

Appendix I
Transportation Analysis



Transportation Analysis

for the:

Perris Travel Center Case No. P22-05002

In the City of Perris



October 2022

Kimley»»Horn

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

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**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 driveways on Trumble Road.

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.



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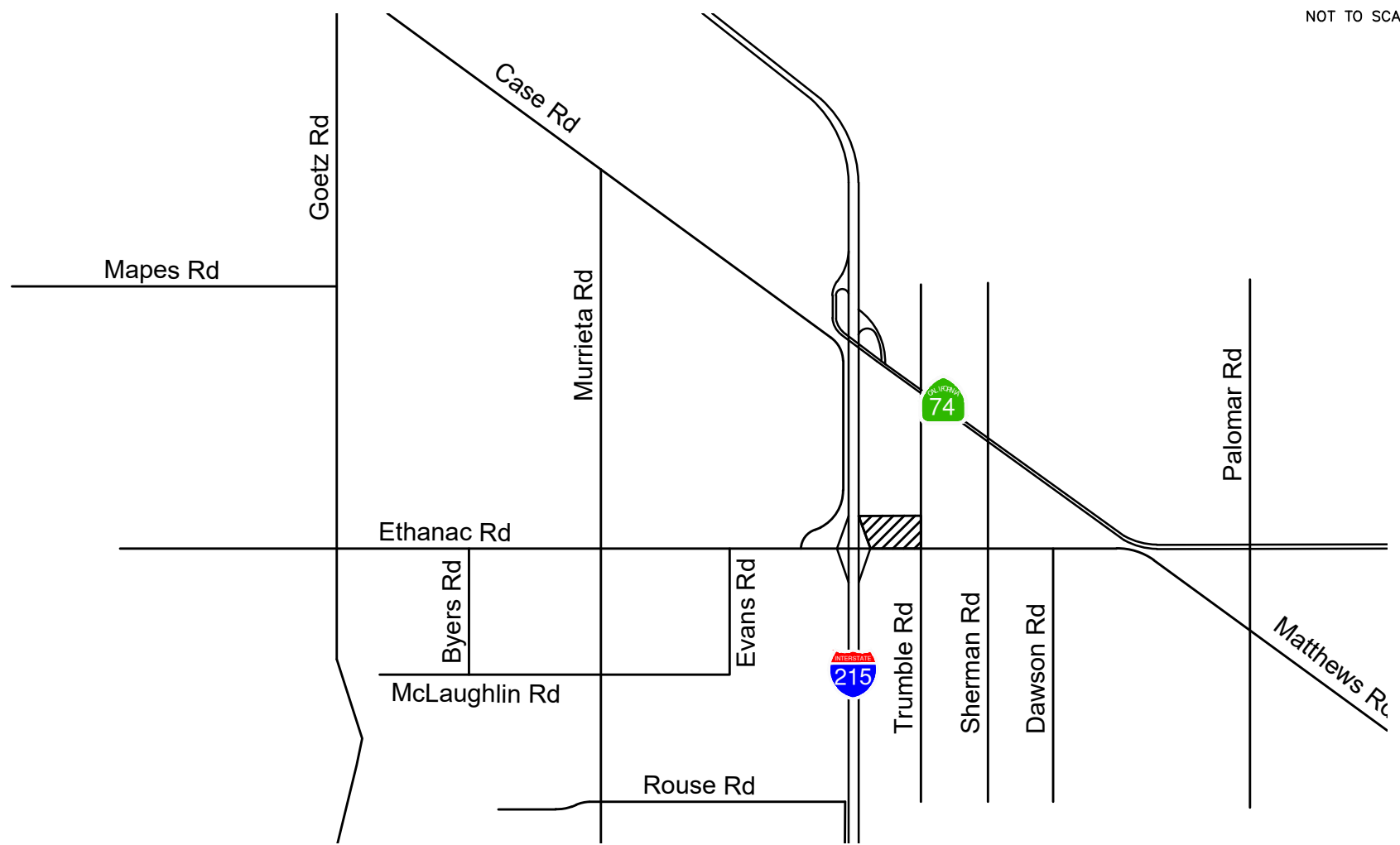



FIGURE 1
VICINITY MAP

LEGEND:
 = Project Site



ANALYSIS SCENARIOS AND METHODOLOGY

Analysis Scenarios

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

- Existing Conditions
- Existing Plus Project
- Opening Year 2024 Cumulative (Opening Year 2024 Plus Cumulative Projects)
- Opening Year 2024 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 impact is considered direct and significant 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 to operate at an unacceptable Level of Service for existing plus project conditions.
- A project-related impact is considered direct and significant 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 impact is considered significant when a study intersection is forecast to operate at an unacceptable Level of Service with the addition of cumulative/background traffic and 50 or more a.m. or p.m. peak hour project trips.

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. 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 September 2021. 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: PM - LOS E

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.



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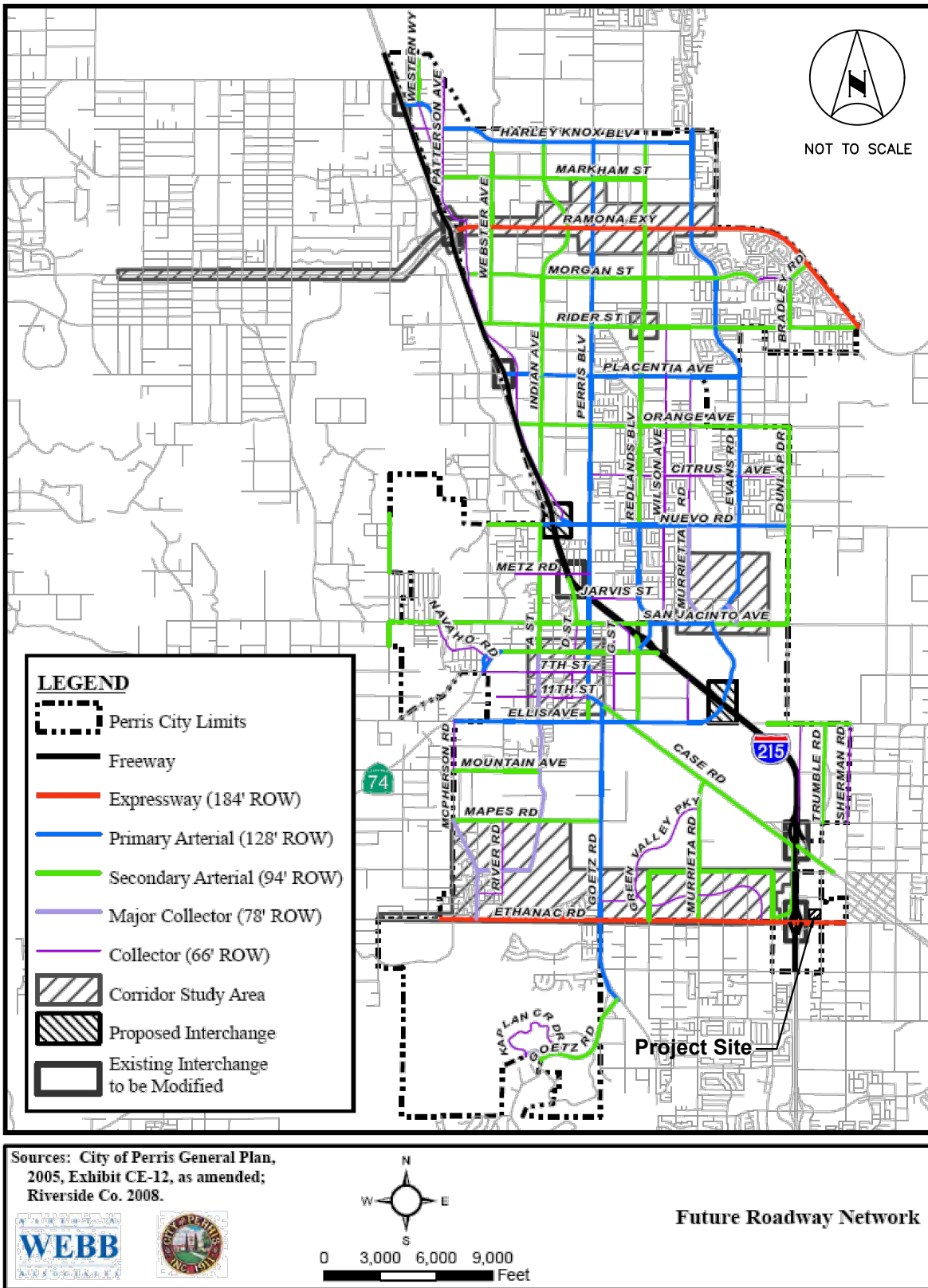
1. I-215 SB Ramps at Ethanac Rd	2. I-215 NB Ramps at Ethanac Rd	3. Encanto Dr at Ethanac Rd	4. Trumble Rd at Ethanac Rd
D1. Ethanac Rd at Project Driveway	D2. Trumble Rd at North Driveway	D3. Trumble Rd at South Driveway	
FUTURE INTERSECTION	FUTURE INTERSECTION	FUTURE INTERSECTION	

LEGEND:

- = Project Site
- = Study Intersection
- = Turn or Through Lane
- = Signal

**FIGURE 3
EXISTING LANE CONFIGURATION
AND TRAFFIC CONTROL**

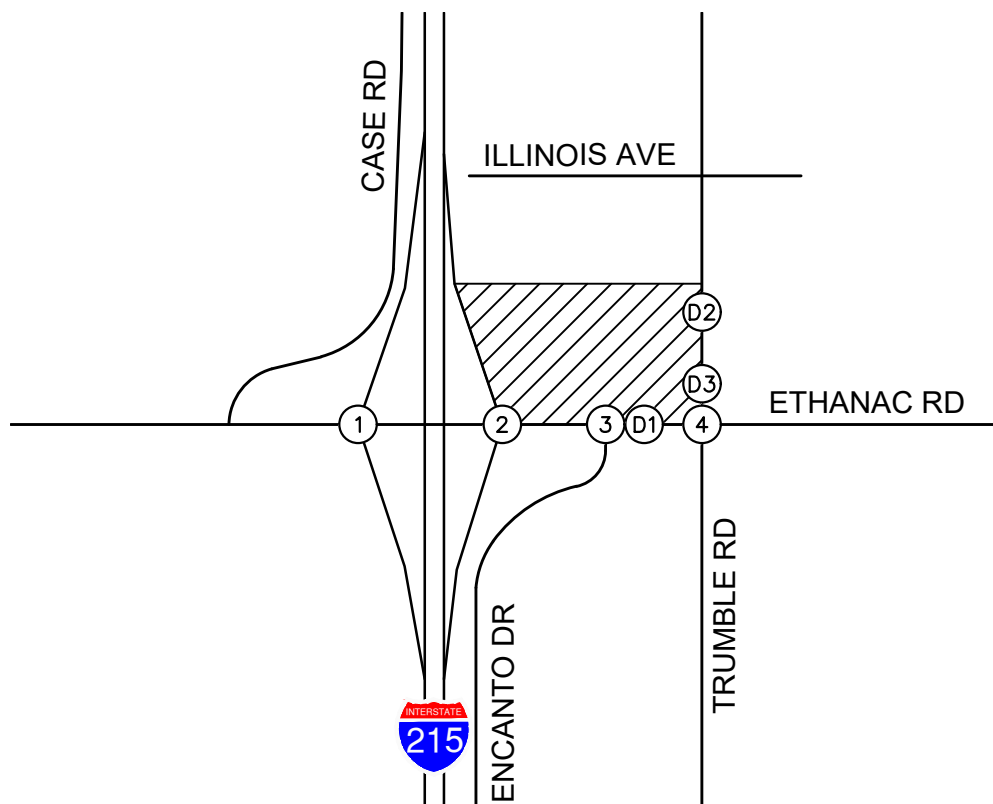




**FIGURE 4
CITY OF PERRIS CIRCULATION PLAN**



NOT TO SCALE



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	

Note: Volumes reflect PCE adjustments.

LEGEND:

- = Project Site
- = 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	16.2	B	22.0	C
2	SR-215 NB Ramps at Ethanac Road	S	26.8	C	34.0	C
3	Encanto Drive at Ethanac Road	U	26.7	D	45.7	E
4	Trumble Road at Ethanac Road	S	24.0	C	23.3	C
5	Ethanac Road at Project Driveway	U	Future Intersection			
6	Trumble Road at North Driveway	U	Future Intersection			
7	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 (10th 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 7,834 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**

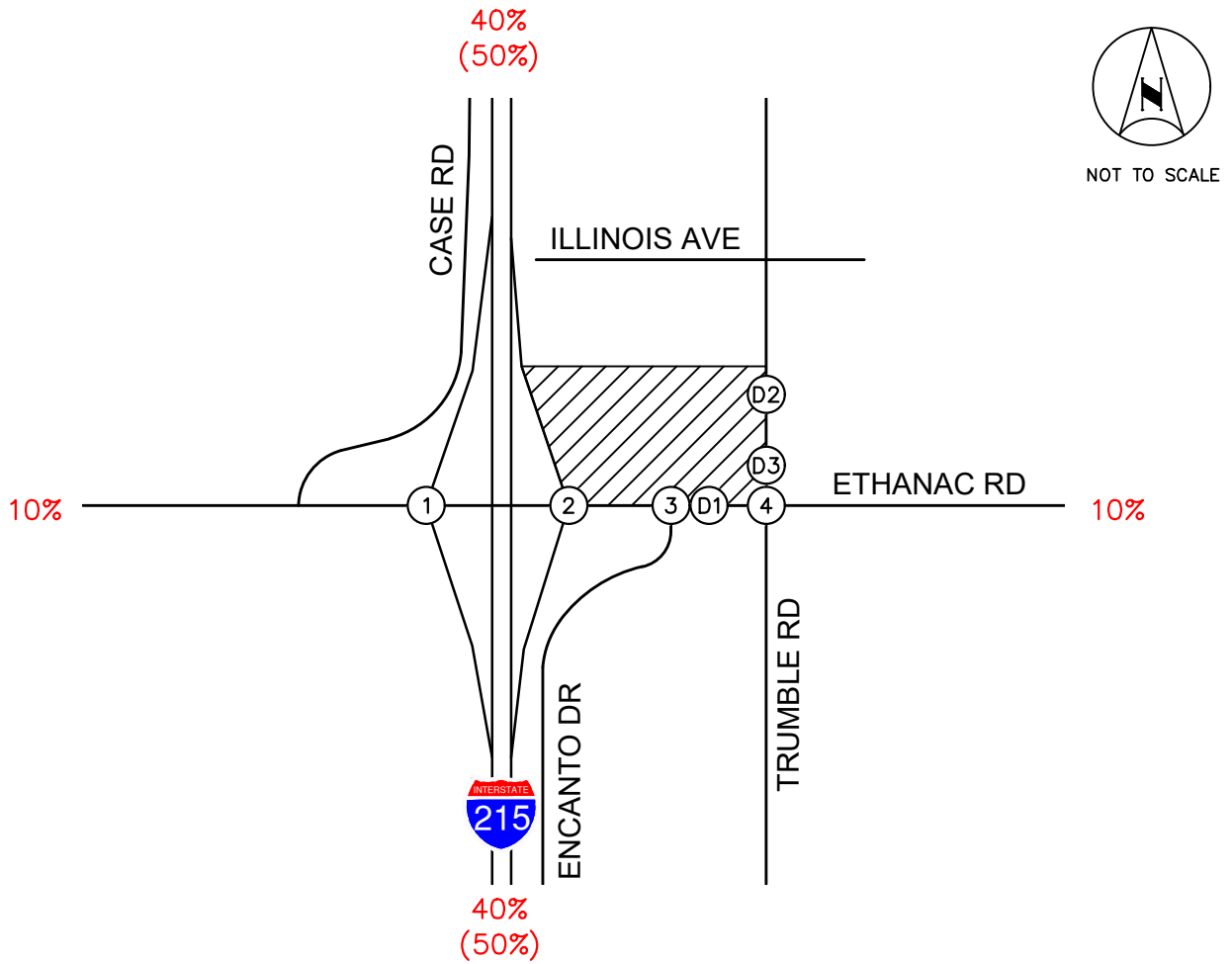
Trip Generation Rates									
Land Use	Unit	Daily(a)	AM Peak Hour (a)			PM Peak Hour (a)			
			In	Out	Total	In	Out	Total	
Convenience Store/Gas Station/Fast-Food Restaurant with Drive-Through	FP	268.110	50%	50%	13.02	50%	50%	18.29	
Truck Stop	FP	219.860	49%	51%	12.40	53%	47%	13.00	
Project Trip Generation									
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	4,290	104	104	208	146	146	292
<i>Pass-By Trips (b) (Daily: 25%, AM: 50%, PM: 55%)</i>			-1,072	-52	-52	-104	-80	-80	-161
Truck Trips									
Truck Stop	7	FP	1,539	43	44	87	48	43	91
PCE Truck Stop (PCE Factor = 3)			4,617	128	133	260	145	128	273
Total Driveway Trips			8,907	232	237	469	291	274	565
Passenger Car			4,290	104	104	208	146	146	292
Truck PCE			4,617	128	133	260	145	128	273
Total Primary (Net New) Trips			7,834	180	185	365	210	194	404
Passenger Car			3,217	52	52	104	66	66	131
Truck PCE			4,617	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



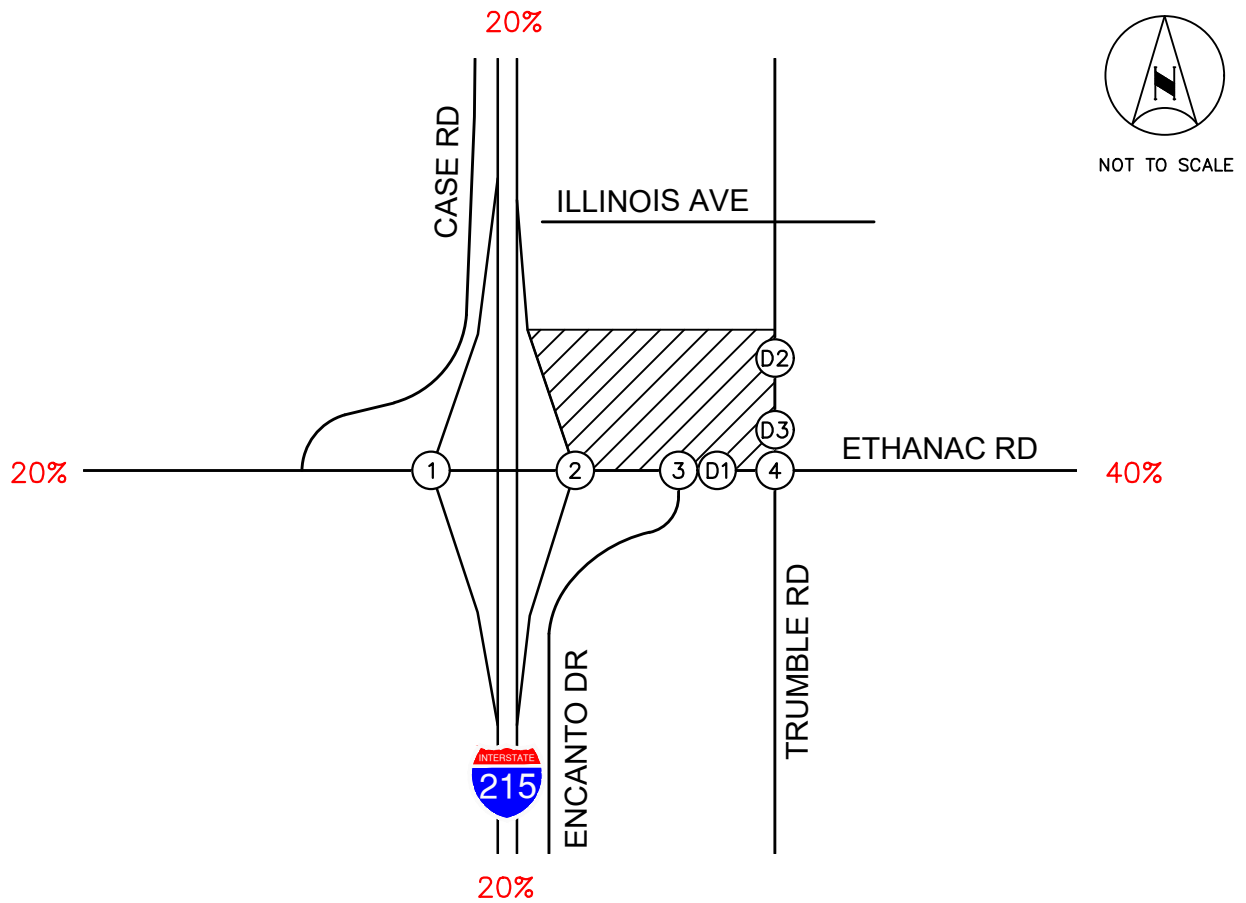
1. I-215 SB Ramps at Ethanac Rd	2. I-215 NB Ramps at Ethanac Rd	3. Encanto Dr at Ethanac Rd	4. Trumble Rd at Ethanac Rd
D1. Ethanac Rd at Project Driveway	D2. Trumble Rd at North Driveway	D3. Trumble Rd at South Driveway	

Note: Volumes reflect PCE adjustments.

LEGEND:

- = Project Site
- = Study Intersection
- XX%** = Passenger Car/(Truck) Trip Distribution Percentage
- (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
D1. Ethanac Rd at Project Driveway	D2. Trumble Rd at North Driveway	D3. Trumble Rd at South Driveway	

Note: Volumes reflect PCE adjustments.

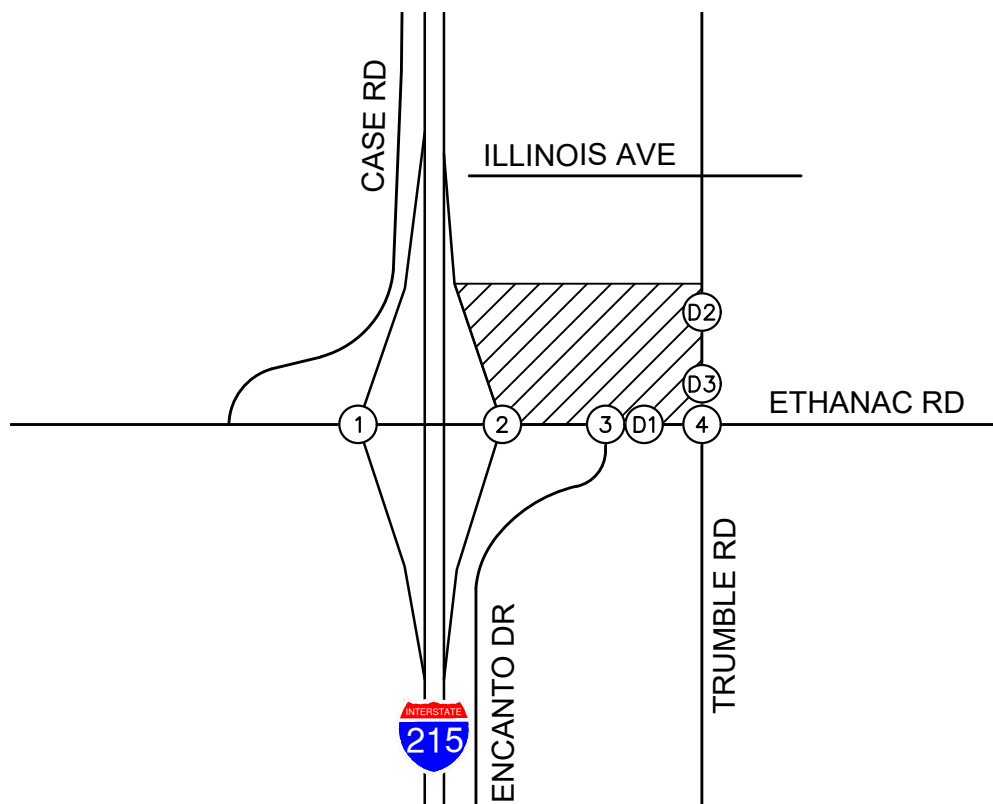
LEGEND:

- = Project Site
- = Study Intersection
- XX%** = Pass-By Distribution Percentage
- XX/YY = AM/PM Peak Hour Turning Movement Volumes

**FIGURE 7
PASS-BY PROJECT-RELATED
TRIP DISTRIBUTION**



NOT TO SCALE



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	

Note: Volumes reflect PCE adjustments.

LEGEND:

- = Project Site
- = 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**.

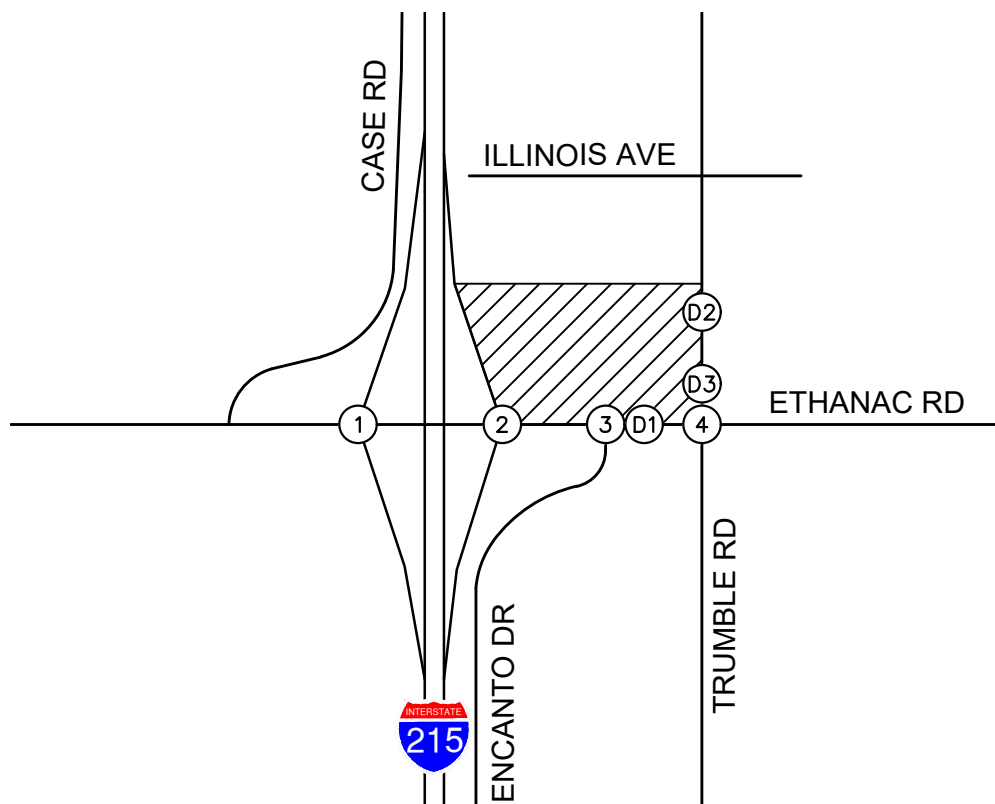
Peak Hour Operating Conditions

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, all intersections would operate at an acceptable Level of Service under Existing Plus Project conditions.



NOT TO SCALE



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	

Note: Volumes reflect PCE adjustments.

LEGEND:

- = Project Site
- = 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	16.2	B	20.2	C	4.0	No	22.0	C	25.8	C	3.8	No
2	SR-215 NB Ramps at Ethanac Road	S	26.8	C	34.7	C	7.9	No	34.0	C	44.2	D	10.2	No
3	Encanto Drive at Ethanac Road	U	26.7	D	18.9	C	-7.8	No	45.7	E	26.7	D	-	No
4	Trumble Road at Ethanac Road	S	24.0	C	36.3	D	12.3	No	23.3	C	39.4	D	16.1	No
5	Ethanac Road at Project Driveway	U	-	-	14.8	B	-	No	-	-	15.5	C	-	No
6	Trumble Road at North Driveway	U	-	-	9.6	A	-	No	-	-	10.0	A	-	No
7	Trumble Road at South Driveway	U	-	-	9.9	A	-	No	-	-	10.4	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).

OPENING YEAR 2024 CUMULATIVE CONDITIONS

The Project Opening Year (the year the project would be constructed and occupied) is anticipated to be Year 2024. Based on consultation with City staff, an ambient growth rate of 3.0% per year (9% total) to Opening Year 2024 was applied to existing traffic volumes. Cumulative Project traffic was also added to Opening Year 2024 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 2024 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 2024 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, the following intersections would operate at an unacceptable Level of Service under Opening Year 2024 conditions:

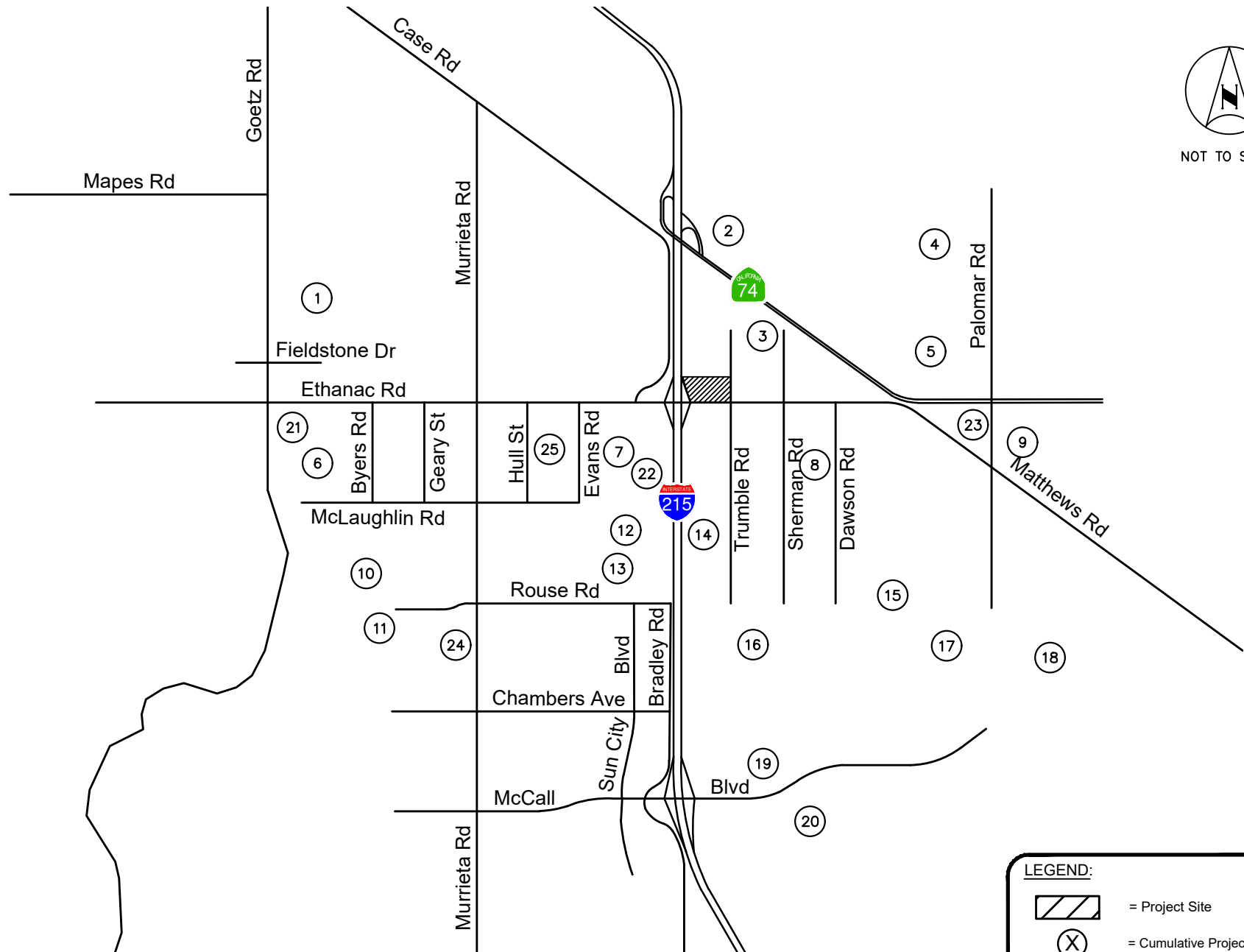
- #1 - I-215 SB Ramps at Ethanac Road: AM & PM - LOS F
- #2 - I-215 NB Ramps at Ethanac Road: AM & PM - LOS F
- #3 - Encanto Drive at Ethanac Road: AM & PM - LOS F
- #4 - Trumble Road at Ethanac Road: PM - LOS E

**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	Green Valley	Single-Family Detached Housing	623	DU	5,881	115	346	461	389	228	617	
		Multifamily Housing (Mid-Rise)	842	DU	4,580	79	224	303	226	145	371	
2	On-Deck Hotel	Hotel	120	Room	1,003	33	23	56	37	35	72	
3	Paragon Framing	High-Cube Transload and 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	
4	MR-27 LLC	Single-Family Detached Housing	172	DU	1,624	32	95	127	107	63	170	
5	Motte Country Plaza	Shopping Center	4.888	KSF	185	3	2	5	9	10	19	
		Pass-by Trips (PM:34%)								-3	-3	-6
		Sub Total				185	3	2	5	6	7	13
6	Capstone Warehouse	High-Cube Fulfillment Center Warehouse	700.037	KSF	4,716	517	122	639	343	536	879	
7	Ethanac Square	Automated Car Wash	2.080	KSF	339	12	7	19	15	15	30	
8	Menifee Commerce Center	Warehousing	1,640.130	KSF	2,854	215	64	279	84	228	312	
9	Forterra Pipe	General Office Building	4.200	KSF	41	4	1	5	1	4	5	
10	Cimarron Ridge	Single-Family Detached Housing	756	DU	7,137	140	420	560	472	277	749	
11	Valley Blvd Tract Map	Single-Family Detached Housing	68	DU	642	13	38	51	42	25	67	
12	Sagewood (DR Horton)	Single-Family Detached Housing	174	DU	1,643	32	97	129	109	64	173	
13	McLaughlin Village	Single-Family Detached Housing	126	DU	1,189	23	70	93	79	46	125	
14	RV SuperCenter	Recreational Vehicle Sales	17.600	KSF	88	7	1	8	4	9	13	
15	Talavera (KB Homes)	Single-Family Detached Housing	173	DU	1,633	32	96	128	108	63	171	
16	Legado	Single-Family Detached Housing	1,022	DU	9,648	189	567	756	638	374	1,012	
17	Underwood (KB Homes)	Single-Family Detached Housing	543	DU	5,126	100	301	401	339	199	538	
18	Remington/McCall Mesa	Single-Family Detached Housing	264	DU	2,492	49	147	196	165	97	262	
19	McCall-Encanto Gas Station	Gasoline Station w/ Conv. Mkt.	12	FP	2,464	76	73	149	86	82	168	
20	McCall Square	Convenience Market w/ Gasoline Pumps	2	FP	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		
21	Goetz/Ethanac Commercial	Convenience Market w/ Gasoline Pumps	8	FP	2,580	83	83	166	92	92	184	
		Pass-by Trips (AM: 63%, PM:66%)					-52	-52	-105	-61	-61	-121
		Bed and Linen Superstore	3	KSF	471	16	10	26	21	21	42	
		Shopping Center	7.040	KSF	266	4	3	7	13	14	27	
		Pass-by Trips (PM:34%) Retail Only								-4	-5	-9
Sub Total				3,317	51	44	94	61	62	122		
22	Barnett Warehouse	Warehousing	251.780	KSF	438	33	10	43	13	35	48	
23	Planning Area 9	Single-Family Detached Housing	173	DU	1,633	32	96	128	108	63	171	
24	Vista Ridge Aparments	Multifamily Housing (Mid-Rise)	30	DU	163	3	8	11	8	5	13	
25	NGCC I & II	Warehousing	1,316.754	Ksf	3,229	243	71	314	95	258	353	
Total Project Trips					64,515	2,108	2,970	5,079	3,615	2,998	6,613	
DU = Dwelling Unit, KSF = 1,000 square feet, FP = Fueling Position												



NOT TO SCALE



LEGEND:



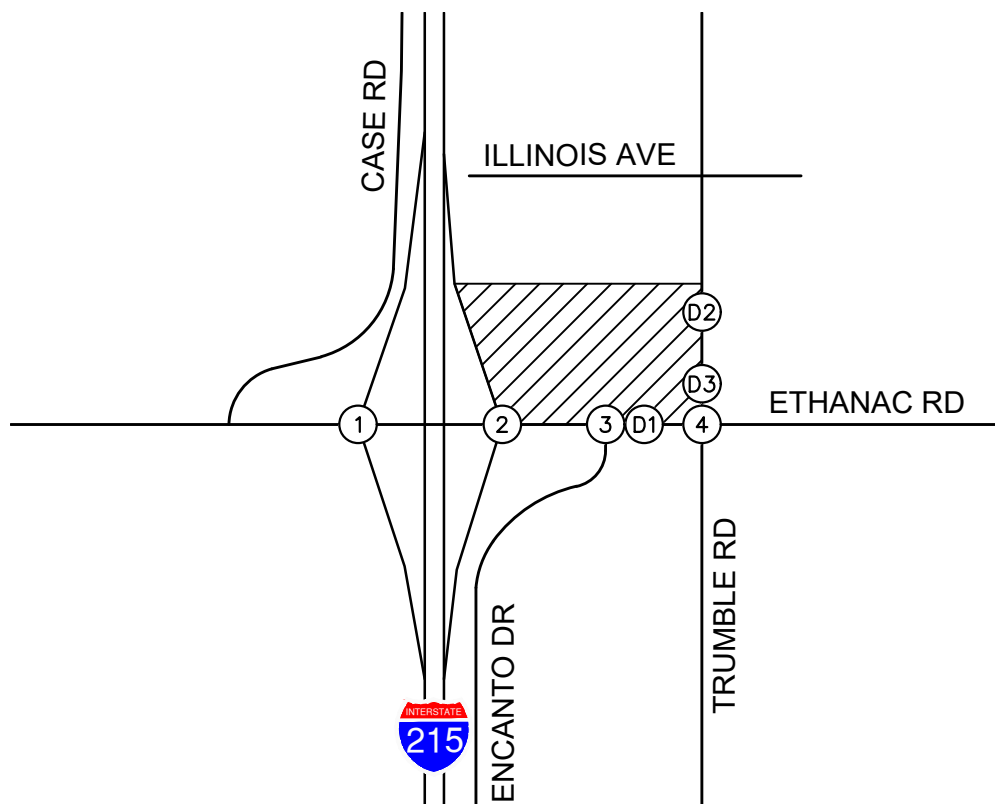
-  = Project Site
-  = Cumulative Project

FIGURE 10
LOCATION OF CUMULATIVE PROJECTS



NOT TO SCALE



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	

Note: Volumes reflect PCE adjustments.

LEGEND:

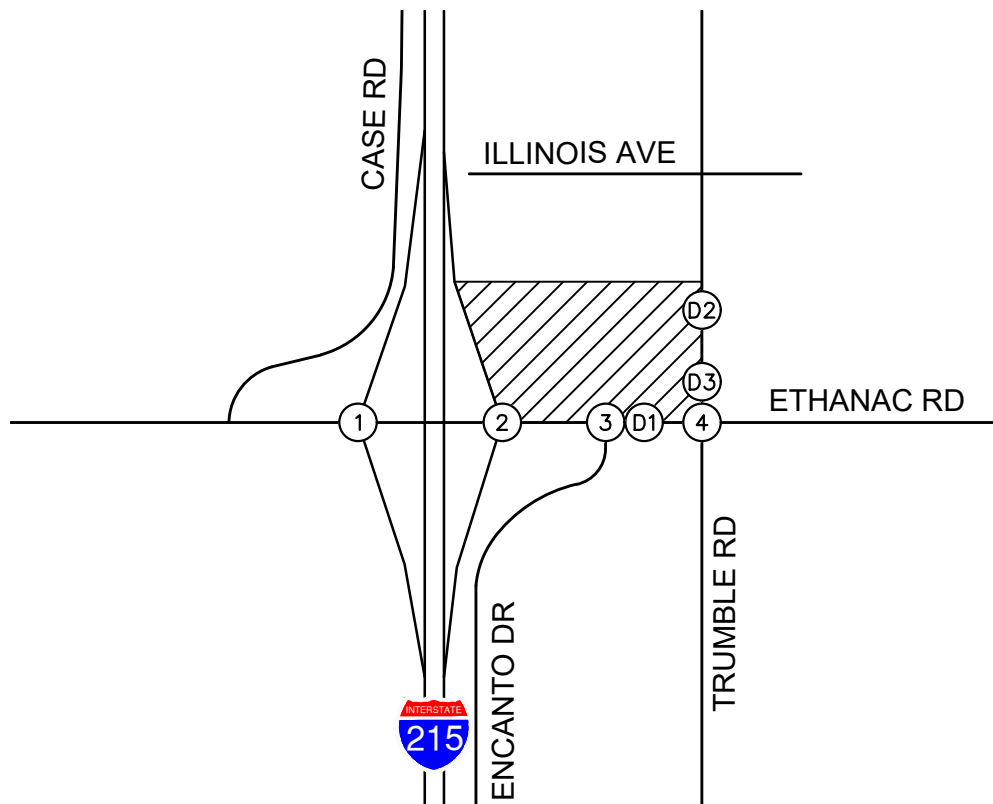
- = Project Site
- = Study Intersection
- xx/yy = AM/PM Peak Hour Turning Movement Volumes

**FIGURE 11
CUMULATIVE PROJECTS TRAFFIC VOLUMES**





NOT TO SCALE



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	

Note: Volumes reflect PCE adjustments.

LEGEND:

- = Project Site
- = Study Intersection
- xx/yy = AM/PM Peak Hour Turning Movement Volumes

**FIGURE 12
OPENING YEAR 2024 CUMULATIVE
TRAFFIC VOLUMES**



**TABLE 5
SUMMARY OF INTERSECTION OPERATION
OPENING YEAR 2024 CUMULATIVE**

Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	SR-215 SB Ramps at Ethanac Road	S	173.0	F	242.0	F
2	SR-215 NB Ramps at Ethanac Road	S	254.7	F	377.9	F
3	Encanto Drive at Ethanac Road	U	>180	F	>180	F
4	Trumble Road at Ethanac Road	S	35.6	D	57.7	E
5	Ethanac Road at Project Driveway	U	Future Intersection			
6	Trumble Road at North Driveway	U	Future Intersection			
7	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 2024 CUMULATIVE PLUS PROJECT CONDITIONS

Project-related traffic was added to the Opening Year 2024 Cumulative traffic volumes, and the resulting morning and evening peak hour volumes and daily roadway volumes are presented on **Figure 13**.

Intersection Operating Conditions

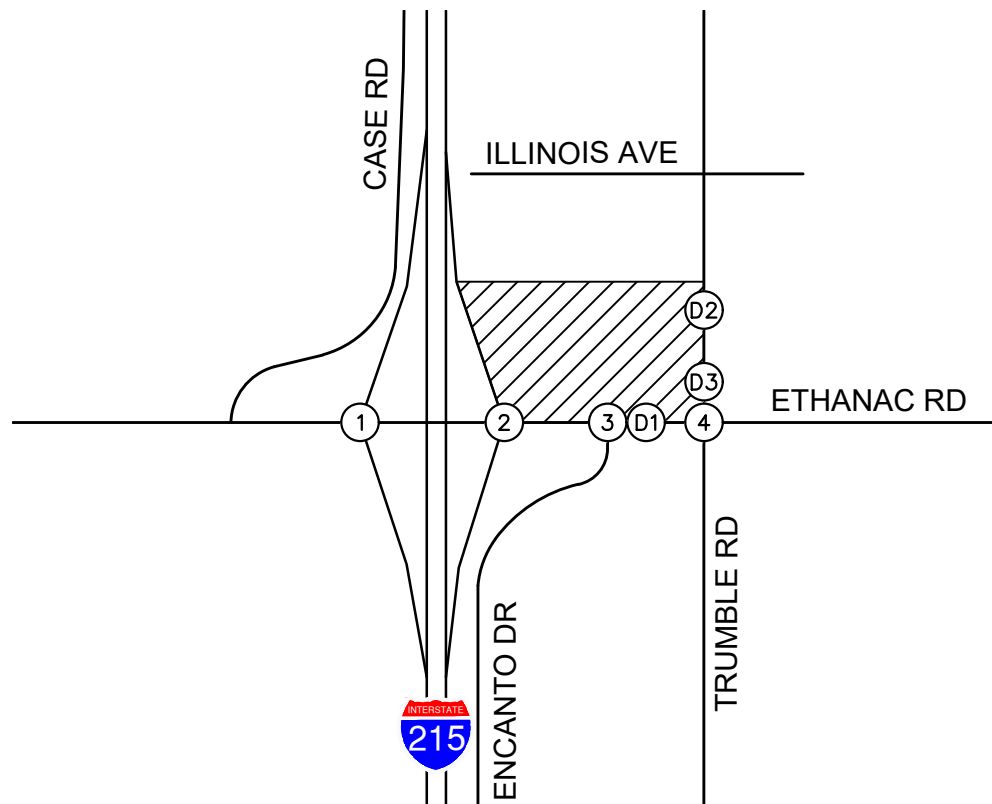
Intersection Level of Service analysis was conducted for the morning and evening peak hours for the Opening Year 2024 Cumulative Plus Project conditions. The results of the intersection analysis are shown on **Table 6**. Copies of intersection analysis worksheets for this scenario are provided in **Appendix D**.

Review of this Table indicates that, with the addition of project traffic, the following intersections would operate at an unacceptable Level of Service under Opening Year 2024 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: PM - LOS F
- #4 - Trumble Road at Ethanac Road: AM & PM - LOS F



NOT TO SCALE



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	

Note: Volumes reflect PCE adjustments.

LEGEND:

- = Project Site
- = Study Intersection
- xx/yy = AM/PM Peak Hour Turning Movement Volumes

FIGURE 13
OPENING YEAR 2024 CUMULATIVE
PLUS PROJECT TRAFFIC VOLUMES



**TABLE 6
SUMMARY OF INTERSECTION OPERATION
OPENING YEAR 2024 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	173.0	F	211.3	F	38.3	Yes	242.0	F	301.1	F	59.1	Yes
2	SR-215 NB Ramps at Ethanac Road	S	254.7	F	292.3	F	37.6	Yes	377.9	F	406.1	F	28.2	Yes
3	Encanto Drive at Ethanac Road	U	>180	F	33.3	D	-	No	>180	F	>180	F	-	No
4	Trumble Road at Ethanac Road	S	35.6	D	125.3	F	89.7	Yes	57.7	E	185.4	F	127.7	Yes
5	Ethanac Road at Project Driveway	U	-	-	27.1	D	-	No	-	-	27.3	D	-	No
6	Trumble Road at North Driveway	U	-	-	9.7	A	-	No	-	-	10.1	B	-	No
7	Trumble Road at South Driveway	U	-	-	9.9	A	-	No	-	-	10.5	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).

RECOMMENDED IMPROVEMENTS

Based on the Level of Service standards and significant effect criteria discussed previously, under Opening Year 2024 Cumulative Plus Project Conditions, the project would cause a cumulative project-related effect at the following intersections:

- #1 - I-215 SB Ramps at Ethanac Road (Cumulative effect)
- #2 - I-215 NB Ramps at Ethanac Road (Cumulative effect)
- #4 - Trumble Road at Ethanac Road (Cumulative effect)

Implementation of the following improvements under Opening Year 2024 Cumulative Plus Project conditions are recommended to address the project-related effect at the study intersections:

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

- Add 2nd eastbound through lane
- Add 2nd westbound left-turn lane
- Modify southbound approach to provide two left-turn and two right-turn movements.
- Add free eastbound right-turn lane

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

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

#4 - Trumble Road at Ethanac Road:

- Add 2nd eastbound through lane
- Add 2nd westbound through lane
- Add a dedicated southbound right-turn lane with right-turn overlap signal phasing

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.

A summary of the intersection operation before and after implementation of the recommended improvements is provided on **Table 7**. Recommended lane configurations and intersection controls at the study intersections are shown on **Figure 14**. 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 2024 Cumulative Plus Project conditions is shown on **Table 8**. 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.

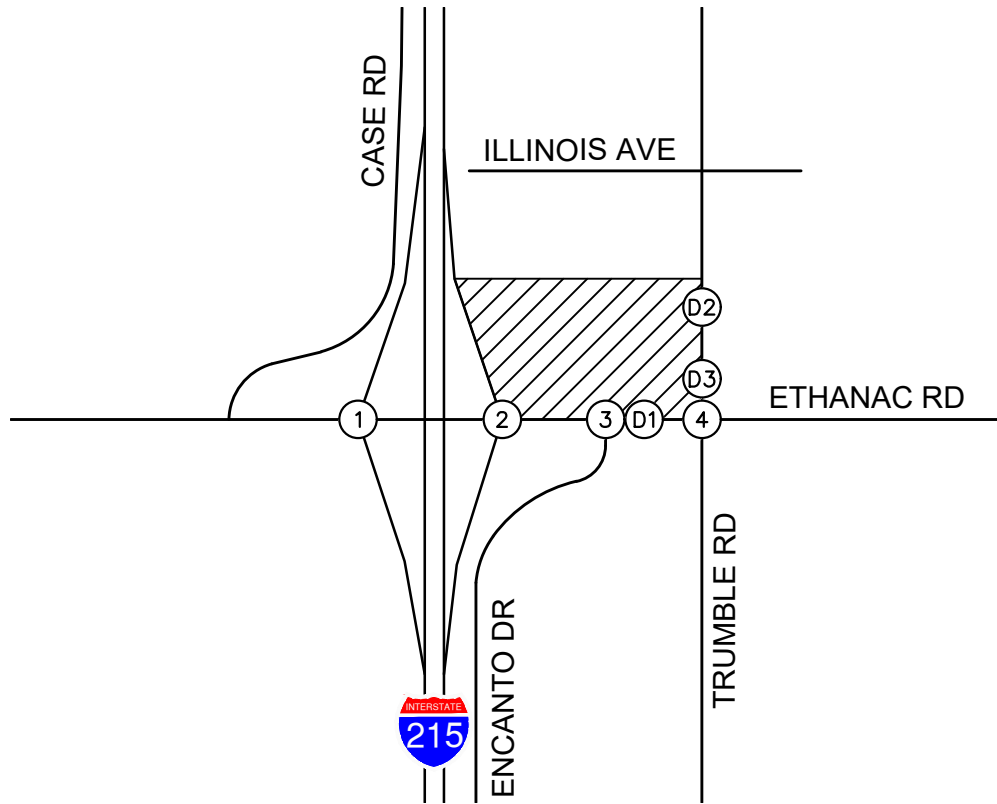
**TABLE 7
SUMMARY OF INTERSECTION OPERATION
RECOMMENDED IMPROVEMENTS**

Int. #	Intersection	Improvements	Peak Hour	Proposed Traffic Control	OPENING YEAR 2024 CUMULATIVE					
					Without Project		With Project		With Improvements	
					Delay	LOS	Delay	LOS	Delay	LOS
1	SR-215 SB Ramps at Ethanac Road	<ul style="list-style-type: none"> •Add 2nd eastbound through lane •Add 2nd westbound left-turn lane •Modify southbound approach to provide two left-turn movements and two right-turn movements. •Add free eastbound right-turn lane 	AM	S	173.0	F	211.3	F	44.8	D
			PM	S	242.0	F	301.1	F	72.4	E
2	SR-215 NB Ramps at Ethanac Road	<ul style="list-style-type: none"> •Add 2nd eastbound through lane •Add 2nd westbound through lane •Add a dedicated westbound right-turn lane •Add 2nd eastbound left-turn lane •Add 2nd northbound left-turn lane 	AM	S	254.7	F	292.3	F	32.1	C
			PM	S	377.9	F	406.1	F	53.0	D
4	Trumble Road at Ethanac Road	<ul style="list-style-type: none"> •Add 2nd eastbound through lane •Add 2nd westbound through lane •Add a dedicated southbound right-turn lane with right-turn overlap signal phasing 	AM	S	35.6	D	125.3	F	28.3	C
			PM	S	57.7	E	185.4	F	27.8	C

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



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	

LEGEND:

- = Project Site
- = Study Intersection
- = Turn or Through Lane
- = Recommended Turn or Through Lane
- = Overlap
- = Signal

**FIGURE 14
RECOMMENDED LANE CONFIGURATION
AND TRAFFIC CONTROL**



TABLE 8
SUMMARY OF PROJECT FAIR SHARE
OPENING YEAR 2024 CUMULATIVE PLUS PROJECT

Int. #	Intersection	AM Peak Hour					PM Peak Hour				
		Total Volume		Total Growth	Project Trips	Percentage of Growth	Total Volume		Total Growth	Project Trips	Percentage of Growth
		2021	2024				2021	2024			
1	I-215 SB Ramps at Ethanac Road	2,398	4,682	2,284	202	8.8%	2,381	5,264	2,883	235	8.2%
2	I-215 NB Ramps at Ethanac Road	1,935	3,984	2,049	395	19.3%	2,050	4,648	2,598	456	17.6%
4	Trumble Road at Ethanac Road	1,360	2,628	1,268	463	36.5%	1,415	2,960	1,545	534	34.6%

Notes:

- Fair Share percentage is to be applied to non-programmed improvements
- The Project applicant will be constructing a median within Ethanac Road to restrict northbound left turns and westbound left turns at Encanto Drive and Ethanac Road

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 driveways on Trumble Road.

STORAGE CAPACITY AT RAMPS

Queue lengths at ramps were assessed at the following locations:

- SR-215 SB Ramps at Ethanac Road
 - Southbound Ramp
- SR-215 NB Ramps at Ethanac Road
 - Northbound Ramp

A summary of ramp storage capacity, as well as 50th and 95th percentile queue lengths at the locations noted above are shown on **Table 9**. The table shows that the 50th and 95th percentile queues would exceed the available ramp capacity under Opening Year 2024 Cumulative conditions (with and without project) at the studied intersections.

DRIVE-THROUGH QUEUING ANALYSIS

The City has requested that a drive-through (DT) queuing analysis 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 on the west side of the proposed building and would wrap around the west side of the building in a clockwise direction. The proposed drive-through would be single lane with one order board and one pay/pick-up window.

There will be approximately 60 feet of queuing capacity from the drive-through entrance to the order board and approximately 40 feet from the order board to the pay/pick-up window. This would provide a total drive-through queue length of approximately 100 feet, for a drive-through queueing capacity of 5 vehicles, assuming 20 feet per vehicle, from the beginning of the drive-through lane to the pay/pick-up window.

Drive-through Queue Length Calculation

The drive-through queuing capacity was analyzed using queuing analysis formulas published in the Institute of Transportation Engineers (ITE) Transportation Planning Handbook (3rd Edition).

The peak arrival rate assumes that 60% of inbound traffic for the drive-through restaurant will use the drive-through service during the peak hour, resulting in an arrival rate of 30 vehicles using the drive-through during the peak hour.

The typical service time in the drive-through is approximately 4 minutes from the order board to the pick-up window, with subsequent vehicles being processed at the pay/pick-up window every 90 seconds during the peak drive-through periods. As a result, the service rate for the proposed drive-through is estimated to be 38 vehicles per hour.

After applying the ITE queuing formulas, the analysis indicates that the average queue length is estimated to be 3 vehicles, and the probability of the queue exceeding 5 vehicles is estimated to be 24.21% during the peak hour. The queuing calculation worksheet and formulas are provided as **Appendix F** of this report.

It should be noted that the drive-through restaurant plans to implement mobile pick-up order at the proposed location. Also, once the specific type of fast-food restaurant has been determined a site-specific queuing analysis would be submitted to the City for approval.

**TABLE 9
SUMMARY OF RAMP STORAGE CAPACITY
PERRIS TRAVEL CENTER PROJECT**

Intersection	Ramp	Storage Capacity (ft)	Peak Hour	PM Peak Hour Queue Length (ft)									
				Existing		Existing Plus Project		Opening Year 2024 Cumulative		Opening Year 2024 Cumulative Plus Project		OY 2024 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	1,370	AM	147	246	160	263	1,152	1,817	1,152	1,817	293	433
			PM	248	378	317	465	1,885	2,989	1,885	2,989	555	772
SR-215 NB Ramps at Ethanac Road	NB	1,315	AM	219	340	282	419	1,272	1,986	1,272	1,986	311	470
			PM	377	491	433	637	1,952	3,072	1,952	3,072	657	908

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 8 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 vehicle. The northern driveway on Trumble Road would provide truck ingress and egress access to the project site. All project driveways would be unsignalized.
- Morning and evening peak hour operating conditions were evaluated at three study intersections for the following study scenarios:
 - Existing Conditions
 - Existing Plus Project
 - Opening Year 2024 Cumulative
 - Opening Year 2024 Cumulative Plus Project
- Existing peak hour traffic counts were collected in September 2021.
- 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 7,834 net new PCE trips on a daily basis, with 365 net new PCE trips in the morning peak hour, and 405 net new PCE trips in the evening peak hour.
- Project traffic was added to Existing traffic volumes to establish the conditions for Existing Project condition. Under this condition, all study intersections would operate at an acceptable Level of Service.
- The project opening year is anticipated to be Year 2024. The Opening Year 2024 includes a 3% ambient annual growth rate. Cumulative Projects traffic was added to Opening Year 2024 traffic volumes to establish the conditions for Opening Year 2024 Cumulative condition. Under this condition, the following intersections continue to 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 2024 traffic volumes to establish the conditions for Opening Year 2024 Cumulative Plus Project condition. Under this condition, the following intersections continue to 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
 - Based on the Riverside County *Transportation Analysis Guidelines* (TA Guidelines, December 2020) under Opening Year 2024 Cumulative Plus Project Conditions, the project-would cause a project-related effect at the following intersections:
 - #1 - I-215 SB Ramps at Ethanac Road (Cumulative effect)
 - #2 - I-215 NB Ramps at Ethanac Road (Cumulative effect)
 - #4 - Trumble Road at Ethanac Road (Cumulative effect)
 - Recommended improvements under applicable Opening Year 2024 Cumulative Plus Project condition were provided to address the project's effect at study intersections.

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.

- 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.

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:

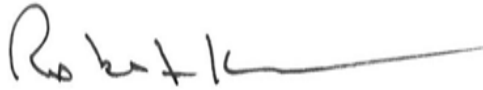
1. The Scoping Agreement and VMT Analysis #3 are acceptable as currently written. **The final traffic study must include the following:**
 - **Detailed exhibits that show actual turning movement volumes at all study intersections and project driveways.**
 - **The traffic study will need to provide a 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

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

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

Current GP Land Use	<u>Vacant</u>	Proposed Land Use	<u>Commercial</u>
Current Zoning	<u>Community Commercial</u>	Proposed Zoning	<u>Community Commercial</u>

	Current Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Trips	<u>0</u>	<u>0</u>	<u>0</u>	<u>241</u>	<u>247</u>	<u>488</u>
PM Trips	<u>0</u>	<u>0</u>	<u>0</u>	<u>258</u>	<u>238</u>	<u>496</u>
Internal Trip Allowance	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<u>(See Attachment 3 % Trip Discount)</u>			
Pass-By Trip Allowance	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<u>(See Attachment 2 % Trip Discount)</u>			

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)

	<u>PC:</u>	<u>N 40%</u>	<u>S 40%</u>	<u>E 10%</u>	<u>W 10%</u>
	<u>Truck:</u>	<u>50%</u>	<u>50%</u>	<u>0%</u>	<u>0%</u>

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)

Exhibit B – Scoping Agreement – Page 2

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

- | | |
|--|--|
| 1. <u>SR-215 SB Ramps at Ethanac Road</u> | 6. <u>Trumble Road at North Driveway</u> |
| 2. <u>SR-215 NB Ramps at Ethanac Road</u> | 7. <u>Trumble Road at South Driveway</u> |
| 3. <u>Encanto Drive at Ethanac Road</u> | 8. _____ |
| 4. <u>Trumble Road at Ethanac Road</u> | 9. _____ |
| 5. <u>Ethanac Road at Project Driveway</u> | 10. _____ |

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

- | | |
|----------|-----------|
| 1. _____ | 6. _____ |
| 2. _____ | 7. _____ |
| 3. _____ | 8. _____ |
| 4. _____ | 9. _____ |
| 5. _____ | 10. _____ |

E. Other Jurisdictional Impacts

Is this project within a City’s Sphere of Influence or one-mile radius of City boundaries? 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
Consultant's Representative

5/13/2022
Date

Approved Scoping Agreement:

Consultant Traffic Engineer for the
City of Perris

Date

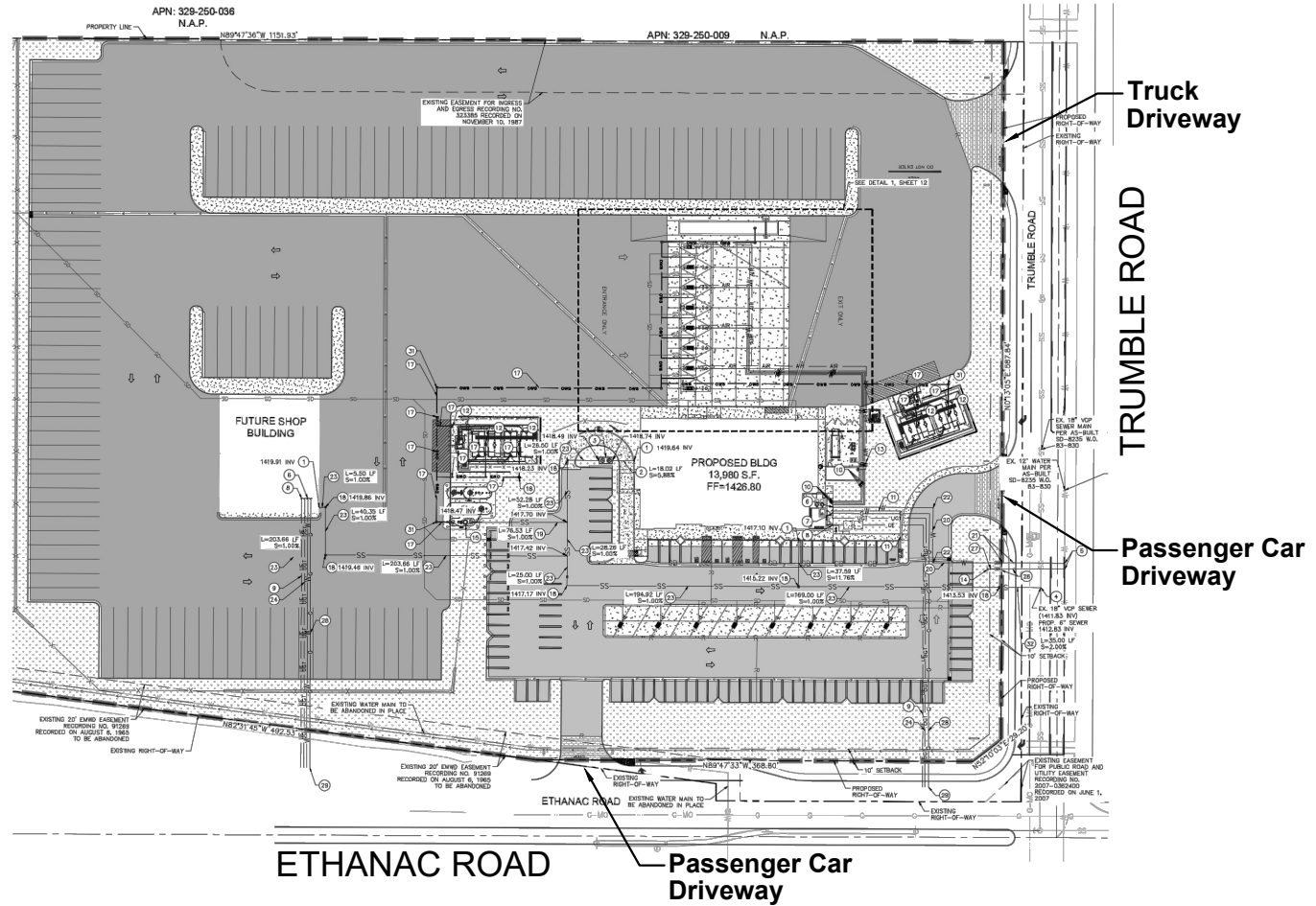
Scoping Agreement Submitted on 10/13/2021

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

ATTACHMENT 1



NOT TO SCALE



PROJECT SITE PLAN

**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-Food 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
<i>Internal Capture (b) (Daily: 10%, AM: 11%, PM: 10%)</i>			-104	-6	-5	-11	-4	-3	-7
<i>Pass-By Trips (c) (Daily: 25%, AM: 50%, PM: 55%)</i>			-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
<i>Internal Capture (b) (Daily: 10%, AM: 11%, PM: 10%)</i>			-553	-28	-28	-56	-22	-21	-43
<i>Pass-By Trips (c) (Daily: 50%, AM: 76%, PM: 75%)</i>			-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						
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

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

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

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

⁴Enter 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.

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

⁶Person-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						
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

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

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

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

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

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

⁶Person-Trips

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

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						
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

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

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

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

⁴Enter 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.

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

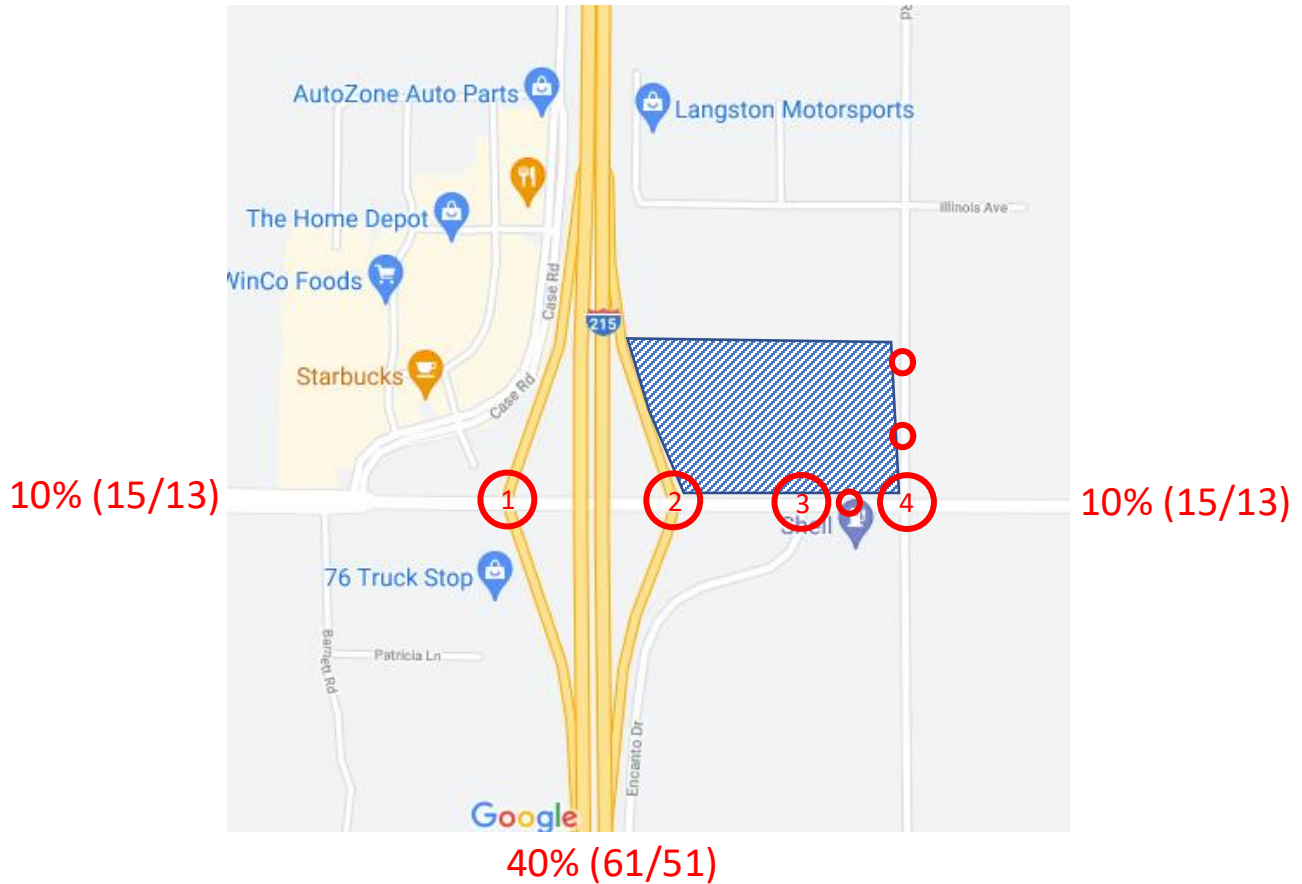
⁶Person-Trips

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

40% (61/51)



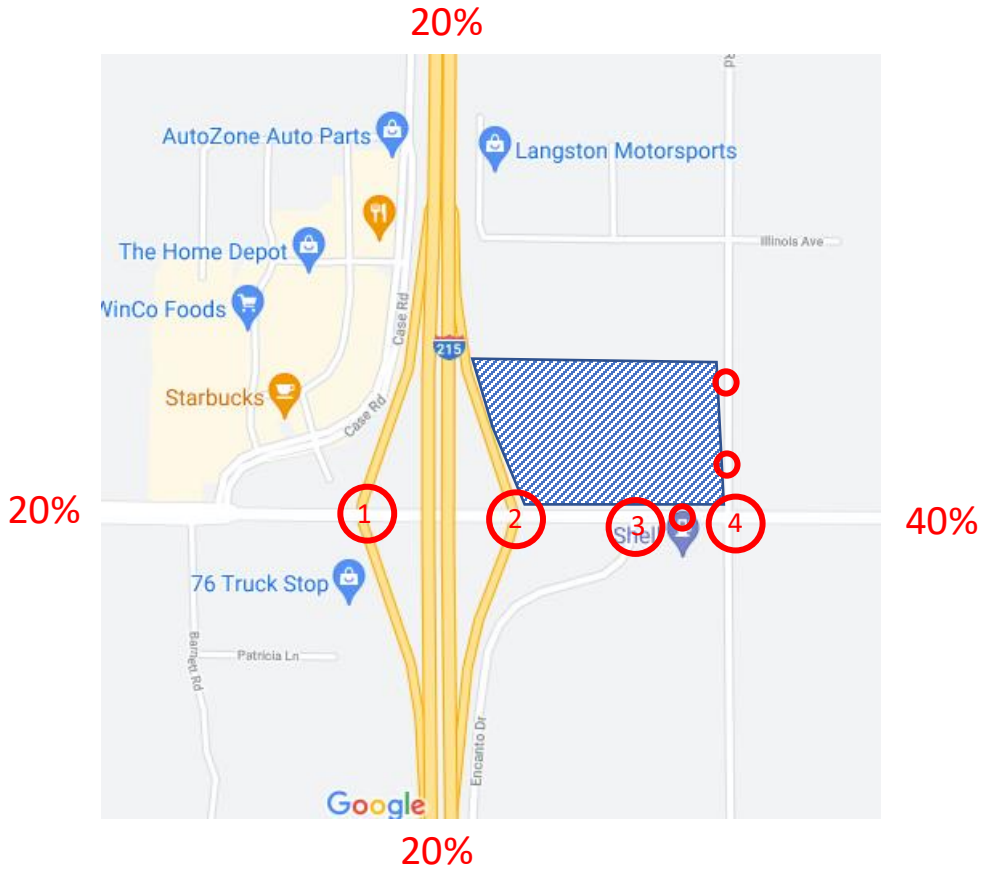
Legend:

-  - 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:

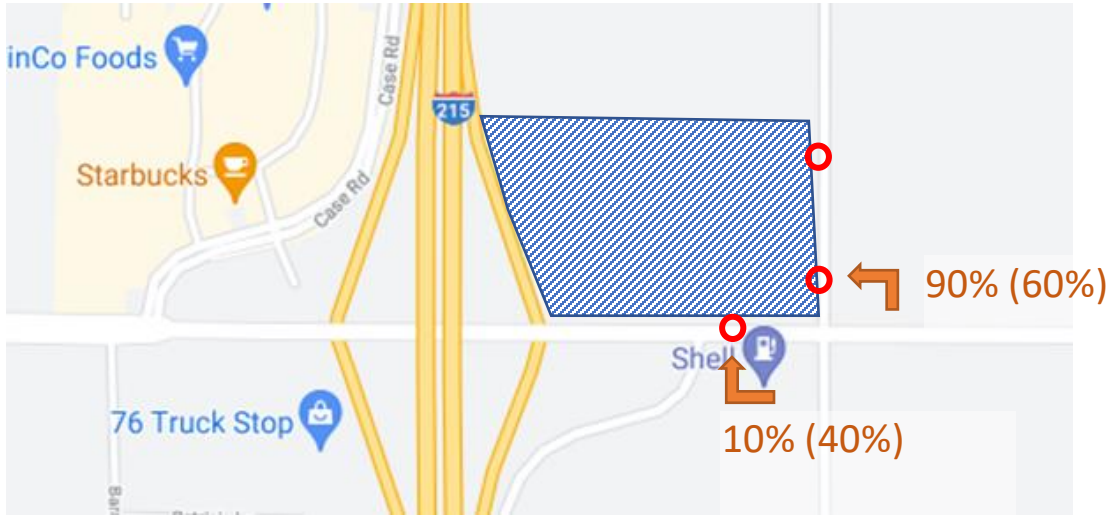
-  - Project Site
-  - Study Intersection
-  - Project Driveway
- XX%** - Pass-By Passenger Car Distribution

Study Intersections:

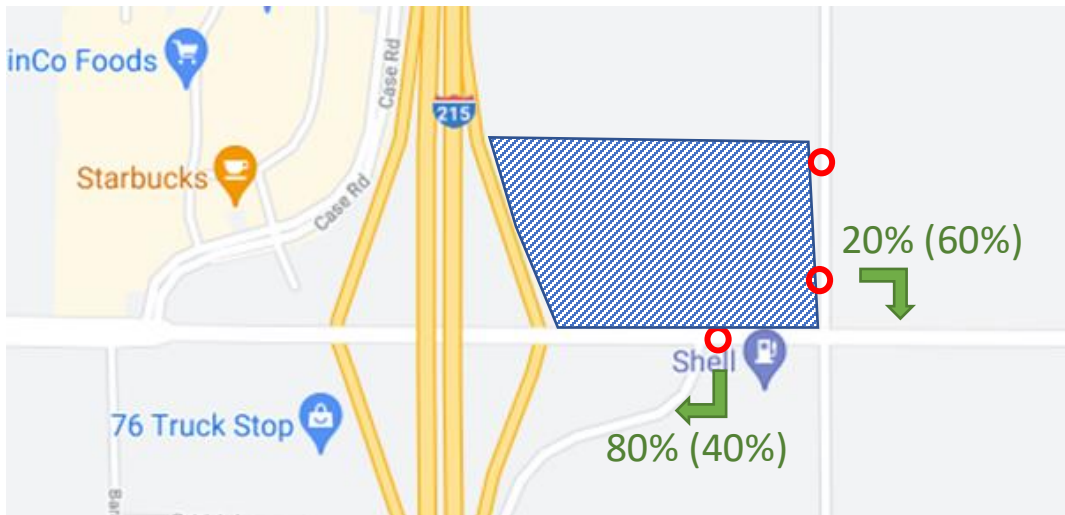
1. SR-215 SB Ramps at Ethanac Road
 2. SR-215 NB Ramps at Ethanac Road
 3. Encanto Drive at Ethanac Road
 4. Trumble Road at Ethanac Road
- D1. Ethanac Road at Project Driveway (Gas Station)
 D2. Trumble Road at North Driveway (Truck Driveway)
 D3. Trumble Road at South Driveway (Gas Station)

ATTACHMENT 4C – PASSENGER CAR DISTRIBUTION (DRIVEWAYS)

Driveway Distribution - IN



Driveway Distribution - OUT



Legend:



- Project Site



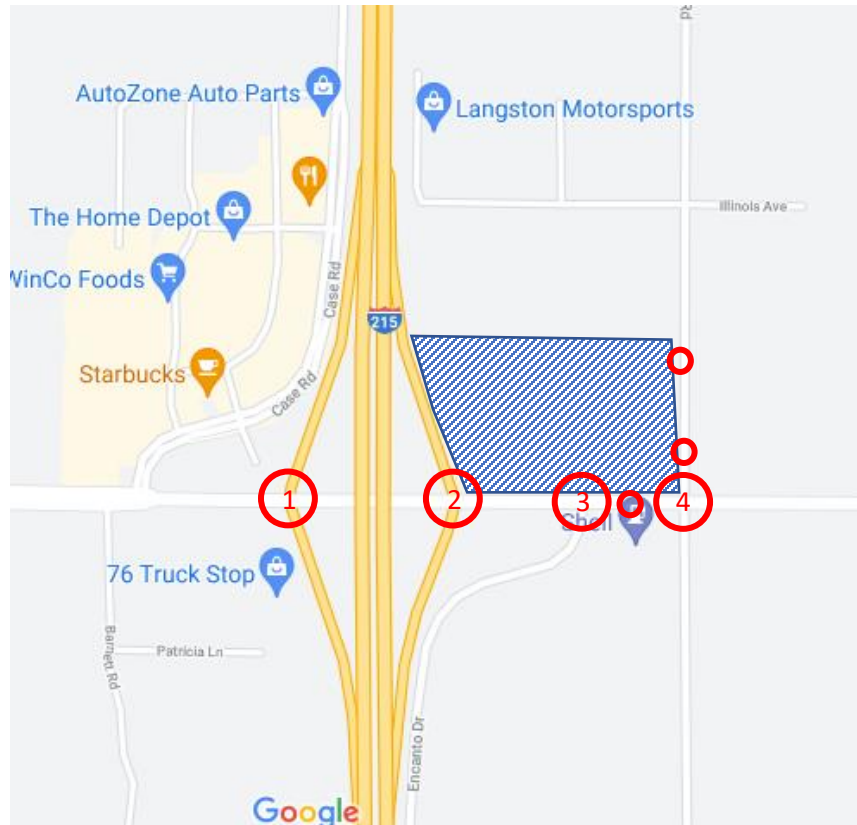
- Project Driveway

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

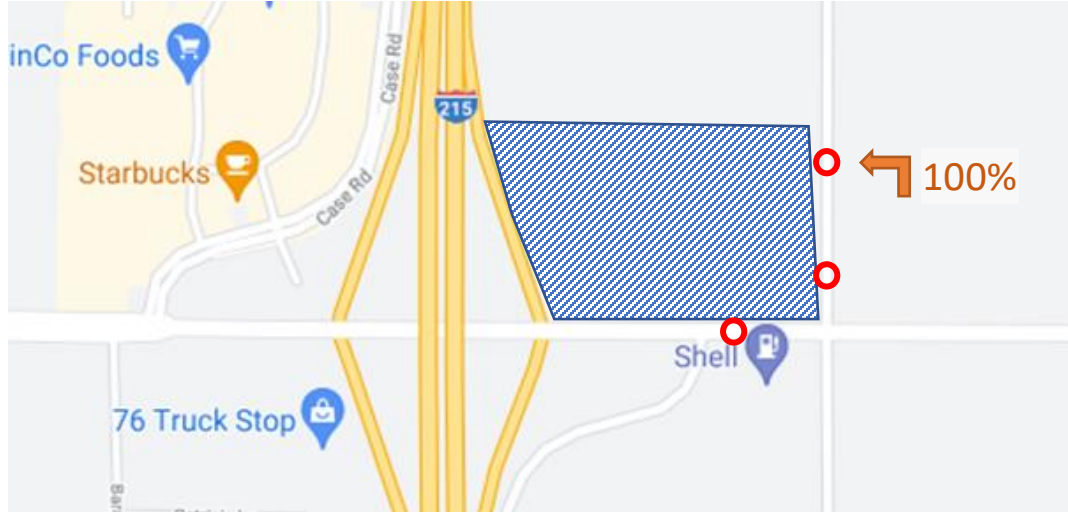
D1. Ethanac Road at Project Driveway (Gas Station)

D2. Trumble Road at North Driveway (Truck Driveway)

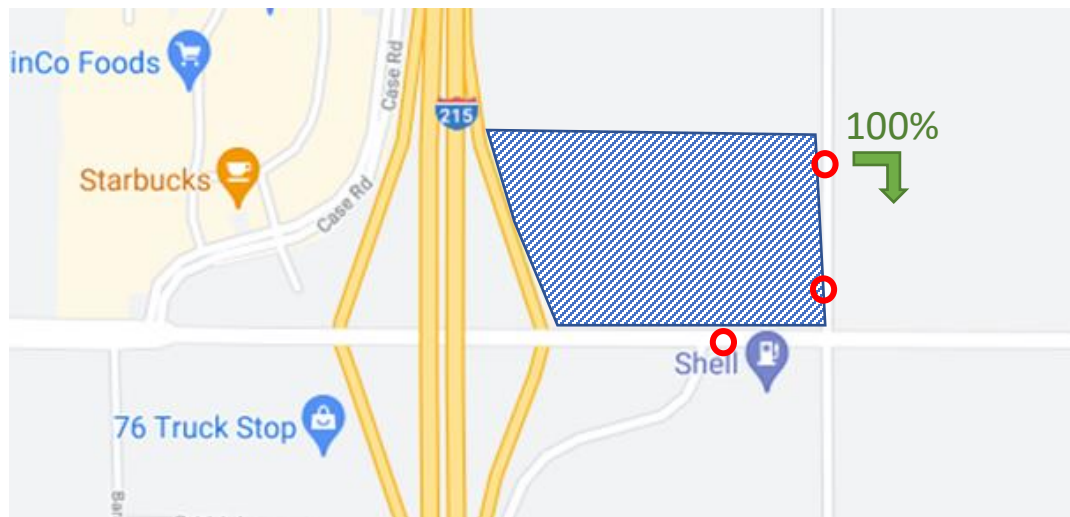
D3. Trumble Road at South Driveway (Gas Station)

ATTACHMENT 4E – TRUCK DISTRIBUTION (DRIVEWAYS)

Driveway Distribution - IN



Driveway Distribution - OUT



Legend:



- Project Site

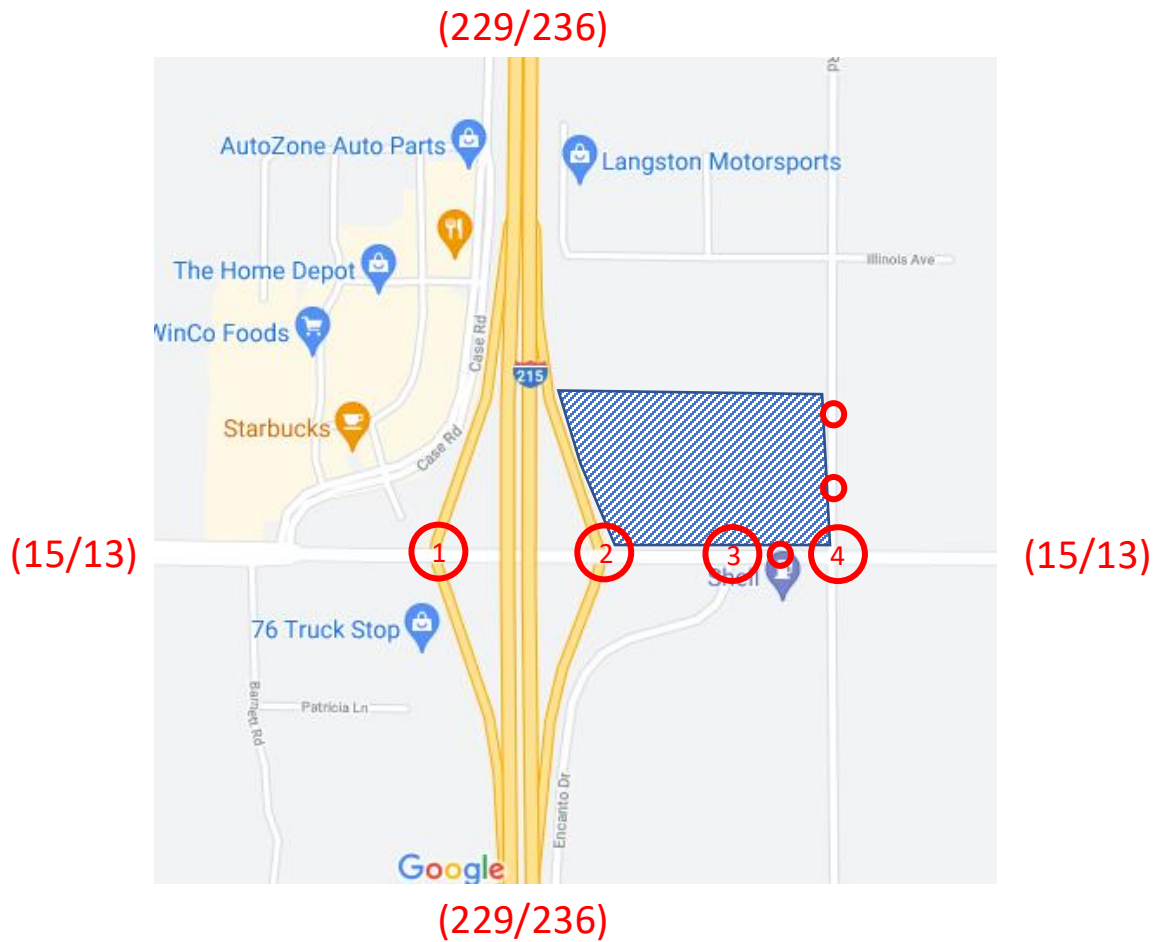


- Project Driveway




XX% (YY%)

- Truck Driveway Distribution

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



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)



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.

Project Name:

Project Location:

Project Description:
(Please attach a copy of the project Site Plan)

Current GP Land Use:

Proposed GP Land Use:

Current Zoning:

Proposed Zoning:

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:

Project Trip Generation:

11,293	Average Daily Trips (ADT)
--------	---------------------------

Internal Trip Credit:	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	% Trip Credit:	<input type="text"/>
Pass-By Trip Credit:	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	% Trip Credit:	<input type="text"/>
Affordable Housing Credit:	YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>	% Trip Credit:	<input type="text"/>
Existing Land Use Trip Credit:	YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>	Trip Credit:	<input type="text"/>

Net Project Daily Trips:

8,568	Average Daily Trips (ADT)
-------	---------------------------

 Attachments:

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	<input checked="" type="checkbox"/>	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 presumed 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
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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**

National Data & Surveying Services Intersection Turning Movement Count

Location: SR 215 SB Ramps & Ethanac Rd
City: Perris
Control: Signalized

Project ID: 21-030079-001
Date: 9/29/2021

Data - Total

NS/EW Streets:	SR 215 SB Ramps				SR 215 SB Ramps				Ethanac Rd				Ethanac Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0.5 SL	0.5 ST	1 SR	0 SU	0 EL	1 ET	1 ER	0 EU	1 WL	2 WT	0 WR	0 WU	
7:00 AM	0	0	0	0	37	0	68	0	0	157	132	0	24	96	0	0	514
7:15 AM	0	0	0	0	31	0	45	0	0	177	133	0	29	137	0	0	552
7:30 AM	0	0	0	0	24	0	35	0	0	167	126	0	27	143	0	0	522
7:45 AM	0	0	0	0	27	0	67	0	0	159	105	0	23	170	0	0	551
8:00 AM	0	0	0	0	30	0	66	0	0	155	89	0	16	193	0	0	549
8:15 AM	0	0	0	0	30	0	57	0	0	118	92	0	28	139	0	0	464
8:30 AM	0	0	0	0	18	0	49	0	0	116	68	0	21	117	0	0	389
8:45 AM	0	0	0	0	22	0	52	0	0	101	69	0	23	119	0	0	386
TOTAL VOLUMES :	0	0	0	0	219	0	439	0	0	1150	814	0	191	1114	0	0	3927
APPROACH %'s :					33.28%	0.00%	66.72%	0.00%	0.00%	58.55%	41.45%	0.00%	14.64%	85.36%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	0	0	112	0	213	0	0	658	453	0	95	643	0	0	2174
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.903	0.000	0.795	0.000	0.000	0.929	0.852	0.000	0.819	0.833	0.000	0.000	0.985
					0.846				0.896				0.883				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0.5 SL	0.5 ST	1 SR	0 SU	0 EL	1 ET	1 ER	0 EU	1 WL	2 WT	0 WR	0 WU	
4:00 PM	0	0	0	0	58	0	73	0	0	125	81	0	27	151	0	0	515
4:15 PM	0	0	0	0	32	0	66	0	0	139	86	0	43	156	0	0	522
4:30 PM	0	0	0	0	45	0	77	0	0	130	76	0	31	153	0	0	512
4:45 PM	0	0	0	0	50	0	91	0	0	152	97	0	42	173	0	0	605
5:00 PM	0	0	0	0	51	0	88	0	0	154	78	0	23	179	0	0	573
5:15 PM	0	0	0	0	40	0	100	0	0	133	110	0	32	166	0	0	581
5:30 PM	0	0	0	0	40	0	68	0	0	135	96	0	21	170	0	0	530
5:45 PM	0	0	0	0	44	0	94	0	0	139	94	0	18	139	0	0	528
TOTAL VOLUMES :	0	0	0	0	360	0	657	0	0	1107	718	0	237	1287	0	0	4366
APPROACH %'s :					35.40%	0.00%	64.60%	0.00%	0.00%	60.66%	39.34%	0.00%	15.55%	84.45%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	181	0	347	0	0	574	381	0	118	688	0	0	2289
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.887	0.000	0.868	0.000	0.000	0.932	0.866	0.000	0.702	0.961	0.000	0.000	0.946
					0.936				0.959				0.937				

National Data & Surveying Services Intersection Turning Movement Count

Location: SR 215 NB Ramps & Ethanac Rd
City: Perris
Control: Signalized

Project ID: 21-030079-002
Date: 9/29/2021

Data - Total

NS/EW Streets:	SR 215 NB Ramps				SR 215 NB Ramps				Ethanac Rd				Ethanac Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0.5 NL	0.5 NT	1 NR	0 NU	0 SL	0 ST	0 SR	0 SU	1 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
7:00 AM	50	0	34	0	0	0	0	0	47	141	0	0	0	72	30	0	374
7:15 AM	76	0	35	0	0	0	0	0	56	158	0	0	0	88	30	0	443
7:30 AM	80	0	24	0	0	0	0	0	47	136	0	0	0	94	38	0	419
7:45 AM	89	0	28	0	0	0	0	0	76	116	0	0	0	102	23	0	434
8:00 AM	93	0	35	0	0	0	0	0	58	125	0	0	0	119	23	0	453
8:15 AM	72	0	33	0	0	0	0	0	33	111	0	0	0	92	32	0	373
8:30 AM	59	0	31	0	0	0	0	0	61	78	0	0	0	82	24	0	335
8:45 AM	65	0	33	0	0	0	0	0	52	69	0	0	0	74	16	0	309
TOTAL VOLUMES :	584	0	253	0	0	0	0	0	430	934	0	0	0	723	216	0	3140
APPROACH %'s :	69.77%	0.00%	30.23%	0.00%					31.52%	68.48%	0.00%	0.00%	0.00%	77.00%	23.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	338	0	122	0	0	0	0	0	237	535	0	0	0	403	114	0	1749
PEAK HR FACTOR :	0.909	0.000	0.871	0.000	0.000	0.000	0.000	0.000	0.780	0.847	0.000	0.000	0.000	0.847	0.750	0.000	0.965
	0.898								0.902				0.910				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0.5 NL	0.5 NT	1 NR	0 NU	0 SL	0 ST	0 SR	0 SU	1 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
4:00 PM	98	1	55	0	0	0	0	0	47	140	0	0	0	84	32	0	457
4:15 PM	91	2	53	0	0	0	0	0	42	116	0	0	0	106	40	0	450
4:30 PM	81	1	42	0	0	0	0	0	61	126	0	0	0	105	49	0	465
4:45 PM	119	0	51	0	0	0	0	0	58	140	0	0	0	94	36	0	498
5:00 PM	104	0	37	0	0	0	0	0	67	143	0	0	0	102	51	0	504
5:15 PM	97	1	50	0	0	0	0	0	45	122	0	0	0	98	49	0	462
5:30 PM	88	0	43	0	0	0	0	0	55	125	0	0	0	107	23	0	441
5:45 PM	89	2	30	0	0	0	0	0	42	140	0	0	0	63	26	0	392
TOTAL VOLUMES :	767	7	361	0	0	0	0	0	417	1052	0	0	0	759	306	0	3669
APPROACH %'s :	67.58%	0.62%	31.81%	0.00%					28.39%	71.61%	0.00%	0.00%	0.00%	71.27%	28.73%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	401	2	180	0	0	0	0	0	231	531	0	0	0	399	185	0	1929
PEAK HR FACTOR :	0.842	0.500	0.882	0.000	0.000	0.000	0.000	0.000	0.862	0.928	0.000	0.000	0.000	0.950	0.907	0.000	0.957
	0.857								0.907				0.948				

National Data & Surveying Services Intersection Turning Movement Count

Location: Encanto Dr & Ethanac Rd
City: Perris
Control: 1-Way Stop(NB)

Project ID: 21-030079-003
Date: 9/29/2021

Data - Totals

NS/EW Streets:	Encanto Dr				Encanto Dr				Ethanac Rd				Ethanac Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
	0.5	0	0.5	0	0	0	0	0	0	1	0	0	1	1	0	0	
7:00 AM	8	0	10	0	0	0	0	0	0	164	13	0	0	98	0	0	293
7:15 AM	8	0	9	0	0	0	0	0	0	172	15	0	4	107	0	0	315
7:30 AM	17	0	13	0	0	0	0	0	0	148	15	0	4	118	0	0	315
7:45 AM	15	0	5	0	0	0	0	0	0	105	42	0	10	108	0	0	285
8:00 AM	22	0	14	0	0	0	0	0	0	115	42	0	10	123	0	0	326
8:15 AM	24	0	9	0	0	0	0	0	0	106	36	0	6	95	0	0	276
8:30 AM	19	0	10	0	0	0	0	0	0	102	12	0	6	91	0	0	240
8:45 AM	5	0	2	0	0	0	0	0	0	83	15	0	3	82	0	0	190
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	118	0	72	0	0	0	0	0	0	995	190	0	43	822	0	0	2240
APPROACH %'s :	62.11%	0.00%	37.89%	0.00%					0.00%	83.97%	16.03%	0.00%	4.97%	95.03%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	62	0	41	0	0	0	0	0	0	540	114	0	28	456	0	0	1241
PEAK HR FACTOR :	0.705	0.000	0.732	0.000	0.000	0.000	0.000	0.000	0.000	0.785	0.679	0.000	0.700	0.927	0.000	0.000	0.952
	0.715								0.874				0.910				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
	0.5	0	0.5	0	0	0	0	0	0	1	0	0	1	1	0	0	
4:00 PM	21	0	15	0	0	0	0	0	0	169	27	0	12	103	0	0	347
4:15 PM	17	0	12	0	0	0	0	0	0	150	15	0	12	126	0	0	332
4:30 PM	15	0	18	0	0	0	0	0	0	154	17	0	13	135	0	0	352
4:45 PM	16	0	9	0	0	0	0	0	0	166	16	0	8	116	0	0	331
5:00 PM	17	0	18	0	0	0	0	0	0	171	18	0	8	146	0	0	378
5:15 PM	22	0	6	0	0	0	0	0	0	150	19	0	6	113	0	0	316
5:30 PM	22	0	10	0	0	0	0	0	0	144	21	0	9	111	0	0	317
5:45 PM	17	0	10	0	0	0	0	0	0	152	23	0	7	69	0	0	278
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	147	0	98	0	0	0	0	0	0	1256	156	0	75	919	0	0	2651
APPROACH %'s :	60.00%	0.00%	40.00%	0.00%					0.00%	88.95%	11.05%	0.00%	7.55%	92.45%	0.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	65	0	57	0	0	0	0	0	0	641	66	0	41	523	0	0	1393
PEAK HR FACTOR :	0.956	0.000	0.792	0.000	0.000	0.000	0.000	0.000	0.000	0.937	0.917	0.000	0.788	0.896	0.000	0.000	0.921
	0.871								0.935				0.916				

National Data & Surveying Services Intersection Turning Movement Count

Location: Trumble Rd & Ethanac Rd
City: Perris
Control: Signalized

Project ID: 21-030079-004
Date: 9/29/2021

Data - Total

NS/EW Streets:	Trumble Rd				Trumble Rd				Ethanac Rd				Ethanac Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	1 NT	0 NR	0 NU	1 SL	0.5 ST	0.5 SR	0 SU	1 EL	1 ET	1 ER	0 EU	1 WL	1 WT	0 WR	0 WU	
7:00 AM	22	3	12	0	2	1	19	0	23	143	3	0	8	52	2	0	290
7:15 AM	19	0	10	0	2	2	20	0	18	154	4	0	19	75	2	0	325
7:30 AM	23	1	4	0	2	2	14	0	13	136	5	0	10	83	2	0	295
7:45 AM	17	4	7	0	0	1	15	0	16	90	7	0	7	92	1	0	257
8:00 AM	22	5	11	0	3	8	15	0	17	96	2	0	11	90	0	0	280
8:15 AM	20	1	12	0	1	2	17	0	15	85	5	0	13	66	2	0	239
8:30 AM	14	0	5	0	4	0	23	0	17	82	2	0	7	57	3	0	214
8:45 AM	12	2	5	0	2	2	10	0	11	73	5	0	9	66	3	0	200
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	149	16	66	0	16	18	133	0	130	859	33	0	84	581	15	0	2100
	64.50%	6.93%	28.57%	0.00%	9.58%	10.78%	79.64%	0.00%	12.72%	84.05%	3.23%	0.00%	12.35%	85.44%	2.21%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	81	8	33	0	6	6	68	0	70	523	19	0	44	302	7	0	1167
PEAK HR FACTOR :	0.880	0.500	0.688	0.000	0.750	0.750	0.850	0.000	0.761	0.849	0.679	0.000	0.579	0.821	0.875	0.000	0.898
	0.824				0.833				0.869				0.883				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	1 NT	0 NR	0 NU	1 SL	0.5 ST	0.5 SR	0 SU	1 EL	1 ET	1 ER	0 EU	1 WL	1 WT	0 WR	0 WU	
4:00 PM	15	1	17	0	6	3	32	0	16	151	6	0	10	67	2	0	326
4:15 PM	30	0	8	0	4	1	19	0	17	135	8	0	16	94	3	0	335
4:30 PM	20	0	5	0	2	1	40	0	23	128	7	0	5	83	1	0	315
4:45 PM	14	2	12	0	3	5	21	0	18	139	9	1	14	91	0	0	329
5:00 PM	18	3	10	0	17	7	52	0	11	155	8	0	8	82	0	0	371
5:15 PM	17	3	6	0	2	1	31	0	11	126	9	0	5	73	1	0	285
5:30 PM	19	1	10	0	3	2	20	0	9	131	10	0	7	79	2	0	293
5:45 PM	13	1	13	0	5	1	15	0	8	129	11	0	4	49	0	0	249
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	146	11	81	0	42	21	230	0	113	1094	68	1	69	618	9	0	2503
	61.34%	4.62%	34.03%	0.00%	14.33%	7.17%	78.50%	0.00%	8.86%	85.74%	5.33%	0.08%	9.91%	88.79%	1.29%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	82	5	35	0	26	14	132	0	69	557	32	1	43	350	4	0	1350
PEAK HR FACTOR :	0.683	0.417	0.729	0.000	0.382	0.500	0.635	0.000	0.750	0.898	0.889	0.250	0.672	0.931	0.333	0.000	0.910
	0.803				0.566				0.947				0.878				

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								
	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume
		2-Axle	3-Axle	4-Axle	Total Trucks	Truck %age	PCE				2-Axle	3-Axle	4-Axle	Total Trucks	Truck %age	PCE		
NL	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	
NR	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0.0%	0	0.0	0	
SL	100	6	3	3	12	10.7%	24	2.0	124	172	4	0	5	9	5.0%	21	2.3	193
ST	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0.0%	0	0.0	0	
SR	181	18	5	9	32	15.0%	64	2.0	245	338	3	0	6	9	2.6%	23	2.6	361
EL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0.0%	0	0.0	0	
ET	599	32	6	21	59	9.0%	123	2.1	722	546	17	3	8	28	4.9%	56	2.0	602
ER	408	22	11	12	45	9.9%	91	2.0	499	376	5	0	0	5	1.3%	8	1.6	384
WL	85	5	3	2	10	10.5%	20	2.0	105	112	3	1	2	6	5.1%	13	2.2	125
WT	593	19	12	19	50	7.8%	110	2.2	703	663	13	3	9	25	3.6%	53	2.1	716
WR	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0.0%	0	0.0	0	
									2,398									2,381
North Leg Volumes																		
Approach	281	24	8	12	44		88		369	510	7	0	11	18		44		554
Depart	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Total	281	24	8	12	44	13.5%	88	2.0	369	510	7	0	11	18	3.4%	44	2.4	554
South Leg Volumes																		
Approach	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Depart	493	27	14	14	55		111		604	488	8	1	2	11		21		509
Total	493	27	14	14	55	10.0%	111	2.0	604	488	8	1	2	11	2.2%	21	1.9	509
East Leg Volumes																		
Approach	678	24	15	21	60		130		808	775	16	4	11	31		66		841
Depart	699	38	9	24	71		147		846	718	21	3	13	37		77		795
Total	1,377	62	24	45	131	8.7%	277	2.1	1,654	1,493	37	7	24	68	4.4%	143	2.1	1,636
West Leg Volumes																		
Approach	1,007	54	17	33	104		214		1,221	922	22	3	8	33		64		986
Depart	774	37	17	28	82		174		948	1,001	16	3	15	34		76		1,077
Total	1,781	91	34	61	186	9.5%	388	2.1	2,169	1,923	38	6	23	67	3.4%	140	2.1	2,063
All Legs																		
Approach	1,966	102	40	66	208		432		2,398	2,207	45	7	30	82		174		2,381
Depart	1,966	102	40	66	208		432		2,398	2,207	45	7	30	82		174		2,381
Total	3,932	204	80	132	416	9.6%	864	2.1	4,796	4,414	90	14	60	164	3.6%	348	2.1	4,762

Existing Peak Hour Volumes - Classification Counts

2 I-215 NB Ramps at Ethanac Road

	AM Peak Hour Volumes									PM Peak Hour Volumes								
	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume
		2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age	PCE				2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age	PCE		
NL	323	11	1	3	15	4.4%	28	1.9	351	377	12	5	7	24	6.0%	49	2.0	426
NT	0	0	0	0	0	0.0%	0	0.0	0	2	0	0	0	0	0.0%	0	0.0	2
NR	108	7	5	2	14	11.5%	27	1.9	135	165	7	2	6	15	8.3%	33	2.2	198
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	213	9	2	13	24	10.1%	57	2.4	270	218	6	2	5	13	5.6%	28	2.2	246
ET	487	29	8	11	48	9.0%	93	1.9	580	497	18	2	14	34	6.4%	73	2.1	570
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	361	12	13	17	42	10.4%	95	2.3	456	387	6	1	5	12	3.0%	26	2.2	413
WR	94	3	7	10	20	17.5%	49	2.5	143	178	3	0	4	7	3.8%	17	2.4	195
									1,935									2,050
North Leg Volumes																		
Approach	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Depart	307	12	9	23	44		106		413	398	9	2	9	20		45		443
Total	307	12	9	23	44	12.5%	106	2.4	413	398	9	2	9	20	4.8%	45	2.3	443
South Leg Volumes																		
Approach	431	18	6	5	29		55		486	544	19	7	13	39		82		626
Depart	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Total	431	18	6	5	29	6.3%	55	1.9	486	544	19	7	13	39	6.7%	82	2.1	626
East Leg Volumes																		
Approach	455	15	20	27	62		144		599	565	9	1	9	19		43		608
Depart	595	36	13	13	62		120		715	662	25	4	20	49		106		768
Total	1,050	51	33	40	124	10.6%	264	2.1	1,314	1,227	34	5	29	68	5.3%	149	2.2	1,376
West Leg Volumes																		
Approach	700	38	10	24	72		150		850	715	24	4	19	47		101		816
Depart	684	23	14	20	57		123		807	764	18	6	12	36		75		839
Total	1,384	61	24	44	129	8.5%	273	2.1	1,657	1,479	42	10	31	83	5.3%	176	2.1	1,655
All Legs																		
Approach	1,586	71	36	56	163		349		1,935	1,824	52	12	41	105		226		2,050
Depart	1,586	71	36	56	163		349		1,935	1,824	52	12	41	105		226		2,050
Total	3,172	142	72	112	326	9.3%	698	2.1	3,870	3,648	104	24	82	210	5.4%	452	2.2	4,100

Existing Peak Hour Volumes - Classification Counts

3 Ethanac Road at Encanto Drive

	AM Peak Hour Volumes									PM Peak Hour Volumes								
	Passenger Vehicles	Truck Volumes					Average PCE	Total PCE Volume	Passenger Vehicles	Truck Volumes					Average PCE	Total PCE Volume		
		2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age				2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age				
NL	62	0	0	0	0	0.0%	0	0.0	62	65	0	0	0	0	0.0%	0	0.0	65
NT	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0.0%	0	0.0	0	0
NR	41	0	0	0	0	0.0%	0	0.0	41	57	0	0	0	0.0%	0	0.0	57	0
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	540	0	0	0	0	0.0%	0	0.0	540	641	0	0	0	0.0%	0	0.0	641	0
ER	114	0	0	0	0	0.0%	0	0.0	114	66	0	0	0	0.0%	0	0.0	66	0
WL	28	0	0	0	0	0.0%	0	0.0	28	41	0	0	0	0.0%	0	0.0	41	0
WT	456	0	0	0	0	0.0%	0	0.0	456	523	0	0	0	0.0%	0	0.0	523	0
WR	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0.0%	0	0.0	0	0
									1,241									1,393
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	103	0	0	0	0		0		103	122	0	0	0		0		122	0
Depart	142	0	0	0	0		0		142	107	0	0	0		0		107	0
Total	245	0	0	0	0	0.0%	0	0.0	245	229	0	0	0	0.0%	0	0.0	229	0
East Leg Volumes																		
Approach	484	0	0	0	0		0		484	564	0	0	0		0		564	0
Depart	581	0	0	0	0		0		581	698	0	0	0		0		698	0
Total	1,065	0	0	0	0	0.0%	0	0.0	1,065	1,262	0	0	0	0.0%	0	0.0	1,262	0
West Leg Volumes																		
Approach	654	0	0	0	0		0		654	707	0	0	0		0		707	0
Depart	518	0	0	0	0		0		518	588	0	0	0		0		588	0
Total	1,172	0	0	0	0	0.0%	0	0.0	1,172	1,295	0	0	0	0.0%	0	0.0	1,295	0
All Legs																		
Approach	1,241	0	0	0	0		0		1,241	1,393	0	0	0		0		1,393	0
Depart	1,241	0	0	0	0		0		1,241	1,393	0	0	0		0		1,393	0
Total	2,482	0	0	0	0	0.0%	0	0.0	2,482	2,786	0	0	0	0.0%	0	0.0	2,786	0

Existing Peak Hour Volumes - Classification Counts

4 Trumble Road at Ethanac Road

	AM Peak Hour Volumes									PM Peak Hour Volumes								
	Passenger Vehicles	Truck Volumes					Average PCE	Total PCE Volume	Passenger Vehicles	Truck Volumes					Average PCE	Total PCE Volume		
		2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age				2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age				
NL	64	5	9	3	17	21.0%	35	2.1	99	80	1	1	0	2	2.4%	4	2.0	84
NT	7	1	0	0	1	12.5%	2	2.0	9	5	0	0	0	0	0.0%	0	0.0	5
NR	31	2	0	0	2	6.1%	3	1.5	34	31	4	0	0	4	11.4%	6	1.5	37
SL	5	0	0	1	1	16.7%	3	3.0	8	24	0	0	2	2	7.7%	6	3.0	30
ST	4	1	0	1	2	33.3%	5	2.5	9	13	1	0	0	1	7.1%	2	2.0	15
SR	42	6	2	18	26	38.2%	67	2.6	109	124	5	0	3	8	6.1%	17	2.1	141
EL	56	5	4	5	14	20.0%	31	2.2	87	67	0	3	0	3	4.3%	6	2.0	73
ET	484	27	3	9	39	7.5%	74	1.9	558	524	19	7	7	33	5.9%	64	1.9	588
ER	11	1	0	7	8	42.1%	23	2.9	34	31	1	0	0	1	3.1%	2	2.0	33
WL	26	7	9	2	18	40.9%	35	1.9	61	42	1	0	0	1	2.3%	2	2.0	44
WT	270	12	7	13	32	10.6%	71	2.2	341	341	5	0	4	9	2.6%	20	2.2	361
WR	4	0	2	1	3	42.9%	7	2.3	11	4	0	0	0	0	0.0%	0	0.0	4
									1,360									1,415
North Leg Volumes																		
Approach	51	7	2	20	29		75		126	161	6	0	5	11		25		186
Depart	67	6	6	6	18		40		107	76	0	3	0	3		6		82
Total	118	13	8	26	47	28.5%	115	2.4	233	237	6	3	5	14	5.6%	31	2.2	268
South Leg Volumes																		
Approach	102	8	9	3	20		40		142	116	5	1	0	6		10		126
Depart	41	9	9	10	28		63		104	86	3	0	0	3		6		92
Total	143	17	18	13	48	25.1%	103	2.1	246	202	8	1	0	9	4.3%	16	1.8	218
East Leg Volumes																		
Approach	300	19	18	16	53		113		413	387	6	0	4	10		22		409
Depart	520	29	3	10	42		80		600	579	23	7	9	39		76		655
Total	820	48	21	26	95	10.4%	193	2.0	1,013	966	29	7	13	49	4.8%	98	2.0	1,064
West Leg Volumes																		
Approach	551	33	7	21	61		128		679	622	20	10	7	37		72		694
Depart	376	23	18	34	75		173		549	545	11	1	7	19		41		586
Total	927	56	25	55	136	12.8%	301	2.2	1,228	1,167	31	11	14	56	4.6%	113	2.0	1,280
All Legs																		
Approach	1,004	67	36	60	163		356		1,360	1,286	37	11	16	64		129		1,415
Depart	1,004	67	36	60	163		356		1,360	1,286	37	11	16	64		129		1,415
Total	2,008	134	72	120	326	14.0%	712	2.2	2,720	2,572	74	22	32	128	4.7%	258	2.0	2,830

APPENDIX C

COLLECTED SITE-SPECIFIC
TRIP WORKSHEETS

PV+RV only		HV only		All Vehicles	
Total Trips	Daily	Total Trips	Daily	Total Trips	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	AM Trips	PM Trips	Total Trips	AM Trips	PM Trips	Total 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	AM Trip Rate	PM Trip Rate	Rates by Truck FP	AM Trip Rate	PM Trip Rate	Rates by FP	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

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

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

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

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

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

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

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

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

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

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

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

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

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

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	9	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

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

Scenario 1 Ex AM

Report File: K:\...\1 EX AM.pdf

9/19/2022

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	0.729	16.2	B
2	I-215 NB Ramps at Ethanac Road	Signalized	HCM 6th Edition	EB Left	0.704	26.8	C
3	Ethanac Road at Encanto Drive	Two-way stop	HCM 6th Edition	NB Left	0.309	30.6	D
4	Trumble Road at Ethanac Road	Signalized	HCM 6th Edition	NB Left	0.505	24.0	C
5	Ethanac Road at Project Driveway	Two-way stop	HCM 6th Edition	EB Thru	0.007	0.0	A
6	Trumble Road at North Driveway	Two-way stop	HCM 6th Edition	SB Thru	0.001	0.0	A
7	Trumble Road at South Driveway	Two-way stop	HCM 6th Edition	SB Thru	0.001	0.0	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):	16.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.729

Intersection Setup

Name	Northbound			Southbound			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	124	0	245	0	722	499	105	703	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	124	0	245	0	722	499	105	703	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9850	0.9850	0.9850	1.0000	0.9850	0.9850	0.9850	0.9850	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	31	0	62	0	183	127	27	178	0
Total Analysis Volume [veh/h]	0	0	0	126	0	249	0	733	507	107	714	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 in		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
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	21	0	46	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]		16	16	55	55	7	66
g / C, Green / Cycle		0.18	0.18	0.61	0.61	0.08	0.73
(v / s)_i Volume / Saturation Flow Rate		0.07	0.15	0.39	0.31	0.06	0.20
s, saturation flow rate [veh/h]		1810	1615	1900	1615	1810	3618
c, Capacity [veh/h]		319	285	1161	987	143	2657
d1, Uniform Delay [s]		32.80	36.08	11.09	9.93	40.56	3.95
k, delay calibration		0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.79	8.22	2.62	1.91	7.52	0.25
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		0.39	0.87	0.63	0.51	0.75	0.27
d, Delay for Lane Group [s/veh]		33.59	44.30	13.70	11.84	48.07	4.20
Lane Group LOS		C	D	B	B	D	A
Critical Lane Group		No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		2.47	5.86	8.97	5.56	2.59	1.76
50th-Percentile Queue Length [ft/ln]		61.69	146.58	224.37	138.98	64.81	43.99
95th-Percentile Queue Length [veh/ln]		4.44	9.83	13.89	9.43	4.67	3.17
95th-Percentile Queue Length [ft/ln]		111.05	245.85	347.20	235.65	116.65	79.19

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	33.59	33.59	44.30	0.00	13.70	11.84	48.07	4.20	0.00
Movement LOS				C	C	D		B	B	D	A	
d_A, Approach Delay [s/veh]	0.00			40.70			12.94			9.92		
Approach LOS	A			D			B			A		
d_I, Intersection Delay [s/veh]	16.19											
Intersection LOS	B											
Intersection V/C	0.729											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	0.00	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.064	0.000	2.542
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	378	1400
d_b, Bicycle Delay [s]	45.00	28.01	29.61	4.05
I_b,int, Bicycle LOS Score for Intersection	4.132	2.178	3.606	2.237
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):	26.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.704

Intersection Setup

Name	Northbound			Southbound			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]	351	0	135	0	0	0	270	580	0	0	456	143
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]	351	0	135	0	0	0	270	580	0	0	456	143
Peak Hour Factor	0.9650	0.9650	0.9650	1.0000	1.0000	1.0000	0.9650	0.9650	1.0000	1.0000	0.9650	0.9650
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]	91	0	35	0	0	0	70	150	0	0	118	37
Total Analysis Volume [veh/h]	364	0	140	0	0	0	280	601	0	0	473	148
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 in		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
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	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]	20	20		15	62	43
g / C, Green / Cycle	0.22	0.22		0.17	0.69	0.48
(v / s)_i Volume / Saturation Flow Rate	0.20	0.09		0.15	0.32	0.34
s, saturation flow rate [veh/h]	1810	1615		1810	1900	1823
c, Capacity [veh/h]	402	359		299	1309	874
d1, Uniform Delay [s]	34.06	29.79		37.12	6.38	18.50
k, delay calibration	0.16	0.11		0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	10.80	0.69		13.31	1.16	4.88
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	0.39		0.94	0.46	0.71
d, Delay for Lane Group [s/veh]	44.86	30.48		50.43	7.54	23.38
Lane Group LOS	D	C		D	A	C
Critical Lane Group	Yes	No		Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	8.75	2.61		7.06	4.73	10.74
50th-Percentile Queue Length [ft/ln]	218.80	65.17		176.43	118.18	268.60
95th-Percentile Queue Length [veh/ln]	13.60	4.69		11.41	8.29	16.12
95th-Percentile Queue Length [ft/ln]	340.10	117.31		285.35	207.33	402.99

Movement, Approach, & Intersection Results

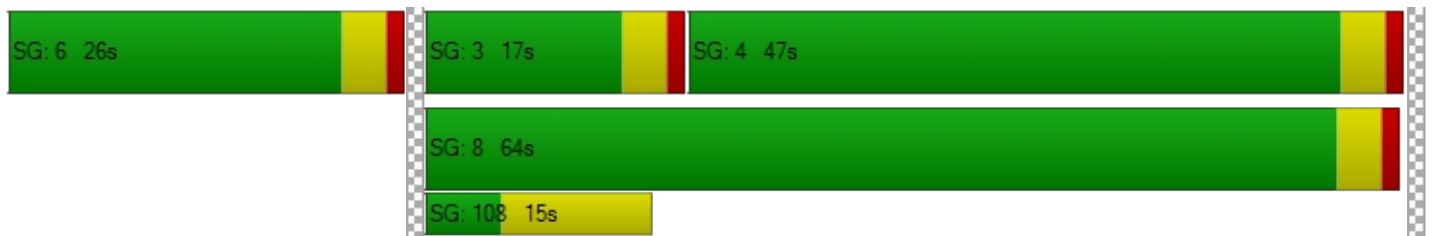
d_M, Delay for Movement [s/veh]	44.86	44.86	30.48	0.00	0.00	0.00	50.43	7.54	0.00	0.00	23.38	23.38
Movement LOS	D	D	C				D	A			C	C
d_A, Approach Delay [s/veh]	40.87			0.00			21.17			23.38		
Approach LOS	D			A			C			C		
d_I, Intersection Delay [s/veh]	26.80											
Intersection LOS	C											
Intersection V/C	0.704											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /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 Intersection	2.106	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	2.391	4.132	3.013	2.584
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):	30.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.309

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]	62	41	540	114	28	456
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]	62	41	540	114	28	456
Peak Hour Factor	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	11	142	30	7	120
Total Analysis Volume [veh/h]	65	43	567	120	29	479
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	0.31	0.09	0.01	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	30.62	20.88	0.00	0.00	9.06	0.00
Movement LOS	D	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.82	1.82	0.00	0.00	0.10	0.00
95th-Percentile Queue Length [ft/ln]	45.47	45.47	0.00	0.00	2.45	0.00
d_A, Approach Delay [s/veh]	26.74		0.00		0.52	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	2.42					
Intersection LOS	D					

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

Control Type:	Signalized	Delay (sec / veh):	24.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.505

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]	99	9	34	8	9	109	87	558	34	61	341	11
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]	99	9	34	8	9	109	87	558	34	61	341	11
Peak Hour Factor	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980
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]	28	3	9	2	3	30	24	155	9	17	95	3
Total Analysis Volume [veh/h]	110	10	38	9	10	121	97	621	38	68	380	12
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 in	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
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]	12	21	0	12	21	0	28	46	0	11	29	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	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]	7	15	1	10	6	50	50	6	49
g / C, Green / Cycle	0.08	0.17	0.02	0.11	0.07	0.56	0.56	0.06	0.55
(v / s)_i Volume / Saturation Flow Rate	0.06	0.03	0.00	0.08	0.05	0.33	0.02	0.04	0.21
s, saturation flow rate [veh/h]	1810	1667	1810	1634	1810	1900	1615	1810	1890
c, Capacity [veh/h]	139	280	29	175	130	1056	897	115	1035
d1, Uniform Delay [s]	40.83	32.06	43.79	38.99	40.98	13.20	9.10	41.00	11.62
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50
l, 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]	9.59	0.29	5.98	6.24	8.30	2.41	0.09	4.75	1.06
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	0.79	0.17	0.31	0.75	0.75	0.59	0.04	0.59	0.38
d, Delay for Lane Group [s/veh]	50.41	32.35	49.78	45.23	49.28	15.61	9.19	45.75	12.68
Lane Group LOS	D	C	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]	2.74	0.91	0.24	3.07	2.38	8.29	0.34	1.60	4.46
50th-Percentile Queue Length [ft/ln]	68.39	22.69	6.11	76.80	59.57	207.23	8.55	40.06	111.62
95th-Percentile Queue Length [veh/ln]	4.92	1.63	0.44	5.53	4.29	13.01	0.62	2.88	7.93
95th-Percentile Queue Length [ft/ln]	123.10	40.84	11.00	138.25	107.23	325.27	15.39	72.10	198.25

Movement, Approach, & Intersection Results

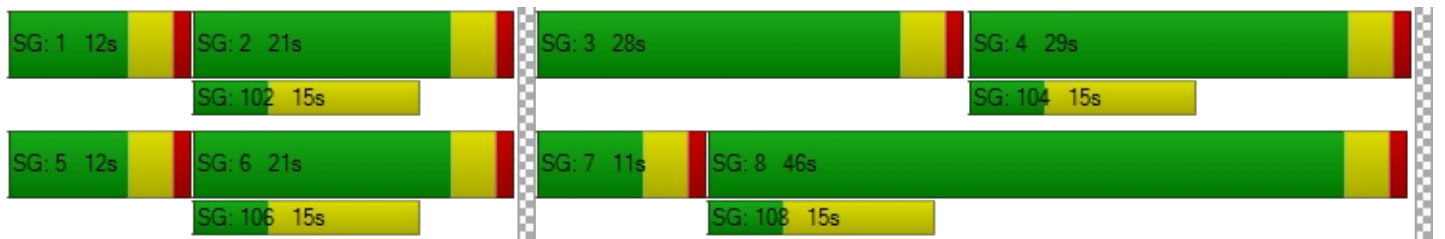
d_M, Delay for Movement [s/veh]	50.41	32.35	32.35	49.78	45.23	45.23	49.28	15.61	9.19	45.75	12.68	12.68
Movement LOS	D	C	C	D	D	D	D	B	A	D	B	B
d_A, Approach Delay [s/veh]	44.93			45.53			19.60			17.57		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	24.03											
Intersection LOS	C											
Intersection V/C	0.505											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
I_p,int, Pedestrian LOS Score for Intersection	2.031	2.026	2.466	2.308
Crosswalk LOS	B	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]	378	378	933	556
d_b, Bicycle Delay [s]	29.61	29.61	12.80	23.47
I_b,int, Bicycle LOS Score for Intersection	1.820	1.791	2.807	2.319
Bicycle LOS	A	A	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):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

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	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	Project Driveway		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	0	0	0	679	484	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	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]	0	0	0	679	484	0
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	0	0	179	127	0
Total Analysis Volume [veh/h]	0	0	0	715	509	0
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	0.00	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	11.34	0.00	0.00	0.00	0.00
Movement LOS		B		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.34		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Trumble Road at North Driveway

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

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	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	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	107	126	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]	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]	0	107	126	0	0	0
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]	0	28	33	0	0	0
Total Analysis Volume [veh/h]	0	113	133	0	0	0
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	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.48	0.00	0.00	0.00	9.85	8.93
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		9.39	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Trumble Road at South Driveway

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

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	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	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	107	126	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]	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]	0	107	126	0	0	0
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]	0	28	33	0	0	0
Total Analysis Volume [veh/h]	0	113	133	0	0	0
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	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.46	0.00	0.00	0.00	9.82	8.91
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		9.36	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Perris Travel Center Project

Vistro File: K:\...\Perris TC_PM.vistro

Scenario 1 EX PM

Report File: K:\...\1 EX PM.pdf

9/19/2022

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	0.784	22.0	C
2	I-215 NB Ramps at Ethanac Road	Signalized	HCM 6th Edition	NB Left	0.903	34.0	C
3	Ethanac Road at Encanto Drive	Two-way stop	HCM 6th Edition	NB Left	0.473	52.9	F
4	Trumble Road at Ethanac Road	Signalized	HCM 6th Edition	WB Left	0.635	23.3	C
5	Ethanac Road at Project Driveway	Two-way stop	HCM 6th Edition	EB Thru	0.007	0.0	A
6	Trumble Road at North Driveway	Two-way stop	HCM 6th Edition	SB Thru	0.002	0.0	A
7	Trumble Road at South Driveway	Two-way stop	HCM 6th Edition	SB Thru	0.002	0.0	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):	22.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.784

Intersection Setup

Name	Northbound			Southbound			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	193	0	361	0	602	384	125	716	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	193	0	361	0	602	384	125	716	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	51	0	95	0	159	101	33	189	0
Total Analysis Volume [veh/h]	0	0	0	204	0	382	0	636	406	132	757	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 in		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
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	47	47	8	59
g / C, Green / Cycle		0.25	0.25	0.52	0.52	0.09	0.66
(v / s)_i Volume / Saturation Flow Rate		0.11	0.24	0.33	0.25	0.07	0.21
s, saturation flow rate [veh/h]		1810	1615	1900	1615	1810	3618
c, Capacity [veh/h]		459	410	985	837	171	2378
d1, Uniform Delay [s]		28.23	32.81	15.68	13.93	39.82	6.69
k, delay calibration		0.11	0.24	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.67	17.94	3.26	2.01	7.29	0.35
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		0.44	0.93	0.65	0.48	0.77	0.32
d, Delay for Lane Group [s/veh]		28.91	50.75	18.94	15.94	47.11	7.04
Lane Group LOS		C	D	B	B	D	A
Critical Lane Group		No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		3.71	9.93	9.63	5.42	3.16	2.84
50th-Percentile Queue Length [ft/ln]		92.79	248.34	240.73	135.57	79.02	70.95
95th-Percentile Queue Length [veh/ln]		6.68	15.10	14.72	9.24	5.69	5.11
95th-Percentile Queue Length [ft/ln]		167.02	377.56	367.95	231.04	142.24	127.71

Movement, Approach, & Intersection Results

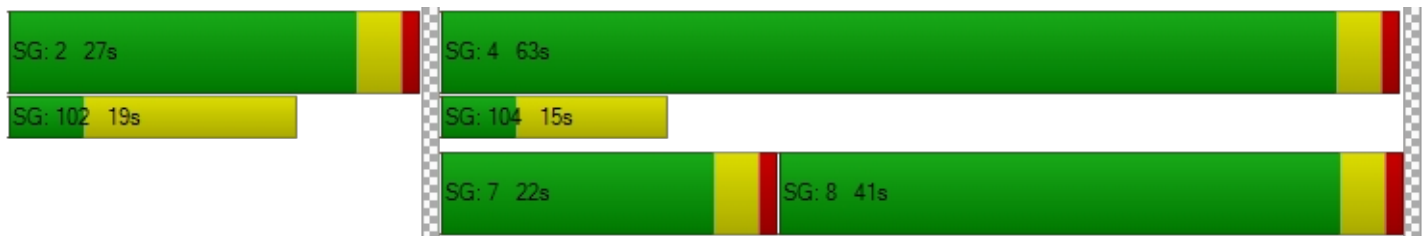
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	28.91	28.91	50.75	0.00	18.94	15.94	47.11	7.04	0.00
Movement LOS				C	C	D		B	B	D	A	
d_A, Approach Delay [s/veh]	0.00			43.15			17.77			12.99		
Approach LOS	A			D			B			B		
d_I, Intersection Delay [s/veh]	21.99											
Intersection LOS	C											
Intersection V/C	0.784											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	0.00	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.132	0.000	2.554
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	511	822	1311
d_b, Bicycle Delay [s]	45.00	24.94	15.61	5.34
I_b,int, Bicycle LOS Score for Intersection	4.132	2.527	3.279	2.293
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):	34.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.903

Intersection Setup

Name	Northbound			Southbound			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]	426	2	198	0	0	0	246	570	0	0	413	195
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]	426	2	198	0	0	0	246	570	0	0	413	195
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]	111	1	52	0	0	0	64	149	0	0	108	51
Total Analysis Volume [veh/h]	445	2	207	0	0	0	257	596	0	0	432	204
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 in		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
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	0.25	0.13		0.14	0.31	0.35
s, saturation flow rate [veh/h]	1810	1615		1810	1900	1798
c, Capacity [veh/h]	442	395		261	1267	859
d1, Uniform Delay [s]	34.00	29.47		38.39	7.29	18.99
k, delay calibration	0.26	0.11		0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	33.46	1.08		22.17	1.26	5.69
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	1.01	0.52		0.98	0.47	0.74
d, Delay for Lane Group [s/veh]	67.46	30.55		60.56	8.54	24.68
Lane Group LOS	F	C		E	A	C
Critical Lane Group	Yes	No		Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	13.48	3.92		7.15	5.17	11.37
50th-Percentile Queue Length [ft/ln]	337.11	97.96		178.81	129.35	284.20
95th-Percentile Queue Length [veh/ln]	19.62	7.05		11.54	8.90	16.90
95th-Percentile Queue Length [ft/ln]	490.60	176.33		288.46	222.61	422.43

Movement, Approach, & Intersection Results

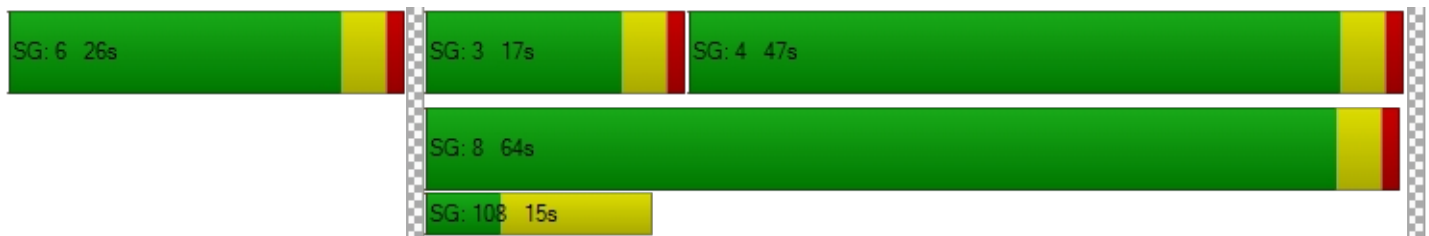
d_M, Delay for Movement [s/veh]	67.46	67.46	30.55	0.00	0.00	0.00	60.56	8.54	0.00	0.00	24.68	24.68
Movement LOS	F	E	C				E	A			C	C
d_A, Approach Delay [s/veh]	55.78			0.00			24.21			24.68		
Approach LOS	E			A			C			C		
d_I, Intersection Delay [s/veh]	33.99											
Intersection LOS	C											
Intersection V/C	0.903											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.154	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
I_b,int, Bicycle LOS Score for Intersection	2.639	4.132	2.967	2.609
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):	52.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.473

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]	65	57	641	66	41	523
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]	65	57	641	66	41	523
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]	18	15	174	18	11	142
Total Analysis Volume [veh/h]	71	62	696	72	45	568
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	0.47	0.15	0.01	0.00	0.05	0.01
d_M, Delay for Movement [s/veh]	52.87	37.37	0.00	0.00	9.44	0.00
Movement LOS	F	E	A	A	A	A
95th-Percentile Queue Length [veh/ln]	3.60	3.60	0.00	0.00	0.17	0.00
95th-Percentile Queue Length [ft/ln]	90.11	90.11	0.00	0.00	4.16	0.00
d_A, Approach Delay [s/veh]	45.65		0.00		0.69	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	4.29					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 4: Trumble Road 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):	0.635

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		
	84	5	37	30	15	141	73	588	33	44	361	4
Base Volume Input [veh/h]	84	5	37	30	15	141	73	588	33	44	361	4
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]	84	5	37	30	15	141	73	588	33	44	361	4
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]	23	1	10	8	4	39	20	162	9	12	99	1
Total Analysis Volume [veh/h]	92	5	41	33	16	155	80	646	36	48	397	4
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 in	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
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	14	3	11	5	53	53	3	51
g / C, Green / Cycle	0.07	0.16	0.03	0.13	0.06	0.59	0.59	0.04	0.57
(v / s)_i Volume / Saturation Flow Rate	0.05	0.03	0.02	0.10	0.04	0.34	0.02	0.03	0.21
s, saturation flow rate [veh/h]	1810	1642	1810	1638	1810	1900	1615	1810	1897
c, Capacity [veh/h]	118	261	58	207	108	1125	956	70	1084
d1, Uniform Delay [s]	41.44	32.74	42.93	38.36	41.63	11.35	7.66	42.70	10.49
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50
l, 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]	10.66	0.32	8.38	8.14	9.55	2.14	0.07	10.94	0.97
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	0.78	0.18	0.57	0.83	0.74	0.57	0.04	0.68	0.37
d, Delay for Lane Group [s/veh]	52.10	33.05	51.31	46.50	51.18	13.49	7.74	53.64	11.46
Lane Group LOS	D	C	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]	2.33	0.88	0.85	4.09	2.01	7.82	0.29	1.26	4.26
50th-Percentile Queue Length [ft/ln]	58.36	22.03	21.31	102.22	50.35	195.52	7.22	31.42	106.61
95th-Percentile Queue Length [veh/ln]	4.20	1.59	1.53	7.36	3.63	12.41	0.52	2.26	7.65
95th-Percentile Queue Length [ft/ln]	105.05	39.65	38.35	184.00	90.63	310.18	12.99	56.56	191.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.10	33.05	33.05	51.31	46.50	46.50	51.18	13.49	7.74	53.64	11.46	11.46
Movement LOS	D	C	C	D	D	D	D	B	A	D	B	B
d_A, Approach Delay [s/veh]	45.75			47.28			17.17			15.97		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	23.32											
Intersection LOS	C											
Intersection V/C	0.635											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
I_p,int, Pedestrian LOS Score for Intersection	2.019	0.000	0.000	2.322
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	511	889	444
d_b, Bicycle Delay [s]	31.25	24.94	13.89	27.22
I_b,int, Bicycle LOS Score for Intersection	1.787	1.896	2.817	2.300
Bicycle LOS	A	A	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):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

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	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	Project Driveway		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	0	0	0	694	564	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	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]	0	0	0	694	564	0
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	0	0	183	148	0
Total Analysis Volume [veh/h]	0	0	0	731	594	0
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	0.00	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	12.08	0.00	0.00	0.00	0.00
Movement LOS		B		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.08		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Trumble Road at North Driveway

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

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	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	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	82	186	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]	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]	0	82	186	0	0	0
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]	0	22	49	0	0	0
Total Analysis Volume [veh/h]	0	86	196	0	0	0
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	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.59	0.00	0.00	0.00	10.05	9.23
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		9.64	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Trumble Road at South Driveway

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

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	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	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	82	186	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]	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]	0	82	186	0	0	0
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]	0	22	49	0	0	0
Total Analysis Volume [veh/h]	0	86	196	0	0	0
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	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.61	0.00	0.00	0.00	10.08	9.26
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		9.67	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

APPENDIX D-2

INTERSECTION ANALYSIS
WORKSHEETS -
EXISTING PLUS PROJECT

Perris Travel Center Project

Vistro File: K:\...\Perris TC_AM.vistro

Scenario 5 2 EX WP AM

Report File: K:\...\2 EX WP AM.pdf

9/19/2022

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	0.798	20.2	C
2	I-215 NB Ramps at Ethanac Road	Signalized	HCM 6th Edition	WB Thru	0.991	34.7	C
3	Ethanac Road at Encanto Drive	Two-way stop	HCM 6th Edition	NB Right	0.306	18.9	C
4	Trumble Road at Ethanac Road	Signalized	HCM 6th Edition	SB Left	0.821	36.3	D
5	Ethanac Road at Project Driveway	Two-way stop	HCM 6th Edition	SB Right	0.173	14.8	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):	20.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.798

Intersection Setup

Name	Northbound			Southbound			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	124	0	245	0	722	499	105	703	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	219	0	245	0	727	499	202	708	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9850	0.9850	0.9850	1.0000	0.9850	0.9850	0.9850	0.9850	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	62	0	185	127	51	180	0
Total Analysis Volume [veh/h]	0	0	0	222	0	249	0	738	507	205	719	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 in		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
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	44	0	23	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]		16	16	50	50	12	66
g / C, Green / Cycle		0.18	0.18	0.55	0.55	0.14	0.73
(v / s)_i Volume / Saturation Flow Rate		0.12	0.15	0.39	0.31	0.11	0.20
s, saturation flow rate [veh/h]		1810	1615	1900	1615	1810	3618
c, Capacity [veh/h]		322	288	1046	889	250	2652
d1, Uniform Delay [s]		34.66	35.95	14.85	13.24	37.71	4.00
k, delay calibration		0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		2.63	7.75	4.00	2.65	6.61	0.25
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		0.69	0.87	0.71	0.57	0.82	0.27
d, Delay for Lane Group [s/veh]		37.28	43.70	18.85	15.89	44.32	4.25
Lane Group LOS		D	D	B	B	D	A
Critical Lane Group		No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		4.71	5.82	11.21	6.81	4.78	1.79
50th-Percentile Queue Length [ft/ln]		117.67	145.53	280.22	170.17	119.44	44.75
95th-Percentile Queue Length [veh/ln]		8.26	9.78	16.70	11.09	8.36	3.22
95th-Percentile Queue Length [ft/ln]		206.62	244.46	417.49	277.14	209.06	80.55

Movement, Approach, & Intersection Results

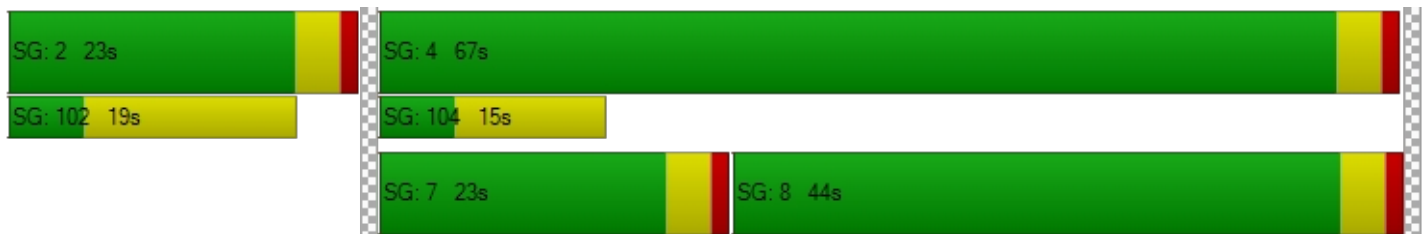
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	37.28	37.28	43.70	0.00	18.85	15.89	44.32	4.25	0.00
Movement LOS				D	D	D		B	B	D	A	
d_A, Approach Delay [s/veh]	0.00			40.67			17.65			13.14		
Approach LOS	A			D			B			B		
d_I, Intersection Delay [s/veh]	20.18											
Intersection LOS	C											
Intersection V/C	0.798											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	0.00	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.095	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	889	1400
d_b, Bicycle Delay [s]	45.00	28.01	13.89	4.05
I_b,int, Bicycle LOS Score for Intersection	4.132	2.337	3.614	2.322
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):	34.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.991

Intersection Setup

Name	Northbound			Southbound			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]	351	0	135	0	0	0	270	580	0	0	456	143
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]	351	0	230	0	0	0	270	680	0	0	558	241
Peak Hour Factor	0.9650	0.9650	0.9650	1.0000	1.0000	1.0000	0.9650	0.9650	1.0000	1.0000	0.9650	0.9650
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]	91	0	60	0	0	0	70	176	0	0	145	62
Total Analysis Volume [veh/h]	364	0	238	0	0	0	280	705	0	0	578	250
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 in		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
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	24	66	0	0	42	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]	20	20		16	62	42
g / C, Green / Cycle	0.22	0.22		0.18	0.69	0.47
(v / s)_i Volume / Saturation Flow Rate	0.20	0.15		0.15	0.37	0.46
s, saturation flow rate [veh/h]	1810	1615		1810	1900	1804
c, Capacity [veh/h]	397	355		321	1314	847
d1, Uniform Delay [s]	34.30	32.14		36.02	6.81	23.40
k, delay calibration	0.16	0.11		0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	11.96	2.20		7.32	1.57	25.93
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	0.92	0.67		0.87	0.54	0.98
d, Delay for Lane Group [s/veh]	46.26	34.34		43.34	8.39	49.33
Lane Group LOS	D	C		D	A	D
Critical Lane Group	Yes	No		Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	8.90	4.86		6.52	5.99	21.95
50th-Percentile Queue Length [ft/ln]	222.39	121.45		162.89	149.66	548.79
95th-Percentile Queue Length [veh/ln]	13.79	8.47		10.70	10.00	29.64
95th-Percentile Queue Length [ft/ln]	344.68	211.82		267.55	249.98	740.89

Movement, Approach, & Intersection Results

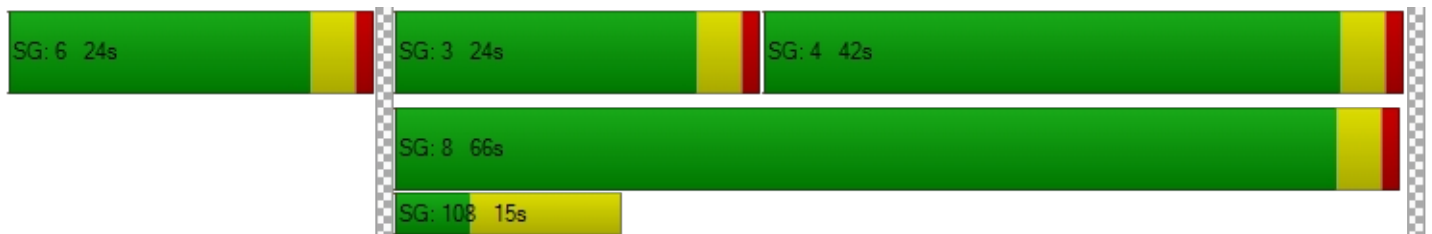
d_M, Delay for Movement [s/veh]	46.26	46.26	34.34	0.00	0.00	0.00	43.34	8.39	0.00	0.00	49.33	49.33
Movement LOS	D	D	C				D	A			D	D
d_A, Approach Delay [s/veh]	41.55			0.00			18.32			49.33		
Approach LOS	D			A			B			D		
d_I, Intersection Delay [s/veh]	34.74											
Intersection LOS	C											
Intersection V/C	0.991											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.137	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	844
d_b, Bicycle Delay [s]	27.22	45.00	4.36	15.02
I_b,int, Bicycle LOS Score for Intersection	2.553	4.132	3.185	2.926
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):	18.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.306

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	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]	62	41	540	114	28	456
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]	68	109	735	114	31	656
Peak Hour Factor	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	29	193	30	8	172
Total Analysis Volume [veh/h]	71	114	772	120	33	689
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	18.89	0.00	0.00	0.00	0.00
Movement LOS		C	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	1.27	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	31.87	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	18.89		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.27					
Intersection LOS	C					

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

Control Type:	Signalized	Delay (sec / veh):	36.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.821

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]	99	9	34	8	9	109	87	558	34	61	341	11
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]	99	9	34	24	9	257	361	547	34	92	346	11
Peak Hour Factor	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980
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]	28	3	9	7	3	72	101	152	9	26	96	3
Total Analysis Volume [veh/h]	110	10	38	27	10	286	402	609	38	102	385	12
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 in	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
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]	12	21	0	12	21	0	28	46	0	11	29	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]	7	22	2	18	22	43	43	6	27
g / C, Green / Cycle	0.08	0.25	0.03	0.20	0.24	0.47	0.47	0.07	0.30
(v / s)_i Volume / Saturation Flow Rate	0.06	0.03	0.01	0.18	0.22	0.32	0.02	0.06	0.21
s, saturation flow rate [veh/h]	1810	1667	1810	1623	1810	1900	1615	1810	1890
c, Capacity [veh/h]	139	414	51	324	438	900	765	130	573
d1, Uniform Delay [s]	40.82	26.17	43.14	35.24	33.22	18.34	12.76	41.09	27.66
k, delay calibration	0.11	0.11	0.11	0.12	0.21	0.50	0.50	0.11	0.50
l, 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]	9.52	0.12	8.22	10.77	13.67	4.07	0.12	9.97	6.75
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	0.79	0.12	0.53	0.91	0.92	0.68	0.05	0.79	0.69
d, Delay for Lane Group [s/veh]	50.34	26.29	51.35	46.02	46.88	22.41	12.89	51.06	34.41
Lane Group LOS	D	C	D	D	D	C	B	D	C
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.73	0.80	0.70	7.17	9.97	10.23	0.43	2.56	8.38
50th-Percentile Queue Length [ft/ln]	68.34	19.98	17.59	179.13	249.14	255.76	10.65	63.91	209.58
95th-Percentile Queue Length [veh/ln]	4.92	1.44	1.27	11.55	15.14	15.48	0.77	4.60	13.13
95th-Percentile Queue Length [ft/ln]	123.01	35.96	31.67	288.87	378.56	386.90	19.18	115.03	328.29

Movement, Approach, & Intersection Results

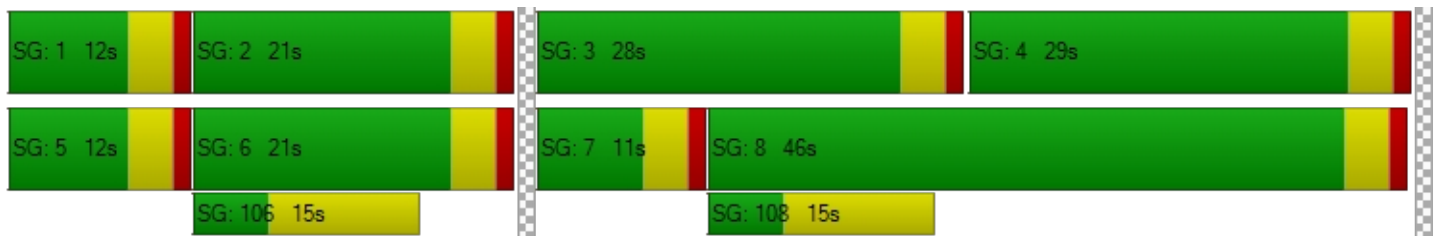
d_M, Delay for Movement [s/veh]	50.34	26.29	26.29	51.35	46.02	46.02	46.88	22.41	12.89	51.06	34.41	34.41
Movement LOS	D	C	C	D	D	D	D	C	B	D	C	C
d_A, Approach Delay [s/veh]	43.04			46.46			31.44			37.82		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	36.31											
Intersection LOS	D											
Intersection V/C	0.821											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
I_p,int, Pedestrian LOS Score for Intersection	2.042	0.000	0.000	2.323
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]	378	378	933	556
d_b, Bicycle Delay [s]	29.61	29.61	12.80	23.47
I_b,int, Bicycle LOS Score for Intersection	1.820	2.093	3.290	2.383
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):	14.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.173

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	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	Project Driveway		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	0	0	0	679	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	874	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	230	171	7
Total Analysis Volume [veh/h]	0	77	0	920	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	0.17	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	14.77	0.00	0.00	0.00	0.00
Movement LOS		B		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.62	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	15.47	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.77		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.67					
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	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	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	107	126	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	107	126	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	28	33	0	0	35
Total Analysis Volume [veh/h]	135	113	133	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	13.41	9.64
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.31	0.31	0.00	0.00	0.54	0.54
95th-Percentile Queue Length [ft/ln]	7.67	7.67	0.00	0.00	13.45	13.45
d_A, Approach Delay [s/veh]	4.21		0.00		9.64	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.59					
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	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	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	107	126	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	235	259	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	62	68	0	0	8
Total Analysis Volume [veh/h]	82	247	273	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	14.51	9.88
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.20	0.20	0.00	0.00	0.13	0.13
95th-Percentile Queue Length [ft/ln]	5.03	5.03	0.00	0.00	3.35	3.35
d_A, Approach Delay [s/veh]	1.98		0.00		9.88	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.54					
Intersection LOS	A					

Perris Travel Center Project

Vistro File: K:\...\Perris TC_PM.vistro

Scenario 5 2 EX WP PM

Report File: K:\...\2 EX WP PM.pdf

9/19/2022

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	0.864	25.8	C
2	I-215 NB Ramps at Ethanac Road	Signalized	HCM 6th Edition	NB Left	1.062	44.2	D
3	Ethanac Road at Encanto Drive	Two-way stop	HCM 6th Edition	NB Right	0.460	26.7	D
4	Trumble Road at Ethanac Road	Signalized	HCM 6th Edition	SB Left	0.868	39.4	D
5	Ethanac Road at Project Driveway	Two-way stop	HCM 6th Edition	SB Right	0.237	15.5	C
6	Trumble Road at North Driveway	Two-way stop	HCM 6th Edition	EB Right	0.159	10.0	B
7	Trumble Road at South Driveway	Two-way stop	HCM 6th Edition	EB Right	0.068	10.4	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):	25.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.864

Intersection Setup

Name	Northbound			Southbound			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	193	0	361	0	602	384	125	716	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	308	0	361	0	609	384	231	723	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	81	0	95	0	161	101	61	191	0
Total Analysis Volume [veh/h]	0	0	0	326	0	382	0	644	406	244	764	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 in		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
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	41	41	14	59
g / C, Green / Cycle		0.25	0.25	0.45	0.45	0.16	0.66
(v / s)_i Volume / Saturation Flow Rate		0.18	0.24	0.34	0.25	0.13	0.21
s, saturation flow rate [veh/h]		1810	1615	1900	1615	1810	3618
c, Capacity [veh/h]		460	410	859	730	290	2377
d1, Uniform Delay [s]		30.54	32.80	20.43	18.04	36.66	6.71
k, delay calibration		0.11	0.24	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		2.13	17.87	5.96	3.04	6.47	0.36
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		0.71	0.93	0.75	0.56	0.84	0.32
d, Delay for Lane Group [s/veh]		32.67	50.67	26.39	21.08	43.13	7.07
Lane Group LOS		C	D	C	C	D	A
Critical Lane Group		No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		6.54	9.92	11.93	6.47	5.63	2.87
50th-Percentile Queue Length [ft/ln]		163.52	248.12	298.37	161.74	140.83	71.82
95th-Percentile Queue Length [veh/ln]		10.74	15.09	17.60	10.64	9.53	5.17
95th-Percentile Queue Length [ft/ln]		268.38	377.29	440.02	266.02	238.14	129.28

Movement, Approach, & Intersection Results

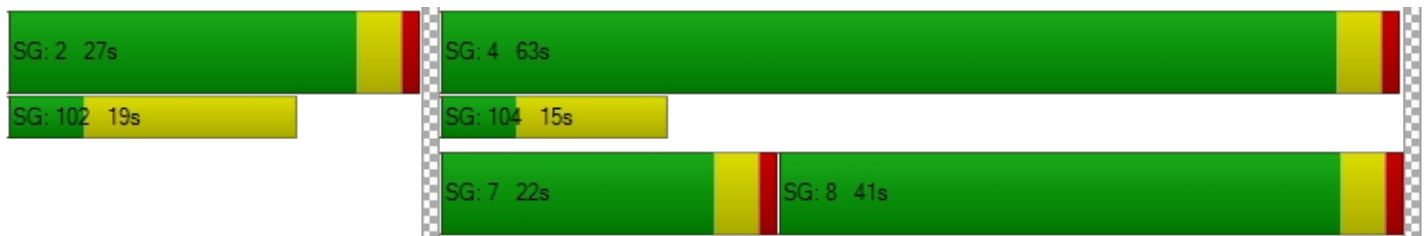
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	32.67	32.67	50.67	0.00	26.39	21.08	43.13	7.07	0.00
Movement LOS				C	C	D		C	C	D	A	
d_A, Approach Delay [s/veh]	0.00			42.38			24.33			15.80		
Approach LOS	A			D			C			B		
d_I, Intersection Delay [s/veh]	25.84											
Intersection LOS	C											
Intersection V/C	0.864											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	0.00	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.172	0.000	2.615
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	511	822	1311
d_b, Bicycle Delay [s]	45.00	24.94	15.61	5.34
I_b,int, Bicycle LOS Score for Intersection	4.132	2.728	3.292	2.391
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):	44.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.062

Intersection Setup

Name	Northbound			Southbound			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]	426	2	198	0	0	0	246	570	0	0	413	195
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]	426	2	313	0	0	0	246	692	0	0	526	301
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]	111	1	82	0	0	0	64	181	0	0	137	79
Total Analysis Volume [veh/h]	445	2	327	0	0	0	257	723	0	0	550	315
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 in		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
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	0.25	0.20		0.14	0.38	0.48
s, saturation flow rate [veh/h]	1810	1615		1810	1900	1785
c, Capacity [veh/h]	442	395		261	1267	853
d1, Uniform Delay [s]	34.00	32.21		38.39	8.07	23.50
k, delay calibration	0.26	0.16		0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	33.46	6.59		22.17	1.87	34.37
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	1.01	0.83		0.98	0.57	1.01
d, Delay for Lane Group [s/veh]	67.46	38.80		60.56	9.94	57.87
Lane Group LOS	F	D		E	A	F
Critical Lane Group	Yes	No		Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	13.48	7.28		7.15	7.02	24.76
50th-Percentile Queue Length [ft/ln]	337.11	182.11		178.81	175.46	618.92
95th-Percentile Queue Length [veh/ln]	19.62	11.71		11.54	11.36	33.28
95th-Percentile Queue Length [ft/ln]	490.60	292.77		288.46	284.08	832.04

Movement, Approach, & Intersection Results

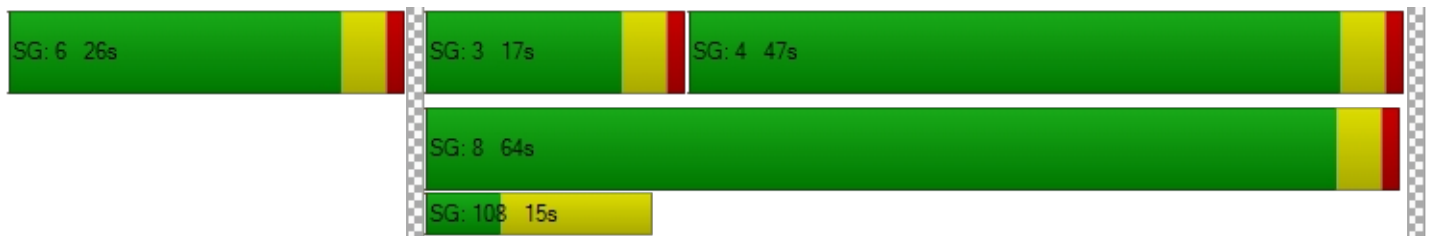
d_M, Delay for Movement [s/veh]	67.46	67.46	38.80	0.00	0.00	0.00	60.56	9.94	0.00	0.00	57.87	57.87
Movement LOS	F	E	D				E	A			E	E
d_A, Approach Delay [s/veh]	55.35			0.00			23.22			57.87		
Approach LOS	E			A			C			E		
d_I, Intersection Delay [s/veh]	44.16											
Intersection LOS	D											
Intersection V/C	1.062											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.193	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
I_b,int, Bicycle LOS Score for Intersection	2.837	4.132	3.177	2.987
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):	26.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.460

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	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]	65	57	641	66	41	523
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]	71	128	878	66	45	742
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]	19	35	238	18	12	201
Total Analysis Volume [veh/h]	77	139	953	72	49	806
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	0.46	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	26.68	0.00	0.00	0.00	0.00
Movement LOS		D	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	2.30	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	57.44	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	26.68		0.00		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	1.88					
Intersection LOS	D					

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

Control Type:	Signalized	Delay (sec / veh):	39.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.868

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		
	84	5	37	30	15	141	73	588	33	44	361	4
Base Volume Input [veh/h]	84	5	37	30	15	141	73	588	33	44	361	4
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]	84	5	37	54	15	291	398	571	33	89	368	4
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]	23	1	10	15	4	80	109	157	9	24	101	1
Total Analysis Volume [veh/h]	92	5	41	59	16	320	437	627	36	98	404	4
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 in	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
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	22	4	20	24	42	42	6	24
g / C, Green / Cycle	0.07	0.25	0.04	0.23	0.26	0.46	0.46	0.07	0.27
(v / s)_i Volume / Saturation Flow Rate	0.05	0.03	0.03	0.21	0.24	0.33	0.02	0.05	0.22
s, saturation flow rate [veh/h]	1810	1642	1810	1627	1810	1900	1615	1810	1897
c, Capacity [veh/h]	118	406	81	369	476	877	745	125	507
d1, Uniform Delay [s]	41.44	26.22	42.46	33.89	32.24	19.48	13.35	41.25	30.77
k, delay calibration	0.11	0.11	0.11	0.17	0.25	0.50	0.50	0.11	0.50
l, 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]	10.65	0.12	11.92	12.86	15.07	4.96	0.12	10.41	12.76
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	0.78	0.11	0.73	0.91	0.92	0.72	0.05	0.79	0.80
d, Delay for Lane Group [s/veh]	52.09	26.35	54.38	46.76	47.31	24.45	13.47	51.67	43.53
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]	2.33	0.77	1.55	8.28	10.95	11.11	0.42	2.47	9.82
50th-Percentile Queue Length [ft/ln]	58.36	19.17	38.73	207.06	273.66	277.83	10.38	61.82	245.46
95th-Percentile Queue Length [veh/ln]	4.20	1.38	2.79	13.00	16.37	16.58	0.75	4.45	14.96
95th-Percentile Queue Length [ft/ln]	105.04	34.50	69.72	325.06	409.31	414.51	18.68	111.28	373.93

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.09	26.35	26.35	54.38	46.76	46.76	47.31	24.45	13.47	51.67	43.53	43.53
Movement LOS	D	C	C	D	D	D	D	C	B	D	D	D
d_A, Approach Delay [s/veh]	43.51			47.90			33.17			45.11		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	39.38											
Intersection LOS	D											
Intersection V/C	0.868											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
I_p,int, Pedestrian LOS Score for Intersection	2.035	0.000	0.000	2.342
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	511	889	444
d_b, Bicycle Delay [s]	31.25	24.94	13.89	27.22
I_b,int, Bicycle LOS Score for Intersection	1.787	2.211	3.375	2.395
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):	15.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.237

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	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	Project Driveway		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	0	0	0	694	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	931	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	245	168	10
Total Analysis Volume [veh/h]	0	106	0	980	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	0.24	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	15.52	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.91	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	22.78	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.52		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.91					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Trumble Road at North Driveway

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.159

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	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	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	82	186	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	82	186	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	22	49	0	0	34
Total Analysis Volume [veh/h]	154	86	196	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	0.16
d_M, Delay for Movement [s/veh]	7.91	0.00	0.00	0.00	14.40	10.03
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.37	0.37	0.00	0.00	0.56	0.56
95th-Percentile Queue Length [ft/ln]	9.33	9.33	0.00	0.00	14.06	14.06
d_A, Approach Delay [s/veh]	5.08		0.00		10.03	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	4.51					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 7: Trumble Road at South Driveway

Control Type:	Two-way stop	Delay (sec / veh):	10.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.068

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	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	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	82	186	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	228	314	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	60	83	0	0	12
Total Analysis Volume [veh/h]	114	240	331	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	0.07
d_M, Delay for Movement [s/veh]	8.23	0.00	0.00	0.00	16.74	10.43
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.31	0.31	0.00	0.00	0.22	0.22
95th-Percentile Queue Length [ft/ln]	7.66	7.66	0.00	0.00	5.42	5.42
d_A, Approach Delay [s/veh]	2.65		0.00		10.43	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.96					
Intersection LOS	B					

APPENDIX D-3

**INTERSECTION ANALYSIS
WORKSHEETS -
OPENING YEAR 2024 CUMULATIVE**

Perris Travel Center Project

Vistro File: K:\...\Perris TC_AM.vistro

Scenario 3 OY 2024 CP AM

Report File: K:\...\3 OY CP AM.pdf

9/19/2022

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	1.501	173.0	F
2	I-215 NB Ramps at Ethanac Road	Signalized	HCM 6th Edition	NB Left	1.779	254.7	F
3	Ethanac Road at Encanto Drive	Two-way stop	HCM 6th Edition	NB Left	2.106	698.0	F
4	Trumble Road at Ethanac Road	Signalized	HCM 6th Edition	NB Left	0.862	35.6	D
5	Ethanac Road at Project Driveway	Two-way stop	HCM 6th Edition	EB Thru	0.010	0.0	A
6	Trumble Road at North Driveway	Two-way stop	HCM 6th Edition	SB Thru	0.001	0.0	A
7	Trumble Road at South Driveway	Two-way stop	HCM 6th Edition	SB Thru	0.001	0.0	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):	173.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.501

Intersection Setup

Name	Northbound			Southbound			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	124	0	245	0	722	499	105	703	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	1.0900	1.0900	1.0900	1.0000	1.0900	1.0900	1.0900	1.0900	1.0000
In-Process Volume [veh/h]	0	0	0	124	0	366	0	412	381	235	349	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	259	0	633	0	1199	925	349	1115	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9850	0.9850	0.9850	1.0000	0.9850	0.9850	0.9850	0.9850	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	66	0	161	0	304	235	89	283	0
Total Analysis Volume [veh/h]	0	0	0	263	0	643	0	1217	939	354	1132	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 in		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
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	44	0	23	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]		19	19	39	39	20	63
g / C, Green / Cycle		0.21	0.21	0.44	0.44	0.22	0.70
(v / s)_i Volume / Saturation Flow Rate		0.15	0.40	0.64	0.58	0.20	0.31
s, saturation flow rate [veh/h]		1810	1615	1900	1615	1810	3618
c, Capacity [veh/h]		382	341	829	704	397	2532
d1, Uniform Delay [s]		32.77	35.50	25.38	25.38	34.08	5.89
k, delay calibration		0.11	0.50	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		2.21	409.61	217.58	159.60	7.02	0.57
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		0.69	1.89	1.47	1.33	0.89	0.45
d, Delay for Lane Group [s/veh]		34.98	445.11	242.96	184.98	41.11	6.47
Lane Group LOS		C	F	F	F	D	A
Critical Lane Group		No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		5.42	46.07	66.58	45.25	8.08	4.00
50th-Percentile Queue Length [ft/ln]		135.41	1151.75	1664.61	1131.35	202.09	100.10
95th-Percentile Queue Length [veh/ln]		9.23	72.66	100.77	67.59	12.75	7.21
95th-Percentile Queue Length [ft/ln]		230.83	1816.61	2519.21	1689.80	318.66	180.18

Movement, Approach, & Intersection Results

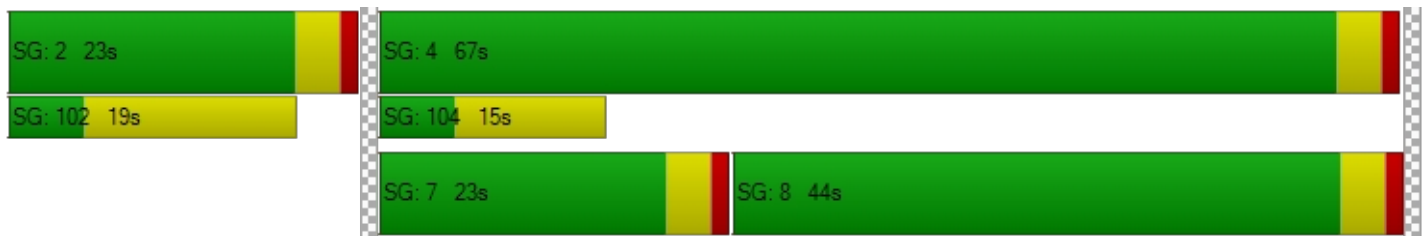
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	34.98	34.98	445.11	0.00	242.96	184.98	41.11	6.47	0.00
Movement LOS				C	C	F		F	F	D	A	
d_A, Approach Delay [s/veh]	0.00			326.06			217.71			14.72		
Approach LOS	A			F			F			B		
d_I, Intersection Delay [s/veh]	172.97											
Intersection LOS	F											
Intersection V/C	1.501											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	0.00	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.236	0.000	2.856
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	422	889	1400
d_b, Bicycle Delay [s]	45.00	28.01	13.89	4.05
I_b,int, Bicycle LOS Score for Intersection	4.132	3.055	5.117	2.786
Bicycle LOS	D	C	F	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):	254.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.779

Intersection Setup

Name	Northbound			Southbound			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]	351	0	135	0	0	0	270	580	0	0	456	143
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	1.0900	1.0900	1.0900	1.0000	1.0000	1.0000	1.0900	1.0900	1.0000	1.0000	1.0900	1.0900
In-Process Volume [veh/h]	323	0	124	0	0	0	395	142	0	0	261	235
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]	706	0	271	0	0	0	689	774	0	0	758	391
Peak Hour Factor	0.9650	0.9650	0.9650	1.0000	1.0000	1.0000	0.9650	0.9650	1.0000	1.0000	0.9650	0.9650
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]	183	0	70	0	0	0	178	201	0	0	196	101
Total Analysis Volume [veh/h]	732	0	281	0	0	0	714	802	0	0	785	405
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 in		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
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	24	66	0	0	42	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]	20	20		20	62	38
g / C, Green / Cycle	0.22	0.22		0.22	0.69	0.42
(v / s)_i Volume / Saturation Flow Rate	0.40	0.17		0.39	0.42	0.66
s, saturation flow rate [veh/h]	1810	1615		1810	1900	1792
c, Capacity [veh/h]	402	359		402	1309	757
d1, Uniform Delay [s]	35.00	32.96		35.00	7.54	26.00
k, delay calibration	0.50	0.11		0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	378.84	3.76		358.99	2.15	263.99
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	1.82	0.78		1.78	0.61	1.57
d, Delay for Lane Group [s/veh]	413.84	36.72		393.99	9.69	289.99
Lane Group LOS	F	D		F	A	F
Critical Lane Group	Yes	No		Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	50.88	6.01		48.66	7.57	70.64
50th-Percentile Queue Length [ft/ln]	1271.96	150.22		1216.50	189.32	1765.89
95th-Percentile Queue Length [veh/ln]	79.45	10.03		75.87	12.09	108.90
95th-Percentile Queue Length [ft/ln]	1986.15	250.73		1896.78	302.15	2722.45

Movement, Approach, & Intersection Results

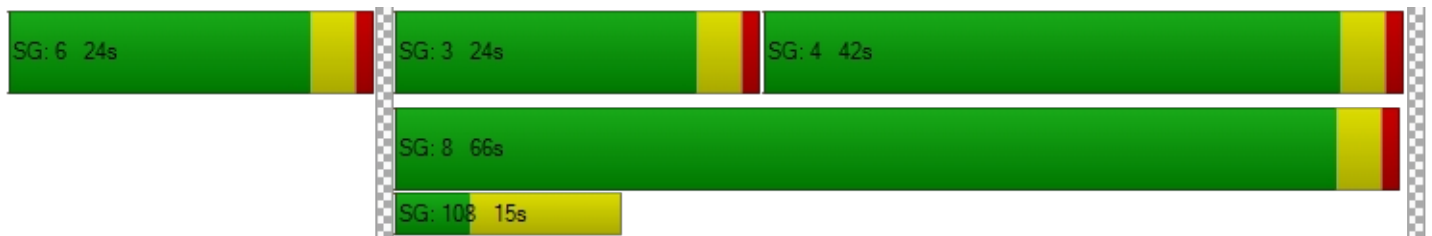
d_M, Delay for Movement [s/veh]	413.84	413.84	36.72	0.00	0.00	0.00	393.99	9.69	0.00	0.00	289.99	289.99
Movement LOS	F	F	D				F	A			F	F
d_A, Approach Delay [s/veh]	309.23			0.00			190.68			289.99		
Approach LOS	F			A			F			F		
d_I, Intersection Delay [s/veh]	254.75											
Intersection LOS	F											
Intersection V/C	1.779											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.271	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	844
d_b, Bicycle Delay [s]	27.22	45.00	4.36	15.02
I_b,int, Bicycle LOS Score for Intersection	3.231	4.132	4.061	3.523
Bicycle LOS	C	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:	Two-way stop	Delay (sec / veh):	698.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.106

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]	62	41	540	114	28	456
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	1.0900	1.0900	1.0900	1.0900	1.0900
In-Process Volume [veh/h]	59	0	236	30	0	445
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]	127	45	825	154	31	942
Peak Hour Factor	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	12	217	40	8	247
Total Analysis Volume [veh/h]	133	47	867	162	33	989
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	2.11	0.15	0.01	0.00	0.05	0.01
d_M, Delay for Movement [s/veh]	698.01	652.28	0.00	0.00	10.54	0.00
Movement LOS	F	F	A	A	B	A
95th-Percentile Queue Length [veh/ln]	16.59	16.59	0.00	0.00	0.15	0.00
95th-Percentile Queue Length [ft/ln]	414.65	414.65	0.00	0.00	3.80	0.00
d_A, Approach Delay [s/veh]	686.07		0.00		0.34	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	55.51					
Intersection LOS	F					

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

Control Type:	Signalized	Delay (sec / veh):	35.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.862

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]	99	9	34	8	9	109	87	558	34	61	341	11
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	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900
In-Process Volume [veh/h]	59	0	0	0	0	7	11	196	30	0	379	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]	167	10	37	9	10	126	106	804	67	66	751	12
Peak Hour Factor	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980
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]	46	3	10	3	3	35	30	224	19	18	209	3
Total Analysis Volume [veh/h]	186	11	41	10	11	140	118	895	75	73	836	13
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 in		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
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]	12	21	0	12	21	0	28	46	0	11	29	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]	8	17	1	10	8	51	51	5	48
g / C, Green / Cycle	0.09	0.19	0.01	0.11	0.08	0.57	0.57	0.05	0.54
(v / s)_i Volume / Saturation Flow Rate	0.10	0.03	0.01	0.09	0.07	0.47	0.05	0.04	0.45
s, saturation flow rate [veh/h]	1810	1668	1810	1633	1810	1900	1615	1810	1895
c, Capacity [veh/h]	161	314	23	184	154	1079	918	95	1016
d1, Uniform Delay [s]	41.00	30.59	44.09	39.06	40.32	15.87	8.80	42.07	17.55
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50
l, 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]	85.15	0.25	11.96	8.85	7.82	7.38	0.17	11.89	8.13
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	1.16	0.17	0.43	0.82	0.77	0.83	0.08	0.76	0.84
d, Delay for Lane Group [s/veh]	126.15	30.84	56.05	47.91	48.13	23.25	8.98	53.96	25.68
Lane Group LOS	F	C	E	D	D	C	A	D	C
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	7.32	0.96	0.30	3.66	2.86	15.59	0.67	1.90	15.67
50th-Percentile Queue Length [ft/ln]	182.91	23.89	7.42	91.60	71.47	389.76	16.66	47.43	391.82
95th-Percentile Queue Length [veh/ln]	12.35	1.72	0.53	6.60	5.15	22.07	1.20	3.42	22.17
95th-Percentile Queue Length [ft/ln]	308.74	42.99	13.35	164.88	128.65	551.65	29.98	85.38	554.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	126.15	30.84	30.84	56.05	47.91	47.91	48.13	23.25	8.98	53.96	25.68	25.68
Movement LOS	F	C	C	E	D	D	D	C	A	D	C	C
d_A, Approach Delay [s/veh]	105.32			48.42			24.96			27.92		
Approach LOS	F			D			C			C		
d_I, Intersection Delay [s/veh]	35.60											
Intersection LOS	D											
Intersection V/C	0.862											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
I_p,int, Pedestrian LOS Score for Intersection	2.071	0.000	0.000	2.549
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]	378	378	933	556
d_b, Bicycle Delay [s]	29.61	29.61	12.80	23.47
I_b,int, Bicycle LOS Score for Intersection	1.952	1.825	3.355	3.081
Bicycle LOS	A	A	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):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

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	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	Project Driveway		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	0	0	0	679	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	236	445	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]	0	0	0	915	898	0
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	0	0	241	236	0
Total Analysis Volume [veh/h]	0	0	0	963	945	0
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	0.00	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	16.24	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	16.24		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Trumble Road at North Driveway

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

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	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	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	107	126	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	11	7	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]	0	118	133	0	0	0
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]	0	31	35	0	0	0
Total Analysis Volume [veh/h]	0	124	140	0	0	0
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	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.49	0.00	0.00	0.00	9.97	8.96
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		9.46	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Trumble Road at South Driveway

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

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	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	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	107	126	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	11	7	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]	0	118	133	0	0	0
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]	0	31	35	0	0	0
Total Analysis Volume [veh/h]	0	124	140	0	0	0
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	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.47	0.00	0.00	0.00	9.94	8.94
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		9.44	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Perris Travel Center Project

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Scenario 3 OY 2024 CP PM

Report File: K:\...\3 OY CP PM.pdf

9/19/2022

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	1.739	242.0	F
2	I-215 NB Ramps at Ethanac Road	Signalized	HCM 6th Edition	EB Left	1.962	377.9	F
3	Ethanac Road at Encanto Drive	Two-way stop	HCM 6th Edition	NB Left	4.594	2,027.6	F
4	Trumble Road at Ethanac Road	Signalized	HCM 6th Edition	NB Left	1.042	57.7	E
5	Ethanac Road at Project Driveway	Two-way stop	HCM 6th Edition	EB Thru	0.013	0.0	A
6	Trumble Road at North Driveway	Two-way stop	HCM 6th Edition	SB Thru	0.002	0.0	A
7	Trumble Road at South Driveway	Two-way stop	HCM 6th Edition	SB Thru	0.002	0.0	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):	242.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.739

Intersection Setup

Name	Northbound			Southbound			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	193	0	361	0	602	384	125	716	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	1.0900	1.0900	1.0900	1.0000	1.0900	1.0900	1.0900	1.0900	1.0000
In-Process Volume [veh/h]	0	0	0	274	0	495	0	522	450	194	500	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	484	0	888	0	1178	869	330	1280	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	128	0	235	0	311	230	87	338	0
Total Analysis Volume [veh/h]	0	0	0	512	0	939	0	1245	919	349	1353	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 in		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
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	35	35	20	59
g / C, Green / Cycle		0.26	0.26	0.39	0.39	0.22	0.66
(v / s)_i Volume / Saturation Flow Rate		0.28	0.58	0.66	0.57	0.19	0.37
s, saturation flow rate [veh/h]		1810	1615	1900	1615	1810	3618
c, Capacity [veh/h]		462	413	748	636	393	2372
d1, Uniform Delay [s]		33.50	33.50	27.27	27.27	34.16	8.53
k, delay calibration		0.34	0.50	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		67.71	581.49	304.48	208.87	6.90	1.00
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	2.28	1.66	1.44	0.89	0.57
d, Delay for Lane Group [s/veh]		101.21	614.99	331.75	236.15	41.06	9.53
Lane Group LOS		F	F	F	F	D	A
Critical Lane Group		No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		18.47	75.38	78.47	49.80	7.96	6.52
50th-Percentile Queue Length [ft/ln]		461.66	1884.60	1961.72	1245.09	199.03	162.98
95th-Percentile Queue Length [veh/ln]		27.05	119.56	121.62	75.94	12.59	10.71
95th-Percentile Queue Length [ft/ln]		676.21	2988.93	3040.60	1898.59	314.72	267.67

Movement, Approach, & Intersection Results

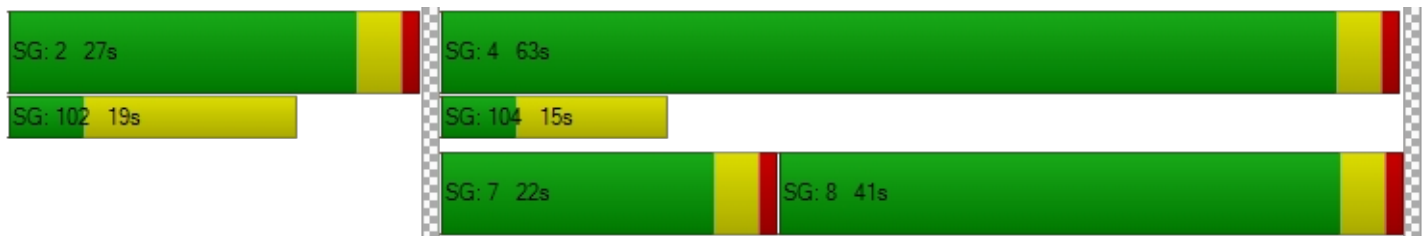
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	101.21	101.21	614.99	0.00	331.75	236.15	41.06	9.53	0.00
Movement LOS				F	F	F		F	F	D	A	
d_A, Approach Delay [s/veh]	0.00			433.70			291.15			16.00		
Approach LOS	A			F			F			B		
d_I, Intersection Delay [s/veh]	241.97											
Intersection LOS	F											
Intersection V/C	1.739											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	0.00	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.413	0.000	2.976
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
I_b,int, Bicycle LOS Score for Intersection	4.132	3.954	5.130	2.964
Bicycle LOS	D	D	F	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):	377.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.962

Intersection Setup

Name	Northbound			Southbound			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]	426	2	198	0	0	0	246	570	0	0	413	195
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	1.0900	1.0900	1.0900	1.0000	1.0000	1.0000	1.0900	1.0900	1.0000	1.0000	1.0900	1.0900
In-Process Volume [veh/h]	477	0	274	0	0	0	492	304	0	0	217	194
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]	941	2	490	0	0	0	760	925	0	0	667	407
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]	246	1	128	0	0	0	199	242	0	0	174	106
Total Analysis Volume [veh/h]	983	2	512	0	0	0	794	967	0	0	697	425
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 in		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
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	0.54	0.32		0.44	0.51	0.63
s, saturation flow rate [veh/h]	1810	1615		1810	1900	1781
c, Capacity [veh/h]	442	395		261	1267	851
d1, Uniform Delay [s]	34.00	34.00		38.50	10.18	23.50
k, delay calibration	0.50	0.42		0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	559.28	148.49		927.15	4.40	151.65
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	2.23	1.30		3.04	0.76	1.32
d, Delay for Lane Group [s/veh]	593.28	182.49		965.65	14.59	175.15
Lane Group LOS	F	F		F	B	F
Critical Lane Group	Yes	No		Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	78.10	24.65		72.97	12.28	52.42
50th-Percentile Queue Length [ft/ln]	1952.38	616.16		1824.21	307.00	1310.42
95th-Percentile Queue Length [veh/ln]	122.88	37.47		112.57	18.03	77.37
95th-Percentile Queue Length [ft/ln]	3072.09	936.82		2814.25	450.68	1934.23

Movement, Approach, & Intersection Results

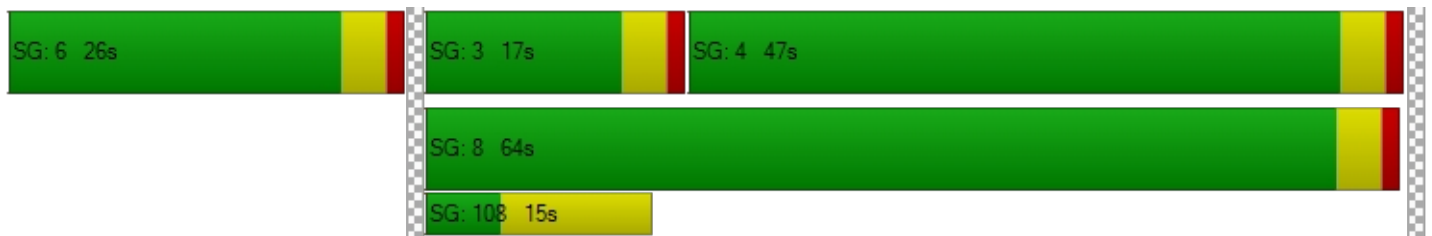
d_M, Delay for Movement [s/veh]	593.28	593.28	182.49	0.00	0.00	0.00	965.65	14.59	0.00	0.00	175.15	175.15
Movement LOS	F	F	F				F	B			F	F
d_A, Approach Delay [s/veh]	452.78			0.00			443.40			175.15		
Approach LOS	F			A			F			F		
d_I, Intersection Delay [s/veh]	377.89											
Intersection LOS	F											
Intersection V/C	1.962											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.428	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
I_b,int, Bicycle LOS Score for Intersection	4.030	4.132	4.465	3.411
Bicycle LOS	D	D	E	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):	2,027.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	4.594

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]	65	57	641	66	41	523
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	1.0900	1.0900	1.0900	1.0900	1.0900
In-Process Volume [veh/h]	49	0	509	67	0	375
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]	120	62	1208	139	45	945
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]	33	17	328	38	12	257
Total Analysis Volume [veh/h]	130	67	1312	151	49	1026
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	4.59	0.38	0.01	0.00	0.10	0.01
d_M, Delay for Movement [s/veh]	2027.63	1920.77	0.00	0.00	13.59	0.00
Movement LOS	F	F	A	A	B	A
95th-Percentile Queue Length [veh/ln]	22.90	22.90	0.00	0.00	0.35	0.00
95th-Percentile Queue Length [ft/ln]	572.49	572.49	0.00	0.00	8.72	0.00
d_A, Approach Delay [s/veh]	1991.28		0.00		0.62	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	143.67					
Intersection LOS	F					

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

Control Type:	Signalized	Delay (sec / veh):	57.7
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.042

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]	84	5	37	30	15	141	73	588	33	44	361	4
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	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900
In-Process Volume [veh/h]	49	0	0	0	0	12	11	431	67	0	314	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]	141	5	40	33	16	166	91	1072	103	48	707	4
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]	39	1	11	9	4	46	25	295	28	13	194	1
Total Analysis Volume [veh/h]	155	5	44	36	18	182	100	1178	113	53	777	4
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 in	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
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	3	13	7	51	51	4	48
g / C, Green / Cycle	0.07	0.18	0.03	0.14	0.07	0.57	0.57	0.04	0.54
(v / s)_i Volume / Saturation Flow Rate	0.09	0.03	0.02	0.12	0.06	0.62	0.07	0.03	0.41
s, saturation flow rate [veh/h]	1810	1640	1810	1637	1810	1900	1615	1810	1898
c, Capacity [veh/h]	121	291	61	237	133	1083	921	74	1021
d1, Uniform Delay [s]	42.00	31.40	42.85	37.51	40.91	19.35	8.94	42.64	16.34
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50
l, 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]	141.38	0.27	8.59	8.04	8.35	54.35	0.27	12.10	5.46
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	1.28	0.17	0.59	0.85	0.75	1.09	0.12	0.72	0.77
d, Delay for Lane Group [s/veh]	183.38	31.67	51.44	45.55	49.26	73.70	9.22	54.75	21.80
Lane Group LOS	F	C	D	D	D	F	A	D	C
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.38	0.91	0.93	4.74	2.46	36.15	1.02	1.40	13.03
50th-Percentile Queue Length [ft/ln]	184.51	22.87	23.20	118.62	61.41	903.80	25.62	35.02	325.82
95th-Percentile Queue Length [veh/ln]	12.72	1.65	1.67	8.32	4.42	49.27	1.84	2.52	18.95
95th-Percentile Queue Length [ft/ln]	318.05	41.16	41.76	207.93	110.53	1231.80	46.11	63.03	473.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	183.38	31.67	31.67	51.44	45.55	45.55	49.26	73.70	9.22	54.75	21.80	21.80
Movement LOS	F	C	C	D	D	D	D	F	A	D	C	C
d_A, Approach Delay [s/veh]	146.94			46.45			66.70			23.90		
Approach LOS	F			D			E			C		
d_I, Intersection Delay [s/veh]	57.66											
Intersection LOS	E											
Intersection V/C	1.042											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
I_p,int, Pedestrian LOS Score for Intersection	2.068	0.000	0.000	2.622
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	511	889	444
d_b, Bicycle Delay [s]	31.25	24.94	13.89	27.22
I_b,int, Bicycle LOS Score for Intersection	1.896	1.949	3.855	2.936
Bicycle LOS	A	A	D	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):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

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	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	Project Driveway		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	0	0	0	694	564	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	509	375	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]	0	0	0	1203	939	0
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	0	0	317	247	0
Total Analysis Volume [veh/h]	0	0	0	1266	988	0
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	0.00	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	16.90	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	16.90		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Trumble Road at North Driveway

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

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	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	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	82	186	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	11	12	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]	0	93	198	0	0	0
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]	0	24	52	0	0	0
Total Analysis Volume [veh/h]	0	98	208	0	0	0
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	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.62	0.00	0.00	0.00	10.22	9.30
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		9.76	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Trumble Road at South Driveway

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

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	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	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	82	186	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	11	12	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]	0	93	198	0	0	0
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]	0	24	52	0	0	0
Total Analysis Volume [veh/h]	0	98	208	0	0	0
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	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.64	0.00	0.00	0.00	10.25	9.33
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		9.79	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

APPENDIX D-4

**INTERSECTION ANALYSIS
WORKSHEETS -
OPENING YEAR 2024 CUMULATIVE
PLUS PROJECT**

Perris Travel Center Project

Vistro File: K:\...\Perris TC_AM.vistro

Scenario 4 OY 2024 CP WP AM

Report File: K:\...4 OY CP WP AM.pdf

9/19/2022

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	1.571	211.3	F
2	I-215 NB Ramps at Ethanac Road	Signalized	HCM 6th Edition	WB Thru	1.924	292.3	F
3	Ethanac Road at Encanto Drive	Two-way stop	HCM 6th Edition	NB Right	0.490	33.3	D
4	Trumble Road at Ethanac Road	Signalized	HCM 6th Edition	WB Thru	1.195	125.3	F
5	Ethanac Road at Project Driveway	Two-way stop	HCM 6th Edition	SB Right	0.322	27.1	D
6	Trumble Road at North Driveway	Two-way stop	HCM 6th Edition	EB Right	0.154	9.7	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):	211.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.571

Intersection Setup

Name	Northbound			Southbound			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	124	0	245	0	722	499	105	703	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	1.0900	1.0900	1.0900	1.0000	1.0900	1.0900	1.0900	1.0900	1.0000
In-Process Volume [veh/h]	0	0	0	124	0	366	0	412	381	235	349	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	354	0	633	0	1204	925	446	1120	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9850	0.9850	0.9850	1.0000	0.9850	0.9850	0.9850	0.9850	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	90	0	161	0	306	235	113	284	0
Total Analysis Volume [veh/h]	0	0	0	359	0	643	0	1222	939	453	1137	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 in		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
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	44	0	23	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]		19	19	34	34	25	63
g / C, Green / Cycle		0.21	0.21	0.38	0.38	0.28	0.70
(v / s)_i Volume / Saturation Flow Rate		0.20	0.40	0.64	0.58	0.25	0.31
s, saturation flow rate [veh/h]		1810	1615	1900	1615	1810	3618
c, Capacity [veh/h]		382	341	724	616	497	2532
d1, Uniform Delay [s]		34.94	35.50	27.85	27.85	31.60	5.91
k, delay calibration		0.15	0.50	0.50	0.50	0.12	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		14.65	409.61	315.38	244.70	7.45	0.58
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		0.94	1.89	1.69	1.53	0.91	0.45
d, Delay for Lane Group [s/veh]		49.59	445.11	343.22	272.55	39.05	6.48
Lane Group LOS		D	F	F	F	D	A
Critical Lane Group		No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		9.10	46.07	78.20	54.38	10.23	4.03
50th-Percentile Queue Length [ft/ln]		227.39	1151.75	1954.88	1359.57	255.76	100.75
95th-Percentile Queue Length [veh/ln]		14.04	72.66	121.38	83.85	15.48	7.25
95th-Percentile Queue Length [ft/ln]		351.04	1816.61	3034.62	2096.13	386.90	181.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	49.59	49.59	445.11	0.00	343.22	272.55	39.05	6.48	0.00
Movement LOS				D	D	F		F	F	D	A	
d_A, Approach Delay [s/veh]	0.00			303.40			312.52			15.76		
Approach LOS	A			F			F			B		
d_I, Intersection Delay [s/veh]	211.32											
Intersection LOS	F											
Intersection V/C	1.571											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	0.00	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.267	0.000	2.906
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	422	889	1400
d_b, Bicycle Delay [s]	45.00	28.01	13.89	4.05
I_b,int, Bicycle LOS Score for Intersection	4.132	3.213	5.125	2.871
Bicycle LOS	D	C	F	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):	292.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.924

Intersection Setup

Name	Northbound			Southbound			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]	351	0	135	0	0	0	270	580	0	0	456	143
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	1.0900	1.0900	1.0900	1.0000	1.0000	1.0000	1.0900	1.0900	1.0000	1.0000	1.0900	1.0900
In-Process Volume [veh/h]	323	0	124	0	0	0	395	142	0	0	261	235
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]	706	0	366	0	0	0	689	874	0	0	860	489
Peak Hour Factor	0.9650	0.9650	0.9650	1.0000	1.0000	1.0000	0.9650	0.9650	1.0000	1.0000	0.9650	0.9650
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]	183	0	95	0	0	0	178	226	0	0	223	127
Total Analysis Volume [veh/h]	732	0	379	0	0	0	714	906	0	0	891	507
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 in		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
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	24	66	0	0	42	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]	20	20		20	62	38
g / C, Green / Cycle	0.22	0.22		0.22	0.69	0.42
(v / s)_i Volume / Saturation Flow Rate	0.40	0.23		0.39	0.48	0.78
s, saturation flow rate [veh/h]	1810	1615		1810	1900	1786
c, Capacity [veh/h]	402	359		402	1309	754
d1, Uniform Delay [s]	35.00	35.00		35.00	8.33	26.00
k, delay calibration	0.50	0.23		0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	378.84	48.27		358.99	3.03	389.50
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	1.82	1.06		1.78	0.69	1.85
d, Delay for Lane Group [s/veh]	413.84	83.27		393.99	11.35	415.50
Lane Group LOS	F	F		F	B	F
Critical Lane Group	Yes	No		Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	50.88	12.45		48.66	9.58	96.66
50th-Percentile Queue Length [ft/ln]	1271.96	311.34		1216.50	239.38	2416.51
95th-Percentile Queue Length [veh/ln]	79.45	18.78		75.87	14.65	153.02
95th-Percentile Queue Length [ft/ln]	1986.15	469.61		1896.78	366.24	3825.45

Movement, Approach, & Intersection Results

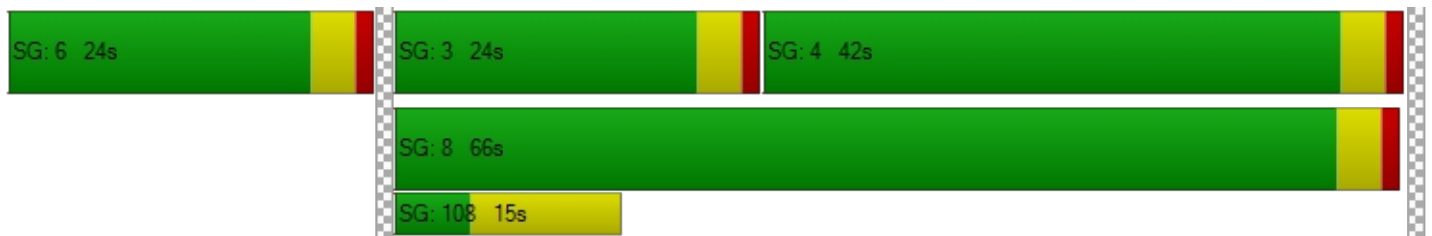
d_M, Delay for Movement [s/veh]	413.84	413.84	83.27	0.00	0.00	0.00	393.99	11.35	0.00	0.00	415.50	415.50
Movement LOS	F	F	F				F	B			F	F
d_A, Approach Delay [s/veh]	301.08			0.00			179.99			415.50		
Approach LOS	F			A			F			F		
d_I, Intersection Delay [s/veh]	292.31											
Intersection LOS	F											
Intersection V/C	1.924											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.303	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	844
d_b, Bicycle Delay [s]	27.22	45.00	4.36	15.02
I_b,int, Bicycle LOS Score for Intersection	3.393	4.132	4.233	3.866
Bicycle LOS	C	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:	Two-way stop	Delay (sec / veh):	33.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.490

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	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]	62	41	540	114	28	456
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	1.0900	1.0900	1.0900	1.0900	1.0900
In-Process Volume [veh/h]	0	0	236	30	0	445
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]	68	113	1020	154	31	1142
Peak Hour Factor	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	30	268	40	8	300
Total Analysis Volume [veh/h]	71	119	1071	162	33	1200
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	0.49	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	33.26	0.00	0.00	0.00	0.00
Movement LOS		D	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	2.48	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	62.07	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	33.26		0.00		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	1.55					
Intersection LOS	D					

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

Control Type:	Signalized	Delay (sec / veh):	125.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.195

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]	99	9	34	8	9	109	87	558	34	61	341	11
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	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900
In-Process Volume [veh/h]	59	0	0	0	0	7	11	196	30	0	379	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]	167	10	37	25	10	274	380	793	67	97	756	12
Peak Hour Factor	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980	0.8980
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]	46	3	10	7	3	76	106	221	19	27	210	3
Total Analysis Volume [veh/h]	186	11	41	28	11	305	423	883	75	108	842	13
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 in	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
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]	12	21	0	12	21	0	28	46	0	11	29	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]	8	22	3	17	23	42	42	7	26
g / C, Green / Cycle	0.09	0.25	0.03	0.19	0.25	0.47	0.47	0.08	0.29
(v / s)_i Volume / Saturation Flow Rate	0.10	0.03	0.02	0.19	0.23	0.46	0.05	0.06	0.45
s, saturation flow rate [veh/h]	1810	1668	1810	1623	1810	1900	1615	1810	1895
c, Capacity [veh/h]	161	413	54	307	457	891	757	137	553
d1, Uniform Delay [s]	41.00	26.27	43.02	36.50	32.81	23.71	13.31	40.90	31.87
k, delay calibration	0.11	0.11	0.11	0.15	0.23	0.50	0.50	0.11	0.50
l, 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]	85.15	0.14	7.48	35.80	15.48	28.08	0.26	9.72	254.62
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	1.16	0.13	0.52	1.03	0.93	0.99	0.10	0.79	1.55
d, Delay for Lane Group [s/veh]	126.15	26.41	50.49	72.30	48.29	51.79	13.57	50.62	286.49
Lane Group LOS	F	C	D	F	D	D	B	D	F
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	7.32	0.87	0.72	9.63	10.69	24.09	0.87	2.69	50.69
50th-Percentile Queue Length [ft/ln]	182.91	21.72	18.02	240.63	267.23	602.29	21.81	67.31	1267.15
95th-Percentile Queue Length [veh/ln]	12.35	1.56	1.30	14.93	16.05	32.14	1.57	4.85	77.52
95th-Percentile Queue Length [ft/ln]	308.74	39.09	32.43	373.37	401.28	803.53	39.25	121.16	1937.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	126.15	26.41	26.41	50.49	72.30	72.30	48.29	51.79	13.57	50.62	286.49	286.49
Movement LOS	F	C	C	D	E	E	D	D	B	D	F	F
d_A, Approach Delay [s/veh]	104.36			70.52			48.64			260.04		
Approach LOS	F			E			D			F		
d_I, Intersection Delay [s/veh]	125.32											
Intersection LOS	F											
Intersection V/C	1.195											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
I_p,int, Pedestrian LOS Score for Intersection	2.082	0.000	0.000	2.564
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]	378	378	933	556
d_b, Bicycle Delay [s]	29.61	29.61	12.80	23.47
I_b,int, Bicycle LOS Score for Intersection	1.952	2.127	3.838	3.149
Bicycle LOS	A	B	D	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):	27.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.322

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	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	Project Driveway		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	0	0	0	679	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	236	445	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	1110	1093	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	292	288	7
Total Analysis Volume [veh/h]	0	77	0	1168	1151	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	0.32	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	27.08	0.00	0.00	0.00	0.00
Movement LOS		D		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	1.34	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	33.46	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	27.08		0.00		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	0.86					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 6: Trumble Road at North Driveway

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.154

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	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	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	107	126	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	11	7	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	118	133	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	31	35	0	0	35
Total Analysis Volume [veh/h]	135	124	140	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]	7.75	0.00	0.00	0.00	13.62	9.69
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.31	0.31	0.00	0.00	0.54	0.54
95th-Percentile Queue Length [ft/ln]	7.72	7.72	0.00	0.00	13.59	13.59
d_A, Approach Delay [s/veh]	4.04		0.00		9.69	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.46					
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	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	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	107	126	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	11	7	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	246	266	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	65	70	0	0	8
Total Analysis Volume [veh/h]	82	259	280	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]	7.97	0.00	0.00	0.00	14.77	9.93
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.20	0.20	0.00	0.00	0.14	0.14
95th-Percentile Queue Length [ft/ln]	5.07	5.07	0.00	0.00	3.38	3.38
d_A, Approach Delay [s/veh]	1.92		0.00		9.93	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.50					
Intersection LOS	A					

Perris Travel Center Project

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Scenario 4 OY 2024 CP WP PM

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9/19/2022

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	1.819	301.1	F
2	I-215 NB Ramps at Ethanac Road	Signalized	HCM 6th Edition	EB Left	2.121	406.1	F
3	Ethanac Road at Encanto Drive	Two-way stop	HCM 6th Edition	NB Right	1.158	197.3	F
4	Trumble Road at Ethanac Road	Signalized	HCM 6th Edition	WB Thru	1.190	185.4	F
5	Ethanac Road at Project Driveway	Two-way stop	HCM 6th Edition	SB Right	0.399	27.3	D
6	Trumble Road at North Driveway	Two-way stop	HCM 6th Edition	EB Right	0.161	10.1	B
7	Trumble Road at South Driveway	Two-way stop	HCM 6th Edition	EB Right	0.069	10.5	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):	301.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.819

Intersection Setup

Name	Northbound			Southbound			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	193	0	361	0	602	384	125	716	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	1.0900	1.0900	1.0900	1.0000	1.0900	1.0900	1.0900	1.0900	1.0000
In-Process Volume [veh/h]	0	0	0	274	0	495	0	522	450	194	500	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	599	0	888	0	1185	869	436	1287	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	158	0	235	0	313	230	115	340	0
Total Analysis Volume [veh/h]	0	0	0	633	0	939	0	1253	919	461	1360	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 in		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
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	30	30	25	59
g / C, Green / Cycle		0.26	0.26	0.33	0.33	0.28	0.66
(v / s)_i Volume / Saturation Flow Rate		0.35	0.58	0.66	0.57	0.25	0.38
s, saturation flow rate [veh/h]		1810	1615	1900	1615	1810	3618
c, Capacity [veh/h]		462	413	630	536	506	2372
d1, Uniform Delay [s]		33.50	33.50	30.07	30.07	31.35	8.56
k, delay calibration		0.49	0.50	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		179.03	581.49	450.38	329.88	6.79	1.02
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		1.37	2.28	1.99	1.72	0.91	0.57
d, Delay for Lane Group [s/veh]		212.53	614.99	480.45	359.95	38.14	9.57
Lane Group LOS		F	F	F	F	D	A
Critical Lane Group		No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		32.77	75.38	91.90	60.18	10.30	6.57
50th-Percentile Queue Length [ft/ln]		819.17	1884.60	2297.42	1504.55	257.51	164.37
95th-Percentile Queue Length [veh/ln]		49.52	119.56	144.75	94.38	15.56	10.78
95th-Percentile Queue Length [ft/ln]		1237.96	2988.93	3618.72	2359.62	389.09	269.49

Movement, Approach, & Intersection Results

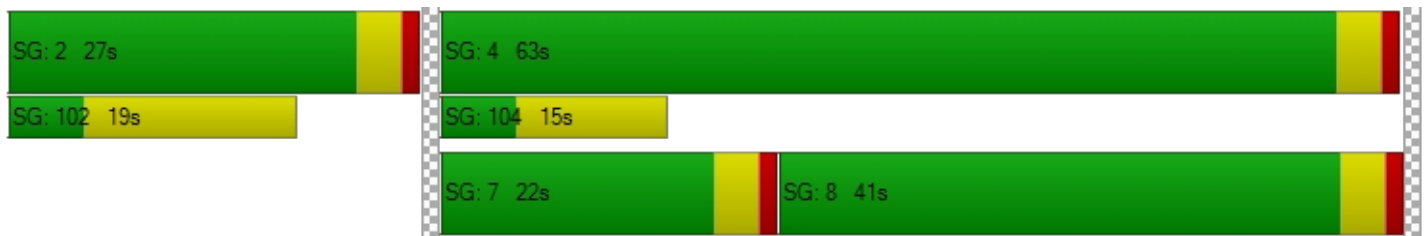
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	212.53	212.53	614.99	0.00	480.45	359.95	38.14	9.57	0.00
Movement LOS				F	F	F		F	F	D	A	
d_A, Approach Delay [s/veh]	0.00			452.93			429.47			16.80		
Approach LOS	A			F			F			B		
d_I, Intersection Delay [s/veh]	301.06											
Intersection LOS	F											
Intersection V/C	1.819											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	0.00	36.45
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.453	0.000	3.036
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
I_b,int, Bicycle LOS Score for Intersection	4.132	4.153	5.143	3.062
Bicycle LOS	D	D	F	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):	406.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.121

Intersection Setup

Name	Northbound			Southbound			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]	426	2	198	0	0	0	246	570	0	0	413	195
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	1.0900	1.0900	1.0900	1.0000	1.0000	1.0000	1.0900	1.0900	1.0000	1.0000	1.0900	1.0900
In-Process Volume [veh/h]	477	0	274	0	0	0	492	304	0	0	217	194
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]	941	2	605	0	0	0	760	1047	0	0	780	513
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]	246	1	158	0	0	0	199	274	0	0	204	134
Total Analysis Volume [veh/h]	983	2	632	0	0	0	794	1094	0	0	815	536
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 in		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
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	0.54	0.39		0.44	0.58	0.76
s, saturation flow rate [veh/h]	1810	1615		1810	1900	1776
c, Capacity [veh/h]	442	395		261	1267	848
d1, Uniform Delay [s]	34.00	34.00		38.50	11.79	23.50
k, delay calibration	0.50	0.50		0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	559.28	282.05		927.15	7.97	272.19
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	2.23	1.60		3.04	0.86	1.59
d, Delay for Lane Group [s/veh]	593.28	316.05		965.65	19.76	295.69
Lane Group LOS	F	F		F	B	F
Critical Lane Group	Yes	No		Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	78.10	39.29		72.97	16.86	80.67
50th-Percentile Queue Length [ft/ln]	1952.38	982.31		1824.21	421.41	2016.70
95th-Percentile Queue Length [veh/ln]	122.88	61.24		112.57	23.59	125.05
95th-Percentile Queue Length [ft/ln]	3072.09	1530.89		2814.25	589.75	3126.24

Movement, Approach, & Intersection Results

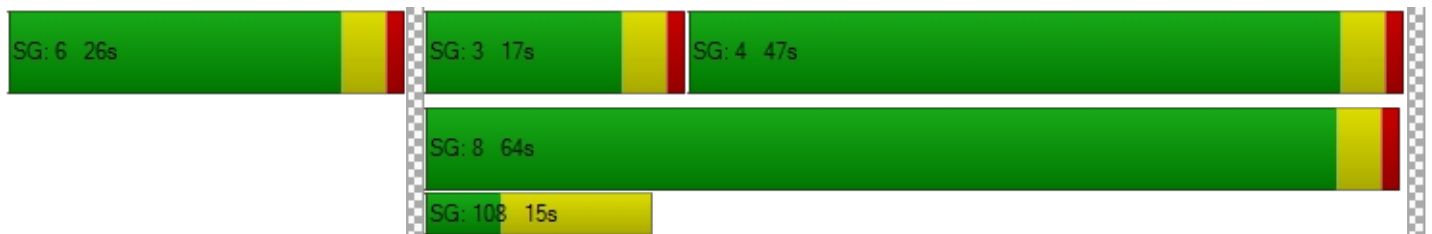
d_M, Delay for Movement [s/veh]	593.28	593.28	316.05	0.00	0.00	0.00	965.65	19.76	0.00	0.00	295.69	295.69
Movement LOS	F	F	F				F	B			F	F
d_A, Approach Delay [s/veh]	484.92			0.00			417.55			295.69		
Approach LOS	F			A			F			F		
d_I, Intersection Delay [s/veh]	406.08											
Intersection LOS	F											
Intersection V/C	2.121											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.467	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
I_b,int, Bicycle LOS Score for Intersection	4.228	4.132	4.675	3.789
Bicycle LOS	D	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):	197.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.158

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	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]	65	57	641	66	41	523
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	1.0900	1.0900	1.0900	1.0900	1.0900
In-Process Volume [veh/h]	0	0	509	67	0	375
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]	71	133	1445	139	45	1164
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]	19	36	392	38	12	316
Total Analysis Volume [veh/h]	77	144	1569	151	49	1264
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	1.16	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	197.26	0.00	0.00	0.00	0.00
Movement LOS		F	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	8.68	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	216.91	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	197.26		0.00		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	9.08					
Intersection LOS	F					

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

Control Type:	Signalized	Delay (sec / veh):	185.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.190

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]	84	5	37	30	15	141	73	588	33	44	361	4
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	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900	1.0900
In-Process Volume [veh/h]	49	0	0	0	0	12	11	431	67	0	314	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]	141	5	40	57	16	316	416	1055	103	93	714	4
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]	39	1	11	16	4	87	114	290	28	26	196	1
Total Analysis Volume [veh/h]	155	5	44	63	18	347	457	1159	113	102	785	4
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 in	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
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	24	4	22	24	40	40	6	22
g / C, Green / Cycle	0.07	0.26	0.05	0.24	0.27	0.44	0.44	0.07	0.24
(v / s)_i Volume / Saturation Flow Rate	0.09	0.03	0.03	0.22	0.25	0.61	0.07	0.06	0.42
s, saturation flow rate [veh/h]	1810	1640	1810	1627	1810	1900	1615	1810	1898
c, Capacity [veh/h]	121	431	85	395	491	846	719	122	457
d1, Uniform Delay [s]	42.00	25.21	42.35	33.25	31.95	24.96	14.89	41.48	34.16
k, delay calibration	0.11	0.11	0.11	0.21	0.27	0.50	0.50	0.11	0.50
l, 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]	141.38	0.12	12.00	15.82	17.18	174.05	0.47	13.82	335.21
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	1.28	0.11	0.74	0.92	0.93	1.37	0.16	0.84	1.72
d, Delay for Lane Group [s/veh]	183.38	25.33	54.35	49.07	49.13	199.01	15.36	55.31	369.37
Lane Group LOS	F	C	D	D	D	F	B	E	F
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	7.38	0.80	1.65	9.29	11.72	57.67	1.43	2.68	52.30
50th-Percentile Queue Length [ft/ln]	184.51	19.95	41.27	232.15	292.90	1441.64	35.72	66.88	1307.41
95th-Percentile Queue Length [veh/ln]	12.72	1.44	2.97	14.28	17.33	85.71	2.57	4.82	81.06
95th-Percentile Queue Length [ft/ln]	318.05	35.92	74.29	357.09	433.24	2142.85	64.30	120.39	2026.58

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	183.38	25.33	25.33	54.35	49.07	49.07	49.13	199.01	15.36	55.31	369.37	369.37
Movement LOS	F	C	C	D	D	D	D	F	B	E	F	F
d_A, Approach Delay [s/veh]	145.41			49.85			147.39			333.41		
Approach LOS	F			D			F			F		
d_I, Intersection Delay [s/veh]	185.40											
Intersection LOS	F											
Intersection V/C	1.190											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
I_p,int, Pedestrian LOS Score for Intersection	2.084	0.000	0.000	2.643
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	511	889	444
d_b, Bicycle Delay [s]	31.25	24.94	13.89	27.22
I_b,int, Bicycle LOS Score for Intersection	1.896	2.266	4.412	3.030
Bicycle LOS	A	B	E	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):	27.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.399

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	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	Project Driveway		Ethanac Road		Ethanac Road	
Base Volume Input [veh/h]	0	0	0	694	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	509	375	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	1440	1012	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	379	266	10
Total Analysis Volume [veh/h]	0	106	0	1516	1065	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	0.40	0.00	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	27.28	0.00	0.00	0.00	0.00
Movement LOS		D		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	1.83	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	45.64	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	27.28		0.00		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	1.06					
Intersection LOS	D					

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):	0.161

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	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	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	82	186	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	11	12	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	93	198	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	24	52	0	0	34
Total Analysis Volume [veh/h]	154	98	208	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	0.16
d_M, Delay for Movement [s/veh]	7.95	0.00	0.00	0.00	14.73	10.12
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.38	0.38	0.00	0.00	0.57	0.57
95th-Percentile Queue Length [ft/ln]	9.44	9.44	0.00	0.00	14.32	14.32
d_A, Approach Delay [s/veh]	4.86		0.00		10.12	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	4.35					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 7: Trumble Road at South Driveway

Control Type:	Two-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.069

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	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	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	82	186	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	11	12	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	239	326	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	63	86	0	0	12
Total Analysis Volume [veh/h]	114	252	343	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	0.07
d_M, Delay for Movement [s/veh]	8.27	0.00	0.00	0.00	17.15	10.52
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.31	0.31	0.00	0.00	0.22	0.22
95th-Percentile Queue Length [ft/ln]	7.74	7.74	0.00	0.00	5.51	5.51
d_A, Approach Delay [s/veh]	2.57		0.00		10.52	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.91					
Intersection LOS	B					

APPENDIX D-5

**INTERSECTION ANALYSIS
WORKSHEETS -
OPENING YEAR 2024 CUMULATIVE
PLUS PROJECT WITH
IMPROVEMENTS**

Option 1: Add 2nd EBT, 2nd WBL, 2nd SBR, Free EBR

Number	1											
Intersection	I-215 SB Ramps at Ethanac Road											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
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
Base Volume Input [veh/h]	0	0	0	124	0	245	0	722	499	105	703	0
Total Analysis Volume [veh/h]	0	0	0	359	0	643	0	1222	939	453	1137	0

Intersection Settings

Cycle Length [s]	120											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Semi-actuated											
Lost time [s]	16.00											
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	28	0	0	73	0	19	92	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
l1, 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
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle		0.20	0.20	0.20	0.55	0.55	0.15	0.73
(v / s)_i Volume / Saturation Flow Rate		0.18	0.21	0.21	0.34	0.58	0.13	0.31
so, Base Saturation Flow per Lane [pc/h/ln]		1900	1900	1900	1900	1900	1900	1900
Arrival type	3	3			3		3	
s, saturation flow rate [veh/h]		1810	1628	1615	3618	1615	3514	3618
c, Capacity [veh/h]		362	326	323	1983	885	534	2653
X, volume / capacity		0.92	1.03	1.03	0.62	1.06	0.85	0.43
d, Delay for Lane Group [s/veh]		66.75	94.56	97.37	19.95	74.85	53.40	6.73
Lane Group LOS		E	F	F	B	F	D	A

Critical Lane Group		NO	NO	Yes	NO	Yes	Yes	NO
50th-Percentile Queue Length [veh/ln]		11.72	13.89	14.03	11.66	35.63	6.88	5.17
50th-Percentile Queue Length [ft/ln]		292.94	347.29	350.79	291.40	890.80	172.03	129.14
95th-Percentile Queue Length [veh/ln]		17.33	20.28	20.54	17.26	47.68	11.18	8.89
95th-Percentile Queue Length [ft/ln]		433.29	507.02	513.54	431.38	1192.09	279.58	222.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	68.69	94.56	96.02	0.00	19.95	74.85	53.40	6.73	0.00
Movement LOS				E	F	F		B	F	D	A	
Critical Movement				No	No	Yes		No	No	No	No	
d_A, Approach Delay [s/veh]	0.00			86.23			43.81			20.03		
Approach LOS	A			F			D			C		
d_I, Intersection Delay [s/veh]	44.79											
Intersection LOS	D											
Intersection V/C	1.058											

Option 1: Add 2nd EBT, 2nd WBL, 2nd SBR, Free EBR

Number	1											
Intersection	I-215 SB Ramps at Ethanac Road											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
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
Base Volume Input [veh/h]	0	0	0	193	0	361	0	602	384	125	716	0
Total Analysis Volume [veh/h]	0	0	0	633	0	939	0	1253	919	461	1360	0

Intersection Settings

Cycle Length [s]	120											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Semi-actuated											
Lost time [s]	16.00											
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	37	0	0	65	0	18	83	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
l1, 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
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle		0.28	0.28	0.28	0.47	0.47	0.16	0.66
(v / s)_i Volume / Saturation Flow Rate		0.29	0.32	0.32	0.35	0.57	0.13	0.38
so, Base Saturation Flow per Lane [pc/h/ln]		1900	1900	1900	1900	1900	1900	1900
Arrival type	3	3			3		3	
s, saturation flow rate [veh/h]		1810	1652	1615	3618	1615	3514	3618
c, Capacity [veh/h]		498	454	444	1701	759	544	2382
X, volume / capacity		1.05	1.15	1.18	0.74	1.21	0.85	0.57
d, Delay for Lane Group [s/veh]		98.29	135.03	145.52	28.65	138.48	53.10	12.22
Lane Group LOS		F	F	F	C	F	D	B

Critical Lane Group		NO	NO	Yes	NO	Yes	Yes	NO
50th-Percentile Queue Length [veh/ln]		22.18	24.89	25.62	14.86	43.71	6.99	9.60
50th-Percentile Queue Length [ft/ln]		554.53	622.14	640.59	371.50	1092.66	174.74	239.95
95th-Percentile Queue Length [veh/ln]		30.89	35.97	37.34	21.18	62.45	11.33	14.68
95th-Percentile Queue Length [ft/ln]		772.24	899.23	933.53	529.55	1561.17	283.14	366.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	104.62	135.03	140.89	0.00	28.65	138.48	53.10	12.22	0.00
Movement LOS				F	F	F		C	F	D	B	
Critical Movement				No	No	Yes		No	No	No	No	
d_A, Approach Delay [s/veh]	0.00			126.28			75.12			22.57		
Approach LOS	A			F			E			C		
d_I, Intersection Delay [s/veh]	72.38											
Intersection LOS	E											
Intersection V/C	1.182											

Option 1: Add 2nd EBT, 2nd WBT, 2nd EBL, WBR, 2nd NBL

Number	2											
Intersection	I-215 NB Ramps at Ethanac Road											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
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
Base Volume Input [veh/h]	351	0	135	0	0	0	270	580	0	0	456	143
Total Analysis Volume [veh/h]	732	0	379	0	0	0	714	906	0	0	891	507

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Semi-actuated											
Lost time [s]	16.00											
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	24	66	0	0	42	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
l1, 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
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.22	0.22	0.22		0.22	0.69	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.20	0.20	0.23		0.20	0.25	0.25	0.31
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900		1900	1900	1900	1900
Arrival type	3			3	3		3	
s, saturation flow rate [veh/h]	1810	1810	1615		3514	3618	3618	1615
c, Capacity [veh/h]	402	402	359		778	2492	1530	683
X, volume / capacity	0.91	0.91	1.06		0.92	0.36	0.58	0.74
d, Delay for Lane Group [s/veh]	45.58	45.58	83.27		39.15	6.22	21.50	28.98
Lane Group LOS	D	D	F		D	A	C	C

Critical Lane Group	No	NO	Yes		Yes	NO	NO	Yes
50th-Percentile Queue Length [veh/ln]	8.88	8.88	12.45		7.96	3.10	7.17	9.88
50th-Percentile Queue Length [ft/ln]	221.93	221.93	311.34		199.02	77.50	179.13	247.05
95th-Percentile Queue Length [veh/ln]	13.76	13.76	18.78		12.59	5.58	11.56	15.04
95th-Percentile Queue Length [ft/ln]	344.09	344.09	469.61		314.70	139.50	288.88	375.93

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.58	45.58	83.27	0.00	0.00	0.00	39.15	6.22	0.00	0.00	21.50	28.98
Movement LOS	D	D	F				D	A			C	C
Critical Movement	No	No	Yes				No	No			No	No
d_A, Approach Delay [s/veh]	58.44			0.00			20.73			24.21		
Approach LOS	E			A			C			C		
d_I, Intersection Delay [s/veh]	32.06											
Intersection LOS	C											
Intersection V/C	0.914											

Option 1: Add 2nd EBT, 2nd WBT, 2nd EBL, WBR, 2nd NBL

Number	2											
Intersection	I-215 NB Ramps at Ethanac Road											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
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
Base Volume Input [veh/h]	426	2	198	0	0	0	246	570	0	0	413	195
Total Analysis Volume [veh/h]	983	2	632	0	0	0	794	1094	0	0	815	536

Intersection Settings

Cycle Length [s]	120											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Semi-actuated											
Lost time [s]	16.00											
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	48	0	0	0	0	30	72	0	0	42	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
l1, 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
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.37	0.37	0.37		0.22	0.57	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.27	0.27	0.39		0.23	0.30	0.23	0.33
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900		1900	1900	1900	1900
Arrival type	3			3	3		3	
s, saturation flow rate [veh/h]	1810	1810	1615		3514	3618	3618	1615
c, Capacity [veh/h]	663	664	592		761	2050	1146	511
X, volume / capacity	0.74	0.74	1.07		1.04	0.53	0.71	1.05
d, Delay for Lane Group [s/veh]	37.18	37.17	94.23		74.87	17.15	39.93	93.97
Lane Group LOS	D	D	F		F	B	D	F

Critical Lane Group	No	NO	Yes		Yes	NO	NO	Yes
50th-Percentile Queue Length [veh/ln]	13.09	13.09	26.29		14.24	9.35	11.06	22.41
50th-Percentile Queue Length [ft/ln]	327.30	327.26	657.29		355.89	233.74	276.58	560.34
95th-Percentile Queue Length [veh/ln]	19.03	19.02	36.31		20.90	14.36	16.52	31.13
95th-Percentile Queue Length [ft/ln]	475.65	475.60	907.67		522.51	359.10	412.95	778.19

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.18	37.17	94.23	0.00	0.00	0.00	74.87	17.15	0.00	0.00	39.93	93.97
Movement LOS	D	D	F				F	B			D	F
Critical Movement	No	No	Yes				No	No			No	No
d_A, Approach Delay [s/veh]	59.48			0.00			41.43			61.37		
Approach LOS	E			A			D			E		
d_I, Intersection Delay [s/veh]	52.99											
Intersection LOS	D											
Intersection V/C	1.095											

Option 1: Copy of Trumble Road at Ethanac Road

Number	4											
Intersection	Trumble Road at Ethanac Road											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
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
Base Volume Input [veh/h]	99	9	34	8	9	109	87	558	34	61	341	11
Total Analysis Volume [veh/h]	186	11	41	28	11	305	423	883	75	108	842	13

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Semi-actuated											
Lost time [s]	16.00											
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]	16	19	0	11	14	14	44	46	0	14	16	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
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
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	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.12	0.20	0.03	0.11	0.42	0.27	0.51	0.51	0.08	0.32	0.32	
(v / s)_i Volume / Saturation Flow Rate	0.10	0.03	0.02	0.01	0.19	0.23	0.25	0.26	0.06	0.23	0.23	
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Arrival type	3			3			3			3		
s, saturation flow rate [veh/h]	1810	1668	1810	1900	1615	1810	1900	1848	1810	1900	1890	
c, Capacity [veh/h]	221	340	53	211	683	484	973	946	139	610	607	
X, volume / capacity	0.84	0.15	0.52	0.05	0.45	0.87	0.50	0.50	0.78	0.70	0.70	
d, Delay for Lane Group [s/veh]	46.95	29.65	50.79	35.87	19.02	36.58	16.20	16.29	49.72	33.41	33.44	
Lane Group LOS	D	C	D	D	B	D	B	B	D	C	C	

Critical Lane Group	Yes	No	NO	NO	Yes	Yes	NO	NO	NO	NO	Yes
50th-Percentile Queue Length [veh/ln]	4.46	0.93	0.72	0.22	4.45	9.21	6.54	6.42	2.67	8.91	8.87
50th-Percentile Queue Length [ft/ln]	111.57	23.30	18.08	5.50	111.25	230.17	163.51	160.46	66.64	222.78	221.73
95th-Percentile Queue Length [veh/ln]	7.93	1.68	1.30	0.40	7.91	14.18	10.73	10.57	4.80	13.81	13.75
95th-Percentile Queue Length [ft/ln]	198.18	41.95	32.55	9.90	197.73	354.57	268.36	264.33	119.96	345.17	343.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.95	29.65	29.65	50.79	35.87	19.02	36.58	16.24	16.29	49.72	33.42	33.44
Movement LOS	D	C	C	D	D	B	D	B	B	D	C	C
Critical Movement	No	No	No	Yes	No	No	No	No	No	No	No	No
d_A, Approach Delay [s/veh]	43.17			22.14			22.47			35.25		
Approach LOS	D			C			C			D		
d_I, Intersection Delay [s/veh]	28.32											
Intersection LOS	C											
Intersection V/C	0.847											

Option 1: Add 2nd EBT, 2nd WBT

Number	4											
Intersection	Trumble Road at Ethanac Road											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
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
Base Volume Input [veh/h]	84	5	37	30	15	141	73	588	33	44	361	4
Total Analysis Volume [veh/h]	155	5	44	63	18	347	457	1159	113	102	785	4

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Semi-actuated											
Lost time [s]	16.00											
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]	13	19	0	9	15	15	37	52	0	10	25	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
11, 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
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	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.10	0.17	0.05	0.11	0.44	0.28	0.54	0.54	0.07	0.33	0.33	
(v / s)_i Volume / Saturation Flow Rate	0.09	0.03	0.03	0.01	0.21	0.25	0.34	0.34	0.06	0.21	0.21	
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Arrival type	3			3			3			3		
s, saturation flow rate [veh/h]	1810	1640	1810	1900	1615	1810	1900	1842	1810	1900	1897	
c, Capacity [veh/h]	181	273	82	212	713	516	1025	993	129	618	617	
X, volume / capacity	0.86	0.18	0.76	0.08	0.49	0.89	0.62	0.64	0.79	0.64	0.64	
d, Delay for Lane Group [s/veh]	50.84	32.56	56.07	36.01	18.80	40.51	17.27	17.65	51.56	30.83	30.84	
Lane Group LOS	D	C	E	D	B	D	B	B	D	C	C	

Critical Lane Group	Yes	No	NO	NO	Yes	Yes	NO	NO	NO	NO	Yes
50th-Percentile Queue Length [veh/ln]	3.88	0.93	1.68	0.36	5.09	10.57	9.15	9.16	2.57	7.81	7.80
50th-Percentile Queue Length [ft/ln]	96.92	23.27	42.02	9.03	127.27	264.26	228.65	229.08	64.24	195.28	194.98
95th-Percentile Queue Length [veh/ln]	6.98	1.68	3.03	0.65	8.79	15.90	14.11	14.13	4.63	12.39	12.38
95th-Percentile Queue Length [ft/ln]	174.45	41.89	75.64	16.26	219.77	397.56	352.64	353.19	115.64	309.87	309.48

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.84	32.56	32.56	56.07	36.01	18.80	40.51	17.44	17.65	51.56	30.84	30.84
Movement LOS	D	C	C	E	D	B	D	B	B	D	C	C
Critical Movement	No	No	No	Yes	No	No	No	No	No	No	No	No
d_A, Approach Delay [s/veh]	46.45			25.01			23.55			33.21		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	27.83											
Intersection LOS	C											
Intersection V/C	0.845											

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	124	0	257	0	372	358	235	272	0
2	SR-215 NB Ramps at Ethanac Road	257	0	124	0	0	0	358	139	0	0	250	235
3	Encanto Drive at Ethanac Road	59	0	0	0	0	0	0	233	30	0	434	0
4	Trumble Road at Ethanac Road	59	0	0	0	0	7	11	193	30	0	368	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	274	0	452	0	385	366	194	472	0
2	SR-215 NB Ramps at Ethanac Road	452	0	274	0	0	0	366	293	0	0	214	194
3	Encanto Drive at Ethanac Road	49	0	0	0	0	0	0	498	67	0	372	0
4	Trumble Road at Ethanac Road	49	0	0	0	0	12	11	420	67	0	311	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	23	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	84	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	124	0	366	0	412	381	235	349	0
2	SR-215 NB Ramps at Ethanac Road	323	0	124	0	0	0	395	142	0	0	261	235
3	Encanto Drive at Ethanac Road	59	0	0	0	0	0	0	236	30	0	445	0
4	Trumble Road at Ethanac Road	59	0	0	0	0	7	11	196	30	0	379	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	274	0	495	0	522	450	194	500	0
2	SR-215 NB Ramps at Ethanac Road	477	0	274	0	0	0	492	304	0	0	217	194
3	Encanto Drive at Ethanac Road	49	0	0	0	0	0	0	509	67	0	375	0
4	Trumble Road at Ethanac Road	49	0	0	0	0	12	11	431	67	0	314	0

Int. #: 1 SR-215 SB Ramps at Ethanac Road

Zone # 5 1,6,21

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In						24%					25%	
N	0%	0%	0%	0%	0%	0%	0%	26%	24%	0%	0%	0%
AM Out								26%	24%			
PM In	0%	0%	0%	0%	0%	24%	0%	0%	0%	0%	26%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	26%	24%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	762	0	0	0	0	0	183	0	0	0	0	198	0
AM Out	736	0	0	0	0	0	0	191	177	0	0	0	0
PM In	1,019	0	0	0	0	0	245	0	0	0	0	265	0
PM Out	971	0	0	0	0	0	0	252	233	0	0	0	0

Zone # 6 8, 14, 15,16,17, 18

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	592	0	0	0	118	0	0	0	0	0	0	0	0
AM Out	1,176	0	0	0	0	0	0	0	0	0	235	0	0
PM In	1,338	0	0	0	268	0	0	0	0	0	0	0	0
PM Out	970	0	0	0	0	0	0	0	0	0	194	0	0

Zone # 7 7,12,13,22

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In						35%					35%	
N	0%	0%	0%	0%	0%	0%	0%	35%	35%	0%	0%	0%
AM Out								35%	35%			
PM In	0%	0%	0%	0%	0%	35%	0%	0%	0%	0%	35%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	35%	35%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	100	0	0	0	0	0	35	0	0	0	0	35	0
AM Out	184	0	0	0	0	0	0	64	64	0	0	0	0
PM In	216	0	0	0	0	0	76	0	0	0	0	76	0
PM Out	160	0	0	0	0	0	0	56	56	0	0	0	0

Zone # 8 2,3

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In				15%								
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	15%	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	38	0	0	0	6	0	0	0	0	0	0	0	0
AM Out	24	0	0	0	0	0	0	0	0	0	0	0	0
PM In	38	0	0	0	6	0	0	0	0	0	0	0	0
PM Out	40	0	0	0	0	0	0	0	0	0	0	0	0

Zone # 9 10,11,24

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In						25%					25%	
N	0%	0%	0%	0%	0%	0%	0%	25%	25%	0%	0%	0%
AM Out								25%	25%			
PM In	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	25%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	25%	25%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	156	0	0	0	0	0	39	0	0	0	0	39	0
AM Out	466	0	0	0	0	0	0	117	117	0	0	0	0
PM In	522	0	0	0	0	0	131	0	0	0	0	131	0
PM Out	307	0	0	0	0	0	0	77	77	0	0	0	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		257	0	124	0	0	0	0	124	0	0	15	0
AM Out		0	0	0	0	0	0	358	15	0	0	235	235
AM Tot		257	0	124	0	0	0	358	139	0	0	250	235
PM In		452	0	274	0	0	0	0	274	0	0	20	0
PM Out		0	0	0	0	0	0	366	19	0	0	194	194
PM Tot		452	0	274	0	0	0	366	293	0	0	214	194

Zone # 1 1

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	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	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	0

Zone # 2 19,20

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	147	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	120	0	0	0	0	0	0	0	0	0	0	0	0
PM In	165	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	156	0	0	0	0	0	0	0	0	0	0	0	0

Zone # 3 23, 24, 27

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	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	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	0

Zone # 4 4,5,9,23

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	71	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	194	0	0	0	0	0	0	0	0	0	0	0	0
PM In	222	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	137	0	0	0	0	0	0	0	0	0	0	0	0

Zone # 5 1,6,21

Int. #: 2 SR-215 NB Ramps at Ethanac Road

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	24%										2%	
N	0%	0%	0%	0%	0%	0%	24%	2%	0%	0%	0%	0%
AM Out							24%	2%				
PM In	24%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%
PM Out	0%	0%	0%	0%	0%	0%	24%	2%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	762	183	0	0	0	0	0	0	0	0	0	15	0
AM Out	736	0	0	0	0	0	0	177	15	0	0	0	0
PM In	1,019	245	0	0	0	0	0	0	0	0	0	20	0
PM Out	971	0	0	0	0	0	0	233	19	0	0	0	0

Zone # 6 8, 14, 15,16,17, 18

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	592	0	0	118	0	0	0	0	118	0	0	0	0
AM Out	1,176	0	0	0	0	0	0	0	0	0	235	235	
PM In	1,338	0	0	268	0	0	0	0	268	0	0	0	0
PM Out	970	0	0	0	0	0	0	0	0	0	194	194	

Zone # 7 7,12,13,22

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	35%											
N	0%	0%	0%	0%	0%	0%	35%	0%	0%	0%	0%	0%
AM Out							35%					
PM In	35%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	35%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	100	35	0	0	0	0	0	0	0	0	0	0	0
AM Out	184	0	0	0	0	0	0	64	0	0	0	0	0
PM In	216	76	0	0	0	0	0	0	0	0	0	0	0
PM Out	160	0	0	0	0	0	0	56	0	0	0	0	0

Zone # 8 2,3

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In			15%					15%				
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	15%	0%	0%	0%	0%	15%	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	38	0	0	6	0	0	0	0	6	0	0	0	0
AM Out	24	0	0	0	0	0	0	0	0	0	0	0	0
PM In	38	0	0	6	0	0	0	0	6	0	0	0	0
PM Out	40	0	0	0	0	0	0	0	0	0	0	0	0

Zone # 9 10,11,24

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	25%											
N	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%
AM Out							25%					
PM In	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	156	39	0	0	0	0	0	0	0	0	0	0	0
AM Out	466	0	0	0	0	0	0	117	0	0	0	0	0
PM In	522	131	0	0	0	0	0	0	0	0	0	0	0
PM Out	307	0	0	0	0	0	0	77	0	0	0	0	0

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	218	30	0	15	0
AM Out		59	0	0	0	0	0	0	15	0	0	419	0
AM Tot		59	0	0	0	0	0	0	233	30	0	434	0
PM In		0	0	0	0	0	0	0	479	67	0	20	0
PM Out		49	0	0	0	0	0	0	19	0	0	352	0
PM Tot		49	0	0	0	0	0	0	498	67	0	372	0

Zone # 1 1

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	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	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	0

Zone # 2 19,20

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	147	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	120	0	0	0	0	0	0	0	0	0	0	0	0
PM In	165	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	156	0	0	0	0	0	0	0	0	0	0	0	0

Zone # 3 23, 24, 27

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	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	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	0

Zone # 4 4,5,9,23

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	71	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	194	0	0	0	0	0	0	0	0	0	0	0	0
PM In	222	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	137	0	0	0	0	0	0	0	0	0	0	0	0

Zone # 5 1,6,21

Int. #: 3 Encanto Drive at Ethanac Road

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In											2%	
Y	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	762	0	0	0	0	0	0	0	0	0	0	15	0
AM Out	736	0	0	0	0	0	0	0	15	0	0	0	0
PM In	1,019	0	0	0	0	0	0	0	0	0	0	20	0
PM Out	971	0	0	0	0	0	0	0	19	0	0	0	0

Zone # 6 8, 14, 15,16,17, 18

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								35%	5%			
Y	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	35%	5%	0%	0%	0%
PM Out	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	592	0	0	0	0	0	0	0	207	30	0	0	0
AM Out	1,176	59	0	0	0	0	0	0	0	0	0	412	0
PM In	1,338	0	0	0	0	0	0	0	468	67	0	0	0
PM Out	970	49	0	0	0	0	0	0	0	0	0	340	0

Zone # 7 7,12,13,22

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	100	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	184	0	0	0	0	0	0	0	0	0	0	0	0
PM In	216	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	160	0	0	0	0	0	0	0	0	0	0	0	0

Zone # 8 2,3

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								30%				
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	38	0	0	0	0	0	0	0	11	0	0	0	0
AM Out	24	0	0	0	0	0	0	0	0	0	0	7	0
PM In	38	0	0	0	0	0	0	0	11	0	0	0	0
PM Out	40	0	0	0	0	0	0	0	0	0	0	12	0

Zone # 9 10,11,24

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	156	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	466	0	0	0	0	0	0	0	0	0	0	0	0
PM In	522	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	307	0	0	0	0	0	0	0	0	0	0	0	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	11	178	30	0	15	0
AM Out		59	0	0	0	0	7	0	15	0	0	353	0
AM Tot		59	0	0	0	0	7	11	193	30	0	368	0
PM In		0	0	0	0	0	0	11	401	67	0	20	0
PM Out		49	0	0	0	0	12	0	19	0	0	291	0
PM Tot		49	0	0	0	0	12	11	420	67	0	311	0

Zone # 1 1

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	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	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	0

Zone # 2 19,20

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	147	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	120	0	0	0	0	0	0	0	0	0	0	0	0
PM In	165	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	156	0	0	0	0	0	0	0	0	0	0	0	0

Zone # 3 23, 24, 27

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	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	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	0

Zone # 4 4,5,9,23

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	71	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	194	0	0	0	0	0	0	0	0	0	0	0	0
PM In	222	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	137	0	0	0	0	0	0	0	0	0	0	0	0

Zone # 5 1,6,21

Int. #: 4 Trumble Road at Ethanac Road

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In											2%	
Y	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	762	0	0	0	0	0	0	0	0	0	0	15	0
AM Out	736	0	0	0	0	0	0	0	15	0	0	0	0
PM In	1,019	0	0	0	0	0	0	0	0	0	0	20	0
PM Out	971	0	0	0	0	0	0	0	19	0	0	0	0

Zone # 6 8, 14, 15,16,17, 18

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In								30%	5%			
Y	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	30%	5%	0%	0%	0%
PM Out	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	592	0	0	0	0	0	0	0	178	30	0	0	0
AM Out	1,176	59	0	0	0	0	0	0	0	0	0	353	0
PM In	1,338	0	0	0	0	0	0	0	401	67	0	0	0
PM Out	970	49	0	0	0	0	0	0	0	0	0	291	0

Zone # 7 7,12,13,22

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	100	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	184	0	0	0	0	0	0	0	0	0	0	0	0
PM In	216	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	160	0	0	0	0	0	0	0	0	0	0	0	0

Zone # 8 2,3

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In							30%					
Y	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	38	0	0	0	0	0	0	11	0	0	0	0	0
AM Out	24	0	0	0	0	0	7	0	0	0	0	0	0
PM In	38	0	0	0	0	0	0	11	0	0	0	0	0
PM Out	40	0	0	0	0	0	12	0	0	0	0	0	0

Zone # 9 10,11,24

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	156	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	466	0	0	0	0	0	0	0	0	0	0	0	0
PM In	522	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	307	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX F

**DRIVE-THROUGH
QUEUING ANALYSIS**

DRIVE-THROUGH QUEUING ANALYSIS

Project: Perris Travel Center - Drive-Through Restaurant
Location: NWC Ethanac Road at Trumble Road, Perris, CA

INPUT VALUES

Variable	Description	Value
A =	average number of vehicle arrivals per hour ¹	30
S =	service rate, number of vehicles per hour ²	38
I =	traffic intensity, utilization factor = A/S	0.79
Q =	queue capacity (vehicles)	5

FORMULAS

Average Length of Queue		
	$\text{Avg } Q = A^2 / S(S-A) = I^2 / 1-I$	2.96
Probability of Q Number of Vehicles in Queue		
	$P(Q) = (I)^Q (1-I)$	6.46%
Probability of Queue Exceeding Q Vehicles (5 Vehicles)		
	$P(Q > a) = 1 - \sum_{Q=0}^{Q=a} P(Q)$	24.21%

¹ Arrival rate assumes 60% of inbound traffic for the drive-through restaurant during the peak hour will use the drive-through.

² Service rate conservatively assumes 250 seconds of lost time for the first vehicle of the hour to move forward from the order board to the service window, while the remainder of the vehicles are assumed to be processed at a rate of 90 sec/veh

Source: Institute of Transportation Engineers (ITE)
 Transportation Planning Handbook, 3rd Edition

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 DIS	CITY	STREETNAME	SEGMENTFROM	SEGMENTO	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	Hammer		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:



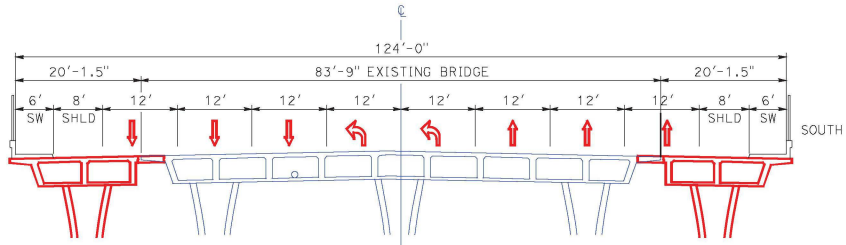
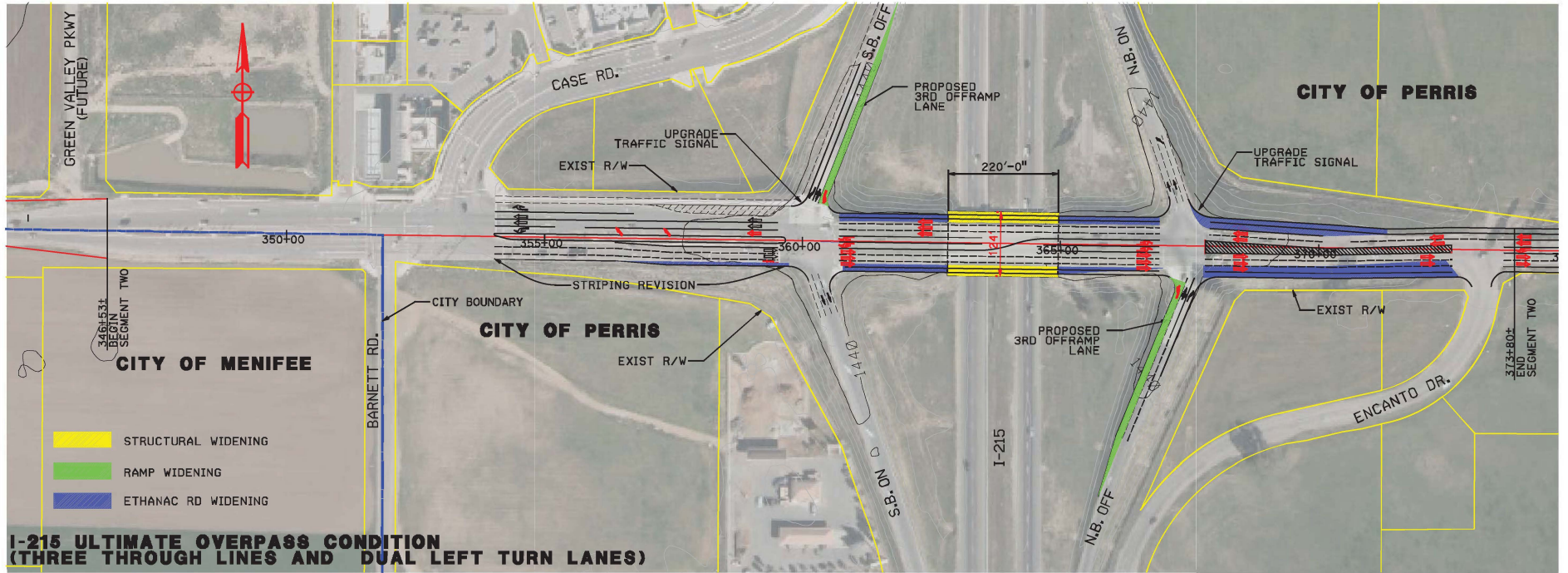
CNS Engineers, Inc.
10370 Hemet Street, Suite 230
Riverside, CA 92503

August 2014
Revised January 2016

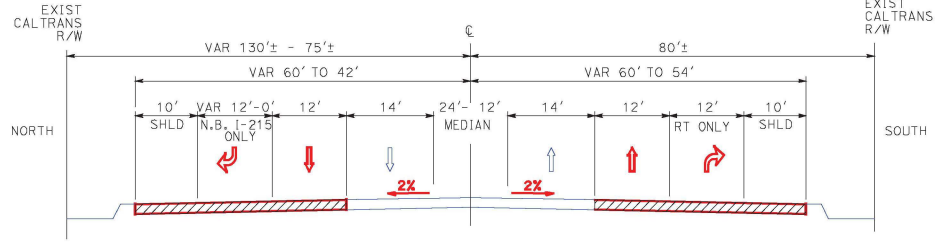


Attachment 2

SEGMENT TWO - Preliminary Roadway Layouts



ETHANAC DRIVE AT I-215 WITH DUAL LEFT TURN ALTERNATIVE



ETHANAC DRIVE FROM NORTHBOUND I-215 RAMP TO ENCANTO DR TO SUPPORT DUAL LEFT TURN RAMP AT THE INTERCHANGE

PLANNING STUDY

CNS ENGINEERS, INC.

APPROVED BY: _____

PREPARED BY: _____ DATE: _____

10370 HEMET ST., 5th FLOOR
RIVERSIDE, CA 92503

USERNAME => MUSER
DGN FILE => BREQUEST

PLAN VIEW AND SECTIONS

SEGMENT TWO
ETHANAC ROAD GAP CLOSURE PROJECT
ALTERNATIVE 2A -
ULTIMATE INTERCHANGE

COUNTY FILE NO. _____

SHEET No.

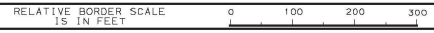
SHEET 1 of 2

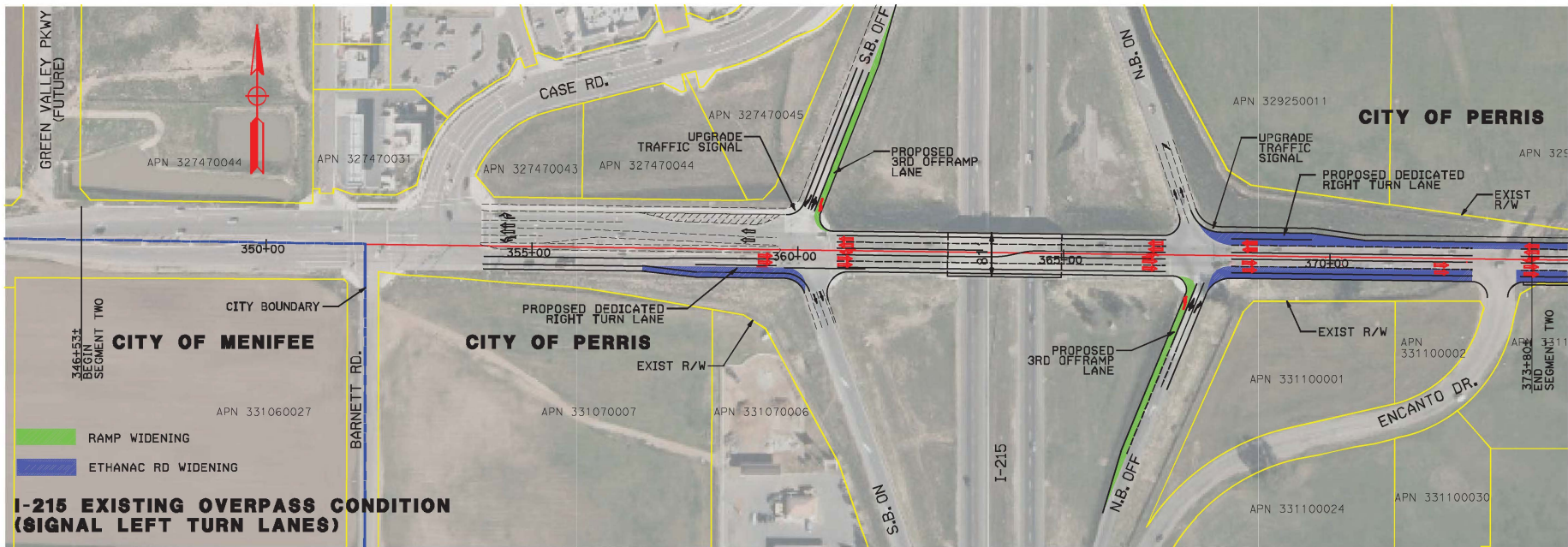
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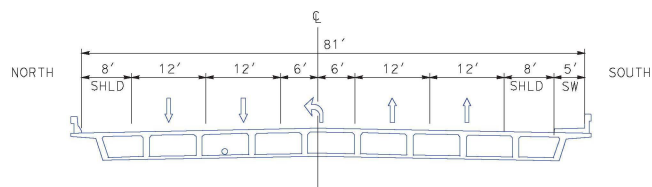
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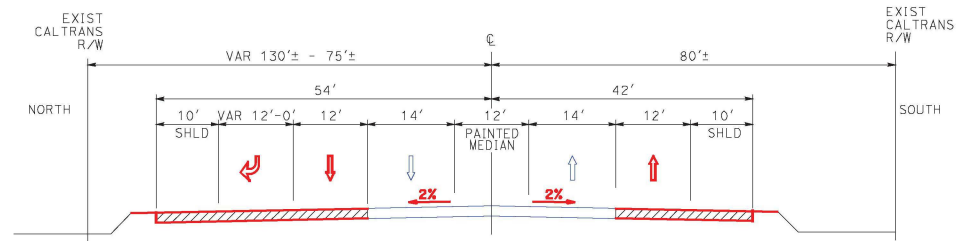




**I-215 EXISTING OVERPASS CONDITION
(SIGNAL LEFT TURN LANES)**



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



<p>CNS ENGINEERS, INC.</p> <p>APPROVED BY: _____</p> <p>PREPARED BY: _____ DATE: _____</p> <p>10370 HEMET ST., SUITE 230 RIVERSIDE, CA 92503</p>	<p>PLAN VIEW AND SECTIONS</p> <p>SEGMENT TWO ETHANAC ROAD GAP CLOSURE PROJECT</p> <p>ALTERNATIVE 2B - EXISTING OVERPASS</p>	<p>SHEET No.</p> <p>SHEET 2 OF 2</p>
		<p>COUNTY FILE No.</p> <p>WO XX-XXXX</p>

DATE: 09/22/2015