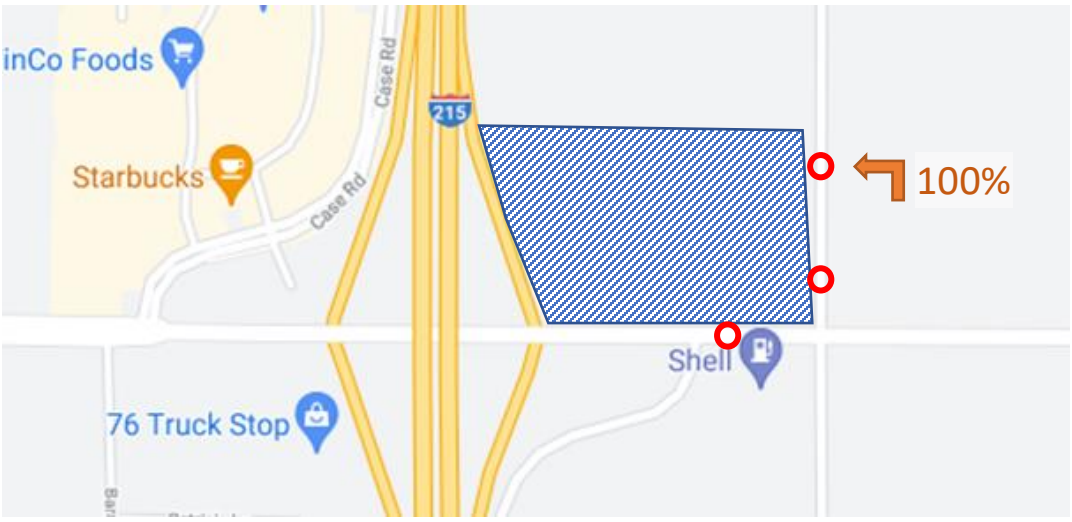
D1. Ethanac Road at Project Driveway (Gas Station)

D2. Trumble Road at North Driveway (Truck Driveway)

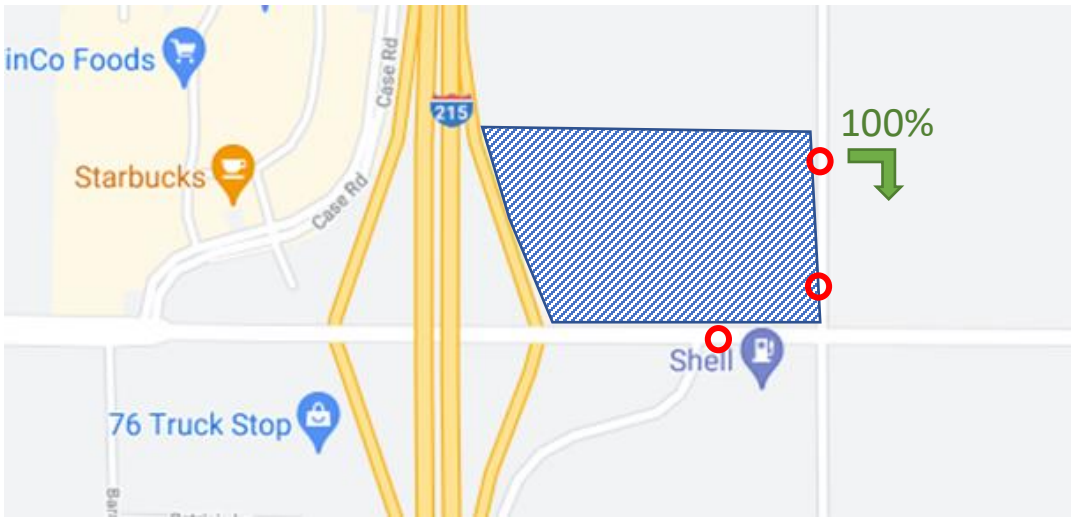
D3. Trumble Road at South Driveway (Gas Station)

ATTACHMENT 4E – TRUCK DISTRIBUTION (DRIVEWAYS)

Driveway Distribution - IN



Driveway Distribution - OUT



Legend:

- Project Site

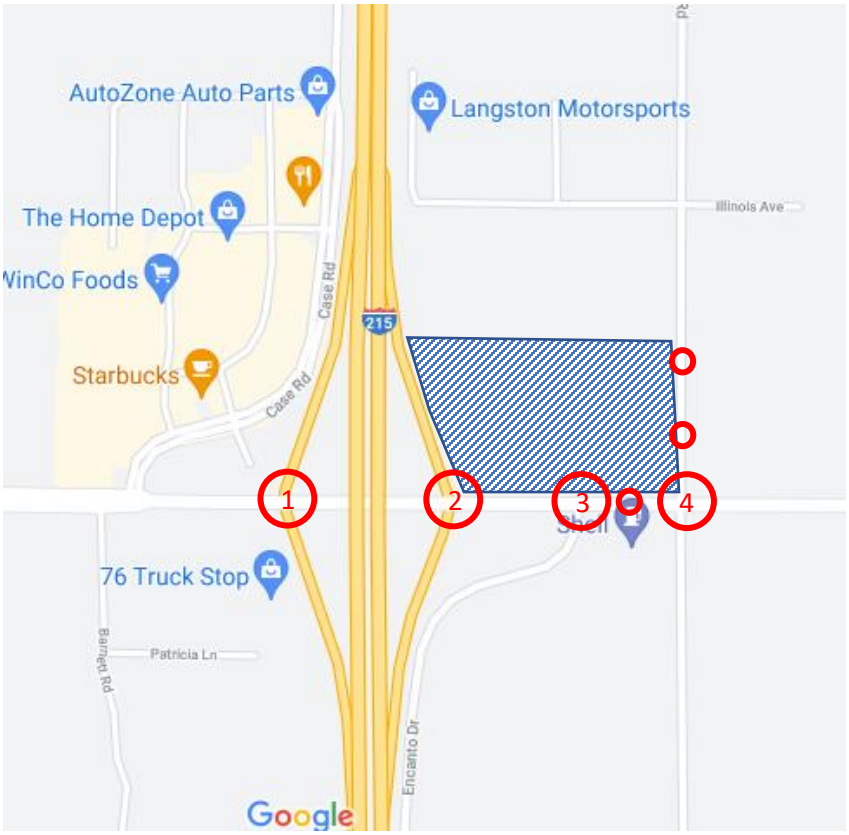
- Project Driveway

XX% (YY%) - Truck Driveway Distribution

ATTACHMENT 4F – PROJECT-RELATED TRIP DISTRIBUTION (TOTAL PRIMARY/NET NEW PCE TRIPS)

(229/236)

(15/13)



(15/13)

(229/236)

Legend:

- Project Site
- Study Intersection
- Project Driveway

(YY/ZZ) - Total AM/PM Primary (Net New) PCE Trips

Study Intersections:

1. SR-215 SB Ramps at Ethanac Road
2. SR-215 NB Ramps at Ethanac Road
3. Encanto Drive at Ethanac Road
4. Trumble Road at Ethanac Road

D1. Ethanac Road at Project Driveway (Gas Station)

D2. Trumble Road at North Driveway (Truck Driveway)

D3. Trumble Road at South Driveway (Gas Station)

City of Perris
www.cityofperris.org

ATTACHMENT 5

CITY OF PERRIS
VMT SCOPING FORM FOR LAND USE PROJECTS

This Scoping Form acknowledges the City of Perris requirements for the evaluation of transportation impacts under CEQA. The analysis provided in this form should follow the City of Perris TIA Guidelines, dated May 12, 2020.

I. Project Description

Tract/Case No. CUP22-05002 & 22-05003

Project Name: Perris Travel Center

Project Location: Northwest corner of Trumble Road and Ethanac Road

Project Description: Travel Center with 2,228 SF Fast-Food w/ Drive-Through, 16 FP Super Convenince Market/Gas Station, and 8 FP Truck stop

(Please attach a copy of the project Site Plan)

Current GP Land Use: Vacant **Proposed GP Land Use:** Commercial

Current Zoning: Community Commercial **Proposed Zoning:** Community Commercial

If a project requires a General Plan Amendment or Zone change, then additional information and analysis should be provided to ensure the project is consistent with RHNA and RTP/SCS Strategies.

II. VMT Screening Criteria

A. Is the Project 100% affordable housing?	**YES**		**NO**	**X**	Attachments:
B. Is the Project within 1/2 mile of qualifying transit?	**YES**		**NO**	**X**	Attachments:
C. Is the Project a local serving land use?	**YES**	**X**	**NO**		Attachments:
D. Is the Project in a low VMT area?	**YES**		**NO**	**X**	Attachments:
E. Are the Project's Net Daily Trips less than 500 ADT?	**YES**		**NO**	**X**	Attachments:

Low VMT Area Evaluation:

Citywide VMT Averages[1]		
Citywide Home-Based VMT =	15.05	VMT/Capita
Citywide Employment-Based VMT =	11.62	VMT/Employee

WRCOG VMT MAP

Project TAZ	**VMT Rate for Project TAZ[1]**		**Type of Project**	
3900	**4.64**	VMT/Capita	Residential:	
	15.26	VMT/Employee	Non-Residential:	**X**

[1] Base year (2012) projections from RIVTAM.

Trip Generation Evaluation:

Source of Trip Generation: ITE Trip Generation Manual, 11th Edition.

Project Trip Generation: **11,293** **Average Daily Trips (ADT)**

Internal Trip Credit:	YES	**X**	NO		% Trip Credit:	
Pass-By Trip Credit:	YES	**X**	NO		% Trip Credit:	
Affordable Housing Credit:	YES		NO	**X**	% Trip Credit:	
Existing Land Use Trip Credit:	YES		NO	**X**	Trip Credit:	

Net Project Daily Trips: **8,568** **Average Daily Trips (ADT)** Attachments: **2**

Does project trip generation warrant an LOS evaluation outside of CEQA?	**YES**	**X**	**NO**	

III. VMT Screening Summary

A. Is the Project presumed to have a less than significant impact on VMT?

A Project is presumed to have a less than significant impact on VMT if the Project satisfies at least one (1) of the VMT screening criteria.

Less Than Significant

B. Is mitigation required?

If the Project does not satisfy at least one (1) of the VMT screening criteria, then mitigation is required to reduce the Project's impact on VMT.

No Mitigation Required

C. Is additional VMT modeling required to evaluate Project impacts?

YES	X	NO	

If the Project requires a zone change and/or General Plan Amendment AND generates 2,500 or more net daily trips, then additional VMT modeling using RIVTAM/RIVCOM is required. If the project generates less than 2,500 net daily trips, the Project TAZ VMT Rate can be used for mitigation purposes.

IV. MITIGATION

A. Citywide Average VMT Rate (Threshold of Significance) for Mitigation Purposes:	N/A	N/A
B. Unmitigated Project TAZ VMT Rate:	N/A	N/A

C. Percentage Reduction Required to Achieve the Citywide Average VMT:	N/A

D. VMT Reduction Mitigation Measures:

Source of VMT Reduction Estimates:	

Project Location Setting	

	VMT Reduction Mitigation Measure:	**Estimated VMT Reduction (%)**
1.		0.00%
2.		0.00%
3.		0.00%
4.		0.00%
5.		0.00%
6.		0.00%
7.		0.00%
8.		0.00%
9.		0.00%
10.		0.00%
Total VMT Reduction (%)		**0.00%**

(Attach additional pages, if necessary, and a copy of all mitigation calculations.)

E. Mitigated Project TAZ VMT Rate:	N/A	N/A

F. Is the project pressumed to have a less than significant impact with mitigation?

N/A

If the mitigated Project VMT rate is below the Citywide Average Rate, then the Project is presumed to have a less than significant impact with mitigation. If the answer is no, then additional VMT modeling may be required and a potentially significant and unavoidable impact may occur. All mitigation measures identified in Section IV.D. are subject to become Conditions of Approval of the project. Development review and processing fees should be submitted with, or prior to the submittal of this Form. The Planning Department staff will not process the Form prior to fees being paid to the City.

Prepared By		**Developer/Applicant**	
Company:	Kimley-Horn and Associates, Inc.	**Company:**	Pilot Travel Center
Contact:	Trevor Briggs	**Contact:**	
Address:	3880 Lemon Street, Suite 420, Riverside, CA	**Address:**	5508 Lonas Drive, Knoxville, TN 37909
Phone:	(714) 786-6117	**Phone:**	(865) 474-2935
Email:	trevor.briggs@kimley-horn.com	**Email:**	
Date:	5/13/2022	**Date:**	5/13/2022

Approved by:	
Perris Planning Division **Date**	**Perris City Engineer** **Date**

APPENDIX **B**

TRAFFIC COUNT DATA SHEETS

APPENDIX B-1

TRAFFIC COUNT DATA SHEETS–
INTERSECTION COUNTS

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 01_PER_215S_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

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

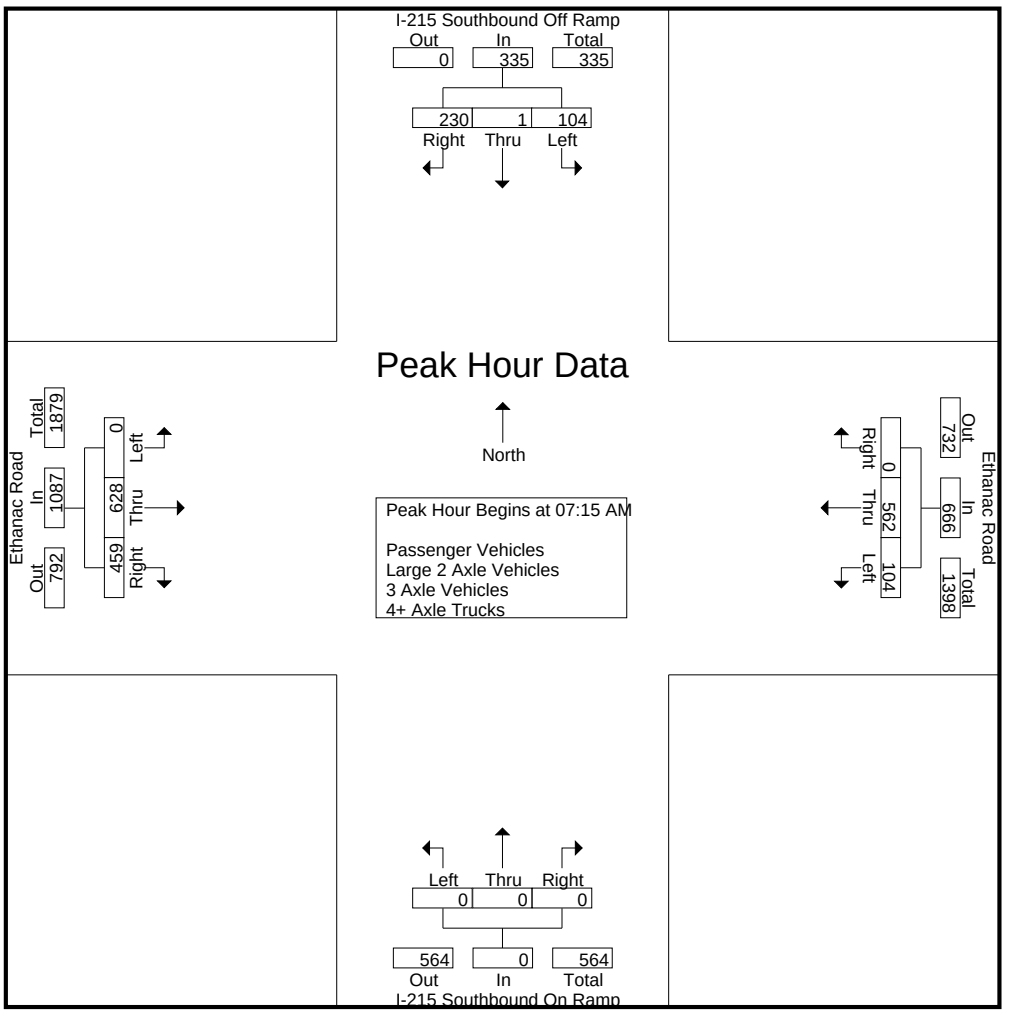
	I-215 Southbound Off Ramp Southbound				Ethanac Road Westbound				I-215 Southbound On Ramp Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	42	1	45	88	21	87	0	108	0	0	0	0	0	124	80	204	400
07:15 AM	27	0	47	74	26	101	0	127	0	0	0	0	0	151	108	259	460
07:30 AM	27	1	56	84	28	131	0	159	0	0	0	0	0	188	141	329	572
07:45 AM	21	0	62	83	21	143	0	164	0	0	0	0	0	167	107	274	521
Total	117	2	210	329	96	462	0	558	0	0	0	0	0	630	436	1066	1953
08:00 AM	29	0	65	94	29	187	0	216	0	0	0	0	0	122	103	225	535
08:15 AM	30	0	58	88	19	130	0	149	0	0	0	0	0	124	96	220	457
08:30 AM	20	2	63	85	22	128	0	150	0	0	0	0	0	107	74	181	416
08:45 AM	26	1	67	94	22	122	0	144	0	0	0	0	0	97	64	161	399
Total	105	3	253	361	92	567	0	659	0	0	0	0	0	450	337	787	1807
Grand Total	222	5	463	690	188	1029	0	1217	0	0	0	0	0	1080	773	1853	3760
Apprch %	32.2	0.7	67.1		15.4	84.6	0		0	0	0		0	58.3	41.7		
Total %	5.9	0.1	12.3	18.4	5	27.4	0	32.4	0	0	0	0	0	28.7	20.6	49.3	
Passenger Vehicles	205	3	417	625	161	980	0	1141	0	0	0	0	0	1020	699	1719	3485
% Passenger Vehicles	92.3	60	90.1	90.6	85.6	95.2	0	93.8	0	0	0	0	0	94.4	90.4	92.8	92.7
Large 2 Axle Vehicles	4	2	31	37	5	21	0	26	0	0	0	0	0	33	32	65	128
% Large 2 Axle Vehicles	1.8	40	6.7	5.4	2.7	2	0	2.1	0	0	0	0	0	3.1	4.1	3.5	3.4
3 Axle Vehicles	1	0	0	1	0	15	0	15	0	0	0	0	0	7	13	20	36
% 3 Axle Vehicles	0.5	0	0	0.1	0	1.5	0	1.2	0	0	0	0	0	0.6	1.7	1.1	1
4+ Axle Trucks	12	0	15	27	22	13	0	35	0	0	0	0	0	20	29	49	111
% 4+ Axle Trucks	5.4	0	3.2	3.9	11.7	1.3	0	2.9	0	0	0	0	0	1.9	3.8	2.6	3

	I-215 Southbound Off Ramp Southbound				Ethanac Road Westbound				I-215 Southbound On Ramp Northbound				Ethanac Road 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	27	0	47	74	26	101	0	127	0	0	0	0	0	151	108	259	460
07:30 AM	27	**1**	56	84	28	131	0	159	0	0	0	0	0	**188**	**141**	**329**	**572**
07:45 AM	21	0	62	83	21	143	0	164	0	0	0	0	0	167	107	274	521
08:00 AM	**29**	0	**65**	**94**	**29**	**187**	0	**216**	0	0	0	0	0	122	103	225	535
Total Volume	104	1	230	335	104	562	0	666	0	0	0	0	0	628	459	1087	2088
% App. Total	31	0.3	68.7		15.6	84.4	0		0	0	0		0	57.8	42.2		
PHF	.897	.250	.885	.891	.897	.751	.000	.771	.000	.000	.000	.000	.000	.835	.814	.826	.913

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 01_PER_215S_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
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:

	08:00 AM				07:30 AM				07:00 AM				07:15 AM			
+0 mins.	29	0	65	**94**	28	131	0	159	0	0	0	0	0	151	108	259
+15 mins.	**30**	0	58	88	21	143	0	164	0	0	0	0	0	**188**	**141**	**329**
+30 mins.	20	**2**	63	85	**29**	**187**	0	**216**	0	0	0	0	0	167	107	274
+45 mins.	26	1	**67**	94	19	130	0	149	0	0	0	0	0	122	103	225
Total Volume	105	3	253	361	97	591	0	688	0	0	0	0	0	628	459	1087
% App. Total	29.1	0.8	70.1		14.1	85.9	0		0	0	0		0	57.8	42.2	
PHF	.875	.375	.944	.960	.836	.790	.000	.796	.000	.000	.000	.000	.000	.835	.814	.826

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 01_PER_215S_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- Passenger Vehicles

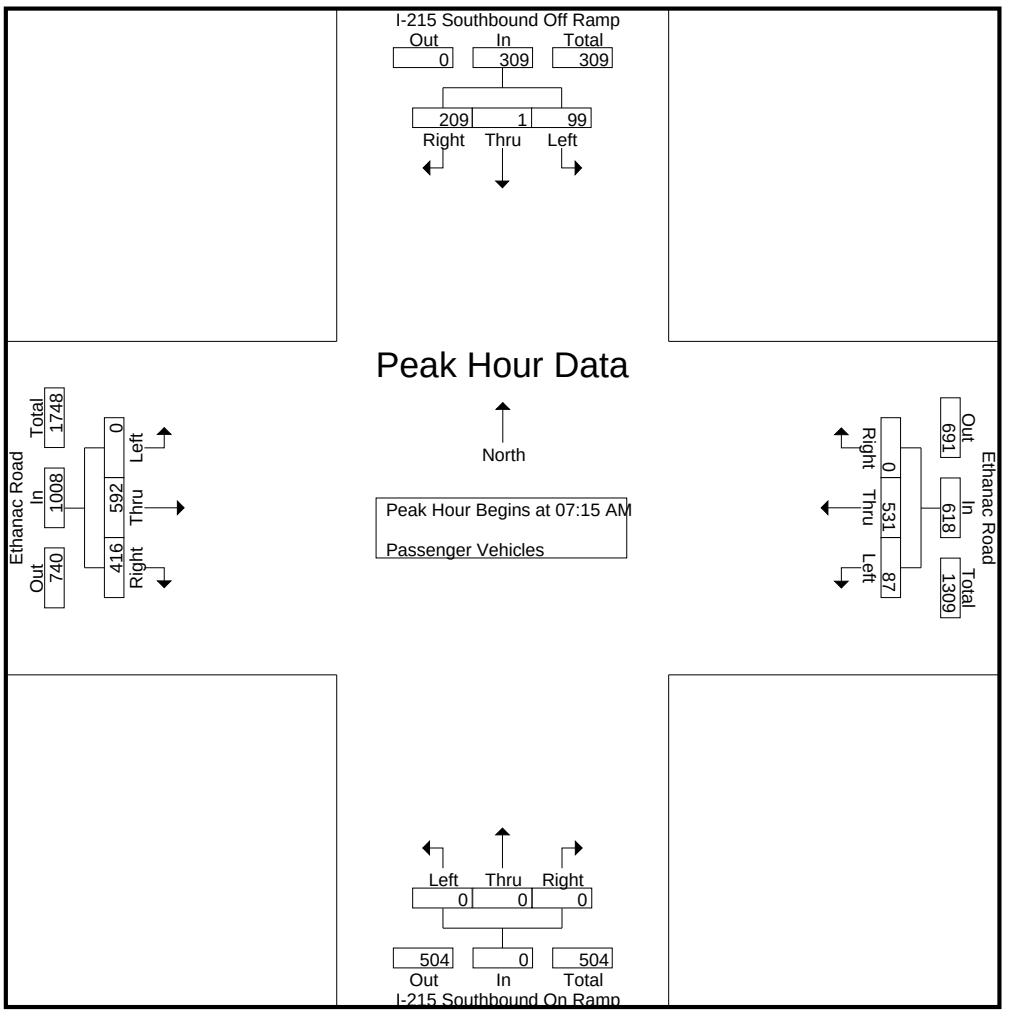
	I-215 Southbound Off Ramp Southbound				Ethanac Road Westbound				I-215 Southbound On Ramp Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	40	1	39	80	17	82	0	99	0	0	0	0	0	119	72	191	370
07:15 AM	26	0	44	70	19	91	0	110	0	0	0	0	0	143	97	240	420
07:30 AM	25	1	51	77	24	125	0	149	0	0	0	0	0	179	127	306	532
07:45 AM	20	0	54	74	20	135	0	155	0	0	0	0	0	153	97	250	479
Total	111	2	188	301	80	433	0	513	0	0	0	0	0	594	393	987	1801
08:00 AM	28	0	60	88	24	180	0	204	0	0	0	0	0	117	95	212	504
08:15 AM	24	0	53	77	18	127	0	145	0	0	0	0	0	119	87	206	428
08:30 AM	17	0	56	73	19	123	0	142	0	0	0	0	0	100	66	166	381
08:45 AM	25	1	60	86	20	117	0	137	0	0	0	0	0	90	58	148	371
Total	94	1	229	324	81	547	0	628	0	0	0	0	0	426	306	732	1684
Grand Total	205	3	417	625	161	980	0	1141	0	0	0	0	0	1020	699	1719	3485
Apprch %	32.8	0.5	66.7		14.1	85.9	0		0	0	0		0	59.3	40.7		
Total %	5.9	0.1	12	17.9	4.6	28.1	0	32.7	0	0	0	0	0	29.3	20.1	49.3	

	I-215 Southbound Off Ramp Southbound				Ethanac Road Westbound				I-215 Southbound On Ramp Northbound				Ethanac Road 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	26	0	44	70	19	91	0	110	0	0	0	0	0	143	97	240	420
07:30 AM	25	**1**	51	77	**24**	125	0	149	0	0	0	0	0	**179**	**127**	**306**	**532**
07:45 AM	20	0	54	74	20	135	0	155	0	0	0	0	0	153	97	250	479
08:00 AM	**28**	0	**60**	**88**	24	**180**	0	**204**	0	0	0	0	0	117	95	212	504
Total Volume	99	1	209	309	87	531	0	618	0	0	0	0	0	592	416	1008	1935
% App. Total	32	0.3	67.6		14.1	85.9	0		0	0	0		0	58.7	41.3		
PHF	.884	.250	.871	.878	.906	.738	.000	.757	.000	.000	.000	.000	.000	.827	.819	.824	.909

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 01_PER_215S_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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.	26	0	44	70	19	91	0	110	0	0	0	0	0	143	97	240
+15 mins.	25	**1**	51	77	**24**	125	0	149	0	0	0	0	0	**179**	**127**	**306**
+30 mins.	20	0	54	74	20	135	0	155	0	0	0	0	0	153	97	250
+45 mins.	**28**	0	**60**	**88**	24	**180**	0	**204**	0	0	0	0	0	117	95	212
Total Volume	99	1	209	309	87	531	0	618	0	0	0	0	0	592	416	1008
% App. Total	32	0.3	67.6		14.1	85.9	0		0	0	0		0	58.7	41.3	
PHF	.884	.250	.871	.878	.906	.738	.000	.757	.000	.000	.000	.000	.000	.827	.819	.824

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 01_PER_215S_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- Large 2 Axle Vehicles

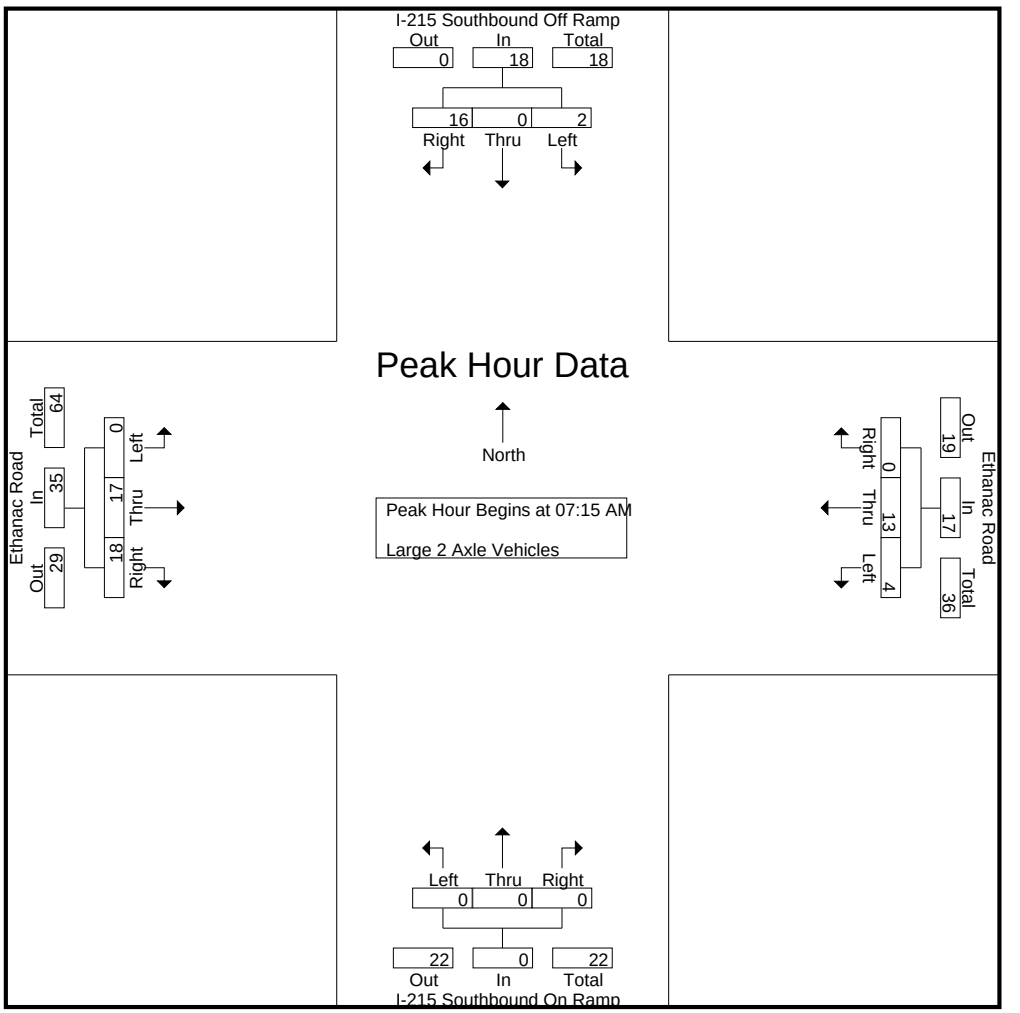
	I-215 Southbound Off Ramp Southbound				Ethanac Road Westbound				I-215 Southbound On Ramp Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	2	0	5	7	1	2	0	3	0	0	0	0	0	2	5	7	17
07:15 AM	0	0	3	3	2	5	0	7	0	0	0	0	0	5	4	9	19
07:30 AM	2	0	4	6	0	3	0	3	0	0	0	0	0	3	7	10	19
07:45 AM	0	0	7	7	0	1	0	1	0	0	0	0	0	8	4	12	20
Total	4	0	19	23	3	11	0	14	0	0	0	0	0	18	20	38	75
08:00 AM	0	0	2	2	2	4	0	6	0	0	0	0	0	1	3	4	12
08:15 AM	0	0	3	3	0	0	0	0	0	0	0	0	0	4	3	7	10
08:30 AM	0	2	4	6	0	3	0	3	0	0	0	0	0	6	3	9	18
08:45 AM	0	0	3	3	0	3	0	3	0	0	0	0	0	4	3	7	13
Total	0	2	12	14	2	10	0	12	0	0	0	0	0	15	12	27	53
Grand Total	4	2	31	37	5	21	0	26	0	0	0	0	0	33	32	65	128
Apprch %	10.8	5.4	83.8		19.2	80.8	0		0	0	0		0	50.8	49.2		
Total %	3.1	1.6	24.2	28.9	3.9	16.4	0	20.3	0	0	0	0	0	25.8	25	50.8	

	I-215 Southbound Off Ramp Southbound				Ethanac Road Westbound				I-215 Southbound On Ramp Northbound				Ethanac Road 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	3	3	**2**	**5**	0	**7**	0	0	0	0	0	5	4	9	19
07:30 AM	**2**	0	4	6	0	3	0	3	0	0	0	0	0	3	**7**	10	19
07:45 AM	0	0	**7**	**7**	0	1	0	1	0	0	0	0	0	**8**	4	**12**	**20**
08:00 AM	0	0	2	2	2	4	0	6	0	0	0	0	0	1	3	4	12
Total Volume	2	0	16	18	4	13	0	17	0	0	0	0	0	17	18	35	70
% App. Total	11.1	0	88.9		23.5	76.5	0		0	0	0		0	48.6	51.4		
PHF	.250	.000	.571	.643	.500	.650	.000	.607	.000	.000	.000	.000	.000	.531	.643	.729	.875

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 01_PER_215S_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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	3	3	**2**	**5**	0	**7**	0	0	0	0	0	5	4	9
+15 mins.	**2**	0	4	6	0	3	0	3	0	0	0	0	0	3	**7**	10
+30 mins.	0	0	**7**	**7**	0	1	0	1	0	0	0	0	0	**8**	4	**12**
+45 mins.	0	0	2	2	2	4	0	6	0	0	0	0	0	1	3	4
Total Volume	2	0	16	18	4	13	0	17	0	0	0	0	0	17	18	35
% App. Total	11.1	0	88.9		23.5	76.5	0		0	0	0		0	48.6	51.4	
PHF	.250	.000	.571	.643	.500	.650	.000	.607	.000	.000	.000	.000	.000	.531	.643	.729

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 01_PER_215S_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- 3 Axle Vehicles

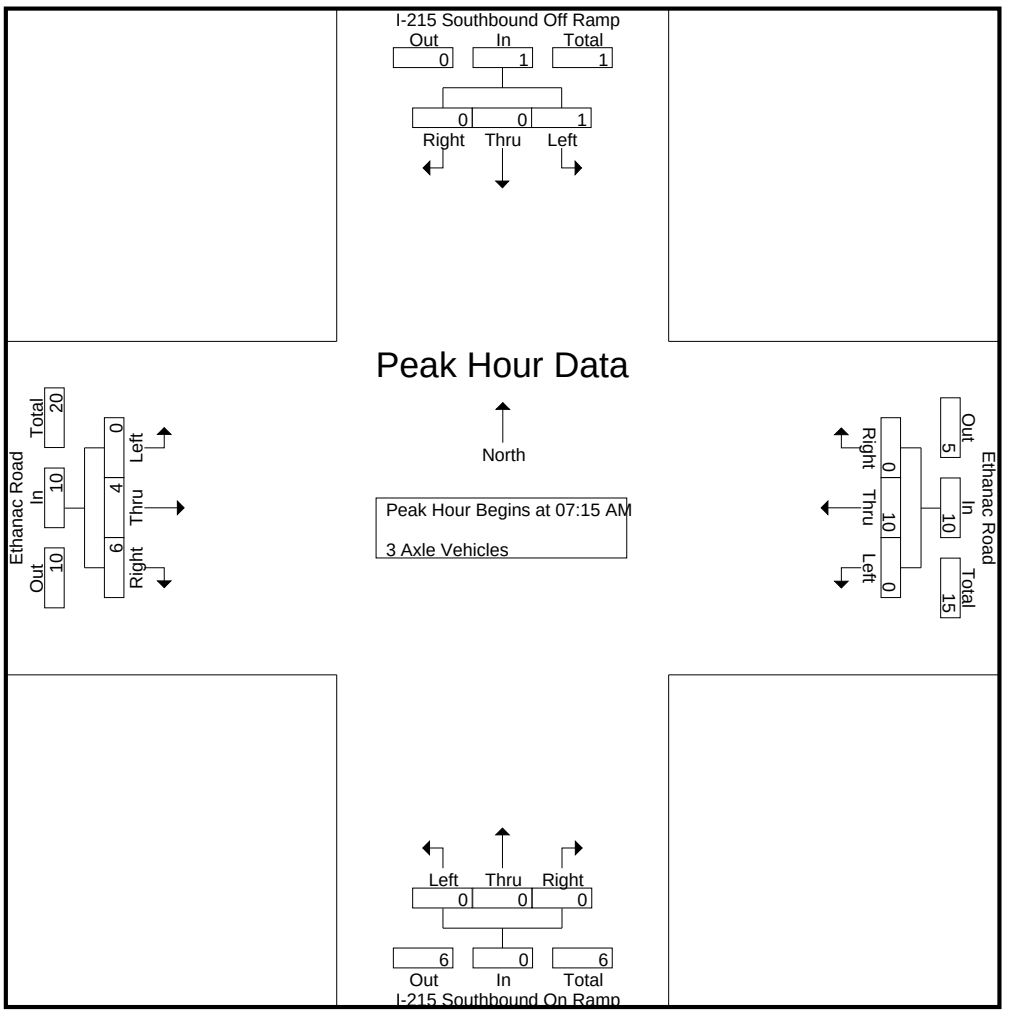
	I-215 Southbound Off Ramp Southbound				Ethanac Road Westbound				I-215 Southbound On Ramp Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	1	3	5
07:15 AM	1	0	0	1	0	2	0	2	0	0	0	0	0	0	2	2	5
07:30 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
07:45 AM	0	0	0	0	0	5	0	5	0	0	0	0	0	1	2	3	8
Total	1	0	0	1	0	11	0	11	0	0	0	0	0	4	5	9	21
08:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	2	4	5
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3
08:30 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	2	3	5
08:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	2
Total	0	0	0	0	0	4	0	4	0	0	0	0	0	3	8	11	15
Grand Total	1	0	0	1	0	15	0	15	0	0	0	0	0	7	13	20	36
Apprch %	100	0	0		0	100	0		0	0	0		0	35	65		
Total %	2.8	0	0	2.8	0	41.7	0	41.7	0	0	0	0	0	19.4	36.1	55.6	

	I-215 Southbound Off Ramp Southbound				Ethanac Road Westbound				I-215 Southbound On Ramp Northbound				Ethanac Road 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	2	0	2	0	0	0	0	0	0	**2**	2	5
07:30 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
07:45 AM	0	0	0	0	0	**5**	0	**5**	0	0	0	0	0	1	2	3	**8**
08:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	**2**	2	**4**	5
Total Volume	1	0	0	1	0	10	0	10	0	0	0	0	0	4	6	10	21
% App. Total	100	0	0		0	100	0		0	0	0		0	40	60		
PHF	.250	.000	.000	.250	.000	.500	.000	.500	.000	.000	.000	.000	.000	.500	.750	.625	.656

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 01_PER_215S_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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	2	0	2	0	0	0	0	0	0	**2**	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	**5**	0	**5**	0	0	0	0	0	1	2	3
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	**2**	2	**4**
Total Volume	1	0	0	1	0	10	0	10	0	0	0	0	0	4	6	10
% App. Total	100	0	0		0	100	0		0	0	0		0	40	60	
PHF	.250	.000	.000	.250	.000	.500	.000	.500	.000	.000	.000	.000	.000	.500	.750	.625

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 01_PER_215S_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- 4+ Axle Trucks

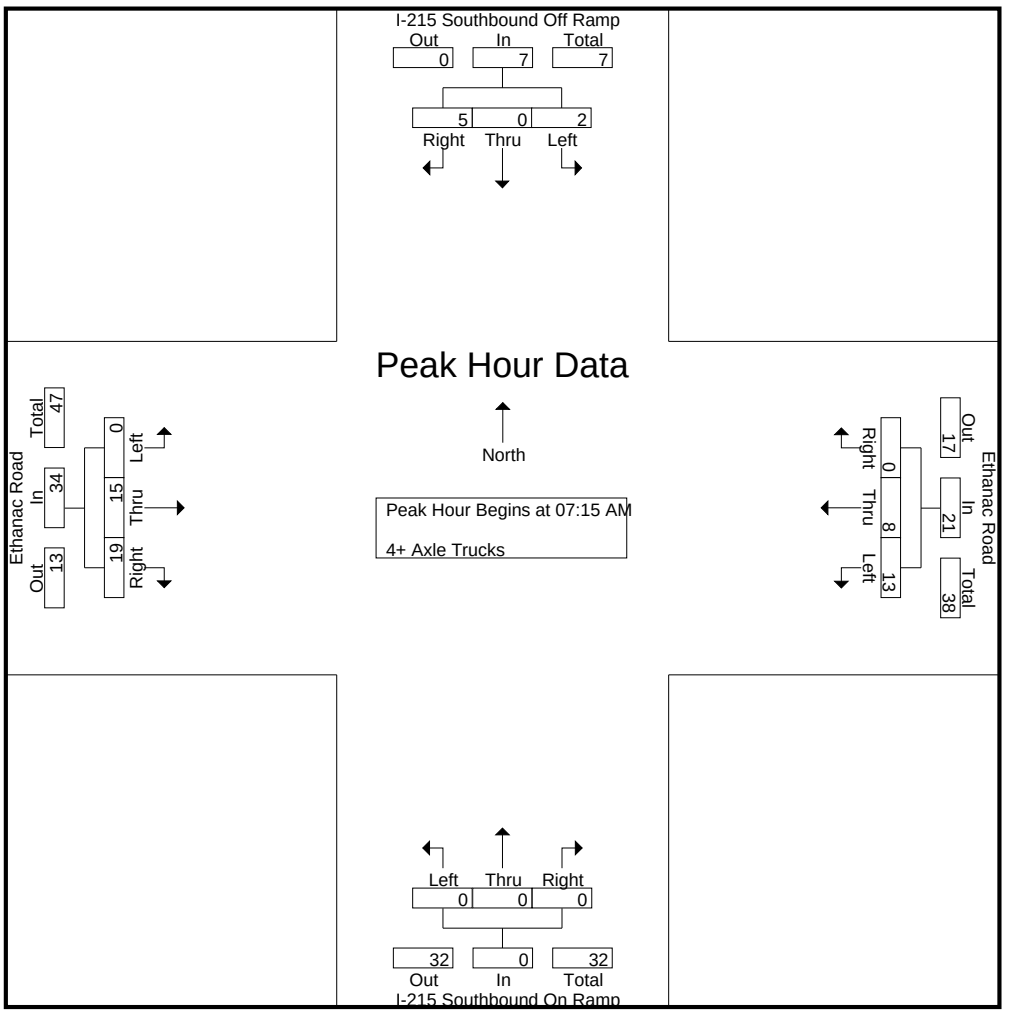
	I-215 Southbound Off Ramp Southbound				Ethanac Road Westbound				I-215 Southbound On Ramp Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	1	1	3	1	0	4	0	0	0	0	0	1	2	3	8
07:15 AM	0	0	0	0	5	3	0	8	0	0	0	0	0	3	5	8	16
07:30 AM	0	0	1	1	4	1	0	5	0	0	0	0	0	5	7	12	18
07:45 AM	1	0	1	2	1	2	0	3	0	0	0	0	0	5	4	9	14
Total	1	0	3	4	13	7	0	20	0	0	0	0	0	14	18	32	56
08:00 AM	1	0	3	4	3	2	0	5	0	0	0	0	0	2	3	5	14
08:15 AM	6	0	2	8	1	3	0	4	0	0	0	0	0	1	3	4	16
08:30 AM	3	0	3	6	3	0	0	3	0	0	0	0	0	0	3	3	12
08:45 AM	1	0	4	5	2	1	0	3	0	0	0	0	0	3	2	5	13
Total	11	0	12	23	9	6	0	15	0	0	0	0	0	6	11	17	55
Grand Total	12	0	15	27	22	13	0	35	0	0	0	0	0	20	29	49	111
Apprch %	44.4	0	55.6		62.9	37.1	0		0	0	0		0	40.8	59.2		
Total %	10.8	0	13.5	24.3	19.8	11.7	0	31.5	0	0	0	0	0	18	26.1	44.1	

	I-215 Southbound Off Ramp Southbound				Ethanac Road Westbound				I-215 Southbound On Ramp Northbound				Ethanac Road 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	**5**	**3**	0	**8**	0	0	0	0	0	3	5	8	16
07:30 AM	0	0	1	1	4	1	0	5	0	0	0	0	0	**5**	**7**	**12**	**18**
07:45 AM	**1**	0	1	2	1	2	0	3	0	0	0	0	0	5	4	9	14
08:00 AM	1	0	**3**	**4**	3	2	0	5	0	0	0	0	0	2	3	5	14
Total Volume	2	0	5	7	13	8	0	21	0	0	0	0	0	15	19	34	62
% App. Total	28.6	0	71.4		61.9	38.1	0		0	0	0		0	44.1	55.9		
PHF	.500	.000	.417	.438	.650	.667	.000	.656	.000	.000	.000	.000	.000	.750	.679	.708	.861

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 01_PER_215S_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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	**5**	**3**	0	**8**	0	0	0	0	0	3	5	8
+15 mins.	0	0	1	1	4	1	0	5	0	0	0	0	0	**5**	**7**	**12**
+30 mins.	**1**	0	1	2	1	2	0	3	0	0	0	0	0	5	4	9
+45 mins.	1	0	**3**	**4**	3	2	0	5	0	0	0	0	0	2	3	5
Total Volume	2	0	5	7	13	8	0	21	0	0	0	0	0	15	19	34
% App. Total	28.6	0	71.4		61.9	38.1	0		0	0	0		0	44.1	55.9	
PHF	.500	.000	.417	.438	.650	.667	.000	.656	.000	.000	.000	.000	.000	.750	.679	.708

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 01_PER_215S_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

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

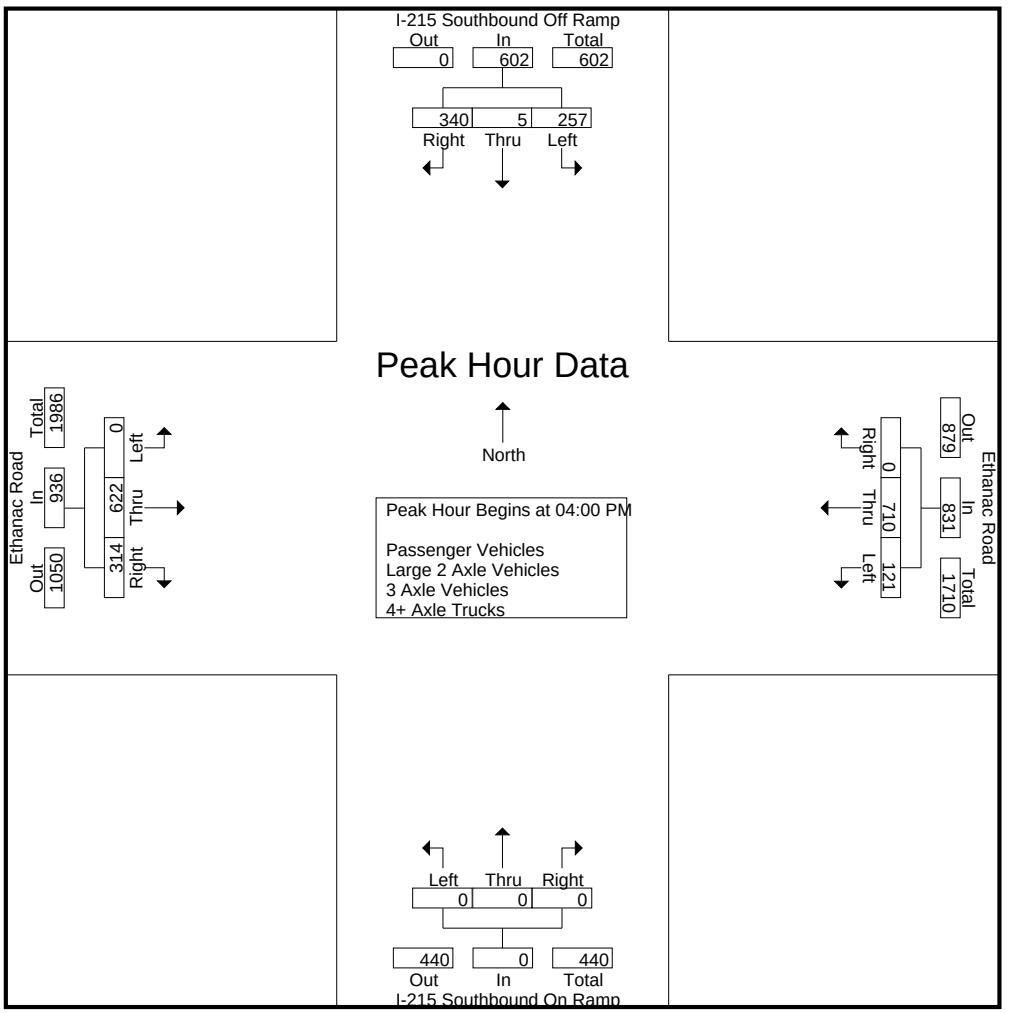
	I-215 Southbound Off Ramp Southbound				Ethanac Road Westbound				I-215 Southbound On Ramp Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	69	1	101	171	20	191	0	211	0	0	0	0	0	163	76	239	621
04:15 PM	71	1	80	152	37	167	0	204	0	0	0	0	0	140	88	228	584
04:30 PM	51	1	67	119	37	180	0	217	0	0	0	0	0	155	81	236	572
04:45 PM	66	2	92	160	27	172	0	199	0	0	0	0	0	164	69	233	592
Total	257	5	340	602	121	710	0	831	0	0	0	0	0	622	314	936	2369
05:00 PM	62	0	92	154	27	165	0	192	0	0	0	0	0	140	84	224	570
05:15 PM	62	0	79	141	22	197	0	219	0	0	0	0	0	148	66	214	574
05:30 PM	69	0	75	144	17	157	0	174	0	0	0	0	0	148	60	208	526
05:45 PM	48	0	89	137	26	150	0	176	0	0	0	0	0	142	80	222	535
Total	241	0	335	576	92	669	0	761	0	0	0	0	0	578	290	868	2205
Grand Total	498	5	675	1178	213	1379	0	1592	0	0	0	0	0	1200	604	1804	4574
Apprch %	42.3	0.4	57.3		13.4	86.6	0		0	0	0		0	66.5	33.5		
Total %	10.9	0.1	14.8	25.8	4.7	30.1	0	34.8	0	0	0	0	0	26.2	13.2	39.4	
Passenger Vehicles	479	5	661	1145	199	1331	0	1530	0	0	0	0	0	1153	594	1747	4422
% Passenger Vehicles	96.2	100	97.9	97.2	93.4	96.5	0	96.1	0	0	0	0	0	96.1	98.3	96.8	96.7
Large 2 Axle Vehicles	12	0	12	24	6	21	0	27	0	0	0	0	0	30	8	38	89
% Large 2 Axle Vehicles	2.4	0	1.8	2	2.8	1.5	0	1.7	0	0	0	0	0	2.5	1.3	2.1	1.9
3 Axle Vehicles	0	0	1	1	0	9	0	9	0	0	0	0	0	8	2	10	20
% 3 Axle Vehicles	0	0	0.1	0.1	0	0.7	0	0.6	0	0	0	0	0	0.7	0.3	0.6	0.4
4+ Axle Trucks	7	0	1	8	8	18	0	26	0	0	0	0	0	9	0	9	43
% 4+ Axle Trucks	1.4	0	0.1	0.7	3.8	1.3	0	1.6	0	0	0	0	0	0.8	0	0.5	0.9

	I-215 Southbound Off Ramp Southbound				Ethanac Road Westbound				I-215 Southbound On Ramp Northbound				Ethanac Road 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 04:00 PM																	
04:00 PM	69	1	**101**	**171**	20	**191**	0	211	0	0	0	0	0	163	76	**239**	**621**
04:15 PM	**71**	1	80	152	**37**	167	0	204	0	0	0	0	0	140	**88**	228	584
04:30 PM	51	1	67	119	37	180	0	**217**	0	0	0	0	0	155	81	236	572
04:45 PM	66	**2**	92	160	27	172	0	199	0	0	0	0	0	**164**	69	233	592
Total Volume	257	5	340	602	121	710	0	831	0	0	0	0	0	622	314	936	2369
% App. Total	42.7	0.8	56.5		14.6	85.4	0		0	0	0		0	66.5	33.5		
PHF	.905	.625	.842	.880	.818	.929	.000	.957	.000	.000	.000	.000	.000	.948	.892	.979	.954

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 01_PER_215S_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
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:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	69	1	**101**	**171**	20	**191**	0	211	0	0	0	0	0	163	76	**239**
+15 mins.	**71**	1	80	152	**37**	167	0	204	0	0	0	0	0	140	**88**	228
+30 mins.	51	1	67	119	37	180	0	**217**	0	0	0	0	0	155	81	236
+45 mins.	66	**2**	92	160	27	172	0	199	0	0	0	0	0	**164**	69	233
Total Volume	257	5	340	602	121	710	0	831	0	0	0	0	0	622	314	936
% App. Total	42.7	0.8	56.5		14.6	85.4	0		0	0	0		0	66.5	33.5	
PHF	.905	.625	.842	.880	.818	.929	.000	.957	.000	.000	.000	.000	.000	.948	.892	.979

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 01_PER_215S_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- Passenger Vehicles

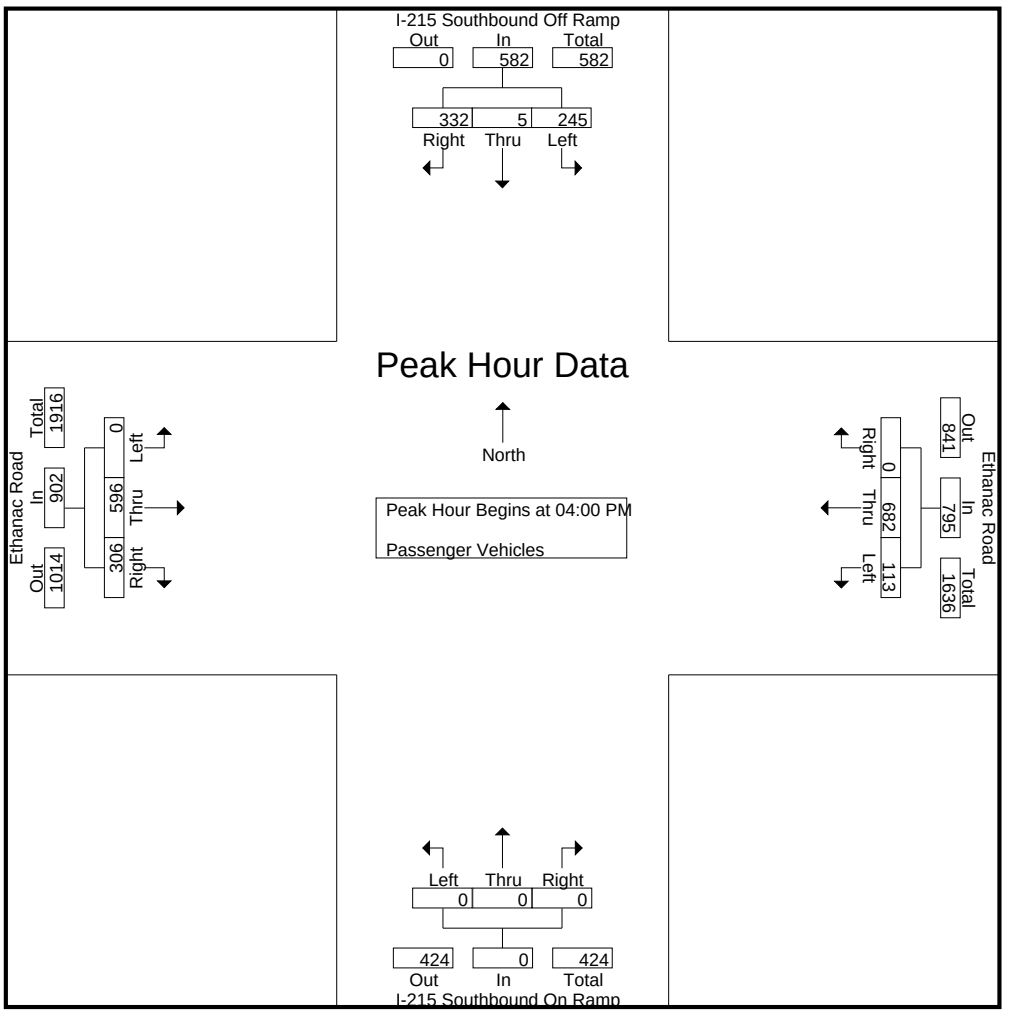
	I-215 Southbound Off Ramp Southbound				Ethanac Road Westbound				I-215 Southbound On Ramp Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	67	1	97	165	20	183	0	203	0	0	0	0	0	157	75	232	600
04:15 PM	67	1	79	147	35	165	0	200	0	0	0	0	0	132	87	219	566
04:30 PM	47	1	65	113	34	168	0	202	0	0	0	0	0	150	77	227	542
04:45 PM	64	2	91	157	24	166	0	190	0	0	0	0	0	157	67	224	571
Total	245	5	332	582	113	682	0	795	0	0	0	0	0	596	306	902	2279
05:00 PM	61	0	91	152	27	157	0	184	0	0	0	0	0	132	84	216	552
05:15 PM	59	0	78	137	21	192	0	213	0	0	0	0	0	140	66	206	556
05:30 PM	67	0	73	140	16	155	0	171	0	0	0	0	0	147	59	206	517
05:45 PM	47	0	87	134	22	145	0	167	0	0	0	0	0	138	79	217	518
Total	234	0	329	563	86	649	0	735	0	0	0	0	0	557	288	845	2143
Grand Total	479	5	661	1145	199	1331	0	1530	0	0	0	0	0	1153	594	1747	4422
Apprch %	41.8	0.4	57.7		13	87	0		0	0	0		0	66	34		
Total %	10.8	0.1	14.9	25.9	4.5	30.1	0	34.6	0	0	0	0	0	26.1	13.4	39.5	

	I-215 Southbound Off Ramp Southbound				Ethanac Road Westbound				I-215 Southbound On Ramp Northbound				Ethanac Road 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**67**	1	**97**	**165**	20	**183**	0	**203**	0	0	0	0	0	**157**	75	**232**	**600**
04:15 PM	67	1	79	147	**35**	165	0	200	0	0	0	0	0	132	**87**	219	566
04:30 PM	47	1	65	113	34	168	0	202	0	0	0	0	0	150	77	227	542
04:45 PM	64	**2**	91	157	24	166	0	190	0	0	0	0	0	157	67	224	571
Total Volume	245	5	332	582	113	682	0	795	0	0	0	0	0	596	306	902	2279
% App. Total	42.1	0.9	57		14.2	85.8	0		0	0	0		0	66.1	33.9		
PHF	.914	.625	.856	.882	.807	.932	.000	.979	.000	.000	.000	.000	.000	.949	.879	.972	.950

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 01_PER_215S_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	**67**	1	**97**	**165**	20	**183**	0	**203**	0	0	0	0	0	**157**	75	**232**
+15 mins.	67	1	79	147	**35**	165	0	200	0	0	0	0	0	132	**87**	219
+30 mins.	47	1	65	113	34	168	0	202	0	0	0	0	0	150	77	227
+45 mins.	64	**2**	91	157	24	166	0	190	0	0	0	0	0	157	67	224
Total Volume	245	5	332	582	113	682	0	795	0	0	0	0	0	596	306	902
% App. Total	42.1	0.9	57		14.2	85.8	0		0	0	0		0	66.1	33.9	
PHF	.914	.625	.856	.882	.807	.932	.000	.979	.000	.000	.000	.000	.000	.949	.879	.972

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 01_PER_215S_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- Large 2 Axle Vehicles

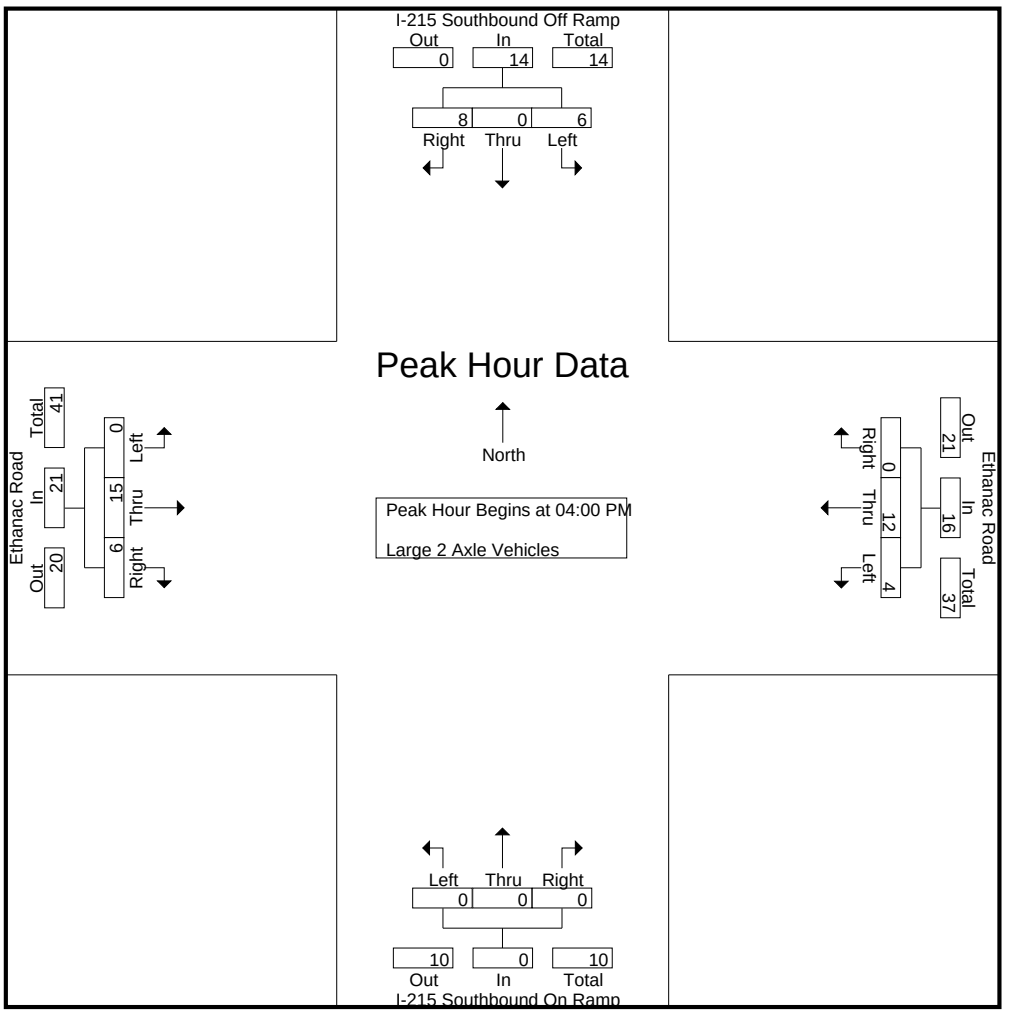
	I-215 Southbound Off Ramp Southbound				Ethanac Road Westbound				I-215 Southbound On Ramp Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	0	4	5	0	4	0	4	0	0	0	0	0	3	1	4	13
04:15 PM	2	0	1	3	2	1	0	3	0	0	0	0	0	6	1	7	13
04:30 PM	3	0	2	5	2	5	0	7	0	0	0	0	0	2	3	5	17
04:45 PM	0	0	1	1	0	2	0	2	0	0	0	0	0	4	1	5	8
Total	6	0	8	14	4	12	0	16	0	0	0	0	0	15	6	21	51
05:00 PM	0	0	1	1	0	5	0	5	0	0	0	0	0	5	0	5	11
05:15 PM	3	0	1	4	0	2	0	2	0	0	0	0	0	6	0	6	12
05:30 PM	2	0	0	2	0	1	0	1	0	0	0	0	0	1	1	2	5
05:45 PM	1	0	2	3	2	1	0	3	0	0	0	0	0	3	1	4	10
Total	6	0	4	10	2	9	0	11	0	0	0	0	0	15	2	17	38
Grand Total	12	0	12	24	6	21	0	27	0	0	0	0	0	30	8	38	89
Apprch %	50	0	50		22.2	77.8	0		0	0	0		0	78.9	21.1		
Total %	13.5	0	13.5	27	6.7	23.6	0	30.3	0	0	0	0	0	33.7	9	42.7	

	I-215 Southbound Off Ramp Southbound				Ethanac Road Westbound				I-215 Southbound On Ramp Northbound				Ethanac Road 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	1	0	**4**	**5**	0	4	0	4	0	0	0	0	0	3	1	4	13
04:15 PM	2	0	1	3	**2**	1	0	3	0	0	0	0	0	**6**	1	**7**	13
04:30 PM	**3**	0	2	5	2	**5**	0	**7**	0	0	0	0	0	2	**3**	5	**17**
04:45 PM	0	0	1	1	0	2	0	2	0	0	0	0	0	4	1	5	8
Total Volume	6	0	8	14	4	12	0	16	0	0	0	0	0	15	6	21	51
% App. Total	42.9	0	57.1		25	75	0		0	0	0		0	71.4	28.6		
PHF	.500	.000	.500	.700	.500	.600	.000	.571	.000	.000	.000	.000	.000	.625	.500	.750	.750

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 01_PER_215S_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	1	0	**4**	**5**	0	4	0	4	0	0	0	0	0	3	1	4
+15 mins.	2	0	1	3	**2**	1	0	3	0	0	0	0	0	**6**	1	**7**
+30 mins.	**3**	0	2	5	2	**5**	0	**7**	0	0	0	0	0	2	**3**	5
+45 mins.	0	0	1	1	0	2	0	2	0	0	0	0	0	4	1	5
Total Volume	6	0	8	14	4	12	0	16	0	0	0	0	0	15	6	21
% App. Total	42.9	0	57.1		25	75	0		0	0	0		0	71.4	28.6	
PHF	.500	.000	.500	.700	.500	.600	.000	.571	.000	.000	.000	.000	.000	.625	.500	.750

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 01_PER_215S_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- 3 Axle Vehicles

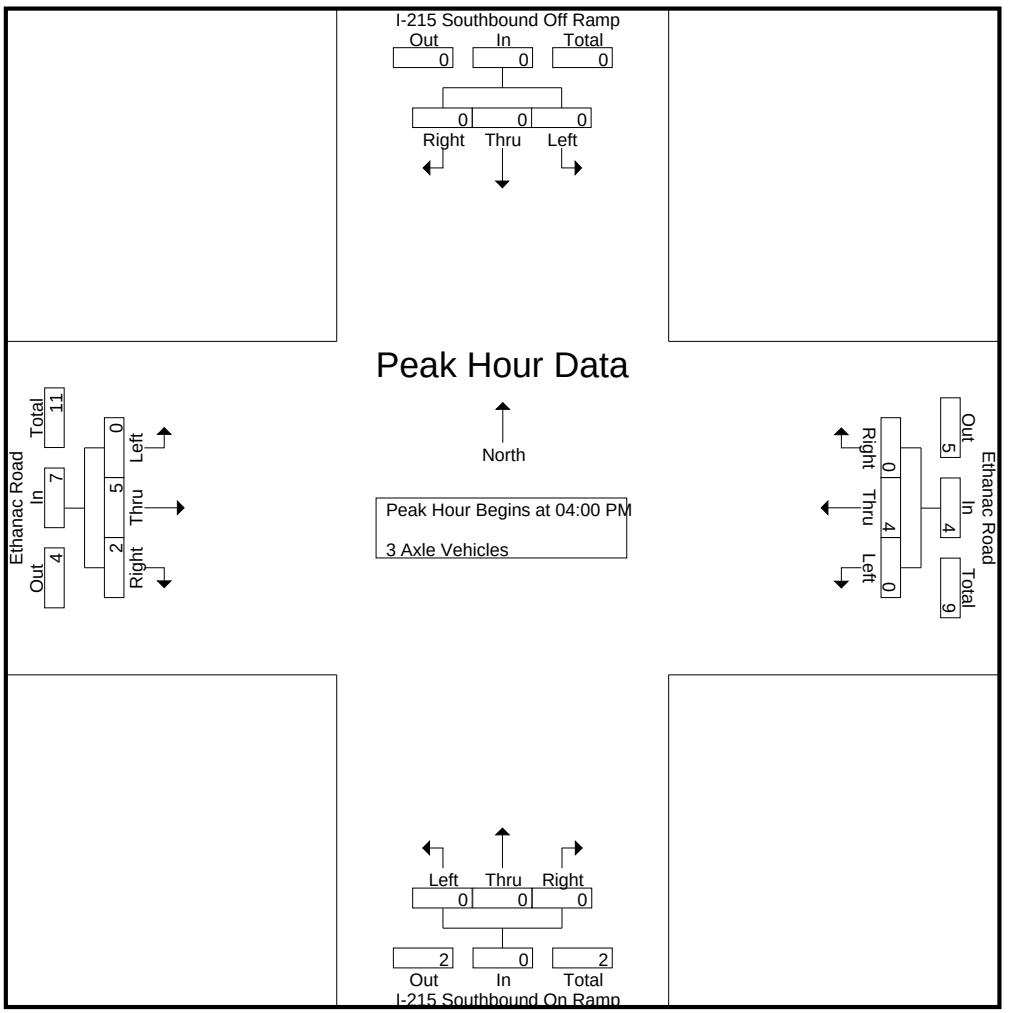
	I-215 Southbound Off Ramp Southbound				Ethanac Road Westbound				I-215 Southbound On Ramp Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	1	1	3
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	1	3	4
Total	0	0	0	0	0	4	0	4	0	0	0	0	0	5	2	7	11
05:00 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
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	1	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	0	0	1	1	0	5	0	5	0	0	0	0	0	3	0	3	9
Grand Total	0	0	1	1	0	9	0	9	0	0	0	0	0	8	2	10	20
Apprch %	0	0	100		0	100	0		0	0	0		0	80	20		
Total %	0	0	5	5	0	45	0	45	0	0	0	0	0	40	10	50	

	I-215 Southbound Off Ramp Southbound				Ethanac Road Westbound				I-215 Southbound On Ramp Northbound				Ethanac Road 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
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	0	0	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	0	**1**	1	3
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	1	**3**	**4**
Total Volume	0	0	0	0	0	4	0	4	0	0	0	0	0	5	2	7	11
% App. Total	0	0	0		0	100	0		0	0	0		0	71.4	28.6		
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.625	.500	.583	.688

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 01_PER_215S_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 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	0	0	0	0	0	0	0	0	1	0	1
+30 mins.	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	0	**1**	1
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	2	1	**3**
Total Volume	0	0	0	0	0	4	0	4	0	0	0	0	0	5	2	7
% App. Total	0	0	0		0	100	0		0	0	0		0	71.4	28.6	
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.625	.500	.583

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 01_PER_215S_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- 4+ Axle Trucks

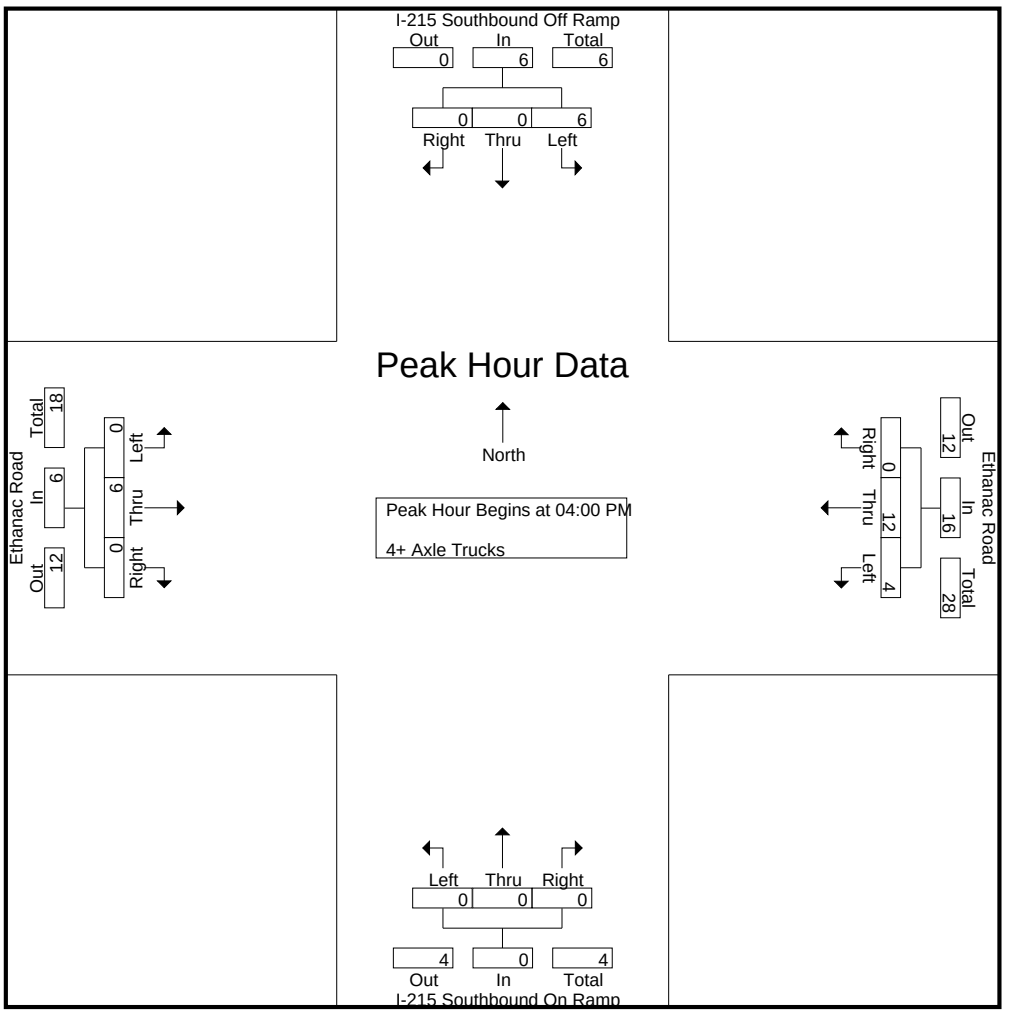
	I-215 Southbound Off Ramp Southbound				Ethanac Road Westbound				I-215 Southbound On Ramp Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	0	0	1	0	3	0	3	0	0	0	0	0	1	0	1	5
04:15 PM	2	0	0	2	0	1	0	1	0	0	0	0	0	1	0	1	4
04:30 PM	1	0	0	1	1	5	0	6	0	0	0	0	0	3	0	3	10
04:45 PM	2	0	0	2	3	3	0	6	0	0	0	0	0	1	0	1	9
Total	6	0	0	6	4	12	0	16	0	0	0	0	0	6	0	6	28
05:00 PM	1	0	0	1	0	1	0	1	0	0	0	0	0	2	0	2	4
05:15 PM	0	0	0	0	1	2	0	3	0	0	0	0	0	1	0	1	4
05:30 PM	0	0	1	1	1	1	0	2	0	0	0	0	0	0	0	0	3
05:45 PM	0	0	0	0	2	2	0	4	0	0	0	0	0	0	0	0	4
Total	1	0	1	2	4	6	0	10	0	0	0	0	0	3	0	3	15
Grand Total	7	0	1	8	8	18	0	26	0	0	0	0	0	9	0	9	43
Apprch %	87.5	0	12.5		30.8	69.2	0		0	0	0		0	100	0		
Total %	16.3	0	2.3	18.6	18.6	41.9	0	60.5	0	0	0	0	0	20.9	0	20.9	

	I-215 Southbound Off Ramp Southbound				Ethanac Road Westbound				I-215 Southbound On Ramp Northbound				Ethanac Road 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	1	0	0	1	0	3	0	3	0	0	0	0	0	1	0	1	5
04:15 PM	**2**	0	0	**2**	0	1	0	1	0	0	0	0	0	1	0	1	4
04:30 PM	1	0	0	1	1	**5**	0	**6**	0	0	0	0	0	**3**	0	**3**	**10**
04:45 PM	2	0	0	2	**3**	3	0	6	0	0	0	0	0	1	0	1	9
Total Volume	6	0	0	6	4	12	0	16	0	0	0	0	0	6	0	6	28
% App. Total	100	0	0		25	75	0		0	0	0		0	100	0		
PHF	.750	.000	.000	.750	.333	.600	.000	.667	.000	.000	.000	.000	.000	.500	.000	.500	.700

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Southbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 01_PER_215S_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	1	0	0	1	0	3	0	3	0	0	0	0	0	1	0	1
+15 mins.	**2**	0	0	**2**	0	1	0	1	0	0	0	0	0	1	0	1
+30 mins.	1	0	0	1	1	**5**	0	**6**	0	0	0	0	0	**3**	0	**3**
+45 mins.	2	0	0	2	**3**	3	0	6	0	0	0	0	0	1	0	1
Total Volume	6	0	0	6	4	12	0	16	0	0	0	0	0	6	0	6
% App. Total	100	0	0		25	75	0		0	0	0		0	100	0	
PHF	.750	.000	.000	.750	.333	.600	.000	.667	.000	.000	.000	.000	.000	.500	.000	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Northbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 02_PER_215N_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

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

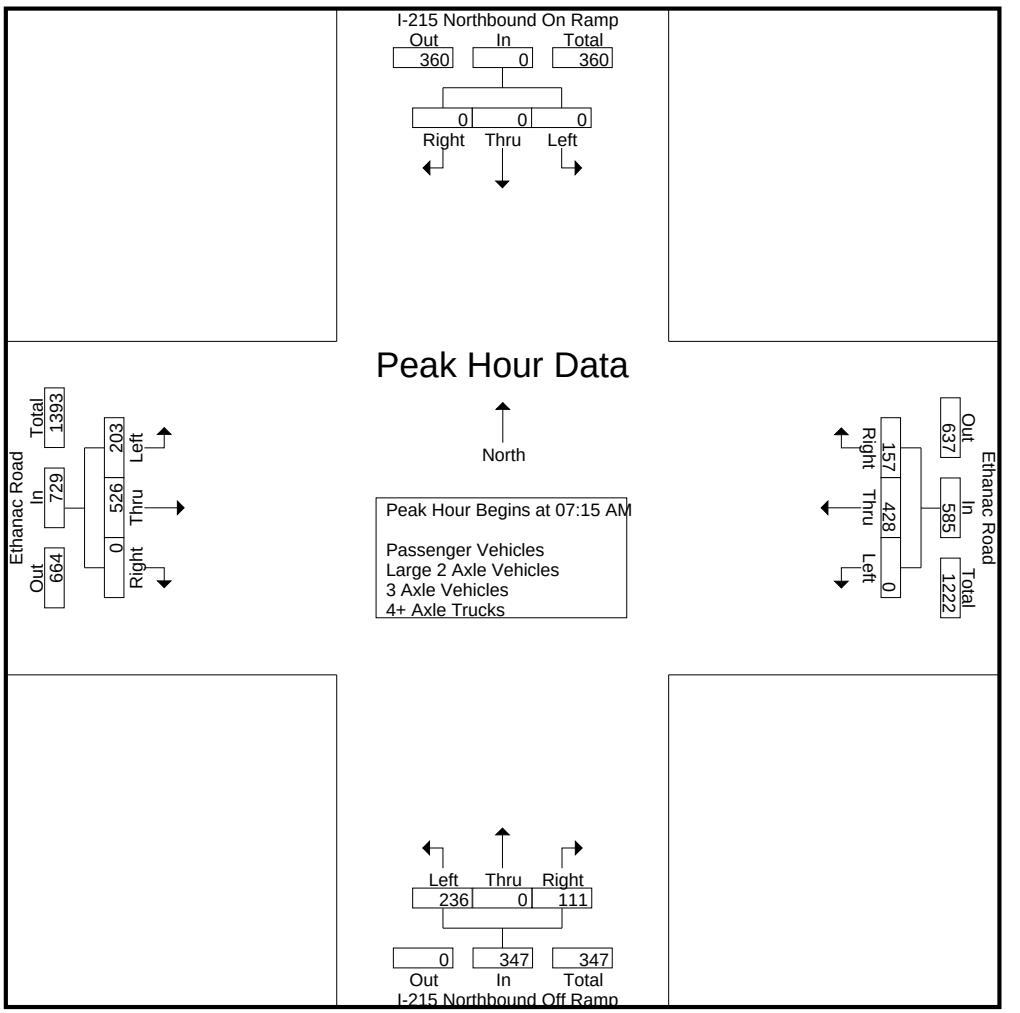
	I-215 Northbound On Ramp Southbound				Ethanac Road Westbound				I-215 Northbound Off Ramp Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	70	52	122	36	0	36	72	56	114	0	170	364
07:15 AM	0	0	0	0	0	81	37	118	46	0	31	77	55	118	0	173	368
07:30 AM	0	0	0	0	0	106	46	152	55	0	23	78	50	160	0	210	440
07:45 AM	0	0	0	0	0	114	44	158	57	0	38	95	50	134	0	184	437
Total	0	0	0	0	0	371	179	550	194	0	128	322	211	526	0	737	1609
08:00 AM	0	0	0	0	0	127	30	157	78	0	19	97	48	114	0	162	416
08:15 AM	0	0	0	0	0	91	31	122	60	0	29	89	58	95	0	153	364
08:30 AM	0	0	0	0	0	84	24	108	66	1	46	113	50	75	0	125	346
08:45 AM	0	0	0	0	0	80	29	109	65	0	41	106	41	83	0	124	339
Total	0	0	0	0	0	382	114	496	269	1	135	405	197	367	0	564	1465
Grand Total	0	0	0	0	0	753	293	1046	463	1	263	727	408	893	0	1301	3074
Apprch %	0	0	0		0	72	28		63.7	0.1	36.2		31.4	68.6	0		
Total %	0	0	0	0	0	24.5	9.5	34	15.1	0	8.6	23.6	13.3	29.1	0	42.3	
Passenger Vehicles	0	0	0	0	0	697	266	963	444	0	229	673	384	840	0	1224	2860
% Passenger Vehicles	0	0	0	0	0	92.6	90.8	92.1	95.9	0	87.1	92.6	94.1	94.1	0	94.1	93
Large 2 Axle Vehicles	0	0	0	0	0	19	11	30	6	1	13	20	14	23	0	37	87
% Large 2 Axle Vehicles	0	0	0	0	0	2.5	3.8	2.9	1.3	100	4.9	2.8	3.4	2.6	0	2.8	2.8
3 Axle Vehicles	0	0	0	0	0	6	7	13	10	0	17	27	2	5	0	7	47
% 3 Axle Vehicles	0	0	0	0	0	0.8	2.4	1.2	2.2	0	6.5	3.7	0.5	0.6	0	0.5	1.5
4+ Axle Trucks	0	0	0	0	0	31	9	40	3	0	4	7	8	25	0	33	80
% 4+ Axle Trucks	0	0	0	0	0	4.1	3.1	3.8	0.6	0	1.5	1	2	2.8	0	2.5	2.6

	I-215 Northbound On Ramp Southbound				Ethanac Road Westbound				I-215 Northbound Off Ramp Northbound				Ethanac Road 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	0	0	0	0	0	81	37	118	46	0	31	77	**55**	118	0	173	368
07:30 AM	0	0	0	0	0	106	**46**	152	55	0	23	78	50	**160**	0	**210**	**440**
07:45 AM	0	0	0	0	0	114	44	**158**	57	0	**38**	95	50	134	0	184	437
08:00 AM	0	0	0	0	0	**127**	30	157	**78**	0	19	**97**	48	114	0	162	416
Total Volume	0	0	0	0	0	428	157	585	236	0	111	347	203	526	0	729	1661
% App. Total	0	0	0		0	73.2	26.8		68	0	32		27.8	72.2	0		
PHF	.000	.000	.000	.000	.000	.843	.853	.926	.756	.000	.730	.894	.923	.822	.000	.868	.944

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Northbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 02_PER_215N_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
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				07:30 AM				08:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	106	**46**	152	**78**	0	19	97	**56**	114	0	170
+15 mins.	0	0	0	0	0	114	44	**158**	60	0	29	89	55	118	0	173
+30 mins.	0	0	0	0	0	**127**	30	157	66	**1**	**46**	**113**	50	**160**	0	**210**
+45 mins.	0	0	0	0	0	91	31	122	65	0	41	106	50	134	0	184
Total Volume	0	0	0	0	0	438	151	589	269	1	135	405	211	526	0	737
% App. Total	0	0	0		0	74.4	25.6		66.4	0.2	33.3		28.6	71.4	0	
PHF	.000	.000	.000	.000	.000	.862	.821	.932	.862	.250	.734	.896	.942	.822	.000	.877

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Northbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 02_PER_215N_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- Passenger Vehicles

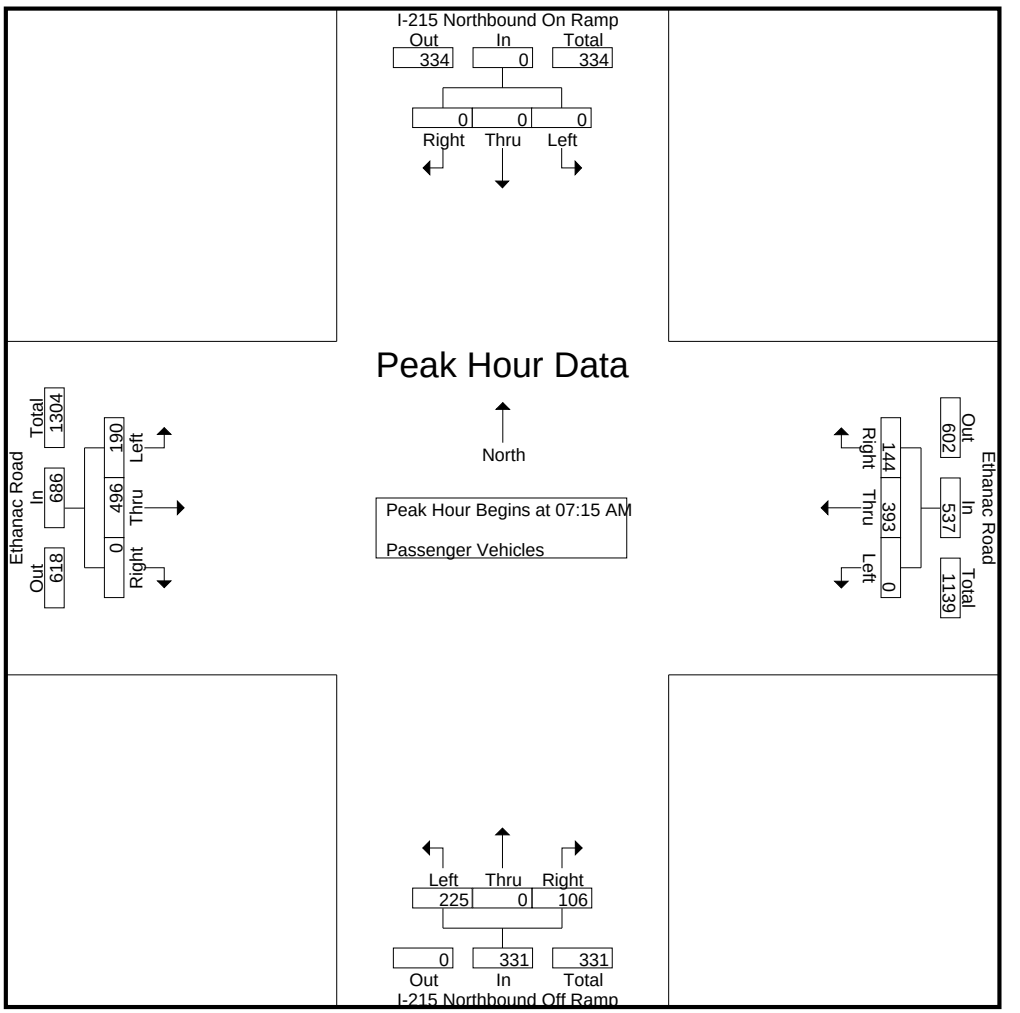
	I-215 Northbound On Ramp Southbound				Ethanac Road Westbound				I-215 Northbound Off Ramp Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	64	48	112	34	0	30	64	54	110	0	164	340
07:15 AM	0	0	0	0	0	67	36	103	44	0	31	75	52	111	0	163	341
07:30 AM	0	0	0	0	0	98	41	139	52	0	22	74	46	155	0	201	414
07:45 AM	0	0	0	0	0	108	41	149	54	0	35	89	48	121	0	169	407
Total	0	0	0	0	0	337	166	503	184	0	118	302	200	497	0	697	1502
08:00 AM	0	0	0	0	0	120	26	146	75	0	18	93	44	109	0	153	392
08:15 AM	0	0	0	0	0	88	26	114	59	0	23	82	56	89	0	145	341
08:30 AM	0	0	0	0	0	77	21	98	64	0	36	100	47	66	0	113	311
08:45 AM	0	0	0	0	0	75	27	102	62	0	34	96	37	79	0	116	314
Total	0	0	0	0	0	360	100	460	260	0	111	371	184	343	0	527	1358
Grand Total	0	0	0	0	0	697	266	963	444	0	229	673	384	840	0	1224	2860
Apprch %	0	0	0		0	72.4	27.6		66	0	34		31.4	68.6	0		
Total %	0	0	0	0	0	24.4	9.3	33.7	15.5	0	8	23.5	13.4	29.4	0	42.8	

	I-215 Northbound On Ramp Southbound				Ethanac Road Westbound				I-215 Northbound Off Ramp Northbound				Ethanac Road 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	67	36	103	44	0	31	75	**52**	111	0	163	341
07:30 AM	0	0	0	0	0	98	**41**	139	52	0	22	74	46	**155**	0	**201**	**414**
07:45 AM	0	0	0	0	0	108	41	**149**	54	0	**35**	89	48	121	0	169	407
08:00 AM	0	0	0	0	0	**120**	26	146	**75**	0	18	**93**	44	109	0	153	392
Total Volume	0	0	0	0	0	393	144	537	225	0	106	331	190	496	0	686	1554
% App. Total	0	0	0		0	73.2	26.8		68	0	32		27.7	72.3	0		
PHF	.000	.000	.000	.000	.000	.819	.878	.901	.750	.000	.757	.890	.913	.800	.000	.853	.938

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Northbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 02_PER_215N_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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	67	36	103	44	0	31	75	**52**	111	0	163
+15 mins.	0	0	0	0	0	98	**41**	139	52	0	22	74	46	**155**	0	**201**
+30 mins.	0	0	0	0	0	108	41	**149**	54	0	**35**	89	48	121	0	169
+45 mins.	0	0	0	0	0	**120**	26	146	**75**	0	18	**93**	44	109	0	153
Total Volume	0	0	0	0	0	393	144	537	225	0	106	331	190	496	0	686
% App. Total	0	0	0		0	73.2	26.8		68	0	32		27.7	72.3	0	
PHF	.000	.000	.000	.000	.000	.819	.878	.901	.750	.000	.757	.890	.913	.800	.000	.853

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Northbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 02_PER_215N_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- Large 2 Axle Vehicles

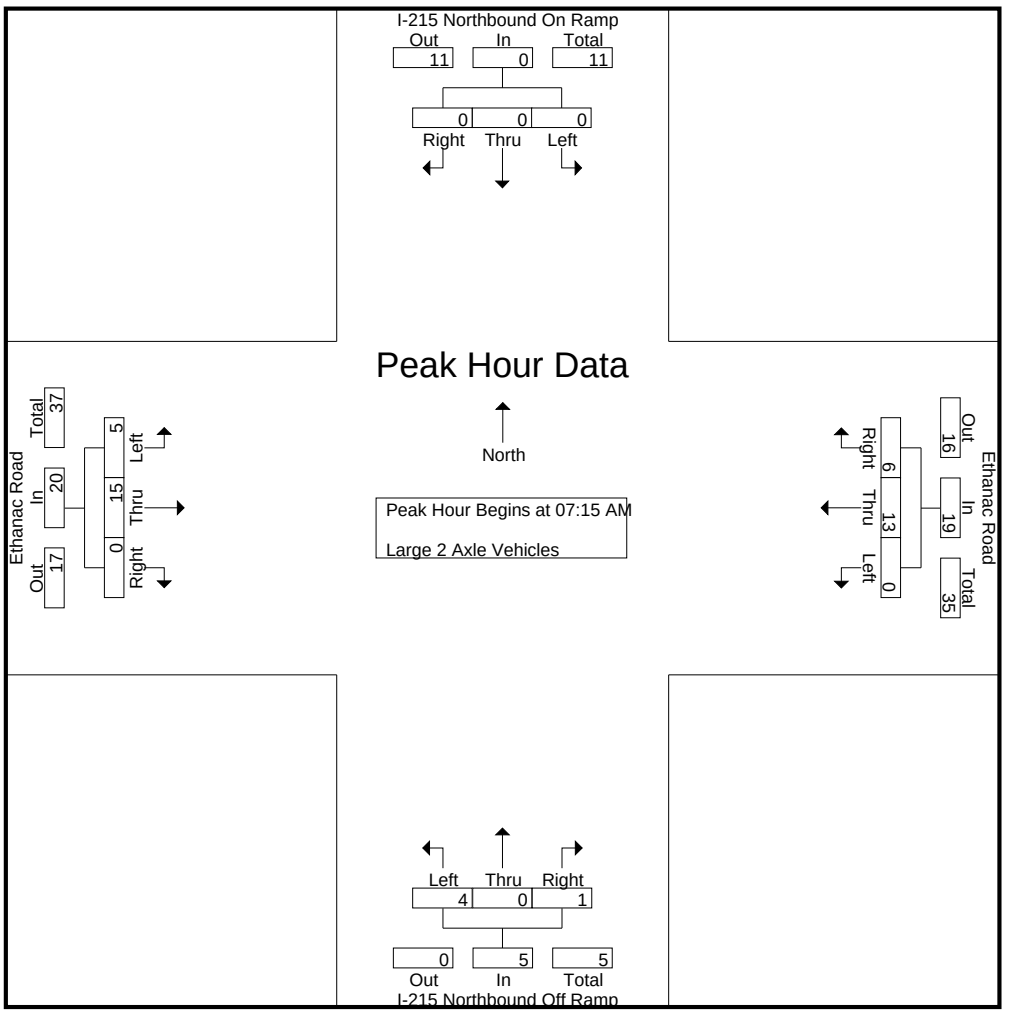
	I-215 Northbound On Ramp Southbound				Ethanac Road Westbound				I-215 Northbound Off Ramp Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	3	2	5	0	0	4	4	1	3	0	4	13
07:15 AM	0	0	0	0	0	7	1	8	1	0	0	1	2	3	0	5	14
07:30 AM	0	0	0	0	0	2	2	4	1	0	0	1	0	4	0	4	9
07:45 AM	0	0	0	0	0	1	2	3	0	0	1	1	1	7	0	8	12
Total	0	0	0	0	0	13	7	20	2	0	5	7	4	17	0	21	48
08:00 AM	0	0	0	0	0	3	1	4	2	0	0	2	2	1	0	3	9
08:15 AM	0	0	0	0	0	0	1	1	0	0	3	3	2	1	0	3	7
08:30 AM	0	0	0	0	0	2	2	4	0	1	2	3	3	3	0	6	13
08:45 AM	0	0	0	0	0	1	0	1	2	0	3	5	3	1	0	4	10
Total	0	0	0	0	0	6	4	10	4	1	8	13	10	6	0	16	39
Grand Total	0	0	0	0	0	19	11	30	6	1	13	20	14	23	0	37	87
Apprch %	0	0	0		0	63.3	36.7		30	5	65		37.8	62.2	0		
Total %	0	0	0	0	0	21.8	12.6	34.5	6.9	1.1	14.9	23	16.1	26.4	0	42.5	

	I-215 Northbound On Ramp Southbound				Ethanac Road Westbound				I-215 Northbound Off Ramp Northbound				Ethanac Road 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	**7**	1	**8**	1	0	0	1	**2**	3	0	5	**14**
07:30 AM	0	0	0	0	0	2	**2**	4	1	0	0	1	0	4	0	4	9
07:45 AM	0	0	0	0	0	1	2	3	0	0	**1**	1	1	**7**	0	**8**	12
08:00 AM	0	0	0	0	0	3	1	4	**2**	0	0	**2**	2	1	0	3	9
Total Volume	0	0	0	0	0	13	6	19	4	0	1	5	5	15	0	20	44
% App. Total	0	0	0		0	68.4	31.6		80	0	20		25	75	0		
PHF	.000	.000	.000	.000	.000	.464	.750	.594	.500	.000	.250	.625	.625	.536	.000	.625	.786

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Northbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 02_PER_215N_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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	**7**	1	**8**	1	0	0	1	**2**	3	0	5
+15 mins.	0	0	0	0	0	2	**2**	4	1	0	0	1	0	4	0	4
+30 mins.	0	0	0	0	0	1	2	3	0	0	**1**	1	1	**7**	0	**8**
+45 mins.	0	0	0	0	0	3	1	4	**2**	0	0	**2**	2	1	0	3
Total Volume	0	0	0	0	0	13	6	19	4	0	1	5	5	15	0	20
% App. Total	0	0	0		0	68.4	31.6		80	0	20		25	75	0	
PHF	.000	.000	.000	.000	.000	.464	.750	.594	.500	.000	.250	.625	.625	.536	.000	.625

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Northbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 02_PER_215N_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- 3 Axle Vehicles

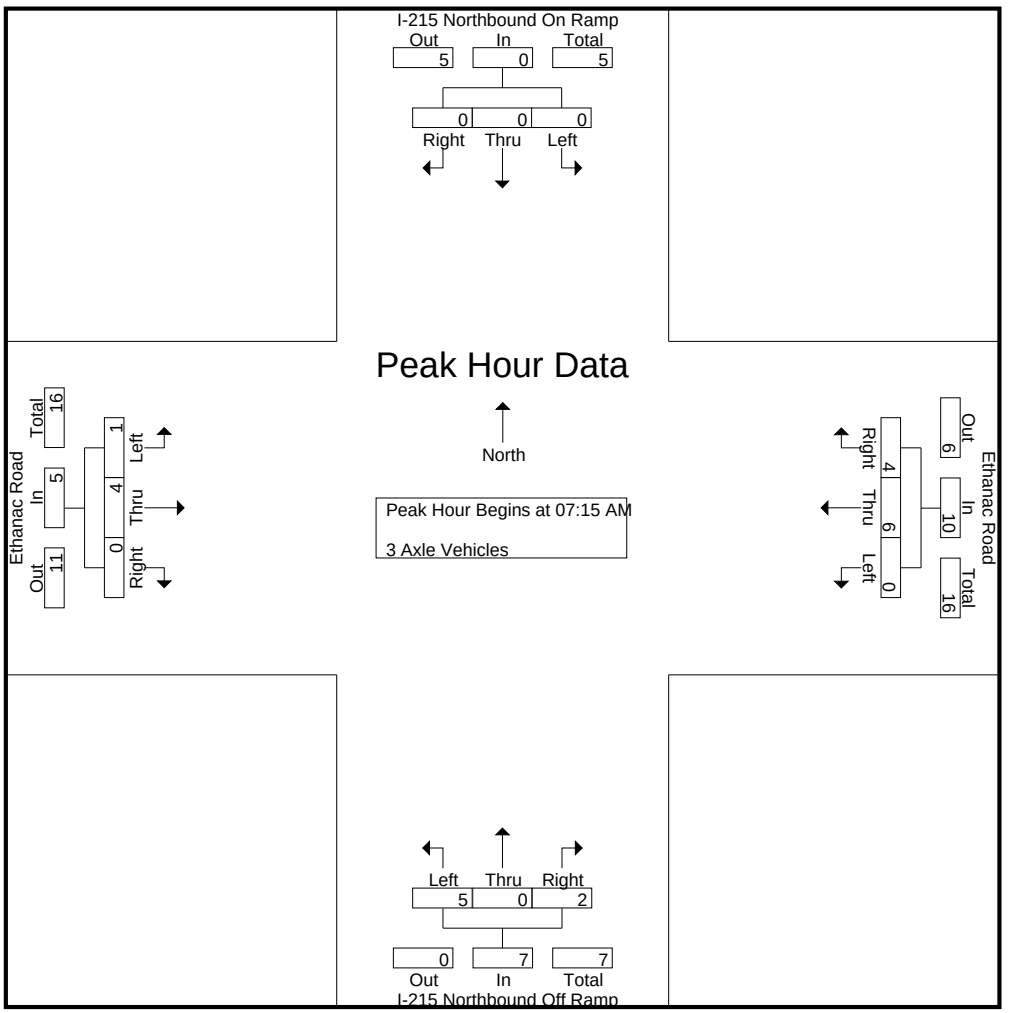
	I-215 Northbound On Ramp Southbound				Ethanac Road Westbound				I-215 Northbound Off Ramp Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	2	0	0	2	1	0	0	1	3
07:15 AM	0	0	0	0	0	2	0	2	1	0	0	1	0	2	0	2	5
07:30 AM	0	0	0	0	0	0	1	1	2	0	0	2	0	1	0	1	4
07:45 AM	0	0	0	0	0	3	1	4	2	0	1	3	0	0	0	0	7
Total	0	0	0	0	0	5	2	7	7	0	1	8	1	3	0	4	19
08:00 AM	0	0	0	0	0	1	2	3	0	0	1	1	1	1	0	2	6
08:15 AM	0	0	0	0	0	0	1	1	0	0	3	3	0	0	0	0	4
08:30 AM	0	0	0	0	0	0	1	1	2	0	8	10	0	1	0	1	12
08:45 AM	0	0	0	0	0	0	1	1	1	0	4	5	0	0	0	0	6
Total	0	0	0	0	0	1	5	6	3	0	16	19	1	2	0	3	28
Grand Total	0	0	0	0	0	6	7	13	10	0	17	27	2	5	0	7	47
Apprch %	0	0	0		0	46.2	53.8		37	0	63		28.6	71.4	0		
Total %	0	0	0	0	0	12.8	14.9	27.7	21.3	0	36.2	57.4	4.3	10.6	0	14.9	

	I-215 Northbound On Ramp Southbound				Ethanac Road Westbound				I-215 Northbound Off Ramp Northbound				Ethanac Road 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	2	0	2	1	0	0	1	0	**2**	0	**2**	5
07:30 AM	0	0	0	0	0	0	1	1	**2**	0	0	2	0	1	0	1	4
07:45 AM	0	0	0	0	0	**3**	1	**4**	2	0	**1**	**3**	0	0	0	0	**7**
08:00 AM	0	0	0	0	0	1	**2**	3	0	0	1	1	**1**	1	0	2	6
Total Volume	0	0	0	0	0	6	4	10	5	0	2	7	1	4	0	5	22
% App. Total	0	0	0		0	60	40		71.4	0	28.6		20	80	0		
PHF	.000	.000	.000	.000	.000	.500	.500	.625	.625	.000	.500	.583	.250	.500	.000	.625	.786

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Northbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 02_PER_215N_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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	2	0	2	1	0	0	1	0	**2**	0	**2**
+15 mins.	0	0	0	0	0	0	1	1	**2**	0	0	2	0	1	0	1
+30 mins.	0	0	0	0	0	**3**	1	**4**	2	0	**1**	**3**	0	0	0	0
+45 mins.	0	0	0	0	0	1	**2**	3	0	0	1	1	**1**	1	0	2
Total Volume	0	0	0	0	0	6	4	10	5	0	2	7	1	4	0	5
% App. Total	0	0	0		0	60	40		71.4	0	28.6		20	80	0	
PHF	.000	.000	.000	.000	.000	.500	.500	.625	.625	.000	.500	.583	.250	.500	.000	.625

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Northbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 02_PER_215N_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- 4+ Axle Trucks

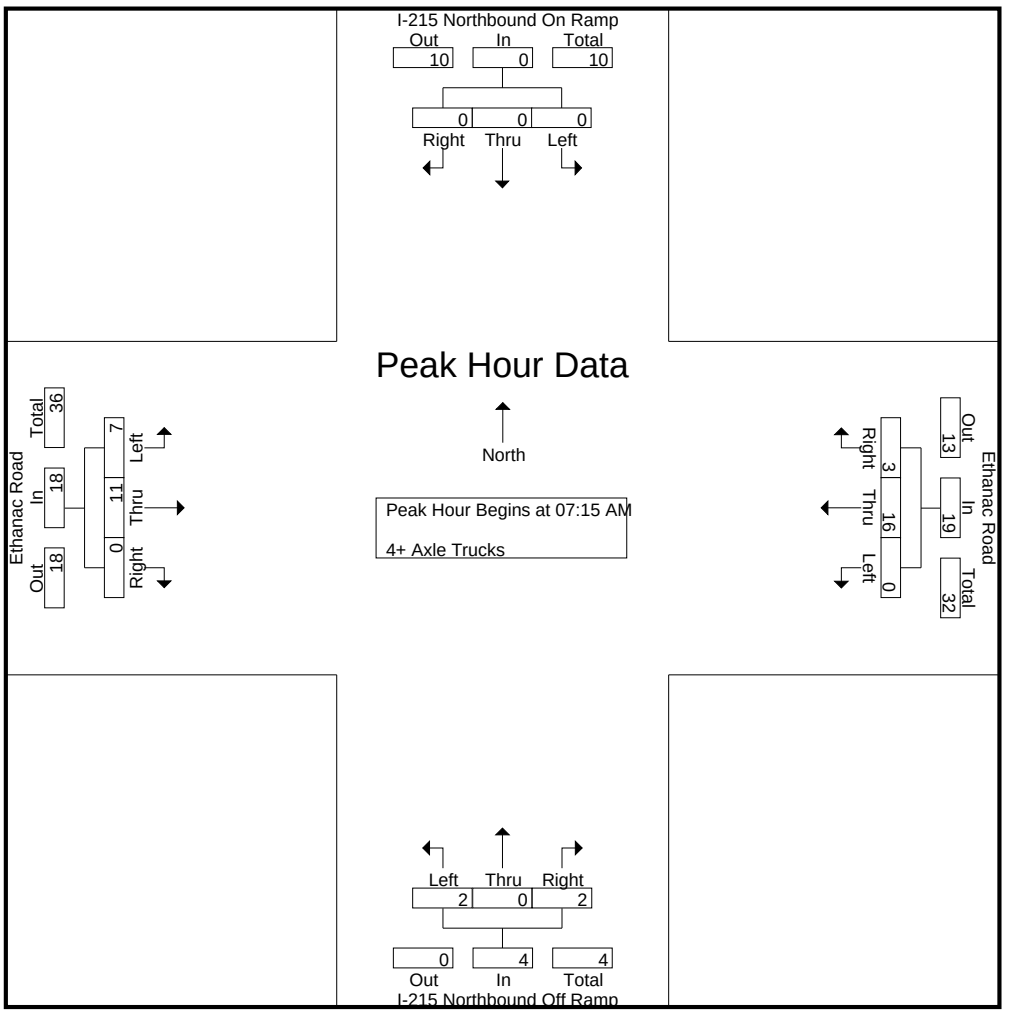
	I-215 Northbound On Ramp Southbound				Ethanac Road Westbound				I-215 Northbound Off Ramp Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	3	2	5	0	0	2	2	0	1	0	1	8
07:15 AM	0	0	0	0	0	5	0	5	0	0	0	0	1	2	0	3	8
07:30 AM	0	0	0	0	0	6	2	8	0	0	1	1	4	0	0	4	13
07:45 AM	0	0	0	0	0	2	0	2	1	0	1	2	1	6	0	7	11
Total	0	0	0	0	0	16	4	20	1	0	4	5	6	9	0	15	40
08:00 AM	0	0	0	0	0	3	1	4	1	0	0	1	1	3	0	4	9
08:15 AM	0	0	0	0	0	3	3	6	1	0	0	1	0	5	0	5	12
08:30 AM	0	0	0	0	0	5	0	5	0	0	0	0	0	5	0	5	10
08:45 AM	0	0	0	0	0	4	1	5	0	0	0	0	1	3	0	4	9
Total	0	0	0	0	0	15	5	20	2	0	0	2	2	16	0	18	40
Grand Total	0	0	0	0	0	31	9	40	3	0	4	7	8	25	0	33	80
Apprch %	0	0	0		0	77.5	22.5		42.9	0	57.1		24.2	75.8	0		
Total %	0	0	0	0	0	38.8	11.2	50	3.8	0	5	8.8	10	31.2	0	41.2	

	I-215 Northbound On Ramp Southbound				Ethanac Road Westbound				I-215 Northbound Off Ramp Northbound				Ethanac Road 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	5	0	5	0	0	0	0	1	2	0	3	8
07:30 AM	0	0	0	0	0	**6**	**2**	**8**	0	0	**1**	1	**4**	0	0	4	**13**
07:45 AM	0	0	0	0	0	2	0	2	**1**	0	1	**2**	1	**6**	0	**7**	11
08:00 AM	0	0	0	0	0	3	1	4	1	0	0	1	1	3	0	4	9
Total Volume	0	0	0	0	0	16	3	19	2	0	2	4	7	11	0	18	41
% App. Total	0	0	0		0	84.2	15.8		50	0	50		38.9	61.1	0		
PHF	.000	.000	.000	.000	.000	.667	.375	.594	.500	.000	.500	.500	.438	.458	.000	.643	.788

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Northbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 02_PER_215N_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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	5	0	5	0	0	0	0	1	2	0	3
+15 mins.	0	0	0	0	0	**6**	**2**	**8**	0	0	**1**	1	**4**	0	0	4
+30 mins.	0	0	0	0	0	2	0	2	**1**	0	1	**2**	1	**6**	0	**7**
+45 mins.	0	0	0	0	0	3	1	4	1	0	0	1	1	3	0	4
Total Volume	0	0	0	0	0	16	3	19	2	0	2	4	7	11	0	18
% App. Total	0	0	0		0	84.2	15.8		50	0	50		38.9	61.1	0	
PHF	.000	.000	.000	.000	.000	.667	.375	.594	.500	.000	.500	.500	.438	.458	.000	.643

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Northbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 02_PER_215N_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

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

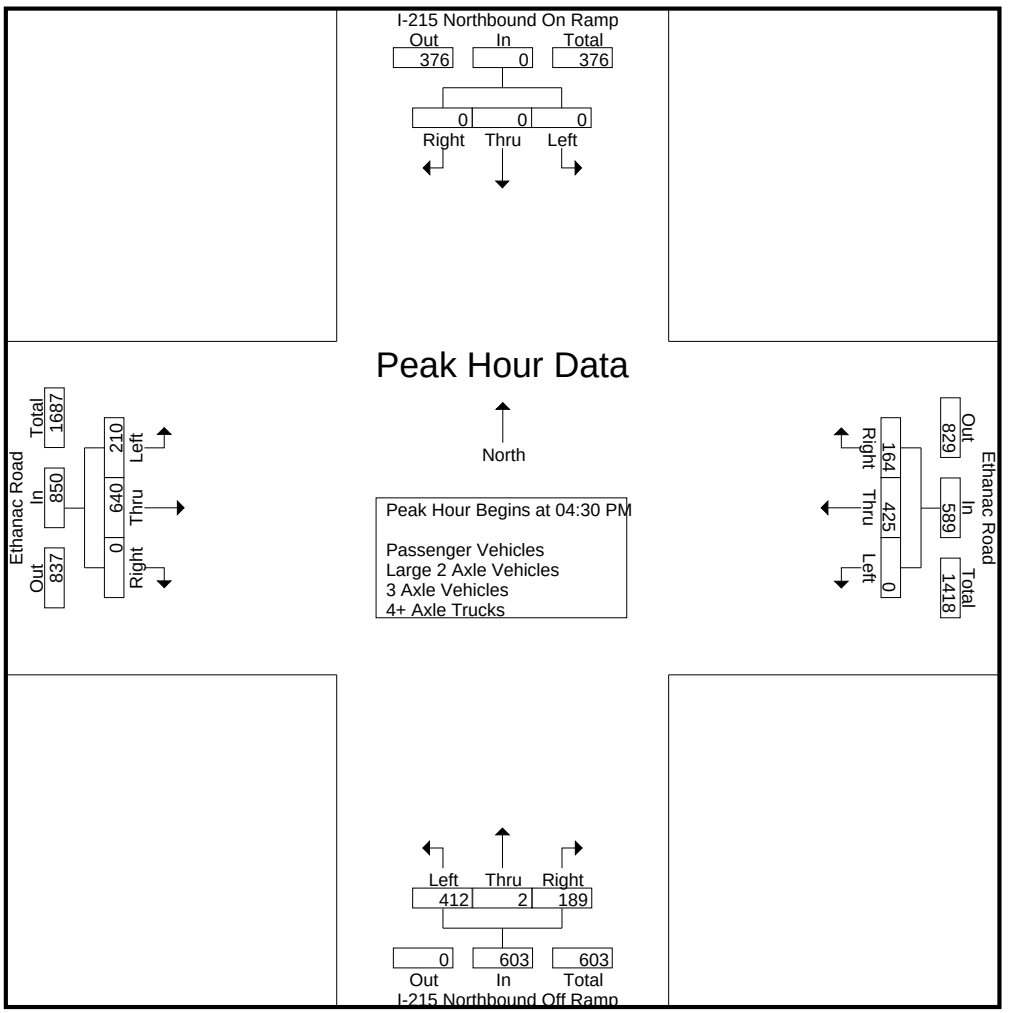
	I-215 Northbound On Ramp Southbound				Ethanac Road Westbound				I-215 Northbound Off Ramp Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	118	49	167	100	1	49	150	52	175	0	227	544
04:15 PM	0	0	0	0	0	103	34	137	95	2	38	135	50	164	0	214	486
04:30 PM	0	0	0	0	0	107	35	142	112	0	55	167	58	138	0	196	505
04:45 PM	0	0	0	0	0	106	36	142	92	0	35	127	54	183	0	237	506
Total	0	0	0	0	0	434	154	588	399	3	177	579	214	660	0	874	2041
05:00 PM	0	0	0	0	0	103	61	164	95	2	60	157	43	156	0	199	520
05:15 PM	0	0	0	0	0	109	32	141	113	0	39	152	55	163	0	218	511
05:30 PM	0	0	0	0	0	72	24	96	106	0	52	158	51	163	0	214	468
05:45 PM	0	0	0	0	0	93	38	131	80	0	51	131	54	133	0	187	449
Total	0	0	0	0	0	377	155	532	394	2	202	598	203	615	0	818	1948
Grand Total	0	0	0	0	0	811	309	1120	793	5	379	1177	417	1275	0	1692	3989
Apprch %	0	0	0		0	72.4	27.6		67.4	0.4	32.2		24.6	75.4	0		
Total %	0	0	0	0	0	20.3	7.7	28.1	19.9	0.1	9.5	29.5	10.5	32	0	42.4	
Passenger Vehicles	0	0	0	0	0	790	294	1084	754	4	358	1116	398	1233	0	1631	3831
% Passenger Vehicles	0	0	0	0	0	97.4	95.1	96.8	95.1	80	94.5	94.8	95.4	96.7	0	96.4	96
Large 2 Axle Vehicles	0	0	0	0	0	10	9	19	16	0	15	31	10	28	0	38	88
% Large 2 Axle Vehicles	0	0	0	0	0	1.2	2.9	1.7	2	0	4	2.6	2.4	2.2	0	2.2	2.2
3 Axle Vehicles	0	0	0	0	0	1	1	2	8	0	2	10	2	6	0	8	20
% 3 Axle Vehicles	0	0	0	0	0	0.1	0.3	0.2	1	0	0.5	0.8	0.5	0.5	0	0.5	0.5
4+ Axle Trucks	0	0	0	0	0	10	5	15	15	1	4	20	7	8	0	15	50
% 4+ Axle Trucks	0	0	0	0	0	1.2	1.6	1.3	1.9	20	1.1	1.7	1.7	0.6	0	0.9	1.3

	I-215 Northbound On Ramp Southbound				Ethanac Road Westbound				I-215 Northbound Off Ramp Northbound				Ethanac Road 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	0	0	0	0	0	107	35	142	112	0	55	**167**	**58**	138	0	196	505
04:45 PM	0	0	0	0	0	106	36	142	92	0	35	127	54	**183**	0	**237**	506
05:00 PM	0	0	0	0	0	103	**61**	**164**	95	**2**	**60**	157	43	156	0	199	**520**
05:15 PM	0	0	0	0	0	**109**	32	141	**113**	0	39	152	55	163	0	218	511
Total Volume	0	0	0	0	0	425	164	589	412	2	189	603	210	640	0	850	2042
% App. Total	0	0	0		0	72.2	27.8		68.3	0.3	31.3		24.7	75.3	0		
PHF	.000	.000	.000	.000	.000	.975	.672	.898	.912	.250	.788	.903	.905	.874	.000	.897	.982

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Northbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 02_PER_215N_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
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:

	04:00 PM				04:30 PM				04:30 PM				04:00 PM			
+0 mins.	0	0	0	0	0	107	35	142	112	0	55	**167**	52	175	0	227
+15 mins.	0	0	0	0	0	106	36	142	92	0	35	127	50	164	0	214
+30 mins.	0	0	0	0	0	103	**61**	**164**	95	**2**	**60**	157	**58**	138	0	196
+45 mins.	0	0	0	0	0	**109**	32	141	**113**	0	39	152	54	**183**	0	**237**
Total Volume	0	0	0	0	0	425	164	589	412	2	189	603	214	660	0	874
% App. Total	0	0	0		0	72.2	27.8		68.3	0.3	31.3		24.5	75.5	0	
PHF	.000	.000	.000	.000	.000	.975	.672	.898	.912	.250	.788	.903	.922	.902	.000	.922

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Northbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 02_PER_215N_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- Passenger Vehicles

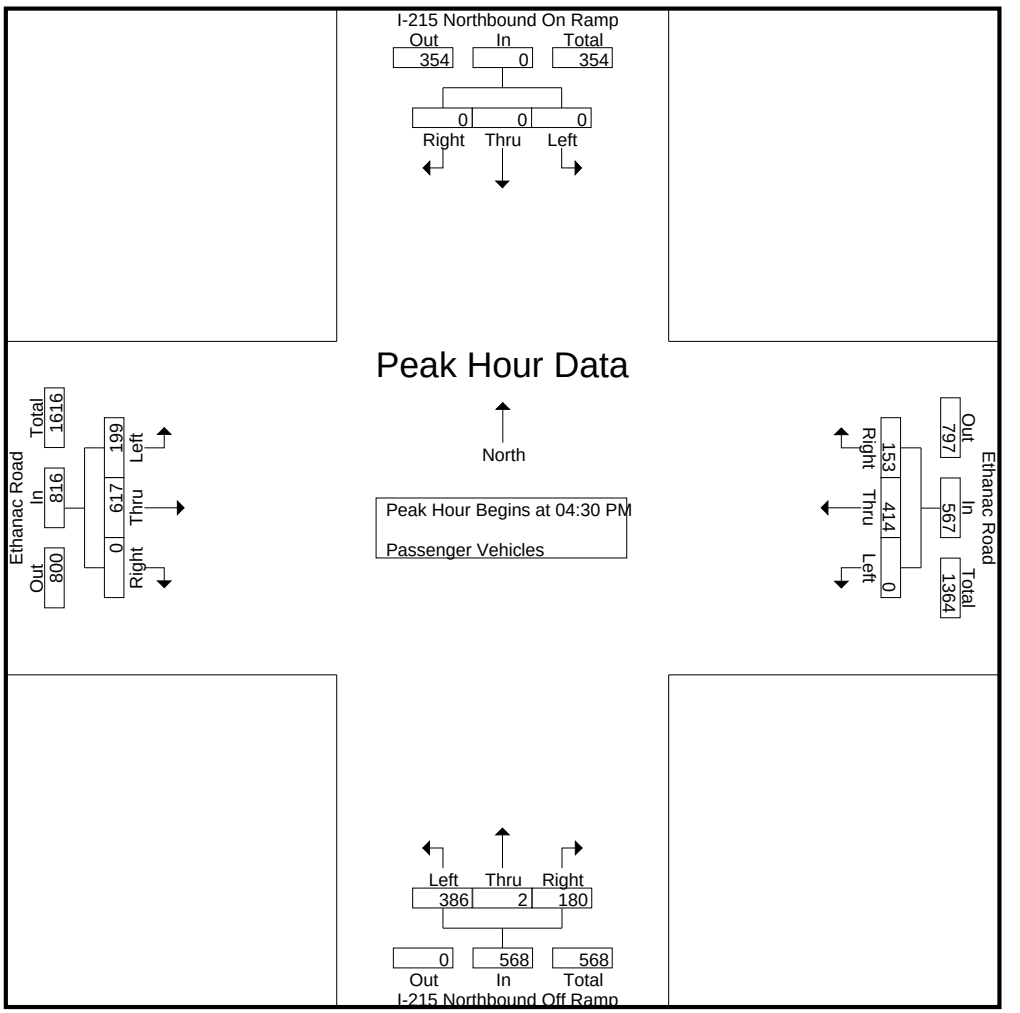
	I-215 Northbound On Ramp Southbound				Ethanac Road Westbound				I-215 Northbound Off Ramp Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	115	46	161	95	1	45	141	51	168	0	219	521
04:15 PM	0	0	0	0	0	101	34	135	94	1	34	129	48	156	0	204	468
04:30 PM	0	0	0	0	0	102	31	133	103	0	52	155	54	132	0	186	474
04:45 PM	0	0	0	0	0	101	34	135	86	0	32	118	52	175	0	227	480
Total	0	0	0	0	0	419	145	564	378	2	163	543	205	631	0	836	1943
05:00 PM	0	0	0	0	0	103	58	161	88	2	57	147	41	151	0	192	500
05:15 PM	0	0	0	0	0	108	30	138	109	0	39	148	52	159	0	211	497
05:30 PM	0	0	0	0	0	69	24	93	104	0	50	154	48	161	0	209	456
05:45 PM	0	0	0	0	0	91	37	128	75	0	49	124	52	131	0	183	435
Total	0	0	0	0	0	371	149	520	376	2	195	573	193	602	0	795	1888
Grand Total	0	0	0	0	0	790	294	1084	754	4	358	1116	398	1233	0	1631	3831
Apprch %	0	0	0		0	72.9	27.1		67.6	0.4	32.1		24.4	75.6	0		
Total %	0	0	0	0	0	20.6	7.7	28.3	19.7	0.1	9.3	29.1	10.4	32.2	0	42.6	

	I-215 Northbound On Ramp Southbound				Ethanac Road Westbound				I-215 Northbound Off Ramp Northbound				Ethanac Road 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	102	31	133	103	0	52	**155**	**54**	132	0	186	474
04:45 PM	0	0	0	0	0	101	34	135	86	0	32	118	52	**175**	0	**227**	480
05:00 PM	0	0	0	0	0	103	**58**	**161**	88	**2**	**57**	147	41	151	0	192	**500**
05:15 PM	0	0	0	0	0	**108**	30	138	**109**	0	39	148	52	159	0	211	497
Total Volume	0	0	0	0	0	414	153	567	386	2	180	568	199	617	0	816	1951
% App. Total	0	0	0		0	73	27		68	0.4	31.7		24.4	75.6	0		
PHF	.000	.000	.000	.000	.000	.958	.659	.880	.885	.250	.789	.916	.921	.881	.000	.899	.976

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Northbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 02_PER_215N_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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	102	31	133	103	0	52	**155**	**54**	132	0	186
+15 mins.	0	0	0	0	0	101	34	135	86	0	32	118	52	**175**	0	**227**
+30 mins.	0	0	0	0	0	103	**58**	**161**	88	**2**	**57**	147	41	151	0	192
+45 mins.	0	0	0	0	0	**108**	30	138	**109**	0	39	148	52	159	0	211
Total Volume	0	0	0	0	0	414	153	567	386	2	180	568	199	617	0	816
% App. Total	0	0	0		0	73	27		68	0.4	31.7		24.4	75.6	0	
PHF	.000	.000	.000	.000	.000	.958	.659	.880	.885	.250	.789	.916	.921	.881	.000	.899

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Northbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 02_PER_215N_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- Large 2 Axle Vehicles

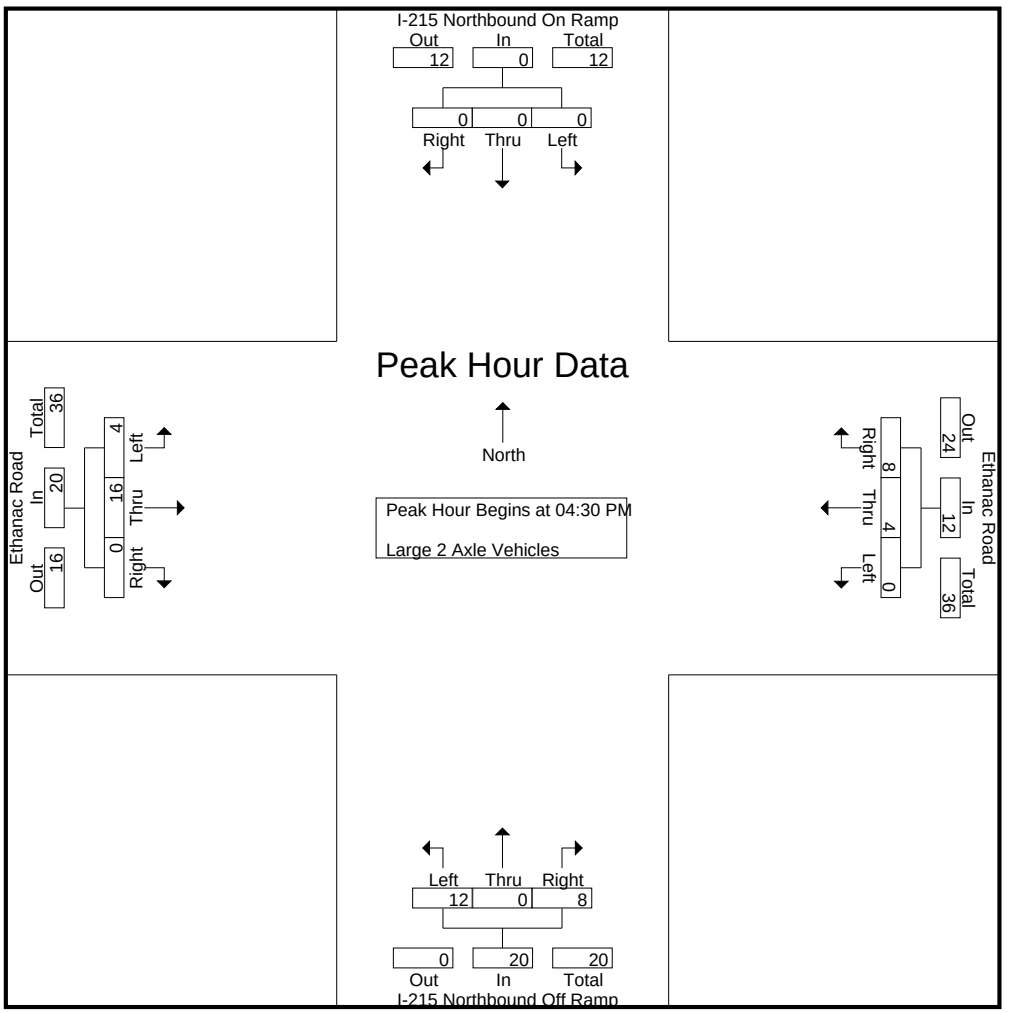
	I-215 Northbound On Ramp Southbound				Ethanac Road Westbound				I-215 Northbound Off Ramp Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	3	0	3	2	0	1	3	0	5	0	5	11
04:15 PM	0	0	0	0	0	1	0	1	0	0	2	2	1	4	0	5	8
04:30 PM	0	0	0	0	0	3	3	6	4	0	3	7	0	6	0	6	19
04:45 PM	0	0	0	0	0	1	2	3	3	0	2	5	2	3	0	5	13
Total	0	0	0	0	0	8	5	13	9	0	8	17	3	18	0	21	51
05:00 PM	0	0	0	0	0	0	2	2	3	0	3	6	1	3	0	4	12
05:15 PM	0	0	0	0	0	0	1	1	2	0	0	2	1	4	0	5	8
05:30 PM	0	0	0	0	0	0	0	0	0	0	2	2	3	2	0	5	7
05:45 PM	0	0	0	0	0	2	1	3	2	0	2	4	2	1	0	3	10
Total	0	0	0	0	0	2	4	6	7	0	7	14	7	10	0	17	37
Grand Total	0	0	0	0	0	10	9	19	16	0	15	31	10	28	0	38	88
Apprch %	0	0	0		0	52.6	47.4		51.6	0	48.4		26.3	73.7	0		
Total %	0	0	0	0	0	11.4	10.2	21.6	18.2	0	17	35.2	11.4	31.8	0	43.2	

	I-215 Northbound On Ramp Southbound				Ethanac Road Westbound				I-215 Northbound Off Ramp Northbound				Ethanac Road 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	**3**	**3**	**6**	**4**	0	**3**	**7**	0	**6**	0	**6**	**19**
04:45 PM	0	0	0	0	0	1	2	3	3	0	2	5	**2**	3	0	5	13
05:00 PM	0	0	0	0	0	0	2	2	3	0	3	6	1	3	0	4	12
05:15 PM	0	0	0	0	0	0	1	1	2	0	0	2	1	4	0	5	8
Total Volume	0	0	0	0	0	4	8	12	12	0	8	20	4	16	0	20	52
% App. Total	0	0	0		0	33.3	66.7		60	0	40		20	80	0		
PHF	.000	.000	.000	.000	.000	.333	.667	.500	.750	.000	.667	.714	.500	.667	.000	.833	.684

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Northbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 02_PER_215N_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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	**3**	**3**	**6**	**4**	0	**3**	**7**	0	**6**	0	**6**
+15 mins.	0	0	0	0	0	1	2	3	3	0	2	5	**2**	3	0	5
+30 mins.	0	0	0	0	0	0	2	2	3	0	3	6	1	3	0	4
+45 mins.	0	0	0	0	0	0	1	1	2	0	0	2	1	4	0	5
Total Volume	0	0	0	0	0	4	8	12	12	0	8	20	4	16	0	20
% App. Total	0	0	0		0	33.3	66.7		60	0	40		20	80	0	
PHF	.000	.000	.000	.000	.000	.333	.667	.500	.750	.000	.667	.714	.500	.667	.000	.833

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Northbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 02_PER_215N_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- 3 Axle Vehicles

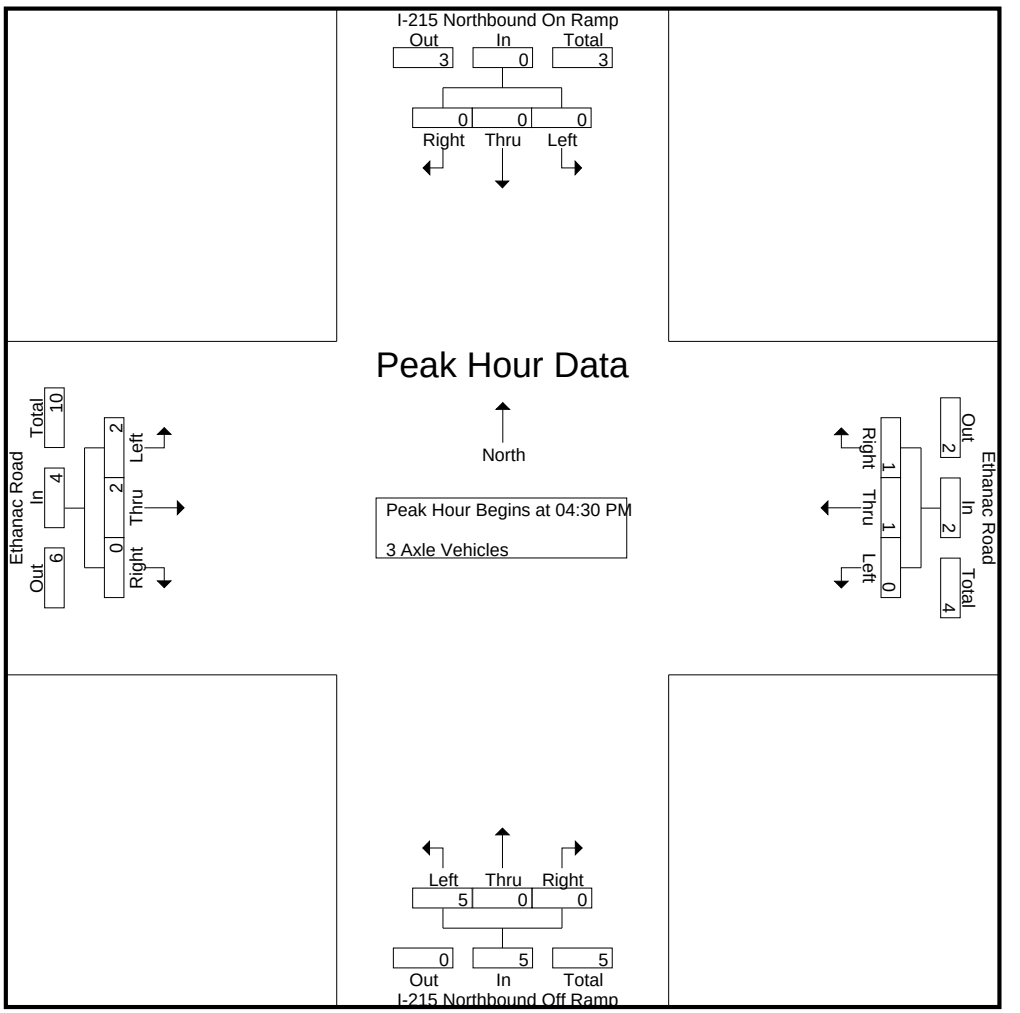
	I-215 Northbound On Ramp Southbound				Ethanac Road Westbound				I-215 Northbound Off Ramp Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	2	0	2	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	2	2	0	1	0	1	3
04:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	1	0	0	1	3
04:45 PM	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	3	0	2	5	1	5	0	6	12
05:00 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	1	1	1	0	0	1	1	0	0	1	3
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	0	0	0	2	0	0	2	0	1	0	1	3
Total	0	0	0	0	0	0	1	1	5	0	0	5	1	1	0	2	8
Grand Total	0	0	0	0	0	1	1	2	8	0	2	10	2	6	0	8	20
Apprch %	0	0	0		0	50	50		80	0	20		25	75	0		
Total %	0	0	0	0	0	5	5	10	40	0	10	50	10	30	0	40	

	I-215 Northbound On Ramp Southbound				Ethanac Road Westbound				I-215 Northbound Off Ramp Northbound				Ethanac Road 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	**2**	0	0	**2**	**1**	0	0	1	**3**
04:45 PM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	**2**	0	**2**	3
05:00 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	**1**	1	1	0	0	1	1	0	0	1	3
Total Volume	0	0	0	0	0	1	1	2	5	0	0	5	2	2	0	4	11
% App. Total	0	0	0		0	50	50		100	0	0		50	50	0		
PHF	.000	.000	.000	.000	.000	.250	.250	.500	.625	.000	.000	.625	.500	.250	.000	.500	.917

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Northbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 02_PER_215N_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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	**2**	0	0	**2**	**1**	0	0	1
+15 mins.	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	**2**	0	**2**
+30 mins.	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0
+45 mins.	0	0	0	0	0	0	**1**	1	1	0	0	1	1	0	0	1
Total Volume	0	0	0	0	0	1	1	2	5	0	0	5	2	2	0	4
% App. Total	0	0	0		0	50	50		100	0	0		50	50	0	
PHF	.000	.000	.000	.000	.000	.250	.250	.500	.625	.000	.000	.625	.500	.250	.000	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Northbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 02_PER_215N_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- 4+ Axle Trucks

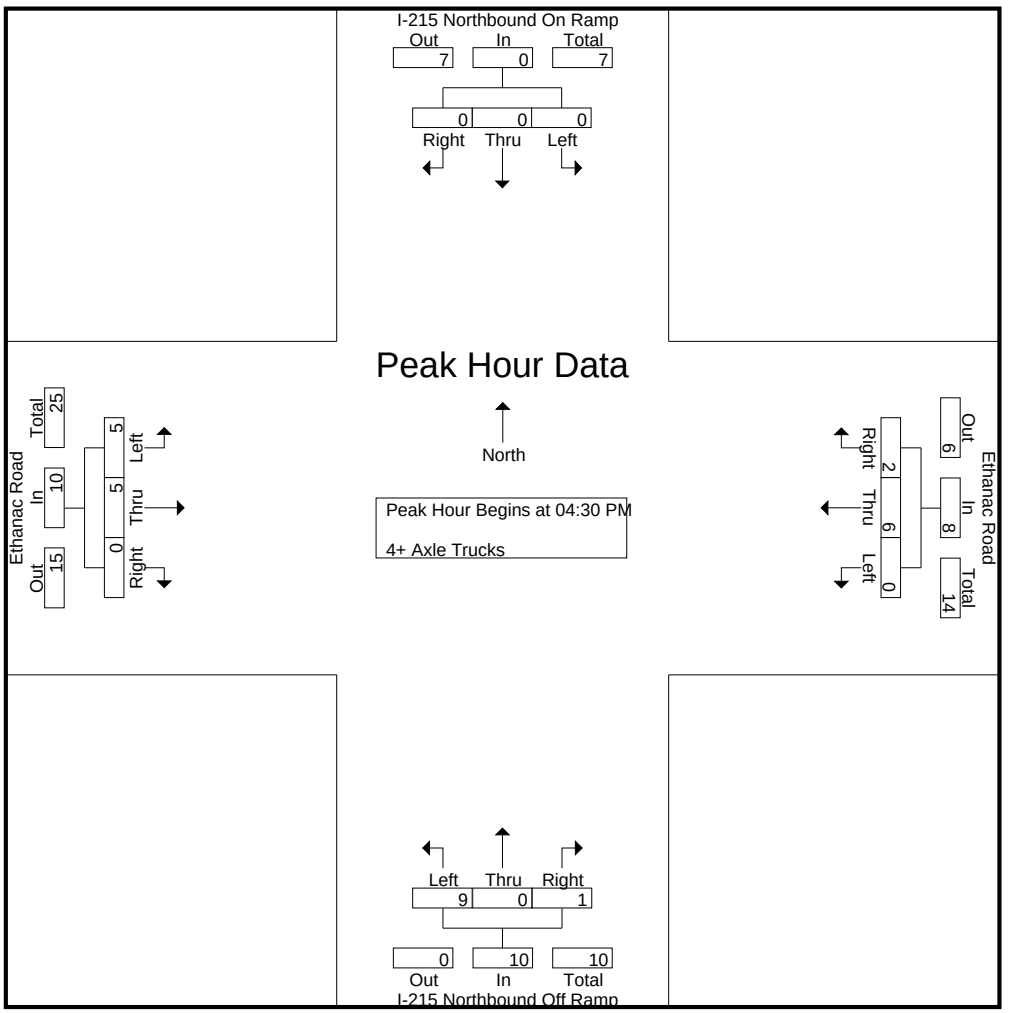
	I-215 Northbound On Ramp Southbound				Ethanac Road Westbound				I-215 Northbound Off Ramp Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	3	3	2	0	3	5	1	0	0	1	9
04:15 PM	0	0	0	0	0	1	0	1	1	1	0	2	1	3	0	4	7
04:30 PM	0	0	0	0	0	2	1	3	3	0	0	3	3	0	0	3	9
04:45 PM	0	0	0	0	0	3	0	3	3	0	1	4	0	3	0	3	10
Total	0	0	0	0	0	6	4	10	9	1	4	14	5	6	0	11	35
05:00 PM	0	0	0	0	0	0	1	1	2	0	0	2	1	2	0	3	6
05:15 PM	0	0	0	0	0	1	0	1	1	0	0	1	1	0	0	1	3
05:30 PM	0	0	0	0	0	3	0	3	2	0	0	2	0	0	0	0	5
05:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
Total	0	0	0	0	0	4	1	5	6	0	0	6	2	2	0	4	15
Grand Total	0	0	0	0	0	10	5	15	15	1	4	20	7	8	0	15	50
Apprch %	0	0	0		0	66.7	33.3		75	5	20		46.7	53.3	0		
Total %	0	0	0	0	0	20	10	30	30	2	8	40	14	16	0	30	

	I-215 Northbound On Ramp Southbound				Ethanac Road Westbound				I-215 Northbound Off Ramp Northbound				Ethanac Road 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	2	**1**	**3**	**3**	0	0	3	**3**	0	0	**3**	9
04:45 PM	0	0	0	0	0	**3**	0	3	3	0	**1**	**4**	0	**3**	0	3	**10**
05:00 PM	0	0	0	0	0	0	1	1	2	0	0	2	1	2	0	3	6
05:15 PM	0	0	0	0	0	1	0	1	1	0	0	1	1	0	0	1	3
Total Volume	0	0	0	0	0	6	2	8	9	0	1	10	5	5	0	10	28
% App. Total	0	0	0		0	75	25		90	0	10		50	50	0		
PHF	.000	.000	.000	.000	.000	.500	.500	.667	.750	.000	.250	.625	.417	.417	.000	.833	.700

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: I-215 Northbound Ramps
E/W: Ethanac Road
Weather: Clear

File Name : 02_PER_215N_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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	2	**1**	**3**	**3**	0	0	3	**3**	0	0	**3**
+15 mins.	0	0	0	0	0	**3**	0	3	3	0	**1**	**4**	0	**3**	0	3
+30 mins.	0	0	0	0	0	0	1	1	2	0	0	2	1	2	0	3
+45 mins.	0	0	0	0	0	1	0	1	1	0	0	1	1	0	0	1
Total Volume	0	0	0	0	0	6	2	8	9	0	1	10	5	5	0	10
% App. Total	0	0	0		0	75	25		90	0	10		50	50	0	
PHF	.000	.000	.000	.000	.000	.500	.500	.667	.750	.000	.250	.625	.417	.417	.000	.833

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Encanto Drive
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Enc_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

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

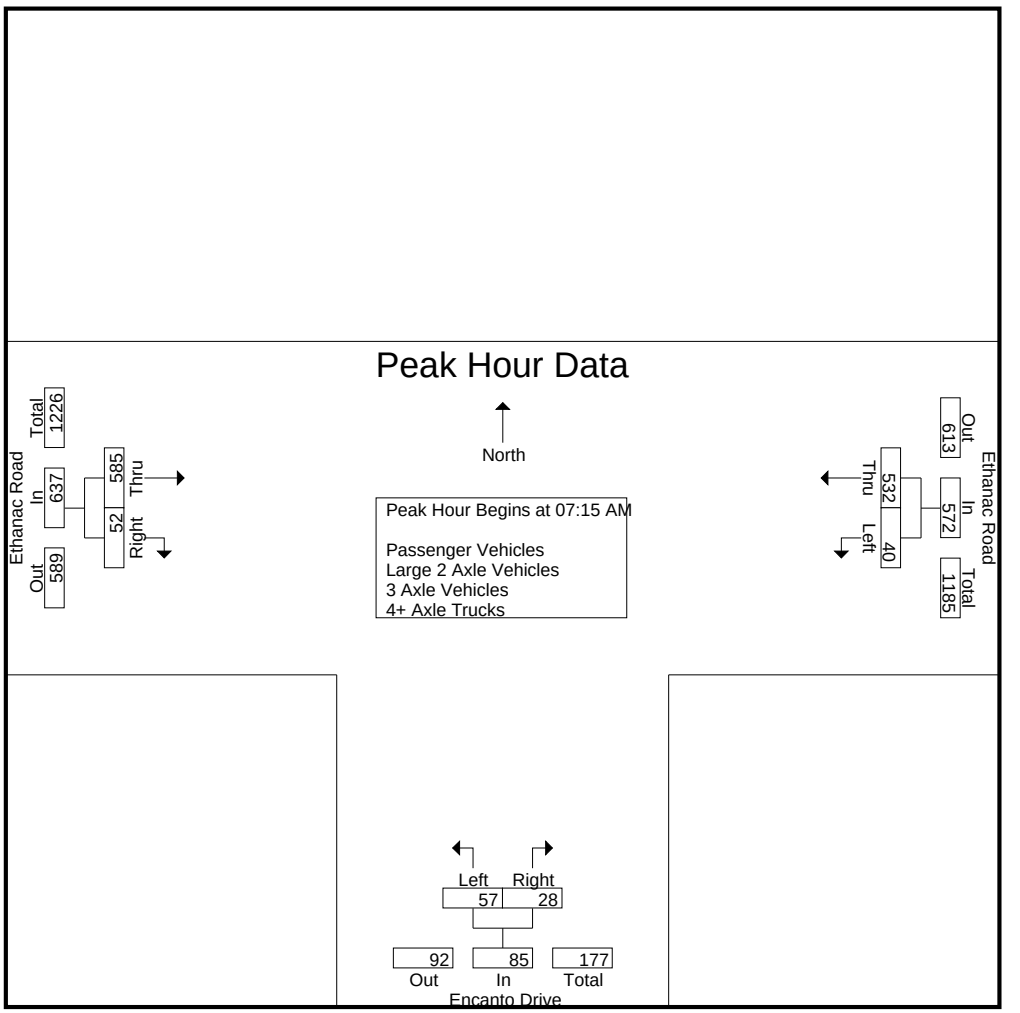
	Ethanac Road Westbound			Encanto Drive Northbound			Ethanac Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	6	105	111	19	3	22	136	12	148	281
07:15 AM	6	97	103	16	7	23	139	7	146	272
07:30 AM	11	154	165	7	6	13	175	9	184	362
07:45 AM	9	144	153	14	10	24	157	18	175	352
Total	32	500	532	56	26	82	607	46	653	1267
08:00 AM	14	137	151	20	5	25	114	18	132	308
08:15 AM	7	113	120	7	11	18	109	16	125	263
08:30 AM	5	89	94	11	7	18	106	17	123	235
08:45 AM	6	93	99	18	4	22	115	11	126	247
Total	32	432	464	56	27	83	444	62	506	1053
Grand Total	64	932	996	112	53	165	1051	108	1159	2320
Apprch %	6.4	93.6		67.9	32.1		90.7	9.3		
Total %	2.8	40.2	42.9	4.8	2.3	7.1	45.3	4.7	50	
Passenger Vehicles	62	857	919	105	50	155	969	102	1071	2145
% Passenger Vehicles	96.9	92	92.3	93.8	94.3	93.9	92.2	94.4	92.4	92.5
Large 2 Axle Vehicles	2	23	25	5	2	7	34	5	39	71
% Large 2 Axle Vehicles	3.1	2.5	2.5	4.5	3.8	4.2	3.2	4.6	3.4	3.1
3 Axle Vehicles	0	13	13	0	1	1	23	0	23	37
% 3 Axle Vehicles	0	1.4	1.3	0	1.9	0.6	2.2	0	2	1.6
4+ Axle Trucks	0	39	39	2	0	2	25	1	26	67
% 4+ Axle Trucks	0	4.2	3.9	1.8	0	1.2	2.4	0.9	2.2	2.9

	Ethanac Road Westbound			Encanto Drive Northbound			Ethanac Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	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	6	97	103	16	7	23	139	7	146	272
07:30 AM	11	**154**	**165**	7	6	13	**175**	9	**184**	**362**
07:45 AM	9	144	153	14	**10**	24	157	**18**	175	352
08:00 AM	**14**	137	151	**20**	5	**25**	114	18	132	308
Total Volume	40	532	572	57	28	85	585	52	637	1294
% App. Total	7	93		67.1	32.9		91.8	8.2		
PHF	.714	.864	.867	.713	.700	.850	.836	.722	.865	.894

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Encanto Drive
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Enc_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
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:

	07:30 AM			07:15 AM			07:00 AM		
+0 mins.	11	**154**	**165**	16	7	23	136	12	148
+15 mins.	9	144	153	7	6	13	139	7	146
+30 mins.	**14**	137	151	14	**10**	24	**175**	9	**184**
+45 mins.	7	113	120	**20**	5	**25**	157	**18**	175
Total Volume	41	548	589	57	28	85	607	46	653
% App. Total	7	93		67.1	32.9		93	7	
PHF	.732	.890	.892	.713	.700	.850	.867	.639	.887

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Encanto Drive
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Enc_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- Passenger Vehicles

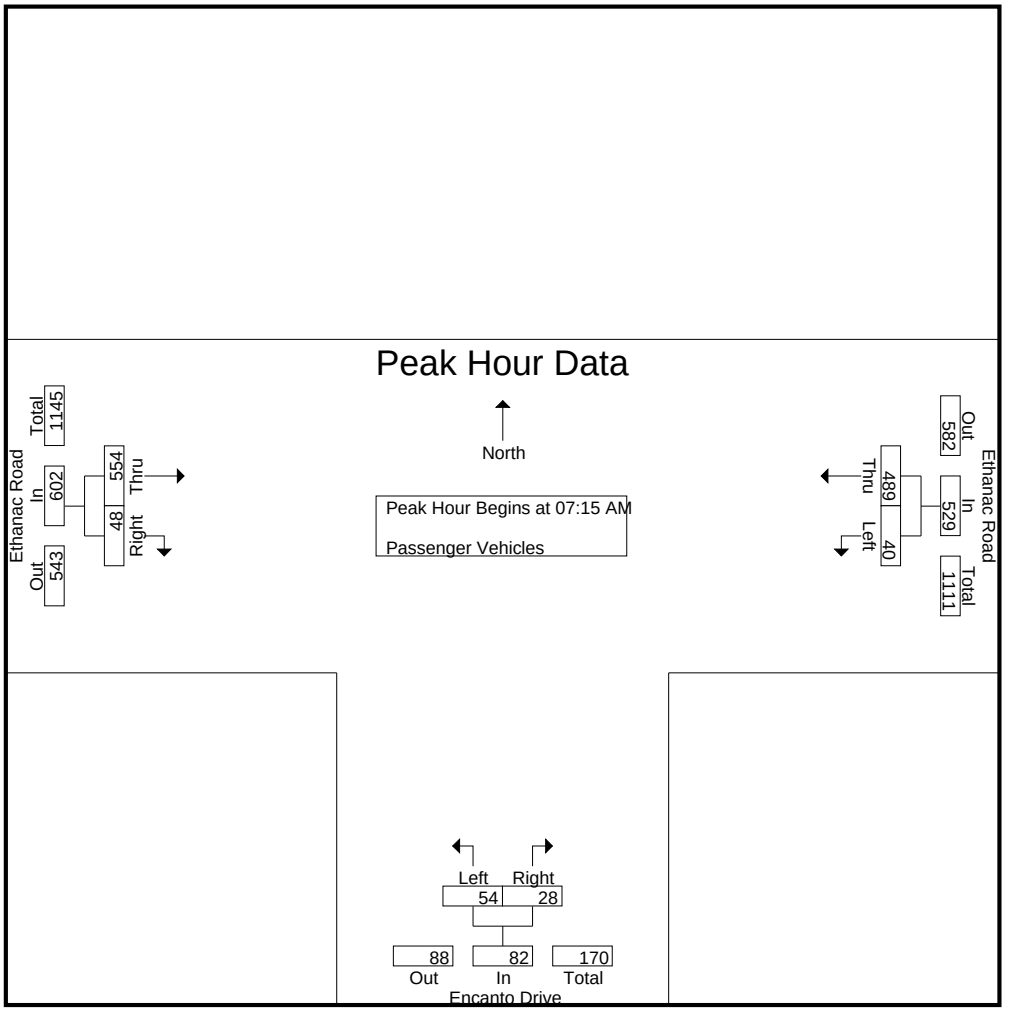
	Ethanac Road Westbound			Encanto Drive Northbound			Ethanac Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	5	95	100	19	1	20	127	11	138	258
07:15 AM	6	86	92	14	7	21	132	7	139	252
07:30 AM	11	141	152	7	6	13	171	7	178	343
07:45 AM	9	135	144	13	10	23	143	16	159	326
Total	31	457	488	53	24	77	573	41	614	1179
08:00 AM	14	127	141	20	5	25	108	18	126	292
08:15 AM	7	105	112	6	11	17	95	16	111	240
08:30 AM	5	82	87	9	6	15	90	16	106	208
08:45 AM	5	86	91	17	4	21	103	11	114	226
Total	31	400	431	52	26	78	396	61	457	966
Grand Total	62	857	919	105	50	155	969	102	1071	2145
Apprch %	6.7	93.3		67.7	32.3		90.5	9.5		
Total %	2.9	40	42.8	4.9	2.3	7.2	45.2	4.8	49.9	

	Ethanac Road Westbound			Encanto Drive Northbound			Ethanac Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	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	6	86	92	14	7	21	132	7	139	252
07:30 AM	11	**141**	**152**	7	6	13	**171**	7	**178**	**343**
07:45 AM	9	135	144	13	**10**	23	143	16	159	326
08:00 AM	**14**	127	141	**20**	5	**25**	108	**18**	126	292
Total Volume	40	489	529	54	28	82	554	48	602	1213
% App. Total	7.6	92.4		65.9	34.1		92	8		
PHF	.714	.867	.870	.675	.700	.820	.810	.667	.846	.884

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Encanto Drive
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Enc_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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		
+0 mins.	6	86	92	14	7	21	132	7	139
+15 mins.	11	**141**	**152**	7	6	13	**171**	7	**178**
+30 mins.	9	135	144	13	**10**	23	143	16	159
+45 mins.	**14**	127	141	**20**	5	**25**	108	**18**	126
Total Volume	40	489	529	54	28	82	554	48	602
% App. Total	7.6	92.4		65.9	34.1		92	8	
PHF	.714	.867	.870	.675	.700	.820	.810	.667	.846

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Encanto Drive
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Enc_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- Large 2 Axle Vehicles

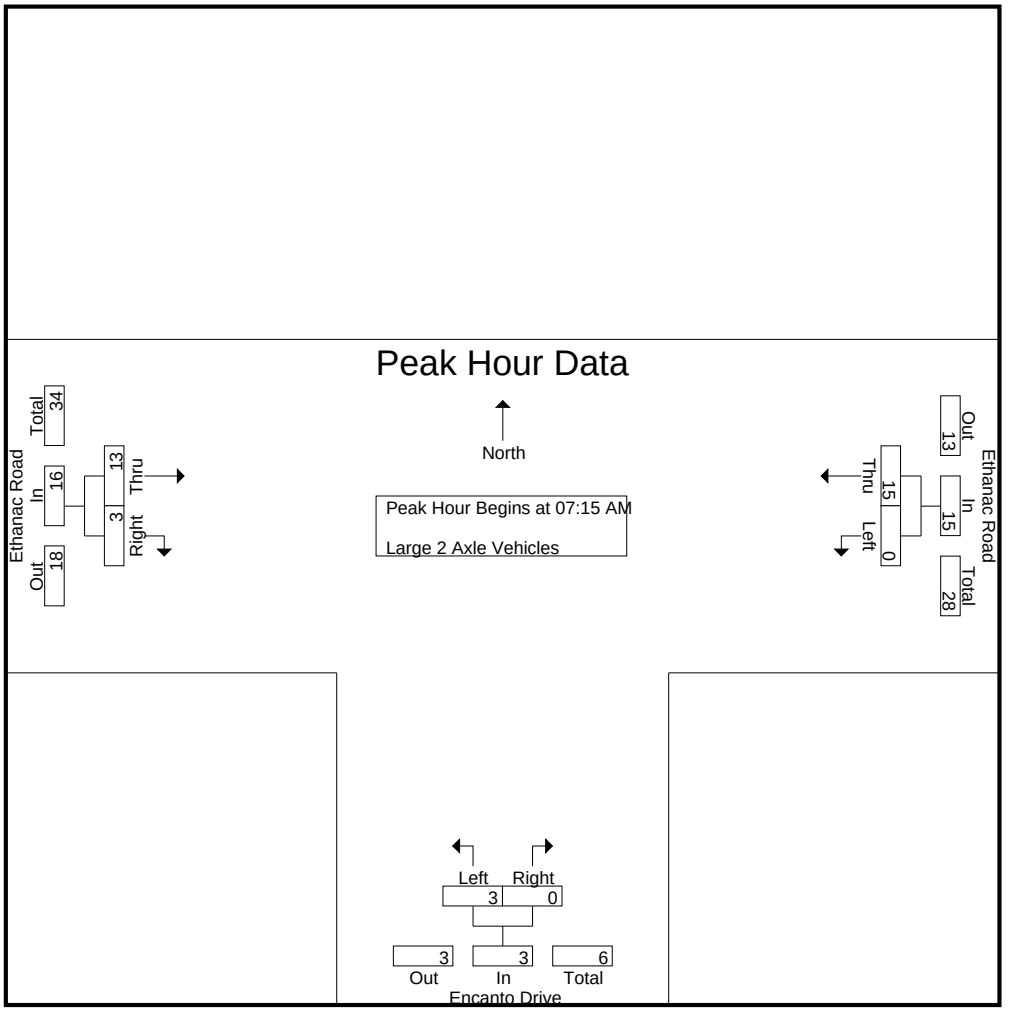
	Ethanac Road Westbound			Encanto Drive Northbound			Ethanac Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	1	4	5	0	2	2	7	1	8	15
07:15 AM	0	5	5	2	0	2	3	0	3	10
07:30 AM	0	4	4	0	0	0	2	2	4	8
07:45 AM	0	2	2	1	0	1	7	1	8	11
Total	1	15	16	3	2	5	19	4	23	44
08:00 AM	0	4	4	0	0	0	1	0	1	5
08:15 AM	0	1	1	0	0	0	6	0	6	7
08:30 AM	0	3	3	1	0	1	4	1	5	9
08:45 AM	1	0	1	1	0	1	4	0	4	6
Total	1	8	9	2	0	2	15	1	16	27
Grand Total	2	23	25	5	2	7	34	5	39	71
Apprch %	8	92		71.4	28.6		87.2	12.8		
Total %	2.8	32.4	35.2	7	2.8	9.9	47.9	7	54.9	

	Ethanac Road Westbound			Encanto Drive Northbound			Ethanac Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	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	**5**	**5**	**2**	0	**2**	3	0	3	10
07:30 AM	0	4	4	0	0	0	2	**2**	4	8
07:45 AM	0	2	2	1	0	1	**7**	1	**8**	**11**
08:00 AM	0	4	4	0	0	0	1	0	1	5
Total Volume	0	15	15	3	0	3	13	3	16	34
% App. Total	0	100		100	0		81.2	18.8		
PHF	.000	.750	.750	.375	.000	.375	.464	.375	.500	.773

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Encanto Drive
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Enc_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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		
+0 mins.	0	**5**	**5**	**2**	0	**2**	3	0	3
+15 mins.	0	4	4	0	0	0	2	**2**	4
+30 mins.	0	2	2	1	0	1	**7**	1	**8**
+45 mins.	0	4	4	0	0	0	1	0	1
Total Volume	0	15	15	3	0	3	13	3	16
% App. Total	0	100		100	0		81.2	18.8	
PHF	.000	.750	.750	.375	.000	.375	.464	.375	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Encanto Drive
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Enc_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- 3 Axle Vehicles

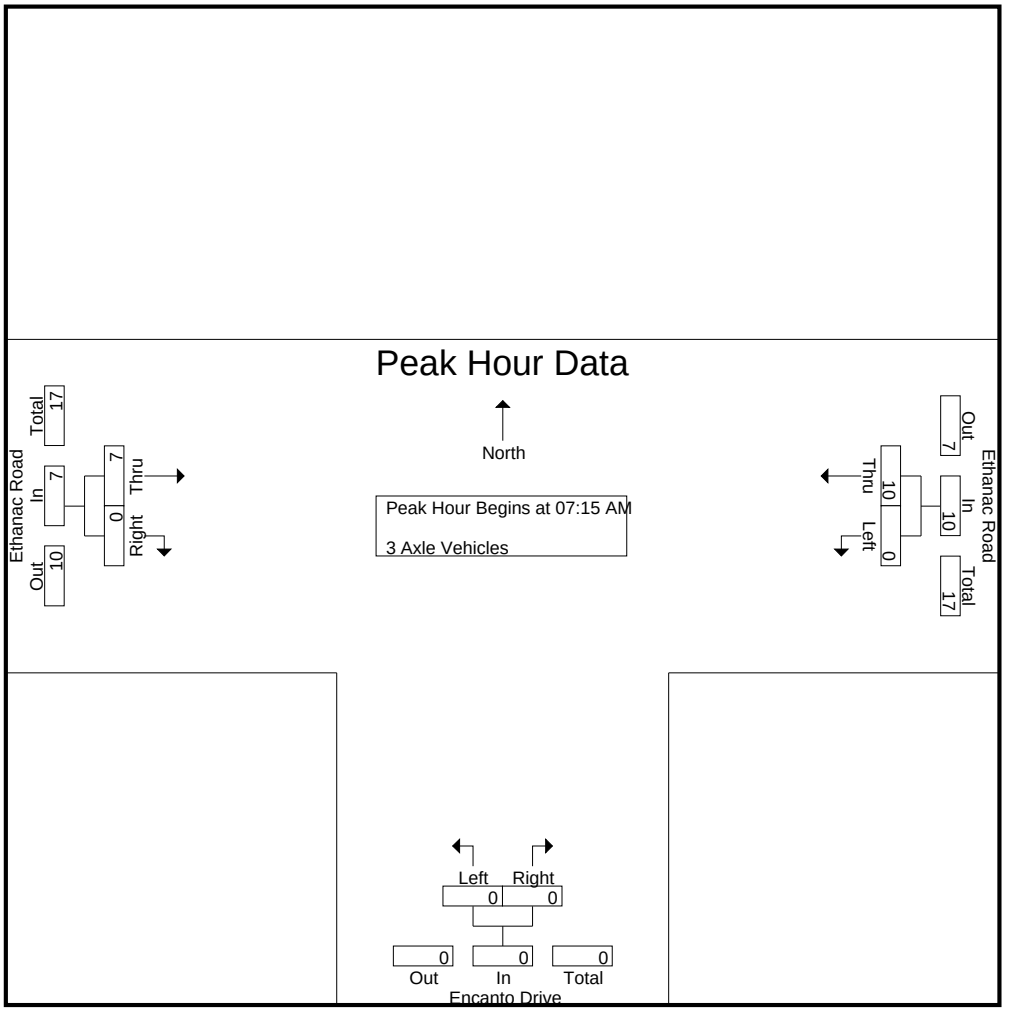
	Ethanac Road Westbound			Encanto Drive Northbound			Ethanac Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	2	2	0	0	0	2	0	2	4
07:30 AM	0	1	1	0	0	0	1	0	1	2
07:45 AM	0	4	4	0	0	0	2	0	2	6
Total	0	7	7	0	0	0	5	0	5	12
08:00 AM	0	3	3	0	0	0	2	0	2	5
08:15 AM	0	1	1	0	0	0	3	0	3	4
08:30 AM	0	1	1	0	1	1	7	0	7	9
08:45 AM	0	1	1	0	0	0	6	0	6	7
Total	0	6	6	0	1	1	18	0	18	25
Grand Total	0	13	13	0	1	1	23	0	23	37
Apprch %	0	100		0	100		100	0		
Total %	0	35.1	35.1	0	2.7	2.7	62.2	0	62.2	

	Ethanac Road Westbound			Encanto Drive Northbound			Ethanac Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	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	2	2	0	0	0	**2**	0	**2**	4
07:30 AM	0	1	1	0	0	0	1	0	1	2
07:45 AM	0	**4**	**4**	0	0	0	2	0	2	**6**
08:00 AM	0	3	3	0	0	0	2	0	2	5
Total Volume	0	10	10	0	0	0	7	0	7	17
% App. Total	0	100		0	0		100	0		
PHF	.000	.625	.625	.000	.000	.000	.875	.000	.875	.708

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Encanto Drive
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Enc_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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		
+0 mins.	0	2	2	0	0	0	**2**	0	**2**
+15 mins.	0	1	1	0	0	0	1	0	1
+30 mins.	0	**4**	**4**	0	0	0	2	0	2
+45 mins.	0	3	3	0	0	0	2	0	2
Total Volume	0	10	10	0	0	0	7	0	7
% App. Total	0	100		0	0		100	0	
PHF	.000	.625	.625	.000	.000	.000	.875	.000	.875

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Encanto Drive
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Enc_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- 4+ Axle Trucks

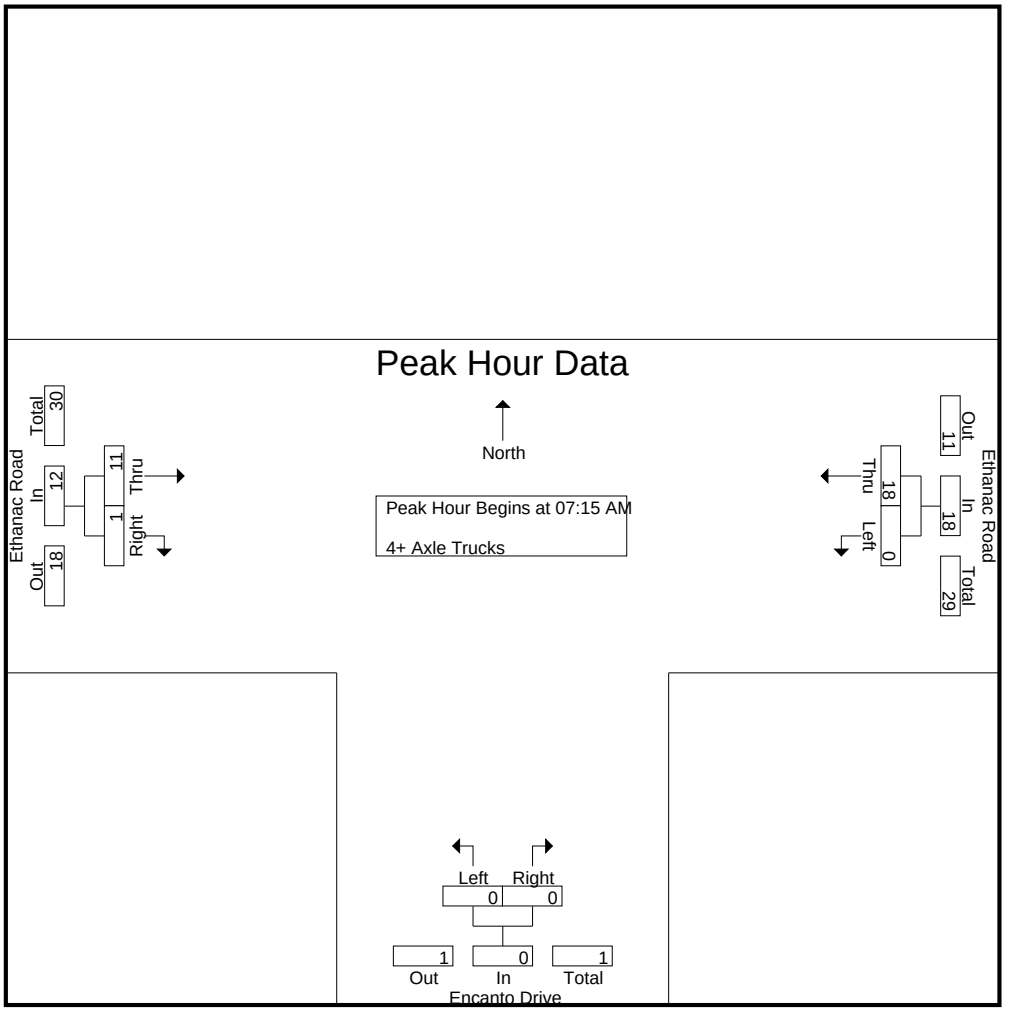
	Ethanac Road Westbound			Encanto Drive Northbound			Ethanac Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	6	6	0	0	0	2	0	2	8
07:15 AM	0	4	4	0	0	0	2	0	2	6
07:30 AM	0	8	8	0	0	0	1	0	1	9
07:45 AM	0	3	3	0	0	0	5	1	6	9
Total	0	21	21	0	0	0	10	1	11	32
08:00 AM	0	3	3	0	0	0	3	0	3	6
08:15 AM	0	6	6	1	0	1	5	0	5	12
08:30 AM	0	3	3	1	0	1	5	0	5	9
08:45 AM	0	6	6	0	0	0	2	0	2	8
Total	0	18	18	2	0	2	15	0	15	35
Grand Total	0	39	39	2	0	2	25	1	26	67
Apprch %	0	100		100	0		96.2	3.8		
Total %	0	58.2	58.2	3	0	3	37.3	1.5	38.8	

	Ethanac Road Westbound			Encanto Drive Northbound			Ethanac Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	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	4	4	0	0	0	2	0	2	6
07:30 AM	0	**8**	**8**	0	0	0	1	0	1	**9**
07:45 AM	0	3	3	0	0	0	**5**	**1**	**6**	9
08:00 AM	0	3	3	0	0	0	3	0	3	6
Total Volume	0	18	18	0	0	0	11	1	12	30
% App. Total	0	100		0	0		91.7	8.3		
PHF	.000	.563	.563	.000	.000	.000	.550	.250	.500	.833

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Encanto Drive
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Enc_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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		
+0 mins.	0	4	4	0	0	0	2	0	2
+15 mins.	0	**8**	**8**	0	0	0	1	0	1
+30 mins.	0	3	3	0	0	0	**5**	**1**	**6**
+45 mins.	0	3	3	0	0	0	3	0	3
Total Volume	0	18	18	0	0	0	11	1	12
% App. Total	0	100		0	0		91.7	8.3	
PHF	.000	.563	.563	.000	.000	.000	.550	.250	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Encanto Drive
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Enc_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

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

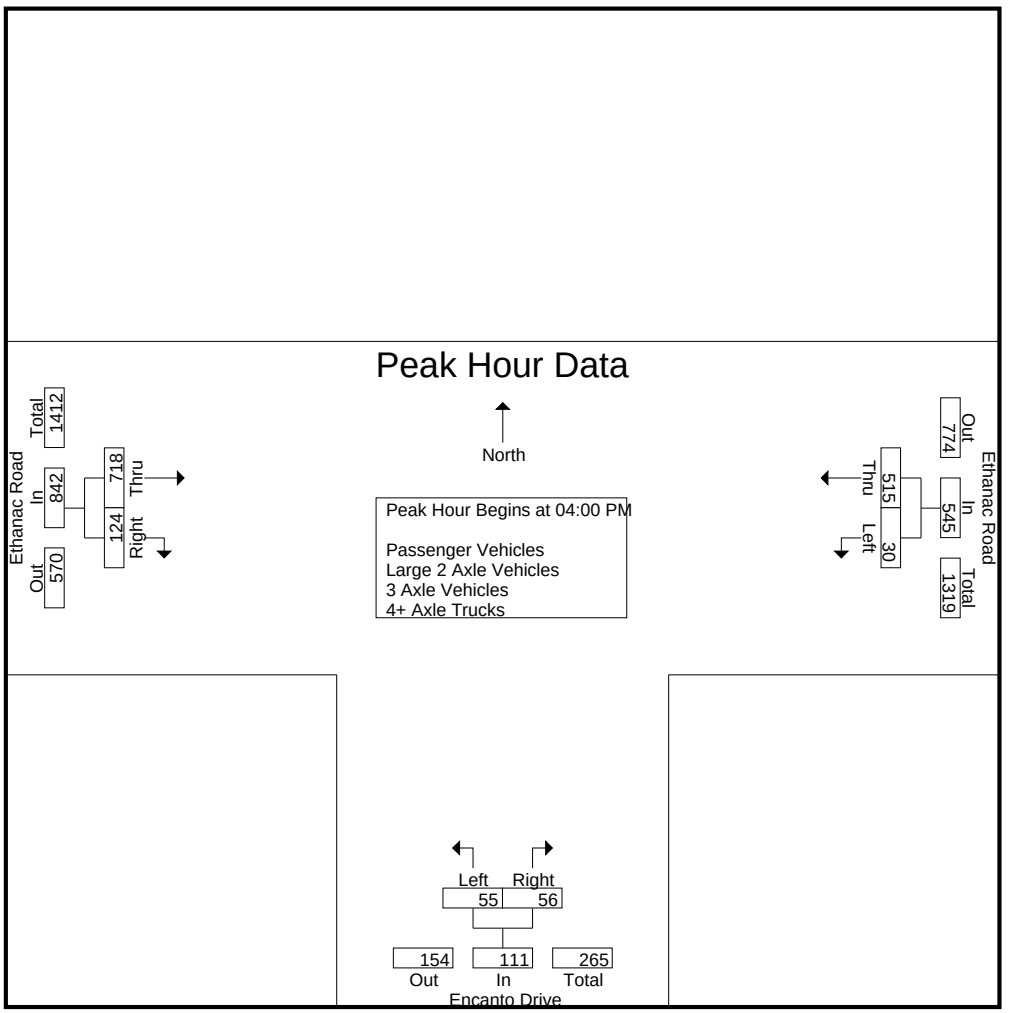
	Ethanac Road Westbound			Encanto Drive Northbound			Ethanac Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	3	140	143	16	17	33	195	35	230	406
04:15 PM	9	115	124	14	15	29	176	25	201	354
04:30 PM	7	135	142	13	14	27	169	28	197	366
04:45 PM	11	125	136	12	10	22	178	36	214	372
Total	30	515	545	55	56	111	718	124	842	1498
05:00 PM	7	156	163	11	17	28	180	31	211	402
05:15 PM	6	113	119	18	10	28	168	37	205	352
05:30 PM	7	75	82	23	8	31	182	30	212	325
05:45 PM	8	102	110	17	7	24	154	34	188	322
Total	28	446	474	69	42	111	684	132	816	1401
Grand Total	58	961	1019	124	98	222	1402	256	1658	2899
Apprch %	5.7	94.3		55.9	44.1		84.6	15.4		
Total %	2	33.1	35.2	4.3	3.4	7.7	48.4	8.8	57.2	
Passenger Vehicles	58	927	985	124	95	219	1338	252	1590	2794
% Passenger Vehicles	100	96.5	96.7	100	96.9	98.6	95.4	98.4	95.9	96.4
Large 2 Axle Vehicles	0	17	17	0	3	3	44	4	48	68
% Large 2 Axle Vehicles	0	1.8	1.7	0	3.1	1.4	3.1	1.6	2.9	2.3
3 Axle Vehicles	0	2	2	0	0	0	8	0	8	10
% 3 Axle Vehicles	0	0.2	0.2	0	0	0	0.6	0	0.5	0.3
4+ Axle Trucks	0	15	15	0	0	0	12	0	12	27
% 4+ Axle Trucks	0	1.6	1.5	0	0	0	0.9	0	0.7	0.9

	Ethanac Road Westbound			Encanto Drive Northbound			Ethanac Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	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 04:00 PM										
04:00 PM	3	**140**	**143**	**16**	**17**	**33**	**195**	35	**230**	**406**
04:15 PM	9	115	124	14	15	29	176	25	201	354
04:30 PM	7	135	142	13	14	27	169	28	197	366
04:45 PM	**11**	125	136	12	10	22	178	**36**	214	372
Total Volume	30	515	545	55	56	111	718	124	842	1498
% App. Total	5.5	94.5		49.5	50.5		85.3	14.7		
PHF	.682	.920	.953	.859	.824	.841	.921	.861	.915	.922

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Encanto Drive
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Enc_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
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:

	04:15 PM			04:00 PM			04:00 PM		
+0 mins.	9	115	124	**16**	**17**	**33**	**195**	35	**230**
+15 mins.	7	135	142	14	15	29	176	25	201
+30 mins.	**11**	125	136	13	14	27	169	28	197
+45 mins.	7	**156**	**163**	12	10	22	178	**36**	214
Total Volume	34	531	565	55	56	111	718	124	842
% App. Total	6	94		49.5	50.5		85.3	14.7	
PHF	.773	.851	.867	.859	.824	.841	.921	.861	.915

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Encanto Drive
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Enc_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- Passenger Vehicles

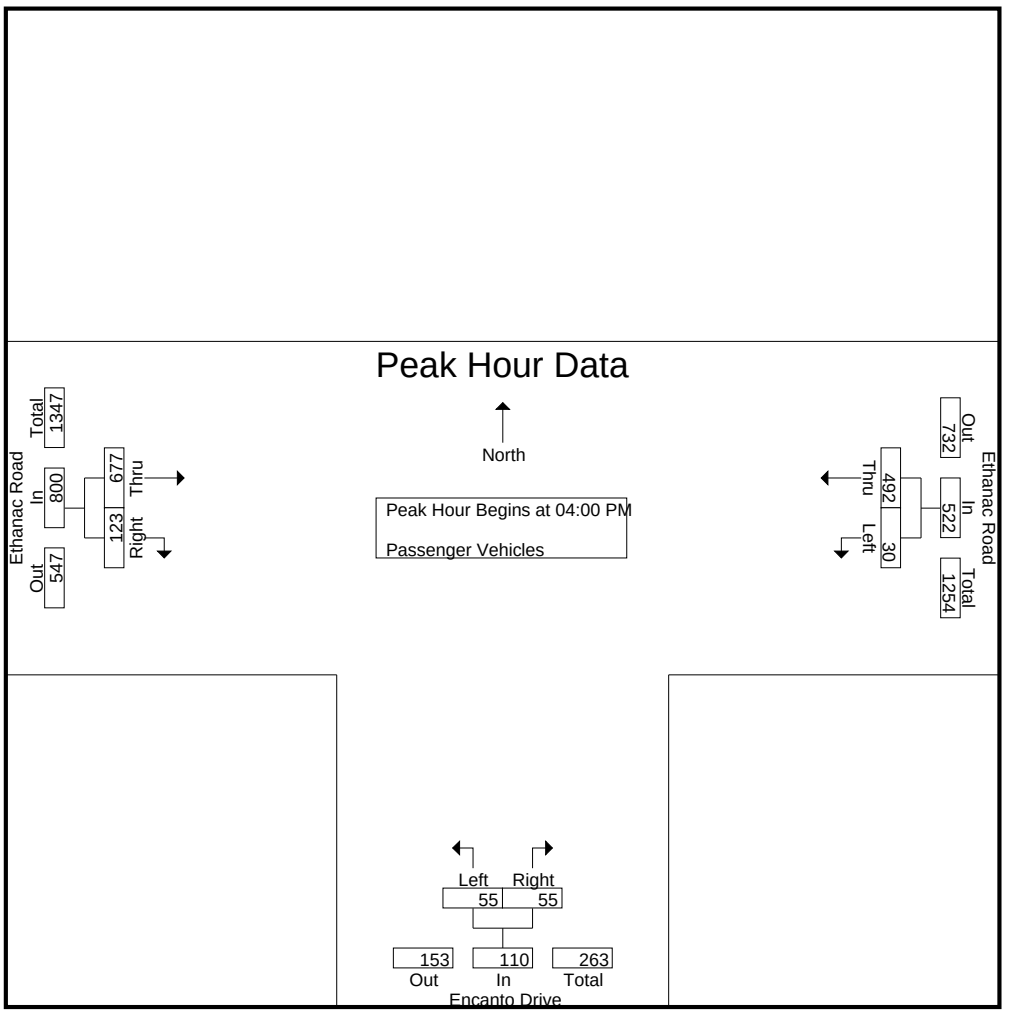
	Ethanac Road Westbound			Encanto Drive Northbound			Ethanac Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	3	135	138	16	17	33	184	35	219	390
04:15 PM	9	112	121	14	15	29	163	25	188	338
04:30 PM	7	125	132	13	14	27	162	27	189	348
04:45 PM	11	120	131	12	9	21	168	36	204	356
Total	30	492	522	55	55	110	677	123	800	1432
05:00 PM	7	152	159	11	16	27	172	30	202	388
05:15 PM	6	111	117	18	10	28	162	36	198	343
05:30 PM	7	72	79	23	7	30	177	29	206	315
05:45 PM	8	100	108	17	7	24	150	34	184	316
Total	28	435	463	69	40	109	661	129	790	1362
Grand Total	58	927	985	124	95	219	1338	252	1590	2794
Apprch %	5.9	94.1		56.6	43.4		84.2	15.8		
Total %	2.1	33.2	35.3	4.4	3.4	7.8	47.9	9	56.9	

	Ethanac Road Westbound			Encanto Drive Northbound			Ethanac Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	3	**135**	**138**	**16**	**17**	**33**	**184**	35	**219**	**390**
04:15 PM	9	112	121	14	15	29	163	25	188	338
04:30 PM	7	125	132	13	14	27	162	27	189	348
04:45 PM	**11**	120	131	12	9	21	168	**36**	204	356
Total Volume	30	492	522	55	55	110	677	123	800	1432
% App. Total	5.7	94.3		50	50		84.6	15.4		
PHF	.682	.911	.946	.859	.809	.833	.920	.854	.913	.918

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Encanto Drive
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Enc_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	3	**135**	**138**	**16**	**17**	**33**	**184**	35	**219**
+15 mins.	9	112	121	14	15	29	163	25	188
+30 mins.	7	125	132	13	14	27	162	27	189
+45 mins.	**11**	120	131	12	9	21	168	**36**	204
Total Volume	30	492	522	55	55	110	677	123	800
% App. Total	5.7	94.3		50	50		84.6	15.4	
PHF	.682	.911	.946	.859	.809	.833	.920	.854	.913

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Encanto Drive
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Enc_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- Large 2 Axle Vehicles

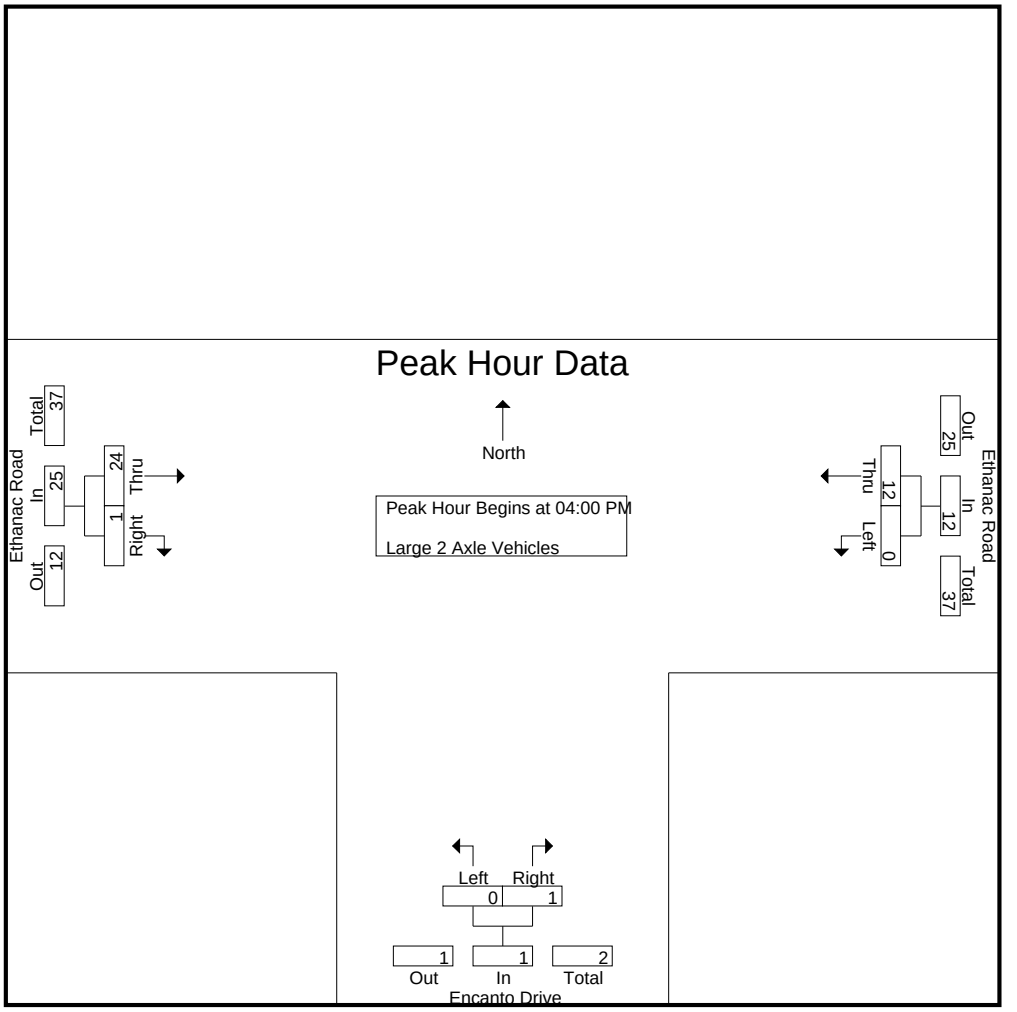
	Ethanac Road Westbound			Encanto Drive Northbound			Ethanac Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	2	2	0	0	0	6	0	6	8
04:15 PM	0	1	1	0	0	0	7	0	7	8
04:30 PM	0	7	7	0	0	0	7	1	8	15
04:45 PM	0	2	2	0	1	1	4	0	4	7
Total	0	12	12	0	1	1	24	1	25	38
05:00 PM	0	3	3	0	1	1	7	1	8	12
05:15 PM	0	0	0	0	0	0	5	1	6	6
05:30 PM	0	0	0	0	1	1	5	1	6	7
05:45 PM	0	2	2	0	0	0	3	0	3	5
Total	0	5	5	0	2	2	20	3	23	30
Grand Total	0	17	17	0	3	3	44	4	48	68
Apprch %	0	100		0	100		91.7	8.3		
Total %	0	25	25	0	4.4	4.4	64.7	5.9	70.6	

	Ethanac Road Westbound			Encanto Drive Northbound			Ethanac Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	2	2	0	0	0	6	0	6	8
04:15 PM	0	1	1	0	0	0	**7**	0	7	8
04:30 PM	0	**7**	**7**	0	0	0	7	**1**	**8**	**15**
04:45 PM	0	2	2	0	**1**	**1**	4	0	4	7
Total Volume	0	12	12	0	1	1	24	1	25	38
% App. Total	0	100		0	100		96	4		
PHF	.000	.429	.429	.000	.250	.250	.857	.250	.781	.633

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Encanto Drive
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Enc_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	2	2	0	0	0	6	0	6
+15 mins.	0	1	1	0	0	0	**7**	0	7
+30 mins.	0	**7**	**7**	0	0	0	7	**1**	**8**
+45 mins.	0	2	2	0	**1**	**1**	4	0	4
Total Volume	0	12	12	0	1	1	24	1	25
% App. Total	0	100		0	100		96	4	
PHF	.000	.429	.429	.000	.250	.250	.857	.250	.781

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Encanto Drive
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Enc_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- 3 Axle Vehicles

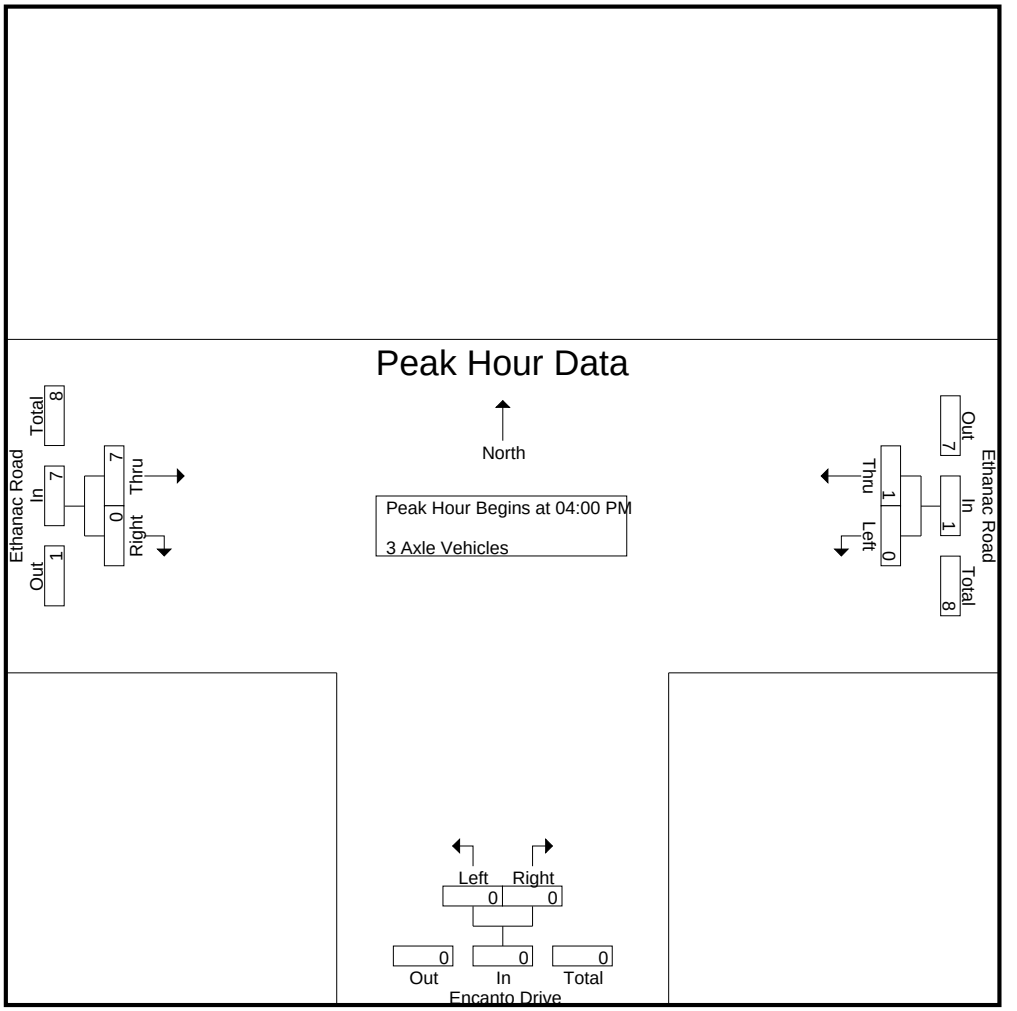
	Ethanac Road Westbound			Encanto Drive Northbound			Ethanac Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	2	0	2	2
04:15 PM	0	0	0	0	0	0	3	0	3	3
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	1	0	0	0	2	0	2	3
Total	0	1	1	0	0	0	7	0	7	8
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	1	1	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	1	0	1	1
Total	0	1	1	0	0	0	1	0	1	2
Grand Total	0	2	2	0	0	0	8	0	8	10
Apprch %	0	100		0	0		100	0		
Total %	0	20	20	0	0	0	80	0	80	

	Ethanac Road Westbound			Encanto Drive Northbound			Ethanac Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	2	0	2	2
04:15 PM	0	0	0	0	0	0	**3**	0	**3**	**3**
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	**1**	**1**	0	0	0	2	0	2	3
Total Volume	0	1	1	0	0	0	7	0	7	8
% App. Total	0	100		0	0		100	0		
PHF	.000	.250	.250	.000	.000	.000	.583	.000	.583	.667

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Encanto Drive
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Enc_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	0	0	0	2	0	2
+15 mins.	0	0	0	0	0	0	**3**	0	**3**
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	**1**	**1**	0	0	0	2	0	2
Total Volume	0	1	1	0	0	0	7	0	7
% App. Total	0	100		0	0		100	0	
PHF	.000	.250	.250	.000	.000	.000	.583	.000	.583

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Encanto Drive
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Enc_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- 4+ Axle Trucks

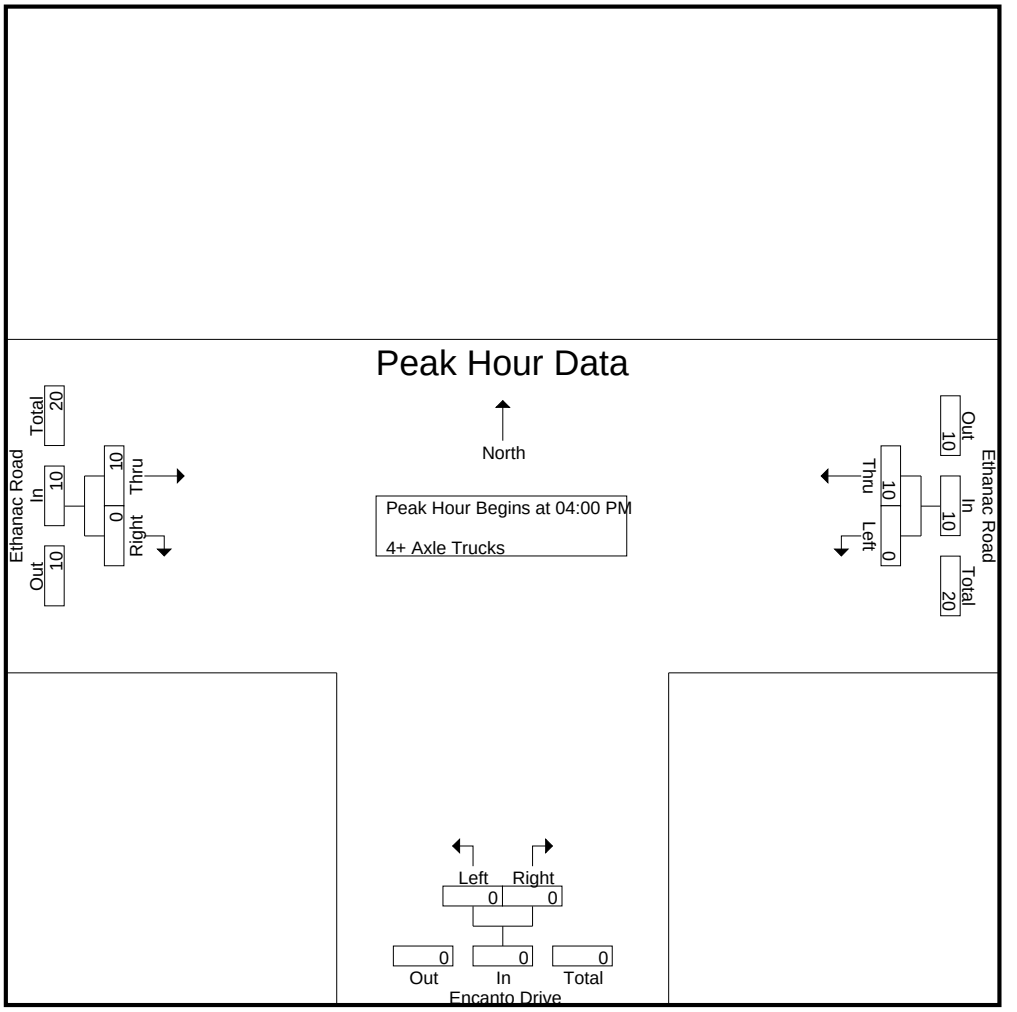
	Ethanac Road Westbound			Encanto Drive Northbound			Ethanac Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	3	3	0	0	0	3	0	3	6
04:15 PM	0	2	2	0	0	0	3	0	3	5
04:30 PM	0	3	3	0	0	0	0	0	0	3
04:45 PM	0	2	2	0	0	0	4	0	4	6
Total	0	10	10	0	0	0	10	0	10	20
05:00 PM	0	1	1	0	0	0	1	0	1	2
05:15 PM	0	1	1	0	0	0	1	0	1	2
05:30 PM	0	3	3	0	0	0	0	0	0	3
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	5	5	0	0	0	2	0	2	7
Grand Total	0	15	15	0	0	0	12	0	12	27
Apprch %	0	100		0	0		100	0		
Total %	0	55.6	55.6	0	0	0	44.4	0	44.4	

	Ethanac Road Westbound			Encanto Drive Northbound			Ethanac Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	**3**	**3**	0	0	0	3	0	3	**6**
04:15 PM	0	2	2	0	0	0	3	0	3	5
04:30 PM	0	3	3	0	0	0	0	0	0	3
04:45 PM	0	2	2	0	0	0	**4**	0	**4**	6
Total Volume	0	10	10	0	0	0	10	0	10	20
% App. Total	0	100		0	0		100	0		
PHF	.000	.833	.833	.000	.000	.000	.625	.000	.625	.833

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Encanto Drive
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Enc_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	**3**	**3**	0	0	0	3	0	3
+15 mins.	0	2	2	0	0	0	3	0	3
+30 mins.	0	3	3	0	0	0	0	0	0
+45 mins.	0	2	2	0	0	0	**4**	0	**4**
Total Volume	0	10	10	0	0	0	10	0	10
% App. Total	0	100		0	0		100	0	
PHF	.000	.833	.833	.000	.000	.000	.625	.000	.625

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 04_PER_Tru_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

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

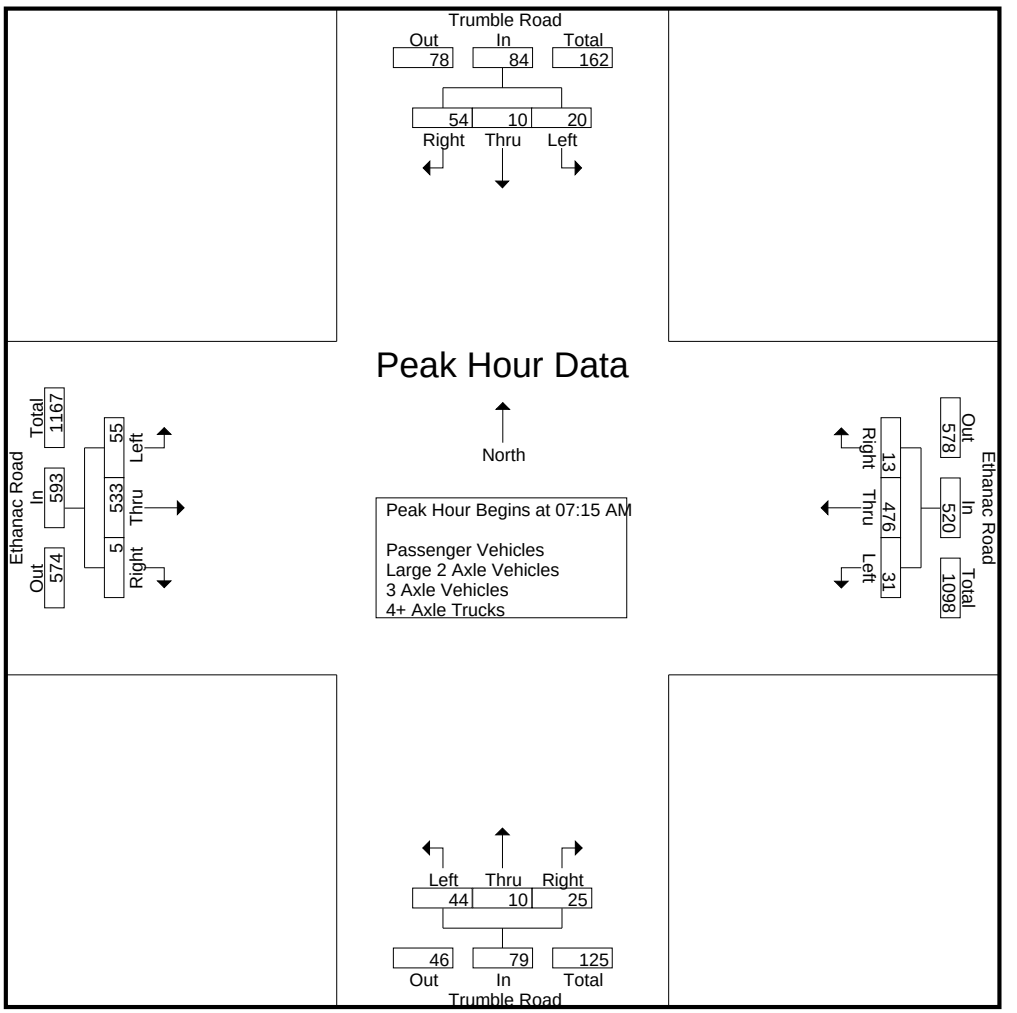
	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	3	0	12	15	4	96	5	105	4	3	0	7	23	112	4	139	266
07:15 AM	2	0	14	16	4	80	4	88	11	3	5	19	15	126	1	142	265
07:30 AM	8	6	15	29	11	142	3	156	11	4	5	20	7	161	1	169	374
07:45 AM	5	4	14	23	9	129	3	141	10	2	7	19	20	144	3	167	350
Total	18	10	55	83	28	447	15	490	36	12	17	65	65	543	9	617	1255
08:00 AM	5	0	11	16	7	125	3	135	12	1	8	21	13	102	0	115	287
08:15 AM	3	1	9	13	7	97	7	111	14	2	7	23	21	92	4	117	264
08:30 AM	4	0	9	13	7	79	3	89	8	1	4	13	13	89	1	103	218
08:45 AM	3	1	14	18	3	73	6	82	13	2	3	18	22	91	1	114	232
Total	15	2	43	60	24	374	19	417	47	6	22	75	69	374	6	449	1001
Grand Total	33	12	98	143	52	821	34	907	83	18	39	140	134	917	15	1066	2256
Apprch %	23.1	8.4	68.5		5.7	90.5	3.7		59.3	12.9	27.9		12.6	86	1.4		
Total %	1.5	0.5	4.3	6.3	2.3	36.4	1.5	40.2	3.7	0.8	1.7	6.2	5.9	40.6	0.7	47.3	
Passenger Vehicles	17	10	64	91	46	781	27	854	80	16	33	129	111	857	12	980	2054
% Passenger Vehicles	51.5	83.3	65.3	63.6	88.5	95.1	79.4	94.2	96.4	88.9	84.6	92.1	82.8	93.5	80	91.9	91
Large 2 Axle Vehicles	4	2	7	13	1	16	0	17	1	0	4	5	6	28	1	35	70
% Large 2 Axle Vehicles	12.1	16.7	7.1	9.1	1.9	1.9	0	1.9	1.2	0	10.3	3.6	4.5	3.1	6.7	3.3	3.1
3 Axle Vehicles	0	0	2	2	4	9	7	20	1	1	2	4	15	7	0	22	48
% 3 Axle Vehicles	0	0	2	1.4	7.7	1.1	20.6	2.2	1.2	5.6	5.1	2.9	11.2	0.8	0	2.1	2.1
4+ Axle Trucks	12	0	25	37	1	15	0	16	1	1	0	2	2	25	2	29	84
% 4+ Axle Trucks	36.4	0	25.5	25.9	1.9	1.8	0	1.8	1.2	5.6	0	1.4	1.5	2.7	13.3	2.7	3.7

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road 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	2	0	14	16	4	80	**4**	88	11	3	5	19	15	126	1	142	265
07:30 AM	**8**	**6**	**15**	**29**	**11**	**142**	3	**156**	11	**4**	5	20	7	**161**	1	**169**	**374**
07:45 AM	5	4	14	23	9	129	3	141	10	2	7	19	**20**	144	**3**	167	350
08:00 AM	5	0	11	16	7	125	3	135	**12**	1	**8**	**21**	13	102	0	115	287
Total Volume	20	10	54	84	31	476	13	520	44	10	25	79	55	533	5	593	1276
% App. Total	23.8	11.9	64.3		6	91.5	2.5		55.7	12.7	31.6		9.3	89.9	0.8		
PHF	.625	.417	.900	.724	.705	.838	.813	.833	.917	.625	.781	.940	.688	.828	.417	.877	.853

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 04_PER_Tru_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
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:

	07:15 AM				07:30 AM				07:30 AM				07:00 AM			
+0 mins.	2	0	14	16	**11**	**142**	3	**156**	11	**4**	5	20	**23**	112	**4**	139
+15 mins.	**8**	**6**	**15**	**29**	9	129	3	141	10	2	7	19	15	126	1	142
+30 mins.	5	4	14	23	7	125	3	135	12	1	**8**	21	7	**161**	1	**169**
+45 mins.	5	0	11	16	7	97	**7**	111	**14**	2	7	**23**	20	144	3	167
Total Volume	20	10	54	84	34	493	16	543	47	9	27	83	65	543	9	617
% App. Total	23.8	11.9	64.3		6.3	90.8	2.9		56.6	10.8	32.5		10.5	88	1.5	
PHF	.625	.417	.900	.724	.773	.868	.571	.870	.839	.563	.844	.902	.707	.843	.563	.913

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 04_PER_Tru_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- Passenger Vehicles

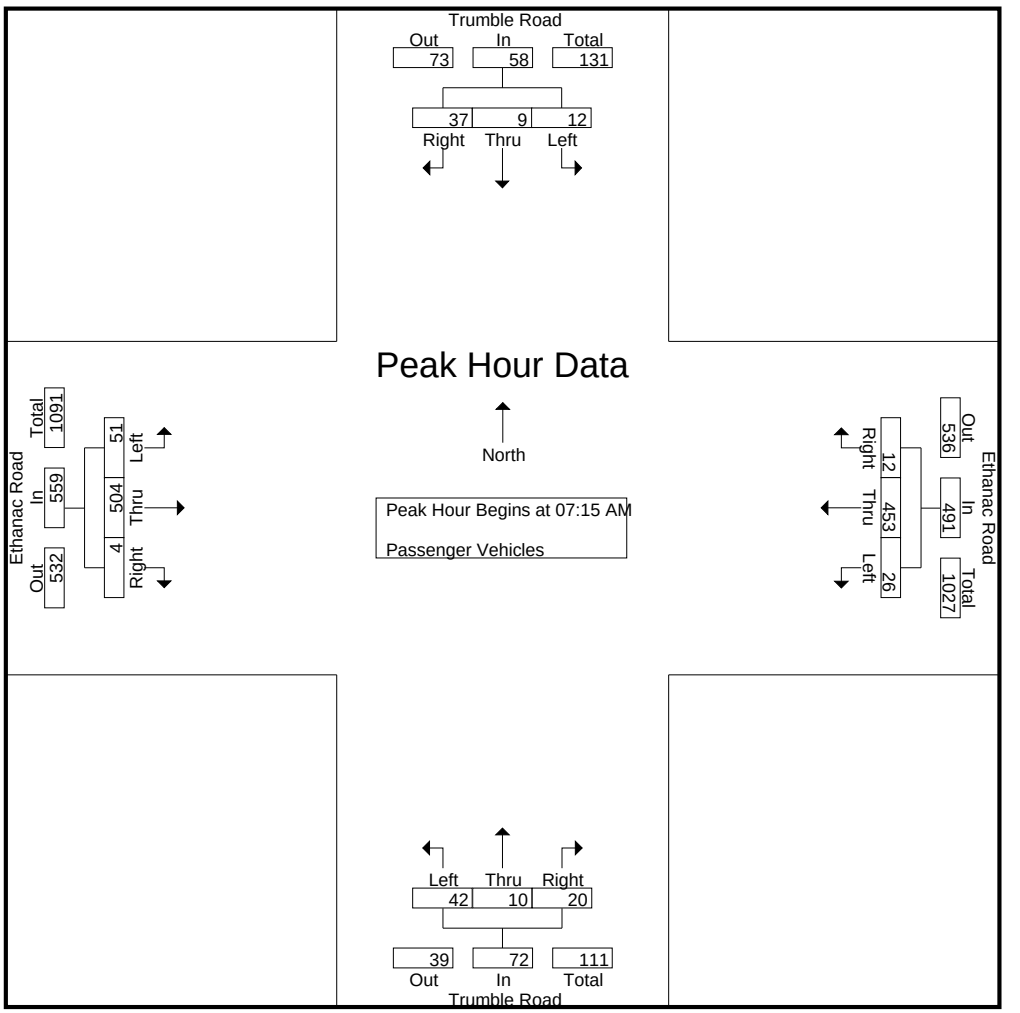
	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	0	8	9	4	89	5	98	4	3	0	7	21	104	3	128	242
07:15 AM	2	0	8	10	4	76	4	84	11	3	4	18	14	120	1	135	247
07:30 AM	4	5	10	19	10	135	3	148	10	4	4	18	7	158	1	166	351
07:45 AM	3	4	10	17	6	123	3	132	10	2	6	18	19	131	2	152	319
Total	10	9	36	55	24	423	15	462	35	12	14	61	61	513	7	581	1159
08:00 AM	3	0	9	12	6	119	2	127	11	1	6	18	11	95	0	106	263
08:15 AM	1	0	6	7	7	93	4	104	13	2	7	22	16	85	3	104	237
08:30 AM	2	0	5	7	6	77	2	85	8	1	3	12	7	80	1	88	192
08:45 AM	1	1	8	10	3	69	4	76	13	0	3	16	16	84	1	101	203
Total	7	1	28	36	22	358	12	392	45	4	19	68	50	344	5	399	895
Grand Total	17	10	64	91	46	781	27	854	80	16	33	129	111	857	12	980	2054
Apprch %	18.7	11	70.3		5.4	91.5	3.2		62	12.4	25.6		11.3	87.4	1.2		
Total %	0.8	0.5	3.1	4.4	2.2	38	1.3	41.6	3.9	0.8	1.6	6.3	5.4	41.7	0.6	47.7	

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road 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	2	0	8	10	4	76	**4**	84	**11**	3	4	**18**	14	120	1	135	247
07:30 AM	**4**	**5**	**10**	**19**	**10**	**135**	3	**148**	10	**4**	4	18	7	**158**	1	**166**	**351**
07:45 AM	3	4	10	17	6	123	3	132	10	2	**6**	18	**19**	131	**2**	152	319
08:00 AM	3	0	9	12	6	119	2	127	11	1	6	18	11	95	0	106	263
Total Volume	12	9	37	58	26	453	12	491	42	10	20	72	51	504	4	559	1180
% App. Total	20.7	15.5	63.8		5.3	92.3	2.4		58.3	13.9	27.8		9.1	90.2	0.7		
PHF	.750	.450	.925	.763	.650	.839	.750	.829	.955	.625	.833	1.00	.671	.797	.500	.842	.840

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 04_PER_Tru_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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.	2	0	8	10	4	76	**4**	84	**11**	3	4	**18**	14	120	1	135
+15 mins.	**4**	**5**	**10**	**19**	**10**	**135**	3	**148**	10	**4**	4	18	7	**158**	1	**166**
+30 mins.	3	4	10	17	6	123	3	132	10	2	**6**	18	**19**	131	**2**	152
+45 mins.	3	0	9	12	6	119	2	127	11	1	6	18	11	95	0	106
Total Volume	12	9	37	58	26	453	12	491	42	10	20	72	51	504	4	559
% App. Total	20.7	15.5	63.8		5.3	92.3	2.4		58.3	13.9	27.8		9.1	90.2	0.7	
PHF	.750	.450	.925	.763	.650	.839	.750	.829	.955	.625	.833	1.000	.671	.797	.500	.842

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 04_PER_Tru_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- Large 2 Axle Vehicles

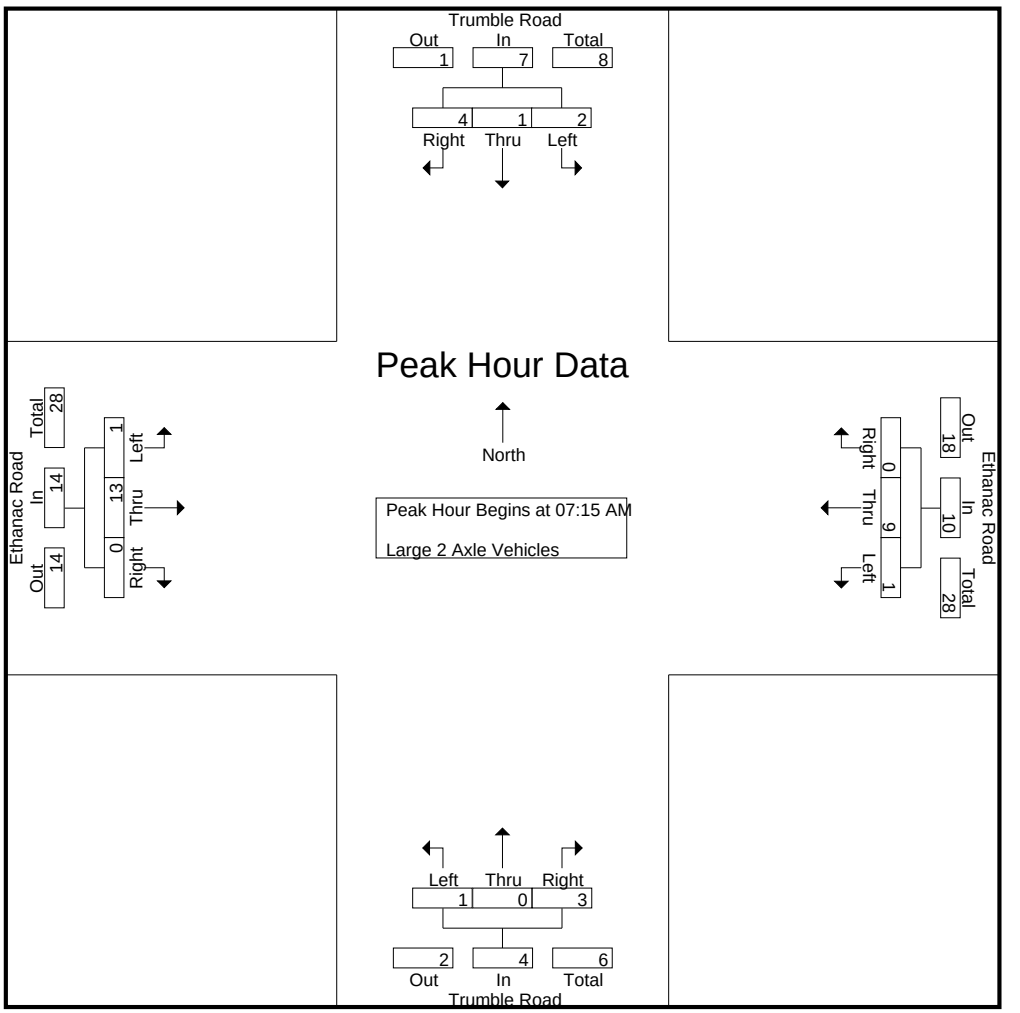
	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	1	1	0	4	0	4	0	0	0	0	2	4	1	7	12
07:15 AM	0	0	2	2	0	2	0	2	0	0	1	1	1	2	0	3	8
07:30 AM	1	1	0	2	1	3	0	4	1	0	1	2	0	1	0	1	9
07:45 AM	1	0	1	2	0	1	0	1	0	0	1	1	0	8	0	8	12
Total	2	1	4	7	1	10	0	11	1	0	3	4	3	15	1	19	41
08:00 AM	0	0	1	1	0	3	0	3	0	0	0	0	0	2	0	2	6
08:15 AM	0	1	1	2	0	0	0	0	0	0	0	0	2	4	0	6	8
08:30 AM	1	0	0	1	0	2	0	2	0	0	1	1	0	3	0	3	7
08:45 AM	1	0	1	2	0	1	0	1	0	0	0	0	1	4	0	5	8
Total	2	1	3	6	0	6	0	6	0	0	1	1	3	13	0	16	29
Grand Total	4	2	7	13	1	16	0	17	1	0	4	5	6	28	1	35	70
Apprch %	30.8	15.4	53.8		5.9	94.1	0		20	0	80		17.1	80	2.9		
Total %	5.7	2.9	10	18.6	1.4	22.9	0	24.3	1.4	0	5.7	7.1	8.6	40	1.4	50	

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road 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	**2**	**2**	0	2	0	2	0	0	**1**	1	**1**	2	0	3	8
07:30 AM	**1**	**1**	0	2	**1**	**3**	0	**4**	**1**	0	1	**2**	0	1	0	1	9
07:45 AM	1	0	1	2	0	1	0	1	0	0	1	1	0	**8**	0	**8**	**12**
08:00 AM	0	0	1	1	0	3	0	3	0	0	0	0	0	2	0	2	6
Total Volume	2	1	4	7	1	9	0	10	1	0	3	4	1	13	0	14	35
% App. Total	28.6	14.3	57.1		10	90	0		25	0	75		7.1	92.9	0		
PHF	.500	.250	.500	.875	.250	.750	.000	.625	.250	.000	.750	.500	.250	.406	.000	.438	.729

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 04_PER_Tru_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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	**2**	**2**	0	2	0	2	0	0	**1**	1	**1**	2	0	3
+15 mins.	**1**	**1**	0	2	**1**	**3**	0	**4**	**1**	0	1	**2**	0	1	0	1
+30 mins.	1	0	1	2	0	1	0	1	0	0	1	1	0	**8**	0	**8**
+45 mins.	0	0	1	1	0	3	0	3	0	0	0	0	0	2	0	2
Total Volume	2	1	4	7	1	9	0	10	1	0	3	4	1	13	0	14
% App. Total	28.6	14.3	57.1		10	90	0		25	0	75		7.1	92.9	0	
PHF	.500	.250	.500	.875	.250	.750	.000	.625	.250	.000	.750	.500	.250	.406	.000	.438

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 04_PER_Tru_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- 3 Axle Vehicles

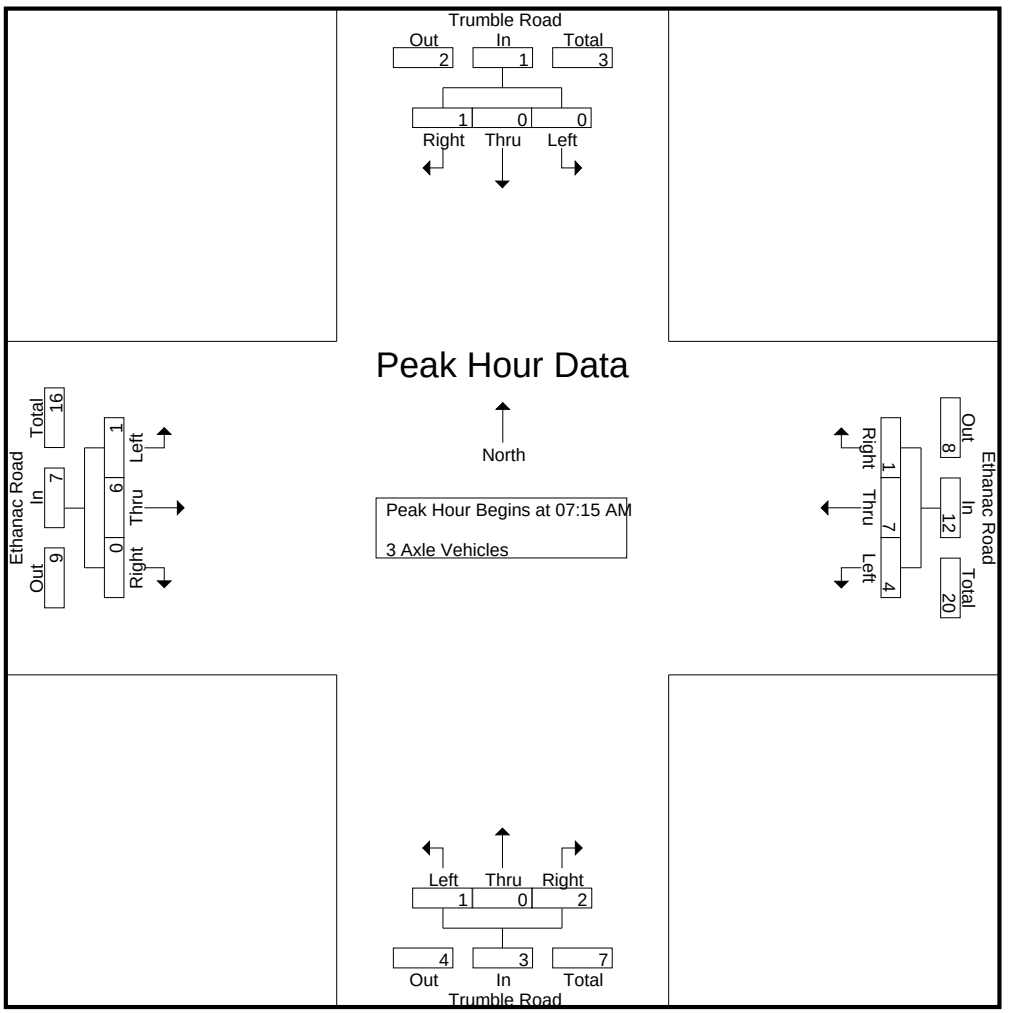
	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	2	0	2	3
07:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
07:45 AM	0	0	0	0	3	4	0	7	0	0	0	0	0	1	0	1	8
Total	0	0	1	1	3	5	0	8	0	0	0	0	0	4	0	4	13
08:00 AM	0	0	0	0	1	2	1	4	1	0	2	3	1	2	0	3	10
08:15 AM	0	0	0	0	0	1	3	4	0	0	0	0	3	0	0	3	7
08:30 AM	0	0	1	1	0	0	1	1	0	0	0	0	6	1	0	7	9
08:45 AM	0	0	0	0	0	1	2	3	0	1	0	1	5	0	0	5	9
Total	0	0	1	1	1	4	7	12	1	1	2	4	15	3	0	18	35
Grand Total	0	0	2	2	4	9	7	20	1	1	2	4	15	7	0	22	48
Apprch %	0	0	100		20	45	35		25	25	50		68.2	31.8	0		
Total %	0	0	4.2	4.2	8.3	18.8	14.6	41.7	2.1	2.1	4.2	8.3	31.2	14.6	0	45.8	

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road 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	**1**	**1**	0	0	0	0	0	0	0	0	0	**2**	0	2	3
07:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
07:45 AM	0	0	0	0	**3**	**4**	0	**7**	0	0	0	0	0	1	0	1	8
08:00 AM	0	0	0	0	1	2	**1**	4	**1**	0	**2**	**3**	**1**	2	0	**3**	**10**
Total Volume	0	0	1	1	4	7	1	12	1	0	2	3	1	6	0	7	23
% App. Total	0	0	100		33.3	58.3	8.3		33.3	0	66.7		14.3	85.7	0		
PHF	.000	.000	.250	.250	.333	.438	.250	.429	.250	.000	.250	.250	.250	.750	.000	.583	.575

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 04_PER_Tru_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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	**1**	**1**	0	0	0	0	0	0	0	0	0	**2**	0	2
+15 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
+30 mins.	0	0	0	0	**3**	**4**	0	**7**	0	0	0	0	0	1	0	1
+45 mins.	0	0	0	0	1	2	**1**	4	**1**	0	**2**	**3**	**1**	2	0	**3**
Total Volume	0	0	1	1	4	7	1	12	1	0	2	3	1	6	0	7
% App. Total	0	0	100		33.3	58.3	8.3		33.3	0	66.7		14.3	85.7	0	
PHF	.000	.000	.250	.250	.333	.438	.250	.429	.250	.000	.250	.250	.250	.750	.000	.583

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 04_PER_Tru_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- 4+ Axle Trucks

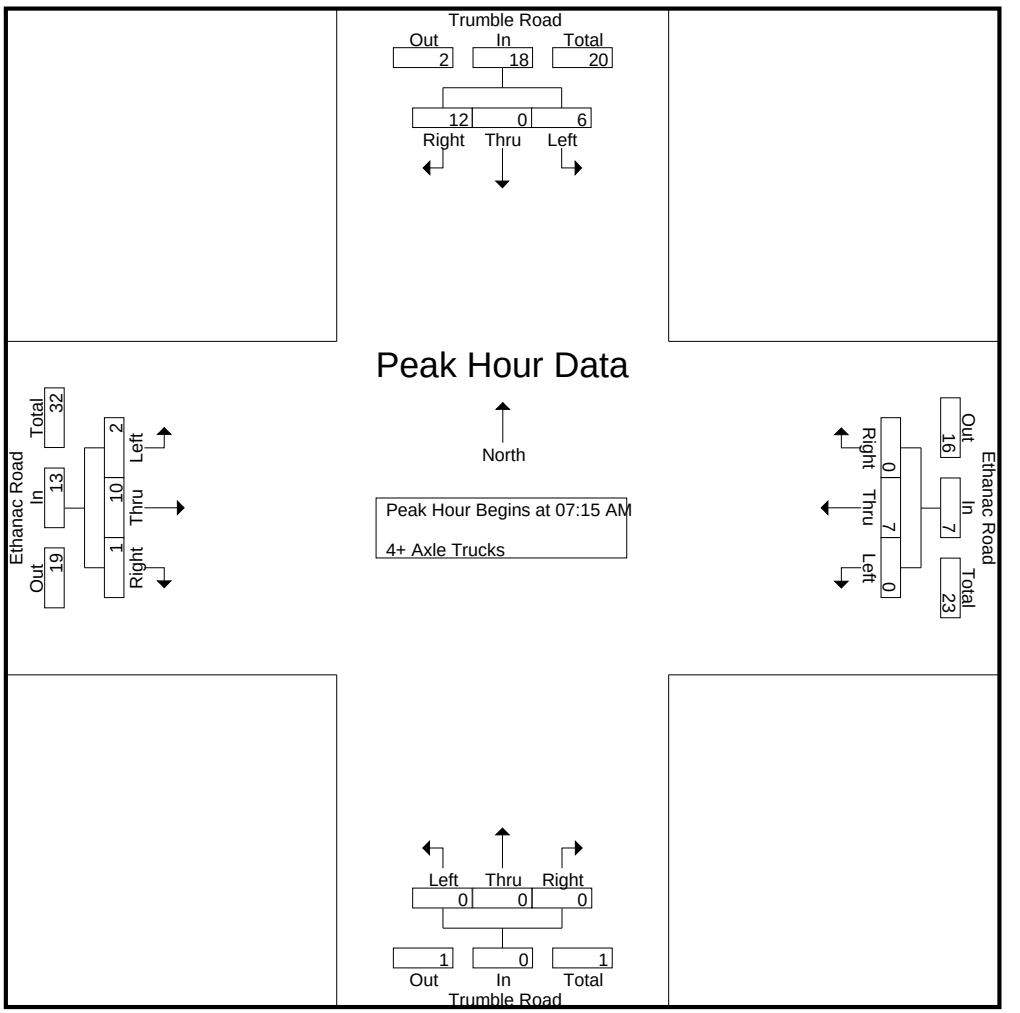
	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	2	0	3	5	0	3	0	3	0	0	0	0	0	4	0	4	12
07:15 AM	0	0	3	3	0	2	0	2	0	0	0	0	0	2	0	2	7
07:30 AM	3	0	5	8	0	3	0	3	0	0	0	0	0	1	0	1	12
07:45 AM	1	0	3	4	0	1	0	1	0	0	0	0	1	4	1	6	11
Total	6	0	14	20	0	9	0	9	0	0	0	0	1	11	1	13	42
08:00 AM	2	0	1	3	0	1	0	1	0	0	0	0	1	3	0	4	8
08:15 AM	2	0	2	4	0	3	0	3	1	0	0	1	0	3	1	4	12
08:30 AM	1	0	3	4	1	0	0	1	0	0	0	0	0	5	0	5	10
08:45 AM	1	0	5	6	0	2	0	2	0	1	0	1	0	3	0	3	12
Total	6	0	11	17	1	6	0	7	1	1	0	2	1	14	1	16	42
Grand Total	12	0	25	37	1	15	0	16	1	1	0	2	2	25	2	29	84
Apprch %	32.4	0	67.6		6.2	93.8	0		50	50	0		6.9	86.2	6.9		
Total %	14.3	0	29.8	44	1.2	17.9	0	19	1.2	1.2	0	2.4	2.4	29.8	2.4	34.5	

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road 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	3	3	0	2	0	2	0	0	0	0	0	2	0	2	7
07:30 AM	**3**	0	**5**	**8**	0	**3**	0	**3**	0	0	0	0	0	1	0	1	**12**
07:45 AM	1	0	3	4	0	1	0	1	0	0	0	0	**1**	**4**	**1**	**6**	11
08:00 AM	2	0	1	3	0	1	0	1	0	0	0	0	1	3	0	4	8
Total Volume	6	0	12	18	0	7	0	7	0	0	0	0	2	10	1	13	38
% App. Total	33.3	0	66.7		0	100	0		0	0	0		15.4	76.9	7.7		
PHF	.500	.000	.600	.563	.000	.583	.000	.583	.000	.000	.000	.000	.500	.625	.250	.542	.792

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 04_PER_Tru_Eth AM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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	3	3	0	2	0	2	0	0	0	0	0	2	0	2
+15 mins.	**3**	0	**5**	**8**	0	**3**	0	**3**	0	0	0	0	0	1	0	1
+30 mins.	1	0	3	4	0	1	0	1	0	0	0	0	**1**	**4**	**1**	**6**
+45 mins.	2	0	1	3	0	1	0	1	0	0	0	0	1	3	0	4
Total Volume	6	0	12	18	0	7	0	7	0	0	0	0	2	10	1	13
% App. Total	33.3	0	66.7		0	100	0		0	0	0		15.4	76.9	7.7	
PHF	.500	.000	.600	.563	.000	.583	.000	.583	.000	.000	.000	.000	.500	.625	.250	.542

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 04_PER_Tru_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

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

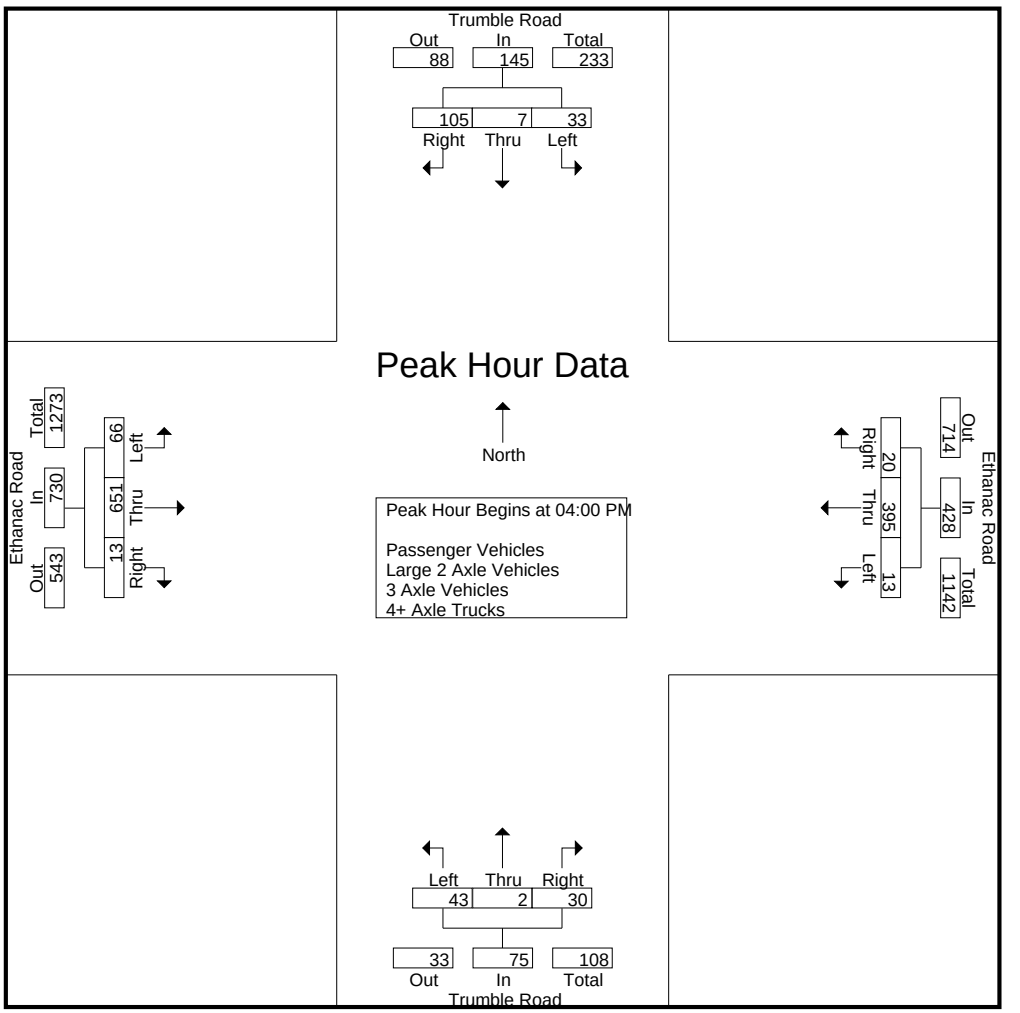
	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	9	3	30	42	4	106	3	113	8	0	8	16	17	189	1	207	378
04:15 PM	12	2	27	41	4	83	8	95	11	2	5	18	13	148	5	166	320
04:30 PM	9	1	28	38	2	98	4	104	16	0	12	28	21	156	2	179	349
04:45 PM	3	1	20	24	3	108	5	116	8	0	5	13	15	158	5	178	331
Total	33	7	105	145	13	395	20	428	43	2	30	75	66	651	13	730	1378
05:00 PM	9	2	40	51	4	113	2	119	16	1	4	21	9	159	2	170	361
05:15 PM	4	1	22	27	5	85	3	93	15	2	12	29	8	159	2	169	318
05:30 PM	6	1	13	20	6	63	5	74	4	0	11	15	8	172	4	184	293
05:45 PM	5	2	7	14	4	95	2	101	8	2	7	17	10	146	2	158	290
Total	24	6	82	112	19	356	12	387	43	5	34	82	35	636	10	681	1262
Grand Total	57	13	187	257	32	751	32	815	86	7	64	157	101	1287	23	1411	2640
Apprch %	22.2	5.1	72.8		3.9	92.1	3.9		54.8	4.5	40.8		7.2	91.2	1.6		
Total %	2.2	0.5	7.1	9.7	1.2	28.4	1.2	30.9	3.3	0.3	2.4	5.9	3.8	48.8	0.9	53.4	
Passenger Vehicles	53	10	178	241	27	729	28	784	81	6	57	144	86	1248	18	1352	2521
% Passenger Vehicles	93	76.9	95.2	93.8	84.4	97.1	87.5	96.2	94.2	85.7	89.1	91.7	85.1	97	78.3	95.8	95.5
Large 2 Axle Vehicles	3	3	4	10	3	10	0	13	5	0	6	11	9	28	2	39	73
% Large 2 Axle Vehicles	5.3	23.1	2.1	3.9	9.4	1.3	0	1.6	5.8	0	9.4	7	8.9	2.2	8.7	2.8	2.8
3 Axle Vehicles	1	0	0	1	0	2	4	6	0	0	1	1	5	3	0	8	16
% 3 Axle Vehicles	1.8	0	0	0.4	0	0.3	12.5	0.7	0	0	1.6	0.6	5	0.2	0	0.6	0.6
4+ Axle Trucks	0	0	5	5	2	10	0	12	0	1	0	1	1	8	3	12	30
% 4+ Axle Trucks	0	0	2.7	1.9	6.2	1.3	0	1.5	0	14.3	0	0.6	1	0.6	13	0.9	1.1

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road 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 04:00 PM																	
04:00 PM	9	**3**	**30**	**42**	**4**	106	3	113	8	0	8	16	17	**189**	1	**207**	**378**
04:15 PM	**12**	2	27	41	4	83	**8**	95	11	**2**	5	18	13	148	**5**	166	320
04:30 PM	9	1	28	38	2	98	4	104	**16**	0	**12**	**28**	**21**	156	2	179	349
04:45 PM	3	1	20	24	3	**108**	5	**116**	8	0	5	13	15	158	5	178	331
Total Volume	33	7	105	145	13	395	20	428	43	2	30	75	66	651	13	730	1378
% App. Total	22.8	4.8	72.4		3	92.3	4.7		57.3	2.7	40		9	89.2	1.8		
PHF	.688	.583	.875	.863	.813	.914	.625	.922	.672	.250	.625	.670	.786	.861	.650	.882	.911

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 04_PER_Tru_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
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:

	04:15 PM				04:15 PM				04:30 PM				04:00 PM			
+0 mins.	**12**	**2**	27	41	**4**	83	**8**	95	**16**	0	**12**	28	17	**189**	1	**207**
+15 mins.	9	1	28	38	2	98	4	104	8	0	5	13	13	148	**5**	166
+30 mins.	3	1	20	24	3	108	5	116	16	1	4	21	**21**	156	2	179
+45 mins.	9	2	**40**	**51**	4	**113**	2	**119**	15	**2**	12	**29**	15	158	5	178
Total Volume	33	6	115	154	13	402	19	434	55	3	33	91	66	651	13	730
% App. Total	21.4	3.9	74.7		3	92.6	4.4		60.4	3.3	36.3		9	89.2	1.8	
PHF	.688	.750	.719	.755	.813	.889	.594	.912	.859	.375	.688	.784	.786	.861	.650	.882

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 04_PER_Tru_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- Passenger Vehicles

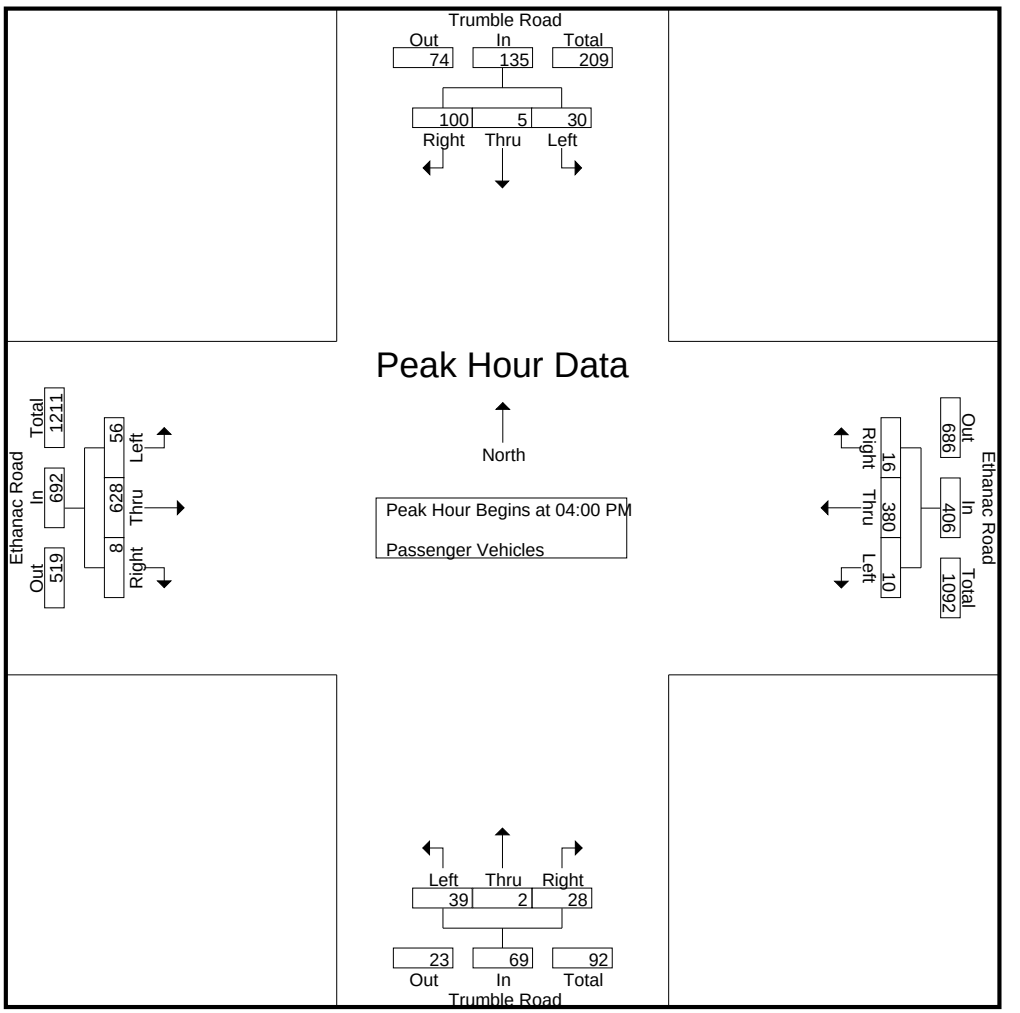
	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	9	2	28	39	3	103	3	109	6	0	8	14	14	184	1	199	361
04:15 PM	10	1	27	38	3	80	6	89	10	2	4	16	8	141	4	153	296
04:30 PM	8	1	25	34	2	93	3	98	16	0	11	27	21	151	1	173	332
04:45 PM	3	1	20	24	2	104	4	110	7	0	5	12	13	152	2	167	313
Total	30	5	100	135	10	380	16	406	39	2	28	69	56	628	8	692	1302
05:00 PM	9	2	38	49	4	111	2	117	15	1	4	20	9	155	2	166	352
05:15 PM	4	1	22	27	5	84	3	92	15	2	8	25	7	155	2	164	308
05:30 PM	6	0	13	19	6	60	5	71	4	0	11	15	4	169	4	177	282
05:45 PM	4	2	5	11	2	94	2	98	8	1	6	15	10	141	2	153	277
Total	23	5	78	106	17	349	12	378	42	4	29	75	30	620	10	660	1219
Grand Total	53	10	178	241	27	729	28	784	81	6	57	144	86	1248	18	1352	2521
Apprch %	22	4.1	73.9		3.4	93	3.6		56.2	4.2	39.6		6.4	92.3	1.3		
Total %	2.1	0.4	7.1	9.6	1.1	28.9	1.1	31.1	3.2	0.2	2.3	5.7	3.4	49.5	0.7	53.6	

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	9	**2**	**28**	**39**	**3**	103	3	109	6	0	8	14	14	**184**	1	**199**	**361**
04:15 PM	**10**	1	27	38	3	80	**6**	89	10	**2**	4	16	8	141	**4**	153	296
04:30 PM	8	1	25	34	2	93	3	98	**16**	0	**11**	**27**	**21**	151	1	173	332
04:45 PM	3	1	20	24	2	**104**	4	**110**	7	0	5	12	13	152	2	167	313
Total Volume	30	5	100	135	10	380	16	406	39	2	28	69	56	628	8	692	1302
% App. Total	22.2	3.7	74.1		2.5	93.6	3.9		56.5	2.9	40.6		8.1	90.8	1.2		
PHF	.750	.625	.893	.865	.833	.913	.667	.923	.609	.250	.636	.639	.667	.853	.500	.869	.902

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 04_PER_Tru_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	9	**2**	**28**	**39**	**3**	103	3	109	6	0	8	14	14	**184**	1	**199**
+15 mins.	**10**	1	27	38	3	80	**6**	89	10	**2**	4	16	8	141	**4**	153
+30 mins.	8	1	25	34	2	93	3	98	**16**	0	**11**	**27**	**21**	151	1	173
+45 mins.	3	1	20	24	2	**104**	4	**110**	7	0	5	12	13	152	2	167
Total Volume	30	5	100	135	10	380	16	406	39	2	28	69	56	628	8	692
% App. Total	22.2	3.7	74.1		2.5	93.6	3.9		56.5	2.9	40.6		8.1	90.8	1.2	
PHF	.750	.625	.893	.865	.833	.913	.667	.923	.609	.250	.636	.639	.667	.853	.500	.869

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 04_PER_Tru_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- Large 2 Axle Vehicles

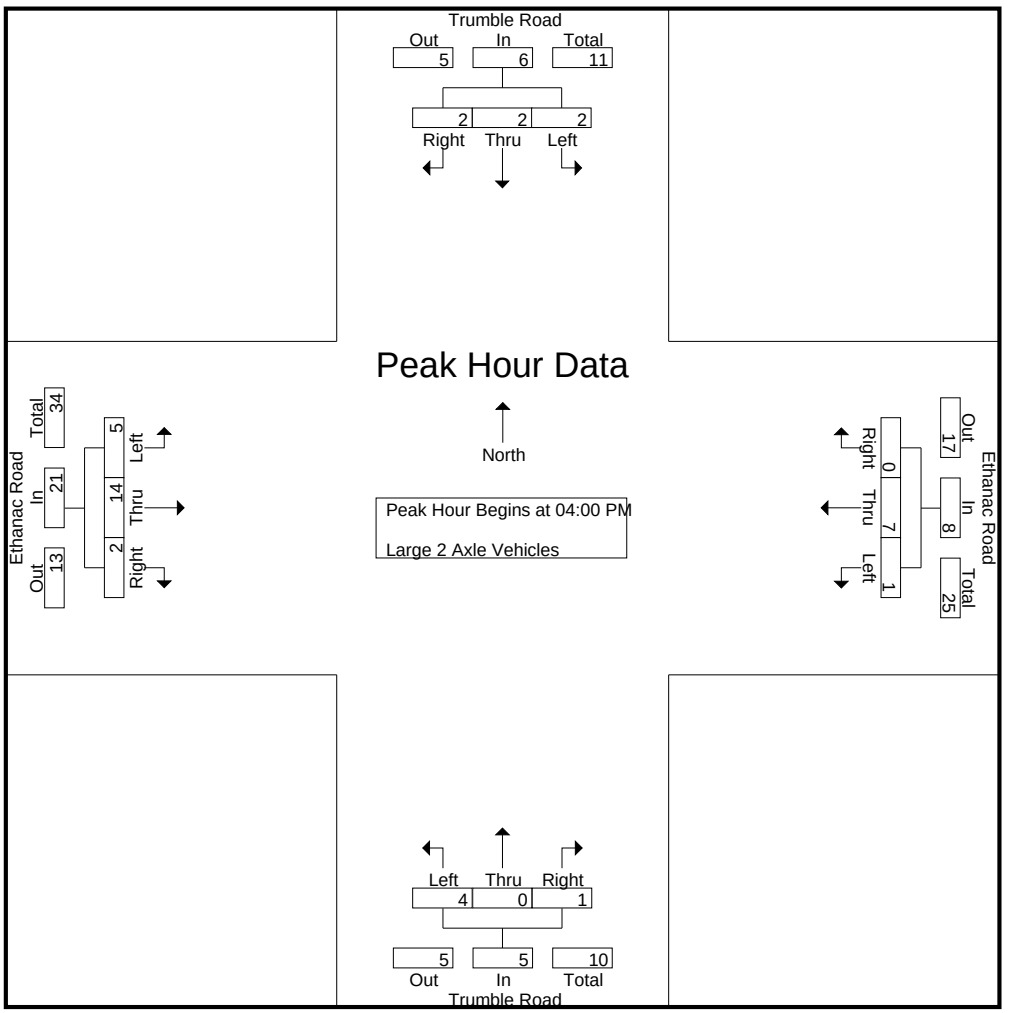
	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	1	0	1	1	2	0	3	2	0	0	2	2	2	0	4	10
04:15 PM	1	1	0	2	0	1	0	1	1	0	0	1	2	3	1	6	10
04:30 PM	1	0	2	3	0	3	0	3	0	0	1	1	0	5	1	6	13
04:45 PM	0	0	0	0	0	1	0	1	1	0	0	1	1	4	0	5	7
Total	2	2	2	6	1	7	0	8	4	0	1	5	5	14	2	21	40
05:00 PM	0	0	0	0	0	2	0	2	1	0	0	1	0	3	0	3	6
05:15 PM	0	0	0	0	0	0	0	0	0	0	4	4	0	3	0	3	7
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	4	3	0	7	8
05:45 PM	1	0	2	3	2	1	0	3	0	0	1	1	0	5	0	5	12
Total	1	1	2	4	2	3	0	5	1	0	5	6	4	14	0	18	33
Grand Total	3	3	4	10	3	10	0	13	5	0	6	11	9	28	2	39	73
Apprch %	30	30	40		23.1	76.9	0		45.5	0	54.5		23.1	71.8	5.1		
Total %	4.1	4.1	5.5	13.7	4.1	13.7	0	17.8	6.8	0	8.2	15.1	12.3	38.4	2.7	53.4	

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	**1**	0	1	**1**	2	0	**3**	**2**	0	0	**2**	**2**	2	0	4	10
04:15 PM	**1**	1	0	2	0	1	0	1	1	0	0	1	2	3	**1**	**6**	10
04:30 PM	1	0	**2**	**3**	0	**3**	0	3	0	0	**1**	1	0	**5**	1	6	**13**
04:45 PM	0	0	0	0	0	1	0	1	1	0	0	1	1	4	0	5	7
Total Volume	2	2	2	6	1	7	0	8	4	0	1	5	5	14	2	21	40
% App. Total	33.3	33.3	33.3		12.5	87.5	0		80	0	20		23.8	66.7	9.5		
PHF	.500	.500	.250	.500	.250	.583	.000	.667	.500	.000	.250	.625	.625	.700	.500	.875	.769

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 04_PER_Tru_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	**1**	0	1	**1**	2	0	**3**	**2**	0	0	**2**	**2**	2	0	4
+15 mins.	**1**	1	0	2	0	1	0	1	1	0	0	1	2	3	**1**	**6**
+30 mins.	1	0	**2**	**3**	0	**3**	0	3	0	0	**1**	1	0	**5**	1	6
+45 mins.	0	0	0	0	0	1	0	1	1	0	0	1	1	4	0	5
Total Volume	2	2	2	6	1	7	0	8	4	0	1	5	5	14	2	21
% App. Total	33.3	33.3	33.3		12.5	87.5	0		80	0	20		23.8	66.7	9.5	
PHF	.500	.500	.250	.500	.250	.583	.000	.667	.500	.000	.250	.625	.625	.700	.500	.875

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 04_PER_Tru_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- 3 Axle Vehicles

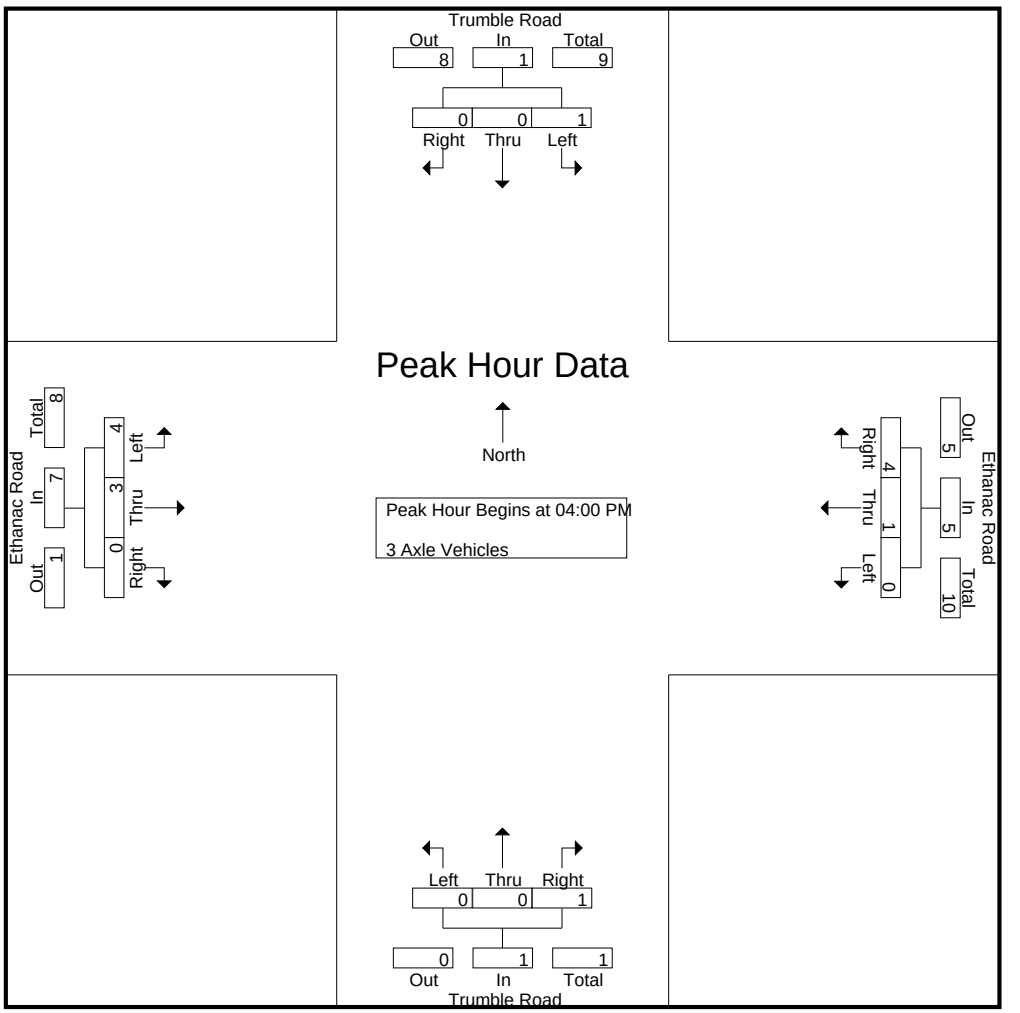
	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:15 PM	1	0	0	1	0	0	2	2	0	0	1	1	2	2	0	4	8
04:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	1	1	2	0	0	0	0	1	1	0	2	4
Total	1	0	0	1	0	1	4	5	0	0	1	1	4	3	0	7	14
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	1	0	1	0	0	0	0	1	0	0	1	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	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	2
Grand Total	1	0	0	1	0	2	4	6	0	0	1	1	5	3	0	8	16
Apprch %	100	0	0		0	33.3	66.7		0	0	100		62.5	37.5	0		
Total %	6.2	0	0	6.2	0	12.5	25	37.5	0	0	6.2	6.2	31.2	18.8	0	50	

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:15 PM	**1**	0	0	**1**	0	0	**2**	**2**	0	0	**1**	**1**	**2**	**2**	0	**4**	**8**
04:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	**1**	1	2	0	0	0	0	1	1	0	2	4
Total Volume	1	0	0	1	0	1	4	5	0	0	1	1	4	3	0	7	14
% App. Total	100	0	0		0	20	80		0	0	100		57.1	42.9	0		
PHF	.250	.000	.000	.250	.000	.250	.500	.625	.000	.000	.250	.250	.500	.375	.000	.438	.438

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 04_PER_Tru_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
+15 mins.	**1**	0	0	**1**	0	0	**2**	**2**	0	0	**1**	**1**	**2**	**2**	0	**4**
+30 mins.	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	**1**	1	2	0	0	0	0	1	1	0	2
Total Volume	1	0	0	1	0	1	4	5	0	0	1	1	4	3	0	7
% App. Total	100	0	0		0	20	80		0	0	100		57.1	42.9	0	
PHF	.250	.000	.000	.250	.000	.250	.500	.625	.000	.000	.250	.250	.500	.375	.000	.438

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 04_PER_Tru_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 1

Groups Printed- 4+ Axle Trucks

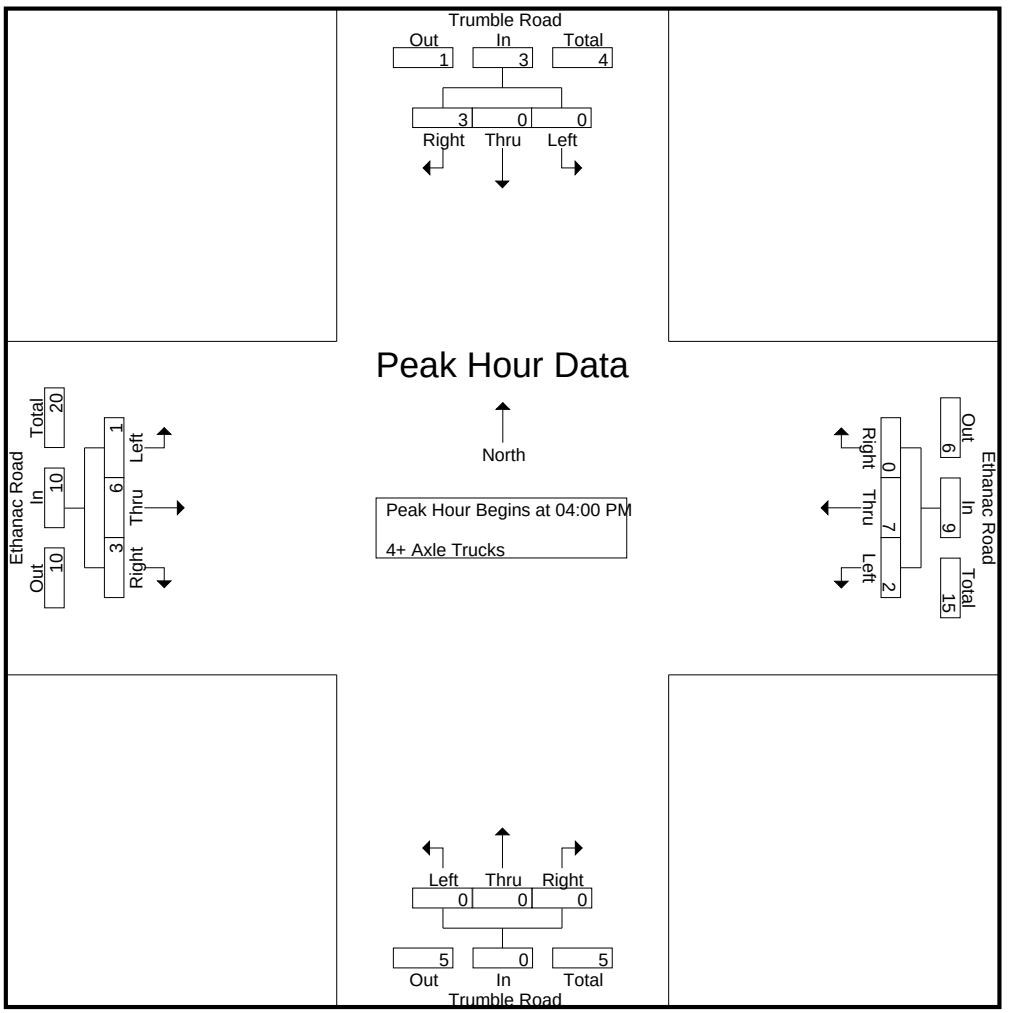
	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	2	2	0	1	0	1	0	0	0	0	0	3	0	3	6
04:15 PM	0	0	0	0	1	2	0	3	0	0	0	0	1	2	0	3	6
04:30 PM	0	0	1	1	0	2	0	2	0	0	0	0	0	0	0	0	3
04:45 PM	0	0	0	0	1	2	0	3	0	0	0	0	0	1	3	4	7
Total	0	0	3	3	2	7	0	9	0	0	0	0	1	6	3	10	22
05:00 PM	0	0	2	2	0	0	0	0	0	0	0	0	0	1	0	1	3
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
05:30 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	3
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	2	2	0	3	0	3	0	1	0	1	0	2	0	2	8
Grand Total	0	0	5	5	2	10	0	12	0	1	0	1	1	8	3	12	30
Apprch %	0	0	100		16.7	83.3	0		0	100	0		8.3	66.7	25		
Total %	0	0	16.7	16.7	6.7	33.3	0	40	0	3.3	0	3.3	3.3	26.7	10	40	

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road 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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	**2**	**2**	0	1	0	1	0	0	0	0	0	**3**	0	3	6
04:15 PM	0	0	0	0	**1**	**2**	0	**3**	0	0	0	0	**1**	2	0	3	6
04:30 PM	0	0	1	1	0	2	0	2	0	0	0	0	0	0	0	0	3
04:45 PM	0	0	0	0	1	2	0	3	0	0	0	0	0	1	**3**	**4**	**7**
Total Volume	0	0	3	3	2	7	0	9	0	0	0	0	1	6	3	10	22
% App. Total	0	0	100		22.2	77.8	0		0	0	0		10	60	30		
PHF	.000	.000	.375	.375	.500	.875	.000	.750	.000	.000	.000	.000	.250	.500	.250	.625	.786

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 04_PER_Tru_Eth PM
Site Code : 10824241
Start Date : 3/12/2024
Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	**2**	**2**	0	1	0	1	0	0	0	0	0	**3**	0	3
+15 mins.	0	0	0	0	**1**	**2**	0	**3**	0	0	0	0	**1**	2	0	3
+30 mins.	0	0	1	1	0	2	0	2	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	1	2	0	3	0	0	0	0	0	1	**3**	**4**
Total Volume	0	0	3	3	2	7	0	9	0	0	0	0	1	6	3	10
% App. Total	0	0	100		22.2	77.8	0		0	0	0		10	60	30	
PHF	.000	.000	.375	.375	.500	.875	.000	.750	.000	.000	.000	.000	.250	.500	.250	.625

APPENDIX B-2

TRAFFIC COUNT –
PCE VOLUMES SPREADSHEETS

Existing Peak Hour Volumes - Classification Counts

1 I-215 SB Ramps at Ethanac Road

	AM Peak Hour Volumes									PM Peak Hour Volumes								
		Truck Volumes							Total		Truck Volumes							Total
	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume
NL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
NT	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
NR	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
SL	99	2	1	2	5	4.8%	11	2.2	110	245	6	0	6	12	4.7%	27	2.3	272
ST	1	0	0	0	0	0.0%	0	0.0	1	5	0	0	0	0	0.0%	0	0.0	5
SR	209	16	0	5	21	9.1%	39	1.9	248	332	8	0	0	8	2.4%	12	1.5	344
EL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
ET	593	17	4	15	36	5.7%	79	2.2	672	597	15	5	6	26	4.2%	51	2.0	648
ER	416	18	6	19	43	9.4%	96	2.2	512	306	6	2	0	8	2.5%	13	1.6	319
WL	87	4	0	13	17	16.3%	45	2.6	132	113	4	0	4	8	6.6%	18	2.3	131
WT	531	13	10	8	31	5.5%	64	2.1	595	683	12	4	12	28	3.9%	62	2.2	745
WR	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
									2,270									2,464
North Leg Volumes																		
Approach	309	18	1	7	26		50		359	582	14	0	6	20		39		621
Depart	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Total	309	18	1	7	26	7.8%	50	1.9	359	582	14	0	6	20	3.3%	39	2.0	621
South Leg Volumes																		
Approach	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Depart	504	22	6	32	60		141		645	424	10	2	4	16		31		455
Total	504	22	6	32	60	10.6%	141	2.4	645	424	10	2	4	16	3.6%	31	1.9	455
East Leg Volumes																		
Approach	618	17	10	21	48		109		727	796	16	4	16	36		80		876
Depart	692	19	5	17	41		90		782	842	21	5	12	38		78		920
Total	1,310	36	15	38	89	6.4%	199	2.2	1,509	1,638	37	9	28	74	4.3%	158	2.1	1,796
West Leg Volumes																		
Approach	1,009	35	10	34	79		175		1,184	903	21	7	6	34		64		967
Depart	740	29	10	13	52		103		843	1,015	20	4	12	36		74		1,089
Total	1,749	64	20	47	131	7.0%	278	2.1	2,027	1,918	41	11	18	70	3.5%	138	2.0	2,056
All Legs																		
Approach	1,936	70	21	62	153		334		2,270	2,281	51	11	28	90		183		2,464
Depart	1,936	70	21	62	153		334		2,270	2,281	51	11	28	90		183		2,464
Total	3,872	140	42	124	306	7.3%	668	2.2	4,540	4,562	102	22	56	180	3.8%	366	2.0	4,928

Existing Peak Hour Volumes - Classification Counts

2 I-215 NB Ramps at Ethanac Road

	AM Peak Hour Volumes									PM Peak Hour Volumes								
		Truck Volumes							Total		Truck Volumes							Total
	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume
NL	225	4	5	2	11	4.7%	22	2.0	247	386	12	5	9	26	6.3%	55	2.1	441
NT	0	0	0	0	0	0.0%	0	0.0	0	2	0	0	0	0	0.0%	0	0.0	2
NR	106	1	2	2	5	4.5%	12	2.4	118	180	8	0	1	9	4.8%	15	1.7	195
SL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
ST	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
SR	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
EL	190	5	1	7	13	6.4%	31	2.4	221	199	4	2	5	11	5.2%	25	2.3	224
ET	496	15	4	11	30	5.7%	64	2.1	560	617	16	2	5	23	3.6%	43	1.9	660
ER	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
WL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
WT	393	13	6	16	35	8.2%	80	2.3	473	414	4	1	6	11	2.6%	26	2.4	440
WR	144	6	4	3	13	8.3%	26	2.0	170	153	8	1	2	11	6.7%	20	1.8	173
									1,789									2,135
North Leg Volumes																		
Approach	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Depart	334	11	5	10	26		57		391	354	12	3	7	22		45		399
Total	334	11	5	10	26	7.2%	57	2.2	391	354	12	3	7	22	5.9%	45	2.0	399
South Leg Volumes																		
Approach	331	5	7	4	16		34		365	568	20	5	10	35		70		638
Depart	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Total	331	5	7	4	16	4.6%	34	2.1	365	568	20	5	10	35	5.8%	70	2.0	638
East Leg Volumes																		
Approach	537	19	10	19	48		106		643	567	12	2	8	22		46		613
Depart	602	16	6	13	35		76		678	797	24	2	6	32		58		855
Total	1,139	35	16	32	83	6.8%	182	2.2	1,321	1,364	36	4	14	54	3.8%	104	1.9	1,468
West Leg Volumes																		
Approach	686	20	5	18	43		95		781	816	20	4	10	34		68		884
Depart	618	17	11	18	46		102		720	800	16	6	15	37		81		881
Total	1,304	37	16	36	89	6.4%	197	2.2	1,501	1,616	36	10	25	71	4.2%	149	2.1	1,765
All Legs																		
Approach	1,554	44	22	41	107		235		1,789	1,951	52	11	28	91		184		2,135
Depart	1,554	44	22	41	107		235		1,789	1,951	52	11	28	91		184		2,135
Total	3,108	88	44	82	214	6.4%	470	2.2	3,578	3,902	104	22	56	182	4.5%	368	2.0	4,270

Existing Peak Hour Volumes - Classification Counts

3 Ethanac Road at Encanto Drive

	AM Peak Hour Volumes									PM Peak Hour Volumes								
		Truck Volumes							Total		Truck Volumes							Total
	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume
NL	54	3	0	0	3	5.3%	5	1.7	59	55	0	0	0	0	0.0%	0	0.0	55
NT	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
NR	28	0	0	0	0	0.0%	0	0.0	28	55	1	0	0	1	1.8%	2	2.0	57
SL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
ST	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
SR	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
EL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
ET	554	13	7	11	31	5.3%	67	2.2	621	677	24	7	10	41	5.7%	80	2.0	757
ER	48	3	0	1	4	7.7%	8	2.0	56	123	1	0	0	1	0.8%	2	2.0	125
WL	40	0	0	0	0	0.0%	0	0.0	40	30	0	0	0	0	0.0%	0	0.0	30
WT	489	15	10	18	43	8.1%	97	2.3	586	492	12	1	10	23	4.5%	50	2.2	542
WR	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
									1,390									1,566
North Leg Volumes																		
Approach	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Depart	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Total	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
South Leg Volumes																		
Approach	82	3	0	0	3		5		87	110	1	0	0	1		2		112
Depart	88	3	0	1	4		8		96	153	1	0	0	1		2		155
Total	170	6	0	1	7	4.0%	13	1.9	183	263	2	0	0	2	0.8%	4	2.0	267
East Leg Volumes																		
Approach	529	15	10	18	43		97		626	522	12	1	10	23		50		572
Depart	582	13	7	11	31		67		649	732	25	7	10	42		82		814
Total	1,111	28	17	29	74	6.2%	164	2.2	1,275	1,254	37	8	20	65	4.9%	132	2.0	1,386
West Leg Volumes																		
Approach	602	16	7	12	35		75		677	800	25	7	10	42		82		882
Depart	543	18	10	18	46		102		645	547	12	1	10	23		50		597
Total	1,145	34	17	30	81	6.6%	177	2.2	1,322	1,347	37	8	20	65	4.6%	132	2.0	1,479
All Legs																		
Approach	1,213	34	17	30	81		177		1,390	1,432	38	8	20	66		134		1,566
Depart	1,213	34	17	30	81		177		1,390	1,432	38	8	20	66		134		1,566
Total	2,426	68	34	60	162	6.3%	354	2.2	2,780	2,864	76	16	40	132	4.4%	268	2.0	3,132

Existing Peak Hour Volumes - Classification Counts

4 Trumble Road at Ethanac Road

	AM Peak Hour Volumes									PM Peak Hour Volumes								
		Truck Volumes							Total		Truck Volumes							Total
	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume	Passenger Vehicles	2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE	Average PCE	PCE Volume
NL	42	1	1	0	2	4.5%	4	2.0	46	39	4	0	0	4	9.3%	6	1.5	45
NT	10	0	0	0	0	0.0%	0	0.0	10	2	0	0	0	0	0.0%	0	0.0	2
NR	20	3	2	0	5	20.0%	9	1.8	29	28	1	1	0	2	6.7%	4	2.0	32
SL	12	2	0	6	8	40.0%	21	2.6	33	30	2	1	0	3	9.1%	5	1.7	35
ST	9	1	0	0	1	10.0%	2	2.0	11	5	2	0	0	2	28.6%	3	1.5	8
SR	37	4	1	12	17	31.5%	44	2.6	81	100	2	0	3	5	4.8%	12	2.4	112
EL	51	1	1	2	4	7.3%	10	2.5	61	56	5	4	1	10	15.2%	19	1.9	75
ET	504	13	6	10	29	5.4%	62	2.1	566	628	14	3	6	23	3.5%	45	2.0	673
ER	4	0	0	1	1	20.0%	3	3.0	7	8	2	0	3	5	38.5%	12	2.4	20
WL	26	1	4	0	5	16.1%	10	2.0	36	10	1	0	2	3	23.1%	8	2.7	18
WT	453	9	7	7	23	4.8%	49	2.1	502	380	7	1	7	15	3.8%	34	2.3	414
WR	12	0	1	0	1	7.7%	2	2.0	14	16	0	4	0	4	20.0%	8	2.0	24
									1,396									1,458
North Leg Volumes																		
Approach	58	7	1	18	26		67		125	135	6	1	3	10		20		155
Depart	73	1	2	2	5		12		85	74	5	8	1	14		27		101
Total	131	8	3	20	31	19.1%	79	2.5	210	209	11	9	4	24	10.3%	47	2.0	256
South Leg Volumes																		
Approach	72	4	3	0	7		13		85	69	5	1	0	6		10		79
Depart	39	2	4	1	7		15		54	23	5	0	5	10		23		46
Total	111	6	7	1	14	11.2%	28	2.0	139	92	10	1	5	16	14.8%	33	2.1	125
East Leg Volumes																		
Approach	491	10	12	7	29		61		552	406	8	5	9	22		50		456
Depart	536	18	8	16	42		92		628	686	17	5	6	28		54		740
Total	1,027	28	20	23	71	6.5%	153	2.2	1,180	1,092	25	10	15	50	4.4%	104	2.1	1,196
West Leg Volumes																		
Approach	559	14	7	13	34		75		634	692	21	7	10	38		76		768
Depart	532	14	9	19	42		97		629	519	13	1	10	24		52		571
Total	1,091	28	16	32	76	6.5%	172	2.3	1,263	1,211	34	8	20	62	4.9%	128	2.1	1,339
All Legs																		
Approach	1,180	35	23	38	96		216		1,396	1,302	40	14	22	76		156		1,458
Depart	1,180	35	23	38	96		216		1,396	1,302	40	14	22	76		156		1,458
Total	2,360	70	46	76	192	7.5%	432	2.3	2,792	2,604	80	28	44	152	5.5%	312	2.1	2,916

APPENDIX C

COLLECTED SITE-SPECIFIC TRIP WORKSHEETS

PV+RV only		HV only		All Vehicles	
Total Trips		Total Trips		Total Trips	
	Daily		Daily		Daily
Orland	3303	Orland	1647	Orland	4950
Patterson	4055	Patterson	2003	Patterson	6057
Lost Hills	3903	Lost Hills	1846	Lost Hills	5750
Combined	11261	Combined	5497	Combined	16757
Rates by FP		Rates by Truck FP		Rates by FP	
	Daily		Daily		Daily
Orland	235.92	Orland	183.05	Orland	215.23
Patterson	202.73	Patterson	222.52	Patterson	208.87
Lost Hills	487.92	Lost Hills	263.77	Lost Hills	383.31
Combined	268.11	Combined	219.86	Combined	250.11

	Perris	Orland	Patterson	Lost Hills	Combined
Building size (kSF)	14	14	15.4	10.5	39.9
fueling pumps	16	14	20	8	42
Truck FPs	7	9	9	7	25

	945	950
5AM-8PM	85%	87%
8PM-5AM	15%	13%

PV+RV only			HV only			All Vehicles		
Total Trips			Total Trips			Total Trips		
	AM Trips	PM Trips		AM Trips	PM Trips		AM Trips	PM Trips
Orland	144	245	Orland	96	87	Orland	239	330
Patterson	233	258	Patterson	99	105	Patterson	340	379
Lost Hills	170	265	Lost Hills	115	133	Lost Hills	280	392
Combined	547	768	Combined	310	325	Combined	859	1101
Rates by FP			Rates by Truck FP			Rates by FP		
	AM Trip Rate	PM Trip Rate		AM Trip Rate	PM Trip Rate		AM Trip Rate	PM Trip Rate
ITE (11th Edition)	31.60	26.90	ITE	13.97	15.42	ITE	N/A	N/A
Orland	10.29	17.50	Orland	10.67	9.67	Orland	10.39	14.35
Patterson	11.65	12.90	Patterson	11.00	11.67	Patterson	11.72	13.07
Lost Hills	21.25	33.13	Lost Hills	16.43	19.00	Lost Hills	18.67	26.13
Combined	13.02	18.29	Combined	12.40	13.00	Combined	12.82	16.43

	Perris	Orland	Patterson	Lost Hills	Combined
Building size (kSF)	14	14	15.4	10.5	39.9
Fueling pumps (FP)	16	14	20	8	42
Truck FPs	7	9	9	7	25

Prepared by National Data & Surveying Services

Driveway IN/OUT

Custom ID: 1-001
Location: Commerce Ln & Pilot Travel Center North Dwy
City: Orland
Date: 6/23/2021
Day: Wednesday

TIME	Passenger Vehicles		Heavy Trucks		Recreational Vehicles		Total	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
5:00 AM	6	5	0	0	0	0	6	5
5:15 AM	10	1	0	0	0	0	10	1
5:30 AM	12	6	0	0	0	0	12	6
5:45 AM	4	2	0	0	0	0	4	2
6:00 AM	12	1	0	0	0	0	12	1
6:15 AM	7	4	3	0	0	0	10	4
6:30 AM	7	5	0	1	0	0	7	6
6:45 AM	4	2	0	0	1	0	5	2
7:00 AM	7	7	0	0	0	0	7	7
7:15 AM	7	7	1	0	0	0	8	7
7:30 AM	10	6	0	1	0	0	10	7
7:45 AM	12	4	0	0	0	0	12	4
8:00 AM	11	2	0	0	0	0	11	2
8:15 AM	16	3	0	0	0	0	16	3
8:30 AM	10	3	0	0	0	0	10	3
8:45 AM	9	8	0	0	0	0	9	8
9:00 AM	13	1	0	0	0	0	13	1
9:15 AM	11	4	0	0	0	0	11	4
9:30 AM	18	5	1	0	0	0	19	5
9:45 AM	11	11	0	0	0	0	11	11
10:00 AM	10	7	1	0	0	0	11	7
10:15 AM	10	4	0	0	1	0	11	4
10:30 AM	14	8	0	0	0	0	14	8
10:45 AM	8	6	0	0	0	0	8	6
11:00 AM	17	3	0	0	0	0	17	3
11:15 AM	29	6	0	0	0	0	29	6
11:30 AM	22	13	2	0	0	0	24	13
11:45 AM	26	14	0	2	2	0	28	16
12:00 PM	28	10	1	0	0	0	29	10
12:15 PM	18	18	1	0	0	2	19	20
12:30 PM	18	11	0	0	0	0	18	11
12:45 PM	22	9	1	0	0	0	23	9
1:00 PM	25	7	0	0	0	0	25	7
1:15 PM	15	14	0	1	1	0	16	15
1:30 PM	26	10	1	0	0	0	27	10
1:45 PM	21	9	1	1	0	0	22	10
2:00 PM	22	7	0	0	0	0	22	7
2:15 PM	18	10	0	0	0	0	18	10
2:30 PM	23	8	1	2	0	0	24	10
2:45 PM	17	2	1	0	0	0	18	2
3:00 PM	14	8	0	0	3	0	17	8
3:15 PM	25	10	0	0	0	0	25	10
3:30 PM	18	11	0	0	1	1	19	12
3:45 PM	17	6	1	0	0	0	18	6
4:00 PM	16	10	0	0	0	0	16	10
4:15 PM	16	4	0	0	0	0	16	4
4:30 PM	29	6	1	0	0	0	30	6
4:45 PM	15	13	0	0	0	0	15	13
5:00 PM	27	10	1	0	0	0	28	10
5:15 PM	18	13	0	0	2	0	20	13
5:30 PM	19	4	0	0	0	0	19	4
5:45 PM	18	10	0	0	0	2	18	12
6:00 PM	10	13	0	0	0	0	10	13
6:15 PM	19	10	0	0	0	0	19	10
6:30 PM	19	8	1	0	1	0	21	8
6:45 PM	14	4	0	0	0	0	14	4
7:00 PM	10	4	0	2	0	0	10	6
7:15 PM	13	7	0	0	0	0	13	7
7:30 PM	9	4	0	0	0	0	9	4
7:45 PM	18	7	0	0	0	0	18	7
Totals	***930***	***425***	***19***	***10***	***12***	***5***	***961***	***440***

Prepared by National Data & Surveying Services

Driveway IN/OUT

Custom ID: 1-002
Location: Commerce Ln & Pilot Travel Center Middle Dwy
City: Orland

Date: 6/23/2021
Day: Wednesday

TIME	Passenger Vehicles		Heavy Trucks		Recreational Vehicles		Total	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
5:00 AM	7	5	0	0	0	0	7	5
5:15 AM	4	5	0	0	0	0	4	5
5:30 AM	5	11	0	0	0	0	5	11
5:45 AM	4	9	0	0	0	0	4	9
6:00 AM	6	7	0	0	0	0	6	7
6:15 AM	2	12	0	1	0	0	2	13
6:30 AM	9	7	0	0	0	0	9	7
6:45 AM	9	7	0	0	0	0	9	7
7:00 AM	10	15	0	1	0	1	10	17
7:15 AM	4	9	0	0	0	0	4	9
7:30 AM	9	12	0	0	0	0	9	12
7:45 AM	9	7	0	0	0	0	9	7
8:00 AM	5	15	0	0	0	0	5	15
8:15 AM	5	17	0	0	0	0	5	17
8:30 AM	1	16	0	0	0	0	1	16
8:45 AM	7	12	0	0	0	0	7	12
9:00 AM	2	8	0	0	0	0	2	8
9:15 AM	10	14	0	0	0	0	10	14
9:30 AM	5	17	0	0	0	0	5	17
9:45 AM	10	13	0	1	0	0	10	14
10:00 AM	9	12	0	1	0	0	9	13
10:15 AM	9	15	0	0	0	0	9	15
10:30 AM	6	13	0	0	0	1	6	14
10:45 AM	5	11	0	0	0	0	5	11
11:00 AM	7	18	0	0	0	0	7	18
11:15 AM	6	16	0	0	0	0	6	16
11:30 AM	8	20	1	0	0	0	9	20
11:45 AM	10	17	0	0	0	0	10	17
12:00 PM	8	21	0	1	2	2	10	24
12:15 PM	14	19	0	0	0	0	14	19
12:30 PM	9	27	0	1	0	0	9	28
12:45 PM	7	24	1	2	0	0	8	26
1:00 PM	9	16	1	1	0	0	10	17
1:15 PM	10	19	1	0	0	0	11	19
1:30 PM	10	26	0	1	0	1	10	28
1:45 PM	4	17	0	0	0	0	4	17
2:00 PM	5	13	0	0	0	0	5	13
2:15 PM	8	22	1	1	0	0	9	23
2:30 PM	4	14	0	0	0	0	4	14
2:45 PM	8	19	0	0	0	0	8	19
3:00 PM	11	22	0	1	0	1	11	24
3:15 PM	8	19	0	0	0	0	8	19
3:30 PM	8	17	0	0	0	1	8	18
3:45 PM	8	17	0	1	0	0	8	18
4:00 PM	10	25	0	0	0	1	10	26
4:15 PM	2	13	0	0	0	0	2	13
4:30 PM	7	20	0	0	0	0	7	20
4:45 PM	7	20	0	1	0	0	7	21
5:00 PM	6	20	0	1	0	0	6	21
5:15 PM	6	14	1	0	0	0	7	14
5:30 PM	4	18	0	1	0	0	4	19
5:45 PM	9	17	0	0	0	0	9	17
6:00 PM	14	14	0	0	0	0	14	14
6:15 PM	8	19	0	0	0	0	8	19
6:30 PM	5	15	0	0	0	0	5	15
6:45 PM	4	19	1	0	0	1	5	20
7:00 PM	8	11	0	0	0	0	8	11
7:15 PM	3	13	0	0	0	0	3	13
7:30 PM	8	11	0	0	0	0	8	11
7:45 PM	6	17	0	0	0	0	6	17
Totals	***421***	***918***	***7***	***16***	***2***	***9***	***430***	***943***

Prepared by National Data & Surveying Services

Driveway IN/OUT

Custom ID: 1-003
Location: Commerce Ln & Pilot Travel Center South Dwy
City: Orland
Date: 6/23/2021
Day: Wednesday

TIME	Passenger Vehicles		Heavy Trucks		Recreational Vehicles		Total	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
5:00 AM	1	0	3	6	0	0	4	6
5:15 AM	0	1	2	10	0	0	2	11
5:30 AM	0	1	2	8	0	0	2	9
5:45 AM	0	0	3	9	0	0	3	9
6:00 AM	0	0	2	10	0	0	2	10
6:15 AM	0	0	4	5	0	0	4	5
6:30 AM	0	0	4	9	0	0	4	9
6:45 AM	0	0	4	13	0	0	4	13
7:00 AM	0	0	2	6	0	0	2	6
7:15 AM	0	1	1	13	0	0	1	14
7:30 AM	0	0	1	11	0	0	1	11
7:45 AM	0	0	2	11	0	0	2	11
8:00 AM	0	1	2	11	0	0	2	12
8:15 AM	0	0	2	12	0	0	2	12
8:30 AM	0	0	3	12	0	0	3	12
8:45 AM	0	1	3	8	0	0	3	9
9:00 AM	1	0	2	14	0	0	3	14
9:15 AM	1	0	4	14	0	0	5	14
9:30 AM	0	1	3	9	0	0	3	10
9:45 AM	0	0	8	9	0	0	8	9
10:00 AM	0	2	1	12	0	0	1	14
10:15 AM	0	1	1	13	0	0	1	14
10:30 AM	0	0	7	13	0	0	7	13
10:45 AM	0	1	8	10	0	0	8	11
11:00 AM	0	2	6	9	0	0	6	11
11:15 AM	0	1	3	13	0	0	3	14
11:30 AM	0	1	7	13	0	0	7	14
11:45 AM	1	1	2	10	0	0	3	11
12:00 PM	0	0	3	17	1	1	4	18
12:15 PM	1	1	6	9	0	0	7	10
12:30 PM	0	1	7	15	0	0	7	16
12:45 PM	1	4	5	14	0	0	6	18
1:00 PM	0	1	6	10	0	0	6	11
1:15 PM	0	0	3	14	0	0	3	14
1:30 PM	0	0	7	12	0	0	7	12
1:45 PM	0	1	4	10	0	0	4	11
2:00 PM	0	0	4	14	1	0	5	14
2:15 PM	1	0	6	11	1	1	8	12
2:30 PM	0	0	3	14	0	0	3	14
2:45 PM	0	0	7	14	0	1	7	15
3:00 PM	0	1	5	14	0	0	5	15
3:15 PM	0	0	4	12	0	0	4	12
3:30 PM	0	1	2	20	0	0	2	21
3:45 PM	0	0	6	5	0	0	6	5
4:00 PM	1	0	4	4	1	0	6	4
4:15 PM	0	1	6	10	0	1	6	12
4:30 PM	2	2	5	9	0	0	7	11
4:45 PM	3	2	4	8	0	0	7	10
5:00 PM	0	0	7	10	0	0	7	10
5:15 PM	0	0	4	12	1	0	5	12
5:30 PM	0	0	8	9	1	1	9	10
5:45 PM	0	0	6	8	0	1	6	9
6:00 PM	0	0	4	10	0	0	4	10
6:15 PM	1	2	4	4	0	0	5	6
6:30 PM	2	2	4	5	0	0	6	7
6:45 PM	0	0	5	6	0	0	5	6
7:00 PM	1	1	4	10	0	0	5	11
7:15 PM	2	1	3	7	0	0	5	8
7:30 PM	1	1	4	8	0	0	5	9
7:45 PM	0	0	6	11	0	0	6	11
Totals	***20***	***37***	***248***	***629***	***6***	***6***	***274***	***672***

Prepared by National Data & Surveying Services

Driveway IN/OUT

Custom ID: 1-004
Location: Pilot Travel Center South East Dwy & CR 13
City: Orland

Date: 6/23/2021
Day: Wednesday

TIME	Passenger Vehicles		Heavy Trucks		Recreational Vehicles		Total	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
5:00 AM	0	0	8	2	0	0	8	2
5:15 AM	1	0	7	0	0	0	8	0
5:30 AM	0	0	4	1	0	0	4	1
5:45 AM	0	0	2	0	0	0	2	0
6:00 AM	0	0	7	1	0	0	7	1
6:15 AM	0	0	1	3	0	0	1	3
6:30 AM	0	0	4	0	0	0	4	0
6:45 AM	0	0	4	2	0	0	4	2
7:00 AM	0	0	8	0	0	0	8	0
7:15 AM	0	0	7	2	0	0	7	2
7:30 AM	0	0	3	1	0	0	3	1
7:45 AM	0	0	6	1	0	0	6	1
8:00 AM	0	0	5	1	0	0	5	1
8:15 AM	0	0	15	0	0	0	15	0
8:30 AM	0	0	9	0	0	0	9	0
8:45 AM	1	0	10	3	0	0	11	3
9:00 AM	0	0	14	3	0	0	14	3
9:15 AM	0	0	9	1	0	0	9	1
9:30 AM	2	0	9	0	0	0	11	0
9:45 AM	0	0	3	2	0	0	3	2
10:00 AM	1	0	13	2	0	0	14	2
10:15 AM	1	0	12	3	0	0	13	3
10:30 AM	2	1	10	2	0	0	12	3
10:45 AM	1	0	6	3	0	0	7	3
11:00 AM	0	0	8	1	0	0	8	1
11:15 AM	1	0	5	3	0	0	6	3
11:30 AM	0	0	4	0	0	0	4	0
11:45 AM	1	0	15	0	0	0	16	0
12:00 PM	0	1	7	0	0	0	7	1
12:15 PM	1	0	14	3	0	0	15	3
12:30 PM	2	0	8	4	0	0	10	4
12:45 PM	1	0	8	1	0	0	9	1
1:00 PM	0	0	6	1	0	0	6	1
1:15 PM	0	0	11	3	0	0	11	3
1:30 PM	0	0	7	0	0	0	7	0
1:45 PM	2	1	13	0	0	0	15	1
2:00 PM	0	0	7	2	0	0	7	2
2:15 PM	0	0	9	1	0	0	9	1
2:30 PM	0	0	11	0	0	0	11	0
2:45 PM	0	0	8	0	0	0	8	0
3:00 PM	0	0	7	3	0	0	7	3
3:15 PM	1	0	9	0	0	0	10	0
3:30 PM	0	0	7	2	0	0	7	2
3:45 PM	0	0	7	0	0	0	7	0
4:00 PM	0	0	4	1	0	0	4	1
4:15 PM	0	0	5	0	0	0	5	0
4:30 PM	0	0	9	0	0	0	9	0
4:45 PM	0	0	3	0	0	0	3	0
5:00 PM	0	0	6	0	0	0	6	0
5:15 PM	1	1	3	0	0	0	4	1
5:30 PM	0	0	4	1	0	0	4	1
5:45 PM	0	0	5	0	0	0	5	0
6:00 PM	0	0	1	0	0	0	1	0
6:15 PM	0	0	9	0	0	0	9	0
6:30 PM	0	0	6	0	0	0	6	0
6:45 PM	0	0	2	2	0	0	2	2
7:00 PM	0	0	11	1	0	0	11	1
7:15 PM	1	1	8	0	0	0	9	1
7:30 PM	0	0	10	1	0	0	10	1
7:45 PM	0	0	6	2	0	0	6	2
Totals	***20***	***5***	***439***	***65***	***0***	***0***	***459***	***70***

Prepared by National Data & Surveying Services

Driveway IN/OUT

Custom ID: 2-001
Location: Park Center Dr & Flying J Travel Center North Dwy
City: Patterson

Date: 6/23/2021
Day: Wednesday

TIME	Passenger Vehicles		Heavy Trucks		Recreational Vehicles		Total	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
5:00 AM	0	0	13	4	0	0	13	4
5:15 AM	0	0	7	5	0	0	7	5
5:30 AM	0	0	5	3	0	0	5	3
5:45 AM	0	0	8	4	0	0	8	4
6:00 AM	2	2	9	3	0	0	11	5
6:15 AM	0	0	11	4	0	0	11	4
6:30 AM	1	0	8	3	0	0	9	3
6:45 AM	1	1	8	1	0	0	9	2
7:00 AM	3	3	8	5	0	0	11	8
7:15 AM	0	0	13	4	0	0	13	4
7:30 AM	2	1	11	2	0	0	13	3
7:45 AM	0	0	3	5	0	0	3	5
8:00 AM	1	0	7	5	0	0	8	5
8:15 AM	0	0	9	5	0	0	9	5
8:30 AM	1	0	18	5	0	0	19	5
8:45 AM	1	0	10	4	0	0	11	4
9:00 AM	0	2	12	8	0	0	12	10
9:15 AM	0	0	12	2	0	0	12	2
9:30 AM	1	0	11	6	0	0	12	6
9:45 AM	1	2	12	9	0	0	13	11
10:00 AM	2	0	16	1	0	0	18	1
10:15 AM	0	1	9	4	0	0	9	5
10:30 AM	0	0	11	3	0	0	11	3
10:45 AM	1	1	19	2	0	0	20	3
11:00 AM	1	0	27	3	0	0	28	3
11:15 AM	1	1	20	7	0	0	21	8
11:30 AM	0	0	24	6	0	0	24	6
11:45 AM	1	1	13	7	0	0	14	8
12:00 PM	1	1	15	10	0	0	16	11
12:15 PM	2	1	12	3	0	0	14	4
12:30 PM	0	0	10	6	0	0	10	6
12:45 PM	1	1	16	3	0	0	17	4
1:00 PM	0	1	13	7	0	0	13	8
1:15 PM	1	1	21	3	0	0	22	4
1:30 PM	5	3	19	5	0	0	24	8
1:45 PM	2	1	23	4	0	0	25	5
2:00 PM	1	0	19	2	0	0	20	2
2:15 PM	1	2	11	3	0	0	12	5
2:30 PM	0	0	17	7	0	0	17	7
2:45 PM	1	0	14	3	0	0	15	3
3:00 PM	2	0	11	6	0	0	13	6
3:15 PM	1	3	13	7	0	0	14	10
3:30 PM	0	0	22	1	0	0	22	1
3:45 PM	0	0	17	4	0	0	17	4
4:00 PM	0	0	14	4	0	0	14	4
4:15 PM	1	0	15	1	0	0	16	1
4:30 PM	1	0	16	2	0	0	17	2
4:45 PM	0	0	14	2	0	0	14	2
5:00 PM	0	0	22	1	0	0	22	1
5:15 PM	1	0	7	1	0	0	8	1
5:30 PM	0	1	16	2	0	0	16	3
5:45 PM	0	0	10	3	0	0	10	3
6:00 PM	0	0	13	7	0	0	13	7
6:15 PM	2	1	12	2	0	0	14	3
6:30 PM	0	0	11	0	0	0	11	0
6:45 PM	0	0	15	3	0	0	15	3
7:00 PM	3	0	16	1	0	0	19	1
7:15 PM	0	0	9	1	0	0	9	1
7:30 PM	1	0	15	5	0	0	16	5
7:45 PM	1	1	12	3	0	0	13	4
Totals	***48***	***32***	***804***	***232***	***0***	***0***	***852***	***264***

Prepared by National Data & Surveying Services

Driveway IN/OUT

Custom ID: 2-002
Location: Park Center Dr & Flying J Travel Center Middle Dwy
City: Patterson
Date: 6/23/2021
Day: Wednesday

TIME	Passenger Vehicles		Heavy Trucks		Recreational Vehicles		Total	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
5:00 AM	0	1	0	9	0	0	0	10
5:15 AM	0	0	0	10	0	0	0	10
5:30 AM	0	1	1	5	0	0	1	6
5:45 AM	0	0	0	6	0	0	0	6
6:00 AM	0	0	0	9	0	0	0	9
6:15 AM	0	0	0	11	0	0	0	11
6:30 AM	0	0	1	9	0	0	1	9
6:45 AM	1	0	1	12	0	0	2	12
7:00 AM	0	2	0	7	0	0	0	9
7:15 AM	0	0	0	7	0	0	0	7
7:30 AM	0	1	0	12	0	0	0	13
7:45 AM	0	0	0	15	0	0	0	15
8:00 AM	0	1	1	6	0	0	1	7
8:15 AM	0	0	1	9	0	0	1	9
8:30 AM	2	2	1	10	0	0	3	12
8:45 AM	0	0	0	8	0	0	0	8
9:00 AM	1	1	0	14	0	0	1	15
9:15 AM	1	1	0	5	0	0	1	6
9:30 AM	0	0	1	5	0	0	1	5
9:45 AM	1	1	0	11	0	0	1	12
10:00 AM	0	0	1	9	0	0	1	9
10:15 AM	0	0	2	14	0	0	2	14
10:30 AM	0	0	0	11	0	0	0	11
10:45 AM	0	0	1	12	0	0	1	12
11:00 AM	0	0	0	9	0	0	0	9
11:15 AM	0	0	0	17	0	0	0	17
11:30 AM	0	1	0	10	0	0	0	11
11:45 AM	1	0	1	12	0	0	2	12
12:00 PM	2	2	1	10	0	0	3	12
12:15 PM	0	0	0	8	0	0	0	8
12:30 PM	1	2	0	4	0	0	1	6
12:45 PM	0	0	2	10	0	0	2	10
1:00 PM	0	0	1	9	0	0	1	9
1:15 PM	0	0	1	11	0	0	1	11
1:30 PM	0	0	1	16	0	0	1	16
1:45 PM	1	2	0	16	0	0	1	18
2:00 PM	0	0	0	12	0	0	0	12
2:15 PM	1	4	0	11	0	0	1	15
2:30 PM	0	0	0	9	0	0	0	9
2:45 PM	2	1	0	14	0	0	2	15
3:00 PM	0	2	0	6	0	0	0	8
3:15 PM	0	0	0	12	0	0	0	12
3:30 PM	0	0	0	15	0	0	0	15
3:45 PM	0	0	1	13	0	0	1	13
4:00 PM	0	1	0	9	0	0	0	10
4:15 PM	1	1	0	11	0	0	1	12
4:30 PM	1	1	0	7	0	0	1	8
4:45 PM	0	0	0	15	0	0	0	15
5:00 PM	0	1	0	15	0	0	0	16
5:15 PM	0	0	0	12	0	0	0	12
5:30 PM	0	0	0	7	0	0	0	7
5:45 PM	0	0	0	10	0	0	0	10
6:00 PM	0	0	0	8	0	0	0	8
6:15 PM	0	0	1	14	0	0	1	14
6:30 PM	0	1	1	5	0	0	1	6
6:45 PM	0	0	0	7	0	0	0	7
7:00 PM	0	1	0	4	0	0	0	5
7:15 PM	0	2	0	11	0	0	0	13
7:30 PM	0	1	0	13	0	0	0	14
7:45 PM	0	0	1	11	0	0	1	11
Totals	***16***	***34***	***22***	***609***	***0***	***0***	***38***	***643***

Prepared by National Data & Surveying Services

Driveway IN/OUT

Custom ID: 2-003
Location: Park Center Dr & Flying J Travel Center South Dwy
City: Patterson
Date: 6/23/2021
Day: Wednesday

TIME	Passenger Vehicles		Heavy Trucks		Recreational Vehicles		Total	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
5:00 AM	4	4	0	0	0	0	4	4
5:15 AM	4	5	0	0	0	0	4	5
5:30 AM	6	5	0	0	0	0	6	5
5:45 AM	8	8	0	0	0	0	8	8
6:00 AM	6	9	0	0	0	0	6	9
6:15 AM	6	3	0	0	0	0	6	3
6:30 AM	1	7	0	0	0	0	1	7
6:45 AM	3	2	0	0	0	0	3	2
7:00 AM	3	7	0	0	0	0	3	7
7:15 AM	4	6	0	0	0	0	4	6
7:30 AM	8	4	1	0	0	0	9	4
7:45 AM	6	4	0	0	0	0	6	4
8:00 AM	12	5	0	0	0	0	12	5
8:15 AM	13	5	1	0	0	0	14	5
8:30 AM	12	15	1	0	0	0	13	15
8:45 AM	4	7	0	0	0	0	4	7
9:00 AM	9	7	1	0	0	0	10	7
9:15 AM	6	10	0	0	0	0	6	10
9:30 AM	5	9	0	0	0	0	5	9
9:45 AM	3	3	0	1	0	0	3	4
10:00 AM	9	8	0	0	0	0	9	8
10:15 AM	6	5	0	0	0	0	6	5
10:30 AM	5	5	0	0	1	0	6	5
10:45 AM	9	7	0	0	0	0	9	7
11:00 AM	4	9	0	0	0	0	4	9
11:15 AM	15	13	2	1	0	0	17	14
11:30 AM	8	13	0	1	0	0	8	14
11:45 AM	10	11	1	0	0	0	11	11
12:00 PM	19	16	2	0	0	0	21	16
12:15 PM	12	15	0	0	0	0	12	15
12:30 PM	12	19	0	1	0	0	12	20
12:45 PM	7	10	0	0	0	0	7	10
1:00 PM	10	10	1	1	0	0	11	11
1:15 PM	10	4	0	0	1	0	11	4
1:30 PM	12	10	1	0	0	0	13	10
1:45 PM	10	7	0	1	0	0	10	8
2:00 PM	11	2	2	0	0	0	13	2
2:15 PM	7	5	0	0	0	0	7	5
2:30 PM	11	7	0	0	0	0	11	7
2:45 PM	13	8	1	0	0	0	14	8
3:00 PM	10	12	1	0	0	0	11	12
3:15 PM	8	2	1	0	0	0	9	2
3:30 PM	13	5	0	0	1	0	14	5
3:45 PM	12	5	1	0	0	0	13	5
4:00 PM	12	7	0	1	0	0	12	8
4:15 PM	13	6	1	0	0	0	14	6
4:30 PM	9	3	0	1	0	0	9	4
4:45 PM	17	8	0	1	0	0	17	9
5:00 PM	8	4	0	0	0	0	8	4
5:15 PM	16	5	1	0	0	0	17	5
5:30 PM	19	15	1	0	0	0	20	15
5:45 PM	15	9	0	0	0	0	15	9
6:00 PM	10	9	0	0	0	0	10	9
6:15 PM	18	5	0	0	0	0	18	5
6:30 PM	9	7	0	0	0	0	9	7
6:45 PM	18	9	0	0	0	0	18	9
7:00 PM	10	10	0	0	0	0	10	10
7:15 PM	17	4	0	0	0	0	17	4
7:30 PM	7	3	0	0	0	0	7	3
7:45 PM	8	7	0	0	0	0	8	7
Totals	***572***	***444***	***20***	***9***	***3***	***0***	***595***	***453***

Prepared by National Data & Surveying Services

Driveway IN/OUT

Custom ID: 2-004
Location: Flying J Travel Center South East Dwy & Sperry Ave
City: Patterson

Date: 6/23/2021
Day: Wednesday

TIME	Passenger Vehicles		Heavy Trucks		Recreational Vehicles		Total	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
5:00 AM	10	9	0	0	0	0	10	9
5:15 AM	18	12	2	1	0	0	20	13
5:30 AM	16	17	0	1	0	0	16	18
5:45 AM	15	12	0	1	0	0	15	13
6:00 AM	18	17	0	0	0	0	18	17
6:15 AM	20	11	0	0	0	0	20	11
6:30 AM	20	16	0	0	0	0	20	16
6:45 AM	18	9	0	0	0	0	18	9
7:00 AM	10	12	0	0	0	0	10	12
7:15 AM	19	9	0	0	0	0	19	9
7:30 AM	24	8	0	0	0	1	24	9
7:45 AM	16	22	0	0	0	0	16	22
8:00 AM	13	13	0	1	0	0	13	14
8:15 AM	17	8	0	1	0	0	17	9
8:30 AM	16	12	0	1	0	0	16	13
8:45 AM	13	7	0	0	0	0	13	7
9:00 AM	16	4	0	0	0	0	16	4
9:15 AM	13	3	0	1	0	0	13	4
9:30 AM	18	17	0	0	0	0	18	17
9:45 AM	29	9	0	0	0	0	29	9
10:00 AM	18	12	0	0	0	0	18	12
10:15 AM	15	9	1	1	0	0	16	10
10:30 AM	14	13	0	0	0	0	14	13
10:45 AM	24	13	0	0	0	1	24	14
11:00 AM	18	10	0	0	0	0	18	10
11:15 AM	17	6	1	1	0	0	18	7
11:30 AM	20	9	0	1	0	0	20	10
11:45 AM	21	12	0	1	0	0	21	13
12:00 PM	19	7	1	2	0	0	20	9
12:15 PM	20	12	0	1	0	0	20	13
12:30 PM	22	14	2	1	0	0	24	15
12:45 PM	15	9	0	2	1	0	16	11
1:00 PM	26	7	1	0	0	0	27	7
1:15 PM	24	10	0	0	0	1	24	11
1:30 PM	12	9	0	0	0	1	12	10
1:45 PM	12	5	1	1	0	0	13	6
2:00 PM	18	13	0	0	0	0	18	13
2:15 PM	7	7	0	0	0	0	7	7
2:30 PM	18	9	0	0	0	0	18	9
2:45 PM	17	6	1	0	0	0	18	6
3:00 PM	20	9	0	1	0	0	20	10
3:15 PM	12	8	0	0	1	0	13	8
3:30 PM	14	11	0	0	0	0	14	11
3:45 PM	16	9	0	0	0	0	16	9
4:00 PM	11	7	0	0	0	1	11	8
4:15 PM	16	9	1	0	0	0	17	9
4:30 PM	27	10	1	0	0	0	28	10
4:45 PM	17	10	0	0	0	0	17	10
5:00 PM	7	9	1	1	0	0	8	10
5:15 PM	18	8	0	0	0	0	18	8
5:30 PM	17	8	0	2	0	0	17	10
5:45 PM	14	10	0	0	0	0	14	10
6:00 PM	13	5	0	0	0	0	13	5
6:15 PM	13	6	0	0	0	0	13	6
6:30 PM	12	9	0	0	0	0	12	9
6:45 PM	20	5	0	0	0	0	20	5
7:00 PM	10	3	1	0	0	0	11	3
7:15 PM	14	8	0	0	0	0	14	8
7:30 PM	18	7	0	0	0	0	18	7
7:45 PM	12	5	0	0	0	0	12	5
Totals	***997***	***575***	***14***	***22***	***2***	***5***	***1013***	***602***

Prepared by National Data & Surveying Services

Driveway IN/OUT

Custom ID: 2-005
Location: Flying J Travel Center South East Dwy 2 & Sperry Ave
City: Patterson

Date: 6/23/2021
Day: Wednesday

TIME	Passenger Vehicles		Heavy Trucks		Recreational Vehicles		Total	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
5:00 AM	2	4	0	0	0	0	2	4
5:15 AM	1	3	0	0	0	0	1	3
5:30 AM	2	3	0	0	0	0	2	3
5:45 AM	1	2	1	0	0	0	2	2
6:00 AM	1	6	0	0	0	0	1	6
6:15 AM	0	9	0	0	0	0	0	9
6:30 AM	0	11	0	0	0	0	0	11
6:45 AM	0	3	0	0	0	0	0	3
7:00 AM	0	2	0	0	0	0	0	2
7:15 AM	0	3	0	0	0	0	0	3
7:30 AM	0	9	0	0	0	0	0	9
7:45 AM	1	8	0	0	0	0	1	8
8:00 AM	2	7	0	0	0	0	2	7
8:15 AM	2	10	1	0	0	0	3	10
8:30 AM	0	7	0	1	0	0	0	8
8:45 AM	0	9	0	0	0	0	0	9
9:00 AM	0	3	0	0	0	0	0	3
9:15 AM	3	10	0	0	0	0	3	10
9:30 AM	2	9	0	0	0	0	2	9
9:45 AM	1	7	0	0	1	0	2	7
10:00 AM	1	15	0	0	0	0	1	15
10:15 AM	1	10	0	0	0	1	1	11
10:30 AM	1	5	0	0	0	0	1	5
10:45 AM	1	10	0	0	0	0	1	10
11:00 AM	0	10	0	0	0	0	0	10
11:15 AM	1	10	0	0	0	0	1	10
11:30 AM	1	8	0	0	0	0	1	8
11:45 AM	2	9	0	0	0	0	2	9
12:00 PM	2	12	0	0	0	0	2	12
12:15 PM	1	9	0	0	0	0	1	9
12:30 PM	0	14	0	0	0	0	0	14
12:45 PM	1	7	2	0	0	0	3	7
1:00 PM	0	20	0	0	0	0	0	20
1:15 PM	1	10	0	1	0	0	1	11
1:30 PM	2	14	0	0	0	0	2	14
1:45 PM	2	10	0	0	0	0	2	10
2:00 PM	0	18	0	1	0	0	0	19
2:15 PM	2	8	0	1	0	0	2	9
2:30 PM	0	10	0	0	0	0	0	10
2:45 PM	2	13	0	1	0	0	2	14
3:00 PM	4	15	0	0	0	0	4	15
3:15 PM	3	14	0	0	0	0	3	14
3:30 PM	3	11	0	0	0	1	3	12
3:45 PM	3	15	0	0	0	0	3	15
4:00 PM	2	14	0	0	0	0	2	14
4:15 PM	1	16	0	0	0	0	1	16
4:30 PM	1	21	0	1	0	0	1	22
4:45 PM	1	12	0	0	0	0	1	12
5:00 PM	0	18	0	0	0	0	0	18
5:15 PM	1	11	0	0	0	0	1	11
5:30 PM	1	16	0	0	0	0	1	16
5:45 PM	2	21	0	0	0	0	2	21
6:00 PM	3	10	0	0	0	0	3	10
6:15 PM	2	15	0	0	0	0	2	15
6:30 PM	2	17	0	0	0	0	2	17
6:45 PM	2	18	0	0	0	0	2	18
7:00 PM	1	13	0	0	0	0	1	13
7:15 PM	1	23	0	0	0	0	1	23
7:30 PM	3	6	0	0	0	0	3	6
7:45 PM	1	17	0	0	0	0	1	17
Totals	***76***	***650***	***4***	***6***	***1***	***2***	***81***	***658***

Prepared by National Data & Surveying Services

Driveway IN/OUT

Custom ID: 3-001
Location: Pilot Gas Station North Dwy & Paso Robles Hwy
City: Lost Hills

Date: 7/1/2021
Day: Thursday

TIME	Passenger Vehicles		Heavy Trucks		Recreational Vehicles		Total	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
5:00 AM	8	2	0	0	0	0	8	2
5:15 AM	10	6	0	0	0	0	10	6
5:30 AM	3	9	0	0	0	0	3	9
5:45 AM	3	7	0	0	0	0	3	7
6:00 AM	8	9	1	0	0	0	9	9
6:15 AM	6	7	0	1	0	0	6	8
6:30 AM	7	6	0	0	0	0	7	6
6:45 AM	6	9	1	0	0	0	7	9
7:00 AM	8	13	0	2	0	0	8	15
7:15 AM	5	8	0	0	0	0	5	8
7:30 AM	14	16	1	0	0	0	15	16
7:45 AM	11	12	0	1	0	0	11	13
8:00 AM	12	22	0	0	0	0	12	22
8:15 AM	6	13	1	0	0	0	7	13
8:30 AM	8	8	0	0	0	1	8	9
8:45 AM	9	12	0	0	0	0	9	12
9:00 AM	6	20	0	0	0	0	6	20
9:15 AM	11	10	0	0	0	0	11	10
9:30 AM	11	14	0	0	0	0	11	14
9:45 AM	16	14	0	0	0	0	16	14
10:00 AM	9	23	0	0	0	0	9	23
10:15 AM	15	13	0	0	0	0	15	13
10:30 AM	13	21	0	0	0	0	13	21
10:45 AM	20	14	0	0	0	0	20	14
11:00 AM	13	24	0	1	0	0	13	25
11:15 AM	18	23	0	0	0	0	18	23
11:30 AM	8	19	0	0	0	0	8	19
11:45 AM	9	22	0	0	1	0	10	22
12:00 PM	19	13	0	0	0	0	19	13
12:15 PM	18	17	0	1	0	0	18	18
12:30 PM	15	21	0	0	0	0	15	21
12:45 PM	24	26	0	0	0	0	24	26
1:00 PM	16	27	1	0	0	1	17	28
1:15 PM	15	19	2	0	0	0	17	19
1:30 PM	15	15	1	2	0	0	16	17
1:45 PM	15	22	0	3	0	0	15	25
2:00 PM	8	26	0	0	0	0	8	26
2:15 PM	19	20	0	0	0	0	19	20
2:30 PM	12	11	0	0	0	0	12	11
2:45 PM	16	18	0	0	0	0	16	18
3:00 PM	7	18	0	0	0	0	7	18
3:15 PM	21	15	0	0	0	0	21	15
3:30 PM	20	28	0	0	0	0	20	28
3:45 PM	18	19	1	1	0	0	19	20
4:00 PM	18	16	0	1	0	0	18	17
4:15 PM	17	30	0	2	0	1	17	33
4:30 PM	12	18	1	0	0	0	13	18
4:45 PM	12	14	0	1	0	0	12	15
5:00 PM	18	21	0	0	0	0	18	21
5:15 PM	15	14	0	0	0	0	15	14
5:30 PM	17	26	1	0	0	0	18	26
5:45 PM	16	24	0	0	0	0	16	24
6:00 PM	13	17	0	0	0	0	13	17
6:15 PM	20	25	0	0	0	0	20	25
6:30 PM	14	20	0	0	0	0	14	20
6:45 PM	16	13	0	0	1	0	17	13
7:00 PM	11	22	0	1	1	1	12	24
7:15 PM	13	16	0	0	0	0	13	16
7:30 PM	14	24	0	0	0	0	14	24
7:45 PM	21	21	2	0	0	0	23	21
Totals	***778***	***1012***	***13***	***17***	***3***	***4***	***794***	***1033***

Prepared by National Data & Surveying Services

Driveway IN/OUT

Custom ID: 3-002
Location: Warren St & Pilot Gas Station West Dwy
City: Lost Hills

Date: 7/1/2021
Day: Thursday

TIME	Passenger Vehicles		Heavy Trucks		Recreational Vehicles		Total	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
5:00 AM	3	5	1	0	0	0	4	5
5:15 AM	7	5	0	0	0	0	7	5
5:30 AM	4	3	0	0	0	0	4	3
5:45 AM	8	3	1	0	0	0	9	3
6:00 AM	8	4	0	0	0	0	8	4
6:15 AM	6	1	0	0	0	0	6	1
6:30 AM	5	8	0	0	0	0	5	8
6:45 AM	5	5	0	0	0	0	5	5
7:00 AM	7	3	0	0	0	1	7	4
7:15 AM	8	3	1	0	0	0	9	3
7:30 AM	6	5	0	0	0	0	6	5
7:45 AM	11	2	0	1	0	0	11	3
8:00 AM	6	6	0	0	0	0	6	6
8:15 AM	8	2	1	0	1	0	10	2
8:30 AM	12	7	0	1	0	0	12	8
8:45 AM	9	3	0	1	0	0	9	4
9:00 AM	17	8	0	0	0	0	17	8
9:15 AM	12	7	0	0	0	0	12	7
9:30 AM	13	10	0	0	0	0	13	10
9:45 AM	9	10	0	0	0	0	9	10
10:00 AM	17	5	0	0	0	0	17	5
10:15 AM	18	13	0	0	0	0	18	13
10:30 AM	13	8	0	0	0	0	13	8
10:45 AM	10	11	0	0	0	0	10	11
11:00 AM	26	8	1	0	0	0	27	8
11:15 AM	21	11	1	0	0	0	22	11
11:30 AM	14	13	0	1	0	0	14	14
11:45 AM	13	9	0	0	0	1	13	10
12:00 PM	13	7	0	0	0	0	13	7
12:15 PM	17	16	1	0	0	0	18	16
12:30 PM	17	13	0	0	1	0	18	13
12:45 PM	10	10	0	0	0	0	10	10
1:00 PM	13	12	1	0	0	0	14	12
1:15 PM	7	6	1	2	0	0	8	8
1:30 PM	13	10	1	0	0	0	14	10
1:45 PM	12	11	0	0	0	0	12	11
2:00 PM	14	4	0	0	0	0	14	4
2:15 PM	6	1	0	0	0	0	6	1
2:30 PM	8	10	0	0	0	0	8	10
2:45 PM	20	9	0	0	0	0	20	9
3:00 PM	13	13	0	0	0	0	13	13
3:15 PM	13	9	0	0	0	0	13	9
3:30 PM	17	10	0	0	0	0	17	10
3:45 PM	4	8	1	0	1	0	6	8
4:00 PM	7	4	2	0	0	0	9	4
4:15 PM	5	8	0	0	1	0	6	8
4:30 PM	17	8	1	0	0	0	18	8
4:45 PM	12	10	0	0	0	0	12	10
5:00 PM	13	8	0	1	0	1	13	10
5:15 PM	13	11	0	0	0	0	13	11
5:30 PM	11	6	0	0	0	0	11	6
5:45 PM	15	7	1	1	0	0	16	8
6:00 PM	15	9	0	1	0	0	15	10
6:15 PM	8	8	0	0	0	0	8	8
6:30 PM	13	5	0	0	0	0	13	5
6:45 PM	10	11	1	0	0	0	11	11
7:00 PM	14	10	0	0	0	0	14	10
7:15 PM	20	7	0	0	0	1	20	8
7:30 PM	15	6	0	0	0	0	15	6
7:45 PM	12	5	0	0	0	0	12	5
Totals	***693***	***450***	***16***	***9***	***4***	***4***	***713***	***463***

Prepared by National Data & Surveying Services

Driveway IN/OUT

Custom ID: 3-003
Location: Warren St & Pilot Travel Center West North Dwy
City: Lost Hills

Date: 7/1/2021
Day: Thursday

TIME	Passenger Vehicles		Heavy Trucks		Recreational Vehicles		Total	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
5:00 AM	0	0	0	5	0	0	0	5
5:15 AM	0	0	0	4	0	0	0	4
5:30 AM	0	0	0	2	0	0	0	2
5:45 AM	0	0	0	8	0	0	0	8
6:00 AM	0	0	0	3	0	0	0	3
6:15 AM	0	0	0	5	0	0	0	5
6:30 AM	0	0	0	4	0	0	0	4
6:45 AM	0	1	0	5	0	0	0	6
7:00 AM	0	0	0	6	0	0	0	6
7:15 AM	0	0	0	3	0	0	0	3
7:30 AM	0	0	0	3	0	0	0	3
7:45 AM	0	0	0	5	0	0	0	5
8:00 AM	0	1	1	4	0	0	1	5
8:15 AM	0	0	0	6	0	0	0	6
8:30 AM	0	0	0	6	0	0	0	6
8:45 AM	0	0	0	4	0	0	0	4
9:00 AM	0	1	0	3	0	0	0	4
9:15 AM	1	1	0	2	0	0	1	3
9:30 AM	0	2	0	5	0	0	0	7
9:45 AM	0	0	0	3	0	0	0	3
10:00 AM	0	3	0	4	0	0	0	7
10:15 AM	0	1	0	2	0	0	0	3
10:30 AM	0	0	0	6	0	0	0	6
10:45 AM	0	1	0	8	0	0	0	9
11:00 AM	1	1	0	1	0	0	1	2
11:15 AM	0	3	0	2	0	0	0	5
11:30 AM	0	1	0	3	0	0	0	4
11:45 AM	0	1	0	3	0	0	0	4
12:00 PM	2	2	0	3	0	0	2	5
12:15 PM	0	2	0	5	0	0	0	7
12:30 PM	3	2	0	2	0	0	3	4
12:45 PM	0	0	0	3	0	0	0	3
1:00 PM	0	1	0	3	0	0	0	4
1:15 PM	0	0	0	5	0	0	0	5
1:30 PM	1	0	0	2	0	0	1	2
1:45 PM	1	1	0	4	0	0	1	5
2:00 PM	0	3	1	3	0	0	1	6
2:15 PM	1	0	0	4	0	0	1	4
2:30 PM	1	3	0	7	0	0	1	10
2:45 PM	0	1	0	4	0	0	0	5
3:00 PM	0	2	0	2	0	0	0	4
3:15 PM	0	1	0	3	0	0	0	4
3:30 PM	0	0	0	5	0	0	0	5
3:45 PM	0	0	0	8	0	0	0	8
4:00 PM	0	1	0	5	0	0	0	6
4:15 PM	0	1	0	5	0	0	0	6
4:30 PM	1	2	0	2	0	0	1	4
4:45 PM	1	0	0	6	0	0	1	6
5:00 PM	1	2	0	5	0	0	1	7
5:15 PM	0	0	0	3	0	0	0	3
5:30 PM	1	1	0	6	0	0	1	7
5:45 PM	0	0	0	2	0	0	0	2
6:00 PM	0	0	0	4	0	0	0	4
6:15 PM	1	2	0	7	0	0	1	9
6:30 PM	1	1	0	4	0	0	1	5
6:45 PM	0	0	0	5	0	0	0	5
7:00 PM	1	1	0	5	0	0	1	6
7:15 PM	0	1	0	3	0	0	0	4
7:30 PM	0	1	0	6	0	0	0	7
7:45 PM	1	1	0	5	0	0	1	6
Totals	***19***	***49***	***2***	***251***	***0***	***0***	***21***	***300***

Prepared by National Data & Surveying Services

Driveway IN/OUT

Custom ID: 3-004
Location: Warren St & Pilot Travel Center West Middle Dwy
City: Lost Hills

Date: 7/1/2021
Day: Thursday

TIME	Passenger Vehicles		Heavy Trucks		Recreational Vehicles		Total	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
5:00 AM	0	0	0	6	0	0	0	6
5:15 AM	0	1	0	5	0	0	0	6
5:30 AM	0	0	0	4	0	0	0	4
5:45 AM	0	0	1	8	0	0	1	8
6:00 AM	0	0	0	2	0	0	0	2
6:15 AM	0	0	0	3	0	0	0	3
6:30 AM	0	1	0	5	0	0	0	6
6:45 AM	0	1	1	4	0	0	1	5
7:00 AM	0	0	0	7	0	0	0	7
7:15 AM	0	0	0	9	0	0	0	9
7:30 AM	0	0	0	4	0	0	0	4
7:45 AM	0	1	1	5	0	0	1	6
8:00 AM	1	0	0	5	0	0	1	5
8:15 AM	0	0	0	4	0	0	0	4
8:30 AM	0	1	0	5	0	1	0	7
8:45 AM	0	0	1	6	0	1	1	7
9:00 AM	0	1	0	4	0	0	0	5
9:15 AM	0	0	1	2	0	0	1	2
9:30 AM	0	2	0	2	0	0	0	4
9:45 AM	2	0	0	2	0	0	2	2
10:00 AM	1	0	0	7	0	0	1	7
10:15 AM	0	1	0	2	0	0	0	3
10:30 AM	0	0	0	6	0	0	0	6
10:45 AM	0	1	0	7	0	0	0	8
11:00 AM	0	0	0	7	0	0	0	7
11:15 AM	1	0	0	5	0	0	1	5
11:30 AM	2	0	0	0	0	0	2	0
11:45 AM	1	0	0	4	0	0	1	4
12:00 PM	2	1	0	2	0	0	2	3
12:15 PM	1	1	0	8	0	0	1	9
12:30 PM	0	4	0	5	0	0	0	9
12:45 PM	1	1	1	5	0	0	2	6
1:00 PM	0	1	0	4	0	0	0	5
1:15 PM	0	0	1	5	0	0	1	5
1:30 PM	0	1	0	5	0	0	0	6
1:45 PM	0	1	1	6	0	0	1	7
2:00 PM	0	3	0	3	0	0	0	6
2:15 PM	0	2	0	3	0	0	0	5
2:30 PM	1	1	0	2	0	1	1	4
2:45 PM	1	1	0	3	0	0	1	4
3:00 PM	2	4	0	4	0	0	2	8
3:15 PM	0	0	1	6	0	0	1	6
3:30 PM	0	0	0	8	0	0	0	8
3:45 PM	1	0	0	5	0	0	1	5
4:00 PM	0	0	1	9	0	0	1	9
4:15 PM	1	1	0	3	0	0	1	4
4:30 PM	0	0	1	4	0	0	1	4
4:45 PM	2	3	0	9	0	0	2	12
5:00 PM	0	2	0	3	0	0	0	5
5:15 PM	0	1	0	3	0	0	0	4
5:30 PM	0	2	1	6	0	0	1	8
5:45 PM	0	1	1	3	0	0	1	4
6:00 PM	0	0	0	5	0	0	0	5
6:15 PM	1	0	0	5	0	0	1	5
6:30 PM	0	0	0	2	0	0	0	2
6:45 PM	0	0	0	6	0	0	0	6
7:00 PM	0	0	0	4	0	0	0	4
7:15 PM	1	0	0	5	0	0	1	5
7:30 PM	0	0	0	1	0	0	0	1
7:45 PM	0	1	0	3	0	0	0	4
Totals	***22***	***42***	***13***	***275***	***0***	***3***	***35***	***320***

Prepared by National Data & Surveying Services

Driveway IN/OUT

Custom ID: 3-005
Location: Warren St & Pilot Travel Center West South Dwy
City: Lost Hills

Date: 7/1/2021
Day: Thursday

TIME	Passenger Vehicles		Heavy Trucks		Recreational Vehicles		Total	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
5:00 AM	0	2	8	4	0	0	8	6
5:15 AM	0	0	3	1	0	0	3	1
5:30 AM	0	0	3	3	0	0	3	3
5:45 AM	1	0	1	1	0	0	2	1
6:00 AM	0	0	3	2	0	0	3	2
6:15 AM	0	0	5	4	0	0	5	4
6:30 AM	0	0	5	0	0	0	5	0
6:45 AM	0	0	5	3	0	0	5	3
7:00 AM	0	1	4	2	0	0	4	3
7:15 AM	0	1	4	6	0	0	4	7
7:30 AM	0	0	5	5	0	0	5	5
7:45 AM	0	0	5	2	0	0	5	2
8:00 AM	0	0	5	6	0	0	5	6
8:15 AM	0	1	4	4	2	0	6	5
8:30 AM	1	0	5	1	0	0	6	1
8:45 AM	1	1	3	0	0	0	4	1
9:00 AM	1	0	1	4	0	0	2	4
9:15 AM	0	1	3	4	0	0	3	5
9:30 AM	3	1	2	3	0	0	5	4
9:45 AM	0	0	5	3	0	0	5	3
10:00 AM	0	0	8	2	0	0	8	2
10:15 AM	1	0	10	3	0	0	11	3
10:30 AM	0	0	1	2	0	0	1	2
10:45 AM	1	1	6	3	0	0	7	4
11:00 AM	0	1	5	2	0	0	5	3
11:15 AM	0	0	2	3	0	0	2	3
11:30 AM	0	1	1	2	0	0	1	3
11:45 AM	0	1	4	2	0	0	4	3
12:00 PM	0	1	3	3	0	0	3	4
12:15 PM	0	2	11	1	0	0	11	3
12:30 PM	1	2	8	0	0	0	9	2
12:45 PM	1	1	10	4	0	0	11	5
1:00 PM	2	1	3	4	0	0	5	5
1:15 PM	2	0	8	1	1	0	11	1
1:30 PM	1	0	4	5	0	0	5	5
1:45 PM	1	1	2	7	0	0	3	8
2:00 PM	0	2	3	1	0	0	3	3
2:15 PM	1	1	7	3	1	1	9	5
2:30 PM	0	1	5	5	0	0	5	6
2:45 PM	0	1	5	7	0	0	5	8
3:00 PM	2	0	5	5	0	0	7	5
3:15 PM	0	0	9	3	0	0	9	3
3:30 PM	0	1	7	1	0	0	7	2
3:45 PM	0	0	7	3	0	0	7	3
4:00 PM	0	0	6	6	0	0	6	6
4:15 PM	0	1	3	3	0	0	3	4
4:30 PM	1	1	5	1	0	0	6	2
4:45 PM	1	2	6	4	0	0	7	6
5:00 PM	0	0	6	5	0	0	6	5
5:15 PM	1	0	8	3	0	0	9	3
5:30 PM	0	0	5	2	0	0	5	2
5:45 PM	0	1	13	1	0	0	13	2
6:00 PM	0	0	6	2	0	0	6	2
6:15 PM	0	0	3	4	0	0	3	4
6:30 PM	0	1	2	2	0	0	2	3
6:45 PM	0	1	3	6	0	0	3	7
7:00 PM	0	0	3	0	0	0	3	0
7:15 PM	0	0	1	3	0	0	1	3
7:30 PM	1	1	5	2	0	0	6	3
7:45 PM	0	0	4	1	0	0	4	1
Totals	***24***	***34***	***292***	***175***	***4***	***1***	***320***	***210***

Prepared by National Data & Surveying Services

Driveway IN/OUT

Custom ID: 3-006
Location: Aloma St & Pilot Travel Center East Dwy
City: Lost Hills

Date: 7/1/2021
Day: Thursday

TIME	Passenger Vehicles		Heavy Trucks		Recreational Vehicles		Total	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
5:00 AM	1	0	5	1	0	0	6	1
5:15 AM	1	0	9	0	0	0	10	0
5:30 AM	0	0	6	1	0	0	6	1
5:45 AM	0	0	9	4	0	0	9	4
6:00 AM	0	1	8	0	0	0	8	1
6:15 AM	0	0	8	1	0	0	8	1
6:30 AM	1	0	6	1	0	0	7	1
6:45 AM	1	1	7	2	0	0	8	3
7:00 AM	1	0	14	2	0	0	15	2
7:15 AM	1	0	7	0	0	0	8	0
7:30 AM	0	0	9	2	0	0	9	2
7:45 AM	2	1	5	0	0	0	7	1
8:00 AM	1	1	7	0	0	0	8	1
8:15 AM	3	1	7	3	0	0	10	4
8:30 AM	2	2	6	2	0	0	8	4
8:45 AM	1	1	9	2	0	0	10	3
9:00 AM	3	1	7	0	0	0	10	1
9:15 AM	2	0	6	1	0	0	8	1
9:30 AM	2	2	10	0	0	0	12	2
9:45 AM	1	1	5	1	0	0	6	2
10:00 AM	4	3	8	0	0	0	12	3
10:15 AM	3	2	5	3	0	0	8	5
10:30 AM	2	2	6	3	0	0	8	5
10:45 AM	3	1	9	1	0	0	12	2
11:00 AM	3	1	6	2	0	0	9	3
11:15 AM	1	1	2	2	1	0	4	3
11:30 AM	3	1	4	0	0	0	7	1
11:45 AM	3	1	11	1	0	0	14	2
12:00 PM	3	2	4	1	0	0	7	3
12:15 PM	2	0	10	1	0	0	12	1
12:30 PM	4	0	5	1	0	0	9	1
12:45 PM	3	2	8	4	0	0	11	6
1:00 PM	2	2	5	2	0	0	7	4
1:15 PM	3	2	10	2	0	0	13	4
1:30 PM	0	1	9	1	0	0	9	2
1:45 PM	3	0	8	1	0	0	11	1
2:00 PM	4	0	5	1	1	1	10	2
2:15 PM	4	1	10	1	0	0	14	2
2:30 PM	7	1	11	1	0	0	18	2
2:45 PM	0	0	11	3	0	0	11	3
3:00 PM	3	0	8	1	0	0	11	1
3:15 PM	1	0	14	2	0	0	15	2
3:30 PM	5	5	8	1	0	0	13	6
3:45 PM	0	0	7	0	0	0	7	0
4:00 PM	0	1	8	1	0	0	8	2
4:15 PM	3	0	11	2	0	0	14	2
4:30 PM	2	1	13	0	0	0	15	1
4:45 PM	3	1	13	0	0	0	16	1
5:00 PM	3	3	10	1	0	0	13	4
5:15 PM	3	1	5	4	0	0	8	5
5:30 PM	2	0	6	0	0	0	8	0
5:45 PM	3	1	4	2	0	0	7	3
6:00 PM	2	1	8	3	0	0	10	4
6:15 PM	1	1	12	2	0	0	13	3
6:30 PM	1	1	11	0	0	0	12	1
6:45 PM	2	2	11	2	0	0	13	4
7:00 PM	1	0	4	0	0	0	5	0
7:15 PM	2	1	6	0	0	0	8	1
7:30 PM	4	2	7	0	0	0	11	2
7:45 PM	2	0	4	1	0	0	6	1
Totals	***123***	***56***	***467***	***76***	***2***	***1***	***592***	***133***

APPENDIX D

INTERSECTION ANALYSIS WORKSHEETS

APPENDIX D-1

INTERSECTION ANALYSIS WORKSHEETS – EXISTING CONDITIONS

Perris Travel Center Project

Vistro File: K:\...\Perris TC_AM.vistro
Report File: K:\...\1 EX AM.pdf

Scenario 1 Ex AM
4/2/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-215 SB Ramps at Ethanac Road	Signalized	HCM 6th Edition	WB Left	0.776	18.7	B
2	I-215 NB Ramps at Ethanac Road	Signalized	HCM 6th Edition	EB Left	0.660	22.2	C
3	Ethanac Road at Encanto Drive	Two-way stop	HCM 6th Edition	NB Left	0.511	58.9	F
4	Trumble Road at Ethanac Road	Signalized	HCM 6th Edition	EB Left	0.475	20.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-215 SB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	18.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.776

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			Yes		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	0	0	0	110	1	248	0	672	512	132	595	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	110	1	248	0	672	512	132	595	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9090	0.9090	0.9090	1.0000	0.9090	0.9090	0.9090	0.9090	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	30	0	68	0	185	141	36	164	0
Total Analysis Volume [veh/h]	0	0	0	121	1	273	0	739	563	145	655	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	10	0	0	10	0	5	10	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	23	0	0	14	0	53	67	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	14	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	C	R	L	C
C, Cycle Length [s]		90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		17	17	52	52	9	65
g / C, Green / Cycle		0.19	0.19	0.57	0.57	0.10	0.72
(v / s)_i Volume / Saturation Flow Rate		0.07	0.17	0.39	0.35	0.08	0.18
s, saturation flow rate [veh/h]		1810	1615	1900	1615	1810	3618
c, Capacity [veh/h]		344	307	1089	926	187	2609
d1, Uniform Delay [s]		31.66	35.53	13.40	12.57	39.34	4.28
k, delay calibration		0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.62	8.68	3.40	2.97	6.76	0.23
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.35	0.89	0.68	0.61	0.78	0.25
d, Delay for Lane Group [s/veh]		32.28	44.21	16.81	15.54	46.10	4.51
Lane Group LOS		C	D	B	B	D	A
Critical Lane Group		No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		2.33	6.45	10.41	7.47	3.43	1.72
50th-Percentile Queue Length [ft/ln]		58.27	161.14	260.25	186.65	85.85	42.97
95th-Percentile Queue Length [veh/ln]		4.20	10.61	15.70	11.95	6.18	3.09
95th-Percentile Queue Length [ft/ln]		104.89	265.23	392.53	298.68	154.53	77.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	32.28	32.28	44.21	0.00	16.81	15.54	46.10	4.51	0.00
Movement LOS				C	C	D		B	B	D	A	
d_A, Approach Delay [s/veh]	0.00			40.53			16.26			12.04		
Approach LOS	A			D			B			B		
d_I, Intersection Delay [s/veh]	18.75											
Intersection LOS	B											
Intersection V/C	0.776											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersectio	0.000	2.070	0.000	2.537
Crosswalk LOS	F	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	422	222	1400
d_b, Bicycle Delay [s]	45.00	28.01	35.56	4.05
l_b,int, Bicycle LOS Score for Intersection	4.132	2.211	3.708	2.220
Bicycle LOS	D	B	D	B

Sequence

Ring 1	2	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: I-215 NB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	22.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.660

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	247	0	118	0	0	0	221	560	0	0	473	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	247	0	118	0	0	0	221	560	0	0	473	170
Peak Hour Factor	0.9380	0.9380	0.9380	1.0000	1.0000	1.0000	0.9380	0.9380	1.0000	1.0000	0.9380	0.9380
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	0	31	0	0	0	59	149	0	0	126	45
Total Analysis Volume [veh/h]	263	0	126	0	0	0	236	597	0	0	504	181
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	1.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	0	0	0	5	10	0	0	10	0
Maximum Green [s]	0	30	0	0	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	25	0	0	0	0	42	65	0	0	23	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R		L	C	C
C, Cycle Length [s]	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15		14	67	49
g / C, Green / Cycle	0.17	0.17		0.16	0.74	0.54
(v / s)_i Volume / Saturation Flow Rate	0.15	0.08		0.13	0.31	0.38
s, saturation flow rate [veh/h]	1810	1615		1810	1900	1815
c, Capacity [veh/h]	308	275		283	1408	981
d1, Uniform Delay [s]	36.27	33.62		36.85	4.40	15.26
k, delay calibration	0.11	0.11		0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	6.74	1.19		6.42	0.94	4.12
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.46		0.84	0.42	0.70
d, Delay for Lane Group [s/veh]	43.01	34.81		43.27	5.34	19.38
Lane Group LOS	D	C		D	A	B
Critical Lane Group	Yes	No		Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	6.08	2.53		5.45	3.49	10.56
50th-Percentile Queue Length [ft/ln]	151.88	63.33		136.32	87.17	263.94
95th-Percentile Queue Length [veh/ln]	10.12	4.56		9.28	6.28	15.89
95th-Percentile Queue Length [ft/ln]	252.94	114.00		232.06	156.90	397.16

Movement, Approach, & Intersection Results

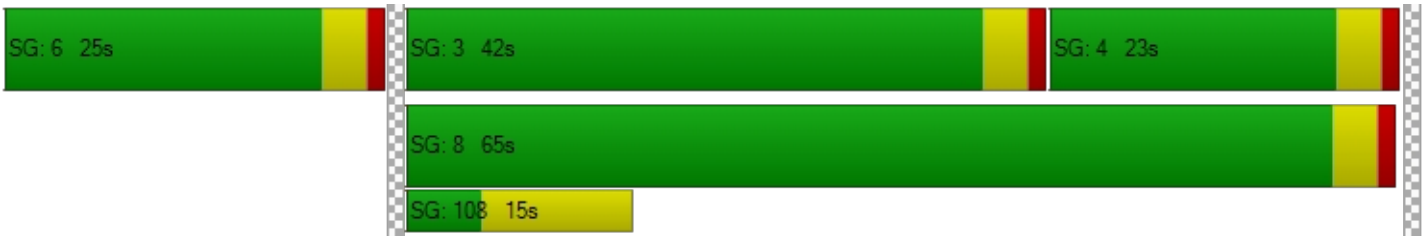
d_M, Delay for Movement [s/veh]	43.01	43.01	34.81	0.00	0.00	0.00	43.27	5.34	0.00	0.00	19.38	19.38
Movement LOS	D	D	C				D	A			B	B
d_A, Approach Delay [s/veh]	40.36			0.00			16.08			19.38		
Approach LOS	D			A			B			B		
d_I, Intersection Delay [s/veh]	22.22											
Intersection LOS	C											
Intersection V/C	0.660											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.068	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	467	0	1356	422
d_b, Bicycle Delay [s]	26.45	45.00	4.67	28.01
l_b,int, Bicycle LOS Score for Intersection	2.201	4.132	2.934	2.690
Bicycle LOS	B	D	C	B

Sequence

Ring 1	-	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Ethanac Road at Encanto Drive

Control Type:	Two-way stop	Delay (sec / veh):	58.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.511

Intersection Setup

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	59	28	621	56	40	586
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	59	28	621	56	40	586
Peak Hour Factor	0.8840	0.8840	0.8840	0.8840	0.8840	0.8840
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	8	176	16	11	166
Total Analysis Volume [veh/h]	67	32	702	63	45	663
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.51	0.08	0.01	0.00	0.05	0.01
d_M, Delay for Movement [s/veh]	58.92	39.97	0.00	0.00	9.43	0.00
Movement LOS	F	E	A	A	A	A
95th-Percentile Queue Length [veh/ln]	3.13	3.13	0.00	0.00	0.17	0.00
95th-Percentile Queue Length [ft/ln]	78.26	78.26	0.00	0.00	4.15	0.00
d_A, Approach Delay [s/veh]	52.79		0.00		0.60	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	3.59					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 4: Trumble Road at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	20.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.475

Intersection Setup

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	46	10	29	33	11	81	61	566	7	36	502	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	10	29	33	11	81	61	566	7	36	502	14
Peak Hour Factor	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	3	9	10	3	24	18	168	2	11	149	4
Total Analysis Volume [veh/h]	55	12	35	39	13	96	73	674	8	43	598	17
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	10	0	7	10	0	7	10	0	7	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	19	0	11	19	0	28	49	0	11	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
l2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	3.7	0.0	2.0	3.7	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	5.70	5.70	4.00	5.70
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	3.70	3.70	2.00	3.70
g_i, Effective Green Time [s]	5	10	4	9	6	53	53	5	52
g / C, Green / Cycle	0.06	0.11	0.05	0.10	0.07	0.59	0.59	0.05	0.58
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.02	0.07	0.04	0.35	0.00	0.02	0.33
s, saturation flow rate [veh/h]	1810	1679	1810	1644	1810	1900	1615	1810	1891
c, Capacity [veh/h]	105	191	88	172	121	1120	952	93	1085
d1, Uniform Delay [s]	41.16	36.35	41.62	38.66	40.84	11.76	7.63	41.48	12.11
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.95	0.66	3.46	3.86	4.77	2.40	0.02	3.54	2.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.25	0.44	0.64	0.60	0.60	0.01	0.46	0.57
d, Delay for Lane Group [s/veh]	45.11	37.01	45.09	42.52	45.61	14.16	7.64	45.01	14.25
Lane Group LOS	D	D	D	D	D	B	A	D	B
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.29	0.97	0.92	2.46	1.72	8.45	0.06	1.01	7.70
50th-Percentile Queue Length [ft/ln]	32.19	24.18	22.95	61.55	42.93	211.17	1.59	25.23	192.53
95th-Percentile Queue Length [veh/ln]	2.32	1.74	1.65	4.43	3.09	13.21	0.11	1.82	12.25
95th-Percentile Queue Length [ft/ln]	57.95	43.52	41.30	110.79	77.27	330.33	2.86	45.41	306.31

Movement, Approach, & Intersection Results

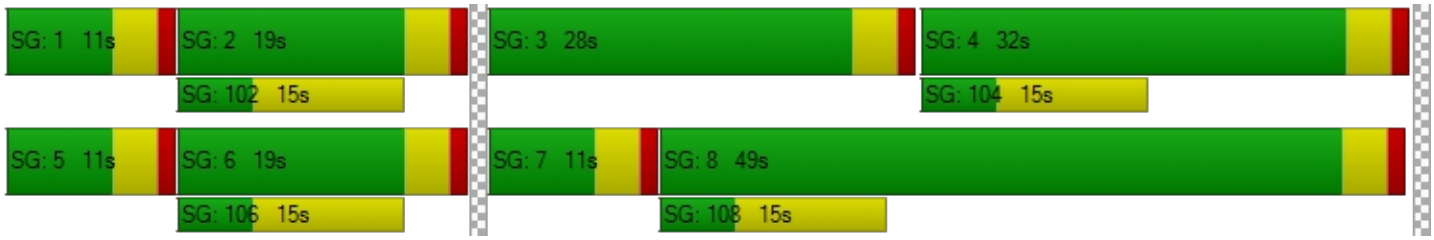
d_M, Delay for Movement [s/veh]	45.11	37.01	37.01	45.09	42.52	42.52	45.61	14.16	7.64	45.01	14.25	14.25
Movement LOS	D	D	D	D	D	D	D	B	A	D	B	B
d_A, Approach Delay [s/veh]	41.38			43.20			17.13			16.26		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	20.60											
Intersection LOS	C											
Intersection V/C	0.475											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	1.996	2.023	2.499	2.399
Crosswalk LOS	A	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	333	1000	622
d_b, Bicycle Delay [s]	31.25	31.25	11.25	21.36
l_b,int, Bicycle LOS Score for Intersection	1.728	1.804	2.805	2.645
Bicycle LOS	A	A	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Perris Travel Center Project

Vistro File: K:\...\Perris TC_PM.vistro
Report File: K:\...\1 EX PM.pdf

Scenario 1 EX PM
4/2/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-215 SB Ramps at Ethanac Road	Signalized	HCM 6th Edition	WB Left	0.805	21.8	C
2	I-215 NB Ramps at Ethanac Road	Signalized	HCM 6th Edition	EB Left	0.899	29.0	C
3	Ethanac Road at Encanto Drive	Two-way stop	HCM 6th Edition	NB Left	0.492	67.8	F
4	Trumble Road at Ethanac Road	Signalized	HCM 6th Edition	NB Left	0.618	18.9	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-215 SB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	21.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.805

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			Yes		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	0	0	0	272	5	344	0	648	319	131	745	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	272	5	344	0	648	319	131	745	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9460	0.9460	0.9460	1.0000	0.9460	0.9460	0.9460	0.9460	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	72	1	91	0	171	84	35	197	0
Total Analysis Volume [veh/h]	0	0	0	288	5	364	0	685	337	138	788	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	10	0	0	10	0	5	10	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	30	0	0	29	0	31	60	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	14	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	C	R	L	C
C, Cycle Length [s]		90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		23	23	47	47	9	59
g / C, Green / Cycle		0.25	0.25	0.52	0.52	0.10	0.66
(v / s)_i Volume / Saturation Flow Rate		0.16	0.23	0.36	0.21	0.08	0.22
s, saturation flow rate [veh/h]		1811	1615	1900	1615	1810	3618
c, Capacity [veh/h]		453	404	983	836	179	2391
d1, Uniform Delay [s]		30.18	32.66	16.39	13.24	39.55	6.62
k, delay calibration		0.11	0.21	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		1.55	13.26	4.08	1.45	6.84	0.37
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.65	0.90	0.70	0.40	0.77	0.33
d, Delay for Lane Group [s/veh]		31.73	45.92	20.47	14.69	46.39	6.99
Lane Group LOS		C	D	C	B	D	A
Critical Lane Group		No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		5.74	8.94	10.92	4.23	3.28	2.94
50th-Percentile Queue Length [ft/ln]		143.50	223.56	272.97	105.84	81.97	73.50
95th-Percentile Queue Length [veh/ln]		9.67	13.85	16.34	7.61	5.90	5.29
95th-Percentile Queue Length [ft/ln]		241.73	346.17	408.44	190.20	147.54	132.29

Movement, Approach, & Intersection Results

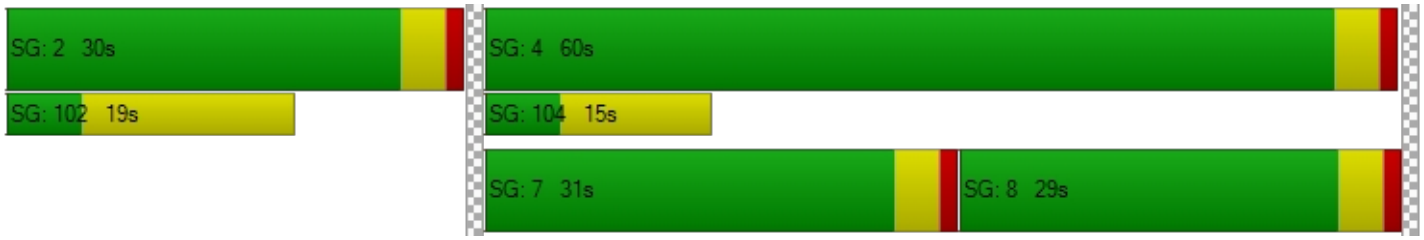
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	31.73	31.73	45.92	0.00	20.47	14.69	46.39	6.99	0.00
Movement LOS				C	C	D		C	B	D	A	
d_A, Approach Delay [s/veh]	0.00			39.59			18.56			12.86		
Approach LOS	A			D			B			B		
d_I, Intersection Delay [s/veh]	21.84											
Intersection LOS	C											
Intersection V/C	0.805											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersectio	0.000	2.155	0.000	2.595
Crosswalk LOS	F	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	578	556	1244
d_b, Bicycle Delay [s]	45.00	22.76	23.47	6.42
l_b,int, Bicycle LOS Score for Intersection	4.132	2.644	3.246	2.324
Bicycle LOS	D	B	C	B

Sequence

Ring 1	2	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: I-215 NB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	29.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.899

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	441	2	195	0	0	0	224	660	0	0	440	173
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	441	2	195	0	0	0	224	660	0	0	440	173
Peak Hour Factor	0.9570	0.9570	0.9570	1.0000	1.0000	1.0000	0.9570	0.9570	1.0000	1.0000	0.9570	0.9570
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	115	1	51	0	0	0	59	172	0	0	115	45
Total Analysis Volume [veh/h]	461	2	204	0	0	0	234	690	0	0	460	181
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	0	0	0	5	10	0	0	10	0
Maximum Green [s]	0	30	0	0	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	37	0	0	0	0	39	53	0	0	14	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R		L	C	C
C, Cycle Length [s]	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	26	26		14	56	39
g / C, Green / Cycle	0.28	0.28		0.15	0.63	0.43
(v / s)_i Volume / Saturation Flow Rate	0.26	0.13		0.13	0.36	0.35
s, saturation flow rate [veh/h]	1810	1615		1810	1900	1810
c, Capacity [veh/h]	513	458		280	1193	775
d1, Uniform Delay [s]	31.05	26.45		36.92	9.80	22.77
k, delay calibration	0.23	0.11		0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	11.85	0.68		6.47	2.05	9.84
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.45		0.84	0.58	0.83
d, Delay for Lane Group [s/veh]	42.90	27.13		43.39	11.85	32.60
Lane Group LOS	D	C		D	B	C
Critical Lane Group	Yes	No		Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	11.04	3.60		5.41	7.64	13.42
50th-Percentile Queue Length [ft/ln]	276.02	89.91		135.32	190.94	335.43
95th-Percentile Queue Length [veh/ln]	16.49	6.47		9.23	12.17	19.42
95th-Percentile Queue Length [ft/ln]	412.26	161.84		230.71	304.24	485.62

Movement, Approach, & Intersection Results

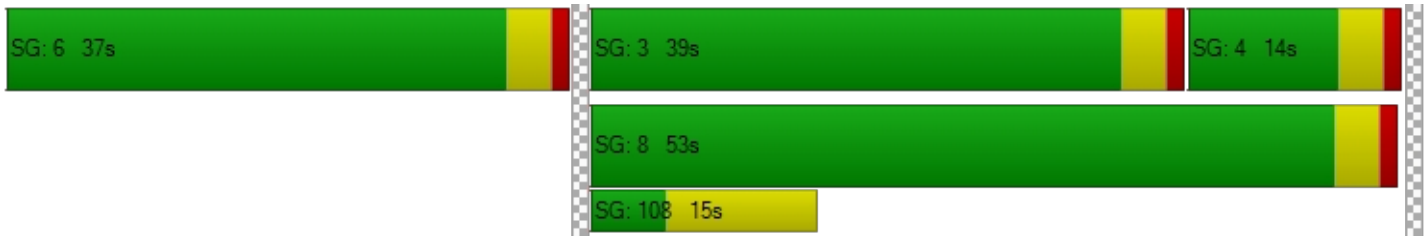
d_M, Delay for Movement [s/veh]	42.90	42.90	27.13	0.00	0.00	0.00	43.39	11.85	0.00	0.00	32.60	32.60
Movement LOS	D	D	C				D	B			C	C
d_A, Approach Delay [s/veh]	38.07			0.00			19.84			32.60		
Approach LOS	D			A			B			C		
d_I, Intersection Delay [s/veh]	28.95											
Intersection LOS	C											
Intersection V/C	0.899											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.158	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	0	1089	222
d_b, Bicycle Delay [s]	18.05	45.00	9.34	35.56
l_b,int, Bicycle LOS Score for Intersection	2.660	4.132	3.084	2.617
Bicycle LOS	B	D	C	B

Sequence

Ring 1	-	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Ethanac Road at Encanto Drive

Control Type:	Two-way stop	Delay (sec / veh):	67.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.492

Intersection Setup

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	55	57	757	125	30	542
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	55	57	757	125	30	542
Peak Hour Factor	0.9210	0.9210	0.9210	0.9210	0.9210	0.9210
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	15	205	34	8	147
Total Analysis Volume [veh/h]	60	62	822	136	33	588
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.49	0.18	0.01	0.00	0.05	0.01
d_M, Delay for Movement [s/veh]	67.76	48.66	0.00	0.00	10.19	0.00
Movement LOS	F	E	A	A	B	A
95th-Percentile Queue Length [veh/ln]	4.00	4.00	0.00	0.00	0.14	0.00
95th-Percentile Queue Length [ft/ln]	100.03	100.03	0.00	0.00	3.57	0.00
d_A, Approach Delay [s/veh]	58.05		0.00		0.54	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	4.36					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 4: Trumble Road at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	18.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.618

Intersection Setup

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	45	2	32	35	8	112	75	673	20	18	414	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	45	2	32	35	8	112	75	673	20	18	414	24
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	1	9	10	2	31	21	185	5	5	114	7
Total Analysis Volume [veh/h]	49	2	35	38	9	123	82	740	22	20	455	26
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	39	19	0	34	14	0	23	19	0	18	14	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	10	3	10	5	59	59	2	55
g / C, Green / Cycle	0.04	0.11	0.03	0.11	0.06	0.65	0.65	0.02	0.62
(v / s)_i Volume / Saturation Flow Rate	0.03	0.02	0.02	0.08	0.05	0.39	0.01	0.01	0.26
s, saturation flow rate [veh/h]	1810	1628	1810	1632	1810	1900	1615	1810	1882
c, Capacity [veh/h]	73	183	64	175	109	1239	1053	41	1156
d1, Uniform Delay [s]	42.57	36.28	42.78	39.04	41.62	8.92	5.52	43.49	8.99
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.94	0.54	8.59	6.51	9.88	2.13	0.04	9.01	1.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.67	0.20	0.60	0.76	0.75	0.60	0.02	0.49	0.42
d, Delay for Lane Group [s/veh]	52.51	36.82	51.37	45.55	51.50	11.04	5.55	52.50	10.10
Lane Group LOS	D	D	D	D	D	B	A	D	B
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.27	0.76	0.98	3.11	2.07	7.75	0.14	0.54	4.71
50th-Percentile Queue Length [ft/ln]	31.66	18.96	24.42	77.69	51.75	193.66	3.49	13.44	117.69
95th-Percentile Queue Length [veh/ln]	2.28	1.37	1.76	5.59	3.73	12.31	0.25	0.97	8.27
95th-Percentile Queue Length [ft/ln]	56.99	34.13	43.96	139.85	93.15	307.78	6.29	24.19	206.65

Movement, Approach, & Intersection Results

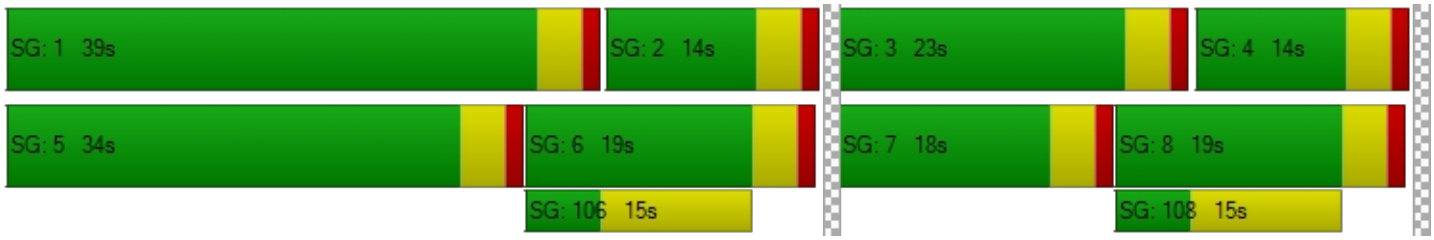
d_M, Delay for Movement [s/veh]	52.51	36.82	36.82	51.37	45.55	45.55	51.50	11.04	5.55	52.50	10.10	10.10
Movement LOS	D	D	D	D	D	D	D	B	A	D	B	B
d_A, Approach Delay [s/veh]	45.76			46.85			14.83			11.79		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	18.94											
Intersection LOS	B											
Intersection V/C	0.618											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersectio	1.986	0.000	0.000	2.369
Crosswalk LOS	A	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	222	333	222
d_b, Bicycle Delay [s]	31.25	35.56	31.25	35.56
l_b,int, Bicycle LOS Score for Intersection	1.702	1.840	2.952	2.386
Bicycle LOS	A	A	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



APPENDIX D-2

INTERSECTION ANALYSIS
WORKSHEETS –
EXISTING PLUS PROJECT

Perris Travel Center Project

Vistro File: K:\...\Perris TC_AM.vistro
Report File: K:\...\2 EX WP AM.pdf

Scenario 5 2 EX WP AM
4/30/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-215 SB Ramps at Ethanac Road	Signalized	HCM 6th Edition	SB Right	0.852	23.3	C
2	I-215 NB Ramps at Ethanac Road	Signalized	HCM 6th Edition	EB Left	0.943	28.7	C
3	Ethanac Road at Encanto Drive	Two-way stop	HCM 6th Edition	NB Right	0.207	13.6	B
4	Trumble Road at Ethanac Road	Signalized	HCM 6th Edition	WB Thru	0.918	42.1	D
5	Ethanac Road at Project Driveway	Two-way stop	HCM 6th Edition	SB Right	0.117	11.2	B
6	Trumble Road at North Driveway	Two-way stop	HCM 6th Edition	EB Right	0.153	9.6	A
7	Trumble Road at South Driveway	Two-way stop	HCM 6th Edition	EB Right	0.043	9.9	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-215 SB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	23.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.852

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			Yes		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	0	0	0	110	1	248	0	672	512	132	595	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	95	0	0	0	5	0	97	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	205	1	248	0	677	512	229	600	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9090	0.9090	0.9090	1.0000	0.9090	0.9090	0.9090	0.9090	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	56	0	68	0	186	141	63	165	0
Total Analysis Volume [veh/h]	0	0	0	226	1	273	0	745	563	252	660	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	10	0	0	10	0	5	10	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	23	0	0	14	0	53	67	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	14	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	C	R	L	C
C, Cycle Length [s]		90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		17	17	46	46	15	65
g / C, Green / Cycle		0.19	0.19	0.51	0.51	0.16	0.72
(v / s)_i Volume / Saturation Flow Rate		0.13	0.17	0.39	0.35	0.14	0.18
s, saturation flow rate [veh/h]		1810	1615	1900	1615	1810	3618
c, Capacity [veh/h]		345	308	971	825	298	2605
d1, Uniform Delay [s]		33.68	35.45	17.70	16.51	36.48	4.31
k, delay calibration		0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		2.13	8.39	5.79	4.54	6.53	0.23
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.66	0.89	0.77	0.68	0.85	0.25
d, Delay for Lane Group [s/veh]		35.81	43.84	23.48	21.05	43.01	4.54
Lane Group LOS		D	D	C	C	D	A
Critical Lane Group		No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		4.71	6.42	12.99	9.10	5.81	1.74
50th-Percentile Queue Length [ft/ln]		117.65	160.42	324.76	227.50	145.35	43.59
95th-Percentile Queue Length [veh/ln]		8.26	10.57	18.90	14.05	9.77	3.14
95th-Percentile Queue Length [ft/ln]		206.59	264.28	472.53	351.18	244.21	78.46

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	35.81	35.81	43.84	0.00	23.48	21.05	43.01	4.54	0.00
Movement LOS				D	D	D		C	C	D	A	
d_A, Approach Delay [s/veh]	0.00			40.20			22.44			15.17		
Approach LOS	A			D			C			B		
d_I, Intersection Delay [s/veh]	23.27											
Intersection LOS	C											
Intersection V/C	0.852											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersectio	0.000	2.104	0.000	2.592
Crosswalk LOS	F	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	422	222	1400
d_b, Bicycle Delay [s]	45.00	28.01	35.56	4.05
l_b,int, Bicycle LOS Score for Intersection	4.132	2.385	3.718	2.312
Bicycle LOS	D	B	D	B

Sequence

Ring 1	2	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: I-215 NB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	28.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.943

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	247	0	118	0	0	0	221	560	0	0	473	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	95	0	0	0	0	100	0	0	102	98
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	247	0	213	0	0	0	221	660	0	0	575	268
Peak Hour Factor	0.9380	0.9380	0.9380	1.0000	1.0000	1.0000	0.9380	0.9380	1.0000	1.0000	0.9380	0.9380
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	0	57	0	0	0	59	176	0	0	153	71
Total Analysis Volume [veh/h]	263	0	227	0	0	0	236	704	0	0	613	286
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	0	0	0	5	10	0	0	10	0
Maximum Green [s]	0	30	0	0	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	25	0	0	0	0	42	65	0	0	23	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R		L	C	C
C, Cycle Length [s]	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15		14	67	49
g / C, Green / Cycle	0.17	0.17		0.16	0.74	0.54
(v / s)_i Volume / Saturation Flow Rate	0.15	0.14		0.13	0.37	0.50
s, saturation flow rate [veh/h]	1810	1615		1810	1900	1799
c, Capacity [veh/h]	311	278		283	1404	969
d1, Uniform Delay [s]	36.10	35.90		36.85	4.86	19.15
k, delay calibration	0.11	0.11		0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	6.26	5.85		6.42	1.28	16.01
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.82		0.84	0.50	0.93
d, Delay for Lane Group [s/veh]	42.36	41.75		43.27	6.15	35.17
Lane Group LOS	D	D		D	A	D
Critical Lane Group	Yes	No		Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	6.02	5.16		5.45	4.56	19.81
50th-Percentile Queue Length [ft/ln]	150.62	128.96		136.32	114.06	495.20
95th-Percentile Queue Length [veh/ln]	10.05	8.88		9.28	8.07	27.11
95th-Percentile Queue Length [ft/ln]	251.26	222.07		232.06	201.63	677.68

Movement, Approach, & Intersection Results

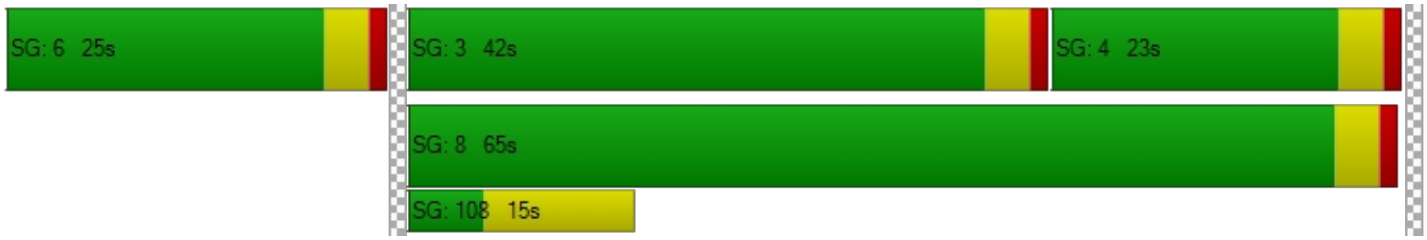
d_M, Delay for Movement [s/veh]	42.36	42.36	41.75	0.00	0.00	0.00	43.27	6.15	0.00	0.00	35.17	35.17
Movement LOS	D	D	D				D	A			D	D
d_A, Approach Delay [s/veh]	42.07			0.00			15.47			35.17		
Approach LOS	D			A			B			D		
d_I, Intersection Delay [s/veh]	28.67											
Intersection LOS	C											
Intersection V/C	0.943											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.101	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	467	0	1356	422
d_b, Bicycle Delay [s]	26.45	45.00	4.67	28.01
l_b,int, Bicycle LOS Score for Intersection	2.368	4.132	3.111	3.043
Bicycle LOS	B	D	C	C

Sequence

Ring 1	-	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Ethanac Road at Encanto Drive

Control Type:	Two-way stop	Delay (sec / veh):	13.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.207

Intersection Setup

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	100.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	59	28	621	56	40	586
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0900	1.0000	1.0000	1.0000	1.0900	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	195	0	0	200
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	68	0	0	0	0
Total Hourly Volume [veh/h]	64	96	816	56	44	786
Peak Hour Factor	0.9520	0.8840	0.8840	0.8840	0.9520	0.8840
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	27	231	16	12	222
Total Analysis Volume [veh/h]	67	109	923	63	46	889
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.21	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	13.60	0.00	0.00	0.00	0.00
Movement LOS		B	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.77	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	19.27	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.60		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.75					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: Trumble Road at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	42.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.918

Intersection Setup

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	46	10	29	33	11	81	61	566	7	36	502	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	5	0	148	195	0	0	0	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	11	0	0	11	-11	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	68	0	0	31	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	10	29	49	11	229	335	555	7	67	507	14
Peak Hour Factor	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	3	9	15	3	68	100	165	2	20	151	4
Total Analysis Volume [veh/h]	55	12	35	58	13	273	399	661	8	80	604	17
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	10	0	7	10	0	7	10	0	7	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	19	0	11	19	0	28	49	0	11	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	17	5	17	22	46	46	6	30
g / C, Green / Cycle	0.06	0.18	0.06	0.19	0.24	0.51	0.51	0.07	0.34
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.03	0.18	0.22	0.35	0.00	0.04	0.33
s, saturation flow rate [veh/h]	1810	1679	1810	1626	1810	1900	1615	1810	1891
c, Capacity [veh/h]	106	307	108	299	436	973	827	122	641
d1, Uniform Delay [s]	41.15	30.92	41.09	36.34	33.27	16.42	10.76	40.95	29.30
k, delay calibration	0.11	0.11	0.11	0.11	0.20	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.92	0.23	4.07	15.57	13.37	3.82	0.02	5.85	28.83
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.15	0.54	0.95	0.92	0.68	0.01	0.66	0.97
d, Delay for Lane Group [s/veh]	45.07	31.15	45.16	51.91	46.64	20.24	10.78	46.80	58.12
Lane Group LOS	D	C	D	D	D	C	B	D	E
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.29	0.87	1.36	7.36	9.86	10.49	0.08	1.91	17.76
50th-Percentile Queue Length [ft/ln]	32.17	21.67	33.95	184.11	246.47	262.16	2.00	47.71	444.06
95th-Percentile Queue Length [veh/ln]	2.32	1.56	2.44	11.81	15.01	15.80	0.14	3.44	24.67
95th-Percentile Queue Length [ft/ln]	57.91	39.01	61.12	295.37	375.21	394.93	3.59	85.88	616.86

Movement, Approach, & Intersection Results

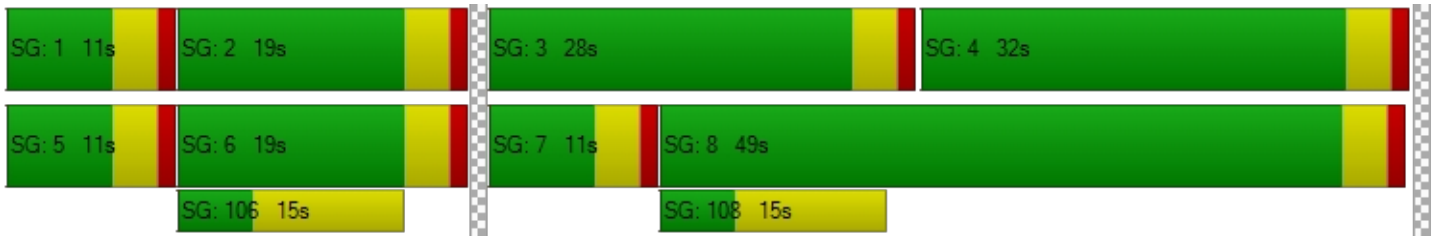
d_M, Delay for Movement [s/veh]	45.07	31.15	31.15	45.16	51.91	51.91	46.64	20.24	10.78	46.80	58.12	58.12
Movement LOS	D	C	C	D	D	D	D	C	B	D	E	E
d_A, Approach Delay [s/veh]	38.65			50.77			30.03			56.83		
Approach LOS	D			D			C			E		
d_I, Intersection Delay [s/veh]	42.13											
Intersection LOS	D											
Intersection V/C	0.918											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.008	0.000	0.000	2.415
Crosswalk LOS	B	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	333	1000	622
d_b, Bicycle Delay [s]	31.25	31.25	11.25	21.36
l_b,int, Bicycle LOS Score for Intersection	1.728	2.127	3.322	2.716
Bicycle LOS	A	B	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Ethanac Road at Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	11.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.117

Intersection Setup

Name	Project Driveway		Ethanac Road		Ethanac Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	100.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Project Driveway		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	0	0	0	649	453	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	2.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	52	0	195	148	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	21	0	0	-21	21
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	68	0
Total Hourly Volume [veh/h]	0	73	0	844	648	26
Peak Hour Factor	1.0000	0.9500	1.0000	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	19	0	222	171	7
Total Analysis Volume [veh/h]	0	77	0	888	682	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.12	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	11.17	0.00	0.00	0.00	0.00
Movement LOS		B		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.39	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	9.84	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.17		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.51					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 6: Trumble Road at North Driveway

Control Type:	Two-way stop	Delay (sec / veh):	9.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.153

Intersection Setup

Name	Trumble Road		Trumble Road		North Driveway	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Trumble Road		Trumble Road		North Driveway	
Base Volume Input [veh/h]	0	85	125	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	128	0	0	0	0	133
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	128	85	125	0	0	133
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	22	33	0	0	35
Total Analysis Volume [veh/h]	135	89	132	0	0	140
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.00	0.00	0.00	0.00	0.15
d_M, Delay for Movement [s/veh]	7.73	0.00	0.00	0.00	13.10	9.63
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.31	0.00	0.00	0.00	0.54	0.54
95th-Percentile Queue Length [ft/ln]	7.67	0.00	0.00	0.00	13.43	13.43
d_A, Approach Delay [s/veh]	4.66		0.00		9.63	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.82					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Trumble Road at South Driveway

Control Type:	Two-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.043

Intersection Setup

Name	Trumble Road		Trumble Road		South Driveway	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Trumble Road		Trumble Road		South Driveway	
Base Volume Input [veh/h]	0	85	125	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	67	128	133	0	0	20
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	11	0	0	0	0	11
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	213	258	0	0	31
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	56	68	0	0	8
Total Analysis Volume [veh/h]	82	224	272	0	0	33
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.00	0.00	0.00	0.04
d_M, Delay for Movement [s/veh]	7.95	0.00	0.00	0.00	14.12	9.87
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.20	0.00	0.00	0.00	0.13	0.13
95th-Percentile Queue Length [ft/ln]	5.03	0.00	0.00	0.00	3.35	3.35
d_A, Approach Delay [s/veh]	2.13		0.00		9.87	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.60					
Intersection LOS	A					

Perris Travel Center Project

Vistro File: K:\...\Perris TC_PM.vistro
Report File: K:\...\2 EX WP PM.pdf

Scenario 5 2 EX WP PM
4/30/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-215 SB Ramps at Ethanac Road	Signalized	HCM 6th Edition	SB Left	0.890	27.4	C
2	I-215 NB Ramps at Ethanac Road	Signalized	HCM 6th Edition	WB Thru	1.058	52.3	D
3	Ethanac Road at Encanto Drive	Two-way stop	HCM 6th Edition	NB Right	0.313	16.8	C
4	Trumble Road at Ethanac Road	Signalized	HCM 6th Edition	SB Left	0.867	35.2	D
5	Ethanac Road at Project Driveway	Two-way stop	HCM 6th Edition	SB Right	0.159	11.4	B
6	Trumble Road at North Driveway	Two-way stop	HCM 6th Edition	EB Right	0.152	9.8	A
7	Trumble Road at South Driveway	Two-way stop	HCM 6th Edition	EB Right	0.065	10.2	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-215 SB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	27.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.890

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			Yes		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	0	0	0	272	5	344	0	648	319	131	745	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	115	0	0	0	7	0	106	7	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	387	5	344	0	655	319	237	752	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9460	0.9460	0.9460	1.0000	0.9460	0.9460	0.9460	0.9460	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	102	1	91	0	173	84	63	199	0
Total Analysis Volume [veh/h]	0	0	0	409	5	364	0	692	337	251	795	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	10	0	0	10	0	5	10	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	30	0	0	29	0	31	60	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	14	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	C	R	L	C
C, Cycle Length [s]		90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		23	23	40	40	15	59
g / C, Green / Cycle		0.25	0.25	0.45	0.45	0.16	0.66
(v / s)_i Volume / Saturation Flow Rate		0.23	0.23	0.36	0.21	0.14	0.22
s, saturation flow rate [veh/h]		1811	1615	1900	1615	1810	3618
c, Capacity [veh/h]		461	411	851	724	297	2375
d1, Uniform Delay [s]		32.41	32.28	21.56	17.32	36.52	6.80
k, delay calibration		0.22	0.21	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		12.01	11.72	8.35	2.15	6.57	0.38
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.90	0.89	0.81	0.47	0.85	0.33
d, Delay for Lane Group [s/veh]		44.42	44.00	29.91	19.47	43.09	7.19
Lane Group LOS		D	D	C	B	D	A
Critical Lane Group		Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		9.99	8.74	13.84	5.07	5.80	3.03
50th-Percentile Queue Length [ft/ln]		249.81	218.53	346.01	126.86	144.88	75.76
95th-Percentile Queue Length [veh/ln]		15.18	13.59	19.94	8.77	9.74	5.45
95th-Percentile Queue Length [ft/ln]		379.41	339.75	498.54	219.22	243.59	136.37

Movement, Approach, & Intersection Results

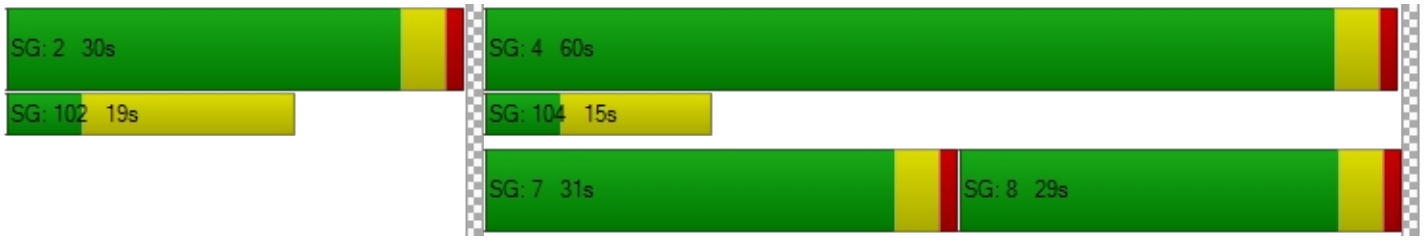
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	44.42	44.42	44.00	0.00	29.91	19.47	43.09	7.19	0.00
Movement LOS				D	D	D		C	B	D	A	
d_A, Approach Delay [s/veh]	0.00			44.23			26.49			15.80		
Approach LOS	A			D			C			B		
d_I, Intersection Delay [s/veh]	27.41											
Intersection LOS	C											
Intersection V/C	0.890											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersectio	0.000	2.195	0.000	2.656
Crosswalk LOS	F	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	578	556	1244
d_b, Bicycle Delay [s]	45.00	22.76	23.47	6.42
l_b,int, Bicycle LOS Score for Intersection	4.132	2.843	3.257	2.423
Bicycle LOS	D	C	C	B

Sequence

Ring 1	2	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: I-215 NB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	52.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.058

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	441	2	195	0	0	0	224	660	0	0	440	173
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	115	0	0	0	0	122	0	0	113	106
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	441	2	310	0	0	0	224	782	0	0	553	279
Peak Hour Factor	0.9570	0.9570	0.9570	1.0000	1.0000	1.0000	0.9570	0.9570	1.0000	1.0000	0.9570	0.9570
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	115	1	81	0	0	0	59	204	0	0	144	73
Total Analysis Volume [veh/h]	461	2	324	0	0	0	234	817	0	0	578	292
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	0	0	0	5	10	0	0	10	0
Maximum Green [s]	0	30	0	0	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	37	0	0	0	0	39	53	0	0	14	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R		L	C	C
C, Cycle Length [s]	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	26	26		14	56	38
g / C, Green / Cycle	0.29	0.29		0.15	0.63	0.43
(v / s)_i Volume / Saturation Flow Rate	0.26	0.20		0.13	0.43	0.49
s, saturation flow rate [veh/h]	1810	1615		1810	1900	1794
c, Capacity [veh/h]	518	462		280	1188	764
d1, Uniform Delay [s]	30.83	28.70		36.92	11.09	25.83
k, delay calibration	0.23	0.12		0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	11.09	2.17		6.48	3.26	77.95
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.70		0.84	0.69	1.14
d, Delay for Lane Group [s/veh]	41.92	30.87		43.40	14.36	103.79
Lane Group LOS	D	C		D	B	F
Critical Lane Group	Yes	No		Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	10.91	6.35		5.41	10.37	31.77
50th-Percentile Queue Length [ft/ln]	272.68	158.65		135.32	259.29	794.34
95th-Percentile Queue Length [veh/ln]	16.32	10.48		9.23	15.65	44.95
95th-Percentile Queue Length [ft/ln]	408.09	261.93		230.71	391.33	1123.67

Movement, Approach, & Intersection Results

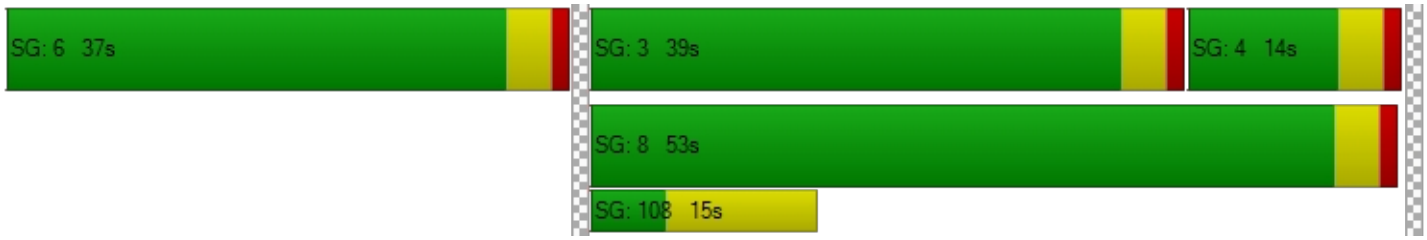
d_M, Delay for Movement [s/veh]	41.92	41.92	30.87	0.00	0.00	0.00	43.40	14.36	0.00	0.00	103.79	103.79
Movement LOS	D	D	C				D	B			F	F
d_A, Approach Delay [s/veh]	37.37			0.00			20.82			103.79		
Approach LOS	D			A			C			F		
d_I, Intersection Delay [s/veh]	52.29											
Intersection LOS	D											
Intersection V/C	1.058											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.197	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	0	1089	222
d_b, Bicycle Delay [s]	18.05	45.00	9.34	35.56
l_b,int, Bicycle LOS Score for Intersection	2.858	4.132	3.294	2.995
Bicycle LOS	C	D	C	C

Sequence

Ring 1	-	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Ethanac Road at Encanto Drive

Control Type:	Two-way stop	Delay (sec / veh):	16.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.313

Intersection Setup

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	100.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	55	57	757	125	30	542
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0900	1.0000	1.0000	1.0000	1.0900	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	237	0	0	219
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	71	0	0	0	0
Total Hourly Volume [veh/h]	60	128	994	125	33	761
Peak Hour Factor	0.9210	0.9210	0.9210	0.9210	0.9210	0.9210
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	35	270	34	9	207
Total Analysis Volume [veh/h]	65	139	1079	136	36	826
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.31	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	16.76	0.00	0.00	0.00	0.00
Movement LOS		C	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	1.32	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	33.03	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	16.76		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.07					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 4: Trumble Road at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	35.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.867

Intersection Setup

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	45	2	32	35	8	112	75	673	20	18	414	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	7	0	150	237	0	0	0	7	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	17	0	0	17	-17	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	71	0	0	45	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	45	2	32	59	8	262	400	656	20	63	421	24
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	1	9	16	2	72	110	180	5	17	116	7
Total Analysis Volume [veh/h]	49	2	35	65	9	288	440	721	22	69	463	26
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	39	19	0	34	14	0	23	19	0	18	14	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	18	4	19	24	47	47	5	28
g / C, Green / Cycle	0.04	0.20	0.05	0.21	0.27	0.52	0.52	0.05	0.31
(v / s)_i Volume / Saturation Flow Rate	0.03	0.02	0.04	0.18	0.24	0.38	0.01	0.04	0.26
s, saturation flow rate [veh/h]	1810	1628	1810	1622	1810	1900	1615	1810	1882
c, Capacity [veh/h]	72	324	86	336	486	997	847	91	577
d1, Uniform Delay [s]	42.63	29.53	42.33	34.63	31.80	16.38	10.31	42.18	29.24
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.58	0.15	12.31	7.69	6.60	4.55	0.06	11.81	14.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.68	0.11	0.75	0.88	0.90	0.72	0.03	0.75	0.85
d, Delay for Lane Group [s/veh]	53.21	29.68	54.63	42.32	38.39	20.93	10.36	53.99	43.58
Lane Group LOS	D	C	D	D	D	C	B	D	D
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.28	0.66	1.71	6.87	9.84	11.73	0.21	1.80	11.85
50th-Percentile Queue Length [ft/ln]	31.91	16.55	42.66	171.73	246.07	293.13	5.36	44.90	296.33
95th-Percentile Queue Length [veh/ln]	2.30	1.19	3.07	11.17	14.99	17.34	0.39	3.23	17.50
95th-Percentile Queue Length [ft/ln]	57.43	29.79	76.79	279.19	374.69	433.53	9.64	80.82	437.49

Movement, Approach, & Intersection Results

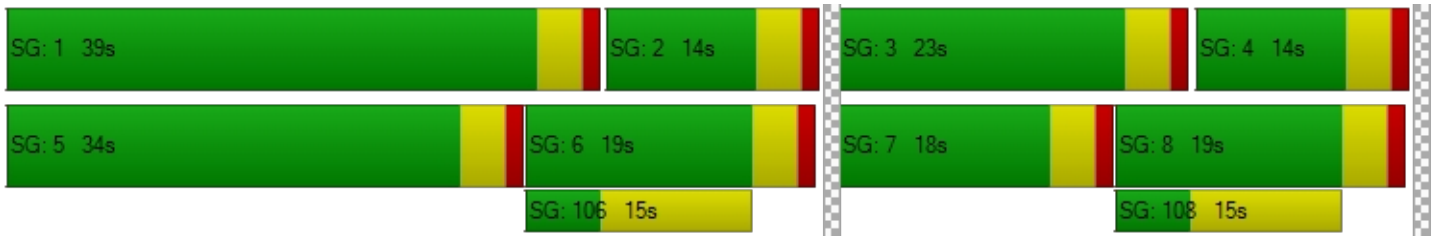
d_M, Delay for Movement [s/veh]	53.21	29.68	29.68	54.63	42.32	42.32	38.39	20.93	10.36	53.99	43.58	43.58
Movement LOS	D	C	C	D	D	D	D	C	B	D	D	D
d_A, Approach Delay [s/veh]	43.09			44.53			27.23			44.87		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	35.21											
Intersection LOS	D											
Intersection V/C	0.867											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.002	0.000	0.000	2.390
Crosswalk LOS	B	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	222	333	222
d_b, Bicycle Delay [s]	31.25	35.56	31.25	35.56
l_b,int, Bicycle LOS Score for Intersection	1.702	2.157	3.512	2.480
Bicycle LOS	A	B	D	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Ethanac Road at Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	11.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.159

Intersection Setup

Name	Project Driveway		Ethanac Road		Ethanac Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	100.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Project Driveway		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	0	0	0	814	519	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	2.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	69	0	237	150	7
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	32	0	0	-32	32
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	101	0	1051	637	39
Peak Hour Factor	1.0000	0.9500	1.0000	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	27	0	277	168	10
Total Analysis Volume [veh/h]	0	106	0	1106	671	41
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.16	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	11.42	0.00	0.00	0.00	0.00
Movement LOS		B		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.56	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	14.08	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.42		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.63					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 6: Trumble Road at North Driveway

Control Type:	Two-way stop	Delay (sec / veh):	9.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.152

Intersection Setup

Name	Trumble Road		Trumble Road		North Driveway	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Trumble Road		Trumble Road		North Driveway	
Base Volume Input [veh/h]	0	101	155	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	146	0	0	0	0	128
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	101	155	0	0	128
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	27	41	0	0	34
Total Analysis Volume [veh/h]	154	106	163	0	0	135
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.00	0.00	0.00	0.00	0.15
d_M, Delay for Movement [s/veh]	7.83	0.00	0.00	0.00	14.10	9.79
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.36	0.00	0.00	0.00	0.54	0.54
95th-Percentile Queue Length [ft/ln]	9.05	0.00	0.00	0.00	13.39	13.39
d_A, Approach Delay [s/veh]	4.64		0.00		9.79	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.53					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Trumble Road at South Driveway

Control Type:	Two-way stop	Delay (sec / veh):	10.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.065

Intersection Setup

Name	Trumble Road		Trumble Road		South Driveway	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Trumble Road		Trumble Road		South Driveway	
Base Volume Input [veh/h]	0	101	155	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	91	146	128	0	0	29
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	17	0	0	0	0	17
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	247	283	0	0	46
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	65	74	0	0	12
Total Analysis Volume [veh/h]	114	260	298	0	0	48
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.00	0.00	0.00	0.00	0.06
d_M, Delay for Movement [s/veh]	8.13	0.00	0.00	0.00	16.30	10.19
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.30	0.00	0.00	0.00	0.21	0.21
95th-Percentile Queue Length [ft/ln]	7.42	0.00	0.00	0.00	5.18	5.18
d_A, Approach Delay [s/veh]	2.48		0.00		10.19	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.97					
Intersection LOS	B					

APPENDIX D-3

INTERSECTION ANALYSIS
WORKSHEETS –
OPENING YEAR 2026
CUMULATIVE

Perris Travel Center Project

Vistro File: K:\...\Perris TC_AM.vistro
Report File: K:\...\3 OY CP AM.pdf

Scenario 3 OY 2024 CP AM
5/6/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-215 SB Ramps at Ethanac Road	Signalized	HCM 6th Edition	SB Left	1.494	151.7	F
2	I-215 NB Ramps at Ethanac Road	Signalized	HCM 6th Edition	WB Thru	1.678	211.9	F
3	Ethanac Road at Encanto Drive	Two-way stop	HCM 6th Edition	NB Left	12.782	6,679.8	F
4	Trumble Road at Ethanac Road	Signalized	HCM 6th Edition	EB Thru	1.404	195.6	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-215 SB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	151.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.494

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			Yes		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	0	0	0	110	1	248	0	672	512	132	595	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0609	1.0609	1.0609	1.0000	1.0609	1.0609	1.0609	1.0609	1.0000
In-Process Volume [veh/h]	0	0	0	531	0	202	0	541	83	128	504	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	648	1	465	0	1254	626	268	1135	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	171	0	122	0	330	165	71	299	0
Total Analysis Volume [veh/h]	0	0	0	682	1	489	0	1320	659	282	1195	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	10	0	0	10	0	5	10	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	26	0	0	51	0	13	64	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	14	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	C	R	L	C
C, Cycle Length [s]		90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		22	22	40	40	16	60
g / C, Green / Cycle		0.24	0.24	0.44	0.44	0.18	0.67
(v / s)_i Volume / Saturation Flow Rate		0.38	0.30	0.69	0.41	0.16	0.33
s, saturation flow rate [veh/h]		1810	1615	1900	1615	1810	3618
c, Capacity [veh/h]		442	395	843	716	323	2412
d1, Uniform Delay [s]		34.00	34.00	25.04	23.54	35.96	7.47
k, delay calibration		0.50	0.38	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		255.85	123.23	260.68	18.94	7.28	0.73
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		1.54	1.24	1.57	0.92	0.87	0.50
d, Delay for Lane Group [s/veh]		289.85	157.23	285.72	42.49	43.23	8.20
Lane Group LOS		F	F	F	D	D	A
Critical Lane Group		Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		40.81	21.88	77.75	16.07	6.54	5.11
50th-Percentile Queue Length [ft/ln]		1020.21	546.89	1943.80	401.78	163.54	127.67
95th-Percentile Queue Length [veh/ln]		62.77	33.07	119.43	22.65	10.74	8.81
95th-Percentile Queue Length [ft/ln]		1569.26	826.76	2985.66	566.14	268.40	220.32

Movement, Approach, & Intersection Results

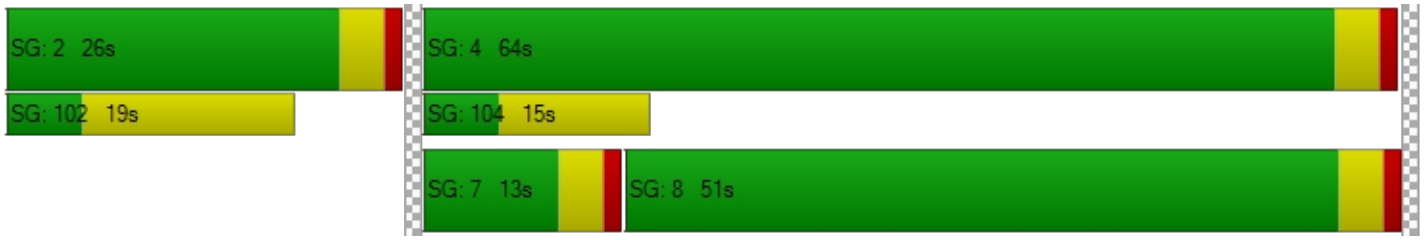
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	289.85	289.85	157.23	0.00	285.72	42.49	43.23	8.20	0.00
Movement LOS				F	F	F		F	D	D	A	
d_A, Approach Delay [s/veh]	0.00			234.51			204.73			14.89		
Approach LOS	A			F			F			B		
d_I, Intersection Delay [s/veh]	151.68											
Intersection LOS	F											
Intersection V/C	1.494											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersectio	0.000	2.323	0.000	2.981
Crosswalk LOS	F	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	489	1044	1333
d_b, Bicycle Delay [s]	45.00	25.69	10.27	5.00
l_b,int, Bicycle LOS Score for Intersection	4.132	3.493	4.825	2.778
Bicycle LOS	D	C	E	C

Sequence

Ring 1	2	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: I-215 NB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	211.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.678

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	247	0	118	0	0	0	221	560	0	0	473	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0609	1.0609	1.0609	1.0000	1.0000	1.0000	1.0609	1.0609	1.0000	1.0000	1.0609	1.0609
In-Process Volume [veh/h]	133	0	349	0	0	0	128	910	0	0	500	287
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	395	0	474	0	0	0	362	1504	0	0	1002	467
Peak Hour Factor	0.9500	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	104	0	125	0	0	0	95	396	0	0	264	123
Total Analysis Volume [veh/h]	416	0	499	0	0	0	381	1583	0	0	1055	492
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	0	0	0	5	10	0	0	10	0
Maximum Green [s]	0	30	0	0	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	22	0	0	0	0	17	68	0	0	51	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R		L	C	C
C, Cycle Length [s]	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	18	18		13	64	47
g / C, Green / Cycle	0.20	0.20		0.14	0.71	0.52
(v / s)_i Volume / Saturation Flow Rate	0.23	0.31		0.21	0.83	0.86
s, saturation flow rate [veh/h]	1810	1615		1810	1900	1799
c, Capacity [veh/h]	362	323		261	1351	939
d1, Uniform Delay [s]	36.00	36.00		38.50	13.00	21.50
k, delay calibration	0.22	0.40		0.18	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	81.36	257.17		213.58	85.45	295.78
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.15	1.54		1.46	1.17	1.65
d, Delay for Lane Group [s/veh]	117.36	293.17		252.08	98.45	317.28
Lane Group LOS	F	F		F	F	F
Critical Lane Group	No	Yes		Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	15.92	29.98		21.16	52.36	95.01
50th-Percentile Queue Length [ft/ln]	398.05	749.61		529.00	1308.99	2375.17
95th-Percentile Queue Length [veh/ln]	24.10	46.87		33.23	73.41	148.58
95th-Percentile Queue Length [ft/ln]	602.51	1171.76		830.78	1835.28	3714.55

Movement, Approach, & Intersection Results

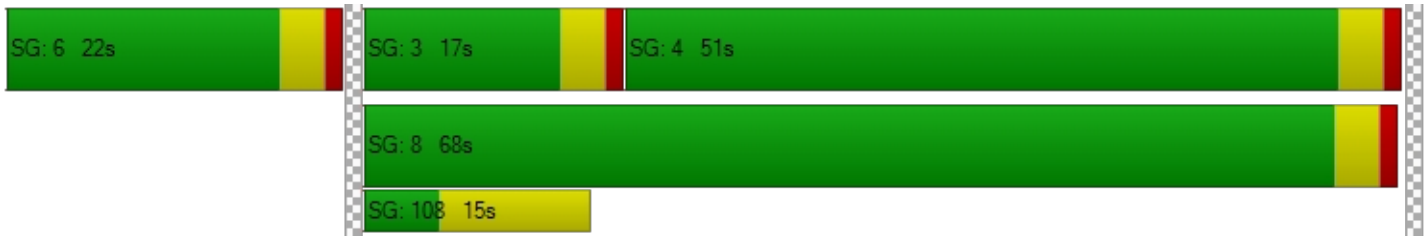
d_M, Delay for Movement [s/veh]	117.36	117.36	293.17	0.00	0.00	0.00	252.08	98.45	0.00	0.00	317.28	317.28
Movement LOS	F	F	F				F	F			F	F
d_A, Approach Delay [s/veh]	213.24			0.00			128.25			317.28		
Approach LOS	F			A			F			F		
d_I, Intersection Delay [s/veh]	211.89											
Intersection LOS	F											
Intersection V/C	1.678											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.239	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	0	1422	1044
d_b, Bicycle Delay [s]	28.80	45.00	3.76	10.27
l_b,int, Bicycle LOS Score for Intersection	3.069	4.132	4.800	4.112
Bicycle LOS	C	D	E	D

Sequence

Ring 1	-	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Ethanac Road at Encanto Drive

Control Type:	Two-way stop	Delay (sec / veh):	6,679.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	12.782

Intersection Setup

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	59	28	621	56	40	586
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609
In-Process Volume [veh/h]	0	2	1131	162	0	787
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	63	32	1790	221	42	1409
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	8	471	58	11	371
Total Analysis Volume [veh/h]	66	34	1884	233	44	1483
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	12.78	0.45	0.02	0.00	0.17	0.01
d_M, Delay for Movement [s/veh]	6679.81	6030.02	0.00	0.00	21.51	0.00
Movement LOS	F	F	A	A	C	A
95th-Percentile Queue Length [veh/ln]	14.20	14.20	0.00	0.00	0.59	0.00
95th-Percentile Queue Length [ft/ln]	354.92	354.92	0.00	0.00	14.83	0.00
d_A, Approach Delay [s/veh]	6458.88		0.00		0.62	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	172.77					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 4: Trumble Road at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	195.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.404

Intersection Setup

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	46	10	29	33	11	81	61	566	7	36	502	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609
In-Process Volume [veh/h]	226	0	9	27	0	34	116	982	35	20	496	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	275	11	40	62	12	120	181	1582	42	58	1029	15
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	3	11	16	3	32	48	416	11	15	271	4
Total Analysis Volume [veh/h]	289	12	42	65	13	126	191	1665	44	61	1083	16
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	19	0	9	14	0	22	53	0	9	40	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	16	4	10	11	50	50	4	43
g / C, Green / Cycle	0.11	0.17	0.05	0.11	0.13	0.56	0.56	0.04	0.48
(v / s)_i Volume / Saturation Flow Rate	0.16	0.03	0.04	0.08	0.11	0.88	0.03	0.03	0.58
s, saturation flow rate [veh/h]	1810	1671	1810	1638	1810	1900	1615	1810	1895
c, Capacity [veh/h]	201	288	84	177	232	1063	904	79	901
d1, Uniform Delay [s]	40.00	31.86	42.43	39.14	38.26	19.82	8.98	42.57	23.61
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	202.99	0.31	13.66	7.56	7.24	259.44	0.10	14.31	109.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.44	0.19	0.77	0.79	0.82	1.57	0.05	0.77	1.22
d, Delay for Lane Group [s/veh]	242.99	32.17	56.08	46.70	45.50	279.27	9.08	56.89	132.65
Lane Group LOS	F	C	E	D	D	F	A	E	F
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	15.71	1.02	1.73	3.32	4.51	96.21	0.39	1.64	44.82
50th-Percentile Queue Length [ft/ln]	392.78	25.47	43.32	83.02	112.72	2405.24	9.83	41.07	1120.56
95th-Percentile Queue Length [veh/ln]	25.21	1.83	3.12	5.98	7.99	148.68	0.71	2.96	64.24
95th-Percentile Queue Length [ft/ln]	630.22	45.84	77.98	149.44	199.78	3716.91	17.69	73.92	1605.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	242.99	32.17	32.17	56.08	46.70	46.70	45.50	279.27	9.08	56.89	132.65	132.65
Movement LOS	F	C	C	E	D	D	D	F	A	E	F	F
d_A, Approach Delay [s/veh]	209.80			49.69			249.51			128.66		
Approach LOS	F			D			F			F		
d_I, Intersection Delay [s/veh]	195.57											
Intersection LOS	F											
Intersection V/C	1.404											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.092	0.000	0.000	2.895
Crosswalk LOS	B	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	222	1089	800
d_b, Bicycle Delay [s]	31.25	35.56	9.34	16.20
l_b,int, Bicycle LOS Score for Intersection	2.126	1.896	4.695	3.474
Bicycle LOS	B	A	E	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Perris Travel Center Project

Vistro File: K:\...\Perris TC_PM.vistro
Report File: K:\...\3 OY CP PM.pdf

Scenario 3 OY 2024 CP PM
5/6/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-215 SB Ramps at Ethanac Road	Signalized	HCM 6th Edition	EB Thru	1.952	367.4	F
2	I-215 NB Ramps at Ethanac Road	Signalized	HCM 6th Edition	WB Thru	2.345	475.3	F
3	Ethanac Road at Encanto Drive	Two-way stop	HCM 6th Edition	NB Right	1.101	10,000.0	F
4	Trumble Road at Ethanac Road	Signalized	HCM 6th Edition	NB Left	1.569	325.9	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-215 SB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	367.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.952

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			Yes		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	0	0	0	272	5	344	0	648	319	131	745	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0609	1.0609	1.0609	1.0000	1.0609	1.0609	1.0609	1.0609	1.0000
In-Process Volume [veh/h]	0	0	0	542	0	154	0	757	151	409	629	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	831	5	519	0	1444	489	548	1419	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	219	1	137	0	380	129	144	373	0
Total Analysis Volume [veh/h]	0	0	0	875	5	546	0	1520	515	577	1494	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	10	0	0	10	0	5	10	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	27	0	0	41	0	22	63	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	14	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	C	R	L	C
C, Cycle Length [s]		90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		23	23	24	24	31	59
g / C, Green / Cycle		0.26	0.26	0.27	0.27	0.34	0.66
(v / s)_i Volume / Saturation Flow Rate		0.49	0.34	0.80	0.32	0.32	0.41
s, saturation flow rate [veh/h]		1810	1615	1900	1615	1810	3618
c, Capacity [veh/h]		463	413	508	432	622	2372
d1, Uniform Delay [s]		33.50	33.50	32.98	32.98	28.44	9.09
k, delay calibration		0.50	0.46	0.50	0.50	0.19	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		414.15	160.27	902.63	107.83	10.79	1.28
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		1.90	1.32	2.99	1.19	0.93	0.63
d, Delay for Lane Group [s/veh]		447.65	193.77	935.61	140.81	39.23	10.38
Lane Group LOS		F	F	F	F	D	B
Critical Lane Group		Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		62.99	27.09	137.99	22.02	13.31	7.71
50th-Percentile Queue Length [ft/ln]		1574.64	677.32	3449.76	550.57	332.63	192.75
95th-Percentile Queue Length [veh/ln]		98.67	41.18	216.41	32.81	19.29	12.26
95th-Percentile Queue Length [ft/ln]		2466.68	1029.53	5410.32	820.14	482.18	306.60

Movement, Approach, & Intersection Results

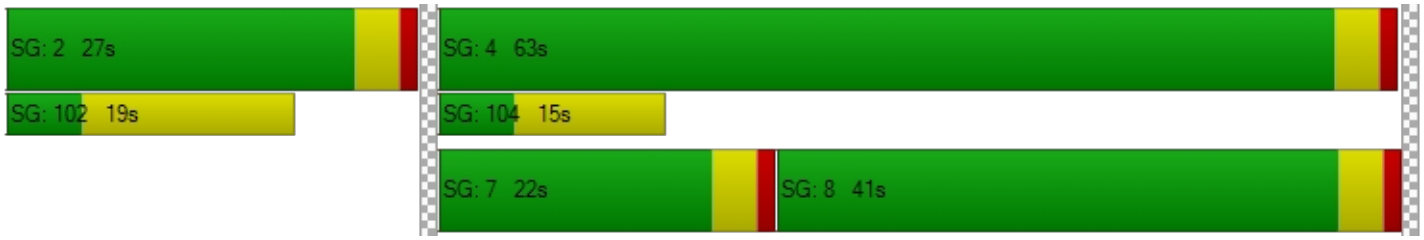
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	447.65	447.65	193.77	0.00	935.61	140.81	39.23	10.38	0.00
Movement LOS				F	F	F		F	F	D	B	
d_A, Approach Delay [s/veh]	0.00			350.44			734.47			18.41		
Approach LOS	A			F			F			B		
d_I, Intersection Delay [s/veh]	367.41											
Intersection LOS	F											
Intersection V/C	1.952											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersectio	0.000	2.405	0.000	3.221
Crosswalk LOS	F	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	511	822	1311
d_b, Bicycle Delay [s]	45.00	24.94	15.61	5.34
l_b,int, Bicycle LOS Score for Intersection	4.132	3.913	4.917	3.268
Bicycle LOS	D	D	E	C

Sequence

Ring 1	2	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: I-215 NB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	475.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.345

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	441	2	195	0	0	0	224	660	0	0	440	173
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0609	1.0609	1.0609	1.0000	1.0000	1.0000	1.0609	1.0609	1.0000	1.0000	1.0609	1.0609
In-Process Volume [veh/h]	103	0	295	0	0	0	238	973	0	0	937	644
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	571	2	502	0	0	0	476	1673	0	0	1404	828
Peak Hour Factor	0.9500	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	150	1	132	0	0	0	125	440	0	0	369	218
Total Analysis Volume [veh/h]	601	2	528	0	0	0	501	1761	0	0	1478	872
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	0	0	0	5	10	0	0	10	0
Maximum Green [s]	0	30	0	0	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	26	0	0	0	0	17	64	0	0	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R		L	C	C
C, Cycle Length [s]	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	22	22		13	60	43
g / C, Green / Cycle	0.24	0.24		0.14	0.67	0.48
(v / s)_i Volume / Saturation Flow Rate	0.33	0.33		0.28	0.93	1.32
s, saturation flow rate [veh/h]	1810	1615		1810	1900	1783
c, Capacity [veh/h]	442	395		261	1267	852
d1, Uniform Delay [s]	34.00	34.00		38.50	15.00	23.50
k, delay calibration	0.45	0.44		0.33	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	176.13	166.28		421.75	180.54	794.52
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.36	1.34		1.92	1.39	2.76
d, Delay for Lane Group [s/veh]	210.13	200.28		460.25	195.54	818.02
Lane Group LOS	F	F		F	F	F
Critical Lane Group	Yes	No		Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	31.02	26.60		36.27	84.23	204.63
50th-Percentile Queue Length [ft/ln]	775.40	664.92		906.85	2105.78	5115.67
95th-Percentile Queue Length [veh/ln]	46.94	40.59		57.03	126.26	333.22
95th-Percentile Queue Length [ft/ln]	1173.61	1014.87		1425.63	3156.41	8330.41

Movement, Approach, & Intersection Results

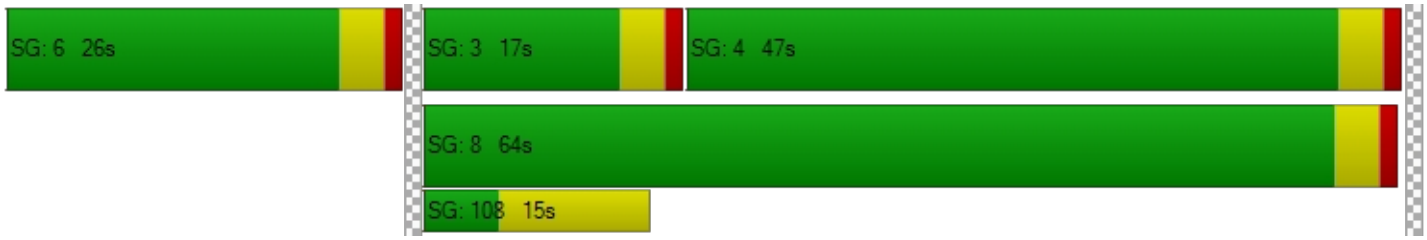
d_M, Delay for Movement [s/veh]	210.13	210.13	200.28	0.00	0.00	0.00	460.25	195.54	0.00	0.00	818.02	818.02
Movement LOS	F	F	F				F	F			F	F
d_A, Approach Delay [s/veh]	205.53			0.00			254.17			818.02		
Approach LOS	F			A			F			F		
d_I, Intersection Delay [s/veh]	475.31											
Intersection LOS	F											
Intersection V/C	2.345											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.309	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	0	1333	956
d_b, Bicycle Delay [s]	25.69	45.00	5.00	12.27
l_b,int, Bicycle LOS Score for Intersection	3.426	4.132	5.292	5.437
Bicycle LOS	C	D	F	F

Sequence

Ring 1	-	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Ethanac Road at Encanto Drive

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.101

Intersection Setup

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	55	57	757	125	30	542
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609
In-Process Volume [veh/h]	0	5	987	369	0	1582
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	58	65	1790	502	32	2157
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	17	471	132	8	568
Total Analysis Volume [veh/h]	61	68	1884	528	34	2271
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	1.10	0.02	0.01	0.17	0.02
d_M, Delay for Movement [s/veh]	10000.00	10000.00	0.00	0.00	26.57	0.00
Movement LOS	F	F	A	A	D	A
95th-Percentile Queue Length [veh/ln]	18.71	18.71	0.00	0.00	0.60	0.00
95th-Percentile Queue Length [ft/ln]	467.76	467.76	0.00	0.00	14.88	0.00
d_A, Approach Delay [s/veh]	10000.00		0.00		0.39	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	266.39					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 4: Trumble Road at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	325.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.569

Intersection Setup

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	45	2	32	35	8	112	75	673	20	18	414	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609
In-Process Volume [veh/h]	269	0	41	26	0	77	93	820	79	45	1108	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	317	2	75	63	8	196	173	1534	100	64	1547	25
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	1	20	17	2	52	46	404	26	17	407	7
Total Analysis Volume [veh/h]	334	2	79	66	8	206	182	1615	105	67	1628	26
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	19	0	18	27	0	29	44	0	9	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	16	4	14	11	50	50	4	43
g / C, Green / Cycle	0.07	0.17	0.05	0.15	0.12	0.55	0.55	0.05	0.48
(v / s)_i Volume / Saturation Flow Rate	0.18	0.05	0.04	0.13	0.10	0.85	0.07	0.04	0.87
s, saturation flow rate [veh/h]	1810	1621	1810	1624	1810	1900	1615	1810	1895
c, Capacity [veh/h]	121	279	89	251	225	1050	892	88	903
d1, Uniform Delay [s]	42.00	32.45	42.24	37.04	38.36	20.13	9.64	42.32	23.55
k, delay calibration	0.12	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	801.61	0.57	11.60	7.98	6.77	247.03	0.27	12.90	378.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	2.77	0.29	0.74	0.85	0.81	1.54	0.12	0.77	1.83
d, Delay for Lane Group [s/veh]	843.61	33.02	53.84	45.02	45.13	267.16	9.90	55.22	402.14
Lane Group LOS	F	C	D	D	D	F	A	E	F
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	29.50	1.56	1.72	5.06	4.27	91.50	1.00	1.77	112.52
50th-Percentile Queue Length [ft/ln]	737.62	39.04	42.95	126.43	106.82	2287.46	24.95	44.21	2812.96
95th-Percentile Queue Length [veh/ln]	46.33	2.81	3.09	8.75	7.66	140.70	1.80	3.18	178.20
95th-Percentile Queue Length [ft/ln]	1158.31	70.27	77.31	218.63	191.57	3517.54	44.90	79.58	4454.89

Movement, Approach, & Intersection Results

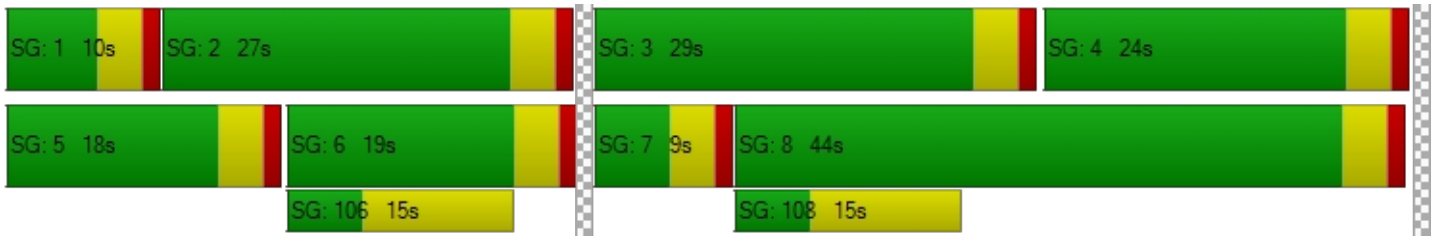
d_M, Delay for Movement [s/veh]	843.61	33.02	33.02	53.84	45.02	45.02	45.13	267.16	9.90	55.22	402.14	402.14
Movement LOS	F	C	C	D	D	D	D	F	A	E	F	F
d_A, Approach Delay [s/veh]	685.40			47.10			231.72			388.63		
Approach LOS	F			D			F			F		
d_I, Intersection Delay [s/veh]	325.89											
Intersection LOS	F											
Intersection V/C	1.569											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.135	0.000	0.000	3.073
Crosswalk LOS	B	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	511	889	444
d_b, Bicycle Delay [s]	31.25	24.94	13.89	27.22
l_b,int, Bicycle LOS Score for Intersection	2.244	2.022	4.698	4.399
Bicycle LOS	B	B	E	E

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



APPENDIX D-4

INTERSECTION ANALYSIS
WORKSHEETS –
OPENING YEAR 2026
CUMULATIVE PLUS PROJECT

Perris Travel Center Project

Vistro File: K:\...\Perris TC_AM.vistro
Report File: K:\...\4 OY CP WP AM.pdf

Scenario 4 OY 2024 CP WP AM
5/6/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-215 SB Ramps at Ethanac Road	Signalized	HCM 6th Edition	EB Thru	1.632	203.1	F
2	I-215 NB Ramps at Ethanac Road	Signalized	HCM 6th Edition	NB Right	1.899	281.7	F
3	Ethanac Road at Encanto Drive	Two-way stop	HCM 6th Edition	NB Right	0.548	44.5	E
4	Trumble Road at Ethanac Road	Signalized	HCM 6th Edition	SB Right	1.537	250.4	F
5	Ethanac Road at Project Driveway	Two-way stop	HCM 6th Edition	SB Right	0.211	17.5	C
6	Trumble Road at North Driveway	Two-way stop	HCM 6th Edition	EB Right	0.166	10.1	B
7	Trumble Road at South Driveway	Two-way stop	HCM 6th Edition	EB Right	0.046	10.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-215 SB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	203.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.632

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			Yes		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	0	0	0	110	1	248	0	672	512	132	595	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0609	1.0609	1.0609	1.0000	1.0609	1.0609	1.0609	1.0609	1.0000
In-Process Volume [veh/h]	0	0	0	531	0	202	0	541	83	128	504	0
Site-Generated Trips [veh/h]	0	0	0	95	0	0	0	5	0	97	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	743	1	465	0	1259	626	365	1140	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	196	0	122	0	331	165	96	300	0
Total Analysis Volume [veh/h]	0	0	0	782	1	489	0	1325	659	384	1200	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	10	0	0	10	0	5	10	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	26	0	0	51	0	13	64	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	14	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	C	R	L	C
C, Cycle Length [s]		90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		22	22	35	35	21	60
g / C, Green / Cycle		0.24	0.24	0.39	0.39	0.24	0.67
(v / s)_i Volume / Saturation Flow Rate		0.43	0.30	0.70	0.41	0.21	0.33
s, saturation flow rate [veh/h]		1810	1615	1900	1615	1810	3618
c, Capacity [veh/h]		442	395	734	624	426	2412
d1, Uniform Delay [s]		34.00	34.00	27.61	27.61	33.37	7.48
k, delay calibration		0.50	0.38	0.50	0.50	0.12	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		355.65	123.23	367.28	51.59	7.84	0.74
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		1.77	1.24	1.80	1.06	0.90	0.50
d, Delay for Lane Group [s/veh]		389.65	157.23	394.89	79.20	41.21	8.22
Lane Group LOS		F	F	F	F	D	A
Critical Lane Group		Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		53.07	21.88	89.86	21.64	8.83	5.14
50th-Percentile Queue Length [ft/ln]		1326.77	546.89	2246.47	540.95	220.68	128.48
95th-Percentile Queue Length [veh/ln]		82.71	33.07	140.86	30.39	13.70	8.86
95th-Percentile Queue Length [ft/ln]		2067.87	826.76	3521.59	759.78	342.50	221.42

Movement, Approach, & Intersection Results

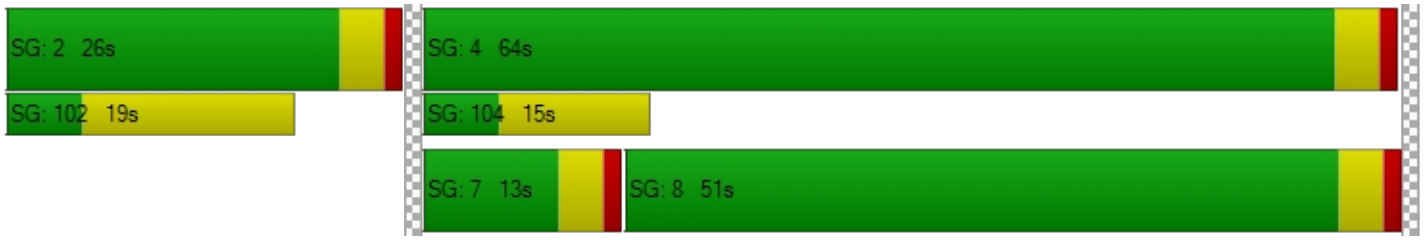
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	389.65	389.65	157.23	0.00	394.89	79.20	41.21	8.22	0.00
Movement LOS				F	F	F		F	F	D	A	
d_A, Approach Delay [s/veh]	0.00			300.30			290.03			16.22		
Approach LOS	A			F			F			B		
d_I, Intersection Delay [s/veh]	203.12											
Intersection LOS	F											
Intersection V/C	1.632											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersectio	0.000	2.355	0.000	3.032
Crosswalk LOS	F	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	489	1044	1333
d_b, Bicycle Delay [s]	45.00	25.69	10.27	5.00
l_b,int, Bicycle LOS Score for Intersection	4.132	3.658	4.833	2.866
Bicycle LOS	D	D	E	C

Sequence

Ring 1	2	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: I-215 NB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	281.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.899

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	247	0	118	0	0	0	221	560	0	0	473	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0609	1.0609	1.0609	1.0000	1.0000	1.0000	1.0609	1.0609	1.0000	1.0000	1.0609	1.0609
In-Process Volume [veh/h]	133	0	349	0	0	0	128	910	0	0	500	287
Site-Generated Trips [veh/h]	0	0	95	0	0	0	0	100	0	0	102	98
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	395	0	569	0	0	0	362	1604	0	0	1104	565
Peak Hour Factor	0.9500	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	104	0	150	0	0	0	95	422	0	0	291	149
Total Analysis Volume [veh/h]	416	0	599	0	0	0	381	1688	0	0	1162	595
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	0	0	0	5	10	0	0	10	0
Maximum Green [s]	0	30	0	0	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	22	0	0	0	0	17	68	0	0	51	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R		L	C	C
C, Cycle Length [s]	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	18	18		13	64	47
g / C, Green / Cycle	0.20	0.20		0.14	0.71	0.52
(v / s)_i Volume / Saturation Flow Rate	0.23	0.37		0.21	0.89	0.98
s, saturation flow rate [veh/h]	1810	1615		1810	1900	1793
c, Capacity [veh/h]	362	323		261	1351	936
d1, Uniform Delay [s]	36.00	36.00		38.50	13.00	21.50
k, delay calibration	0.22	0.50		0.18	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	81.36	396.26		213.58	118.52	398.54
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.15	1.85		1.46	1.25	1.88
d, Delay for Lane Group [s/veh]	117.36	432.26		252.08	131.52	420.04
Lane Group LOS	F	F		F	F	F
Critical Lane Group	No	Yes		Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	15.92	42.46		21.16	64.77	121.41
50th-Percentile Queue Length [ft/ln]	398.05	1061.59		529.00	1619.29	3035.14
95th-Percentile Queue Length [veh/ln]	24.10	66.96		33.23	93.33	194.21
95th-Percentile Queue Length [ft/ln]	602.51	1674.12		830.78	2333.15	4855.17

Movement, Approach, & Intersection Results

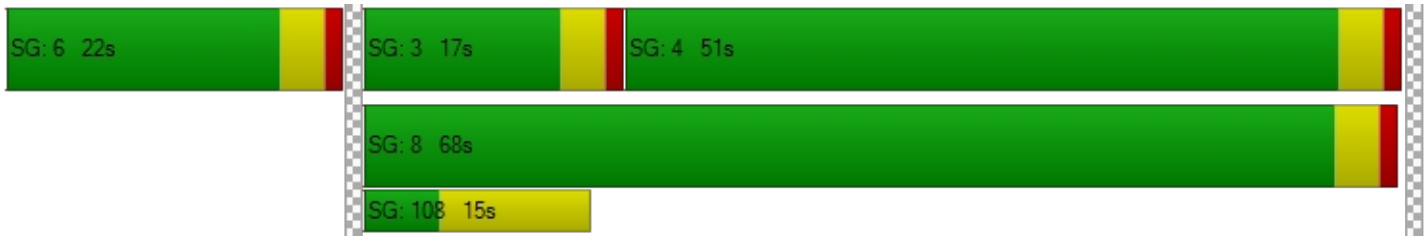
d_M, Delay for Movement [s/veh]	117.36	117.36	432.26	0.00	0.00	0.00	252.08	131.52	0.00	0.00	420.04	420.04
Movement LOS	F	F	F				F	F			F	F
d_A, Approach Delay [s/veh]	303.20			0.00			153.72			420.04		
Approach LOS	F			A			F			F		
d_I, Intersection Delay [s/veh]	281.72											
Intersection LOS	F											
Intersection V/C	1.899											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.272	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	0	1422	1044
d_b, Bicycle Delay [s]	28.80	45.00	3.76	10.27
l_b,int, Bicycle LOS Score for Intersection	3.234	4.132	4.973	4.459
Bicycle LOS	C	D	E	E

Sequence

Ring 1	-	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Ethanac Road at Encanto Drive

Control Type:	Two-way stop	Delay (sec / veh):	44.5
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.548

Intersection Setup

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	100.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	59	28	621	56	40	586
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0900	1.0609	1.0609	1.0609	1.0900	1.0609
In-Process Volume [veh/h]	0	2	1131	162	0	787
Site-Generated Trips [veh/h]	0	0	195	0	0	200
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	68	0	0	0	0
Total Hourly Volume [veh/h]	64	100	1985	221	44	1609
Peak Hour Factor	0.9520	0.9500	0.9500	0.9500	0.9520	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	26	522	58	12	423
Total Analysis Volume [veh/h]	67	105	2089	233	46	1694
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.55	0.02	0.00	0.00	0.02
d_M, Delay for Movement [s/veh]	0.00	44.51	0.00	0.00	0.00	0.00
Movement LOS		E	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	2.88	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	71.91	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	44.51		0.00		0.00	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	1.13					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 4: Trumble Road at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	250.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.537

Intersection Setup

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	46	10	29	33	11	81	61	566	7	36	502	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609
In-Process Volume [veh/h]	226	0	9	27	0	34	116	982	35	20	496	0
Site-Generated Trips [veh/h]	0	0	0	5	0	148	195	0	0	0	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	11	0	0	11	-11	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	68	0	0	31	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	275	11	40	78	12	268	455	1571	42	89	1034	15
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	3	11	21	3	71	120	413	11	23	272	4
Total Analysis Volume [veh/h]	289	12	42	82	13	282	479	1654	44	94	1088	16
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	19	0	9	14	0	22	53	0	9	40	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
l2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	15	5	10	18	49	49	5	36
g / C, Green / Cycle	0.11	0.17	0.06	0.11	0.20	0.54	0.54	0.06	0.40
(v / s)_i Volume / Saturation Flow Rate	0.16	0.03	0.05	0.18	0.26	0.87	0.03	0.05	0.58
s, saturation flow rate [veh/h]	1810	1671	1810	1626	1810	1900	1615	1810	1895
c, Capacity [veh/h]	201	278	101	181	362	1034	879	101	758
d1, Uniform Delay [s]	40.00	32.29	42.04	40.00	36.00	20.50	9.60	42.34	27.00
k, delay calibration	0.11	0.11	0.11	0.12	0.30	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	202.99	0.34	14.56	290.74	156.91	274.08	0.11	28.30	212.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.44	0.19	0.82	1.63	1.32	1.60	0.05	0.94	1.46
d, Delay for Lane Group [s/veh]	242.99	32.63	56.61	330.74	192.91	294.58	9.71	70.64	239.67
Lane Group LOS	F	C	E	F	F	F	A	E	F
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	15.71	1.03	2.19	18.52	23.52	98.07	0.41	2.85	60.09
50th-Percentile Queue Length [ft/ln]	392.78	25.69	54.67	462.96	587.93	2451.72	10.28	71.13	1502.27
95th-Percentile Queue Length [veh/ln]	25.21	1.85	3.94	29.93	35.92	152.16	0.74	5.12	90.76
95th-Percentile Queue Length [ft/ln]	630.22	46.24	98.41	748.18	898.04	3803.99	18.50	128.04	2269.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	242.99	32.63	32.63	56.61	330.74	330.74	192.91	294.58	9.71	70.64	239.67	239.67
Movement LOS	F	C	C	E	F	F	F	F	A	E	F	F
d_A, Approach Delay [s/veh]	209.87			271.12			266.46			226.41		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	250.43											
Intersection LOS	F											
Intersection V/C	1.537											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.102	0.000	0.000	2.909
Crosswalk LOS	B	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	222	1089	800
d_b, Bicycle Delay [s]	31.25	35.56	9.34	16.20
l_b,int, Bicycle LOS Score for Intersection	2.126	2.182	5.152	3.536
Bicycle LOS	B	B	F	D

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: Ethanac Road at Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	17.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.211

Intersection Setup

Name	Project Driveway		Ethanac Road		Ethanac Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	100.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Project Driveway		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	0	0	0	649	453	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	2.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	1133	756	0
Site-Generated Trips [veh/h]	0	52	0	195	148	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	21	0	0	-21	21
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	68	0
Total Hourly Volume [veh/h]	0	73	0	1977	1404	26
Peak Hour Factor	1.0000	0.9500	1.0000	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	19	0	520	369	7
Total Analysis Volume [veh/h]	0	77	0	2081	1478	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.21	0.00	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	17.51	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.79	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	19.67	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	17.51		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.37					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Trumble Road at North Driveway

Control Type:	Two-way stop	Delay (sec / veh):	10.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.166

Intersection Setup

Name	Trumble Road		Trumble Road		North Driveway	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Trumble Road		Trumble Road		North Driveway	
Base Volume Input [veh/h]	0	85	125	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	116	61	0	0	0
Site-Generated Trips [veh/h]	128	0	0	0	0	133
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	128	201	186	0	0	133
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	53	49	0	0	35
Total Analysis Volume [veh/h]	135	212	196	0	0	140
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.00	0.00	0.00	0.00	0.17
d_M, Delay for Movement [s/veh]	7.90	0.00	0.00	0.00	15.40	10.10
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.33	0.00	0.00	0.00	0.59	0.59
95th-Percentile Queue Length [ft/ln]	8.14	0.00	0.00	0.00	14.79	14.79
d_A, Approach Delay [s/veh]	3.07		0.00		10.10	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.63					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 7: Trumble Road at South Driveway

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.046

Intersection Setup

Name	Trumble Road		Trumble Road		South Driveway	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Trumble Road		Trumble Road		South Driveway	
Base Volume Input [veh/h]	0	85	125	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	116	61	0	0	0
Site-Generated Trips [veh/h]	67	128	133	0	0	20
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	11	0	0	0	0	11
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	329	319	0	0	31
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	87	84	0	0	8
Total Analysis Volume [veh/h]	82	346	336	0	0	33
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.00	0.00	0.00	0.05
d_M, Delay for Movement [s/veh]	8.12	0.00	0.00	0.00	16.75	10.31
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.21	0.00	0.00	0.00	0.15	0.15
95th-Percentile Queue Length [ft/ln]	5.33	0.00	0.00	0.00	3.65	3.65
d_A, Approach Delay [s/veh]	1.56		0.00		10.31	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.26					
Intersection LOS	B					

Perris Travel Center Project

Vistro File: K:\...\Perris TC_PM.vistro
Report File: K:\...\4 OY CP WP PM.pdf

Scenario 4 OY 2024 CP WP PM
5/6/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-215 SB Ramps at Ethanac Road	Signalized	HCM 6th Edition	EB Thru	2.113	503.1	F
2	I-215 NB Ramps at Ethanac Road	Signalized	HCM 6th Edition	WB Thru	2.588	555.8	F
3	Ethanac Road at Encanto Drive	Two-way stop	HCM 6th Edition	NB Right	0.971	126.4	F
4	Trumble Road at Ethanac Road	Signalized	HCM 6th Edition	WB Thru	1.923	480.1	F
5	Ethanac Road at Project Driveway	Two-way stop	HCM 6th Edition	SB Right	0.504	38.4	E
6	Trumble Road at North Driveway	Two-way stop	HCM 6th Edition	EB Right	0.175	10.7	B
7	Trumble Road at South Driveway	Two-way stop	HCM 6th Edition	EB Right	0.074	11.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-215 SB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	503.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.113

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			Yes		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	0	0	0	272	5	344	0	648	319	131	745	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0609	1.0609	1.0609	1.0000	1.0609	1.0609	1.0609	1.0609	1.0000
In-Process Volume [veh/h]	0	0	0	542	0	154	0	757	151	409	629	0
Site-Generated Trips [veh/h]	0	0	0	115	0	0	0	7	0	106	7	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	946	5	519	0	1451	489	654	1426	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	249	1	137	0	382	129	172	375	0
Total Analysis Volume [veh/h]	0	0	0	996	5	546	0	1527	515	688	1501	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	10	0	0	10	0	5	10	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	27	0	0	41	0	22	63	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	14	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	C	R	L	C
C, Cycle Length [s]		90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		23	23	19	19	36	59
g / C, Green / Cycle		0.26	0.26	0.21	0.21	0.40	0.66
(v / s)_i Volume / Saturation Flow Rate		0.55	0.34	0.80	0.32	0.38	0.41
s, saturation flow rate [veh/h]		1810	1615	1900	1615	1810	3618
c, Capacity [veh/h]		463	413	394	335	731	2372
d1, Uniform Delay [s]		33.50	33.50	35.68	35.68	25.80	9.12
k, delay calibration		0.50	0.46	0.50	0.50	0.29	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		530.99	160.27	1301.66	257.08	14.59	1.30
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		2.16	1.32	3.88	1.54	0.94	0.63
d, Delay for Lane Group [s/veh]		564.49	193.77	1337.33	292.76	40.39	10.42
Lane Group LOS		F	F	F	F	D	B
Critical Lane Group		Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		78.00	27.09	150.75	31.05	16.29	7.77
50th-Percentile Queue Length [ft/ln]		1949.89	677.32	3768.85	776.23	407.19	194.34
95th-Percentile Queue Length [veh/ln]		122.80	41.18	231.23	48.41	22.91	12.35
95th-Percentile Queue Length [ft/ln]		3069.96	1029.53	5780.83	1210.33	572.66	308.66

Movement, Approach, & Intersection Results

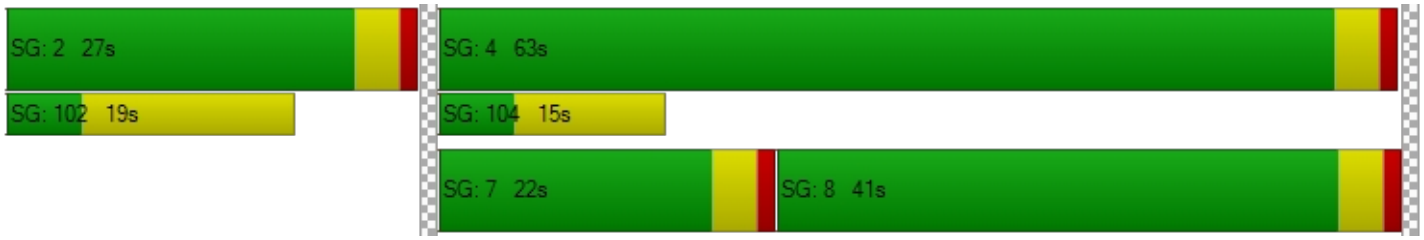
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	564.49	564.49	193.77	0.00	1337.33	292.76	40.39	10.42	0.00
Movement LOS				F	F	F		F	F	D	B	
d_A, Approach Delay [s/veh]	0.00			433.65			1073.89			19.84		
Approach LOS	A			F			F			B		
d_I, Intersection Delay [s/veh]	503.14											
Intersection LOS	F											
Intersection V/C	2.113											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersectio	0.000	2.444	0.000	3.281
Crosswalk LOS	F	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	511	822	1311
d_b, Bicycle Delay [s]	45.00	24.94	15.61	5.34
l_b,int, Bicycle LOS Score for Intersection	4.132	4.112	4.929	3.366
Bicycle LOS	D	D	E	C

Sequence

Ring 1	2	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: I-215 NB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	555.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.588

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	441	2	195	0	0	0	224	660	0	0	440	173
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0609	1.0609	1.0609	1.0000	1.0000	1.0000	1.0609	1.0609	1.0000	1.0000	1.0609	1.0609
In-Process Volume [veh/h]	103	0	295	0	0	0	238	973	0	0	937	644
Site-Generated Trips [veh/h]	0	0	115	0	0	0	0	122	0	0	113	106
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	571	2	617	0	0	0	476	1795	0	0	1517	934
Peak Hour Factor	0.9500	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	150	1	162	0	0	0	125	472	0	0	399	246
Total Analysis Volume [veh/h]	601	2	649	0	0	0	501	1889	0	0	1597	983
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	0	0	0	5	10	0	0	10	0
Maximum Green [s]	0	30	0	0	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	26	0	0	0	0	17	64	0	0	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R		L	C	C
C, Cycle Length [s]	90	90		90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	22	22		13	60	43
g / C, Green / Cycle	0.24	0.24		0.14	0.67	0.48
(v / s)_i Volume / Saturation Flow Rate	0.33	0.40		0.28	0.99	1.45
s, saturation flow rate [veh/h]	1810	1615		1810	1900	1780
c, Capacity [veh/h]	442	395		261	1267	851
d1, Uniform Delay [s]	34.00	34.00		38.50	15.00	23.50
k, delay calibration	0.45	0.50		0.33	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	176.13	300.99		421.75	225.32	918.09
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.36	1.64		1.92	1.49	3.03
d, Delay for Lane Group [s/veh]	210.13	334.99		460.25	240.32	941.59
Lane Group LOS	F	F		F	F	F
Critical Lane Group	No	Yes		Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	31.02	41.37		36.27	99.99	233.49
50th-Percentile Queue Length [ft/ln]	775.40	1034.23		906.85	2499.69	5837.17
95th-Percentile Queue Length [veh/ln]	46.94	64.63		57.03	153.36	380.06
95th-Percentile Queue Length [ft/ln]	1173.61	1615.82		1425.63	3834.02	9501.42

Movement, Approach, & Intersection Results

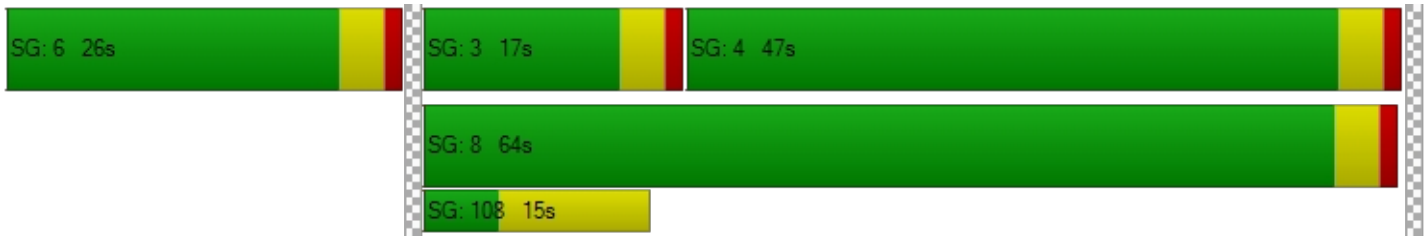
d_M, Delay for Movement [s/veh]	210.13	210.13	334.99	0.00	0.00	0.00	460.25	240.32	0.00	0.00	941.59	941.59
Movement LOS	F	F	F				F	F			F	F
d_A, Approach Delay [s/veh]	274.86			0.00			286.43			941.59		
Approach LOS	F			A			F			F		
d_I, Intersection Delay [s/veh]	555.76											
Intersection LOS	F											
Intersection V/C	2.588											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.349	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	0	1333	956
d_b, Bicycle Delay [s]	25.69	45.00	5.00	12.27
l_b,int, Bicycle LOS Score for Intersection	3.625	4.132	5.503	5.817
Bicycle LOS	D	D	F	F

Sequence

Ring 1	-	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Ethanac Road at Encanto Drive

Control Type:	Two-way stop	Delay (sec / veh):	126.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.971

Intersection Setup

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	100.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	55	57	757	125	30	542
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0900	1.0609	1.0609	1.0609	1.0900	1.0609
In-Process Volume [veh/h]	0	5	987	369	0	1582
Site-Generated Trips [veh/h]	0	0	237	0	0	219
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	71	0	0	0	0
Total Hourly Volume [veh/h]	60	136	2027	502	33	2376
Peak Hour Factor	0.9210	0.9500	0.9500	0.9500	0.9210	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	36	533	132	9	625
Total Analysis Volume [veh/h]	65	143	2134	528	36	2501
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.97	0.02	0.01	0.00	0.03
d_M, Delay for Movement [s/veh]	0.00	126.42	0.00	0.00	0.00	0.00
Movement LOS		F	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	7.06	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	176.48	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	126.42		0.00		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	3.41					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 4: Trumble Road at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	480.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.923

Intersection Setup

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	45	2	32	35	8	112	75	673	20	18	414	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609
In-Process Volume [veh/h]	269	0	41	26	0	77	93	820	79	45	1108	0
Site-Generated Trips [veh/h]	0	0	0	7	0	150	237	0	0	0	7	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	17	0	0	17	-17	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	71	0	0	45	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	317	2	75	87	8	346	498	1517	100	109	1554	25
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	1	20	23	2	91	131	399	26	29	409	7
Total Analysis Volume [veh/h]	334	2	79	92	8	364	524	1597	105	115	1636	26
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	21	0	15	19	0	22	45	0	9	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	15	6	15	25	46	46	7	28
g / C, Green / Cycle	0.07	0.17	0.07	0.17	0.28	0.51	0.51	0.08	0.31
(v / s)_i Volume / Saturation Flow Rate	0.18	0.05	0.05	0.23	0.29	0.84	0.07	0.06	0.88
s, saturation flow rate [veh/h]	1810	1621	1810	1620	1810	1900	1615	1810	1895
c, Capacity [veh/h]	121	272	119	271	500	965	821	146	592
d1, Uniform Delay [s]	42.00	32.80	41.38	37.49	32.56	22.13	11.64	40.63	30.95
k, delay calibration	0.12	0.11	0.11	0.22	0.35	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	801.61	0.60	10.16	179.01	47.10	298.99	0.32	9.16	818.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	2.77	0.30	0.77	1.38	1.05	1.65	0.13	0.79	2.81
d, Delay for Lane Group [s/veh]	843.61	33.40	51.54	216.50	79.67	321.13	11.97	49.80	849.79
Lane Group LOS	F	C	D	F	F	F	B	D	F
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	29.50	1.57	2.32	19.28	17.04	98.66	1.13	2.84	146.89
50th-Percentile Queue Length [ft/ln]	737.62	39.34	58.00	482.00	425.97	2466.47	28.25	70.98	3672.26
95th-Percentile Queue Length [veh/ln]	46.33	2.83	4.18	30.29	24.50	153.85	2.03	5.11	232.51
95th-Percentile Queue Length [ft/ln]	1158.31	70.81	104.41	757.19	612.42	3846.29	50.86	127.76	5812.64

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	843.61	33.40	33.40	51.54	216.50	216.50	79.67	321.13	11.97	49.80	849.79	849.79
Movement LOS	F	C	C	D	F	F	F	F	B	D	F	F
d_A, Approach Delay [s/veh]	685.48			183.79			249.71			798.02		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	480.06											
Intersection LOS	F											
Intersection V/C	1.923											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.151	0.000	0.000	3.094
Crosswalk LOS	B	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	378	333	911	622
d_b, Bicycle Delay [s]	29.61	31.25	13.34	21.36
l_b,int, Bicycle LOS Score for Intersection	2.244	2.325	5.233	4.492
Bicycle LOS	B	B	F	E

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: Ethanac Road at Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	38.4
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.504

Intersection Setup

Name	Project Driveway		Ethanac Road		Ethanac Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	100.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Project Driveway		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	0	0	0	814	519	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	2.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	992	1454	0
Site-Generated Trips [veh/h]	0	69	0	237	150	7
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	32	0	0	-32	32
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	101	0	2043	2091	39
Peak Hour Factor	1.0000	0.9500	1.0000	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	27	0	538	550	10
Total Analysis Volume [veh/h]	0	106	0	2151	2201	41
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.50	0.00	0.02	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	38.38	0.00	0.00	0.00	0.00
Movement LOS		E		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	2.55	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	63.82	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	38.38		0.00		0.00	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	0.90					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 6: Trumble Road at North Driveway

Control Type:	Two-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.175

Intersection Setup

Name	Trumble Road		Trumble Road		North Driveway	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Trumble Road		Trumble Road		North Driveway	
Base Volume Input [veh/h]	0	101	155	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	93	103	0	0	0
Site-Generated Trips [veh/h]	146	0	0	0	0	128
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	194	258	0	0	128
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	51	68	0	0	34
Total Analysis Volume [veh/h]	154	204	272	0	0	135
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.00	0.00	0.00	0.00	0.17
d_M, Delay for Movement [s/veh]	8.13	0.00	0.00	0.00	17.18	10.65
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.40	0.00	0.00	0.00	0.63	0.63
95th-Percentile Queue Length [ft/ln]	10.02	0.00	0.00	0.00	15.78	15.78
d_A, Approach Delay [s/veh]	3.50		0.00		10.65	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.52					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 7: Trumble Road at South Driveway

Control Type:	Two-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.074

Intersection Setup

Name	Trumble Road		Trumble Road		South Driveway	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Trumble Road		Trumble Road		South Driveway	
Base Volume Input [veh/h]	0	101	155	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	93	103	0	0	0
Site-Generated Trips [veh/h]	91	146	128	0	0	29
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	17	0	0	0	0	17
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	340	386	0	0	46
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	89	102	0	0	12
Total Analysis Volume [veh/h]	114	358	406	0	0	48
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.00	0.00	0.00	0.00	0.07
d_M, Delay for Movement [s/veh]	8.47	0.00	0.00	0.00	20.11	11.03
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.33	0.00	0.00	0.00	0.24	0.24
95th-Percentile Queue Length [ft/ln]	8.21	0.00	0.00	0.00	6.01	6.01
d_A, Approach Delay [s/veh]	2.04		0.00		11.03	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.61					
Intersection LOS	B					

APPENDIX D-5

INTERSECTION ANALYSIS
WORKSHEETS –
OY 2026 CUMULATIVE PLUS
PROJECT WITH MENIFEE
COMMERCE CENTER

Perris Travel Center Project

Vistro File: K:\...\Perris TC_AM-MIT.vistro
Report File: K:\...\Mitigation AM - Core 5.pdf

Scenario 6 OY 2024 CP WP AM - Core 5
5/6/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-215 SB Ramps at Ethanac Road	Signalized	HCM 6th Edition	EB Right	1.155	63.1	E
2	I-215 NB Ramps at Ethanac Road	Signalized	HCM 6th Edition	WB Right	1.031	37.1	D
3	Ethanac Road at Encanto Drive	Signalized	HCM 6th Edition	NB Right	0.816	13.8	B
4	Trumble Road at Ethanac Road	Signalized	HCM 6th Edition	WB Right	1.091	73.7	E
5	Ethanac Road at Project Driveway	Two-way stop	HCM 6th Edition	SB Right	0.211	17.5	C
6	Trumble Road at North Driveway	Two-way stop	HCM 6th Edition	EB Right	0.166	10.1	B
7	Trumble Road at South Driveway	Two-way stop	HCM 6th Edition	EB Right	0.046	10.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-215 SB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	63.1
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.155

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			Yes		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	0	0	0	110	1	248	0	672	512	132	595	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0609	1.0609	1.0609	1.0000	1.0609	1.0609	1.0609	1.0609	1.0000
In-Process Volume [veh/h]	0	0	0	531	0	202	0	541	83	128	504	0
Site-Generated Trips [veh/h]	0	0	0	95	0	0	0	5	0	97	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	743	1	465	0	1259	626	365	1140	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	196	0	122	0	331	165	96	300	0
Total Analysis Volume [veh/h]	0	0	0	782	1	489	0	1325	659	384	1200	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	10	0	0	10	0	5	10	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	38	0	0	39	0	13	52	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	14	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	C	R	L	C
C, Cycle Length [s]		90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		34	34	31	31	13	48
g / C, Green / Cycle		0.38	0.38	0.35	0.35	0.14	0.53
(v / s)_i Volume / Saturation Flow Rate		0.43	0.30	0.37	0.41	0.11	0.33
s, saturation flow rate [veh/h]		1810	1615	3618	1615	3514	3618
c, Capacity [veh/h]		684	610	1268	566	486	1929
d1, Uniform Delay [s]		28.00	24.99	29.22	29.22	37.51	14.66
k, delay calibration		0.50	0.31	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		81.96	6.85	37.78	91.87	2.92	1.52
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		1.15	0.80	1.04	1.16	0.79	0.62
d, Delay for Lane Group [s/veh]		109.96	31.84	67.00	121.10	40.44	16.19
Lane Group LOS		F	C	F	F	D	B
Critical Lane Group		Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]		29.49	10.05	19.72	26.11	4.21	8.29
50th-Percentile Queue Length [ft/ln]		737.16	251.20	492.96	652.84	105.33	207.32
95th-Percentile Queue Length [veh/ln]		42.04	15.25	27.81	37.98	7.58	13.02
95th-Percentile Queue Length [ft/ln]		1050.91	381.16	695.16	949.50	189.49	325.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	109.96	109.96	31.84	0.00	67.00	121.10	40.44	16.19	0.00
Movement LOS				F	F	C		F	F	D	B	
d_A, Approach Delay [s/veh]	0.00			79.93			84.97			22.06		
Approach LOS	A			E			F			C		
d_I, Intersection Delay [s/veh]	63.06											
Intersection LOS	E											
Intersection V/C	1.155											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersectio	0.000	2.355	0.000	3.110
Crosswalk LOS	F	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	756	778	1067
d_b, Bicycle Delay [s]	45.00	17.42	16.81	9.80
l_b,int, Bicycle LOS Score for Intersection	4.132	3.658	3.196	2.866
Bicycle LOS	D	D	C	C

Sequence

Ring 1	2	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: I-215 NB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	37.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.031

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	247	0	118	0	0	0	221	560	0	0	473	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0609	1.0609	1.0609	1.0000	1.0000	1.0000	1.0609	1.0609	1.0000	1.0000	1.0609	1.0609
In-Process Volume [veh/h]	133	0	349	0	0	0	128	910	0	0	500	287
Site-Generated Trips [veh/h]	0	0	95	0	0	0	0	100	0	0	102	98
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	395	0	569	0	0	0	362	1604	0	0	1104	565
Peak Hour Factor	0.9500	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	104	0	150	0	0	0	95	422	0	0	291	149
Total Analysis Volume [veh/h]	416	0	599	0	0	0	381	1688	0	0	1162	595
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	0	0	0	5	10	0	0	10	0
Maximum Green [s]	0	30	0	0	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	38	0	0	0	0	14	52	0	0	38	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R		L	C	C	R
C, Cycle Length [s]	90	90		90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	34	34		10	48	34	34
g / C, Green / Cycle	0.38	0.38		0.11	0.53	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.23	0.37		0.11	0.47	0.32	0.37
s, saturation flow rate [veh/h]	1810	1615		3514	3618	3618	1615
c, Capacity [veh/h]	684	610		390	1929	1367	610
d1, Uniform Delay [s]	22.62	27.69		39.88	18.37	25.67	27.59
k, delay calibration	0.17	0.44		0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.35	30.13		16.16	5.90	6.79	30.84
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.61	0.98		0.98	0.87	0.85	0.98
d, Delay for Lane Group [s/veh]	23.98	57.82		56.04	24.28	32.46	58.42
Lane Group LOS	C	E		E	C	C	E
Critical Lane Group	No	Yes		Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	7.10	17.17		5.01	15.48	12.14	17.16
50th-Percentile Queue Length [ft/ln]	177.55	429.28		125.21	386.98	303.38	429.10
95th-Percentile Queue Length [veh/ln]	11.47	23.97		8.68	21.93	17.85	23.96
95th-Percentile Queue Length [ft/ln]	286.81	599.18		216.97	548.28	446.21	598.96

Movement, Approach, & Intersection Results

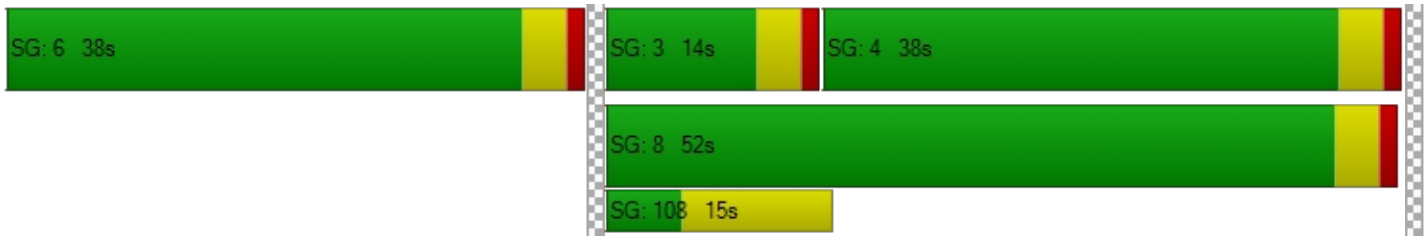
d_M, Delay for Movement [s/veh]	23.98	23.98	57.82	0.00	0.00	0.00	56.04	24.28	0.00	0.00	32.46	58.42
Movement LOS	C	C	E				E	C			C	E
d_A, Approach Delay [s/veh]	43.95			0.00			30.13			41.25		
Approach LOS	D			A			C			D		
d_I, Intersection Delay [s/veh]	37.06											
Intersection LOS	D											
Intersection V/C	1.031											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.272	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	756	0	1067	756
d_b, Bicycle Delay [s]	17.42	45.00	9.80	17.42
l_b,int, Bicycle LOS Score for Intersection	3.234	4.132	3.267	3.009
Bicycle LOS	C	D	C	C

Sequence

Ring 1	-	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Ethanac Road at Encanto Drive

Control Type:	Signalized	Delay (sec / veh):	13.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.816

Intersection Setup

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	59	28	621	56	40	586
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0900	1.0609	1.0609	1.0609	1.0900	1.0609
In-Process Volume [veh/h]	0	2	1131	162	0	787
Site-Generated Trips [veh/h]	0	0	195	0	0	200
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	68	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	64	100	1985	221	44	1609
Peak Hour Factor	0.9520	0.9500	0.9500	0.9500	0.9520	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	26	522	58	12	423
Total Analysis Volume [veh/h]	67	105	2089	233	46	1694
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	3	0	2	0	0	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	10	0	0	10
Maximum Green [s]	30	0	30	0	0	30
Amber [s]	3.0	0.0	3.0	0.0	0.0	3.0
All red [s]	1.0	0.0	1.0	0.0	0.0	1.0
Split [s]	16	0	74	0	0	74
Vehicle Extension [s]	3.0	0.0	3.0	0.0	0.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	0.0	2.0
Minimum Recall	No		No			No
Maximum Recall	No		No			No
Pedestrian Recall	No		No			No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	L	C
C, Cycle Length [s]	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	70	70	70	70
g / C, Green / Cycle	0.13	0.78	0.78	0.78	0.78
(v / s)_i Volume / Saturation Flow Rate	0.11	0.68	0.70	0.32	0.52
s, saturation flow rate [veh/h]	1517	1710	1652	143	3256
c, Capacity [veh/h]	200	1333	1287	116	2537
d1, Uniform Delay [s]	38.25	6.83	7.38	35.96	4.57
k, delay calibration	0.11	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.27	8.03	10.42	9.76	1.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.87	0.90	0.40	0.67
d, Delay for Lane Group [s/veh]	48.52	14.86	17.81	45.72	5.98
Lane Group LOS	D	B	B	D	A
Critical Lane Group	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.22	12.48	14.00	1.33	5.14
50th-Percentile Queue Length [ft/ln]	105.56	311.97	350.07	33.32	128.49
95th-Percentile Queue Length [veh/ln]	7.59	18.27	20.14	2.40	8.86
95th-Percentile Queue Length [ft/ln]	189.81	456.81	503.50	59.98	221.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.52	48.52	16.17	17.81	45.72	5.98
Movement LOS	D	D	B	B	D	A
d_A, Approach Delay [s/veh]	48.52		16.33		7.03	
Approach LOS	D		B		A	
d_I, Intersection Delay [s/veh]	13.82					
Intersection LOS	B					
Intersection V/C	0.816					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.002	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	267	1556	1556
d_b, Bicycle Delay [s]	33.80	2.22	2.22
l_b,int, Bicycle LOS Score for Intersection	1.843	3.475	2.995
Bicycle LOS	A	C	C

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Trumble Road at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	73.7
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.091

Intersection Setup

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	46	10	29	33	11	81	61	566	7	36	502	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609
In-Process Volume [veh/h]	226	0	9	27	0	34	116	982	35	20	496	0
Site-Generated Trips [veh/h]	0	0	0	5	0	148	195	0	0	0	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	11	0	0	11	-11	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	68	0	0	31	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	275	11	40	78	12	268	455	1571	42	89	1034	15
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	3	11	21	3	71	120	413	11	23	272	4
Total Analysis Volume [veh/h]	289	12	42	82	13	282	479	1654	44	94	1088	16
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	20	0	16	19	0	26	45	0	9	28	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	23	5	15	22	41	41	5	24	24
g / C, Green / Cycle	0.14	0.25	0.06	0.17	0.24	0.46	0.46	0.06	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.16	0.03	0.05	0.18	0.26	0.46	0.03	0.05	0.29	0.29
s, saturation flow rate [veh/h]	1810	1671	1810	1626	1810	3618	1615	1810	1900	1890
c, Capacity [veh/h]	261	418	110	271	442	1648	736	101	507	504
d1, Uniform Delay [s]	38.50	26.13	41.58	37.50	34.00	24.50	13.71	42.34	33.00	33.00
k, delay calibration	0.11	0.11	0.11	0.12	0.30	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	59.92	0.14	9.60	53.94	57.85	23.04	0.16	28.30	67.37	67.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.11	0.13	0.75	1.09	1.08	1.00	0.06	0.94	1.09	1.09
d, Delay for Lane Group [s/veh]	98.42	26.27	51.18	91.44	91.85	47.54	13.87	70.64	100.37	100.56
Lane Group LOS	F	C	D	F	F	F	B	E	F	F
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	10.00	0.90	2.06	9.90	16.48	21.51	0.52	2.85	20.16	20.08
50th-Percentile Queue Length [ft/ln]	250.09	22.49	51.61	247.41	411.95	537.73	12.92	71.13	503.88	502.00
95th-Percentile Queue Length [veh/ln]	15.87	1.62	3.72	15.66	24.20	29.20	0.93	5.12	29.00	28.91
95th-Percentile Queue Length [ft/ln]	396.76	40.48	92.89	391.43	605.10	729.90	23.26	128.04	724.98	722.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	98.42	26.27	26.27	51.18	91.44	91.44	91.85	47.54	13.87	70.64	100.46	100.56
Movement LOS	F	C	C	D	F	F	F	F	B	E	F	F
d_A, Approach Delay [s/veh]	87.06			82.69			56.61			98.13		
Approach LOS	F			F			E			F		
d_I, Intersection Delay [s/veh]	73.71											
Intersection LOS	E											
Intersection V/C	1.091											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.102	0.000	0.000	2.882
Crosswalk LOS	B	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	356	333	911	533
d_b, Bicycle Delay [s]	30.42	31.25	13.34	24.20
l_b,int, Bicycle LOS Score for Intersection	2.126	2.182	3.356	2.548
Bicycle LOS	B	B	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: Ethanac Road at Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	17.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.211

Intersection Setup

Name	Project Driveway		Ethanac Road		Ethanac Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Project Driveway		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	0	0	0	649	453	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	2.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	1133	756	0
Site-Generated Trips [veh/h]	0	52	0	195	148	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	21	0	0	-21	21
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	68	0
Total Hourly Volume [veh/h]	0	73	0	1977	1404	26
Peak Hour Factor	1.0000	0.9500	1.0000	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	19	0	520	369	7
Total Analysis Volume [veh/h]	0	77	0	2081	1478	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.21	0.00	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	17.51	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.79	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	19.67	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	17.51		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.37					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Trumble Road at North Driveway

Control Type:	Two-way stop	Delay (sec / veh):	10.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.166

Intersection Setup

Name	Trumble Road		Trumble Road		North Driveway	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Trumble Road		Trumble Road		North Driveway	
Base Volume Input [veh/h]	0	85	125	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	116	61	0	0	0
Site-Generated Trips [veh/h]	128	0	0	0	0	133
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	128	201	186	0	0	133
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	53	49	0	0	35
Total Analysis Volume [veh/h]	135	212	196	0	0	140
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.00	0.00	0.00	0.00	0.17
d_M, Delay for Movement [s/veh]	7.90	0.00	0.00	0.00	15.40	10.10
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.33	0.00	0.00	0.00	0.59	0.59
95th-Percentile Queue Length [ft/ln]	8.14	0.00	0.00	0.00	14.79	14.79
d_A, Approach Delay [s/veh]	3.07		0.00		10.10	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.63					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 7: Trumble Road at South Driveway

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.046

Intersection Setup

Name	Trumble Road		Trumble Road		South Driveway	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Trumble Road		Trumble Road		South Driveway	
Base Volume Input [veh/h]	0	85	125	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	116	61	0	0	0
Site-Generated Trips [veh/h]	67	128	133	0	0	20
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	11	0	0	0	0	11
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	329	319	0	0	31
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	87	84	0	0	8
Total Analysis Volume [veh/h]	82	346	336	0	0	33
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.00	0.00	0.00	0.05
d_M, Delay for Movement [s/veh]	8.12	0.00	0.00	0.00	16.75	10.31
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.21	0.00	0.00	0.00	0.15	0.15
95th-Percentile Queue Length [ft/ln]	5.33	0.00	0.00	0.00	3.65	3.65
d_A, Approach Delay [s/veh]	1.56		0.00		10.31	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.26					
Intersection LOS	B					

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-215 SB Ramps at Ethanac Road	Signalized	HCM 6th Edition	SB Left	1.424	144.4	F
2	I-215 NB Ramps at Ethanac Road	Signalized	HCM 6th Edition	NB Right	1.402	89.5	F
3	Ethanac Road at Encanto Drive	Signalized	HCM 6th Edition	NB Right	0.971	37.4	D
4	Trumble Road at Ethanac Road	Signalized	HCM 6th Edition	WB Right	1.390	147.6	F
5	Ethanac Road at Project Driveway	Two-way stop	HCM 6th Edition	SB Right	0.504	38.4	E
6	Trumble Road at North Driveway	Two-way stop	HCM 6th Edition	EB Right	0.175	10.7	B
7	Trumble Road at South Driveway	Two-way stop	HCM 6th Edition	EB Right	0.074	11.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-215 SB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	144.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.424

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			Yes		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	0	0	0	272	5	344	0	648	319	131	745	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0609	1.0609	1.0609	1.0000	1.0609	1.0609	1.0609	1.0609	1.0000
In-Process Volume [veh/h]	0	0	0	542	0	154	0	757	151	409	629	0
Site-Generated Trips [veh/h]	0	0	0	115	0	0	0	7	0	106	7	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	946	5	519	0	1451	489	654	1426	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	249	1	137	0	382	129	172	375	0
Total Analysis Volume [veh/h]	0	0	0	996	5	546	0	1527	515	688	1501	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	10	0	0	10	0	5	10	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	36	0	0	38	0	16	54	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	14	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	C	R	L	C
C, Cycle Length [s]		90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		32	32	25	25	21	50
g / C, Green / Cycle		0.36	0.36	0.28	0.28	0.23	0.56
(v / s)_i Volume / Saturation Flow Rate		0.55	0.34	0.42	0.32	0.20	0.41
s, saturation flow rate [veh/h]		1810	1615	3618	1615	3514	3618
c, Capacity [veh/h]		644	574	1012	452	813	2010
d1, Uniform Delay [s]		29.00	28.23	32.41	32.41	33.07	15.19
k, delay calibration		0.50	0.42	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		257.56	24.19	233.90	86.40	2.55	2.58
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		1.56	0.95	1.51	1.14	0.85	0.75
d, Delay for Lane Group [s/veh]		286.56	52.43	266.31	118.81	35.61	17.78
Lane Group LOS		F	D	F	F	D	B
Critical Lane Group		Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		59.25	14.77	43.53	20.35	7.26	11.27
50th-Percentile Queue Length [ft/ln]		1481.24	369.23	1088.36	508.81	181.59	281.85
95th-Percentile Queue Length [veh/ln]		90.96	21.07	66.67	29.95	11.68	16.78
95th-Percentile Queue Length [ft/ln]		2274.03	526.80	1666.77	748.68	292.09	419.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	286.56	286.56	52.43	0.00	266.31	118.81	35.61	17.78	0.00
Movement LOS				F	F	D		F	F	D	B	
d_A, Approach Delay [s/veh]	0.00			203.92			229.11			23.38		
Approach LOS	A			F			F			C		
d_I, Intersection Delay [s/veh]	144.43											
Intersection LOS	F											
Intersection V/C	1.424											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersectio	0.000	2.444	0.000	3.252
Crosswalk LOS	F	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	711	756	1111
d_b, Bicycle Delay [s]	45.00	18.69	17.42	8.89
l_b,int, Bicycle LOS Score for Intersection	4.132	4.112	3.244	3.366
Bicycle LOS	D	D	C	C

Sequence

Ring 1	2	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: I-215 NB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	89.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.402

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	441	2	195	0	0	0	224	660	0	0	440	173
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0609	1.0609	1.0609	1.0000	1.0000	1.0000	1.0609	1.0609	1.0000	1.0000	1.0609	1.0609
In-Process Volume [veh/h]	103	0	295	0	0	0	238	973	0	0	937	644
Site-Generated Trips [veh/h]	0	0	115	0	0	0	0	122	0	0	113	106
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	571	2	617	0	0	0	476	1795	0	0	1517	934
Peak Hour Factor	0.9500	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	150	1	162	0	0	0	125	472	0	0	399	246
Total Analysis Volume [veh/h]	601	2	649	0	0	0	501	1889	0	0	1597	983
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	0	0	0	5	10	0	0	10	0
Maximum Green [s]	0	30	0	0	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	31	0	0	0	0	14	59	0	0	45	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R		L	C	C	R
C, Cycle Length [s]	90	90		90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	27	27		10	55	41	41
g / C, Green / Cycle	0.30	0.30		0.11	0.61	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.33	0.40		0.14	0.52	0.44	0.61
s, saturation flow rate [veh/h]	1810	1615		3514	3618	3618	1615
c, Capacity [veh/h]	543	485		390	2211	1648	736
d1, Uniform Delay [s]	31.50	31.50		40.00	14.24	23.88	24.50
k, delay calibration	0.45	0.50		0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	70.85	166.26		131.77	4.47	15.94	160.42
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.11	1.34		1.28	0.85	0.97	1.34
d, Delay for Lane Group [s/veh]	102.35	197.76		171.77	18.72	39.82	184.92
Lane Group LOS	F	F		F	B	D	F
Critical Lane Group	No	Yes		Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	22.02	32.49		11.39	14.89	18.98	47.28
50th-Percentile Queue Length [ft/ln]	550.56	812.29		284.82	372.26	474.61	1181.98
95th-Percentile Queue Length [veh/ln]	31.70	49.11		18.54	21.22	26.13	70.62
95th-Percentile Queue Length [ft/ln]	792.59	1227.81		463.51	530.47	653.25	1765.42

Movement, Approach, & Intersection Results

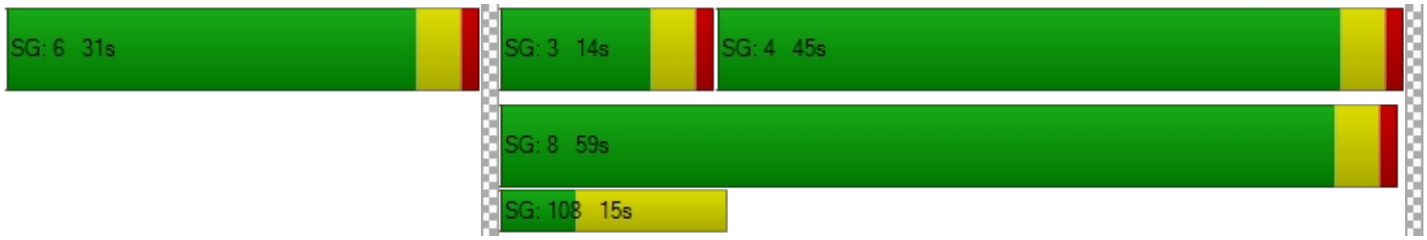
d_M, Delay for Movement [s/veh]	102.35	102.35	197.76	0.00	0.00	0.00	171.77	18.72	0.00	0.00	39.82	184.92
Movement LOS	F	F	F				F	B			D	F
d_A, Approach Delay [s/veh]	151.81			0.00			50.80			95.11		
Approach LOS	F			A			D			F		
d_I, Intersection Delay [s/veh]	89.50											
Intersection LOS	F											
Intersection V/C	1.402											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.349	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	0	1222	911
d_b, Bicycle Delay [s]	22.05	45.00	6.81	13.34
l_b,int, Bicycle LOS Score for Intersection	3.625	4.132	3.531	3.688
Bicycle LOS	D	D	D	D

Sequence

Ring 1	-	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Ethanac Road at Encanto Drive

Control Type:	Signalized	Delay (sec / veh):	37.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.971

Intersection Setup

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	55	57	757	125	30	542
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0900	1.0609	1.0609	1.0609	1.0900	1.0609
In-Process Volume [veh/h]	0	5	987	369	0	1582
Site-Generated Trips [veh/h]	0	0	237	0	0	219
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	71	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	136	2027	502	33	2376
Peak Hour Factor	0.9210	0.9500	0.9500	0.9500	0.9210	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	36	533	132	9	625
Total Analysis Volume [veh/h]	65	143	2134	528	36	2501
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Permissive	Permissive
Signal Group	3	0	2	0	0	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	10	0	0	10
Maximum Green [s]	30	0	30	0	0	30
Amber [s]	3.0	0.0	3.0	0.0	0.0	3.0
All red [s]	1.0	0.0	1.0	0.0	0.0	1.0
Split [s]	16	0	74	0	0	74
Vehicle Extension [s]	3.0	0.0	3.0	0.0	0.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	0.0	2.0
Minimum Recall	No		No			No
Maximum Recall	No		No			No
Pedestrian Recall	No		No			No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	L	C
C, Cycle Length [s]	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	70	70	70	70
g / C, Green / Cycle	0.13	0.78	0.78	0.78	0.78
(v / s)_i Volume / Saturation Flow Rate	0.14	0.78	0.83	0.35	0.77
s, saturation flow rate [veh/h]	1504	1710	1598	102	3256
c, Capacity [veh/h]	201	1330	1243	85	2532
d1, Uniform Delay [s]	39.00	10.00	10.00	44.70	9.59
k, delay calibration	0.11	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	39.60	24.86	46.78	14.75	15.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.04	1.00	1.07	0.42	0.99
d, Delay for Lane Group [s/veh]	78.60	34.86	56.78	59.45	24.79
Lane Group LOS	F	F	F	E	C
Critical Lane Group	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.55	25.17	31.09	1.14	19.76
50th-Percentile Queue Length [ft/ln]	163.80	629.29	777.36	28.61	493.93
95th-Percentile Queue Length [veh/ln]	10.91	33.42	42.79	2.06	27.05
95th-Percentile Queue Length [ft/ln]	272.83	835.58	1069.81	51.49	676.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	78.60	78.60	43.11	56.78	59.45	24.79
Movement LOS	E	E	D	E	E	C
d_A, Approach Delay [s/veh]	78.60		45.82		25.28	
Approach LOS	E		D		C	
d_I, Intersection Delay [s/veh]	37.45					
Intersection LOS	D					
Intersection V/C	0.971					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.144	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	267	1556	1556
d_b, Bicycle Delay [s]	33.80	2.22	2.22
l_b,int, Bicycle LOS Score for Intersection	1.903	3.756	3.653
Bicycle LOS	A	D	D

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Trumble Road at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	147.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.390

Intersection Setup

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	45	2	32	35	8	112	75	673	20	18	414	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609
In-Process Volume [veh/h]	269	0	41	26	0	77	93	820	79	45	1108	0
Site-Generated Trips [veh/h]	0	0	0	7	0	150	237	0	0	0	7	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	17	0	0	17	-17	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	71	0	0	45	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	317	2	75	87	8	346	498	1517	100	109	1554	25
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	1	20	23	2	91	131	399	26	29	409	7
Total Analysis Volume [veh/h]	334	2	79	92	8	364	524	1597	105	115	1636	26
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	16	19	0	16	19	0	23	46	0	9	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
l2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	21	6	15	19	42	42	5	28	28
g / C, Green / Cycle	0.13	0.23	0.07	0.17	0.21	0.47	0.47	0.06	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.18	0.05	0.05	0.23	0.29	0.44	0.07	0.06	0.44	0.44
s, saturation flow rate [veh/h]	1810	1621	1810	1620	1810	3618	1615	1810	1900	1890
c, Capacity [veh/h]	241	377	122	270	382	1688	754	101	591	588
d1, Uniform Delay [s]	39.00	27.89	41.24	37.50	35.50	22.92	13.69	42.50	31.00	31.00
k, delay calibration	0.12	0.11	0.11	0.22	0.35	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	179.33	0.28	9.10	180.11	178.79	12.37	0.39	87.53	193.16	195.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.38	0.21	0.76	1.38	1.37	0.95	0.14	1.14	1.41	1.41
d, Delay for Lane Group [s/veh]	218.33	28.17	50.34	217.61	214.29	35.29	14.08	130.03	224.16	226.51
Lane Group LOS	F	C	D	F	F	D	B	F	F	F
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	17.25	1.42	2.29	19.33	27.13	17.84	1.25	4.65	44.02	44.16
50th-Percentile Queue Length [ft/ln]	431.19	35.43	57.26	483.17	678.16	445.98	31.36	116.26	1100.48	1104.05
95th-Percentile Queue Length [veh/ln]	27.27	2.55	4.12	30.37	41.42	24.77	2.26	8.37	66.17	66.46
95th-Percentile Queue Length [ft/ln]	681.83	63.78	103.07	759.21	1035.53	619.14	56.44	209.27	1654.20	1661.50

Movement, Approach, & Intersection Results

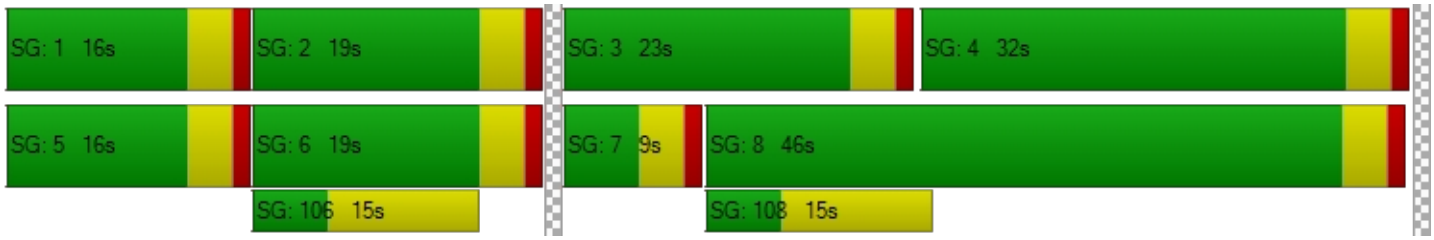
d_M, Delay for Movement [s/veh]	218.33	28.17	28.17	50.34	217.61	217.61	214.29	35.29	14.08	130.03	225.32	226.51
Movement LOS	F	C	C	D	F	F	F	D	B	F	F	F
d_A, Approach Delay [s/veh]	181.22			184.45			76.43			219.17		
Approach LOS	F			F			E			F		
d_I, Intersection Delay [s/veh]	147.56											
Intersection LOS	F											
Intersection V/C	1.390											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.151	0.000	0.000	2.993
Crosswalk LOS	B	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	333	933	622
d_b, Bicycle Delay [s]	31.25	31.25	12.80	21.36
l_b,int, Bicycle LOS Score for Intersection	2.244	2.325	3.396	3.026
Bicycle LOS	B	B	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Ethanac Road at Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	38.4
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.504

Intersection Setup

Name	Project Driveway		Ethanac Road		Ethanac Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	100.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Project Driveway		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	0	0	0	814	519	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	2.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	992	1454	0
Site-Generated Trips [veh/h]	0	69	0	237	150	7
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	32	0	0	-32	32
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	101	0	2043	2091	39
Peak Hour Factor	1.0000	0.9500	1.0000	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	27	0	538	550	10
Total Analysis Volume [veh/h]	0	106	0	2151	2201	41
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.50	0.00	0.02	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	38.38	0.00	0.00	0.00	0.00
Movement LOS		E		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	2.55	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	63.82	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	38.38		0.00		0.00	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	0.90					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 6: Trumble Road at North Driveway

Control Type:	Two-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.175

Intersection Setup

Name	Trumble Road		Trumble Road		North Driveway	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Trumble Road		Trumble Road		North Driveway	
Base Volume Input [veh/h]	0	101	155	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	93	103	0	0	0
Site-Generated Trips [veh/h]	146	0	0	0	0	128
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	194	258	0	0	128
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	51	68	0	0	34
Total Analysis Volume [veh/h]	154	204	272	0	0	135
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.00	0.00	0.00	0.00	0.17
d_M, Delay for Movement [s/veh]	8.13	0.00	0.00	0.00	17.18	10.65
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.40	0.00	0.00	0.00	0.63	0.63
95th-Percentile Queue Length [ft/ln]	10.02	0.00	0.00	0.00	15.78	15.78
d_A, Approach Delay [s/veh]	3.50		0.00		10.65	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.52					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 7: Trumble Road at South Driveway

Control Type:	Two-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.074

Intersection Setup

Name	Trumble Road		Trumble Road		South Driveway	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Trumble Road		Trumble Road		South Driveway	
Base Volume Input [veh/h]	0	101	155	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	93	103	0	0	0
Site-Generated Trips [veh/h]	91	146	128	0	0	29
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	17	0	0	0	0	17
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	340	386	0	0	46
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	89	102	0	0	12
Total Analysis Volume [veh/h]	114	358	406	0	0	48
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.00	0.00	0.00	0.00	0.07
d_M, Delay for Movement [s/veh]	8.47	0.00	0.00	0.00	20.11	11.03
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.33	0.00	0.00	0.00	0.24	0.24
95th-Percentile Queue Length [ft/ln]	8.21	0.00	0.00	0.00	6.01	6.01
d_A, Approach Delay [s/veh]	2.04		0.00		11.03	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.61					
Intersection LOS	B					

APPENDIX D-6

INTERSECTION ANALYSIS WORKSHEETS – OY 2026 CUMULATIVE PLUS PROJECT WITH ALL IMPROVEMENTS

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-215 SB Ramps at Ethanac Road	Signalized	HCM 6th Edition	WB Left	0.900	33.3	C
2	I-215 NB Ramps at Ethanac Road	Signalized	HCM 6th Edition	EB Left	0.792	26.8	C
3	Ethanac Road at Encanto Drive	Signalized	HCM 6th Edition	NB Right	0.816	13.7	B
4	Trumble Road at Ethanac Road	Signalized	HCM 6th Edition	SB Left	0.858	29.1	C
5	Ethanac Road at Project Driveway	Two-way stop	HCM 6th Edition	SB Right	0.211	17.5	C
6	Trumble Road at North Driveway	Two-way stop	HCM 6th Edition	EB Right	0.166	10.1	B
7	Trumble Road at South Driveway	Two-way stop	HCM 6th Edition	EB Right	0.046	10.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-215 SB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	33.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.900

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			Yes		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	0	0	0	110	1	248	0	672	512	132	595	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0609	1.0609	1.0609	1.0000	1.0609	1.0609	1.0609	1.0609	1.0000
In-Process Volume [veh/h]	0	0	0	531	0	202	0	541	83	128	504	0
Site-Generated Trips [veh/h]	0	0	0	95	0	0	0	5	0	97	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	743	1	465	0	1259	626	365	1140	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	196	0	122	0	331	165	96	300	0
Total Analysis Volume [veh/h]	0	0	0	782	1	489	0	1325	659	384	1200	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	10	0	0	10	0	5	10	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	51	0	0	52	0	17	69	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	14	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	R	L	C
C, Cycle Length [s]		120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		35	35	35	57	57	16	77
g / C, Green / Cycle		0.30	0.30	0.30	0.47	0.47	0.13	0.64
(v / s)_i Volume / Saturation Flow Rate		0.23	0.24	0.26	0.37	0.41	0.11	0.33
s, saturation flow rate [veh/h]		1810	1777	1615	3618	1615	3514	3618
c, Capacity [veh/h]		536	527	479	1708	762	463	2304
d1, Uniform Delay [s]		38.80	39.02	40.29	26.39	28.25	50.80	11.83
k, delay calibration		0.17	0.17	0.22	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		4.04	4.67	10.65	3.53	12.49	3.91	0.85
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.79	0.81	0.89	0.78	0.86	0.83	0.52
d, Delay for Lane Group [s/veh]		42.84	43.69	50.94	29.92	40.75	54.71	12.68
Lane Group LOS		D	D	D	C	D	D	B
Critical Lane Group		No	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]		12.01	12.15	13.26	16.21	19.02	5.87	8.52
50th-Percentile Queue Length [ft/ln]		300.18	303.85	331.47	405.23	475.43	146.63	213.03
95th-Percentile Queue Length [veh/ln]		17.69	17.87	19.23	22.81	26.17	9.84	13.31
95th-Percentile Queue Length [ft/ln]		442.25	446.79	480.76	570.30	654.22	245.93	332.71

Movement, Approach, & Intersection Results

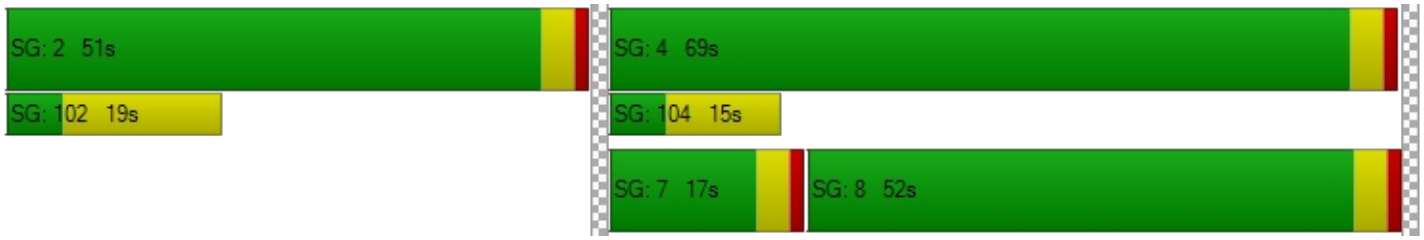
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	43.23	43.69	49.98	0.00	29.92	40.75	54.71	12.68	0.00
Movement LOS				D	D	D		C	D	D	B	
d_A, Approach Delay [s/veh]	0.00			45.82			33.51			22.86		
Approach LOS	A			D			C			C		
d_I, Intersection Delay [s/veh]	33.26											
Intersection LOS	C											
Intersection V/C	0.900											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	51.34	0.00	51.34
l_p,int, Pedestrian LOS Score for Intersectio	0.000	2.456	0.000	3.123
Crosswalk LOS	F	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	783	800	1083
d_b, Bicycle Delay [s]	60.00	22.20	21.60	12.60
l_b,int, Bicycle LOS Score for Intersection	4.132	3.658	3.196	2.866
Bicycle LOS	D	D	C	C

Sequence

Ring 1	2	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: I-215 NB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	26.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.792

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	247	0	118	0	0	0	221	560	0	0	473	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0609	1.0609	1.0609	1.0000	1.0000	1.0000	1.0609	1.0609	1.0000	1.0000	1.0609	1.0609
In-Process Volume [veh/h]	133	0	349	0	0	0	128	910	0	0	500	287
Site-Generated Trips [veh/h]	0	0	95	0	0	0	0	100	0	0	102	98
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	395	0	569	0	0	0	362	1604	0	0	1104	565
Peak Hour Factor	0.9500	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	104	0	150	0	0	0	95	422	0	0	291	149
Total Analysis Volume [veh/h]	416	0	599	0	0	0	381	1688	0	0	1162	595
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	0	0	0	5	10	0	0	10	0
Maximum Green [s]	0	30	0	0	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	56	0	0	0	0	17	64	0	0	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R		L	C	C	R
C, Cycle Length [s]	120	120	120		120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	29	29	29		16	83	63	63
g / C, Green / Cycle	0.24	0.24	0.24		0.13	0.69	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.19	0.20	0.21		0.11	0.47	0.32	0.37
s, saturation flow rate [veh/h]	1810	1656	1615		3514	3618	3618	1615
c, Capacity [veh/h]	439	402	392		457	2498	1907	851
d1, Uniform Delay [s]	42.32	43.25	43.53		50.92	10.77	19.77	21.24
k, delay calibration	0.11	0.11	0.11		0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.89	4.82	5.73		4.02	1.49	1.46	4.74
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.84	0.86		0.83	0.68	0.61	0.70
d, Delay for Lane Group [s/veh]	45.21	48.07	49.25		54.94	12.25	21.23	25.99
Lane Group LOS	D	D	D		D	B	C	C
Critical Lane Group	No	No	Yes		Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	9.67	10.06	10.20		5.83	12.23	11.40	13.25
50th-Percentile Queue Length [ft/ln]	241.71	251.44	255.11		145.76	305.66	285.05	331.14
95th-Percentile Queue Length [veh/ln]	14.77	15.26	15.44		9.79	17.96	16.94	19.21
95th-Percentile Queue Length [ft/ln]	369.19	381.46	386.09		244.76	449.02	423.50	480.36

Movement, Approach, & Intersection Results

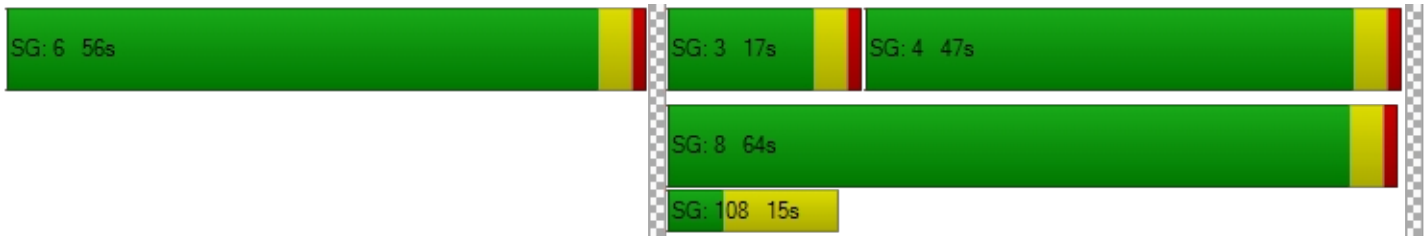
d_M, Delay for Movement [s/veh]	45.75	48.07	48.74	0.00	0.00	0.00	54.94	12.25	0.00	0.00	21.23	25.99
Movement LOS	D	D	D				D	B			C	C
d_A, Approach Delay [s/veh]	47.51			0.00			20.11			22.84		
Approach LOS	D			A			C			C		
d_I, Intersection Delay [s/veh]	26.85											
Intersection LOS	C											
Intersection V/C	0.792											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.394	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	867	0	1000	717
d_b, Bicycle Delay [s]	19.27	60.00	15.00	24.70
l_b,int, Bicycle LOS Score for Intersection	3.234	4.132	3.267	3.009
Bicycle LOS	C	D	C	C

Sequence

Ring 1	-	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Ethanac Road at Encanto Drive

Control Type:	Signalized	Delay (sec / veh):	13.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.816

Intersection Setup

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	59	28	621	56	40	586
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0900	1.0609	1.0609	1.0609	1.0900	1.0609
In-Process Volume [veh/h]	0	2	1131	162	0	787
Site-Generated Trips [veh/h]	0	0	195	0	0	200
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	68	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	64	100	1985	221	44	1609
Peak Hour Factor	0.9520	0.9500	0.9500	0.9500	0.9520	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	26	522	58	12	423
Total Analysis Volume [veh/h]	67	105	2089	233	46	1694
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	3	0	2	0	0	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	10	0	0	10
Maximum Green [s]	30	0	30	0	0	30
Amber [s]	3.0	0.0	3.0	0.0	0.0	3.0
All red [s]	1.0	0.0	1.0	0.0	0.0	1.0
Split [s]	21	0	99	0	0	99
Vehicle Extension [s]	3.0	0.0	3.0	0.0	0.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	0.0	2.0
Minimum Recall	No		No			No
Maximum Recall	No		No			No
Pedestrian Recall	No		No			No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	L	C
C, Cycle Length [s]	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	97	97	97	97
g / C, Green / Cycle	0.13	0.80	0.80	0.80	0.80
(v / s)_i Volume / Saturation Flow Rate	0.11	0.68	0.70	0.32	0.52
s, saturation flow rate [veh/h]	1517	1710	1652	143	3256
c, Capacity [veh/h]	196	1375	1328	106	2618
d1, Uniform Delay [s]	51.29	7.18	7.76	40.94	4.81
k, delay calibration	0.11	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.61	6.51	8.24	12.49	1.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.84	0.87	0.43	0.65
d, Delay for Lane Group [s/veh]	62.91	13.69	16.00	53.43	6.06
Lane Group LOS	E	B	B	D	A
Critical Lane Group	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.71	15.61	17.23	1.71	6.86
50th-Percentile Queue Length [ft/ln]	142.69	390.27	430.69	42.68	171.60
95th-Percentile Queue Length [veh/ln]	9.63	22.09	24.03	3.07	11.16
95th-Percentile Queue Length [ft/ln]	240.64	552.26	600.86	76.83	279.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.91	62.91	14.72	16.00	53.43	6.06
Movement LOS	E	E	B	B	D	A
d_A, Approach Delay [s/veh]	62.91		14.85		7.31	
Approach LOS	E		B		A	
d_I, Intersection Delay [s/veh]	13.70					
Intersection LOS	B					
Intersection V/C	0.816					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.015	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	283	1583	1583
d_b, Bicycle Delay [s]	44.20	2.60	2.60
l_b,int, Bicycle LOS Score for Intersection	1.843	3.475	2.995
Bicycle LOS	A	C	C

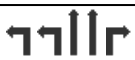
Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Trumble Road at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	29.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.858

Intersection Setup

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	46	10	29	33	11	81	61	566	7	36	502	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609
In-Process Volume [veh/h]	226	0	9	27	0	34	116	982	35	20	496	0
Site-Generated Trips [veh/h]	0	0	0	5	0	148	195	0	0	0	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	11	0	0	11	-11	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	68	0	0	31	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	275	11	40	78	12	268	455	1571	42	89	1034	15
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	3	11	21	3	71	120	413	11	23	272	4
Total Analysis Volume [veh/h]	289	12	42	82	13	282	479	1654	44	94	1088	16
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	2	3	8	0	7	4	0
Auxiliary Signal Groups						2,3						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	10	5	10	0	5	10	0
Maximum Green [s]	10	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	19	0	21	26	26	60	71	0	9	20	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	10	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
l2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	24	13	7	10	34	20	76	76	8	64	64
g / C, Green / Cycle	0.20	0.11	0.06	0.08	0.28	0.17	0.63	0.63	0.07	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.20	0.03	0.05	0.01	0.17	0.14	0.46	0.03	0.05	0.29	0.29
s, saturation flow rate [veh/h]	1454	1671	1810	1900	1615	3514	3618	1615	1810	1900	1890
c, Capacity [veh/h]	377	182	106	160	461	591	2294	1024	118	1009	1004
d1, Uniform Delay [s]	46.54	49.23	55.71	50.68	37.11	48.08	14.80	8.26	55.31	18.61	18.61
k, delay calibration	0.50	0.11	0.11	0.11	0.23	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	13.80	0.90	11.34	0.22	2.78	2.74	2.00	0.08	11.50	2.14	2.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.30	0.77	0.08	0.61	0.81	0.72	0.04	0.80	0.55	0.55
d, Delay for Lane Group [s/veh]	60.34	50.13	67.05	50.89	39.89	50.82	16.80	8.34	66.81	20.75	20.76
Lane Group LOS	E	D	E	D	D	D	B	A	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	9.62	1.54	2.78	0.37	7.52	7.12	14.82	0.44	3.18	10.53	10.48
50th-Percentile Queue Length [ft/ln]	240.54	38.56	69.55	9.29	187.91	177.97	370.52	11.09	79.49	263.21	262.04
95th-Percentile Queue Length [veh/ln]	14.71	2.78	5.01	0.67	12.01	11.49	21.13	0.80	5.72	15.85	15.79
95th-Percentile Queue Length [ft/ln]	367.71	69.40	125.19	16.72	300.32	287.36	528.36	19.96	143.08	396.24	394.78

Movement, Approach, & Intersection Results

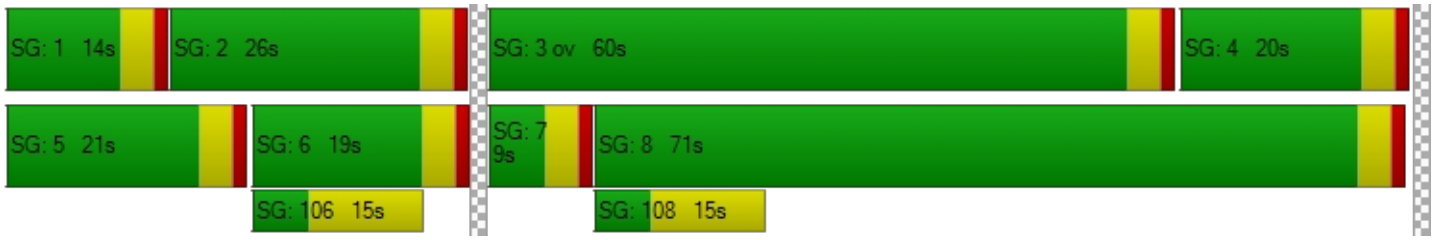
d_M, Delay for Movement [s/veh]	60.34	50.13	50.13	67.05	50.89	39.89	50.82	16.80	8.34	66.81	20.76	20.76
Movement LOS	E	D	D	E	D	D	D	B	A	E	C	C
d_A, Approach Delay [s/veh]	58.74			46.17			24.11			24.37		
Approach LOS	E			D			C			C		
d_I, Intersection Delay [s/veh]	29.12											
Intersection LOS	C											
Intersection V/C	0.858											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	0.00	0.00	51.34
l_p,int, Pedestrian LOS Score for Intersectio	2.116	0.000	0.000	2.895
Crosswalk LOS	B	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	250	367	1117	267
d_b, Bicycle Delay [s]	45.94	40.02	11.70	45.07
l_b,int, Bicycle LOS Score for Intersection	2.126	2.182	3.356	2.548
Bicycle LOS	B	B	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Ethanac Road at Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	17.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.211

Intersection Setup

Name	Project Driveway		Ethanac Road		Ethanac Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Project Driveway		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	0	0	0	649	453	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	2.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	1133	756	0
Site-Generated Trips [veh/h]	0	52	0	195	148	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	21	0	0	-21	21
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	68	0
Total Hourly Volume [veh/h]	0	73	0	1977	1404	26
Peak Hour Factor	1.0000	0.9500	1.0000	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	19	0	520	369	7
Total Analysis Volume [veh/h]	0	77	0	2081	1478	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.21	0.00	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	17.51	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.79	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	19.67	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	17.51		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.37					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Trumble Road at North Driveway

Control Type:	Two-way stop	Delay (sec / veh):	10.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.166

Intersection Setup

Name	Trumble Road		Trumble Road		North Driveway	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Trumble Road		Trumble Road		North Driveway	
Base Volume Input [veh/h]	0	85	125	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	116	61	0	0	0
Site-Generated Trips [veh/h]	128	0	0	0	0	133
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	128	201	186	0	0	133
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	53	49	0	0	35
Total Analysis Volume [veh/h]	135	212	196	0	0	140
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.00	0.00	0.00	0.00	0.17
d_M, Delay for Movement [s/veh]	7.90	0.00	0.00	0.00	15.40	10.10
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.33	0.00	0.00	0.00	0.59	0.59
95th-Percentile Queue Length [ft/ln]	8.14	0.00	0.00	0.00	14.79	14.79
d_A, Approach Delay [s/veh]	3.07		0.00		10.10	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.63					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 7: Trumble Road at South Driveway

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.046

Intersection Setup

Name	Trumble Road		Trumble Road		South Driveway	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Trumble Road		Trumble Road		South Driveway	
Base Volume Input [veh/h]	0	85	125	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	116	61	0	0	0
Site-Generated Trips [veh/h]	67	128	133	0	0	20
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	11	0	0	0	0	11
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	329	319	0	0	31
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	87	84	0	0	8
Total Analysis Volume [veh/h]	82	346	336	0	0	33
Pedestrian Volume [ped/h]	0		0		0	

Perris Travel Center Project

Vistro File: K:\...\Perris TC_PM-MIT.vistro
Report File: K:\...\new scenario 7.pdf

Scenario 7 OY 2024 CP WP PM - Core 5 + Mitigation
6/11/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-215 SB Ramps at Ethanac Road	Signalized	HCM 6th Edition	EB Thru	1.140	66.4	E
2	I-215 NB Ramps at Ethanac Road	Signalized	HCM 6th Edition	WB Right	1.228	57.4	E
3	Ethanac Road at Encanto Drive	Signalized	HCM 6th Edition	NB Right	0.971	33.0	C
4	Trumble Road at Ethanac Road	Signalized	HCM 6th Edition	WB Left	1.027	51.7	D
5	Ethanac Road at Project Driveway	Two-way stop	HCM 6th Edition	SB Right	0.504	38.4	E
6	Trumble Road at North Driveway	Two-way stop	HCM 6th Edition	EB Right	0.175	10.7	B
7	Trumble Road at South Driveway	Two-way stop	HCM 6th Edition	EB Right	0.074	11.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-215 SB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	66.4
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.140

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	275.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			Yes		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	0	0	0	272	5	344	0	648	319	131	745	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0609	1.0609	1.0609	1.0000	1.0609	1.0609	1.0609	1.0609	1.0000
In-Process Volume [veh/h]	0	0	0	542	0	154	0	757	151	409	629	0
Site-Generated Trips [veh/h]	0	0	0	115	0	0	0	7	0	106	7	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	946	5	519	0	1451	489	654	1426	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	249	1	137	0	382	129	172	375	0
Total Analysis Volume [veh/h]	0	0	0	996	5	546	0	1527	515	688	1501	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	10	0	0	10	0	5	10	0
Maximum Green [s]	0	0	0	0	30	0	0	43	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	29	0	0	41	0	20	61	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	14	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	R	L	C
C, Cycle Length [s]		90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		25	25	25	32	32	21	57
g / C, Green / Cycle		0.28	0.28	0.28	0.36	0.36	0.23	0.63
(v / s)_i Volume / Saturation Flow Rate		0.28	0.29	0.32	0.42	0.32	0.20	0.41
s, saturation flow rate [veh/h]		1810	1798	1615	3618	1615	3514	3618
c, Capacity [veh/h]		503	499	449	1295	578	812	2291
d1, Uniform Delay [s]		32.50	32.50	32.50	28.90	27.24	33.09	10.34
k, delay calibration		0.34	0.35	0.42	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		40.07	42.31	87.25	89.03	18.49	2.57	1.48
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		1.03	1.03	1.15	1.18	0.89	0.85	0.66
d, Delay for Lane Group [s/veh]		72.57	74.81	119.75	117.93	45.73	35.66	11.82
Lane Group LOS		F	F	F	F	D	D	B
Critical Lane Group		No	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		16.15	16.36	20.30	29.31	12.95	7.27	8.53
50th-Percentile Queue Length [ft/ln]		403.85	408.96	507.40	732.82	323.65	181.69	213.23
95th-Percentile Queue Length [veh/ln]		23.11	23.45	30.01	42.44	18.85	11.69	13.32
95th-Percentile Queue Length [ft/ln]		577.66	586.25	750.16	1061.05	471.18	292.22	332.97

Movement, Approach, & Intersection Results

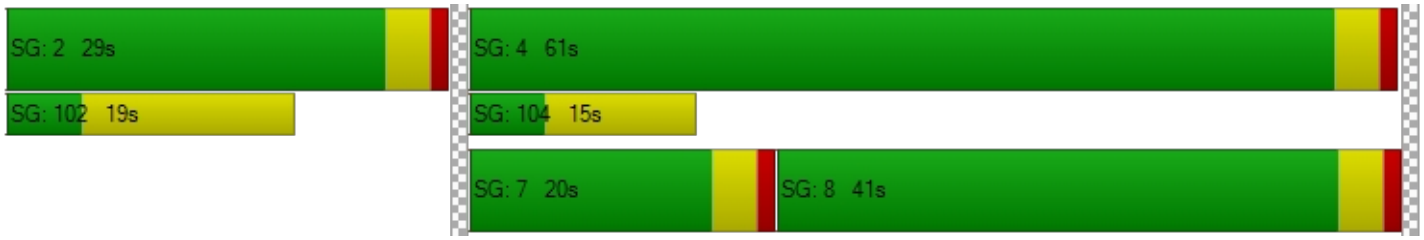
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	73.65	74.81	117.25	0.00	117.93	45.73	35.66	11.82	0.00
Movement LOS				E	E	F		F	D	D	B	
d_A, Approach Delay [s/veh]	0.00			89.04			99.72			19.31		
Approach LOS	A			F			F			B		
d_I, Intersection Delay [s/veh]	66.40											
Intersection LOS	E											
Intersection V/C	1.140											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersectio	0.000	2.510	0.000	3.252
Crosswalk LOS	F	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	556	822	1267
d_b, Bicycle Delay [s]	45.00	23.47	15.61	6.05
l_b,int, Bicycle LOS Score for Intersection	4.132	4.112	3.244	3.366
Bicycle LOS	D	D	C	C

Sequence

Ring 1	2	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: I-215 NB Ramps at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	57.4
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.228

Intersection Setup

Name							Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name							Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	441	2	195	0	0	0	224	660	0	0	440	173
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0609	1.0609	1.0609	1.0000	1.0000	1.0000	1.0609	1.0609	1.0000	1.0000	1.0609	1.0609
In-Process Volume [veh/h]	103	0	295	0	0	0	238	973	0	0	937	644
Site-Generated Trips [veh/h]	0	0	115	0	0	0	0	122	0	0	113	106
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	571	2	617	0	0	0	476	1795	0	0	1517	934
Peak Hour Factor	0.9500	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	150	1	162	0	0	0	125	472	0	0	399	246
Total Analysis Volume [veh/h]	601	2	649	0	0	0	501	1889	0	0	1597	983
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	0	0	0	5	10	0	0	10	0
Maximum Green [s]	0	30	0	0	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	24	0	0	0	0	18	66	0	0	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R		L	C	C	R
C, Cycle Length [s]	90	90	90		90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20	20		14	62	44	44
g / C, Green / Cycle	0.22	0.22	0.22		0.16	0.69	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.23	0.25	0.26		0.14	0.52	0.44	0.61
s, saturation flow rate [veh/h]	1810	1696	1615		3514	3618	3618	1615
c, Capacity [veh/h]	402	377	359		547	2492	1769	790
d1, Uniform Delay [s]	35.00	35.00	35.00		37.42	9.12	21.05	23.00
k, delay calibration	0.22	0.26	0.29		0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	40.32	66.61	89.96		6.64	2.22	8.00	120.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.04	1.11	1.16		0.92	0.76	0.90	1.25
d, Delay for Lane Group [s/veh]	75.32	101.61	124.96		44.06	11.33	29.05	143.82
Lane Group LOS	F	F	F		D	B	C	F
Critical Lane Group	No	No	Yes		Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	13.07	15.00	16.61		5.83	10.44	16.11	41.78
50th-Percentile Queue Length [ft/ln]	326.63	375.05	415.24		145.72	261.01	402.75	1044.56
95th-Percentile Queue Length [veh/ln]	19.38	22.54	25.19		9.79	15.74	22.69	61.02
95th-Percentile Queue Length [ft/ln]	484.62	563.57	629.81		244.71	393.48	567.31	1525.47

Movement, Approach, & Intersection Results

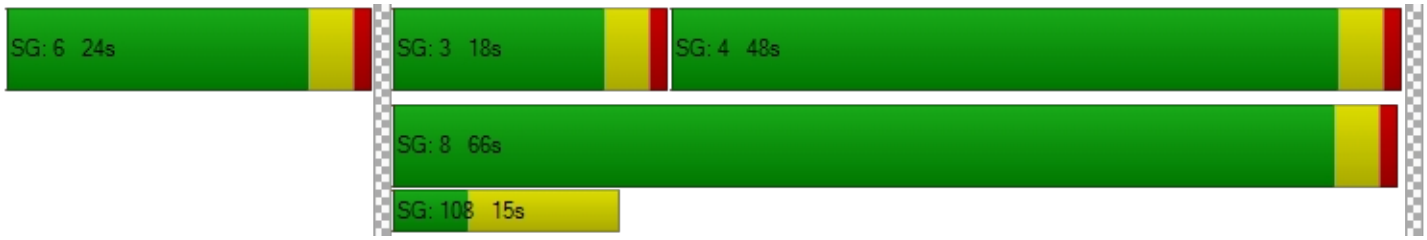
d_M, Delay for Movement [s/veh]	83.35	101.61	116.62	0.00	0.00	0.00	44.06	11.33	0.00	0.00	29.05	143.82
Movement LOS	F	F	F				D	B			C	F
d_A, Approach Delay [s/veh]	100.63			0.00			18.19			72.78		
Approach LOS	F			A			B			E		
d_I, Intersection Delay [s/veh]	57.42											
Intersection LOS	E											
Intersection V/C	1.228											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.438	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	444	0	1378	978
d_b, Bicycle Delay [s]	27.22	45.00	4.36	11.76
l_b,int, Bicycle LOS Score for Intersection	3.625	4.132	3.531	3.688
Bicycle LOS	D	D	D	D

Sequence

Ring 1	-	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Ethanac Road at Encanto Drive

Control Type:	Signalized	Delay (sec / veh):	33.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.971

Intersection Setup

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	Encanto Drive		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	55	57	757	125	30	542
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0900	1.0609	1.0609	1.0609	1.0900	1.0609
In-Process Volume [veh/h]	0	5	987	369	0	1582
Site-Generated Trips [veh/h]	0	0	237	0	0	219
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	71	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	136	2027	502	33	2376
Peak Hour Factor	0.9210	0.9500	0.9500	0.9500	0.9210	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	36	533	132	9	625
Total Analysis Volume [veh/h]	65	143	2134	528	36	2501
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Permissive	Permissive
Signal Group	3	0	2	0	0	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	10	0	0	10
Maximum Green [s]	30	0	30	0	0	30
Amber [s]	3.0	0.0	3.0	0.0	0.0	3.0
All red [s]	1.0	0.0	1.0	0.0	0.0	1.0
Split [s]	20	0	100	0	0	100
Vehicle Extension [s]	3.0	0.0	3.0	0.0	0.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	0.0	2.0
Minimum Recall	No		No			No
Maximum Recall	No		No			No
Pedestrian Recall	No		No			No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	L	C
C, Cycle Length [s]	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	96	96	96	96
g / C, Green / Cycle	0.13	0.80	0.80	0.80	0.80
(v / s)_i Volume / Saturation Flow Rate	0.14	0.78	0.83	0.35	0.77
s, saturation flow rate [veh/h]	1504	1710	1598	102	3256
c, Capacity [veh/h]	201	1368	1278	66	2605
d1, Uniform Delay [s]	52.00	10.83	12.00	59.46	10.35
k, delay calibration	0.12	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	41.50	18.68	36.53	28.99	10.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.04	0.97	1.04	0.55	0.96
d, Delay for Lane Group [s/veh]	93.50	29.50	48.53	88.45	20.86
Lane Group LOS	F	C	F	F	C
Critical Lane Group	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.33	29.81	37.15	1.63	24.20
50th-Percentile Queue Length [ft/ln]	208.23	745.29	928.84	40.64	605.07
95th-Percentile Queue Length [veh/ln]	13.27	38.77	48.99	2.93	32.27
95th-Percentile Queue Length [ft/ln]	331.74	969.15	1224.72	73.16	806.78

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	93.50	93.50	36.66	48.53	88.45	20.86
Movement LOS	F	F	D	D	F	C
d_A, Approach Delay [s/veh]	93.50		39.02		21.82	
Approach LOS	F		D		C	
d_I, Intersection Delay [s/veh]	33.04					
Intersection LOS	C					
Intersection V/C	0.971					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.158	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	267	1600	1600
d_b, Bicycle Delay [s]	45.07	2.40	2.40
l_b,int, Bicycle LOS Score for Intersection	1.903	3.756	3.653
Bicycle LOS	A	D	D

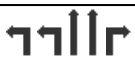
Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Trumble Road at Ethanac Road

Control Type:	Signalized	Delay (sec / veh):	51.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.027

Intersection Setup

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	Trumble Road			Trumble Road			Ethanac Road			Ethanac Road		
Base Volume Input [veh/h]	45	2	32	35	8	112	75	673	20	18	414	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609	1.0609
In-Process Volume [veh/h]	269	0	41	26	0	77	93	820	79	45	1108	0
Site-Generated Trips [veh/h]	0	0	0	7	0	150	237	0	0	0	7	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	17	0	0	17	-17	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	71	0	0	45	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	317	2	75	87	8	346	498	1517	100	109	1554	25
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	1	20	23	2	91	131	399	26	29	409	7
Total Analysis Volume [veh/h]	334	2	79	92	8	364	524	1597	105	115	1636	26
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	2	3	8	0	7	4	0
Auxiliary Signal Groups						2,3						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	10	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	27	28	0	13	14	14	22	67	0	12	57	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	10	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
l2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Detector Location [ft]	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 Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	25	8	10	32	18	63	63	8	53	53
g / C, Green / Cycle	0.19	0.21	0.06	0.08	0.27	0.15	0.53	0.53	0.07	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.18	0.05	0.05	0.00	0.23	0.15	0.44	0.07	0.06	0.44	0.44
s, saturation flow rate [veh/h]	1810	1621	1810	1900	1615	3514	3618	1615	1810	1900	1890
c, Capacity [veh/h]	347	340	118	158	431	527	1899	848	121	839	835
d1, Uniform Delay [s]	48.08	39.42	55.26	50.63	41.66	50.95	24.24	14.48	55.81	33.27	33.36
k, delay calibration	0.26	0.11	0.11	0.11	0.38	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	26.79	0.36	10.70	0.13	14.33	16.89	4.70	0.30	28.13	29.00	29.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.96	0.24	0.78	0.05	0.85	0.99	0.84	0.12	0.95	0.99	0.99
d, Delay for Lane Group [s/veh]	74.87	39.77	65.96	50.76	55.99	67.83	28.94	14.78	83.95	62.27	63.31
Lane Group LOS	E	D	E	D	E	E	C	B	F	E	E
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	12.44	2.03	3.09	0.23	11.85	9.07	19.75	1.52	4.41	30.02	30.23
50th-Percentile Queue Length [ft/ln]	310.91	50.78	77.32	5.70	296.15	226.81	493.79	38.12	110.23	750.61	755.83
95th-Percentile Queue Length [veh/ln]	18.22	3.66	5.57	0.41	17.49	14.01	27.04	2.74	7.85	39.01	39.25
95th-Percentile Queue Length [ft/ln]	455.49	91.40	139.18	10.26	437.27	350.30	676.01	68.62	196.32	975.27	981.27

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	74.87	39.77	39.77	65.96	50.76	55.99	67.83	28.94	14.78	83.95	62.78	63.31
Movement LOS	E	D	D	E	D	E	E	C	B	F	E	E
d_A, Approach Delay [s/veh]	68.02			57.88			37.42			64.16		
Approach LOS	E			E			D			E		
d_I, Intersection Delay [s/veh]	51.70											
Intersection LOS	D											
Intersection V/C	1.027											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	0.00	0.00	51.34
l_p,int, Pedestrian LOS Score for Intersectio	2.164	0.000	0.000	3.006
Crosswalk LOS	B	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	167	1050	883
d_b, Bicycle Delay [s]	38.40	50.42	13.54	18.70
l_b,int, Bicycle LOS Score for Intersection	2.244	2.325	3.396	3.026
Bicycle LOS	B	B	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: Ethanac Road at Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	38.4
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.504

Intersection Setup

Name	Project Driveway		Ethanac Road		Ethanac Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	100.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Project Driveway		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	0	0	0	814	519	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	2.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	992	1454	0
Site-Generated Trips [veh/h]	0	69	0	237	150	7
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	32	0	0	-32	32
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	101	0	2043	2091	39
Peak Hour Factor	1.0000	0.9500	1.0000	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	27	0	538	550	10
Total Analysis Volume [veh/h]	0	106	0	2151	2201	41
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.50	0.00	0.02	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	38.38	0.00	0.00	0.00	0.00
Movement LOS		E		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	2.55	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	63.82	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	38.38		0.00		0.00	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	0.90					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 6: Trumble Road at North Driveway

Control Type:	Two-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.175

Intersection Setup

Name	Trumble Road		Trumble Road		North Driveway	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Trumble Road		Trumble Road		North Driveway	
Base Volume Input [veh/h]	0	101	155	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	93	103	0	0	0
Site-Generated Trips [veh/h]	146	0	0	0	0	128
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	194	258	0	0	128
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	51	68	0	0	34
Total Analysis Volume [veh/h]	154	204	272	0	0	135
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.00	0.00	0.00	0.00	0.17
d_M, Delay for Movement [s/veh]	8.13	0.00	0.00	0.00	17.18	10.65
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.40	0.00	0.00	0.00	0.63	0.63
95th-Percentile Queue Length [ft/ln]	10.02	0.00	0.00	0.00	15.78	15.78
d_A, Approach Delay [s/veh]	3.50		0.00		10.65	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.52					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 7: Trumble Road at South Driveway

Control Type:	Two-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.074

Intersection Setup

Name	Trumble Road		Trumble Road		South Driveway	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Trumble Road		Trumble Road		South Driveway	
Base Volume Input [veh/h]	0	101	155	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	93	103	0	0	0
Site-Generated Trips [veh/h]	91	146	128	0	0	29
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	17	0	0	0	0	17
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	340	386	0	0	46
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	89	102	0	0	12
Total Analysis Volume [veh/h]	114	358	406	0	0	48
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.00	0.00	0.00	0.00	0.07
d_M, Delay for Movement [s/veh]	8.47	0.00	0.00	0.00	20.11	11.03
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.33	0.00	0.00	0.00	0.24	0.24
95th-Percentile Queue Length [ft/ln]	8.21	0.00	0.00	0.00	6.01	6.01
d_A, Approach Delay [s/veh]	2.04		0.00		11.03	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.61					
Intersection LOS	B					

APPENDIX E

CUMULATIVE PROJECTS INFORMATION

CUMULATIVE PROJECTS - DISTRIBUTION

TOTAL OF ALL CUMULATIVE PROJECTS

AM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	SR-215 SB Ramps at Ethanac Road	0	0	0	531	0	93	0	501	64	128	427	0
2	SR-215 NB Ramps at Ethanac Road	67	0	349	0	0	0	91	907	0	0	489	287
3	Encanto Drive at Ethanac Road	0	0	2	0	0	0	0	1,128	162	0	776	0
4	Trumble Road at Ethanac Road	226	0	9	27	0	34	116	979	35	20	485	0

PM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	SR-215 SB Ramps at Ethanac Road	0	0	0	542	0	111	0	620	81	409	601	0
2	SR-215 NB Ramps at Ethanac Road	78	0	295	0	0	0	112	962	0	0	934	644
3	Encanto Drive at Ethanac Road	0	0	5	0	0	0	0	976	369	0	1,579	0
4	Trumble Road at Ethanac Road	269	0	41	26	0	77	93	809	79	45	1,105	0

CUMULATIVE PROJECTS - HAND ENTERED FROM TRAFFIC STUDIES

AM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	SR-215 SB Ramps at Ethanac Road	0	0	0	0	0	109	0	40	19	0	77	0
2	SR-215 NB Ramps at Ethanac Road	66	0	0	0	0	0	37	3	0	0	11	0
3	Encanto Drive at Ethanac Road	0	0	0	0	0	0	0	3	0	0	11	0
4	Trumble Road at Ethanac Road	0	0	0	0	0	0	0	3	0	0	11	0

PM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	SR-215 SB Ramps at Ethanac Road	0	0	0	0	0	43	0	137	70	0	28	0
2	SR-215 NB Ramps at Ethanac Road	25	0	0	0	0	0	126	11	0	0	3	0
3	Encanto Drive at Ethanac Road	0	0	0	0	0	0	0	11	0	0	3	0
4	Trumble Road at Ethanac Road	0	0	0	0	0	0	0	11	0	0	3	0

TOTAL CUMULATIVE PROJECTS TRAFFIC

AM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	SR-215 SB Ramps at Ethanac Road	0	0	0	531	0	202	0	541	83	128	504	0
2	SR-215 NB Ramps at Ethanac Road	133	0	349	0	0	0	128	910	0	0	500	287
3	Encanto Drive at Ethanac Road	0	0	2	0	0	0	0	1,131	162	0	787	0
4	Trumble Road at Ethanac Road	226	0	9	27	0	34	116	982	35	20	496	0

PM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	SR-215 SB Ramps at Ethanac Road	0	0	0	542	0	154	0	757	151	409	629	0
2	SR-215 NB Ramps at Ethanac Road	103	0	295	0	0	0	238	973	0	0	937	644
3	Encanto Drive at Ethanac Road	0	0	5	0	0	0	0	987	369	0	1,582	0
4	Trumble Road at Ethanac Road	269	0	41	26	0	77	93	820	79	45	1,108	0

Enter only in blue cells	Yellow cells calculate

Int. #:	1	SR-215 SB Ramps at Ethanac Road

N

TOTAL CUMULATIVE PROJECTS TRAFFIC

Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	0	0	530	0	91	0	314	11	0	157	0
AM Out		0	0	0	1	0	2	0	187	53	128	270	0
AM Tot		0	0	0	531	0	93	0	501	64	128	427	0
PM In		0	0	0	539	0	105	0	379	14	0	198	0
PM Out		0	0	0	3	0	6	0	241	67	409	403	0
PM Tot		0	0	0	542	0	111	0	620	81	409	601	0

Zone #	1	1

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								2%				
N	0%	0%	0%	1%	0%	2%	0%	0%	0%	0%	0%	0%
AM Out				1%		2%						
PM In	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%
PM Out	0%	0%	0%	1%	0%	2%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	301	0	0	0	0	0	0	0	6	0	0	0	0
AM Out	90	0	0	0	1	0	2	0	0	0	0	0	0
PM In	115	0	0	0	0	0	0	0	2	0	0	0	0
PM Out	299	0	0	0	3	0	6	0	0	0	0	0	0

Zone #	2	4, 40

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In				20%								
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%
AM Out										20%		
PM In	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	48	0	0	0	10	0	0	0	0	0	0	0	0
AM Out	14	0	0	0	0	0	0	0	0	0	3	0	0
PM In	17	0	0	0	3	0	0	0	0	0	0	0	0
PM Out	48	0	0	0	0	0	0	0	0	0	10	0	0

Zone #	3	21, 22, 25

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In						2%					2%	
N	0%	0%	0%	0%	0%	0%	0%	2%	2%	0%	0%	0%
AM Out								2%	2%			
PM In	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	2%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	2%	2%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	107	0	0	0	0	0	2	0	0	0	0	2	0
AM Out	319	0	0	0	0	0	0	0	6	6	0	0	0
PM In	359	0	0	0	0	0	7	0	0	0	0	7	0
PM Out	211	0	0	0	0	0	0	0	4	4	0	0	0

Zone #	4	55

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In				10%				5%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	5%	0%
AM Out										10%	5%	
PM In	0%	0%	0%	10%	0%	0%	0%	5%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	5%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	345	0	0	0	35	0	0	0	17	0	0	0	0
AM Out	182	0	0	0	0	0	0	0	0	0	18	9	0
PM In	788	0	0	0	79	0	0	0	39	0	0	0	0
PM Out	817	0	0	0	0	0	0	0	0	0	82	41	0

Int. #:	1	SR-215 SB Ramps at Ethanac Road

Zone #	5	45,46

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								1%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
AM Out											1%	
PM In	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	166	0	0	0	0	0	0	0	2	0	0	0	0
AM Out	196	0	0	0	0	0	0	0	0	0	0	2	0
PM In	229	0	0	0	0	0	0	0	2	0	0	0	0
PM Out	191	0	0	0	0	0	0	0	0	0	0	2	0

Zone #	6	5, 54

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In				20%								
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%
AM Out										20%		
PM In	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	165	0	0	0	33	0	0	0	0	0	0	0	0
AM Out	41	0	0	0	0	0	0	0	0	0	8	0	0
PM In	83	0	0	0	17	0	0	0	0	0	0	0	0
PM Out	142	0	0	0	0	0	0	0	0	0	28	0	0

Zone #	7	6,7,42,51,52

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								5%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%
AM Out											5%	
PM In	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	197	0	0	0	0	0	0	0	10	0	0	0	0
AM Out	339	0	0	0	0	0	0	0	0	0	0	17	0
PM In	283	0	0	0	0	0	0	0	14	0	0	0	0
PM Out	188	0	0	0	0	0	0	0	0	0	0	9	0

Zone #	8	3, 31, 33, 53

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								10%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
AM Out											10%	
PM In	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	549	0	0	0	0	0	0	0	55	0	0	0	0
AM Out	278	0	0	0	0	0	0	0	0	0	0	28	0
PM In	456	0	0	0	0	0	0	0	46	0	0	0	0
PM Out	578	0	0	0	0	0	0	0	0	0	0	58	0

Zone #	9	11, 23, 24, 41, 43

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In									5%			
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%
AM Out											5%	
PM In	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	212	0	0	0	0	0	0	0	0	11	0	0	0
AM Out	253	0	0	0	0	0	0	0	0	0	0	13	0
PM In	283	0	0	0	0	0	0	0	0	14	0	0	0
PM Out	239	0	0	0	0	0	0	0	0	0	0	12	0

Int. #:	1	SR-215 SB Ramps at Ethanac Road

Zone #	10	17, 19, 20, 28, 30, 32, 37, 47, 56

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In				4%				6%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	6%	0%
AM Out										2%	6%	
PM In	0%	0%	0%	4%	0%	0%	0%	6%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	6%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	349	0	0	0	14	0	0	0	21	0	0	0	0
AM Out	713	0	0	0	0	0	0	0	0	0	14	43	0
PM In	864	0	0	0	35	0	0	0	52	0	0	0	0
PM Out	623	0	0	0	0	0	0	0	0	0	12	37	0

Zone #	11	9, 14, 15, 27, 38, 39, 48, 50

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In						18%					20%	
N	0%	0%	0%	0%	0%	0%	0%	28%	10%	0%	0%	0%
AM Out								28%	10%			
PM In	0%	0%	0%	0%	0%	18%	0%	0%	0%	0%	20%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	28%	10%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	348	0	0	0	0	0	63	0	0	0	0	70	0
AM Out	287	0	0	0	0	0	0	0	80	29	0	0	0
PM In	341	0	0	0	0	0	61	0	0	0	0	68	0
PM Out	408	0	0	0	0	0	0	0	114	41	0	0	0

Zone #	12	44

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In				5%								
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%
AM Out										5%		
PM In	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	1,086	0	0	0	0	0	0	0	59	0	0	0	0
AM Out	799	0	0	0	0	0	0	0	0	0	0	30	0
PM In	1,132	0	0	0	0	0	0	0	59	0	0	0	0
PM Out	1,104	0	0	0	0	0	0	0	0	0	0	70	0

Zone #	13	2, 8, 12, 13, 16, 26, 29, 34, 35, 49

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In						3%					10%	
N	0%	0%	0%	0%	0%	0%	0%	11%	2%	0%	0%	0%
AM Out								11%	2%			
PM In	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	10%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	11%	2%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	851	0	0	0	0	0	26	0	0	0	0	85	0
AM Out	915	0	0	0	0	0	0	0	101	18	0	0	0
PM In	1,233	0	0	0	0	0	37	0	0	0	0	123	0
PM Out	1,116	0	0	0	0	0	0	0	123	22	0	0	0

Zone #	14	18

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	339	0	0	0	72	0	0	0	38	0	0	0	0
AM Out	675	0	0	0	0	0	0	0	0	0	3	94	0
PM In	1,086	0	0	0	158	0	0	0	93	0	0	0	0
PM Out	847	0	0	0	0	0	0	0	0	0	6	65	0

Int. #:	1	SR-215 SB Ramps at Ethanac Road

Zone #	15	10

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	964	0	0	0	352	0	0	0	92	0	0	0	0
AM Out	249	0	0	0	0	0	0	0	0	0	69	21	0
PM In	633	0	0	0	234	0	0	0	59	0	0	0	0
PM Out	999	0	0	0	0	0	0	0	0	0	258	96	0

Zone #	16	57

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In				20%				20%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	20%	0%
AM Out										20%	20%	
PM In	0%	0%	0%	20%	0%	0%	0%	20%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	20%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	70	0	0	0	14	0	0	0	14	0	0	0	0
AM Out	67	0	0	0	0	0	0	0	0	0	13	13	0
PM In	66	0	0	0	13	0	0	0	13	0	0	0	0
PM Out	66	0	0	0	0	0	0	0	0	0	13	13	0

Enter only in blue cells	Yellow cells calculate

Int. #:	2	SR-215 NB Ramps at Ethanac Road

N

TOTAL CUMULATIVE PROJECTS TRAFFIC													
Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		54	0	349	0	0	0	6	804	0	0	103	3
AM Out		13	0	0	0	0	0	85	103	0	0	386	284
AM Tot		67	0	349	0	0	0	91	907	0	0	489	287
PM In		66	0	295	0	0	0	2	829	0	0	133	1
PM Out		12	0	0	0	0	0	110	133	0	0	801	643
PM Tot		78	0	295	0	0	0	112	962	0	0	934	644

Zone #	1	1

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In							2%					1%
N	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
AM Out								1%				
PM In	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	1%
PM Out	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	301	0	0	0	0	0	0	6	0	0	0	0	3
AM Out	90	0	0	0	0	0	0	0	1	0	0	0	0
PM In	115	0	0	0	0	0	0	2	0	0	0	0	1
PM Out	299	0	0	0	0	0	0	0	3	0	0	0	0

Zone #	2	4, 40

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In			20%					20%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	20%
AM Out											20%	20%
PM In	0%	0%	20%	0%	0%	0%	0%	20%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	20%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	48	0	0	10	0	0	0	0	10	0	0	0	0
AM Out	14	0	0	0	0	0	0	0	0	0	0	3	3
PM In	17	0	0	3	0	0	0	0	3	0	0	0	0
PM Out	48	0	0	0	0	0	0	0	0	0	0	10	10

Zone #	3	21, 22, 25

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	2%											
N	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%
AM Out							2%					
PM In	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	107	2	0	0	0	0	0	0	0	0	0	0	0
AM Out	319	0	0	0	0	0	0	6	0	0	0	0	0
PM In	359	7	0	0	0	0	0	0	0	0	0	0	0
PM Out	211	0	0	0	0	0	0	4	0	0	0	0	0

Zone #	4	55

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In			10%					15%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	10%
AM Out											15%	10%
PM In	0%	0%	10%	0%	0%	0%	0%	15%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	10%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	345	0	0	35	0	0	0	0	52	0	0	0	0
AM Out	182	0	0	0	0	0	0	0	0	0	0	27	18
PM In	788	0	0	79	0	0	0	0	118	0	0	0	0
PM Out	817	0	0	0	0	0	0	0	0	0	0	123	82

Int. #:	2	SR-215 NB Ramps at Ethanac Road

Zone #	5	45,46

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								1%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
AM Out											1%	
PM In	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	166	0	0	0	0	0	0	0	2	0	0	0	0
AM Out	196	0	0	0	0	0	0	0	0	0	0	2	0
PM In	229	0	0	0	0	0	0	0	2	0	0	0	0
PM Out	191	0	0	0	0	0	0	0	0	0	0	2	0

Zone #	6	5, 54

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In			20%					20%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	20%
AM Out											20%	20%
PM In	0%	0%	20%	0%	0%	0%	0%	20%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	20%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	165	0	0	33	0	0	0	0	33	0	0	0	0
AM Out	41	0	0	0	0	0	0	0	0	0	0	8	8
PM In	83	0	0	17	0	0	0	0	17	0	0	0	0
PM Out	142	0	0	0	0	0	0	0	0	0	0	28	28

Zone #	7	6,7,42,51,52

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								5%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%
AM Out											5%	
PM In	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	197	0	0	0	0	0	0	0	10	0	0	0	0
AM Out	339	0	0	0	0	0	0	0	0	0	0	17	0
PM In	283	0	0	0	0	0	0	0	14	0	0	0	0
PM Out	188	0	0	0	0	0	0	0	0	0	0	9	0

Zone #	8	3, 31, 33, 53

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								10%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
AM Out											10%	
PM In	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	549	0	0	0	0	0	0	0	55	0	0	0	0
AM Out	278	0	0	0	0	0	0	0	0	0	0	28	0
PM In	456	0	0	0	0	0	0	0	46	0	0	0	0
PM Out	578	0	0	0	0	0	0	0	0	0	0	58	0

Zone #	9	11, 23, 24, 41, 43

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out	5%											
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	212	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	253	13	0	0	0	0	0	0	0	0	0	0	0
PM In	283	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	239	12	0	0	0	0	0	0	0	0	0	0	0

Int. #:	2	SR-215 NB Ramps at Ethanac Road

Zone #	10	17, 19, 20, 28, 30, 32, 37, 47, 56

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In			2%									
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	4%
AM Out											8%	4%
PM In	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	4%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	349	0	0	7	0	0	0	0	0	0	0	0	0
AM Out	713	0	0	0	0	0	0	0	0	0	0	57	29
PM In	864	0	0	17	0	0	0	0	0	0	0	0	0
PM Out	623	0	0	0	0	0	0	0	0	0	0	50	25

Zone #	11	9, 14, 15, 27, 38, 39, 48, 50

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	10%										10%	
N	0%	0%	0%	0%	0%	0%	18%	10%	0%	0%	0%	0%
AM Out							18%	10%				
PM In	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
PM Out	0%	0%	0%	0%	0%	0%	18%	10%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	348	35	0	0	0	0	0	0	0	0	0	35	0
AM Out	287	0	0	0	0	0	0	52	29	0	0	0	0
PM In	341	34	0	0	0	0	0	0	0	0	0	34	0
PM Out	408	0	0	0	0	0	0	73	41	0	0	0	0

Zone #	12	44

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In			5%					5%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	5%
AM Out											5%	5%
PM In	0%	0%	5%	0%	0%	0%	0%	5%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	5%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	1,086	0	0	0	0	0	0	0	59	0	0	0	0
AM Out	799	0	0	0	0	0	0	0	0	0	0	30	0
PM In	1,132	0	0	0	0	0	0	0	59	0	0	0	0
PM Out	1,104	0	0	0	0	0	0	0	0	0	0	70	0

Zone #	13	2, 8, 12, 13, 16, 26, 29, 34, 35, 49

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	2%										8%	
N	0%	0%	0%	0%	0%	0%	3%	8%	0%	0%	0%	0%
AM Out							3%	8%				
PM In	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%
PM Out	0%	0%	0%	0%	0%	0%	3%	8%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	851	17	0	0	0	0	0	0	0	0	0	68	0
AM Out	915	0	0	0	0	0	0	27	73	0	0	0	0
PM In	1,233	25	0	0	0	0	0	0	0	0	0	99	0
PM Out	1,116	0	0	0	0	0	0	33	89	0	0	0	0

Zone #	14	18

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	339	0	0	0	0	0	0	0	110	0	0	0	0
AM Out	675	0	0	0	0	0	0	0	0	0	0	97	114
PM In	1,086	0	0	0	0	0	0	0	251	0	0	0	0
PM Out	847	0	0	0	0	0	0	0	0	0	0	71	122

Int. #:	2	SR-215 NB Ramps at Ethanac Road

Zone #	15	10

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	964	0	0	250	0	0	0	0	445	0	0	0	0
AM Out	249	0	0	0	0	0	0	0	0	0	0	90	99
PM In	633	0	0	166	0	0	0	0	293	0	0	0	0
PM Out	999	0	0	0	0	0	0	0	0	0	0	354	363

Zone #	16	57

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In			20%					40%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	20%
AM Out											40%	20%
PM In	0%	0%	20%	0%	0%	0%	0%	40%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	20%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	70	0	0	14	0	0	0	0	28	0	0	0	0
AM Out	67	0	0	0	0	0	0	0	0	0	0	27	13
PM In	66	0	0	13	0	0	0	0	26	0	0	0	0
PM Out	66	0	0	0	0	0	0	0	0	0	0	26	13

Enter only in blue cells	Yellow cells calculate

Int. #:	3	Encanto Drive at Ethanac Road

Y

TOTAL CUMULATIVE PROJECTS TRAFFIC

Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	0	0	0	0	0	0	1,025	162	0	106	0
AM Out		0	0	2	0	0	0	0	103	0	0	670	0
AM Tot		0	0	2	0	0	0	0	1,128	162	0	776	0
PM In		0	0	0	0	0	0	0	843	369	0	134	0
PM Out		0	0	5	0	0	0	0	133	0	0	1,445	0
PM Tot		0	0	5	0	0	0	0	976	369	0	1,579	0

Zone #	1	1

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In											1%	
N	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
AM Out								1%				
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	301	0	0	0	0	0	0	0	0	0	0	3	0
AM Out	90	0	0	0	0	0	0	0	1	0	0	0	0
PM In	115	0	0	0	0	0	0	0	0	0	0	1	0
PM Out	299	0	0	0	0	0	0	0	3	0	0	0	0

Zone #	2	4, 40

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								40%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%
AM Out											40%	
PM In	0%	0%	0%	0%	0%	0%	0%	40%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	48	0	0	0	0	0	0	0	19	0	0	0	0
AM Out	14	0	0	0	0	0	0	0	0	0	0	6	0
PM In	17	0	0	0	0	0	0	0	7	0	0	0	0
PM Out	48	0	0	0	0	0	0	0	0	0	0	19	0

Zone #	3	21, 22, 25

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	107	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	319	0	0	0	0	0	0	0	0	0	0	0	0
PM In	359	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	211	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	4	55

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								10%	15%			
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%
AM Out											25%	
PM In	0%	0%	0%	0%	0%	0%	0%	10%	15%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	345	0	0	0	0	0	0	0	35	52	0	0	0
AM Out	182	0	0	0	0	0	0	0	0	0	0	46	0
PM In	788	0	0	0	0	0	0	0	79	118	0	0	0
PM Out	817	0	0	0	0	0	0	0	0	0	0	204	0

Int. #:	3	Encanto Drive at Ethanac Road

Zone #	5	45,46

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								1%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
AM Out											1%	
PM In	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	166	0	0	0	0	0	0	0	2	0	0	0	0
AM Out	196	0	0	0	0	0	0	0	0	0	0	2	0
PM In	229	0	0	0	0	0	0	0	2	0	0	0	0
PM Out	191	0	0	0	0	0	0	0	0	0	0	2	0

Zone #	6	5, 54

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								40%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%
AM Out											40%	
PM In	0%	0%	0%	0%	0%	0%	0%	40%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	165	0	0	0	0	0	0	0	66	0	0	0	0
AM Out	41	0	0	0	0	0	0	0	0	0	0	16	0
PM In	83	0	0	0	0	0	0	0	33	0	0	0	0
PM Out	142	0	0	0	0	0	0	0	0	0	0	57	0

Zone #	7	6,7,42,51,52

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								5%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%
AM Out											5%	
PM In	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	197	0	0	0	0	0	0	0	10	0	0	0	0
AM Out	339	0	0	0	0	0	0	0	0	0	0	17	0
PM In	283	0	0	0	0	0	0	0	14	0	0	0	0
PM Out	188	0	0	0	0	0	0	0	0	0	0	9	0

Zone #	8	3, 31, 33, 53

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								10%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
AM Out											10%	
PM In	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	549	0	0	0	0	0	0	0	55	0	0	0	0
AM Out	278	0	0	0	0	0	0	0	0	0	0	28	0
PM In	456	0	0	0	0	0	0	0	46	0	0	0	0
PM Out	578	0	0	0	0	0	0	0	0	0	0	58	0

Zone #	9	11, 23, 24, 41, 43

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	212	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	253	0	0	0	0	0	0	0	0	0	0	0	0
PM In	283	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	239	0	0	0	0	0	0	0	0	0	0	0	0

Int. #:	3	Encanto Drive at Ethanac Road

Zone #	10	17, 19, 20, 28, 30, 32, 37, 47, 56

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								12%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	12%	0%
AM Out											12%	
PM In	0%	0%	0%	0%	0%	0%	0%	12%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	12%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	349	0	0	0	0	0	0	0	42	0	0	0	0
AM Out	713	0	0	0	0	0	0	0	0	0	0	86	0
PM In	864	0	0	0	0	0	0	0	104	0	0	0	0
PM Out	623	0	0	0	0	0	0	0	0	0	0	75	0

Zone #	11	9, 14, 15, 27, 38, 39, 48, 50

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In											10%	
N	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
AM Out								10%				
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	348	0	0	0	0	0	0	0	0	0	0	35	0
AM Out	287	0	0	0	0	0	0	0	29	0	0	0	0
PM In	341	0	0	0	0	0	0	0	0	0	0	34	0
PM Out	408	0	0	0	0	0	0	0	41	0	0	0	0

Zone #	12	44

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								8%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%
AM Out											8%	
PM In	0%	0%	0%	0%	0%	0%	0%	8%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	1,086	0	0	0	0	0	0	0	59	0	0	0	0
AM Out	799	0	0	0	0	0	0	0	0	0	0	30	0
PM In	1,132	0	0	0	0	0	0	0	59	0	0	0	0
PM Out	1,104	0	0	0	0	0	0	0	0	0	0	70	0

Zone #	13	2, 8, 12, 13, 16, 26, 29, 34, 35, 49

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In											8%	
Y	0%	0%	0%	0%	0%	0%	0%	8%	0%	0%	0%	0%
AM Out								8%				
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	8%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	851	0	0	0	0	0	0	0	0	0	0	68	0
AM Out	915	0	0	0	0	0	0	0	73	0	0	0	0
PM In	1,233	0	0	0	0	0	0	0	0	0	0	99	0
PM Out	1,116	0	0	0	0	0	0	0	89	0	0	0	0

Zone #	14	18

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	339	0	0	0	0	0	0	0	0	110	0	0	0
AM Out	675	0	0	2	0	0	0	0	0	0	0	211	0
PM In	1,086	0	0	0	0	0	0	0	0	251	0	0	0
PM Out	847	0	0	5	0	0	0	0	0	0	0	193	0

Int. #:	3	Encanto Drive at Ethanac Road

Zone #	15	10

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	964	0	0	0	0	0	0	0	695	0	0	0	0
AM Out	249	0	0	0	0	0	0	0	0	0	0	188	0
PM In	633	0	0	0	0	0	0	0	459	0	0	0	0
PM Out	999	0	0	0	0	0	0	0	0	0	0	718	0

Zone #	16	57

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								60%				
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	60%	0%
AM Out											60%	
PM In	0%	0%	0%	0%	0%	0%	0%	60%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	60%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	70	0	0	0	0	0	0	0	42	0	0	0	0
AM Out	67	0	0	0	0	0	0	0	0	0	0	40	0
PM In	66	0	0	0	0	0	0	0	40	0	0	0	0
PM Out	66	0	0	0	0	0	0	0	0	0	0	40	0

Enter only in blue cells	Yellow cells calculate

Int. #:	4	Trumble Road at Ethanac Road

Y

TOTAL CUMULATIVE PROJECTS TRAFFIC

Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	0	0	0	0	0	116	876	35	20	106	0
AM Out		226	0	9	27	0	34	0	103	0	0	379	0
AM Tot		226	0	9	27	0	34	116	979	35	20	485	0
PM In		0	0	0	0	0	0	93	676	79	45	134	0
PM Out		269	0	41	26	0	77	0	133	0	0	971	0
PM Tot		269	0	41	26	0	77	93	809	79	45	1,105	0

Zone #	1	1

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In											1%	
Y	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
AM Out								1%				
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	301	0	0	0	0	0	0	0	0	0	0	3	0
AM Out	90	0	0	0	0	0	0	0	1	0	0	0	0
PM In	115	0	0	0	0	0	0	0	0	0	0	1	0
PM Out	299	0	0	0	0	0	0	0	3	0	0	0	0

Zone #	2	4, 40

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In							40%					
Y	0%	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%	0%
AM Out						40%						
PM In	0%	0%	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	48	0	0	0	0	0	0	19	0	0	0	0	0
AM Out	14	0	0	0	0	0	6	0	0	0	0	0	0
PM In	17	0	0	0	0	0	0	7	0	0	0	0	0
PM Out	48	0	0	0	0	0	19	0	0	0	0	0	0

Zone #	3	21, 22, 25

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	107	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	319	0	0	0	0	0	0	0	0	0	0	0	0
PM In	359	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	211	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	4	55

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In									10%	5%		
Y	10%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out	25%		5%									
PM In	0%	0%	0%	0%	0%	0%	0%	0%	10%	5%	0%	0%
PM Out	10%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	345	0	0	0	0	0	0	0	0	35	17	0	0
AM Out	182	18	0	9	0	0	0	0	0	0	0	0	0
PM In	788	0	0	0	0	0	0	0	0	79	39	0	0
PM Out	817	82	0	41	0	0	0	0	0	0	0	0	0

Int. #:	4	Trumble Road at Ethanac Road

Zone #	5	45,46

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								1%				
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
AM Out											1%	
PM In	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	166	0	0	0	0	0	0	0	2	0	0	0	0
AM Out	196	0	0	0	0	0	0	0	0	0	0	2	0
PM In	229	0	0	0	0	0	0	0	2	0	0	0	0
PM Out	191	0	0	0	0	0	0	0	0	0	0	2	0

Zone #	6	5, 54

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								40%				
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%
AM Out											40%	
PM In	0%	0%	0%	0%	0%	0%	0%	40%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	165	0	0	0	0	0	0	0	66	0	0	0	0
AM Out	41	0	0	0	0	0	0	0	0	0	0	16	0
PM In	83	0	0	0	0	0	0	0	33	0	0	0	0
PM Out	142	0	0	0	0	0	0	0	0	0	0	57	0

Zone #	7	6,7,42,51,52

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								5%				
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%
AM Out											5%	
PM In	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	197	0	0	0	0	0	0	0	10	0	0	0	0
AM Out	339	0	0	0	0	0	0	0	0	0	0	17	0
PM In	283	0	0	0	0	0	0	0	14	0	0	0	0
PM Out	188	0	0	0	0	0	0	0	0	0	0	9	0

Zone #	8	3, 31, 33, 53

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In							10%					
Y	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%
AM Out						10%						
PM In	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	549	0	0	0	0	0	0	55	0	0	0	0	0
AM Out	278	0	0	0	0	0	28	0	0	0	0	0	0
PM In	456	0	0	0	0	0	0	46	0	0	0	0	0
PM Out	578	0	0	0	0	0	58	0	0	0	0	0	0

Zone #	9	11, 23, 24, 41, 43

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	212	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	253	0	0	0	0	0	0	0	0	0	0	0	0
PM In	283	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	239	0	0	0	0	0	0	0	0	0	0	0	0

Int. #:	4	Trumble Road at Ethanac Road

Zone #	10	17, 19, 20, 28, 30, 32, 37, 47, 56

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								12%				
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	12%	0%
AM Out											12%	
PM In	0%	0%	0%	0%	0%	0%	0%	12%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	12%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	349	0	0	0	0	0	0	0	42	0	0	0	0
AM Out	713	0	0	0	0	0	0	0	0	0	0	86	0
PM In	864	0	0	0	0	0	0	0	104	0	0	0	0
PM Out	623	0	0	0	0	0	0	0	0	0	0	75	0

Zone #	11	9, 14, 15, 27, 38, 39, 48, 50

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In											10%	
Y	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
AM Out								10%				
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	348	0	0	0	0	0	0	0	0	0	0	35	0
AM Out	287	0	0	0	0	0	0	0	29	0	0	0	0
PM In	341	0	0	0	0	0	0	0	0	0	0	34	0
PM Out	408	0	0	0	0	0	0	0	41	0	0	0	0

Zone #	12	44

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								10%				
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
AM Out											10%	
PM In	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	1,086	0	0	0	0	0	0	0	59	0	0	0	0
AM Out	799	0	0	0	0	0	0	0	0	0	0	30	0
PM In	1,132	0	0	0	0	0	0	0	59	0	0	0	0
PM Out	1,104	0	0	0	0	0	0	0	0	0	0	70	0

Zone #	13	2, 8, 12, 13, 16, 26, 29, 34, 35, 49

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In											8%	
Y	0%	0%	0%	0%	0%	0%	0%	8%	0%	0%	0%	0%
AM Out								8%				
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	8%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	851	0	0	0	0	0	0	0	0	0	0	68	0
AM Out	915	0	0	0	0	0	0	0	73	0	0	0	0
PM In	1,233	0	0	0	0	0	0	0	0	0	0	99	0
PM Out	1,116	0	0	0	0	0	0	0	89	0	0	0	0

Zone #	14	18

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	339	0	0	0	0	0	0	0	2	0	3	0	0
AM Out	675	208	0	0	0	0	0	0	0	0	0	0	0
PM In	1,086	0	0	0	0	0	0	0	5	0	6	0	0
PM Out	847	187	0	0	0	0	0	0	0	0	0	0	0

Int. #:	4	Trumble Road at Ethanac Road

Zone #	15	10

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	964	0	0	0	0	0	0	0	695	0	0	0	0
AM Out	249	0	0	0	0	0	0	0	0	0	0	188	0
PM In	633	0	0	0	0	0	0	0	459	0	0	0	0
PM Out	999	0	0	0	0	0	0	0	0	0	0	718	0

Zone #	16	57

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In							60%					
n	0%	0%	0%	40%	0%	0%	0%	0%	0%	0%	60%	0%
AM Out				40%							60%	
PM In	0%	0%	0%	0%	0%	0%	60%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	40%	0%	0%	0%	0%	0%	0%	60%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	70	0	0	0	0	0	0	42	0	0	0	0	0
AM Out	67	0	0	0	27	0	0	0	0	0	0	40	0
PM In	66	0	0	0	0	0	0	40	0	0	0	0	0
PM Out	66	0	0	0	26	0	0	0	0	0	0	40	0

APPENDIX F

DRIVE-THROUGH QUEUING ANALYSIS

February 2, 2023

Lupita Garcia
Associate Planner, Development Services Department
City of Perris
135 North "D" Street
Perris, CA 92570

Subject: *Drive-Through Queuing Analysis for the Proposed Perris Travel Center Project (CUP22-05002) Located at Ethanac Road and Trumble Road in the City of Perris*

Dear Ms. Garcia:

This memorandum has been prepared to evaluate the drive-through queuing capacity of a proposed Wendy's restaurant located within the proposed Perris Travel Center project, which is located on the northwest corner of Ethanac Road and Trumble Road in the City of Perris ("City").

PROJECT DESCRIPTION

The project site is located on the northwest corner of the intersection of Ethanac Road and Trumble Road in the City of Perris. The project site is approximately 14.4 acres and is currently vacant. It is bounded by vacant land to the north, Ethanac Road to the south, I-215 to the west, and Trumble to the east. The project consists of the construction of a truck stop with 7 truck fueling positions, a gas station with 16 fueling positions, and a convenience market. The applicant proposes to construct a 2,228-square-foot Wendy's restaurant (fast-food) with one drive-through lane as part of the project. The project location is shown on Figure 1 and the proposed project site plan is shown on Figure 2.

Access to the Wendy's restaurant would be provided primarily via two unsignalized driveways as noted below:

- One right-in-right-out only (RIRO) driveway on Ethanac Road
- One full-access driveway on Trumble Road

DRIVE-THROUGH QUEUING ANALYSIS

The City has requested that a drive-through queuing study be conducted for the proposed project, to evaluate the adequacy of the drive-through lane queuing capacity.

The opening to the drive-through lane would be located just west of the proposed travel center building and would circulate in a clockwise direction to the west side of the proposed building. The drive-through would provide one entry lane and one order board.

FIGURE 1
VICINITY MAP

Kimley»Horn

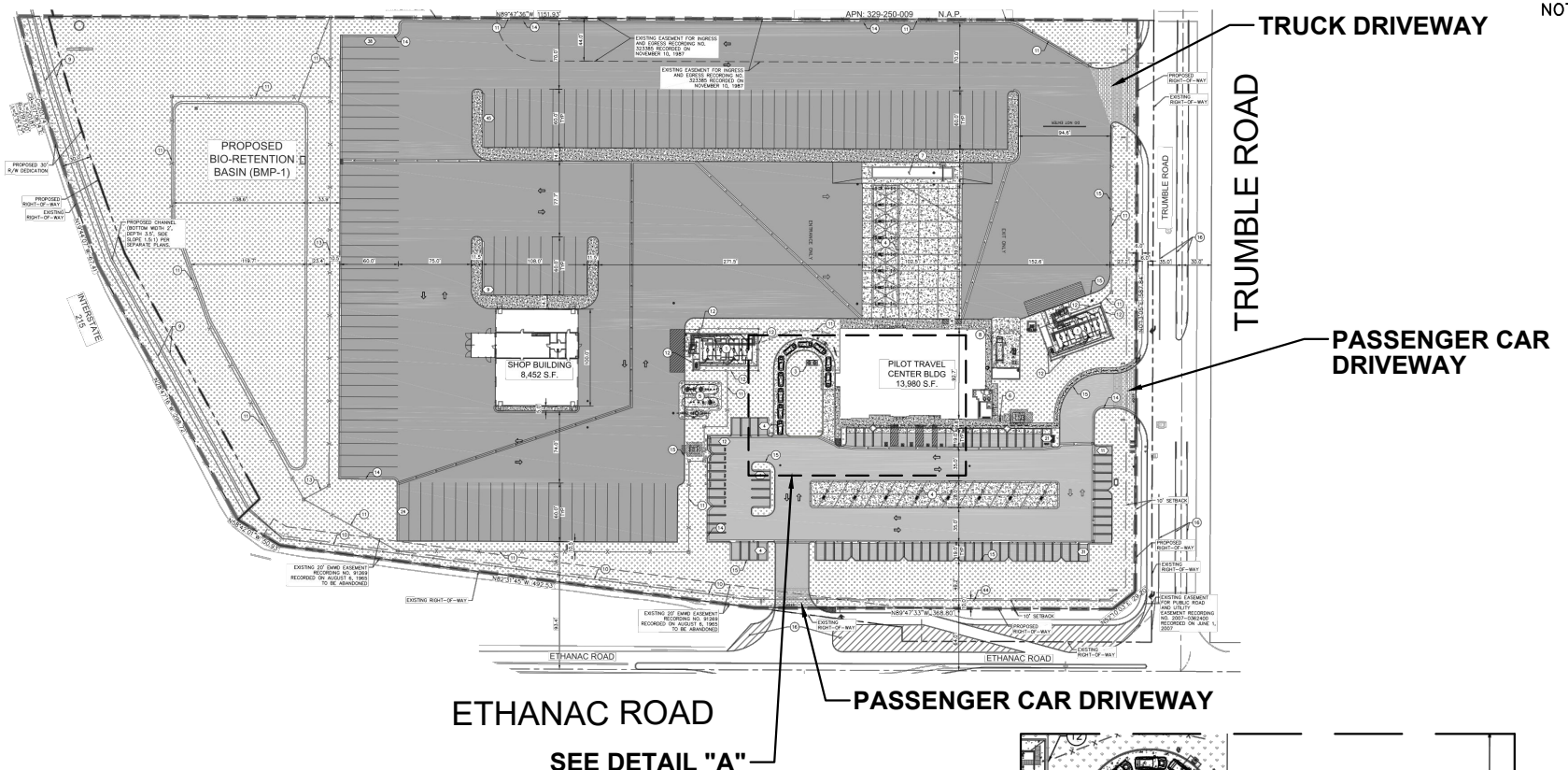


FIGURE 2
SITE PLAN

There will be approximately 160 feet of total queuing lane capacity from the opening of the drive-through lane to the order board and approximately 40 feet from the order board to the pick-up window. This would provide a total drive-through queue length of approximately 200 feet, for a drive-through queuing capacity of 10 vehicles, assuming 20 feet per vehicle, from the beginning of the drive-through lane to the pick-up window.

Queuing Data Collection

To assess the adequacy of the proposed drive-through lane for the proposed Wendy's restaurant, existing drive-through queuing data collection was conducted at the following existing Wendy's drive-through location that is also located within an existing travel center:

- City of Fontana: 14320 Slover Avenue

The Fontana site was selected for queuing data collection due to the following site characteristics that are similar to the proposed project:

- A Wendy's restaurant with a drive-through lane
- Located within an existing travel center site
- Located in Southern California
- Located near a major freeway

The drive-through activity was observed during the following times for the existing Wendy's site on two typical weekdays:

- 11:00 AM – 2:00 PM (lunch-time)
- 4:00 PM – 6:00 PM (commute peak hour/dinner-time)

The results of the observations are summarized on Table **1** and Table **2** for a typical weekday (Tuesday, December 13th and Wednesday, December 14th) during mid-day and evening peak periods, respectively.

The data summaries on Tables 1 and 2 present the number of vehicles in the drive-through lane, broken down into 15-minute periods, based on the observed average queue, 95th percentile queue, and the peak queue for each of the data collection periods. Queuing data collected from the existing Fontana location is shown in 5-minute intervals, which was then computed into 15-minute intervals for the purposes of this drive-through study. A copy of the queuing data collection worksheets is provided in *Attachment A*.

TABLE 1
SUMMARY OF DRIVE-THROUGH QUEUING DATA COLLECTION - MIDDAY
14320 SLOVER AVENUE
AVERAGE, PEAK, AND 95TH PERCENTILE QUEUES

Average Queue			Peak Queue			95th %-ile [1] Queue		
Time Period	Number of Drive-through Vehicles		Time Period	Number of Drive-through Vehicles		Time Period	Number of Drive-through Vehicles	
	TUES - 12/13	WED - 12/14		TUES - 12/13	WED - 12/14		TUES - 12/13	WED - 12/14
10:45-11:00 AM	0	0.7	10:45-11:00 AM	0	2	10:45-11:00 AM	0	1.8
11:00-11:15 AM	1.3	2.0	11:00-11:15 AM	3	2	11:00-11:15 AM	2.8	2.0
11:15-11:30 AM	2.7	0.0	11:15-11:30 AM	3	0	11:15-11:30 AM	3.0	0.0
11:30-11:45 AM	1.7	1.3	11:30-11:45 AM	3	2	11:30-11:45 AM	2.8	1.9
11:45 AM-12:00 PM	2.3	0.7	11:45 AM-12:00 PM	4	1	11:45 AM-12:00 PM	3.9	1.0
12:00-12:15 PM	2.3	1.7	12:00-12:15 PM	5	3	12:00-12:15 PM	4.7	2.8
12:15-12:30 PM	2.0	0.7	12:15-12:30 PM	3	2	12:15-12:30 PM	3.0	1.8
12:30-12:45 PM	0.7	4.3	12:30-12:45 PM	1	6	12:30-12:45 PM	1.0	5.9
12:45-1:00 PM	1.7	1.0	12:45-1:00 PM	4	2	12:45-1:00 PM	3.7	1.9
1:00-1:15 PM	1.7	2.7	1:00-1:15 PM	3	3	1:00-1:15 PM	2.8	2.0
1:15-1:30 PM	1.3	1.7	1:15-1:30 PM	3	3	1:15-1:30 PM	2.8	2.9
1:30-1:45 PM	1.0	0.7	1:30-1:45 PM	1	2	1:30-1:45 PM	1.0	1.8
1:45-2:00 PM	0.3	0.7	1:45-2:00 PM	1	2	1:45-2:00 PM	0.9	1.8
Highest Average	2.7	4.3	**Highest Peak**	5	6	**Highest 95th %-ile Queue**	4.7	5.9

Notes:
[1] 95th percentile = The queue will be less than the queue shown 95% of the time.

TABLE 2
SUMMARY OF DRIVE-THROUGH QUEUING DATA COLLECTION - MIDDAY
14320 SLOVER AVENUE
AVERAGE, PEAK, AND 95TH PERCENTILE QUEUES

Average Queue			Peak Queue			95th %-ile [1] Queue		
Time Period	Number of Drive-through Vehicles		Time Period	Number of Drive-through Vehicles		Time Period	Number of Drive-through Vehicles	
	TUES - 12/13	WED - 12/14		TUES - 12/13	WED - 12/14		TUES - 12/13	WED - 12/14
4:00 - 4:15 PM	0	0	4:00 - 4:15 PM	0	0	4:00 - 4:15 PM	0	0
4:15 - 4:30 PM	0.3	1.3	4:15 - 4:30 PM	1	3	4:15 - 4:30 PM	0.9	2.8
4:30 - 4:45 PM	0.3	1.7	4:30 - 4:45 PM	1	2	4:30 - 4:45 PM	0.9	2.0
4:45 - 5:00 PM	0	0.7	4:45 - 5:00 PM	0	2	4:45 - 5:00 PM	0	1.8
5:00 - 5:15 PM	0.7	0.3	5:00 - 5:15 PM	2	1	5:00 - 5:15 PM	1.8	0.9
5:15 - 5:30 PM	2.0	0	5:15 - 5:30 PM	4	0	5:15 - 5:30 PM	3.8	0
5:30 - 5:45 PM	1.7	0	5:30 - 5:45 PM	3	0	5:30 - 5:45 PM	2.9	0
5:45 - 6:00 PM	0	1.0	5:45 - 6:00 PM	0	1	5:45 - 6:00 PM	0	1.0
6:00 - 6:15 PM	0	0	6:00 - 6:15 PM	0	0	6:00 - 6:15 PM	0	0
Highest Average	2.0	1.7	**Highest Peak**	4	3	**Highest 95th %-ile Queue**	3.8	2.8

Notes:
[1] 95th percentile = The queue will be less than the queue shown 95% of the time.

Queuing Observations

The queuing activity was observed to vary with an ebb and flow pattern throughout the data collection periods. The following vehicle movement and queuing observations of the drive-through operations at the study location were made:

- The peak 15 minutes during the weekday lunch-time peak was from 12:30 PM to 12:45 PM, with an average queue of 4 vehicles and a peak queue of 6 vehicles. The 95th percentile queue observed was approximately 6 vehicles.
- The peak 15 minutes during the weekday dinner-time peak was from 5:15 PM to 5:30 PM, with an average queue of 2 vehicles and a peak queue of 4 vehicles. The 95th percentile queue observed was approximately 4 vehicles.

CONCLUSION

Based on the drive-through queuing data collection and analysis presented in this memorandum, the peak queue at an existing site was 6 vehicles during lunch time. The proposed Wendy's drive-through lane would provide a total queue length of approximately 200 feet, which can accommodate 10 vehicles, assuming 20 feet per vehicle. The proposed site would provide sufficient capacity to contain the peak queue of 6 vehicles.

Trevor Briggs, P.E. (C87664)
Project Engineer

APPENDIX F

ATTACHMENT A –
DRIVE-THROUGH QUEUING DATA COLLECTION

Prepared by National Data & Surveying Services

Snapshot Queue Study

Location: Wendy's, 14320 Slover Avenue
City: City of Fontana, CA
Date: 12/13/2022
Day: Tuesday

New ven in Drive Thru	TIME	Drive Thru Queue Length (Number of Vehicles)			
		Zone 1 [Yellow] (Pick-up Window to Order Board)	Zone 2 [Green] (Order Board to Beginning of Drive Thru Lane)	Zone 3 [Blue] (Drive Thru Lane to End of Queue)	Totals
1	11:05 AM	0	1	0	1
2	11:10 AM	1	2	0	3
0	11:15 AM	0	0	0	0
2	11:20 AM	0	2	0	2
1	11:25 AM	2	1	0	3
0	11:30 AM	2	1	0	3
0	11:35 AM	2	1	0	3
0	11:40 AM	1	0	0	1
0	11:45 AM	1	0	0	1
3	11:50 AM	2	2	0	4
0	11:55 AM	0	0	0	0
3	12:00 PM	2	1	0	3
2	12:05 PM	2	2	1	5
0	12:10 PM	2	0	0	2
0	12:15 PM	0	0	0	0
3	12:20 PM	2	1	0	3
0	12:25 PM	2	1	0	3
0	12:30 PM	0	0	0	0
1	12:35 PM	1	0	0	1
0	12:40 PM	0	0	0	0
1	12:45 PM	1	0	0	1
0	12:50 PM	0	0	0	0
4	12:55 PM	2	2	0	4
0	1:00 PM	1	0	0	1
0	1:05 PM	0	1	0	1
0	1:10 PM	1	0	0	1
2	1:15 PM	2	1	0	3
0	1:20 PM	2	1	0	3
0	1:25 PM	0	0	0	0
1	1:30 PM	1	0	0	1
0	1:35 PM	1	0	0	1
0	1:40 PM	1	0	0	1
0	1:45 PM	0	1	0	1
0	1:50 PM	0	1	0	1
0	1:55 PM	0	0	0	0
0	2:00 PM	0	0	0	0
1	Average	1	1	1	1

Prepared by National Data & Surveying Services

Snapshot Queue Study

Location: Wendy's, 14320 Slover Avenue
City: City of Fontana, CA
Date: 12/13/2022
Day: Tuesday

New ven in Drive Thru	TIME	Drive Thru Queue Length (Number of Vehicles)			
		Zone 1 [Yellow] (Pick-up Window to Order Board)	Zone 2 [Green] (Order Board to Beginning of Drive Thru Lane)	Zone 3 [Blue] (Drive Thru Lane to End of Queue)	Totals
0	4:00 PM	0	0	0	0
0	4:05 PM	0	0	0	0
0	4:10 PM	0	0	0	0
0	4:15 PM	0	0	0	0
0	4:20 PM	0	0	0	0
1	4:25 PM	1	0	0	1
0	4:30 PM	0	0	0	0
0	4:35 PM	0	0	0	0
0	4:40 PM	0	0	0	0
1	4:45 PM	1	0	0	1
0	4:50 PM	0	0	0	0
0	4:55 PM	0	0	0	0
0	5:00 PM	0	0	0	0
0	5:05 PM	0	0	0	0
0	5:10 PM	0	0	0	0
2	5:15 PM	0	2	0	2
2	5:20 PM	2	2	0	4
0	5:25 PM	1	1	0	2
0	5:30 PM	0	0	0	0
0	5:35 PM	0	0	0	0
2	5:40 PM	2	0	0	2
1	5:45 PM	2	1	0	3
0	5:50 PM	0	0	0	0
0	5:55 PM	0	0	0	0
0	6:00 PM	0	0	0	0
1	Average	1	1	0	1

Prepared by National Data & Surveying Services

Snapshot Queue Study

Location: Wendy's, 14320 Slover Avenue
City: City of Fontana, CA
Date: 12/14/2022
Day: Wednesday

New ven in Drive Thru	TIME	Drive Thru Queue Length (Number of Vehicles)			
		Zone 1 [Yellow] (Pick-up Window to Order Board)	Zone 2 [Green] (Order Board to Beginning of Drive Thru Lane)	Zone 3 [Blue] (Drive Thru Lane to End of Queue)	Totals
0	11:05 AM	1	1	0	2
0	11:10 AM	2	0	0	2
0	11:15 AM	2	0	0	2
0	11:20 AM	0	0	0	0
0	11:25 AM	0	0	0	0
0	11:30 AM	0	0	0	0
1	11:35 AM	0	1	0	1
1	11:40 AM	1	1	0	2
0	11:45 AM	1	0	0	1
0	11:50 AM	0	0	0	0
1	11:55 AM	1	0	0	1
0	12:00 PM	0	1	0	1
2	12:05 PM	1	2	0	3
0	12:10 PM	0	1	0	1
0	12:15 PM	0	1	0	1
1	12:20 PM	2	0	0	2
0	12:25 PM	0	0	0	0
0	12:30 PM	0	0	0	0
2	12:35 PM	1	1	0	2
3	12:40 PM	3	2	0	5
1	12:45 PM	3	3	0	6
0	12:50 PM	2	0	0	2
0	12:55 PM	0	0	0	0
1	1:00 PM	0	1	0	1
1	1:05 PM	2	0	0	2
1	1:10 PM	2	1	0	3
0	1:15 PM	2	1	0	3
0	1:20 PM	0	0	0	0
2	1:25 PM	1	1	0	2
1	1:30 PM	2	1	0	3
0	1:35 PM	2	0	0	2
0	1:40 PM	0	0	0	0
0	1:45 PM	0	0	0	0
0	1:50 PM	0	0	0	0
2	1:55 PM	1	1	0	2
0	2:00 PM	0	0	0	0
1	Average	1	1	0	1

Prepared by National Data & Surveying Services

Snapshot Queue Study

Location: Wendy's, 14320 Slover Avenue
City: City of Fontana, CA
Date: 12/14/2022
Day: Wednesday

New ven in Drive Thru	TIME	Drive Thru Queue Length (Number of Vehicles)			
		Zone 1 [Yellow] (Pick-up Window to Order Board)	Zone 2 [Green] (Order Board to Beginning of Drive Thru Lane)	Zone 3 [Blue] (Drive Thru Lane to End of Queue)	Totals
0	4:00 PM	0	0	0	0
0	4:05 PM	0	0	0	0
0	4:10 PM	0	0	0	0
0	4:15 PM	0	0	0	0
3	4:20 PM	2	1	0	3
0	4:25 PM	1	0	0	1
0	4:30 PM	0	0	0	0
1	4:35 PM	1	0	0	1
1	4:40 PM	2	0	0	2
0	4:45 PM	1	1	0	2
0	4:50 PM	0	0	0	0
2	4:55 PM	1	1	0	2
0	5:00 PM	0	0	0	0
0	5:05 PM	0	0	0	0
1	5:10 PM	1	0	0	1
0	5:15 PM	0	0	0	0
0	5:20 PM	0	0	0	0
0	5:25 PM	0	0	0	0
0	5:30 PM	0	0	0	0
0	5:35 PM	0	0	0	0
0	5:40 PM	0	0	0	0
0	5:45 PM	0	0	0	0
1	5:50 PM	0	1	0	1
0	5:55 PM	1	0	0	1
0	6:00 PM	0	1	0	1
1	Average	1	1	0	1

APPENDIX G

TUMF REGIONAL PROGRAM

TRANSPORTATION UNIFORM MITIGATION FEE NEXUS STUDY 2016 UPDATE

FINAL REPORT

Prepared for the Western Riverside Council of Governments

In Cooperation with

The City of Banning
The City of Beaumont
The City of Calimesa
The City of Canyon Lake
The City of Corona
The City of Eastvale
The City of Hemet
The City of Jurupa Valley
The City of Lake Elsinore
The City of Menifee
The City of Moreno Valley
The City of Murrieta
The City of Norco
The City of Perris
The City of Riverside
The City of San Jacinto
The City of Temecula
The City of Wildomar
The County of Riverside
Eastern Municipal Water District
March Joint Powers Authority
Morongo Band of Mission Indians
Riverside County Superintendent of Schools
Riverside Transit Agency
Western Municipal Water District

Prepared by WSP

As adopted by the WRCOG Executive Committee, July 10, 2017

Table 4.4 - TUMF Network Cost Estimates

AREA PLAN DIST	CITY	STREETNAME	SEGMENTFROM	SEGMENTTO	MILES	TOTAL COST	MAXIMUM TUMF SHARE
Central	Menifee	Ethanac	Goetz	Murrieta	0.99	$0	$0
Central	Menifee	Ethanac	Murrieta	I-215	0.90	$0	$0
Central	Menifee	Ethanac	I-215	interchange	0.00	$17,897,000	$15,766,000
Central	Menifee	Ethanac	Sherman	Matthews	0.61	$1,617,000	$1,617,000
Central	Menifee	Ethanac	BNSF San Jacinto Branch	railroad crossing	0.00	$36,980,000	$33,018,000
Central	Menifee	Menifee	SR-74 (Pinacate)	Simpson	2.49	$0	$0
Central	Menifee	Menifee	Salt Creek	bridge	0.00	$0	$0
Central	Menifee	Menifee	Simpson	Aldergate	0.64	$0	$0
Central	Menifee	Menifee	Aldergate	Newport	0.98	$0	$0
Central	Menifee	Menifee	Newport	Holland	1.07	$0	$0
Central	Menifee	Menifee	Holland	Garbani	1.03	$0	$0
Central	Menifee	Menifee	Garbani	Scott	1.00	$2,635,000	$2,635,000
Central	Menifee	Menifee/Whitewood	Scott	Murrieta City Limit	0.53	$0	$0
Central	Menifee	Newport	Goetz	Murrieta	1.81	$0	$0
Central	Menifee	Newport	Murrieta	I-215	2.05	$5,405,000	$5,405,000
Central	Menifee	Newport	I-215	Menifee	0.95	$0	$0
Central	Menifee	Newport	Menifee	Lindenberger	0.77	$0	$0
Central	Menifee	Newport	Lindenberger	SR-79 (Winchester)	3.58	$0	$0
Central	Menifee	Scott	I-215	Briggs	2.04	$0	$0
Central	Menifee	Scott	I-215	interchange	0.00	$37,060,000	$37,060,000
Central	Menifee	Scott	Sunset	Murrieta	1.01	$2,654,000	$2,654,000
Central	Menifee	Scott	Murrieta	I-215	1.94	$10,254,000	$10,254,000
Central	Menifee	SR-74	Matthews	Briggs	1.89	$4,994,000	$4,994,000
Central	Moreno Valley	Alessandro	I-215	Perris	3.52	$6,394,000	$6,394,000
Central	Moreno Valley	Alessandro	Perris	Nason	2.00	$22,632,000	$22,632,000
Central	Moreno Valley	Alessandro	Nason	Moreno Beach	0.99	$6,922,000	$6,922,000
Central	Moreno Valley	Alessandro	Moreno Beach	Gilman Springs	4.13	$10,902,000	$10,902,000
Central	Moreno Valley	Gilman Springs	SR-60	Alessandro	1.67	$4,411,000	$3,724,000
Central	Moreno Valley	Gilman Springs	SR-60	interchange	0.00	$17,897,000	$17,897,000
Central	Moreno Valley	Perris	Reche Vista	Ironwood	2.09	$0	$0
Central	Moreno Valley	Perris	Ironwood	Sunnymead	0.52	$0	$0
Central	Moreno Valley	Perris	SR-60	interchange	0.00	$17,897,000	$0
Central	Moreno Valley	Perris	Sunnymead	Cactus	2.00	$0	$0
Central	Moreno Valley	Perris	Cactus	Harley Knox	3.50	$0	$0
Central	Moreno Valley	Reche Vista	Moreno Valley City Limit	Heacock	0.44	$3,310,000	$1,705,000
Central	Perris	11th/Case	Perris	Goetz	0.30	$2,100,000	$2,100,000
Central	Perris	Case	Goetz	I-215	2.36	$16,486,000	$13,538,000
Central	Perris	Case	San Jacinto River	bridge	0.00	$1,126,000	$495,000
Central	Perris	Ethanac	Keystone	Goetz	2.24	$7,327,000	$7,327,000
Central	Perris	Ethanac	San Jacinto River	bridge	0.00	$7,378,000	$7,378,000
Central	Perris	Ethanac	I-215	Sherman	0.35	$2,435,000	$1,945,000
Central	Perris	Goetz	Case	Ethanac	2.00	$5,267,000	$2,506,000
Central	Perris	Goetz	San Jacinto River	bridge	0.00	$3,688,000	$1,925,000
Central	Perris	Mid-County (Placentia)	I-215	Perris	0.87	$13,127,000	$12,627,000
Central	Perris	Mid-County (Placentia)	I-215	interchange	0.00	$37,060,000	$12,354,000
Central	Perris	Mid-County	Perris	Evans	1.57	$32,902,000	$32,902,000
Central	Perris	Mid-County	Perris Valley Storm Channel	bridge	0.00	$8,299,000	$8,299,000
Central	Perris	Perris	Harley Knox	Ramona	1.00	$0	$0
Central	Perris	Perris	Ramona	Citrus	2.49	$6,578,000	$6,578,000
Central	Perris	Perris	Citrus	Nuevo	0.50	$0	$0
Central	Perris	Perris	Nuevo	11th	1.75	$12,206,000	$9,034,000
Central	Perris	Perris	I-215 overcrossing	bridge	0.00	$2,767,000	$1,356,000
Central	Perris	Ramona	I-215	Perris	1.47	$2,769,000	$2,769,000
Central	Perris	Ramona	I-215	interchange	0.00	$17,897,000	$5,965,000
Central	Perris	Ramona	Perris	Evans	1.00	$0	$0
Central	Perris	Ramona	Evans	Mid-County (2,800 ft E of Rider)	2.62	$0	$0
Central	Perris	SR-74 (4th)	Ellis	I-215	2.29	$0	$0
Central	Unincorporated	Ethanac	SR-74	Keystone	1.07	$5,646,000	$5,646,000
Central	Unincorporated	Gilman Springs	Alessandro	Bridge	4.98	$15,815,000	$8,105,000
Central	Unincorporated	Menifee	Nuevo	SR-74 (Pinacate)	4.07	$10,737,000	$10,737,000
Central	Unincorporated	Mid-County	Evans	Ramona (2,800 ft E of Rider)	0.77	$8,587,000	$8,587,000
Central	Unincorporated	Mid-County (Ramona)	Ramona (2,800 ft E of Rider)	Pico Avenue	0.44	$1,161,000	$1,161,000
Central	Unincorporated	Mid-County (Ramona)	Pico Avenue	Bridge	5.95	$31,413,000	$25,287,000
Central	Unincorporated	Mid-County (Ramona)	San Jacinto River	bridge	0.00	$23,978,000	$15,835,000
Central	Unincorporated	Reche Canyon	San Bernardino County	Reche Vista	3.35	$12,457,000	$9,429,000
Central	Unincorporated	Reche Vista	Reche Canyon	Moreno Valley City Limit	1.22	$9,180,000	$4,729,000
Central	Unincorporated	Scott	Briggs	SR-79 (Winchester)	3.04	$16,042,000	$0
Central	Unincorporated	SR-74	Ethanac	Ellis	2.68	$0	$0
Northwest	Corona	Cajalco	I-15	Temescal Canyon	0.66	$2,306,000	$2,306,000
Northwest	Corona	Cajalco	I-15	interchange	0.00	$72,546,000	$44,251,000
Northwest	Corona	Foothill	Paseo Grande	Lincoln	2.60	$19,330,000	$7,282,000
Northwest	Corona	Foothill	Wardlow Wash	bridge	0.00	$5,534,000	$0
Northwest	Corona	Foothill	Lincoln	California	2.81	$0	$0
Northwest	Corona	Foothill	California	I-15	0.89	$6,207,000	$4,304,000
Northwest	Corona	Green River	SR-91	Dominguez Ranch	0.52	$3,624,000	$1,000
Northwest	Corona	Green River	Dominguez Ranch	Palisades	0.56	$4,214,000	$1,639,000
Northwest	Corona	Green River	Palisades	Paseo Grande	2.01	$0	$0
Northwest	Eastvale	Schleisman	San Bernardino County	600' e/o Cucamonga Creek	0.65	$2,271,000	$2,271,000
Northwest	Eastvale	Schleisman	Cucamonga Creek	bridge	0.00	$923,000	$923,000
Northwest	Eastvale	Schleisman	600' e/o Cucamonga Creek	Harrison	0.87	$0	$0
Northwest	Eastvale	Schleisman	Harrison	Sumner	0.50	$0	$0
Northwest	Eastvale	Schleisman	Sumner	Scholar	0.50	$3,493,000	$3,493,000
Northwest	Eastvale	Schleisman	Scholar	A Street	0.31	$0	$0
Northwest	Eastvale	Schleisman	A Street	Hamner	0.27	$0	$0
Northwest	Jurupa Valley	Van Buren	SR-60	Bellegrave	1.43	$9,976,000	$3,628,000
Northwest	Jurupa Valley	Van Buren	Bellegrave	Santa Ana River	3.60	$25,115,000	$7,444,000

DRAFT Preliminary Engineering Study Report for

Ethanac Road Gap Closure Project

Prepared for:

County of Riverside
Department of Transportation

3525 14th Street
Riverside, CA 92501

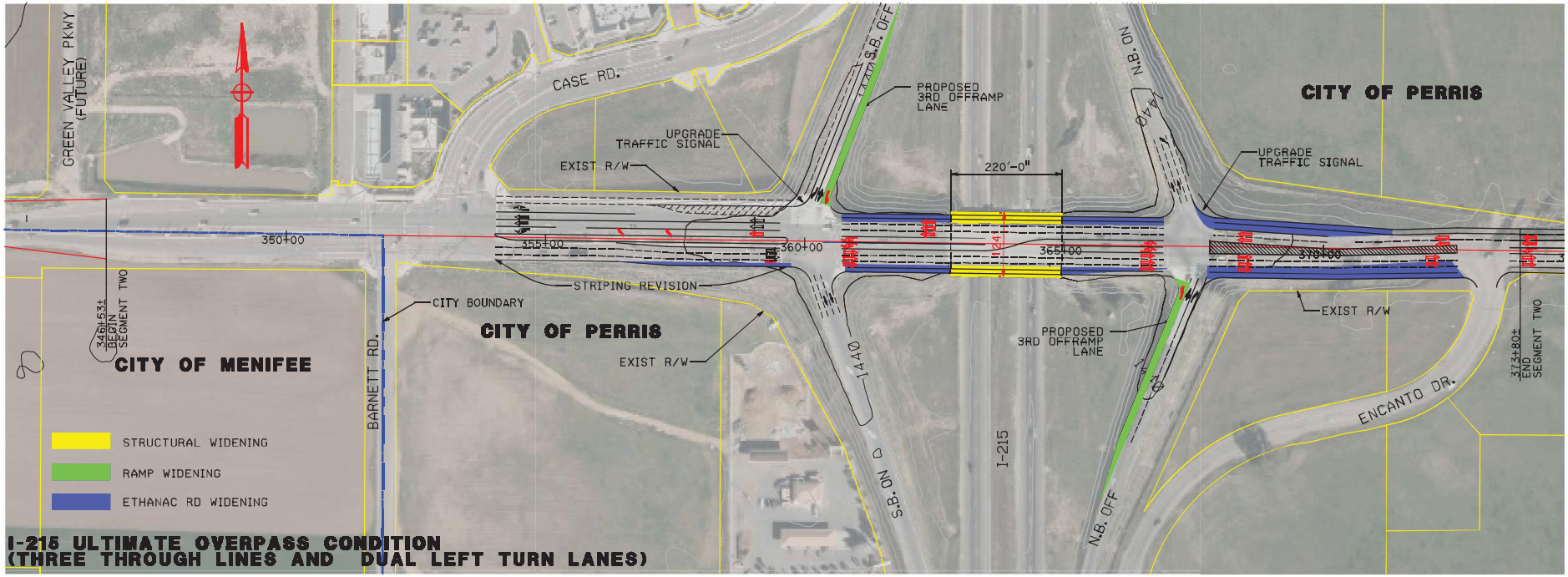
Prepared by:

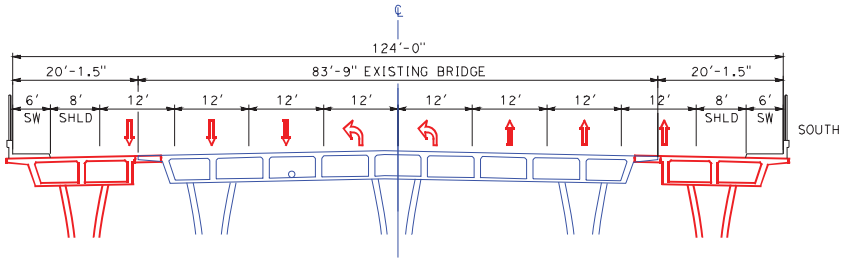
CNS Engineers, Inc.
10370 Hemet Street, Suite 230
Riverside, CA 92503

August 2014
Revised January 2016

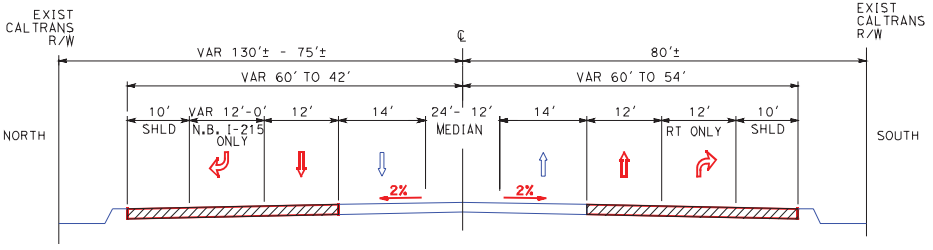
Attachment 2

SEGMENT TWO - Preliminary Roadway Layouts





ETHANAC DRIVE AT I-215 WITH
DUAL LEFT TURN ALTERNATIVE



ETHANAC DRIVE FROM NORTHBOUND I-215 RAMPS
TO ENCANTO DR TO SUPPORT DUAL LEFT TURN RAMPS
AT THE INTERCHANGE

PLANNING STUDY

CNS ENGINEERS, INC.	PLAN VIEW AND SECTIONS	SHEET No.
APPROVED BY:	SEGMENT TWO **ETHANAC ROAD GAP CLOSURE PROJECT**	
PREPARED BY: DATE	ALTERNATIVE 2A - ULTIMATE INTERCHANGE	SHEET 1 OF 2
10370 HEMET ST., Ste 230 RIVERSIDE, CA 92503		

RELATIVE BORDER SCALE IS IN FEET 0 100 200 300

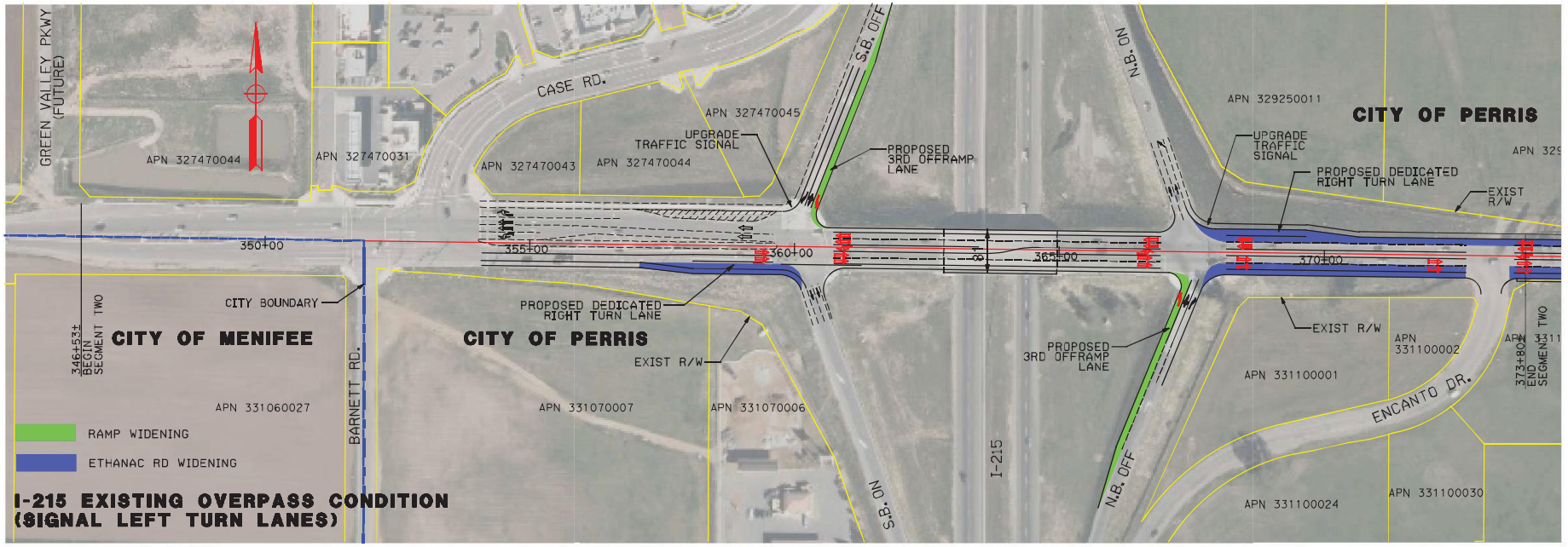
USERNAME => $USER
DGN FILE => $REQUEST

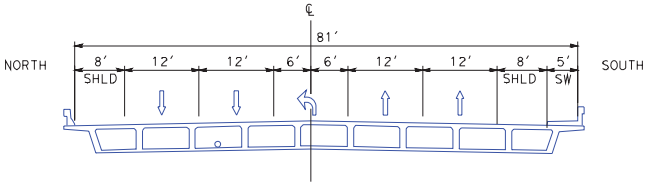
WO XX-XXXX

COUNTY FILE No.

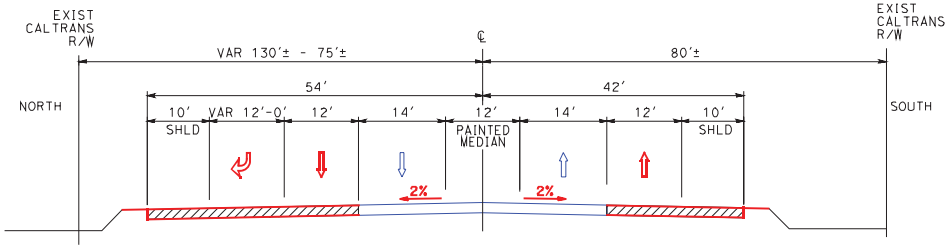
VERSION: 08/27/2012

$USER $TIME $DATE $REQUEST





ETHANAC ROAD OVER I-215
FROM SOUTHBOUND RAMPS TO NORTHBOUND RAMPS
TO SUPPORT SINGLE LEFT TURN LANES
CITY OF PERRIS
(EXISTING CONDITION)



ETHANAC ROAD FROM NORTHBOUND RAMPS TO
ENCANTO DRIVE TO SUPPORT SINGLE LEFT TURN LANES
AT THE INTERCHANGE
CITY OF PERRIS

PLANNING STUDY

CNS ENGINEERS, INC.	PLAN VIEW AND SECTIONS	SHEET No.
APPROVED BY: PREPARED BY: DATE 10370 HEMET ST., Ste 230 RIVERSIDE, CA 92503	SEGMENT TWO **ETHANAC ROAD GAP CLOSURE PROJECT** ALTERNATIVE 2B - EXISTING OVERPASS	SHEET 2 OF 2

RELATIVE BORDER SCALE IS IN FEET 0 100 200 300

USERNAME => $USER
DGN FILE => $REQUEST

WO XX-XXXX

COUNTY FILE No.

VERSION: 08/27/2012

$DATE $TIME $USER $DATE $REQUEST

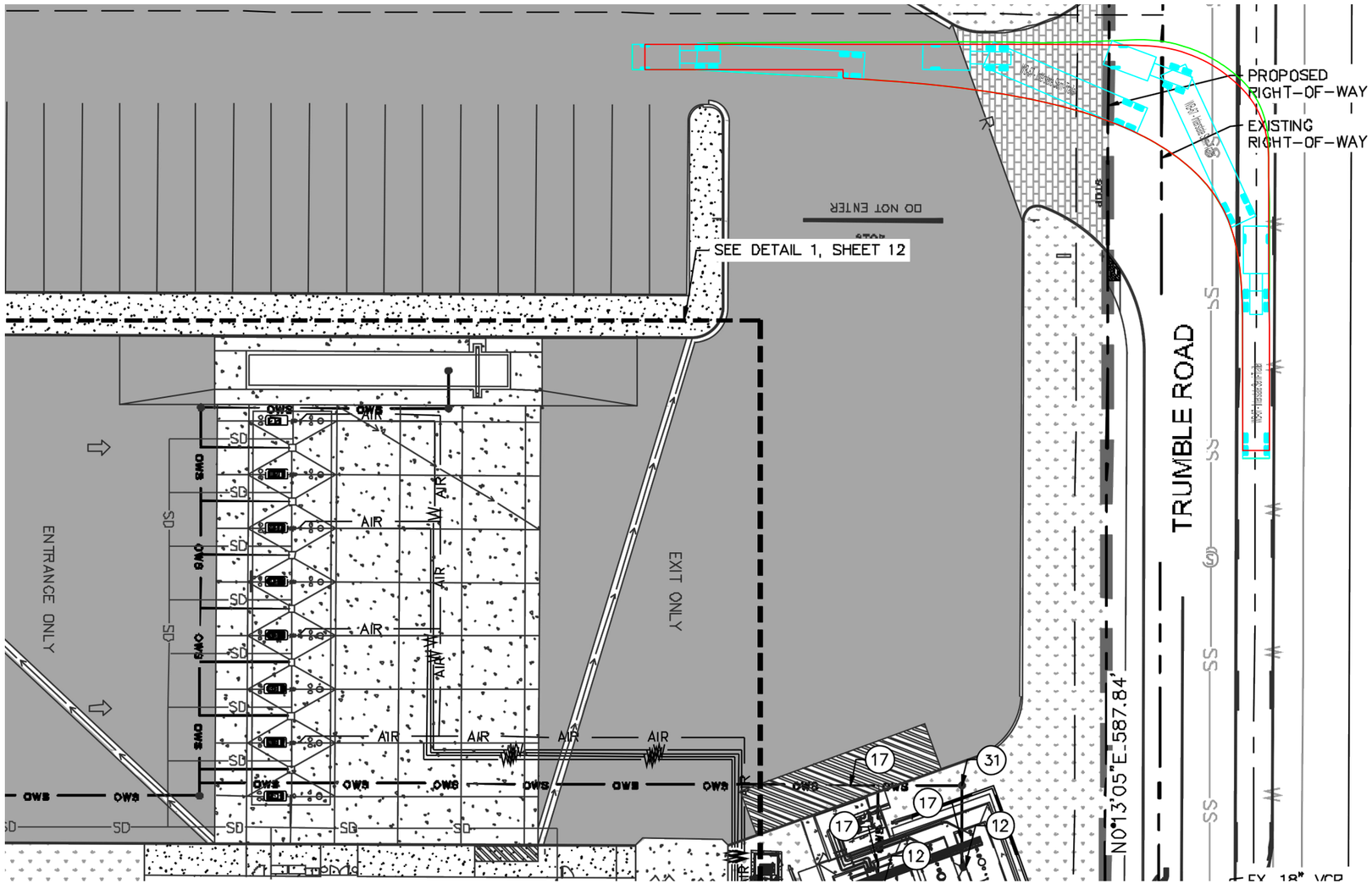
APPENDIX H

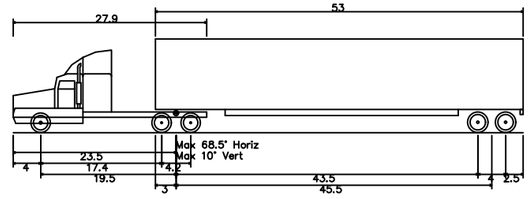
TRUCK TURN
TEMPLATES

TRUCK TURNING EXHIBIT - TRUMBLE RD AT NORTH DRIVEWAY (TRUCK DRIVEWAY) - INGRESS

FOR WB-67 CA DESIGN VEHICLE

NOT TO SCALE





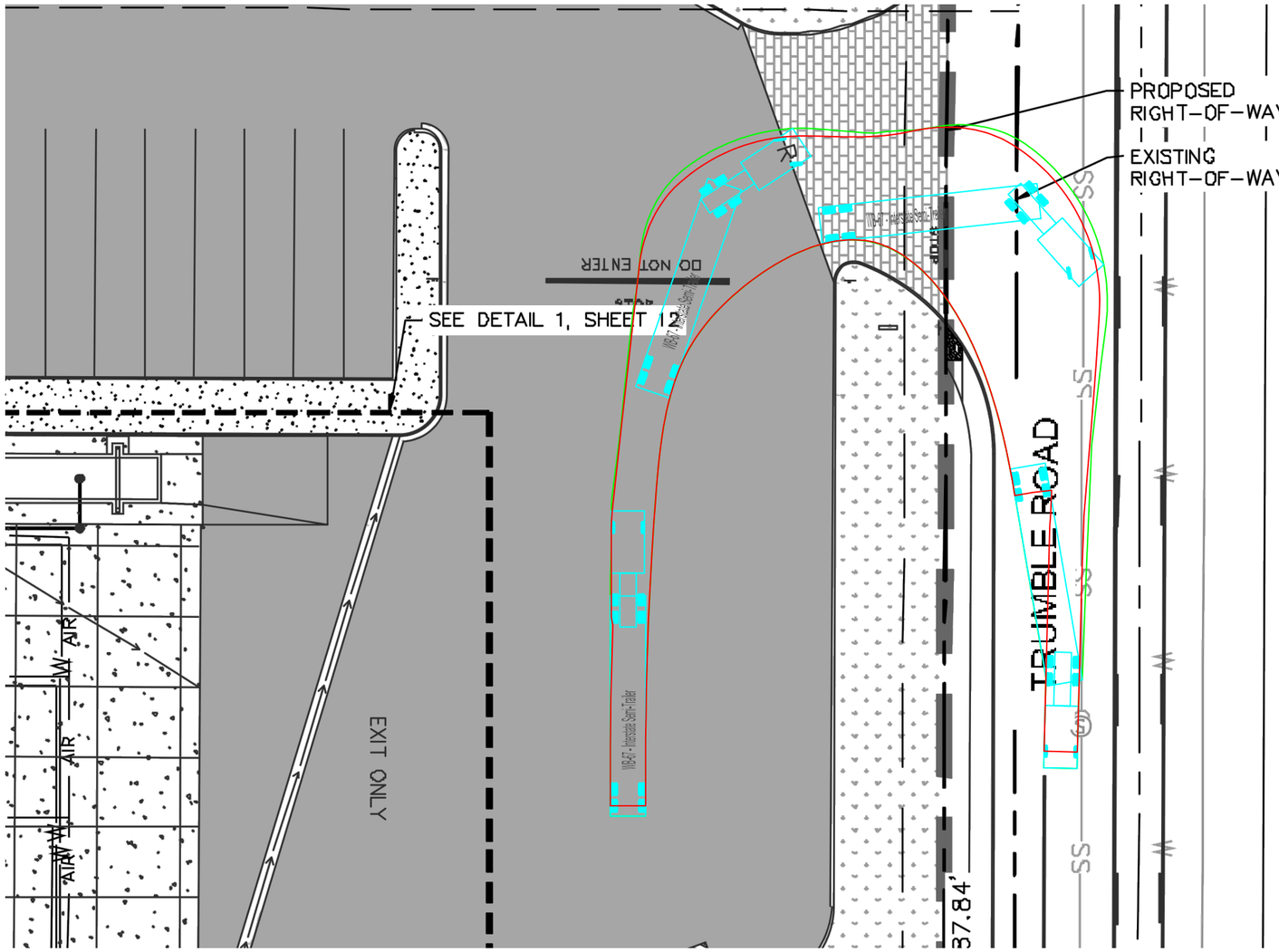
WB-67 – Interstate Semi-Trailer	
Overall Length	73.501ft
Overall Width	8.500ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.334ft
Max Track Width	8.500ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	28.40°

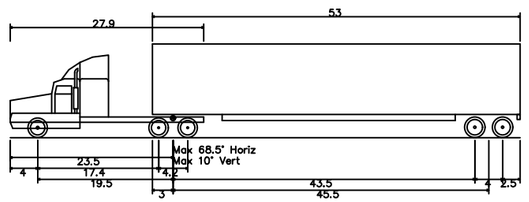
Kimley»Horn

TRUCK TURNING EXHIBIT - TRUMBLE RD AT NORTH DRIVEWAY (TRUCK DRIVEWAY) - EGRESS

FOR WB-67 CA DESIGN VEHICLE

NOT TO SCALE





WB-67 - Interstate Semi-Trailer	
Overall Length	73.501ft
Overall Width	8.500ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.334ft
Max Track Width	8.500ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	28.40°

Kimley»Horn