APPENDIX K1

TRAFFIC ANALYSIS

HERITAGE VALLEY BUSINESS CENTER (PLN24-0195, PLN24-0197, PLN24-0198, PLN24-0199)

TRAFFIC ANALYSIS

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16568-06 TA Report	City of Menifee	February 24, 2026

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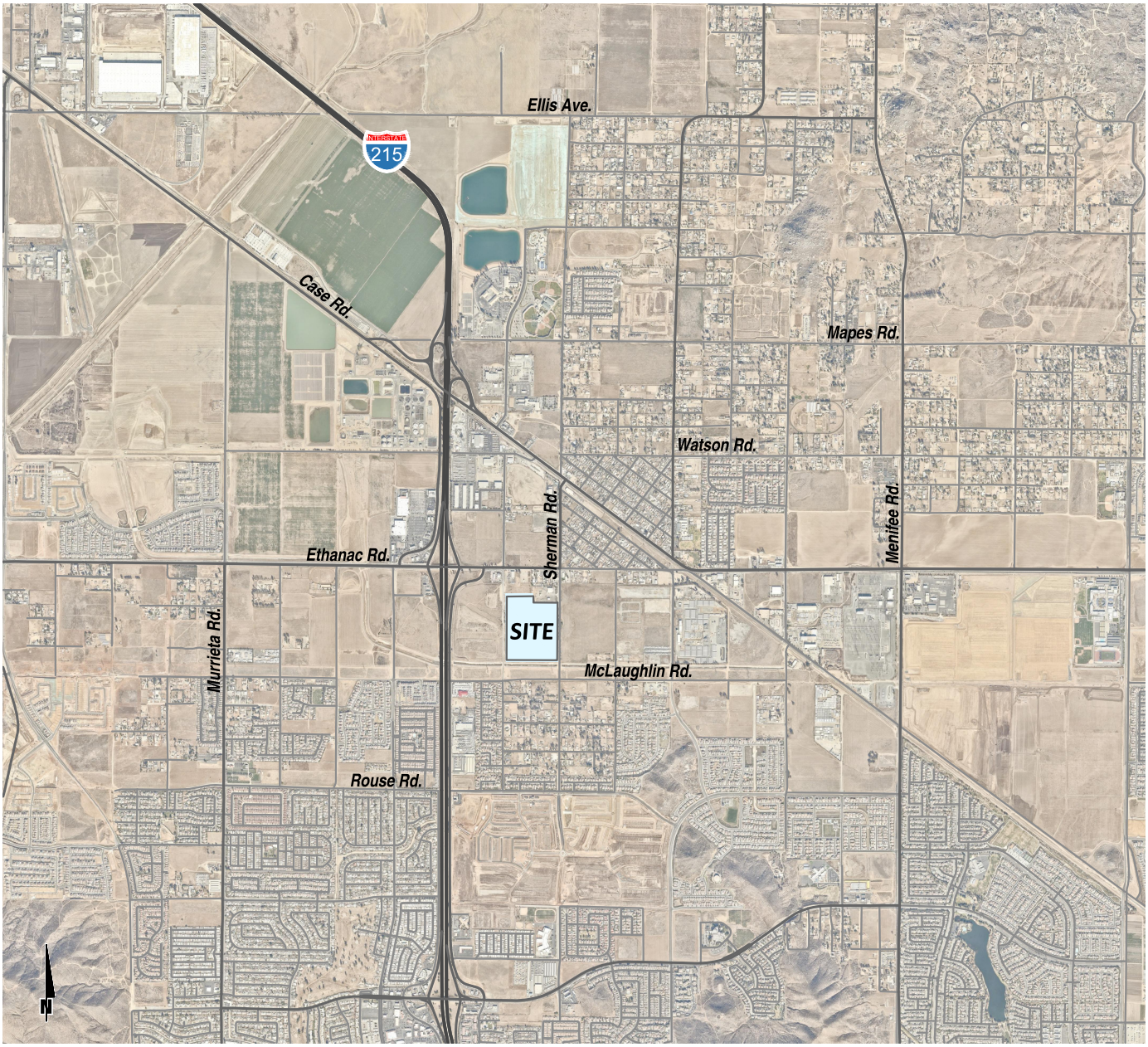
(1)	Reference
ADT	Average Daily Traffic
APN	Assessor's Parcel Number
CAMUTCD	California Manual on Uniform Traffic Control Devices
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
DIF	Development Impact Fee
E+P	Existing plus Project
EAC	Existing plus Ambient Growth plus Cumulative
EAPC	Existing plus Ambient Growth plus Project plus Cumulative
EIR	Environmental Impact Report
HCM	Highway Capacity Manual
ITE	Institute of Transportation Engineers
LOS	Level of Service
NCHRP	National Cooperative Highway Research Program
NOP	Notice of Preparation
OPR	Office of Planning and Research
PCE	Passenger Car Equivalent
PHF	Peak Hour Factor
Project	Heritage Valley Business Center
RCTC	Riverside County Transportation Commission
RIVCOM	Riverside County Transportation Analysis Model
RTA	Riverside Transit Authority
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SHS	State Highway System
TA	Traffic Analysis
TPM	Tentative Parcel Map
TUMF	Transportation Uniform Mitigation Fee
V/C	Volume-to-Capacity Ratio
VMT	Vehicle Miles Traveled
vphgpl	Vehicles per Hour Green per Lane
WRCOG	Western Riverside Council of Governments

1 SUMMARY OF FINDINGS

This report presents the results of the Traffic Analysis (TA) for the Heritage Valley Business Center (Project), which is located south of Ethanac Road, east of Trumble Road, west of Sherman Road, and north of McLaughlin Road in the City of Menifee (Assessor's Parcel Number (APN) 331-110-023, 024-027, 031, 035, 038, 039, and 041), as shown in Exhibit 1-1.

The purpose of this TA is to evaluate the potential circulation system deficiencies that may result when the Project is developed and where circulation system (intersection and/or roadway) improvements are needed to maintain acceptable levels of service consistent with the City's General Plan level of service goals and policies, which are described in the City of Menifee's Level of Service (LOS) Traffic Study Guidelines (October 2020) (City Guidelines) and through consultation with City of Menifee staff during the scoping process. (1) The TA Scoping Agreement is included in Appendix 1.1 and has been reviewed and approved by the City of Menifee.

EXHIBIT 1-1 : LOCATION MAP



1.1 PROJECT OVERVIEW

1.1.1 Land Use

The Project includes the development of an 829,755 square foot warehouse building which includes 10,000 square feet of office support space on a 41.16-acre site (see Exhibit 1-2). It is our understanding the proposed Project Planning Application consists of a Plot Plan (PLN24-0195), General Plan Amendment (PLN24-0197) to change the land use from Heavy Industrial to Menifee North Specific Plan for APNs 331-110-024, 025, and 026, Change of Zone (PLN24-0198) to change to zoning from Heavy Industrial to Menifee North Specific Plan for APNs 331-110-024, 025, and 026, and a Specific Plan Amendment (PLN24-0199) to modify the boundary of the existing Menifee North Specific Plan to include the proposed Project and designating it as Planning Area 2 (Industrial).

The site is currently occupied by a few non-conforming existing residential units and businesses. Driveway counts were collected to determine the trips associated with the existing uses in order to be utilized as a credit against the Project trip generation. Existing traffic counts were collected in May 2025 and due to the short time period between the collection of counts and the publication of the Notice of Preparation (NOP), the baseline condition for the Environmental Impact Report (EIR) is reflective of the current traffic counts.

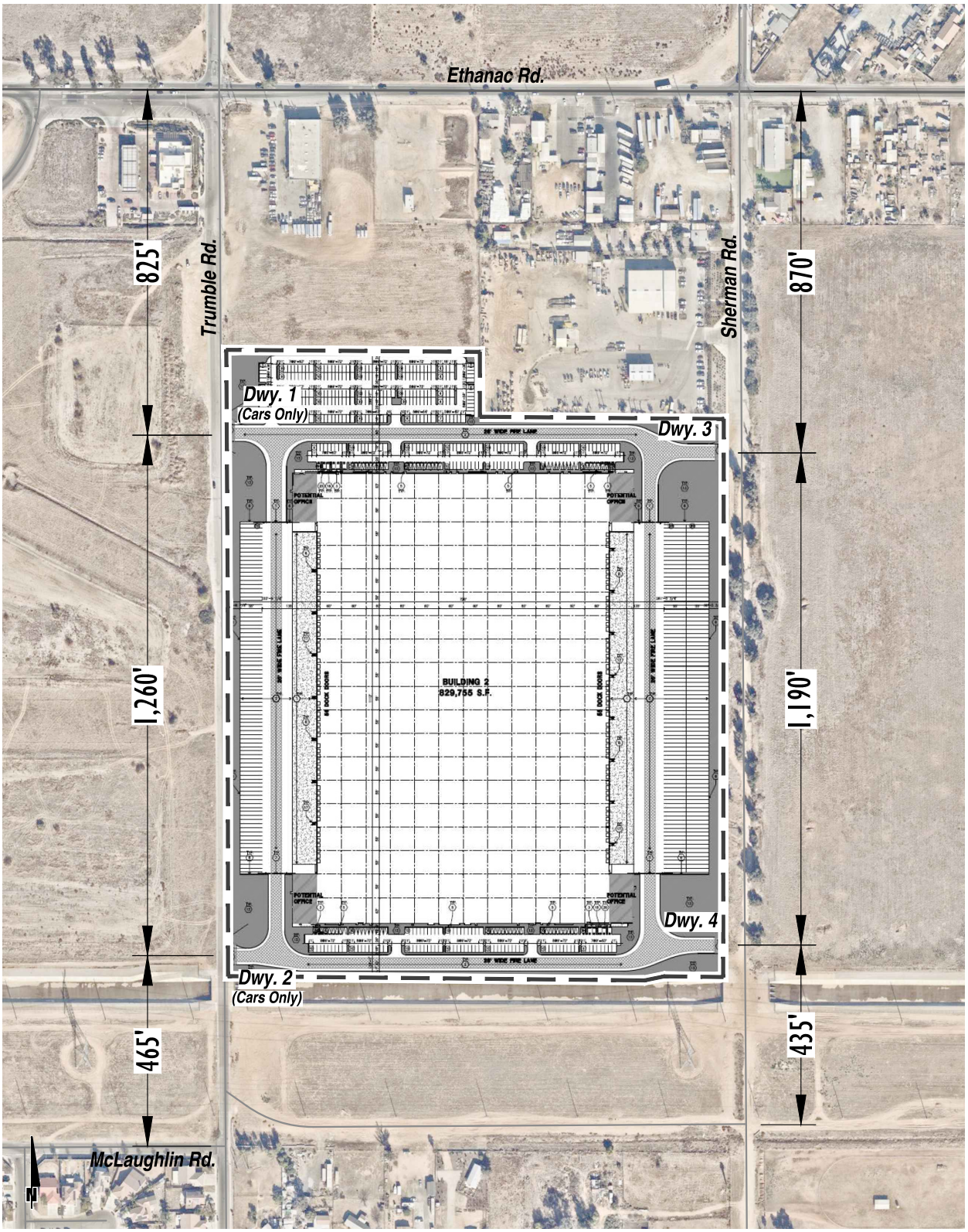
The proposed Project is anticipated to have an Opening Year of 2028. Access is proposed along Trumble Road (via two passenger car driveways only) and Sherman Road (via two driveways that would serve cars and trucks). All driveways are assumed to allow for full access (no turn restrictions).

1.1.2 Trip Generation

In order to develop the traffic characteristics of the proposed Project, trip-generation statistics published in the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition, 2021) for Warehousing (ITE Land Use Code 150) and truck mix from ITE's Trip Generation Manual along with truck mix (by axle) type per the South Coast Air Quality Management District (SCAQMD). (2)

The Project is anticipated to generate a total of 1,422 vehicle trip-ends per day with 142 AM peak hour trips and 149 PM peak hour trips (in actual vehicles, refer to Table 4-3). The assumptions and methods used to estimate the Project's trip generation characteristics are discussed in greater detail in Section 4.1 *Project Trip Generation* of this report.

EXHIBIT 1-2 : PRELIMINARY SITE PLAN



1.2 ANALYSIS SCENARIOS

For the purposes of this TA, peak hour intersection operations have been evaluated for each of the following traffic conditions:

- Existing (2025) Conditions
- Existing plus Project (E+P) Conditions
- Existing plus Ambient Growth plus Cumulative (EAC) (2028) Conditions
- Existing plus Ambient Growth plus Project plus Cumulative (EAPC) (2028) Conditions
- Horizon Year (2045) Without Project
- Horizon Year (2045) With Project

1.2.1 Existing (2025) Conditions

Information for Existing (2025) conditions is disclosed to represent the baseline traffic conditions as they existed at the time this report was prepared. Local schools were in session with in-person instruction at the time of the traffic counts. As such, no further adjustments were made to the existing baseline traffic counts.

1.2.2 E+P Conditions

The E+P conditions analyses determine the potential circulation system deficiencies based on a comparison of the E+P traffic conditions to Existing conditions. The roadway network is similar to Existing conditions except for new connections to be constructed by the Project. No background growth is included in this analysis scenario. Consistent with City Guidelines, the E+P analysis is intended to identify deficiencies associated with the development of the proposed Project.

1.2.3 EAC & EAPC (2028) Conditions

The EAC and EAPC (2028) traffic conditions analysis determines the potential near-term cumulative circulation system deficiencies. The roadway network is similar to Existing conditions except for new connections to be constructed by the Project. To account for background traffic growth, an ambient growth factor from Existing (2025) conditions of 6.12% (2 percent per year, compounded over 3 years) is included for EAC and EAPC (2028) traffic conditions. The assumed ambient growth factor is based on the requirements per the City Guidelines and the approved Traffic Study Scoping Agreement. A comparison of the EAC and EAPC analysis scenarios is intended to identify "Opening Year" cumulative deficiencies associated with the development of the proposed Project based on the expected background growth within the study area. Conservatively, this TA estimates the area's ambient traffic growth and then adds traffic generated by other known or probable related projects. These related projects are at least in part already accounted for in the assumed ambient growth rates; and some of these related projects may not be implemented and operational within the 2028 Opening Year time frame assumed for Project Buildout. The resulting traffic growth utilized in the TA would therefore tend to overstate rather than understate background cumulative traffic deficiencies under 2028 traffic conditions.

1.2.4 Horizon Year (2045) Conditions

Traffic projections for Horizon Year (2045) Without Project conditions were derived from the County of Riverside refined version of the Riverside County Transportation Analysis Model (RIVCOM) using accepted procedures for model forecast refinement and smoothing. Project traffic was then manually added for Horizon Year (2045) With Project traffic conditions. Cumulative projects have been included for the long-range forecasts developed from RIVCOM.

The Horizon Year conditions analysis has been utilized to determine if improvements funded through regional transportation mitigation fee programs, such as the Western Riverside Council of Governments (WRCOG) Transportation Uniform Mitigation Fee (TUMF) program, can accommodate the long-range cumulative traffic at the target LOS identified in the City of Menifee (lead agency) General Plan. (3) Each of these regional transportation fee programs are discussed in more detail in Section 8 *Local and Regional Funding Mechanisms*.

1.3 Study Area

To ensure that this TA satisfies the City of Menifee's traffic study requirements, Urban Crossroads, Inc. prepared a Project traffic study scoping package for review by City of Menifee staff prior to the preparation of this report. This agreement provides an outline of the Project study area, trip generation, trip distribution, and analysis methodology. The scoping agreement is included in Appendix 1.1 of this TA. The scoping agreement was also reviewed and approved by the City of Perris. Where applicable, City of Perris guidelines have been applied to City intersections.

1.3.1 Intersections

For the purposes of this TA, 9 study area intersections were selected for evaluation based on City Guidelines and consultation with City staff. (1) The 9 study area intersections shown in Exhibit 1-3 and listed in Table 1-1 have been selected for assessment based on the City's analysis criteria of 50 or more peak hour trips. The "50 peak hour trip" criterion represents a minimum number of trips at which a typical intersection would have the potential to be substantively affected by a given development proposal. The 50 peak hour trip criterion is a traffic engineering rule of thumb that is accepted and widely used within Riverside County including the City of Menifee and City of Perris for estimating a potential area of influence (i.e., study area).

Table 1-1: Intersection Analysis Locations

ID	Intersection	Jurisdiction
1	I-215 SB Ramps & Ethanac Rd.	Caltrans, City of Perris
2	I-215 NB Ramps & Ethanac Rd.	Caltrans, City of Perris
3	Encanto Dr. & Ethanac Rd.	City of Perris
4	Trumble Rd. & Ethanac Rd.	City of Menifee, City of Perris
5	Trumble Rd. & Driveway 1	City of Menifee
6	Trumble Rd. & Driveway 2	City of Menifee
7	Sherman Rd. & Ethanac Rd.	City of Menifee, City of Perris
8	Sherman Rd. & Driveway 3	City of Menifee
9	Sherman Rd. & Driveway 4	City of Menifee

EXHIBIT 1-3 : STUDY AREA



LEGEND:

0 = *Existing Intersection Analysis Location*

(0) = *Future Intersection Analysis Location*

1.3.2 Roadway Segments

Based on consultation with City of Menifee and City of Perris staff, the study area roadway segments selected for evaluation are listed in Table 1-2.

TABLE 1-2: ROADWAY SEGMENT CAPACITY ANALYSIS LOCATIONS

#	Roadway	Segment Limits
1	Ethanac Rd.	I-215 Freeway to Encanto Dr.
2	Ethanac Rd.	Encanto Dr. to Trumble Rd.
3	Ethanac Rd.	Trumble Rd. to Sherman Rd.
4	Trumble Rd.	South of Ethanac Rd.
5	Sherman Rd.	South of Ethanac Rd.

1.4 GENERAL PLAN CONSISTENCY REQUIREMENTS FOR INTERSECTIONS

This section provides a brief overview of the intersection LOS deficiencies identified in this report. The LOS standards used for this assessment are consistent with those identified in the City of Menifee General Plan. Section 2 *Methodologies* provides a detailed explanation on the methodologies used for this assessment, while Section 3 *Area Conditions*, Section 5 *E+P Traffic Conditions*, Section 6 *EAC & EAPC (2028) Traffic Conditions,* and Section 7 *Horizon Year (2045) Traffic Conditions* include the operations analysis results for each analysis scenario. Additionally, a summary of the peak hour LOS analysis results is presented in Table 1-3.

1.4.1 Existing (2025) & E+P Conditions

Intersections

The assessment of Existing (2025) traffic conditions is performed to establish a baseline of current LOS operations from which the effects of the Project's future contribution of traffic can be measured. The study area intersections were found to currently operate at an acceptable LOS (i.e., at or above the City of Menifee's adopted General Plan thresholds) during the peak hours, with the exception of the following intersection:

- Sherman Rd. & Ethanac Rd. (#7) – LOS F AM peak hour and LOS E PM peak hour

The addition of Project traffic under E+P traffic conditions is not anticipated to result in any additional deficiencies beyond those previously identified under Existing traffic conditions.

Roadway Segments

The following roadway segment is currently experiencing capacity issues:

- Ethanac Rd., between I-215 Freeway and Sherman Rd. (#1) – LOS E

The study area roadway segments are anticipated to continue to operate at an acceptable LOS with the addition of Project traffic, with the exception of the aforementioned segment that was found to be deficient under Existing traffic conditions.

Queues

There are no freeway off-ramp movements currently experiencing queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows. There is no queuing issues anticipated with the addition of Project traffic. However, the eastbound left and westbound through movements at the I-215 Northbound Ramps on Ethanac Road 95th percentile queues are anticipated to exceed the available storage during the morning and evening peak hours. Note that the eastbound left turn movement is not associated with the Project as the Project does not contribute traffic to this turning movement. In addition, the westbound through queue would be resolved with the planned access restriction to right-in/right-out at Encanto Drive which would provide additional storage for the westbound approach.

1.4.2 EAC & EAPC (2028) and Horizon Year (2045) Conditions

An assessment of EAC & EAPC and Horizon Year traffic conditions is performed to identify whether the traffic contribution associated with the Project and that of other reasonably foreseeable future development projects in the area have the potential to cause intersection LOS to fall below the City's adopted thresholds. The Project's contribution to these forecasted LOS deficiencies is typically addressed through fee payments to an established fee program (both local and regional).

The results of the LOS assessments for EAC & EAPC (2028) and Horizon Year (2045) traffic conditions are also summarized in Table 1-3, while Section 6 *EAC & EAPC (2028) Traffic Conditions* and Section 7 *Horizon Year (2045) Traffic Conditions* of the report provide a more detailed list of the forecast LOS deficiencies.

TABLE 1-3 : SUMMARY OF LOS

		Existing	E + P	2028 NP	2028 WP	2045 NP	2045 WP
1	I-215 SB Ramps & Ethanac Rd.	●	●	●	●	●	●
2	I-215 NB Ramps & Ethanac Rd.	●	●	●	●	●	●
3	Encanto Dr. & Ethanac Rd.	●	●	●	●	●	●
4	Trumble Rd. & Ethanac Rd.	●	●	●	●	●	●
5	Trumble Rd. & Driveway 1	N/A	●	N/A	●	N/A	●
6	Trumble Rd. & Driveway 2	N/A	●	N/A	●	N/A	●
7	Sherman Rd. & Ethanac Rd.	◐	●	●	●	●	●
8	SHerman Rd. & Driveway 3	N/A	●	N/A	●	N/A	●
9	Sherman Rd. & Driveway 4	N/A	●	N/A	●	N/A	●

LEGEND:

◖ = *AM Peak Hour*
◗ = *PM Peak Hour*
● = *A-D*
● = *E*
● = *F*

1.5 RECOMMENDATIONS

1.5.1 Intersection Improvement Recommendations Necessary to Maintain General Plan Consistency

The summary of intersection improvement recommendations necessary per the thresholds outlined in each agency's Guidelines and maintain the General Plan LOS standards are provided in Table 1-4. For those improvements listed in Table 1-4 and not constructed as part of the Project, the Project Applicant's responsibility for the Project's contributions towards deficient intersections is fulfilled through payment of fees or fair share that would be assigned to construction of the identified recommended improvements. The Project Applicant would be required to pay fair share fees consistent with the City's requirements (see Section 8 *Local and Regional Funding Mechanisms*).

TABLE 1-4: SUMMARY OF IMPROVEMENTS BY ANALYSIS SCENARIO (1 OF 2)

#	Intersection	Jurisdiction	Analysis Scenarios			Improvements in DIF, TUMF, etc.[1,2]	Project Responsibility	2028 Fair Share	2045 Fair Share
			E+P	EAPC (2028)	2045 With Project				
1	I-215 SB Ramps & Ethanac Rd.	Perris, Caltrans	None	Add 2nd WB left turn lane	Same	No	Fair Share	1.9%	--
				Add SB left turn lane (modify southbound approach to provide one left-turn, one shared left-through-right turn lane, and one right-turn lane)	Same	No	Fair Share	1.9%	--
				Add 2nd and 3rd EB through lanes	Same	Yes (TUMF)	Fees	--	--
				Modify EB right turn lane to a free-right turn lane	Same	Yes (TUMF)	Fees	--	--
				Add 3rd WB through lane	Same	Yes (TUMF)	Fees	--	--
2	I-215 NB Ramps & Ethanac Rd.	Perris, Caltrans	None	Restripe to add 2nd EB left turn lane	Not Applicable	No	Fair Share	3.9%	--
				Restripe to add 2nd EB through lane	Same	Yes (TUMF)	Fees	--	--
				Add 2nd WB through lane	Same	Yes (TUMF)	Fees	--	--
				Add WB right turn lane	Same	Yes (TUMF)	Fees	--	--
				Add 2 NB left turn lanes	Same	Yes (TUMF)	Fees	--	--
				Add 3rd EB through lane	Same	Yes (TUMF)	Fees	--	--
				Add 3rd WB through lane	Same	Yes (TUMF)	Fees	--	--
3	Encanto Dr. & Ethanac Rd.[3]	Perris	None	Add 2nd EB through lane	Same	Yes (TUMF)	Fees	--	--
				Add 2nd WB through lane	Same	Yes (TUMF)	Fees	--	--
				Restrict access to right-in/right-out	Same	No	Fair Share	6.3%	--
					Add 3rd EB through lane	No	Fair Share	--	5.1%
					Add 3rd WB through lane	No	Fair Share	--	5.1%

TABLE 1-4: SUMMARY OF IMPROVEMENTS BY ANALYSIS SCENARIO (2 OF 2)

#	Intersection	Jurisdiction	Analysis Scenarios			Improvements in DIF, TUMF, etc.[1,2]	Project Responsibility	2028 Fair Share	2045 Fair Share
			E+P	EAPC (2028)	2045 With Project				
4	Trumble Rd. & Ethanac Rd.	Perris, Menifee	None	Add 2nd EB through lane	Same	Yes (TUMF)	Fees	--	--
				Add 2nd WB through lane	Same	Yes (TUMF)	Fees	--	--
				2nd NB left turn lane	Same	No	Fair Share	5.1%	--
				Add 3rd EB through lane	Same	No	Fair Share	5.1%	--
				Add 3rd WB through lane	Same	No	Fair Share	5.1%	--
7	Sherman Rd. & Ethanac Rd.	Perris, Menifee, County	Install a traffic signal	Same	Same	No	Construct	--	--
			Add NB left turn lane	Same	Same	No	Construct	--	--
			Add SB left turn lane	Same	Same	No	Construct	--	--
			Add EB left turn lane	Same	Same	No	Construct	--	--
			Add WB left turn lane	Same	Same	No	Construct	--	--
			Additional pavement required on the NW and SW corners	Same	Same	No	Construct	--	--
				Add 2nd EB through lane	Same	Yes (TUMF)	Fees	--	--
				Add 2nd WB through lane	Same	Yes (TUMF)	Fees	--	--
				Add 3rd EB through lane	Same	No	Fair Share	2.9%	--
				Add 3rd WB through lane	Same	No	Fair Share	2.9%	--
					Add 2nd NB left turn lane	No	Fair Share	--	2.4%
					Add EB right turn lane	No	Fair Share	--	2.4%

#	Roadway Segment	Jurisdiction	Analysis Scenarios			Improvements in DIF, TUMF, etc.[1,2]	Project Responsibility	2028 Fair Share	2045 Fair Share
			E+P	EAPC (2028)	2045 With Project				
1	Ethanac Rd., I-215 to Encanto Dr.	Perris	None	Add 2nd EBT and 2nd WBT	Same	Yes (TUMF)	Fees	--	--
					Add 3rd EBT and 3rd WBT	Yes (TUMF)	Fees	--	--
2	Ethanac Rd., Encanto Dr. to Trumble Rd.	Perris	None	Add 2nd EBT and 2nd WBT	Same	Yes (TUMF)	Fees	--	--
					Add 3rd EBT and 3rd WBT	No	Fair Share	--	3.4%
3	Ethanac Rd., Trumble Rd. to Sherman Rd.	Perris, Menifee	None	None	Add 2nd & 3rd EBT and 2nd & 3rd WBT	No	Fair Share	--	5.1%

[1] Improvements included in TUMF/City DIF programs have been identified as such.

[2] Program improvements constructed by project may be eligible for fee credit. In lieu fee payment is at the discretion of the City.

[3] Improvements are consistent with the Menifee Commerce Center TPM 38156 Signing, Striping and Traffic Signal Modification Plans, which reflect a right-in/right-out access at Encanto Drive.

1.5.2 On-Site Circulation Recommendations

The following recommendations are based on the minimum improvements needed to accommodate site access and maintain acceptable peak hour operations for each phase of the Project. The site adjacent recommendations for the Project are shown in Exhibit 1-4.

Recommendation 1 – Trumble Road & Driveway 1 (#5) – The following improvement is necessary to accommodate site access:

- Project to install a stop sign on the westbound approach and construct a westbound shared left-right turn lane (Project driveway).

Recommendation 2 – Trumble Road & Driveway 2 (#6) – The following improvements are necessary to accommodate site access:

- Project to install a stop sign on the westbound approach and construct a westbound shared left-right turn lane (Project driveway).

Recommendation 3 – Sherman Road & Driveway 3 (#8) – The following improvements are necessary to accommodate site access:

- Project to install a stop sign on the eastbound approach and construct an eastbound shared left-right turn lane (Project driveway).
- Project to construct a northbound left turn lane with a minimum of 100-feet of storage.

Recommendation 4 – Sherman Road & Driveway 4 (#9) – The following improvements are necessary to accommodate site access:

- Project to install a stop sign on the eastbound approach and construct an eastbound shared left-right turn lane (Project driveway).
- Project to construct a northbound left turn lane with a minimum of 100-feet of storage.

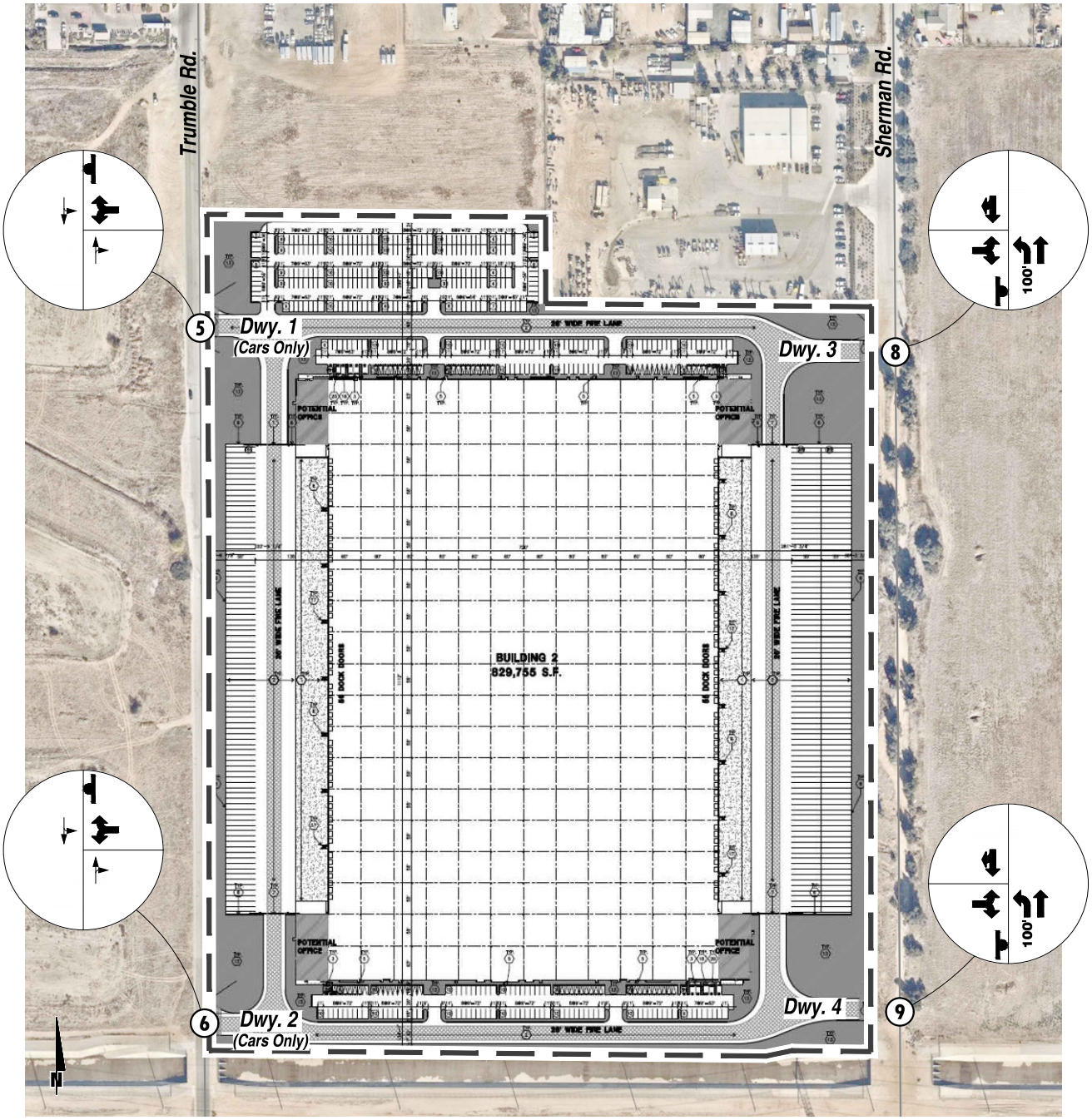
Recommendation 5 – Trumble Road is a north-south oriented roadway located on the Project's western boundary. Project to construct Trumble Road at its ultimate half-section width along the Project's frontage as a Collector (74-foot right-of-way) from the Project's southern boundary to the Project's northern boundary, consistent with the City's standards.

Recommendation 6 – Sherman Road is a north-south oriented roadway located on the Project's eastern boundary. Project to construct Sherman Road at its ultimate half-section width along the Project's frontage as a Major Roadway (100-foot right-of-way) from the Project's southern boundary to the Project's northern boundary, consistent with the City's standards. Project will construct an additional 12 feet of pavement on the east side of Sherman Road to facilitate two-way access.

On-site traffic signing and striping should be implemented agreeable with the provisions of the California Manual on Uniform Traffic Control Devices (CA MUTCD) and in conjunction with detailed construction plans for the Project site.

Sight distance at each Project access point should be reviewed with respect to standard California Department of Transportation (Caltrans) and City of Menifee sight distance standards at the time of preparation of final grading, landscape, and street improvement plans.

EXHIBIT 1-4 : SITE ACCESS RECOMMENDATIONS



LEGEND:

- (0) = *Future Intersection Analysis Location*
- = *Proposed Stop Sign*
- = *Existing Lane*
- = *Proposed Lane*

1.5.3 Queuing Analysis at Project Driveways

A queuing analysis was conducted for Horizon Year (2045) traffic conditions to verify the recommended pocket lengths for each of the future intersections anticipated to be completed as part of the Project, as discussed in Section 1.5.2 *On-Site Circulation Recommendations*. The analysis was conducted for both the weekday AM and weekday PM peak hours. The results have been provided in Appendix 1.2 and are summarized in Table 1-5. No queuing issues are anticipated at the Project access point.

SimTraffic is designed to model networks of signalized and unsignalized intersections, with the primary purpose of checking and fine-tuning signal operations. SimTraffic uses the input parameters from Synchro to generate random simulations. The 95th percentile queue is derived from the average queue plus 1.65 standard deviations. The 95th percentile queue is not necessarily ever observed; it is simply based on statistical calculations (or Average Queue plus 1.65 standard deviations). Many agencies utilize the 95th percentile queues for design purposes. A vehicle is considered queued whenever it is traveling at less than 10 feet/second. The random simulations generated by SimTraffic have been utilized to determine the 95th percentile queue lengths observed for each turn movement. A SimTraffic simulation has been recorded five (5) times, during the weekday AM and weekday PM peak hours, and has been seeded for 15-minute periods with 60-minute recording intervals.

TABLE 1-5: SITE ACCESS QUEUES FOR HORIZON YEAR (2045) CONDITIONS

#	Intersection	Movement	Available Stacking Distance (Feet)	95th Percentile Queue (Feet)[3]		Acceptable?[1]	
				AM Peak Hour	PM Peak Hour	AM	PM
5	Trumble Rd. & Driveway 1	NBT/R	1,210	0	202	Yes	Yes
		SBL/T	780	27	10	Yes	Yes
		WBL/R	200	35	117	Yes	Yes
6	Trumble Rd. & Driveway 2	SBL/T	1,210	11	6	Yes	Yes
		WBL/R	200	27	40	Yes	Yes
8	Sherman Rd. & Driveway 3	NBT	1,125	0	604	Yes	Yes
		EBL/R	180	36	87	Yes	Yes
9	Sherman Rd. & Driveway 4	NBT	240	0	94	Yes	Yes
		EBL/R	170	30	38	Yes	Yes

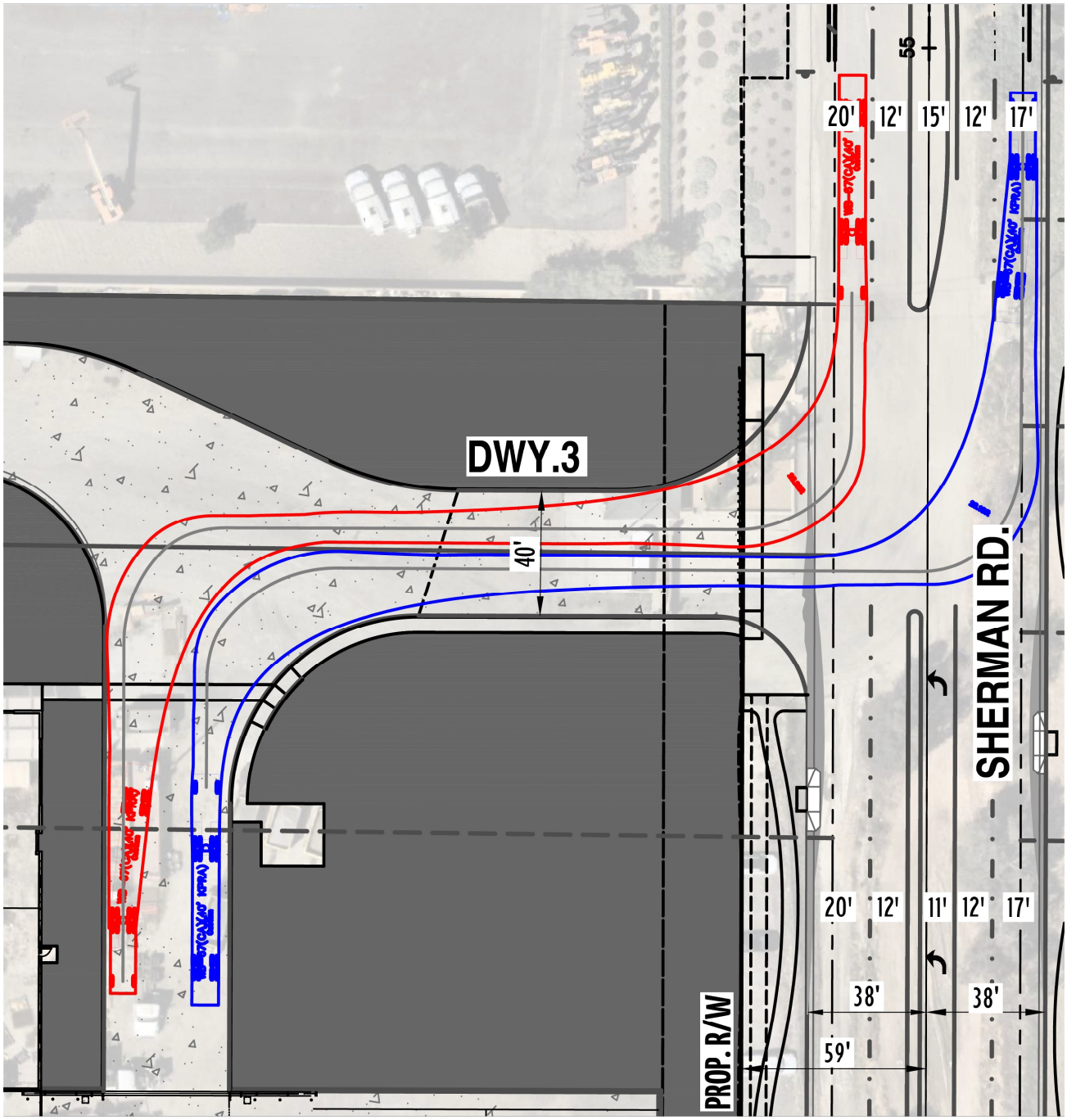
[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 25 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

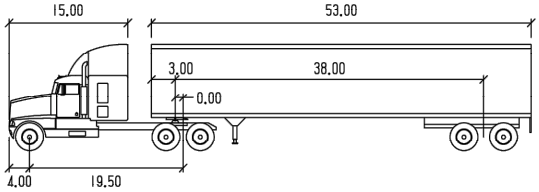
1.6 TRUCK ACCESS AND CIRCULATION

Due to the typical wide turning radius of large trucks, a truck turning template has been overlaid on the site plan at the Project driveways on Sherman Road anticipated to be utilized by heavy trucks and at the intersection of Sherman Road and Ethanac Road (#7) in order to determine appropriate curb radii and to verify that trucks will have sufficient space to execute turning maneuvers (see Exhibit 1-5). Driveway 3 as currently designed is anticipated to accommodate the ingress and egress of heavy trucks. Driveway 4 should be modified to a 55-foot curb radius on the northwest corner of the intersection as shown on Exhibit 1-5 (Sheet 2), in order to accommodate the ingress of heavy trucks. Based on the existing right-of-way, additional pavement is required on the northwest and southwest corners of the intersection of Sherman Road and Ethanac Road (#7) in order to accommodate the ingress and egress of heavy trucks, respectively.

Driveway 3 can accommodate the queuing of four trucks without extending to the street and Driveway 4 can also accommodate four trucks (see Exhibit 1-6).

EXHIBIT 1-5 : TRUCK ACCESS (SHEET 1 OF 3)



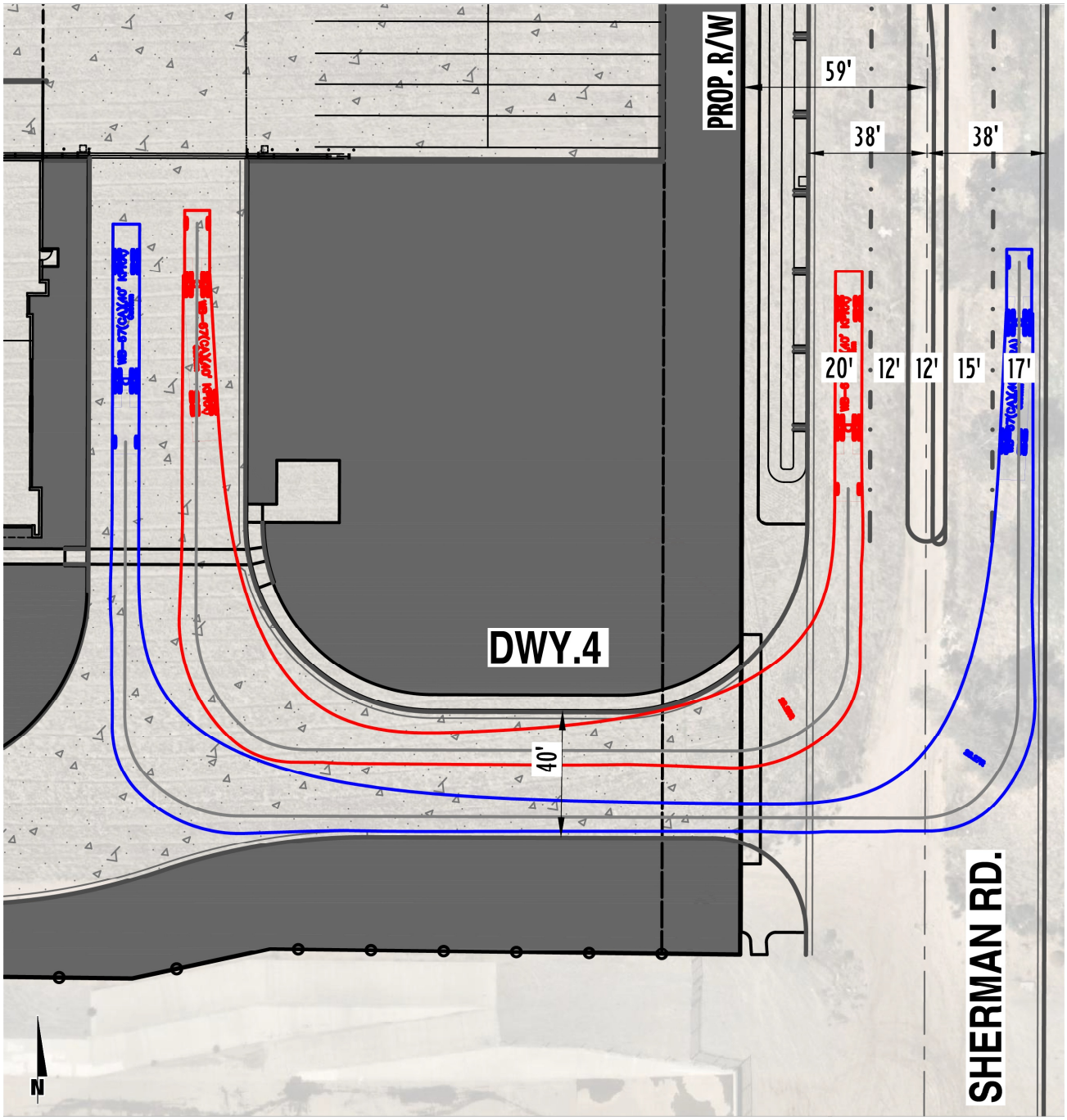


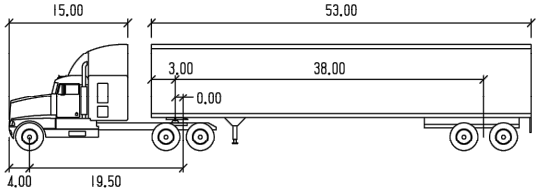
WB-67(CA)(40' KPRA)

feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

EXHIBIT 1-5 : TRUCK ACCESS (SHEET 2 OF 3)



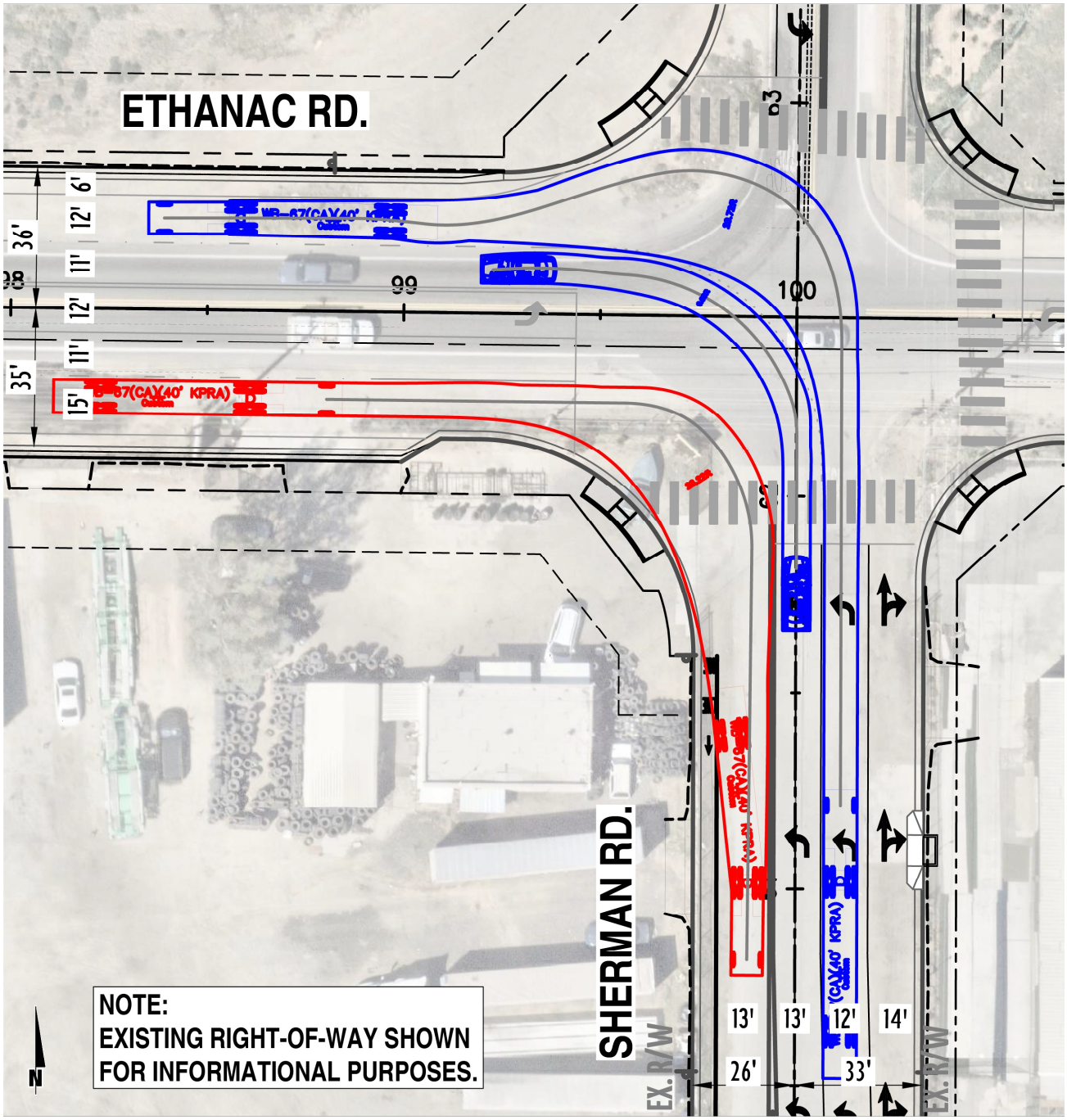


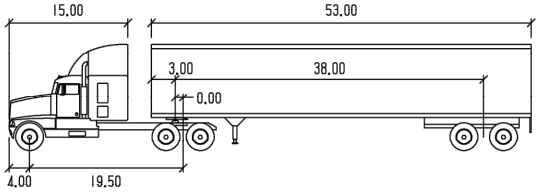
WB-67(CA)(40' KPRA)

feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

EXHIBIT 1-5 : TRUCK ACCESS (SHEET 3 OF 3)



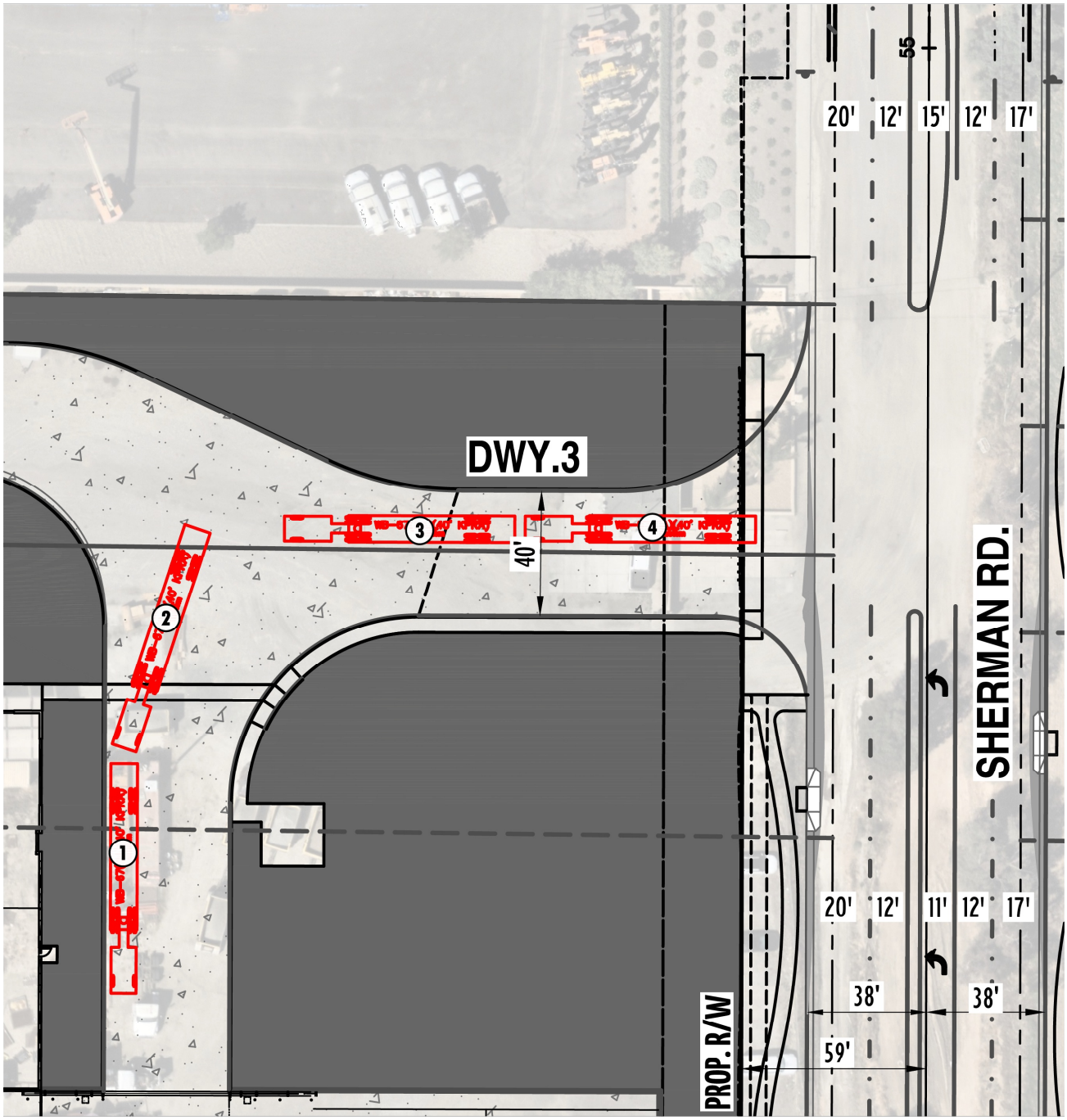


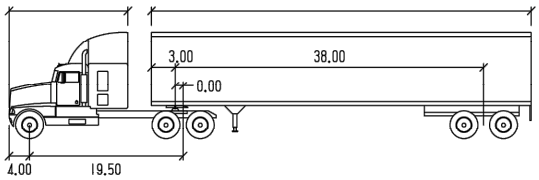
WB-67(CA)(40' KPRA)

feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

EXHIBIT 1-6 : TRUCK STACKING (SHEET 1 OF 2)

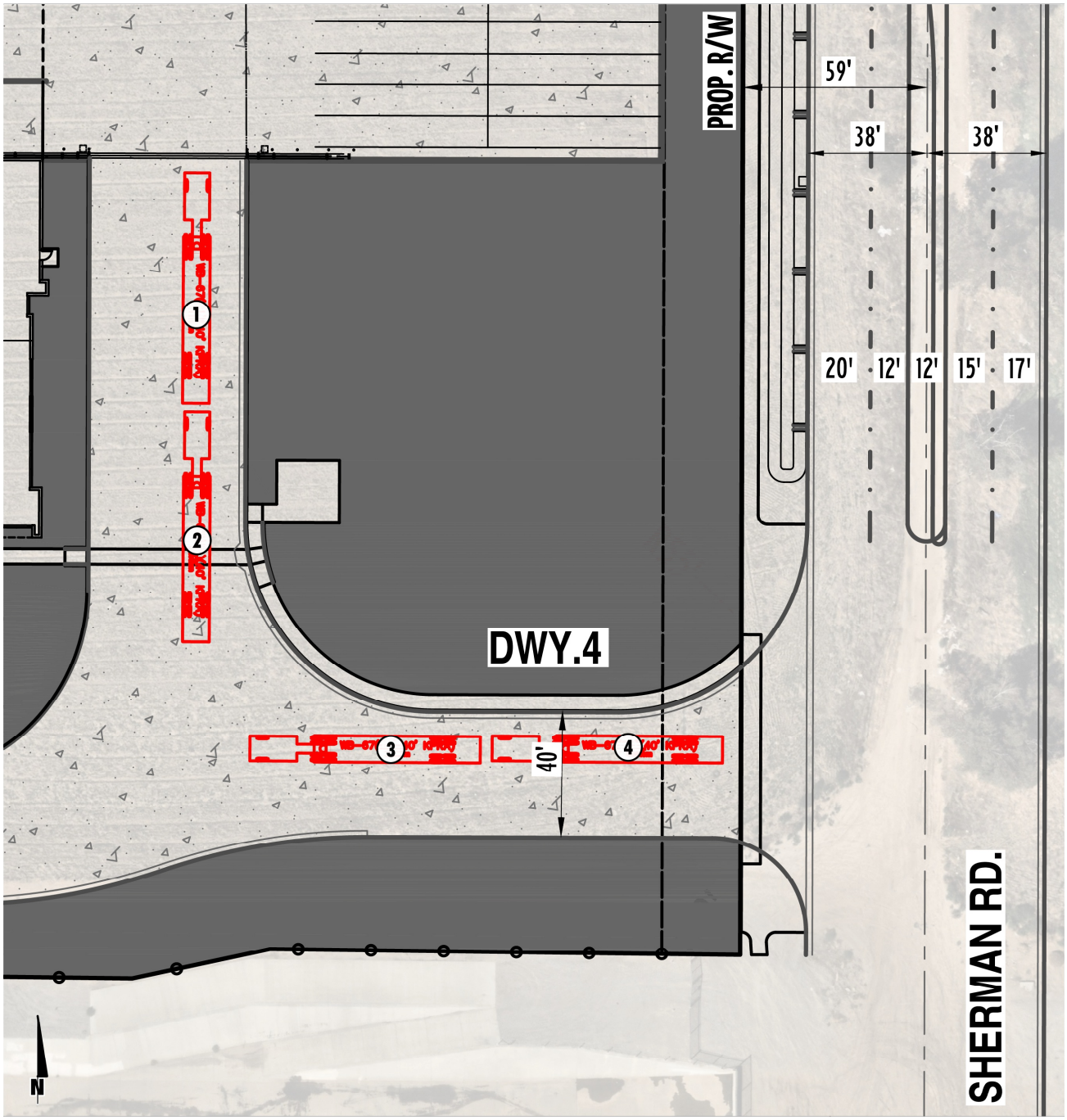


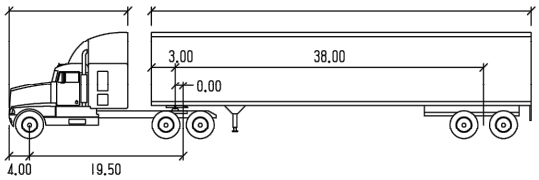


WB-67(CA)(40' KPRA)

	feet		
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

EXHIBIT 1-6 : TRUCK STACKING (SHEET 2 OF 2)





WB-67(CA)(40' KPRA)

feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

2 METHODOLOGIES

This section of the report presents the methodologies used to perform this TA. The methodologies described are consistent with City Guidelines. (1)

2.1 LEVEL OF SERVICE

Traffic operations of roadway facilities are described using the term "Level of Service" (LOS). LOS is a qualitative description of traffic flow based on several factors, such as speed, travel time, delay, and freedom to maneuver. Six levels are typically defined, ranging from LOS A, representing completely free-flow conditions, to LOS F, representing a breakdown in flow resulting in stop-and-go conditions. LOS E represents operations at or near capacity, an unstable level where vehicles are operating with the minimum spacing for maintaining uniform flow.

2.2 INTERSECTION CAPACITY ANALYSIS

The definitions of LOS for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control. The LOS is typically dependent on the quality of traffic flow at the intersections along a roadway. The 7th Edition Highway Capacity Manual (HCM) methodology expresses LOS at an intersection in terms of delay time for the various intersection approaches. (4) The HCM uses different procedures depending on the type of intersection control.

2.2.1 Signalized Intersections

The City of Menifee and City of Perris require signalized intersection operations analysis based on the methodology described in the HCM. (4) Intersection LOS operations are based on an intersection's average control delay. Control delays include initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. For signalized intersections, LOS is related to the average control delay per vehicle and is correlated to a LOS designation as described in Table 2-1.

The traffic modeling and signal timing optimization software package Synchro (Version 12) has been utilized to analyze signalized intersections. Synchro is a macroscopic traffic software program that is based on the signalized intersection capacity analysis as specified in the HCM. Macroscopic level models represent traffic in terms of aggregate measures for each movement at the study intersections. Equations are used to determine measures of effectiveness such as delay and queue length. The level of service and capacity analysis performed by Synchro takes into consideration optimization and coordination of signalized intersections within a network.

TABLE 2-1: SIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service V/C ≤ 1.0[1]
Operations with very low delay occurring with favorable progression and/or short cycle length.	0 to 10.00	A
Operations with low delay occurring with good progression and/or short cycle lengths.	10.01 to 20.00	B
Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.01 to 35.00	C
Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.01 to 55.00	D
Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.01 to 80.00	E
Operations with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	80.01 and up	F

Source: HCM, 7th Edition
[1] If V/C is greater than 1.0, then LOS is F per HCM

A saturation flow rate of 1,900 has been utilized for all study area intersections located within the County of Riverside and City of Menifee. The peak hour traffic volumes have been adjusted using a peak hour factor (PHF) to reflect peak 15-minute volumes. Customary practice for LOS analysis is to use a peak 15-minute rate of flow. However, flow rates are typically expressed in vehicles per hour. The PHF is the relationship between the peak 15-minute flow rate and the full hourly volume (e.g., PHF = [Hourly Volume] / [4 x Peak 15-minute Flow Rate]). The use of a 15-minute PHF produces a more detailed analysis as compared to analyzing vehicles per hour. Existing PHFs have been used for all analysis scenarios. Per the HCM, PHF values over 0.95 often are indicative of high traffic volumes with capacity constraints on peak hour flows while lower PHF values are indicative of greater variability of flow during the peak hour. (4)

2.2.2 Unsignalized Intersections

The City of Menifee and City of Peris requires the operations of unsignalized intersections to be evaluated using the methodology described in the HCM. (4) The LOS rating is based on the weighted average control delay expressed in seconds per vehicle (see Table 2-2). At two-way or side-street stop-controlled intersections, LOS is calculated for each controlled movement and for the left turn movement from the major street, as well as for the intersection as a whole. For approaches composed of a single lane, the delay is computed as the average of all movements in that lane. Delay for the intersection is reported for the worst individual movement at a two-way stop-controlled intersection. For all-way stop controlled intersections, LOS is computed for the intersection as a whole (average delay).

TABLE 2-2: UNSIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service V/C ≤ 1.0[1]
Little or no delays.	0 to 10.00	A
Short traffic delays.	10.01 to 15.00	B
Average traffic delays.	15.01 to 25.00	C
Long traffic delays.	25.01 to 35.00	D
Very long traffic delays.	35.01 to 50.00	E
Extreme traffic delays with intersection capacity exceeded.	> 50.00	F

Source: HCM, 7th Edition

[1] If V/C is greater than 1.0, then LOS is F per HCM

2.3 TRAFFIC SIGNAL WARRANT ANALYSIS METHODOLOGY

The term "signal warrants" refers to the list of established criteria used by Caltrans and other public agencies to quantitatively justify or determine the potential need for installation of a traffic signal at an otherwise unsignalized intersection. This TA uses the signal warrant criteria presented in the latest edition of the Caltrans California Manual on Uniform Traffic Control Devices (CA MUTCD). (5)

The signal warrant criteria for Existing study area intersections are based upon several factors, including volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas. The CA MUTCD indicates that the installation of a traffic signal should be considered if one or more of the signal warrants are met. (5) Specifically, this TA utilizes the Peak Hour Volume-based Warrant 3 as the appropriate representative traffic signal warrant analysis for existing traffic conditions and for all future analysis scenarios for existing unsignalized intersections. Warrant 3 is appropriate to use for this TA because it provides specialized warrant criteria for intersections with rural characteristics. For the purposes of this study, the speed limit was the basis for determining whether Urban or Rural warrants were used for a given intersection. Rural warrants have been used where posted speed limits on the major roadways with unsignalized intersections are over 40 miles per hour while urban warrants have been used where speeds are 40 miles per hour or below.

Future intersections that do not currently exist have been assessed regarding the potential need for new traffic signals based on future average daily traffic (ADT) volumes, using the Caltrans planning level ADT-based signal warrant analysis worksheets. Similarly, the speed limit has been used as the basis for determining the use of Urban and Rural warrants. Traffic signal warrant analyses were performed for the following study area intersections shown in Table 2-3.

The traffic signal warrant analyses are presented in Section 3 *Area Conditions*, Section 5 *E+P Traffic Conditions*, Section 6 *EAC & EAPC (2028) Traffic Conditions, and* Section 7 *Horizon Year (2045) Traffic Conditions*. It is important to note that a signal warrant defines the minimum condition under which the installation of a traffic signal might be warranted. Meeting this threshold condition does not require that a traffic control signal be installed at a particular location, but rather, that other traffic factors and conditions be evaluated in order to determine whether the signal is truly justified. It should also be noted that signal warrants do not necessarily correlate with LOS. An intersection may satisfy a signal warrant condition and operate at or above acceptable LOS or operate below acceptable LOS and not meet a signal warrant.

It should be noted that although a traffic signal warrant analysis has been conducted for the intersection of Encanto Drive at Ethanac Road for Existing traffic conditions, a traffic signal is not proposed to be installed at this location. The intersection of Encanto Drive and Ethanac Road is proposed to be modified to right-in/right-out access only (to be controlled with a stop sign for the northbound approach) with the implementation of the interim improvements along Ethanac Road to be implemented by Menifee Commerce Center Tentative Parcel Map 38156.

TABLE 2-3: TRAFFIC SIGNAL WARRANT ANALYSIS LOCATIONS

ID	Intersection
3	Encanto Dr. & Ethanac Rd.
5	Trumble Rd. & Driveway 1
6	Trumble Rd. & Driveway 2
7	Sherman Rd. & Ethanac Rd.
8	Sherman Rd. & Driveway 1
9	Sherman Rd. & Driveway 2

2.4 ROADWAY SEGMENT CAPACITY ANALYSIS

Roadway segment operations have been evaluated using the Roadway Segment Capacity Thresholds provided in the City's Guidelines. (1) These roadway capacities are "rule of thumb" estimates for planning purposes and are affected by such factors as intersections (spacing, configuration and control features), degree of access control, roadway grades, design geometrics (horizontal and vertical alignment standards), sight distance, vehicle mix (truck and bus traffic) and pedestrian bicycle traffic. In other words, while using ADT for planning purposes is suitable with regards to evaluating potential volume to capacity with future forecasts, it is not suitable for operational analysis because it does not account for the factors listed previously. As such, where the ADT based roadway segment analysis indicates a deficiency (unacceptable LOS), a review of the more detailed peak hour intersection analysis and progression analysis are undertaken. The more detailed peak hour intersection analysis explicitly accounts for factors that affect roadway capacity.

2.5 OFF-RAMP QUEUING ANALYSIS

A queuing analysis has been performed for the study area off-ramp intersections at the I-215 Freeway at the Ethanac Road interchange. Specifically, the queuing analysis is utilized to identify any potential queuing and "spill back" onto the I-215 Freeway mainline from the off-ramps or out of the turn pockets.

The traffic progression analysis tool and HCM intersection analysis program, Synchro, has been used to assess the potential deficiencies/needs of the intersections with traffic added from the proposed Project. Storage (turn-pocket) length recommendations at the ramps have been based upon the 95th percentile queue resulting from the Synchro progression analysis. The footnote from the Synchro output sheets indicates if the 95th percentile cycle exceeds capacity. Traffic is simulated for two complete cycles of the 95th percentile traffic in Synchro in order to account for the effects of spillover between cycles. In practice, the 95th percentile queue shown will rarely be exceeded and the queues shown with the footnote are acceptable for the design of storage bays. The 95th percentile queue is

derived from the average queue plus 1.65 standard deviations. The 95th percentile queue is not necessarily ever observed, it is simply based on statistical calculations.

Improvements to address queuing deficiencies have been identified, where feasible, by providing sufficient storage length to accommodate the 95th percentile queue. The recommendations for increased storage at a given movement are based on the needs identified under ultimate conditions (i.e., Horizon Year Traffic Conditions). Improvements were not identified in locations where providing the necessary storage was determined to be infeasible due to constraints such as physical limitations of the roadway or where the required storage would extend beyond an adjacent intersection.

2.6 Minimum Acceptable Levels of Service (LOS)

Minimum acceptable LOS and associated definitions of intersection deficiencies have been obtained from each of the applicable surrounding jurisdictions.

2.6.1 City of Menifee

Per Policy C-1.2 of the City of Menifee General Plan, the following LOS will be utilized for study area intersections located within the City:

The City of Menifee has identified LOS D as the threshold for acceptable operating conditions for intersections except at constrained intersections and roadway segments in close proximity to I-215, where LOS E is accepted during peak hours.

In an effort to conduct a conservative analysis, we have applied LOS D as the threshold for all intersections. Therefore, any intersection operating at LOS E or F will be considered deficient for the purposes of this analysis.

2.6.2 City of Perris

The definition of an intersection deficiency has been obtained from the City of Perris' General Plan.

- 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.

The applicable minimum LOS utilized for the purposes of this analysis is LOS D. The minimum acceptable LOS for all study segments is LOS D.

2.6.3 Caltrans

Senate Bill 743 (SB 743), approved in 2013, endeavors to change the way transportation impacts will be determined according to the California Environmental Quality Act (CEQA). The Office of Planning and Research (OPR) has recommended the use of vehicle miles traveled (VMT) as the replacement

for automobile delay-based LOS. Caltrans acknowledges automobile delay will no longer be considered a CEQA impact for development projects and will use VMT as the metric for determining impacts on the State Highway System (SHS). However, LOS D has been utilized as the target LOS for Caltrans facilities, consistent with the County of Riverside.

2.7 DEFICIENCY CRITERIA

This section outlines the methodology used in this analysis related to identifying circulation system deficiencies.

2.7.1 City of Menifee

This section outlines the methodology used in this analysis related to identifying circulation system deficiencies. Consistent with the City of Menifee's traffic study guidelines, the following criteria shall be used to determine if the addition of Project traffic would be responsible for LOS deficiencies and whether feasible intersection improvements should be identified to improve performance:

- If the pre-Project condition at an intersection is at or better than the minimum acceptable LOS (LOS D) and the addition of project trips results in unacceptable LOS (LOS E or LOS F).
- If the pre-Project condition is LOS E or F and the Project adds 50 or more peak hour trips to the intersection or roadway segment. This type of impact would be considered a "cumulative" project impact in which the project would be required to contribute a fair share payment toward reducing the impact.

Project-related impacts shall be clearly identified as direct or cumulative in the Traffic Study report. Only feasible improvements should be recommended in the Traffic Study report. Consideration should be made for existing right-of-way, availability of receiving lanes for additional through or turn lanes, environmental constraints, utility conflicts, and economically feasible improvement costs. Analysis of the recommended improvements shall be provided to demonstrate the proposed improvement will reduce the project impact to LOS to meet LOS standards.

All studies that propose increasing the number of travel lanes on a roadway or intersections to improve LOS conditions, either beyond existing conditions or for General Plan conditions beyond what is planned for that segment shall clearly identify the impacts associated with such a change. Exhibits and preliminary cost estimates must be provided to show the feasibility of the improvement.

The Traffic Study shall identify whether or not the recommended improvements to achieve LOS standards are within the scope of a funding mechanism. The funding mechanism identified shall also include the availability of the funds and anticipated construction dates (if available). A fair share contribution toward the identified funding mechanism shall be calculated in order to reduce identified cumulative project impacts.

LOS improvements may also include connectivity improvements for bicycles and pedestrians. Improvements along the project frontage shall include pedestrian and bicycle facilities in compliance with the goals and policies established in the City's General Plan and mandated through the Complete Streets Act of 2008. The project should clearly identify pedestrian and bicycle facilities within the community that connect the development to existing sidewalk and bicycle facilities.

LOS improvements that are determined to be infeasible should be discussed in the Traffic Study and the factors resulting in the improvement being infeasible should be identified.

2.7.2 City of Perris

The following deficiency criteria have been utilized, for the City of Perris, to identify operational deficiencies as either Project-related or cumulative traffic impacts, and to classify them as direct or indirect.

- A project-related traffic impact is considered direct when a study intersection operates at an acceptable LOS under Existing (2024) conditions and the addition of Project traffic causes the intersection to degrade to an unacceptable LOS under E+P conditions. Improvements shall be identified to restore the intersection's LOS to an acceptable level.
- A project-related traffic impact is considered direct when a study intersection operates at an unacceptable LOS under Existing (2024) and the addition of Project traffic causes the intersection delay to increase under E+P Conditions. Improvements shall be identified to offset the Project's impact at the intersection to pre-Project conditions. At the discretion of the city, if the intersection is considered to directly serve project ingress/egress traffic or is directly adjacent to the Project, the Project will be fully responsible for restoring the intersection's LOS to an acceptable level.
- A cumulative traffic impact is considered indirect when a study intersection operates at an unacceptable LOS under EAPC (2028) or Horizon Year (2045) conditions and the addition of any Project traffic causes the intersection to degrade further, unless the intersection's impact was previously determined to be a direct project impact. Improvements shall be identified to restore the intersection's LOS to an acceptable level. At the discretion of the city, if the intersection is considered to directly serve project ingress/egress traffic or is directly adjacent to the Project, the Project will be fully responsible for restoring the intersection's LOS to an acceptable level. Additionally, at the city's discretion, the Project may be required to front the costs and fully construct certain off-site cumulative improvements (and be reimbursed later) to ensure that specific improvements which are deemed necessary to facilitate traffic are constructed prior to the project's opening.

2.8 PROJECT FAIR SHARE CALCULATION METHODOLOGY

Improvements found to be included in the County TUMF and/or City Development Impact Fee (DIF) programs will be identified as such. For improvements that do not appear to be in either of the pre-existing fee programs, a fair share contribution based on the Project's proportional share may be imposed in order to address the Project's share of deficiencies in lieu of construction. It should be noted that fair share calculations are for informational purposes only and the City Traffic Engineer will determine the appropriate improvements to be implemented by a project (to be identified in the conditions of approval).

The Project's fair share cost of improvements would be determined based on the following equation, which is the ratio of Project traffic to new traffic, where new traffic is total future traffic less existing baseline traffic:

Project Fair Share % = Project Traffic / (Horizon Year (2045) Total Traffic – Existing (2025) Traffic)

For improvements recommended under EAPC (2028) traffic conditions, the Project's fair share cost of improvements will be calculated using EAPC (2028) traffic volumes.

3 AREA CONDITIONS

This section provides a summary of the existing circulation network and the City of Menifee General Plan Circulation Network, and a review of existing peak hour intersection operations, traffic signal warrant, roadway segment, and freeway off-ramp queuing analyses.

3.1 EXISTING CIRCULATION NETWORK

Pursuant to the agreement with City of Menifee and City of Perris staff (Appendix 1.1), the study area includes a total of 25 existing and future intersections as shown previously in Exhibit 1-3. Exhibit 3-1 illustrates the study area intersections located near the proposed Project and identifies the number of through traffic lanes for existing roadways and intersection traffic controls.

3.2 CITY OF MENIFEE GENERAL PLAN CIRCULATION ELEMENT

As noted previously, the Project site is located within the City of Menifee. The roadway classifications and planned (ultimate) roadway cross-sections of the major roadways within the study area, as identified on the City of Menifee General Plan Circulation Element, are described subsequently. Exhibit 3-2 shows the City of Menifee General Plan Circulation Element.

Expressways are six-to-eight travel lines and include a raised or graded median with left shoulders. These roadways typically have a 200-to-216-foot right-of-way and a 106-to-152-foot curb-to-curb measurement. These facilities primarily serve through traffic to which access from abutting property shall be kept at a minimum. The following roadway is classified as an Expressway within the study area:

- Ethanac Road

Major Roadways are four-lane roadways and may include a painted median. These roadways typically have a 118-foot right-of-way and a 76-foot curb-to-curb measurement. These roadways typically direct traffic through major development areas. The following roadways within the study area are classified as a Major Roadway:

- Encanto Drive
- Sherman Road

Collector Streets are two-lane roadways and provide on-street parking on both sides. These roadways typically have a 74-foot right-of-way and a 44-foot curb-to-curb measurement. These roadways provide connections to secondary streets, arterials, and freeways, with most traffic being through-traffic or intra-city traffic. The following study area roadway within the study area is classified as a Collector Street:

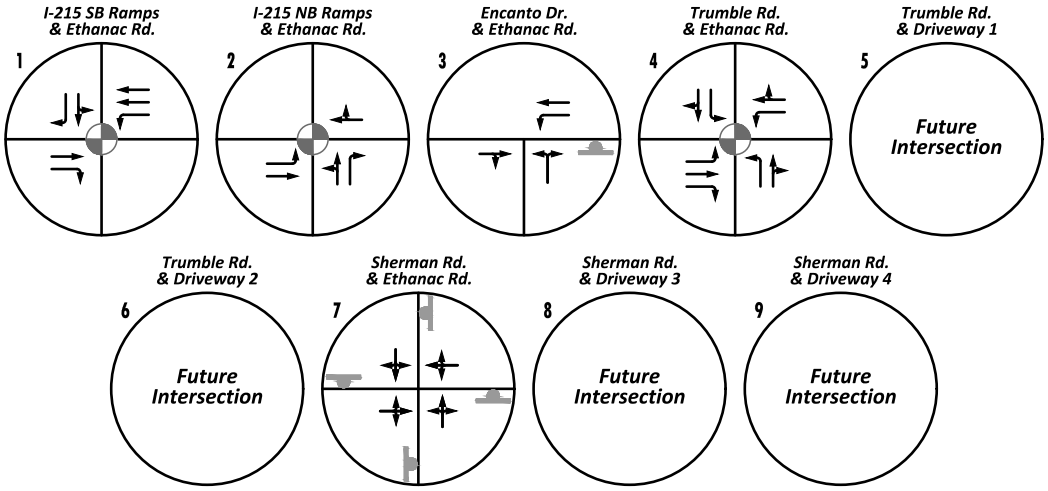
- Trumble Road

3.3 CITY OF PERRIS PLAN CIRCULATION ELEMENT

The majority of the study area roadways share a border with the City of Perris. Exhibit 3-3 illustrates the City of Perris Circulation Plan.

EXHIBIT 3-1 : EXISTING LANES AND INTERSECTION CONTROLS





LEGEND:

- = Existing Intersection Analysis Location
- = Future Intersection Analysis Location
- = Existing Traffic Signal
- = Existing Stop Sign
- = Existing Lane

EXHIBIT 3-2: CITY OF MENIFEE CIRCULATION ELEMENT

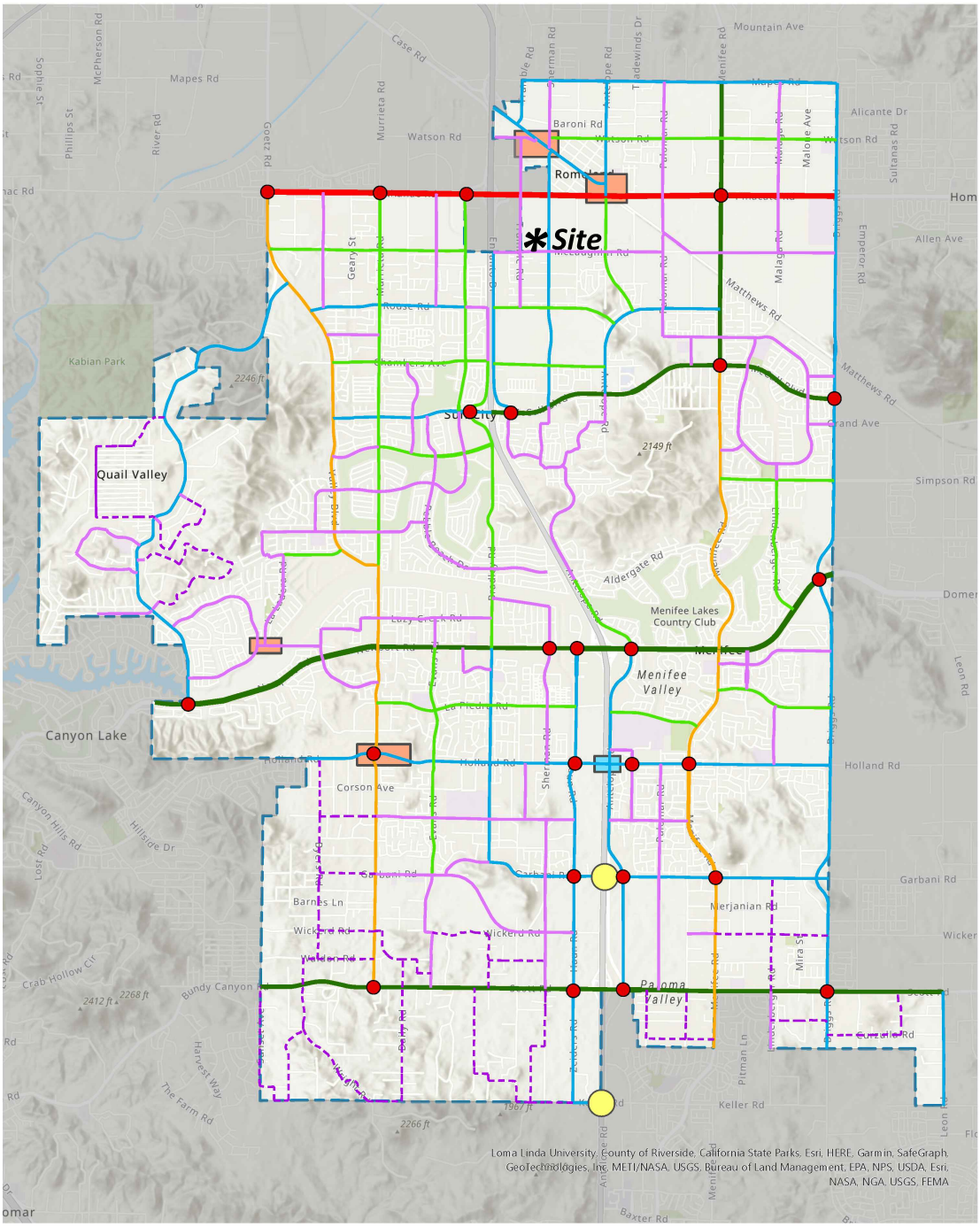
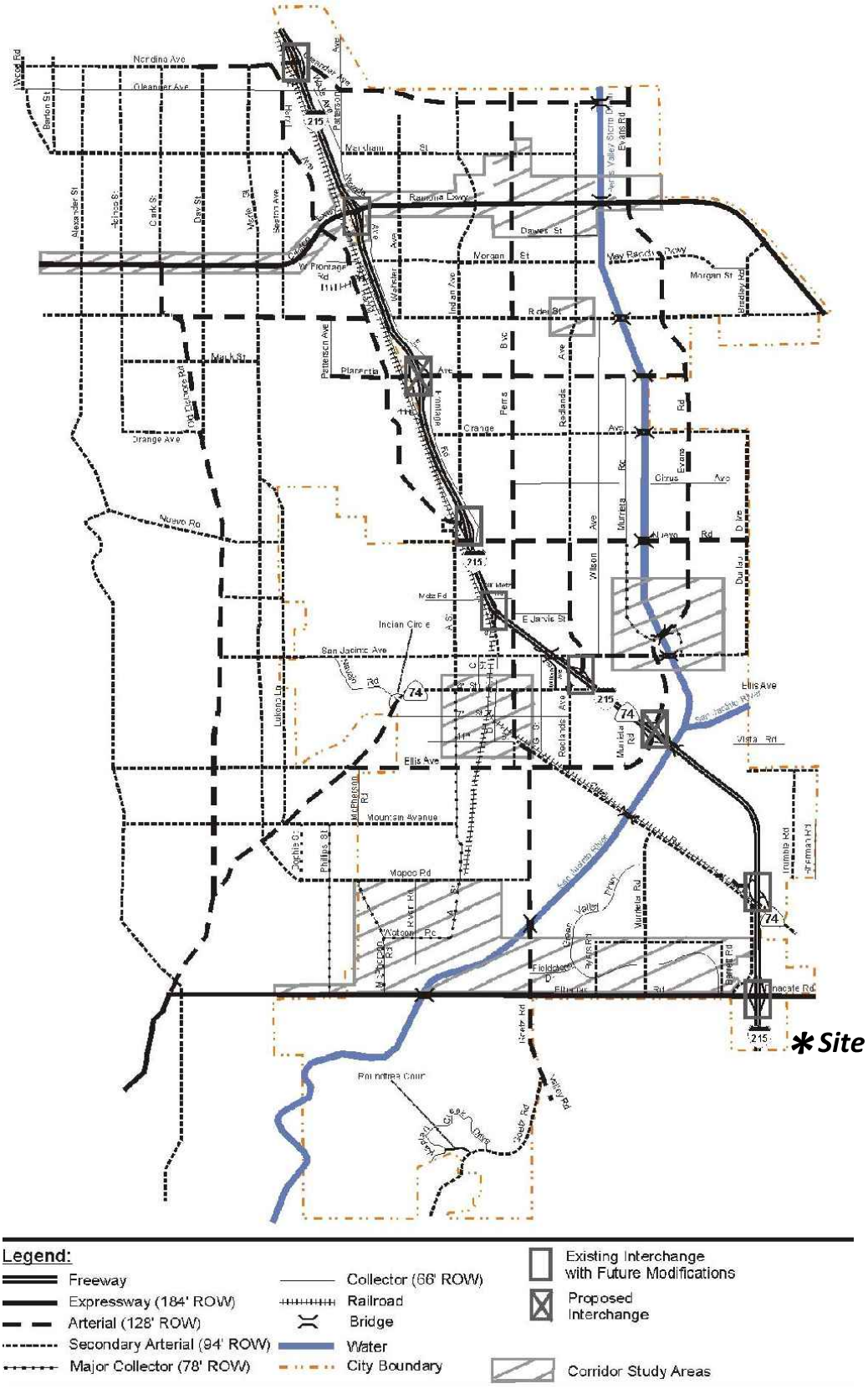


EXHIBIT 3-3 : CITY OF PERRIS GENERAL PLAN CIRCULATION ELEMENT



3.4 BICYCLE & PEDESTRIAN FACILITIES

Exhibit 3-4 illustrates the City of Menifee General Plan proposed bike facilities. As shown on Exhibit 3-4, there is a proposed Community On-Street Bike Lane (Class II) along Sherman Road. There are proposed Class II Community On-Street Bike Lanes along Antelope Road, Watson Road, and Encanto Drive within the vicinity of the Project site. Trumble Road is identified as a Class III (on-street, signed but not striped) bike route. Exhibit 3-5 shows the existing pedestrian facilities within the study area. As shown on Exhibit 3-5, there are limited pedestrian facilities in the vicinity of the Project site. Field observations and traffic counts conducted in May 2025 indicate light pedestrian and bicycle activity within the study area associated with the adjacent commercial uses.

3.5 TRANSIT SERVICE

The study area is currently served by Riverside Transit Authority (RTA), a public transit agency serving various jurisdictions within Riverside County. The existing transit routes within the study area are shown in Exhibit 3-6. Based on a review of the existing transit routes within the vicinity of the proposed Project there are no existing routes along the study area roadways. However, RTA Route 28 runs along Sherman Road north of Jackson Avenue, and down Jackson Avenue to Matthews Road. There are existing stops along Jackson Avenue with the closest stop being approximately 2,700 feet from the Project at Sherman Road and Jackson Avenue which could potentially serve the Project site. Service times for the stops along RTA Route 28 are approximately 40-50 minutes. RTA Route 61 also runs along Case Road within the study area. Transit service is reviewed and updated by RTA periodically to address ridership, budget, and community demand needs. Changes in land use can affect these periodic adjustments which may lead to either enhanced or reduced service where appropriate. As such, it is recommended that the Project Applicant work in conjunction with RTA to potentially provide bus service to the site.

3.6 TRUCK ROUTES

The City of Menifee's potential truck routes are shown on Exhibit 3-7 and City of Perris' map is shown on Exhibit 3-8. Ethanac Road is identified as a truck route for both agencies, between the I-215 Freeway and Sherman Road. These truck route maps have been utilized to route truck traffic from the Project and future cumulative development projects throughout the study area.

EXHIBIT 3-4 : CITY OF MENIFEE PROPOSED BIKEWAY NETWORK

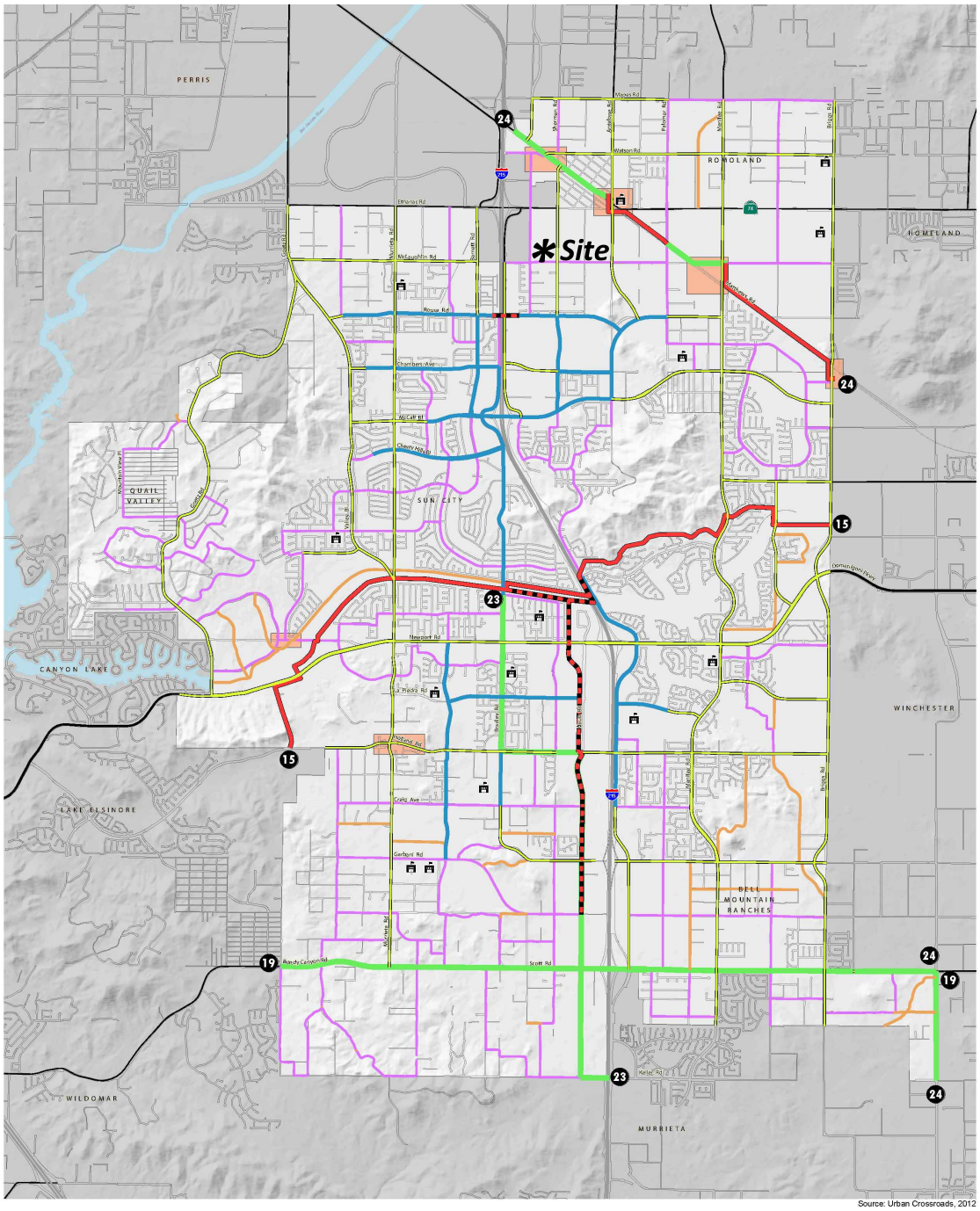


EXHIBIT 3-5 : EXISTING PEDESTRIAN FACILITIES



LEGEND:

= 1 Approach

= 2 Approaches

= Sidewalks

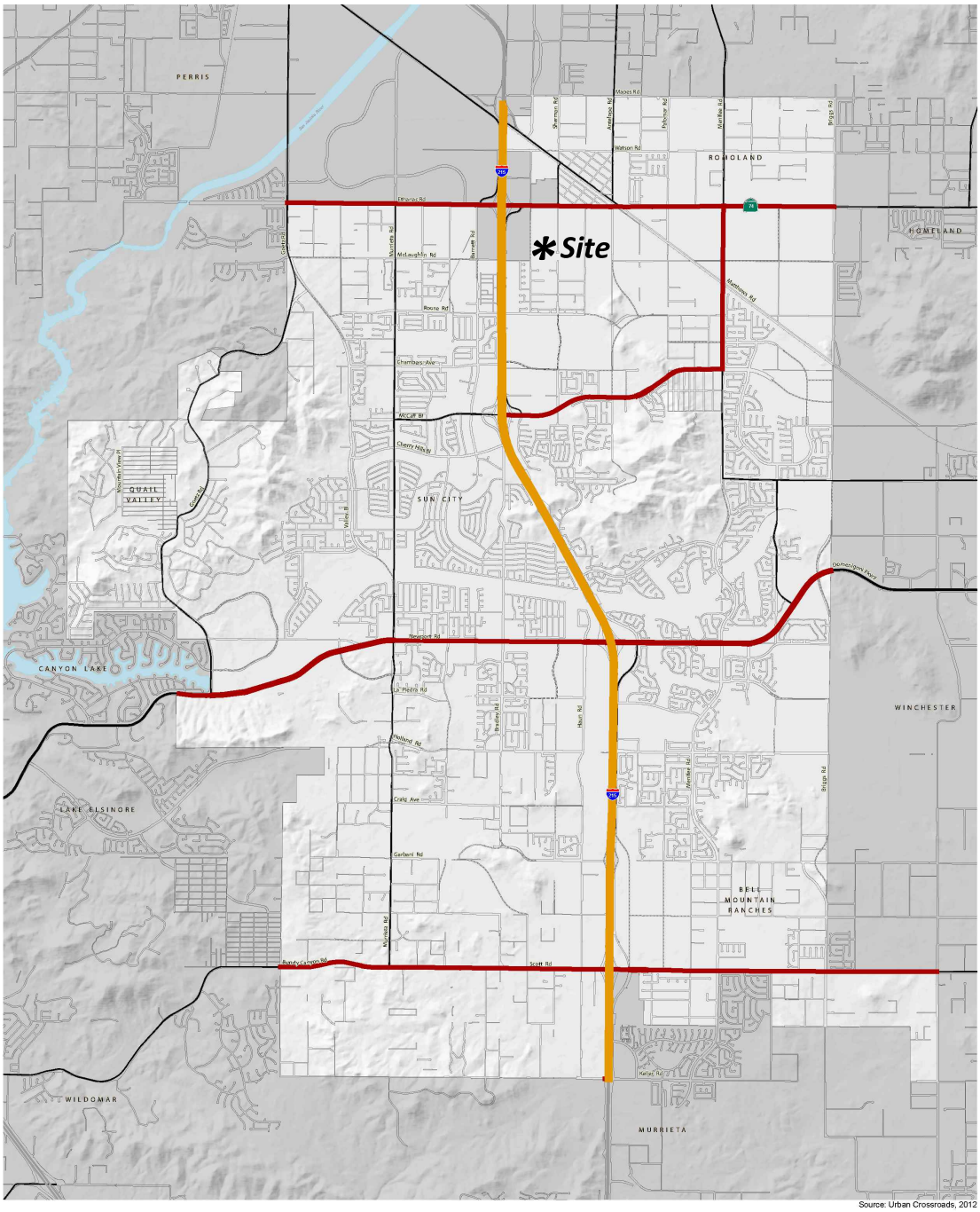
EXHIBIT 3-6 : EXISTING TRANSIT FACILITIES



LEGEND:

= RTA 28
= RTA 61

EXHIBIT 3-7 : CITY OF MENIFEE POTENTIAL TRUCK ROUTES



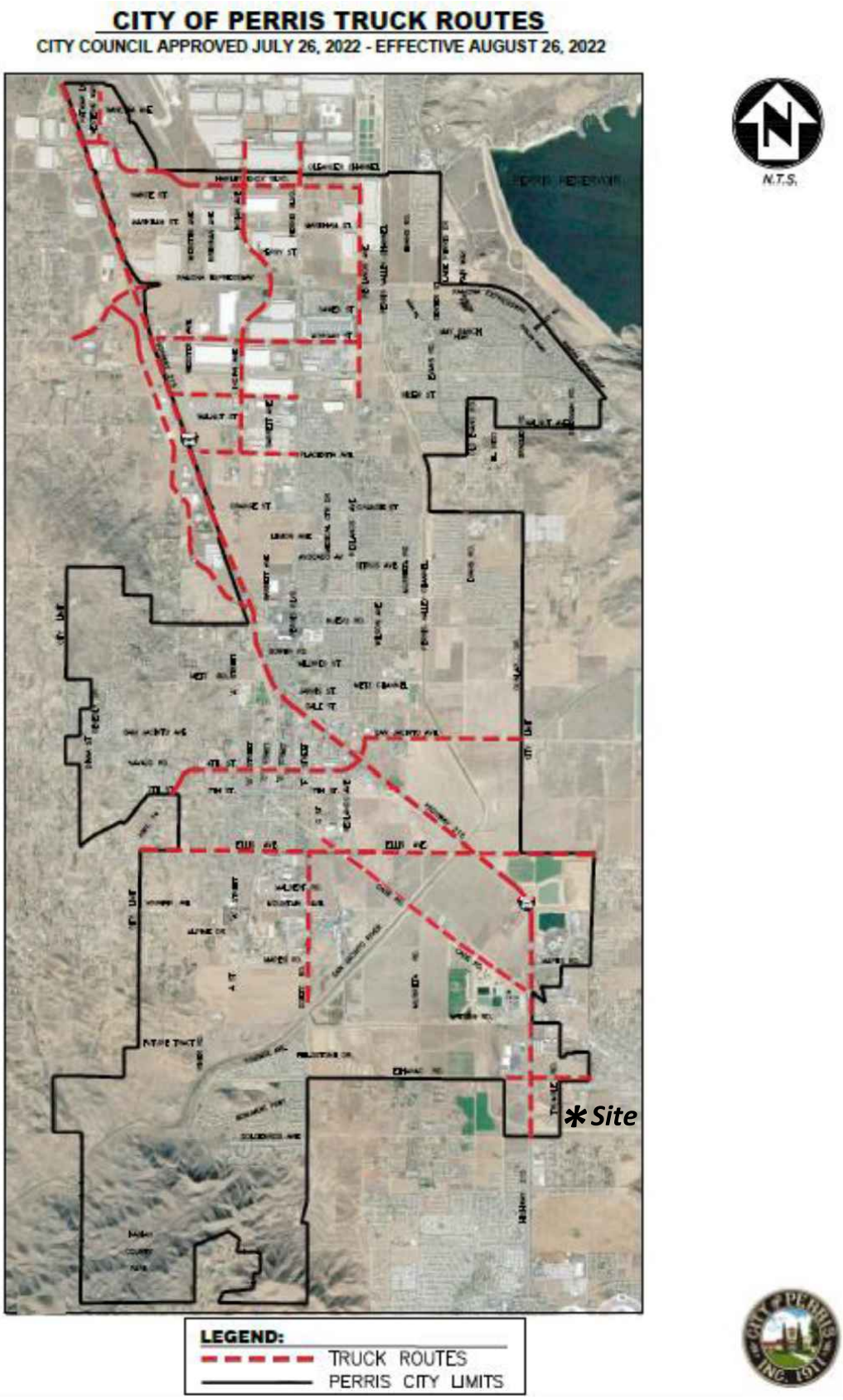
The designated truck routes within the City have been selected because of their accessibility to the freeway and key industrial/commercial areas. The designation of truck routes does not prevent trucks from using other roads or streets to make deliveries to individual addresses, or for other reasons as defined in the State of California *Motor Vehicle Code*.

MENIFEE GENERAL PLAN

THE PLANNING CENTER DC&E

7/26/2013 0 0.5 1 Mile Truck_Routes_072613

EXHIBIT 3-8 : CITY OF PERRIS TRUCK ROUTES



3.7 EXISTING (2025) TRAFFIC COUNTS

The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected in May 2025. The following peak hours were selected for analysis:

- Weekday AM Peak Hour (peak hour between 7:00 AM and 9:00 AM)
- Weekday PM Peak Hour (peak hour between 4:00 PM and 6:00 PM)

The 2025 weekday AM and weekday PM peak hour count data is representative of typical weekday peak hour traffic conditions in the study area. There were no observations made in the field that would indicate atypical traffic conditions on the count dates, such as construction activity or detour routes and nearby schools were in session and operating on normal schedules. The raw manual peak hour turning movement traffic count data sheets are included in Appendix 3.1.

The peak hour turning movements were adjusted as necessary to achieve flow conservation between parallel routes. Flow conservation checks ensure that traffic flow between two closely spaced intersections, such as two freeway ramp locations, is verified in order to make certain that vehicles leaving one intersection are entering the adjacent intersection and that there is no unexplained loss of vehicles.

Existing weekday ADT volumes are shown in Exhibit 3-9. Where actual 24-hour tube count data was not available, Existing ADT volumes were based upon factored intersection peak hour counts collected by Urban Crossroads, Inc. using the following formula for each intersection leg:

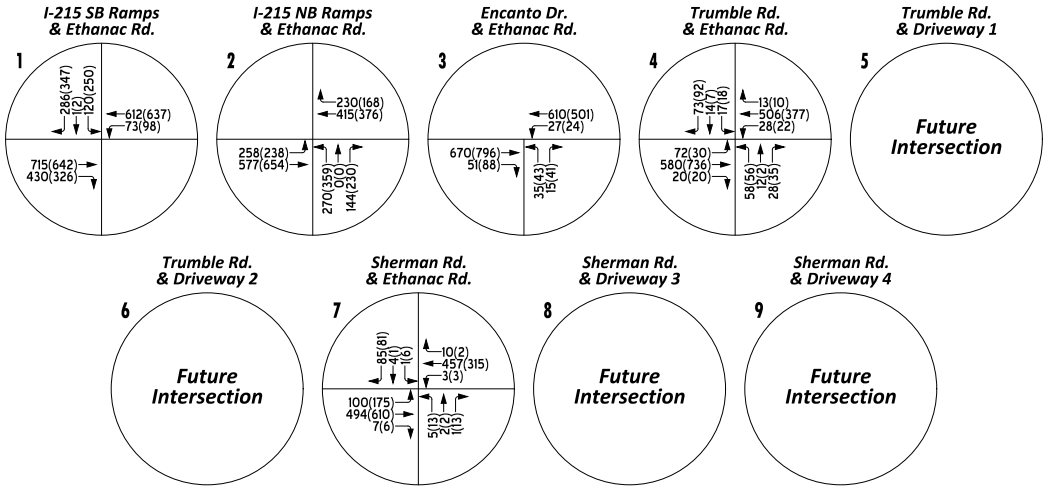
Weekday PM Peak Hour (Approach Volume + Exit Volume) x 10.5 = Leg Volume

A comparison of the PM peak hour and daily traffic volumes of various roadway segments within the study area indicated that the peak-to-daily relationship is approximately 9.5 percent. As such, the above equation utilizing a factor of 10.5 estimates the ADT volumes on the study area roadway segments assuming a peak-to-daily relationship of approximately 9.5 percent (i.e., 1/0.095 = 10.5) and was assumed to sufficiently estimate ADT volumes for planning-level analyses.

For the purposes of the operations analysis, the Passenger Car Equivalent (PCE) volumes were utilized. PCE factors were applied to the trip generation rates for heavy trucks (large 2-axles, 3-axles, 4+-axles). PCEs allow the typical "real-world" mix of vehicle types to be represented as a single, standardized unit, such as the passenger car, to be used for the purposes of capacity and level of service analyses. The PCE factors are consistent with the recommended PCE factors in City's guidelines. Existing weekday peak hour intersection volumes are also shown in Exhibit 3-9 in actual vehicles and in Exhibit 3-10 in PCE.

EXHIBIT 3-9 : EXISTING (2025) VOLUMES (ACTUAL VOLUMES)



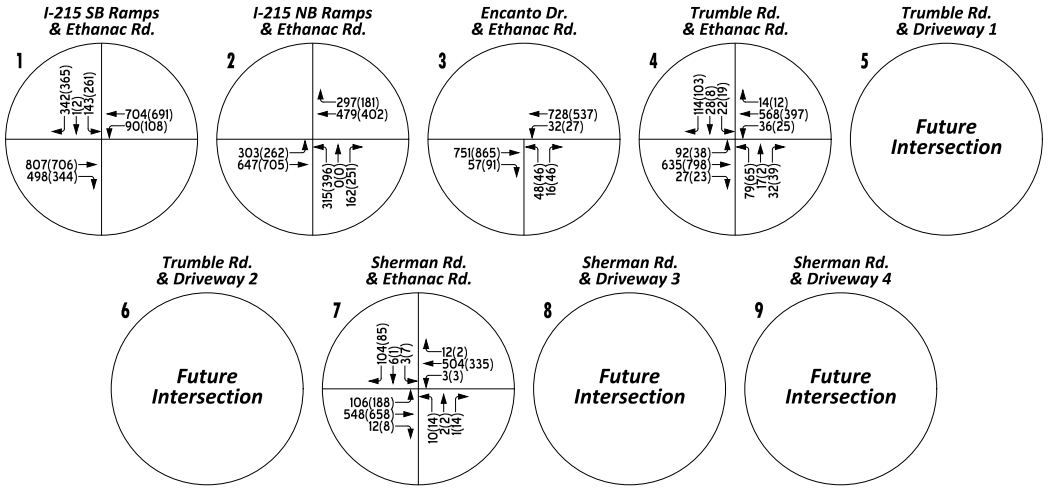


LEGEND:

- **0** = *Existing Intersection Analysis Location*
- (0) = *Future Intersection Analysis Location*
- 00(00) = *Peak Hour Volume AM(PM)*
- **00** = *Average Daily Traffic (ADT) In Thousands*

EXHIBIT 3-10 : EXISTING (2025) PCE VOLUMES





LEGEND:

- **0** = *Existing Intersection Analysis Location*
- (0) = *Future Intersection Analysis Location*
- 00(00) = *Peak Hour Volume AM(PM)*
- **00** = *Average Daily Traffic (ADT) In Thousands*

3.8 INTERSECTION OPERATIONS ANALYSIS

Existing peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2.2 *Intersection Capacity Analysis*. The intersection operations analysis results are summarized in Table 3-1, which indicates that all existing study area intersections are currently operating at acceptable LOS during peak hours, with the exception of the following intersection:

- Sherman Road & Ethanac Road (#7) – LOS F AM peak hour; LOS E PM peak hour

The intersection operations analysis worksheets are included in Appendix 3.2 of this TA.

TABLE 3-1: EXISTING (2025) INTERSECTION ANALYSIS

#	Intersection	Traffic Control[2]	Delay[1] (secs.)		Level of Service	
			AM	PM	AM	PM
1	I-215 SB Ramps & Ethanac Rd.	TS	14.5	15.4	B	B
2	I-215 NB Ramps & Ethanac Rd.	TS	38.9	28.0	D	C
3	Encanto Dr. & Ethanac Rd.	CSS	24.9	25.3	C	D
4	Trumble Rd. & Ethanac Rd.	TS	18.9	19.1	B	B
5	Trumble Rd. & Driveway 1		Future Intersection			
6	Trumble Rd. & Driveway 2		Future Intersection			
7	Sherman Rd. & Ethanac Rd.	CSS	**53.4**	**43.5**	**F**	**E**
8	Sherman Rd. & Driveway 3		Future Intersection			
9	Sherman Rd. & Driveway 4		Future Intersection			

* **BOLD** = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

1 Per the Highway Capacity Manual (7th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown. HCM delay reported in seconds.

2 TS = Traffic Signal; CSS = Cross-street Stop

3.9 TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants for Existing traffic conditions are based on existing peak hour intersection turning volumes. The following unsignalized study area intersections currently meet a peak hour traffic signal warrant under Existing traffic conditions:

- Encanto Dr. & Ethanac Rd. (#3)
- Sherman Rd. & Ethanac Rd. (#7)

However, a traffic signal is not proposed for installation at Encanto Drive at Ethanac Road as the interim plans with the widening of Ethanac Road are to restrict access at this intersection to right-

in/right-out access only. Existing conditions traffic signal warrant analysis worksheets are provided in Appendix 3.3.

3.10 Roadway Segment Capacity Analysis

The roadway capacities utilized for the study area roadway segment analysis are obtained from the City Guidelines. These roadway segment capacities are approximate figures only and are used at the General Plan level to assist in determining the roadway functional classification (number of through lanes) needed to meet traffic demand.

Table 3-2 provides a summary of the Existing (2025) Conditions roadway segment capacity analysis. As shown in Table 3-2, all study area roadway segments are currently operating at an acceptable LOS based on the daily roadway capacity thresholds and minimum LOS criteria, with the exception of the following segment:

- Ethanac Rd., between I-215 Freeway and Encanto Dr. (#1) – LOS E

Table 3-2: Existing (2025) Roadway Segment Analysis

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	Existing (2025)		
					2025	V/C[2]	LOS[3]
1	Ethanac Road	I-215 Freeway to Encanto Dr.	2D	18,000	**16,922**	**0.940**	**E**
2		Encanto Dr. to Trumble Rd.	2D	18,000	14,335	0.796	C
3		Trumble Rd. to Sherman Rd.	2U	18,000	13,653	0.759	C
4	Trumble Road	South of Ethanac Rd.	2D	18,000	1,495	0.083	A
5	Sherman Road	South of Ethanac Rd.	2U	17,050	337	0.020	A

[1] The volumes shown are based on LOS "E" roadway segment capacity thresholds as defined by the applicable City Guidelines.

[2] V/C = Volume to Capacity Ratio

[3] LOS = Level of Service

3.11 Off-Ramp Queuing Analysis

A queuing analysis was performed at the off-ramps at the I-215 Freeway at the Ethanac Road interchange to assess vehicle queues for the off-ramps that may potentially result in deficient peak hour operations at the ramp-to-arterial intersections and may potentially "spill back" onto the I-215 Freeway mainline. As shown in Table 3-3, there are no off-ramp movements currently experiencing queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows. However, the following turning movements on Ethanac Road are currently experiencing queuing issues:

- I-215 NB Ramps & Ethanac Rd. (#2) – eastbound left turn movement during the AM and PM peak hours
- I-215 NB Ramps & Ethanac Rd. (#2) – westbound through movement during the AM peak hour only

Queuing analysis worksheets are presented in Appendix 3.4.

TABLE 3-3: EXISTING (2025) OFF-RAMP QUEUING SUMMARY

#	Intersection	Movement	Available Stacking Distance (Feet)	95th Percentile Queue (Feet)		Acceptable? [1]	
				AM Peak Hour	PM Peak Hour	AM	PM
1	I-215 SB Ramps & Ethanac Rd.	SBT	1,375	145	285 [2]	Yes	Yes
		SBR	240	141	151	Yes	Yes
		EBT	625	605	453	Yes	Yes
		EBR	625	46	39	Yes	Yes
		WBL	275	110	150 [2]	Yes	Yes
		WBT	680	109	104	Yes	Yes
2	I-215 NB Ramps & Ethanac Rd.	NBL/T	1,325	374 [2]	499 [2]	Yes	Yes
		NBR	270	54	66	Yes	Yes
		EBL	245	**378** [2]	**324** [2]	**No**	**No**
		EBT	680	265	287	Yes	Yes
		WBT	460	**740** [2]	396	**No**	Yes

BOLD = 95th percentile queue exceeds the available storage.

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 25 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

[2] 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

4 PROJECTED FUTURE TRAFFIC

This section presents the traffic volumes estimated to be generated by the Project, as well as the Project's trip assignment onto the study area roadway network.

The Project includes the development of an 829,755 square foot warehouse building which includes 10,000 square feet of office support space on a 41.16-acre site. Access is proposed along Trumble Road (via two passenger car driveways only) and Sherman Road (via two driveways that would serve cars and trucks). All driveways are assumed to allow for full access (no turn restrictions).

4.1 PROJECT TRIP GENERATION

Trip generation represents the amount of traffic which is both attracted to and produced by a development. Determining traffic generation for a specific project is therefore based upon forecasting the amount of traffic that is expected to be both attracted to and produced by the specific land uses being proposed for a given development

4.1.1 Existing Uses

The site is currently occupied by a few non-conforming existing residential units and businesses. Driveway counts were collected to determine the trips associated with the existing uses in order to be utilized as a credit against the Project trip generation. In an effort to determine the trip generation associated with the existing buildings, driveway counts were collected at the existing driveway location. Traffic associated with each of the existing uses were captured through driveway counts collected on Tuesday, April 22nd, 2025, through Thursday, April 24th, 2025. Table 4-1 summarizes the average existing trip generation based on the count data collected over the three consecutive days. The existing sites currently generate an average of 177 two-way trips per day, with 8 trips during the AM peak hour and 7 trips during the PM peak hour. A detailed summary of the count data collected at the existing sites is provided in Appendix 1.1. Table 4-1 summarizes the existing trip generation in PCE with 278 two-way PCE trips per day, 13 PCE AM peak hour trips, and 12 PCE PM peak hour trips.

TABLE 4-1: EXISTING TRIP GENERATION

Existing Uses	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	
Actual Vehicles							
Passenger Cars:	3	3	6	1	4	4	108
2-axle Trucks:	0	0	1	0	0	1	18
3-axle Trucks:	0	0	0	0	0	1	11
4+-axle Trucks:	0	1	1	1	0	1	40
Total Truck Trips (Actual Vehicles):	0	2	2	2	1	3	69
Existing Total Trips (Actual Vehicles)[2]	**3**	**5**	**8**	**3**	**4**	**7**	**177**
Passenger Car Equivalent (PCE)							
Passenger Cars:	3	3	6	1	4	4	108
2-axle Trucks (PCE = 1.5):	1	1	2	1	1	2	27
3-axle Trucks (PCE = 2.0):	0	1	1	1	1	2	23
4+-axle Trucks (PCE = 3.0):	0	4	4	4	0	4	120
Total Truck Trips (PCE):	1	6	7	6	2	8	170
Existing Total Trips (PCE)[2]	**4**	**9**	**13**	**7**	**6**	**12**	**278**

4.1.2 Proposed Project

In order to develop the traffic characteristics of the proposed project, trip-generation statistics published in ITE's Trip Generation Manual (11th Edition, 2021) was used to estimate the trip generation based on the following land use category:

- ITE Land Use Code 150 (Warehousing) has been used to derive site specific trip generation estimates for up to 829,755 square feet. A warehouse is primarily devoted to the storage of materials but may also include office and maintenance areas. The vehicle mix has been obtained from the ITE's Trip Generation Manual and the truck percentages were further broken down by axle type per the following SCAQMD recommended truck mix: 2-Axle = 16.7%; 3-Axle = 20.7%; 4+-Axle = 62.6%.

As noted in Table 4-2, refinements to the raw trip generation estimates have been made to provide a more detailed breakdown of trips between passenger cars and trucks. Trip generation for heavy trucks was further broken down by truck type (or axle type). The total truck percentage is comprised of 3 different truck types: 2-axle, 3-axle, and 4+-axle trucks.

The proposed Project may consider including refrigerated uses, however, if the Project proceeds with that land use category, a supplemental trip generation will be prepared to demonstrate the trips fit within that evaluated for the proposed Traffic Study.

The Project is estimated to generate a total of 1,422 two-way trips per day on a typical weekday with approximately 142 AM peak hour trips and 149 PM peak hour trips as shown in Table 4-3 (actual vehicles). The Project is anticipated to generate a total of 2,190 two-way PCE trips per day on a typical weekday with approximately 166 PCE AM peak hour trips and 189 PCE PM peak hour trips.

TABLE 4-2: TRIP GENERATION RATES

Land Use[1]	Units[2]	ITE LU CODE	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Actual Vehicles:									
Warehousing[3]	TSF	150	0.131	0.039	0.170	0.050	0.130	0.180	1.710
Passenger Cars			0.120	0.030	0.150	0.034	0.116	0.150	1.110
2-axle Trucks			0.002	0.001	0.003	0.003	0.002	0.005	0.100
3-axle Trucks			0.002	0.002	0.004	0.003	0.003	0.006	0.124
4+-axle Trucks			0.007	0.006	0.013	0.010	0.009	0.019	0.376
Passenger Car Equivalent (PCE):									
Warehousing[3]	TSF	150	0.131	0.039	0.170	0.050	0.130	0.180	1.710
Passenger Cars			0.120	0.030	0.150	0.034	0.116	0.150	1.110
2-Axle Trucks (PCE = 1.5)			0.003	0.002	0.005	0.005	0.003	0.008	0.150
3-Axle Trucks (PCE = 2.0)			0.004	0.004	0.008	0.006	0.006	0.012	0.248
4+-Axle Trucks (PCE = 3.0)			0.021	0.017	0.038	0.030	0.026	0.056	1.127

[1] Trip Generation & Vehicle Mix Source: ITE, Trip Generation Manual, Eleventh Edition (2021).

[2] TSF = thousand square feet

[3] Truck Mix: South Coast Air Quality Management District's (SCAQMD) recommended truck mix, by axle type.
Normalized % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks.

TABLE 4-3: PROJECT TRIP GENERATION

Project Trip Generation	Quantity	Units[1]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Actual Vehicles:									
Warehousing	829.755	TSF							
Passenger Cars:			99	25	124	29	96	125	922
2-axle Trucks:			2	1	3	2	2	4	84
3-axle Trucks:			2	2	4	2	3	5	104
4+-axle Trucks:			6	5	11	8	7	15	312
Total Truck Trips:			10	8	18	12	12	24	500
Project Trips (Actual Vehicles)[2]			**109**	**33**	**142**	**41**	**108**	**149**	**1,422**
Passenger Car Equivalent (PCE):									
Warehousing	829.755	TSF							
Passenger Cars:			99	25	124	29	96	125	922
2-axle Trucks (PCE = 1.5):			2	2	4	4	3	7	126
3-axle Trucks (PCE = 2.0):			3	4	7	5	5	10	206
4+-axle Trucks (PCE = 3.0):			17	14	31	25	22	47	936
Total Truck Trips:			22	20	42	34	30	64	1,268
Project Trips (PCE)[2]			**121**	**45**	**166**	**63**	**126**	**189**	**2,190**

[1] TSF = thousand square feet

[2] Total Trips = Passenger Cars + Truck Trips.

Table 4-4 summarizes the net new trip generation to be evaluated for the Project once the credit is taken for existing uses. As shown, the proposed Project will be evaluated assuming 1,632 two-way PCE trips per day with a net reduction of 215 PCE AM peak hour trips and 836 PCE PM peak hour trips after credits for the existing uses. Note the net new trip generation will be utilized for all off-site study area intersections; however, the Project trip generation reflected in Table 4-3 will be utilized to evaluate the Project Driveways (without reductions for existing traffic).

TABLE 4-4: NET NEW PROJECT TRIP GENERATION

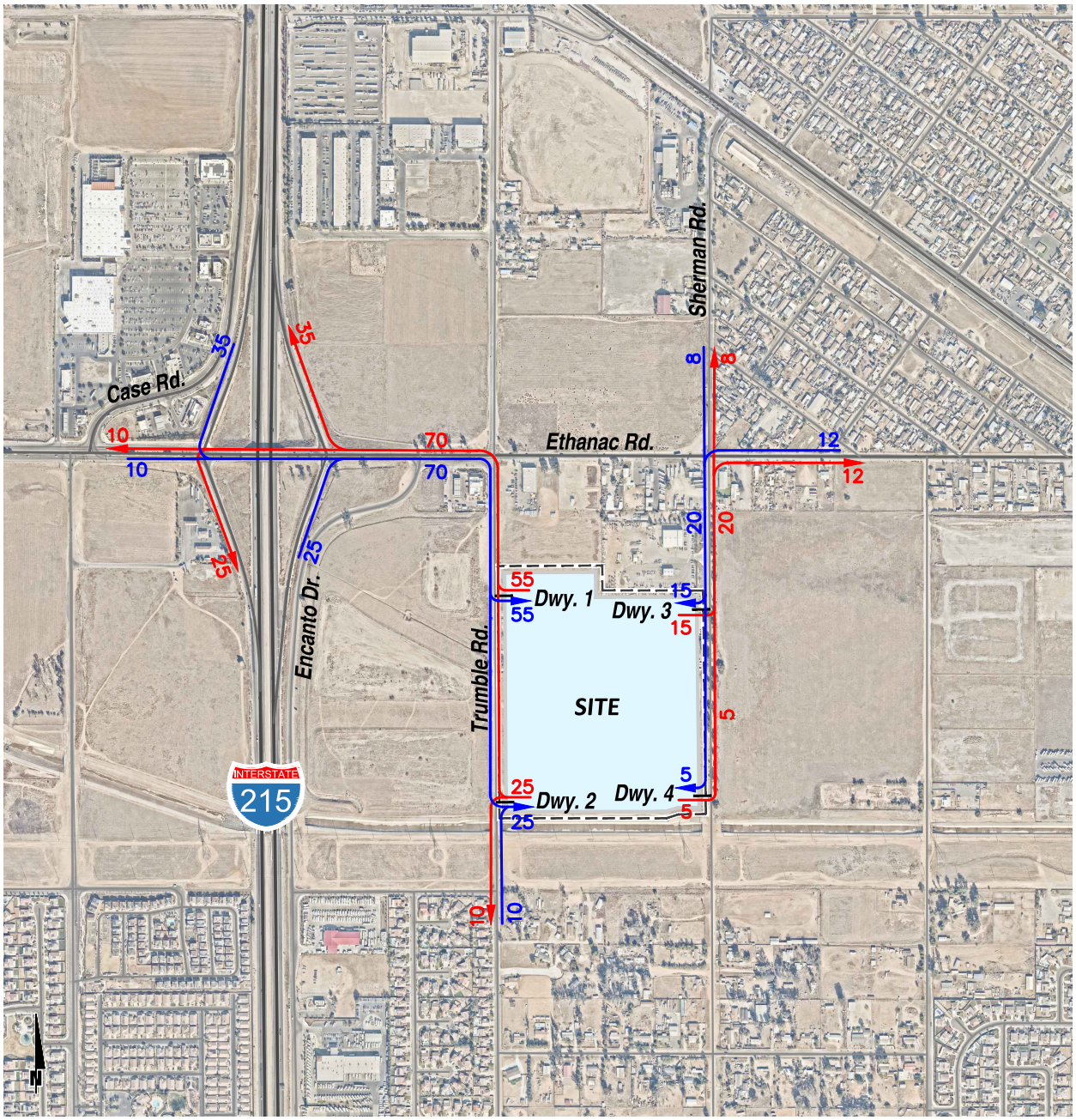
Net New Trip Generation	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	
Actual Vehicles:							
Net New Project Trips							
Passenger Cars:	96	22	118	28	92	121	814
2-axle Trucks:	2	1	2	2	2	3	66
3-axle Trucks:	2	2	4	2	3	4	93
4+-axle Trucks:	6	4	10	7	7	14	272
Total Truck Trips:	10	6	16	10	11	21	431
Net New Project Trips (Actual Vehicles)	**106**	**28**	**134**	**38**	**104**	**142**	**1,245**
Passenger Car Equivalent (PCE):							
Net New Project Trips							
Passenger Cars:	96	22	118	28	92	121	814
2-axle Trucks (PCE = 1.5):	1	1	2	3	2	5	99
3-axle Trucks (PCE = 2.0):	3	3	6	4	4	8	183
4+-axle Trucks (PCE = 3.0):	17	10	27	21	22	43	816
Total Truck Trips:	21	14	35	28	28	56	1,098
Net New Project Trips (PCE)	**117**	**36**	**153**	**56**	**120**	**177**	**1,912**

4.2 PROJECT TRIP DISTRIBUTION

Trip distribution is the process of identifying the probable destinations, directions or traffic routes that will be utilized by Project traffic. The potential interaction between the planned land uses and surrounding regional access routes are considered, to identify the route where the Project traffic would distribute. The Project trip distribution and assignment process represents the directional orientation of traffic to and from the Project site. The trip distribution pattern is heavily influenced by the geographical location of the site, the location of surrounding land uses, and the proximity to the regional freeway system.

The project trip distribution patterns for both passenger cars and trucks are consistent with those evaluated as part of the Menifee Commerce Center Project Traffic Impact Analysis (prepared by Albert A. Webb Associates and dated August 2021). Passenger car distribution patterns are based on existing and planned land uses and roadway infrastructure in the area. Truck distribution patterns take into consideration City truck routes, proximity to the freeway system, and the Project Applicant's input on percentage of traffic oriented to the Port of Long Beach or other destination. The passenger car and truck trip distributions are illustrated on Exhibits 4-1 and 4-2, respectively. Trucks will utilize Sherman Road only to access Ethanac Road (no trucks to access on Trumble Road).

EXHIBIT 4-1 : PROJECT (PASSENGER CAR) TRIP DISTRIBUTION



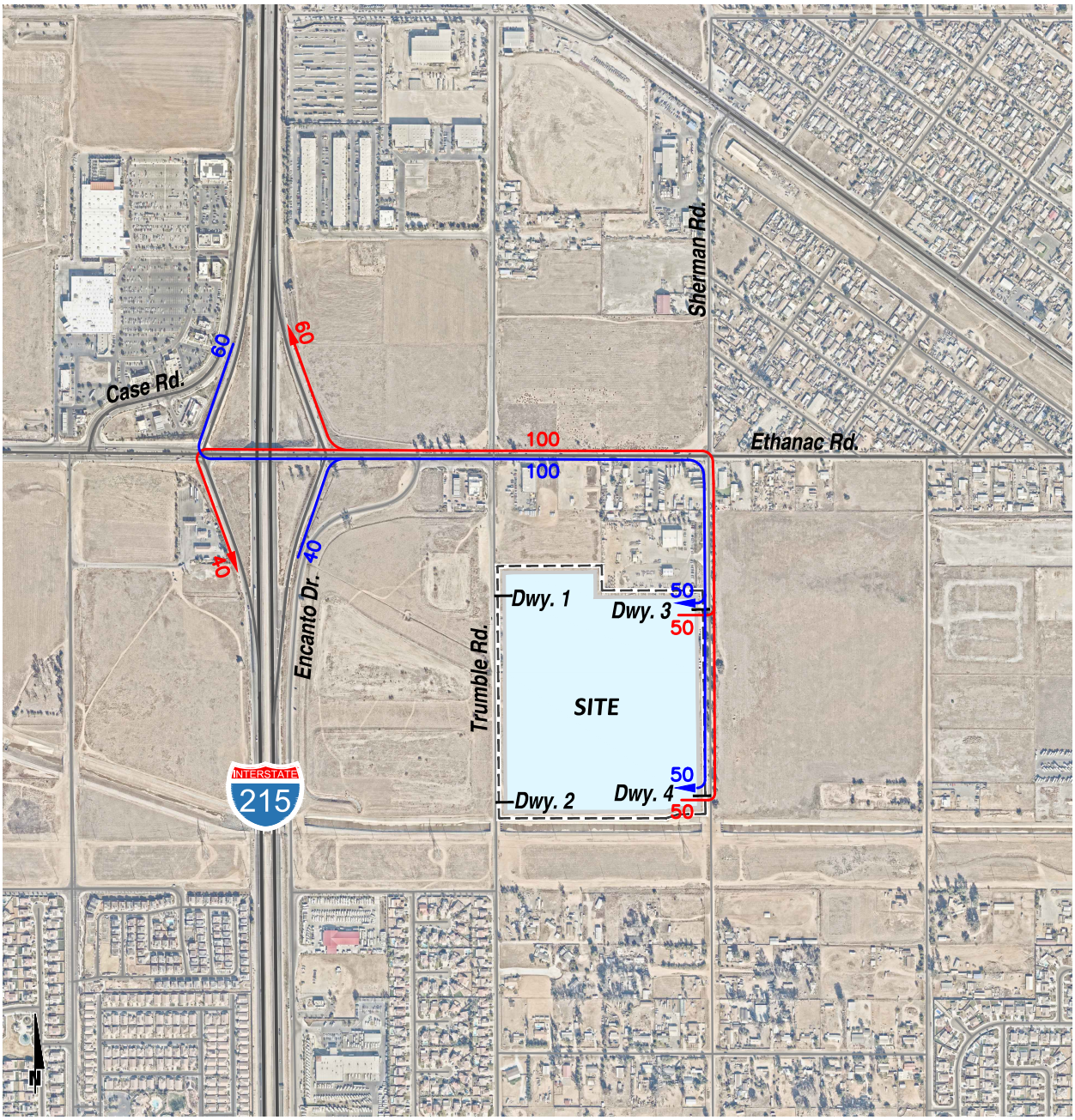
LEGEND:

10 = *Car Percent To/From Project*

= *Inbound Distribution*

= *Outbound Distribution*

EXHIBIT 4-2 : PROJECT (TRUCK) TRIP DISTRIBUTION



LEGEND:

10 = *Truck Percent To/From Project*

= *Inbound Distribution*

= *Outbound Distribution*

4.3 MODAL SPLIT

The potential for Project trips to be reduced by the use of public transit, walking or bicycling have not been included as part of the Project's estimated trip generation. Essentially, the Project's traffic projections are "conservative" in that these alternative travel modes would reduce the forecasted traffic volumes.

4.4 PROJECT TRIP ASSIGNMENT

The assignment of traffic from the Project area to the adjoining roadway system is based upon the Project trip generation, trip distribution, and the arterial highway and local street system improvements that would be in place by the time of initial occupancy of the Project. Based on the identified Project traffic generation and trip distribution patterns, near-term Project weekday ADT and weekday peak hour intersection turning movement volumes are shown in Exhibit 4-3 in actual vehicles and PCE in Exhibit 4-4.

4.5 BACKGROUND TRAFFIC

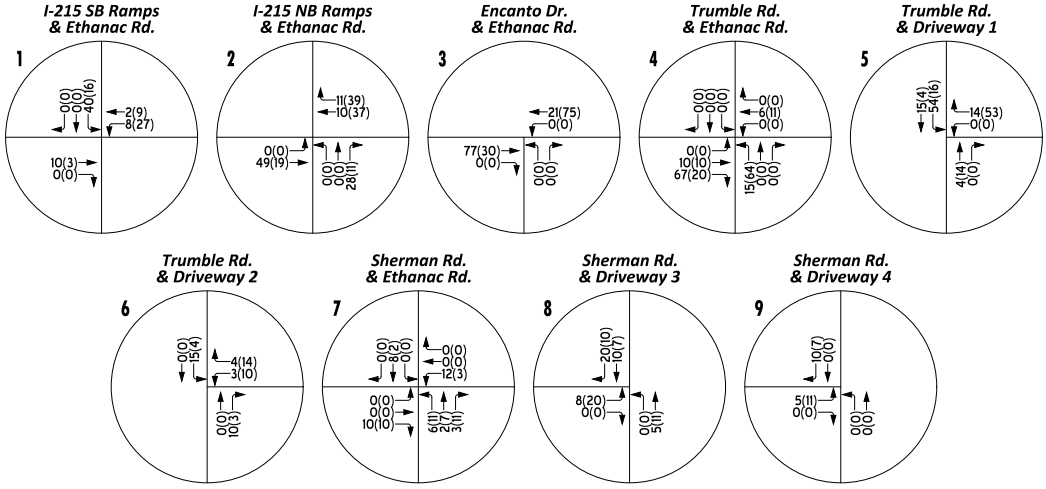
Future year traffic forecasts have been based upon background (ambient) growth at 2.0% per year for EAC and EAPC (2028) traffic conditions. The ambient growth factor is intended to approximate regional traffic growth. This ambient growth rate is added to existing traffic volumes to account for area-wide growth not reflected by cumulative development projects. Future year traffic forecasts for EAC and EAPC (2028) conditions have been based upon background (ambient) growth of 2.0% per year over three years (or 6.12%). This ambient growth is intended to approximate regional traffic growth in addition to growth generated by cumulative development projects. The traffic generated by the proposed Project was then manually added to the base volume to determine With Project forecasts.

4.6 CUMULATIVE DEVELOPMENT TRAFFIC

A cumulative project list was developed for the purposes of this analysis through consultation with planning and engineering staff from the City of Menifee and City of Perris. The cumulative projects listed are those that would generate traffic and would contribute traffic to study area intersections. Exhibit 4-5 illustrates the cumulative development location map. A summary of cumulative development projects and their proposed land uses are shown in Table 4-5. If applicable, the traffic generated by individual cumulative projects was manually added to the EAC and EAPC (2028) traffic forecasts to ensure that traffic generated by the listed cumulative development projects in Table 4-5 is reflected as part of the background traffic. In an effort to conduct a conservative analysis, the cumulative projects are added in conjunction with the ambient growth identified in Section 4.5 *Background Traffic*. Cumulative ADT and peak hour intersection turning movement volumes, in actual vehicles, are shown on Exhibit 4-6 for actual vehicles and Exhibit 4-7 for PCE.

EXHIBIT 4-3 : PROJECT ONLY VOLUMES (ACTUAL VEHICLES)



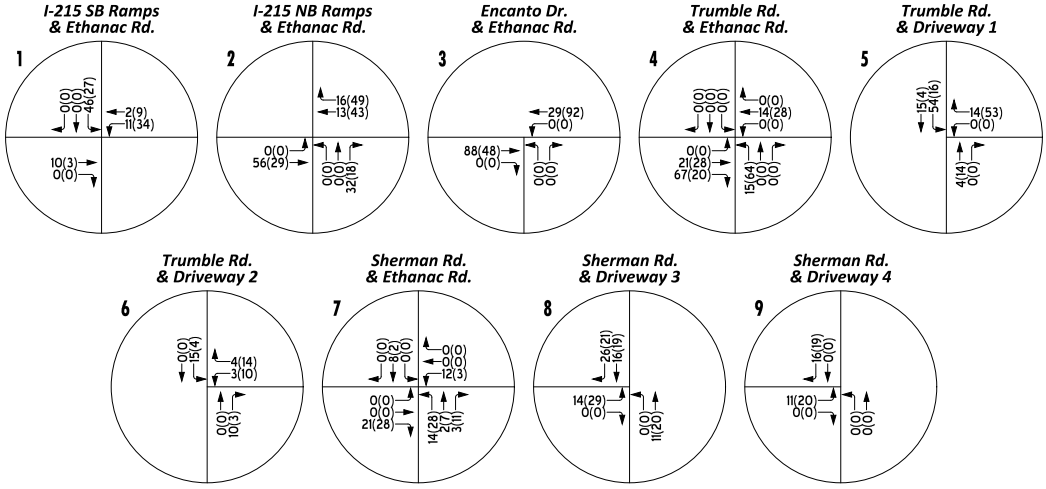


LEGEND:

- **0** = *Existing Intersection Analysis Location*
- (0) = *Future Intersection Analysis Location*
- 00(00) = *Peak Hour Volume AM(PM)*
- **00** = *Average Daily Traffic (ADT)*

EXHIBIT 4-4 : PROJECT ONLY PCE VOLUMES





LEGEND:

- **0** = *Existing Intersection Analysis Location*
- (0) = *Future Intersection Analysis Location*
- 00(00) = *Peak Hour Volume AM(PM)*
- **00** = *Average Daily Traffic (ADT)*

EXHIBIT 4-5 : CUMULATIVE DEVELOPMENT MAP

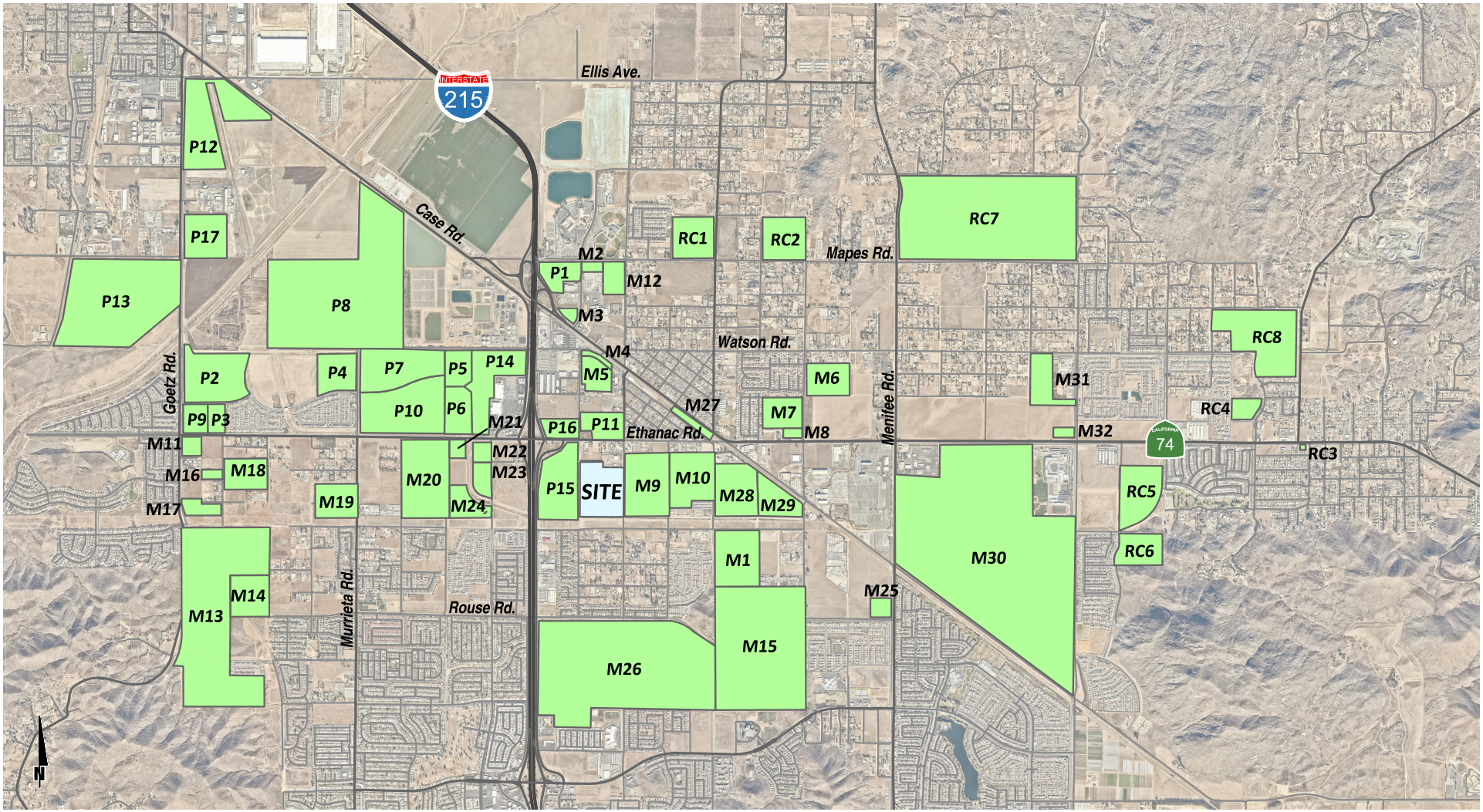
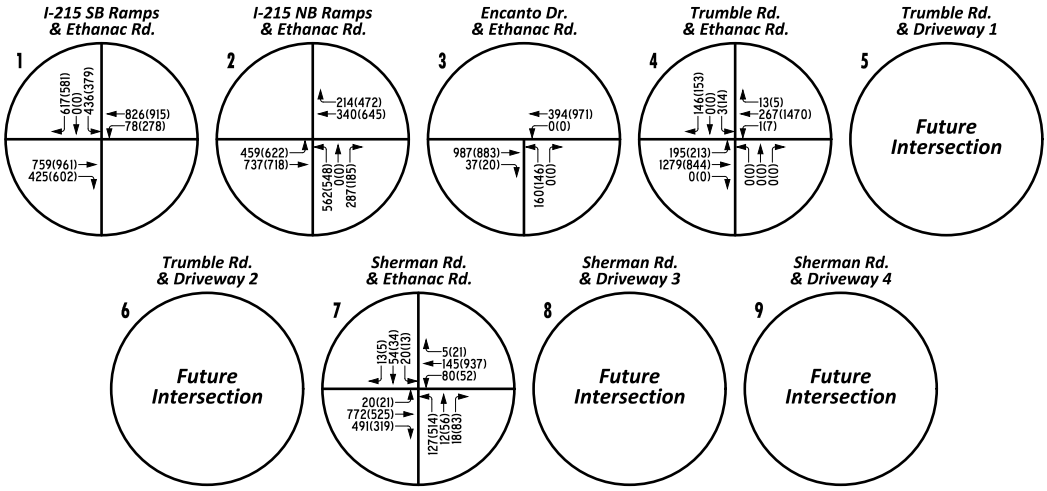


EXHIBIT 4-6 : CUMULATIVE ONLY VOLUMES (ACTUAL VOLUMES)



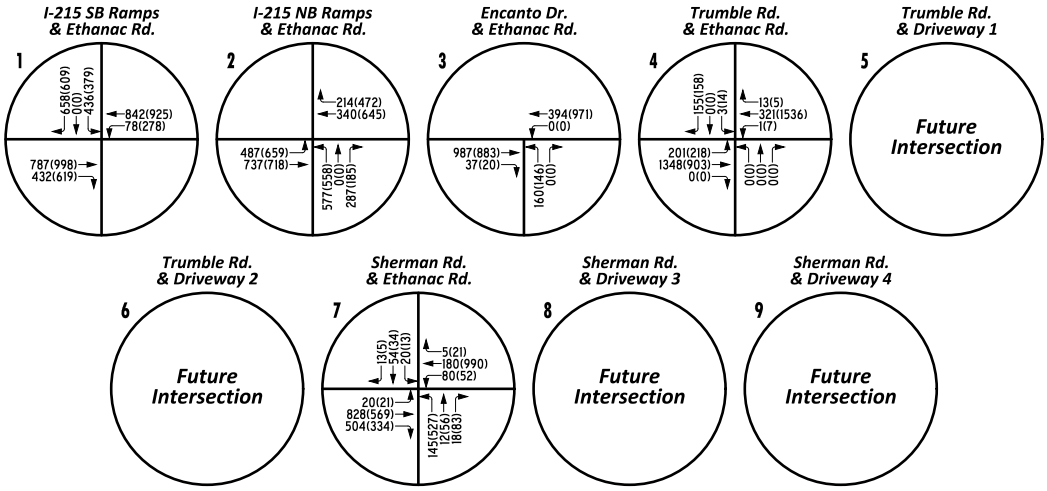


LEGEND:

- 0 = *Existing Intersection Analysis Location*
- (0) = *Future Intersection Analysis Location*
- 00(00) = *Peak Hour Volume AM(PM)*
- 00 = *Average Daily Traffic (ADT) In Thousands*

EXHIBIT 4-7 : CUMULATIVE ONLY PCE VOLUMES





LEGEND:

- **0** = *Existing Intersection Analysis Location*
- (0) = *Future Intersection Analysis Location*
- 00(00) = *Peak Hour Volume AM(PM)*
- **00** = *Average Daily Traffic (ADT) In Thousands*

TABLE 4-2: CUMULATIVE DEVELOPMENT LAND USE SUMMARY (1 OF 2)

No.	Project Name / Case Number	Jurisdiction	Land Use	Quantity	Units[1]
P1	Mapes and Trumble Industrial	Perris	High-Cube Fulfillment Center	396.000	TSF
	Green Valley Specific Plan (GVSP)	Perris			
P2	GVSP - Track 37262		Single Family Housing	191	DU
P3	GVSP - Track 37816		Multifamily Housing	97	DU
P4	GVSP - Track 37722 (75% Complete)		Single Family Housing	116	DU
P5	GVSP - Track 37817		Multifamily Housing	227	DU
P6	GVSP - Track 37818		Multifamily Housing	374	DU
P7	GVSP - Track 37223		Single Family Housing	235	DU
P8	GVSP - Phase 2 (North)		Multifamily Housing	1,183	DU
			Single Family Housing	462	DU
			Commercial	5.9	AC
			School	15.0	AC
P9	GVSP - Phase 2 (South)		Multifamily Housing	111	DU
			Commercial	5.4	AC
P10	GVSP (PA 46, 47, & 48)		Single Family Housing	483	DU
P11	Hillwood Ethanac	Perris	High-Cube Transload Warehouse	362.348	TSF
			High-Cube Cold Storage Warehouse	50.000	TSF
P12	Perris Airport Center Industrial	Perris	High-Cube Fulfillment Center	795.109	TSF
			General Light Industrial	71.961	TSF
			Truck/Trailer Lot	323	Spaces
P13	Perris Logistics Center South	Perris	High-Cube Warehouse	3,448.734	TSF
P14	Case Road Mixed-Use	Perris	Self-Storage Facility	211.900	TSF
			Recreational Vehicle (RV) Storage	215	Spaces
			High-Cube Fulfillment Center (Sort)	498.000	TSF
			Hotel	128	RM
			High Turnover (Sit-Down) Restaurant	27.000	TSF
			Fast-Food Restaurant with Drive-Thru	5.000	TSF
P15	Motte Towne Center (DPR06-0337)	Perris	Commercial	286.000	TSF
			Free-Standing Discount Store	221.000	TSF
P16	Perris Travel Center (P22-05002)	Perris	Gas Station and Truck Stop	23	VFP
P17	Airport Industrial	Perris	Industrial	650.000	TSF
RC1	TTM/TR37358	County	Residential lots	154	DU
RC2	TR31687	County	Single Family Residential	65	DU
RC3	CUP180014	County	High Turnover (Sit-Down) Restaurant	5.000	TSF
			Shopping Center	5.000	TSF
			Office	5.000	TSF
RC4	TR31820	County	Single Family Residential	17	DU
RC5	Menifee North SP (PA32)	County	Multifamily Housing	206	DU
RC6	Menifee North SP (PA35)	County	Multifamily Housing	43	DU
RC7	TR35045	County	Single Family Detached Residential	712	DU
RC8	Menifee North (SP No. 260)	County	Single Family Detached Residential	115	DU
			Single Family Detached Residential	201	DU
			Mini-Warehouse (Storage)	55.539	TSF
M1	McLaughlin Warehouses (DEV2024-016)	Menifee	Warehouse	491.467	TSF
M2	United Carports Warehouse (DEV2024-009)	Menifee	Warehouse	58.643	TSF
M3	Trumble Retail (CUP2016-290)	Menifee	Hotel	108	RM
			Quality Restaurant	5.500	TSF
			Fast-Food w/ Drive-Thru	3.000	TSF
			Gas Station	12	VFP
M4	Paragon Framing (CUP2018-126)	Menifee	Office/Storage	10.454	TSF

TABLE 4-2: CUMULATIVE DEVELOPMENT LAND USE SUMMARY (2 OF 2)

No.	Project Name / Case Number	Jurisdiction	Land Use	Quantity	Units[1]
M5	Trumble/Watson Warehouse (DEV2024-019)	Menifee	Warehouse	327.631	TSF
M6	TR 38132 & 38133 (SPA DEV2021-005)	Menifee	Single Family Residential	322	DU
M7	MR-27 LLC Rancon (TTM 34118)	Menifee	Multifamily (Low-Rise)	85	DU
M8	Motte Country Plaza (PP2018-300)	Menifee	Gas Station	12	VFP
M9	Menifee Commerce Center (PP2019-005)	Menifee	Warehouse	1,640.130	TSF
M10	Motte Business Center	Menifee	Warehouse	1,138.638	TSF
M11	Goetz/Ethanac Commercial (PP PLN21-0319)	Menifee	Gas Station w/ C-Store	7.250	TSF
			Car Wash	2.790	TSF
			Retail	7.040	TSF
M12	Mapes and Sherman Warehouse	Menifee	High-Cube Fulfillment Center	277.578	TSF
M13	Cimarron Ridge (25% Complete)	Menifee	Residential	756	DU
M14	TTM 38128 (DEV2024-001)	Menifee	Single Family Residential	96	DU
M15	Underwood	Menifee	Residential	543	DU
M16	Wheat Warehouse	Menifee	Warehouse Distribution Center	87.676	TSF
M17	Corsica Business Park (DEV2024-010)	Menifee	Business Park	234.921	TSF
M18	CADO Warehouse	Menifee	Warehouse	700.037	TSF
M19	Ares Warehouse on Murrieta (DEV2024-017)	Menifee	Warehouse	517.720	TSF
M20	N. Gateway Commerce Center II (PP PLN21-0281)	Menifee	High-Cube Warehouse	1,286.607	TSF
M21	Ethanac/Evans Warehouse (DEV2024-018)	Menifee	Warehouse	137.896	TSF
M22	Ethanac Square (MJMOD PLN21-0104)	Menifee	Gas Station	3.800	TSF
M23	Ethanac/Barnett Warehouse (PP PLN21-0290)	Menifee	Warehouse	251.133	TSF
M24	Menifee Logistics (PLN23-0040)	Menifee	Warehouse	411.829	TSF
M25	LDW TTM 38346	Menifee	Condominiums	162	DU
M26	Legado SP	Menifee	Single Family Detached Residential	1,061	DU
			Shopping Center	225.000	TSF
			Sports Park	11.23	AC
			Recreational Community Center	10.000	TSF
M27	Self-Storage Facility	Menifee	Self-Storage Facility	71.637	TSF
M28	Nova Battery Project (DEV2024-015)	Menifee	Battery Energy Storage System	44.220	AC
M29	Double Butte (DEV2024-026)	Menifee	Battery Energy Storage System	27.000	AC
M30	Menifee Valley Specific Plan	Menifee	Single Family Housing	1,328	DU
			Multifamily (Low-Rise)	390	DU
			Elementary School	750	STU
			Industrial Uses	5,510.000	TSF
			Commercial	560.000	TSF
			Public Facilities	120.000	TSF
			Sports Park w/ Aquatic Sports	54.000	TSF
M31	MR-27 LLC (Rancon)	Menifee	Multifamily Housing	153	DU
M32	Harvest Glen Marketplace	Menifee	Fast-Food Restaurant with Drive-Thru	5.000	TSF
			Gas Station with Convenience Market	16	VFP

[1] TSF = Thousand Square Feet; DU = Dwelling Units; VSP = Vehicle Fueling Positions; STU = Students; AC = Acres

4.7 HORIZON YEAR TRAFFIC FORECASTS

Traffic projections for Horizon Year conditions were derived from the RIVCOM regional model using accepted procedures for model forecast refinement and smoothing. The traffic forecasts reflect the area-wide growth anticipated between Existing and Horizon Year traffic conditions. The base model year for the RIVCOM regional model is Year 2018 and the future year model is Year 2045.

In most instances, the traffic model zone structure is not designed to provide accurate turning movements along arterial roadways unless refinement and reasonableness checking is performed. Therefore, the Horizon Year peak hour forecasts were refined using the model derived long-range forecasts, base (validation) year model forecasts, along with existing peak hour traffic count data collected at each analysis location.

The refined future peak hour approach and departure volumes obtained from these calculations are then entered into a spreadsheet program consistent with the National Cooperative Highway Research Program (NCHRP Report 765), along with initial estimates of turning movement proportions. A linear programming algorithm is used to calculate individual turning movements which match the known directional roadway segment forecast volumes computed in the previous step. This program computes a likely set of intersection turning movements from intersection approach counts and the initial turning proportions from each approach leg.

Typically, the model growth is prorated and is subsequently added to the existing (base validation) traffic volumes to represent Horizon Year traffic conditions. However, review of the resulting model growth indicates negative growth for some of the study area intersections. In conjunction with the addition of cumulative projects that are not consistent with the General Plan, additional growth has also been applied on a movement-by-movement basis, where applicable, to estimate reasonable Horizon Year forecasts. Horizon Year turning volumes were compared to Existing (2025) volumes in order to ensure a minimum growth as a part of the refinement process.

The future Horizon Year Without Project peak hour turning movements were then reviewed by Urban Crossroads for reasonableness, and in some cases, were adjusted to achieve flow conservation, reasonable growth, and reasonable diversion between parallel routes. Flow conservation checks ensure that traffic flow between two closely spaced intersections, such as two freeway ramp locations, is verified in order to make certain that vehicles leaving one intersection are entering the adjacent intersection and that there is no unexplained loss of vehicles. The result of this traffic forecasting procedure is a series of traffic volumes which are suitable for traffic operations analysis. Post processing worksheets are provided in Appendix 4.1.

5 E+P TRAFFIC CONDITIONS

This section discusses the traffic forecasts for E+P conditions and the resulting intersection operations, traffic signal warrant, roadway segment, and freeway off-ramp queuing analyses.

5.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for EAP (2028, 2029, & 2030) conditions are consistent with those shown previously in Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for EAP conditions (e.g., intersection and roadway improvements at the Project's frontage and driveways).

5.2 TRAFFIC VOLUME FORECASTS

This scenario includes Existing (2025) traffic volumes plus the addition of Project traffic. The weekday ADT volumes and peak hour volumes which can be expected for E+P traffic conditions are shown in Exhibit 5-1.

5.3 INTERSECTION OPERATIONS ANALYSIS

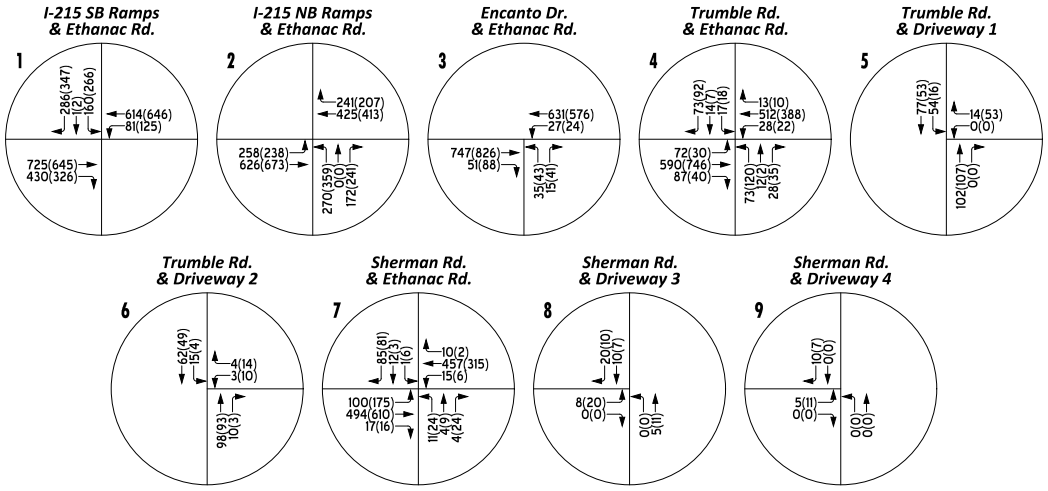
E+P peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2 *Methodologies* of this TA. The intersection analysis results are summarized in Table 5-1 for E+P traffic conditions, which indicates that all of the study area intersections are anticipated to continue to operate at an acceptable LOS under E+P traffic conditions, with the exception of the following intersection (consistent with Existing conditions):

- Sherman Rd. & Ethanac Rd. (#7) – LOS F AM and PM peak hours

The intersection operations analysis worksheets for E+P traffic conditions are included in Appendix 5.1.

EXHIBIT 5-1 : E+P VOLUMES (ACTUAL VOLUMES)



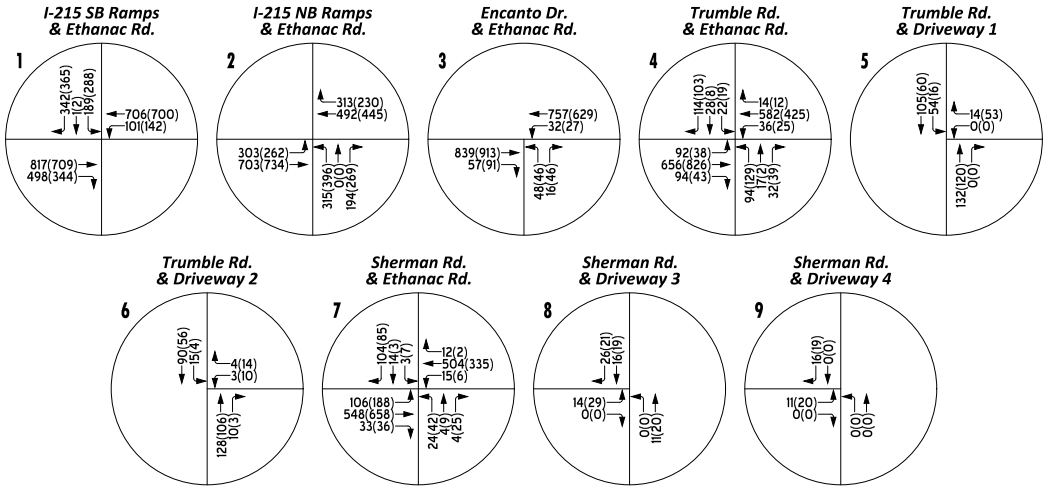


LEGEND:

- **0** = *Existing Intersection Analysis Location*
- (0) = *Future Intersection Analysis Location*
- 00(00) = *Peak Hour Volume AM(PM)*
- **00** = *Average Daily Traffic (ADT) In Thousands*

EXHIBIT 5-2 : E+P PCE VOLUMES





LEGEND:

- **0** = *Existing Intersection Analysis Location*
- (0) = *Future Intersection Analysis Location*
- 00(00) = *Peak Hour Volume AM(PM)*
- **00** = *Average Daily Traffic (ADT) In Thousands*

TABLE 5-1: E+P INTERSECTION ANALYSIS

#	Intersection	Traffic Control[2]	Existing (2025)				E+P			
			Delay[1] (secs.)		Level of Service		Delay[1] (secs.)		Level of Service	
			AM	PM	AM	PM	AM	PM	AM	PM
1	I-215 SB Ramps & Ethanac Rd.	TS	14.5	15.4	B	B	15.6	18.0	B	B
2	I-215 NB Ramps & Ethanac Rd.	TS	38.9	28.0	D	C	41.3	35.9	D	D
3	Encanto Dr. & Ethanac Rd.	CSS	24.9	25.3	C	D	27.8	28.3	D	D
4	Trumble Rd. & Ethanac Rd.	TS	18.9	19.1	B	B	19.9	24.1	B	C
5	Trumble Rd. & Driveway 1	**CSS**	Future Intersection				9.0	9.2	A	A
6	Trumble Rd. & Driveway 2	**CSS**	Future Intersection				9.5	9.2	A	A
7	Sherman Rd. & Ethanac Rd.	CSS	**53.4**	**43.5**	**F**	**E**	**82.9**	**>100.0**	**F**	**F**
8	Sherman Rd. & Driveway 3	**CSS**	Future Intersection				9.1	9.2	A	A
9	Sherman Rd. & Driveway 4	**CSS**	Future Intersection				8.9	9.0	A	A

* **BOLD** = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

1 Per the Highway Capacity Manual (7th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown. HCM delay reported in seconds.

2 TS = Traffic Signal; CSS = Cross-street Stop; **CSS** = Improvement

5.4 TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants have been performed for E+P traffic conditions based on planning level (ADT) volumes for the future intersections (Project Driveways). There are no unsignalized study area intersections anticipated to meet a traffic signal warrant under E+P traffic conditions. The E+P traffic conditions traffic signal warrant analysis worksheets are provided in Appendix 5.2.

5.5 ROADWAY SEGMENT CAPACITY ANALYSIS

The roadway capacities utilized for the study area roadway segment analysis are obtained from the City Guidelines. These roadway segment capacities are approximate figures only and are used at the General Plan level to assist in determining the roadway functional classification (number of through lanes) needed to meet traffic demand.

Table 5-2 provides a summary of the E+P conditions roadway segment capacity analysis. As shown in Table 5-2, there are no additional study area roadway segments are anticipated to operate at an unacceptable LOS based on the daily roadway capacity thresholds and minimum LOS criteria under E+P traffic conditions in addition to the segment previously identified under Existing traffic conditions.

TABLE 5-2: E+P ROADWAY SEGMENT ANALYSIS

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	Existing (2025)			Existing + Project		
					2025	V/C[2]	LOS[3]	E+P	V/C[2]	LOS[3]
1	Ethanac Road	I-215 Freeway to Encanto Dr.	2D	18,000	**16,922**	**0.940**	**E**	**17,764**	**0.987**	**E**
2		Encanto Dr. to Trumble Rd.	2D	18,000	14,335	0.796	C	15,177	0.843	D
3		Trumble Rd. to Sherman Rd.	2U	18,000	13,653	0.759	C	13,925	0.774	C
4	Trumble Road	South of Ethanac Rd.	2D	18,000	1,495	0.083	A	2,065	0.115	A
5	Sherman Road	South of Ethanac Rd.	2U	17,050	337	0.020	A	773	0.045	A

[1] The volumes shown are based on LOS "E" roadway segment capacity thresholds as defined by the applicable City Guidelines.

[2] V/C = Volume to Capacity Ratio

[3] LOS = Level of Service

5.6 Off-Ramp Queuing Analysis

Off-ramp queuing analysis findings for E+P are presented in Table 5-3. As shown in Table 5-3, there are no off-ramp movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows. However, the following movements are anticipated to continue to operate with deficient queues along Ethanac Road consistent with Existing (2025) traffic conditions:

- I-215 NB Ramps & Ethanac Rd. (#2) – eastbound left turn movement during the AM and PM peak hours
- I-215 NB Ramps & Ethanac Rd. (#2) – westbound through movement during the AM peak hour only

It should be noted that the Project does not contribute any traffic to the eastbound left turn movement at the I-215 NB Ramps and Ethanac Road. Worksheets for E+P traffic conditions queuing analysis are provided in Appendix 5.3.

5.7 Improvement Recommendations to Maintain General Plan Consistency

Improvements needed to bring the intersection back to existing LOS or better have been identified at intersections or off-ramps anticipated to operate at a deficient LOS under E+P traffic conditions.

5.7.1 Improvements To Address Intersection Deficiencies

Intersection improvements necessary to improve project-related traffic deficiencies are shown in Table 5-4. The improvements have been identified at deficient intersections to restore the LOS back to existing levels or better, thereby offsetting the Project's increase in delay. Worksheets for E+P conditions, with improvements, HCM calculation worksheets are provided in Appendix 5.4.

5.7.2 Improvements To Address Roadway Segment Deficiencies

Although the Project does not cause the roadway segment deficiency along Ethanac Road between the I-215 Freeway and Encanto Drive, the addition of Project traffic will continue to exacerbate the existing deficiency. As such, the Project should contribute its fair share towards the improvements needed to address the Existing and E+P deficiency. Roadway segment improvements necessary to improve project-related traffic deficiencies are shown in Table 5-5.

5.7.3 Improvements To Address Off-Ramp Queuing Deficiencies

As shown previously in Table 5-3, there are no study area off-ramps anticipated to experience queuing issues under E+P traffic conditions. As such, no improvements have been identified. In order to address queues along Ethanac Road east of the I-215 Freeway, Ethanac Road would need to be widened to accommodate additional roadway capacity. Alternatively, the proposed closure of Encanto Drive would also provide additional storage capacity of the westbound through movement (additional 450-feet of storage).

TABLE 5-3: E+P OFF-RAMP QUEUING SUMMARY

#	Intersection	Movement	Available Stacking Distance (Feet)	Existing (2025)				E+P			
				95th Percentile Queue (Feet)		Acceptable? [1]		95th Percentile Queue (Feet)		Acceptable? [1]	
				AM	PM	AM	PM	AM	PM	AM	PM
1	I-215 SB Ramps & Ethanac Rd.	SBT	1,375	145	285 [2]	Yes	Yes	187	329 [2]	Yes	Yes
		SBR	240	141	151	Yes	Yes	142	155	Yes	Yes
		EBT	625	605	453	Yes	Yes	619	456	Yes	Yes
		EBR	625	46	39	Yes	Yes	46	39	Yes	Yes
		WBL	275	110	150 [2]	Yes	Yes	126 [2]	211 [2]	Yes	Yes
		WBT	680	109	104	Yes	Yes	110	105	Yes	Yes
2	I-215 NB Ramps & Ethanac Rd.	NBL/T	1,325	374 [2]	499 [2]	Yes	Yes	374 [2]	509 [2]	Yes	Yes
		NBR	270	54	66	Yes	Yes	59	81	Yes	Yes
		EBL	245	**378** [2]	**324** [2]	**No**	**No**	**378** [2]	**330** [2]	**No**	**No**
		EBT	680	265	287	Yes	Yes	302	307	Yes	Yes
		WBT	460	**740** [2]	396	**No**	Yes	**783** [2]	**497**	**No**	**No**

BOLD = 95th percentile queue exceeds the available storage.

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 25 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

[2] 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

TABLE 5-4: E+P INTERSECTION ANALYSIS WITH IMPROVEMENTS

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
7	Sherman Rd. & Ethanac Rd.																	
	Without Improvements:	CSS	0	1	0	0	1	0	0	1	0	0	1	0	**82.9**	**>100.0**	**F**	**F**
	With Improvements:	**TS**	**1**	1	0	**1**	1	0	**1**	1	0	**1**	1	0	15.1	15.1	B	B

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; **1** = Improvement

[2] Per the Highway Capacity Manual (7th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; CSS = Cross-Street Stop; **TS** = Improvement

TABLE 5-5: E+P ROADWAY SEGMENT ANALYSIS WITH IMPROVEMENTS

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	Existing (2025)			Existing + Project		
					2025	V/C[2]	LOS[3]	E+P	V/C[2]	LOS[3]
1	Ethanac Road	I-215 Freeway to Encanto Dr.	**4D**	35,900	16,922	0.471	A	17,764	0.495	A

[1] The volumes shown are based on LOS "E" roadway segment capacity thresholds as defined by the applicable City Guidelines.

[2] V/C = Volume to Capacity Ratio

[3] LOS = Level of Service

6 EAC & EAPC (2028) TRAFFIC CONDITIONS

This section discusses the traffic forecasts for EAC & EAPC (2028) conditions and the resulting intersection operations, roadway segment, traffic signal warrant, and freeway off-ramp queuing analyses.

6.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for EAC and EAPC (2028) conditions are consistent with those shown previously in Exhibit 3-1, with the exception of the following:

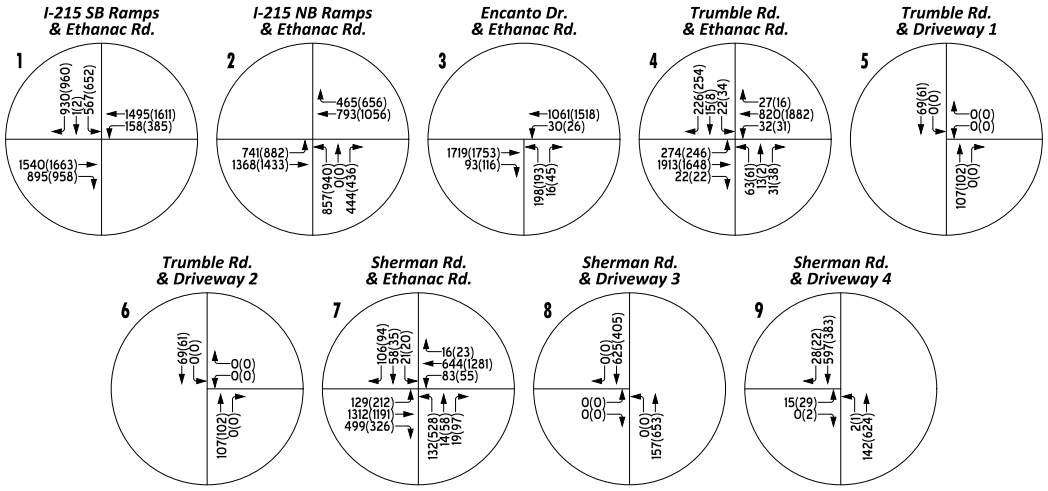
- Driveways and those facilities assumed to be constructed by cumulative developments to provide site access are also assumed to be in place for EAC and EAPC (2028) conditions only (e.g., intersection and roadway improvements along the cumulative development's frontages).
- Project driveways and those facilities assumed to be constructed by the Project (Project Buildout) to provide site access are also assumed to be in place for EAPC (2028) conditions (e.g., intersection and roadway improvements at the Project's frontage and driveways).

6.2 TRAFFIC VOLUME FORECASTS

The EAC (2028) scenario includes Existing traffic volumes plus an ambient growth factor of 6.12% and the addition of traffic generated by cumulative development projects. The EAPC (2028) scenario includes Existing traffic volumes plus an ambient growth factor of 6.12%, the addition of traffic generated by cumulative development projects, and the addition of Project traffic. The weekday ADT and weekday peak hour intersection turning movement volumes, in actual vehicles, which can be expected for EAC and EAPC (2028) traffic conditions are shown on Exhibits 6-1 and 6-3, respectively. It should be noted that in order to evaluate the proposed right-in/right-out access restriction for the intersection of Encanto Drive at Ethanac Road, the northbound left and westbound left turn volumes have been reallocated to the intersection of Trumble Road and Ethanac Road for the purposes of these near-term cumulative analysis scenarios. The weekday peak hour intersection turning movement volumes, in PCE, which can be expected for EAC and EAPC (2028) traffic conditions are shown on Exhibits 6-2 and 6-4, respectively.

EXHIBIT 6-1 : EAC (2028) VOLUMES (ACTUAL VOLUMES)



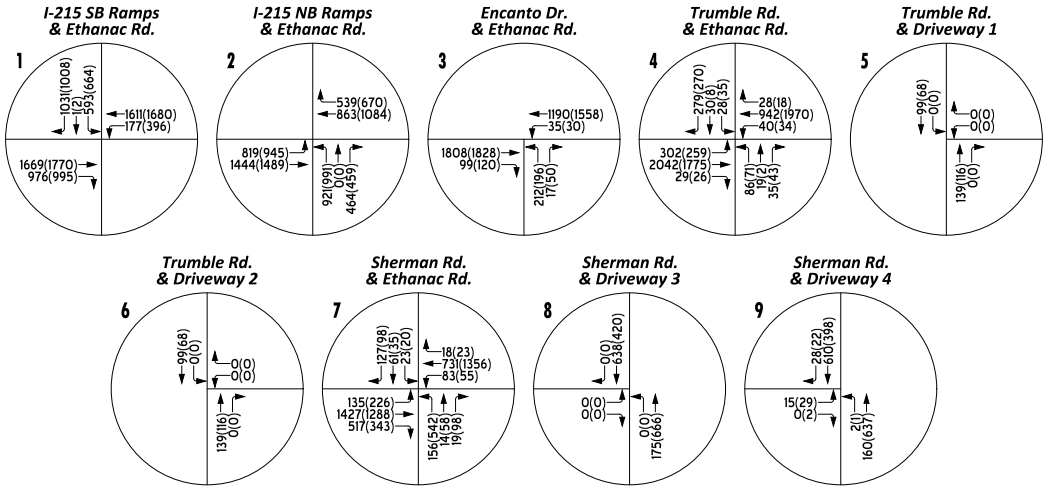


LEGEND:

- **0** = *Existing Intersection Analysis Location*
- (0) = *Future Intersection Analysis Location*
- 00(00) = *Peak Hour Volume AM(PM)*
- **00** = *Average Daily Traffic (ADT) In Thousands*

EXHIBIT 6-2 : EAC (2028) PCE VOLUMES



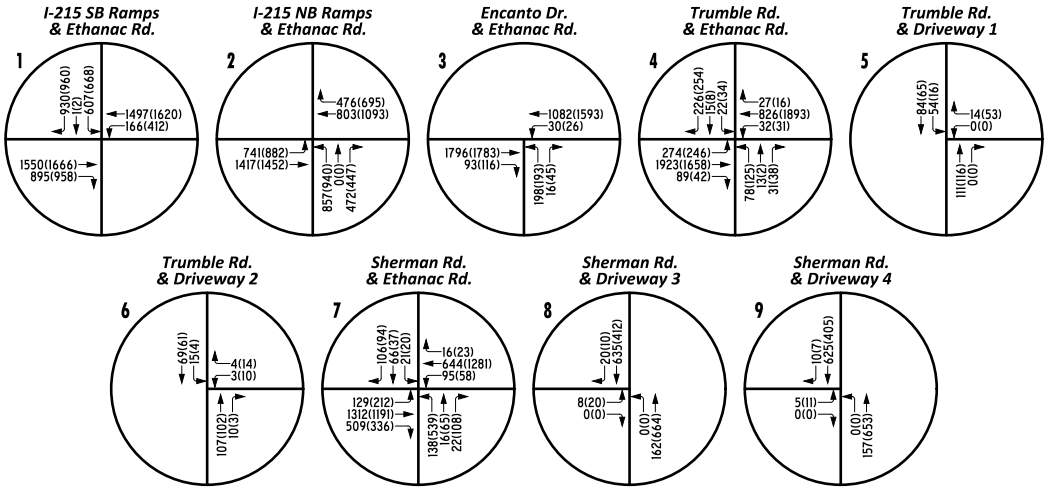


LEGEND:

- (0) = *Existing Intersection Analysis Location*
- (0) = *Future Intersection Analysis Location*
- 00(00) = *Peak Hour Volume AM(PM)*
- 00 = *Average Daily Traffic (ADT) In Thousands*

EXHIBIT 6-3 : EAPC (2028) VOLUMES (ACTUAL VOLUMES)



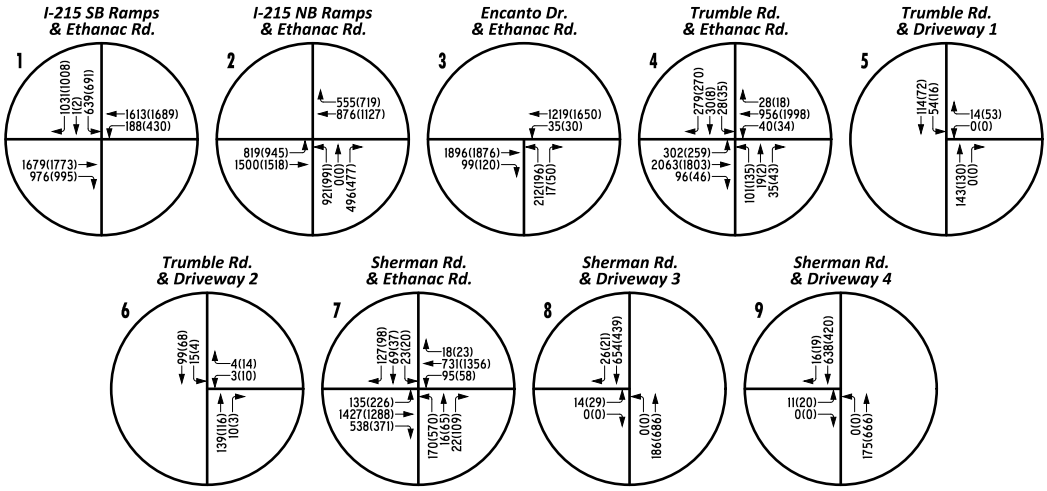


LEGEND:

- **0** = *Existing Intersection Analysis Location*
- (0) = *Future Intersection Analysis Location*
- 00(00) = *Peak Hour Volume AM(PM)*
- **00** = *Average Daily Traffic (ADT) In Thousands*

EXHIBIT 6-4 : EAPC (2028) PCE VOLUMES





LEGEND:

- **0** = *Existing Intersection Analysis Location*
- (0) = *Future Intersection Analysis Location*
- 00(00) = *Peak Hour Volume AM(PM)*
- **00** = *Average Daily Traffic (ADT) In Thousands*

6.3 INTERSECTION OPERATIONS ANALYSIS

EAC (2028) peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2 *Methodologies*. The intersection analysis results are summarized in Table 6-1 for EAC (2028) traffic conditions, which indicates that the following study area intersections are anticipated to operate at an unacceptable LOS under EAC (2028) traffic conditions:

- I-215 SB Ramps & Ethanac Rd. (#1) – LOS F AM and PM peak hours
- I-215 NB Ramps & Ethanac Rd. (#2) – LOS F AM and PM peak hours
- Encanto Dr. & Ethanac Rd. (#3) – LOS F AM and PM peak hours
- Trumble Rd. & Ethanac Rd. (#4) – LOS F AM and PM peak hours
- Sherman Rd. & Ethanac Rd. (#7) – LOS F AM and PM peak hours

The addition of Project traffic is not anticipated to result in any additional deficiencies from those previously identified under EAC (2028) traffic conditions. The intersection operations analysis worksheets for EAC and EAPC (2028) traffic conditions are included in Appendices 6.1 and 6.2, respectively.

TABLE 6-1: EAC & EAPC (2028) INTERSECTION ANALYSIS

#	Intersection	Traffic Control[2]	EAC 2028				EAPC 2028			
			Delay[1] (secs.)		Level of Service		Delay[1] (secs.)		Level of Service	
			AM	PM	AM	PM	AM	PM	AM	PM
1	I-215 SB Ramps & Ethanac Rd.	TS	**>200.0**	**>200.0**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**
2	I-215 NB Ramps & Ethanac Rd.	TS	**>200.0**	**>200.0**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**
3	Encanto Dr. & Ethanac Rd.	CSS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
4	Trumble Rd. & Ethanac Rd.	TS	**>200.0**	**>200.0**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**
5	Trumble Rd. & Driveway 1	**CSS**	Future Intersection				9.1	9.2	A	A
6	Trumble Rd. & Driveway 2	**CSS**	Future Intersection				9.6	9.3	A	A
7	Sherman Rd. & Ethanac Rd.	CSS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
8	Sherman Rd. & Driveway 3	**CSS**	Future Intersection				14.4	17.0	B	C
9	Sherman Rd. & Driveway 4	**CSS**	Future Intersection				14.0	16.2	B	C

* **BOLD** = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

1 Per the Highway Capacity Manual (7th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown. HCM delay reported in seconds.

2 TS = Traffic Signal; CSS = Cross-street Stop; **CSS** = Improvement

6.4 TRAFFIC SIGNAL WARRANTS ANALYSIS

All unsignalized study area intersections met a peak hour volume based traffic signal warrant under Existing traffic conditions. As such, traffic signal warrants have not been evaluated for EAC (2028) traffic conditions. The traffic signal warrant analysis for EAPC (2028) traffic conditions are based on the planning level ADT volume-based traffic signal warrants. There are no unsignalized study area intersections anticipated to meet a traffic signal warrant under EAPC (2028) traffic conditions at the Project Driveways. The EAPC (2028) traffic conditions traffic signal warrant analysis worksheets are provided in Appendix 6.3.

6.5 ROADWAY SEGMENT CAPACITY ANALYSIS

The roadway capacities utilized for the study area roadway segment analysis are obtained from the City Guidelines. Table 6-2 provides a summary of the EAC and EAPC (2028) conditions roadway segment capacity analysis. As shown in Table 6-2, the following study area roadway segments are anticipated to operate at an unacceptable LOS based on the daily roadway capacity thresholds and minimum LOS criteria under EAC (2028) traffic conditions:

- Ethanac Rd., between I-215 Freeway and Encanto Dr. (#1) – LOS F
- Ethanac Rd., between Encanto Dr. and Trumble Rd. (#2) – LOS F
- Ethanac Rd., between Trumble Rd. and Sherman Rd. (#3) – LOS F

As shown in Table 6-2, there are no additional study area roadway segments that are anticipated to operate at an unacceptable LOS with the addition of Project traffic under EAPC (2028) traffic conditions with the addition of Project traffic.

6.6 OFF-RAMP QUEUING ANALYSIS

Freeway off-ramp queuing analysis findings for EAC and EAPC (2028) are presented in Table 6-3. As shown in Table 6-3, the following off-ramp movements are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows under EAC (2028) traffic conditions:

- I-215 SB Ramps & Ethanac Rd. (#1):
  - southbound right turn movement during the AM and PM peak hours
  - eastbound through movement during the AM and PM peak hours
  - eastbound right turn movement during the AM and PM peak hours
  - westbound left turn movement during the PM peak hour only
- I-215 NB Ramps & Ethanac Rd. (#2):
  - northbound shared left-through lane during the PM peak hour only
  - northbound right turn lane during the AM and PM peak hours
  - eastbound left turn movement during the AM and PM peak hours
  - eastbound through movement during the AM and PM peak hours
  - westbound through movement during the AM and PM peak hours

There are no additional deficient movements with the addition of Project traffic under EAPC (2028) traffic conditions. Worksheets for EAC and EAPC (2028) traffic conditions queuing analysis are provided in Appendices 6.4 and 6.5, respectively.

TABLE 6-2: EAC & EAPC (2028) ROADWAY SEGMENT ANALYSIS

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	EAC 2028			EAPC 2028		
					2028 NP	V/C[2]	LOS[3]	2028 WP	V/C[2]	LOS[3]
1	Ethanac Road	I-215 Freeway to Encanto Dr.	2D	18,000	**38,969**	**2.165**	**F**	**39,811**	**2.212**	**F**
2		Encanto Dr. to Trumble Rd.	2D	18,000	**34,670**	**1.926**	**F**	**35,512**	**1.973**	**F**
3		Trumble Rd. to Sherman Rd.	2U	18,000	**28,407**	**1.578**	**F**	**28,679**	**1.593**	**F**
4	Trumble Road	South of Ethanac Rd.	2D	18,000	1,696	0.094	A	2,266	0.126	A
5	Sherman Road	South of Ethanac Rd.	2U	17,050	6,157	0.361	A	6,593	0.387	A

[1] The volumes shown are based on LOS "E" roadway segment capacity thresholds as defined by the applicable City Guidelines.

[2] V/C = Volume to Capacity Ratio

[3] LOS = Level of Service

TABLE 6-3: EAC & EAPC (2028) OFF-RAMP QUEUING ANALYSIS

#	Intersection	Movement	Available Stacking Distance (Feet)	EAC 2028				EAPC 2028			
				95th Percentile Queue (Feet)		Acceptable? [1]		95th Percentile Queue (Feet)		Acceptable? [1]	
				AM	PM	AM	PM	AM	PM	AM	PM
1	I-215 SB Ramps & Ethanac Rd.	SBT	1,375	798 [2]	900 [2]	Yes	Yes	866 [2]	938 [2]	Yes	Yes
		SBR	240	**1,390** [2]	**1,346** [2]	**No**	**No**	**1,390** [2]	**1,346** [2]	**No**	**No**
		EBT	625	**1,898** [2]	**1,994** [2]	**No**	**No**	**1,912** [2]	**1,998** [2]	**No**	**No**
		EBR	625	**713** [2]	**713** [2]	**No**	**No**	**714** [2]	**714** [2]	**No**	**No**
		WBL	275	261 [2]	**620** [2]	Yes	**No**	281 [2]	**673** [2]	Yes	**No**
		WBT	680	356	371	Yes	Yes	357	375	Yes	Yes
2	I-215 NB Ramps & Ethanac Rd.	NBL/T	1,325	1,291 [2]	**1,391** [2]	Yes	**No**	1,291 [2]	**1,391** [2]	Yes	**No**
		NBR	270	**544** [2]	**540** [2]	**No**	**No**	**595** [2]	**567** [2]	**No**	**No**
		EBL	245	**1,167** [2]	**1,362** [2]	**No**	**No**	**1,167** [2]	**1,362** [2]	**No**	**No**
		EBT	680	**1,413** [2]	**1,442** [2]	**No**	**No**	**1,492** [2]	**1,482** [2]	**No**	**No**
		WBT	460	**1,665** [2]	**2,112** [2]	**No**	**No**	**1,708** [2]	**2,242** [2]	**No**	**No**

BOLD = 95th percentile queue exceeds the available storage.

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 25 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

[2] 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

6.7 Improvement Recommendations to Maintain General Plan Consistency

Improvements needed to achieve acceptable LOS have been identified at intersections, roadway segments, or off-ramps that are anticipated to operate at a deficient LOS under EAPC (2028) traffic conditions. For the EAPC (2028) traffic analysis scenario, improvements have been recommended to bring each location's peak hour delays to pre-project conditions or better. It should be noted that these improvements are consistent with the Menifee Commerce Center TPM 38156 Signing, Striping and Traffic Signal Modification Plans.

6.7.1 Improvements To Address Intersection Deficiencies

Intersection improvements necessary to improve project-related traffic deficiencies are shown in Table 6-4. It should be noted that Table 6-4 presents the intersection improvements that are reflective of the Menifee commerce Center TPM 38156 Signing, Striping, and Traffic Signal Modification Plans. However, additional improvements needed to achieve acceptable LOS have also been identified in Table 6-4, consistent with City of Perris Guidelines. Worksheets for EAPC (2028) conditions, with improvements, HCM calculation worksheets are provided in Appendix 6.6.

6.7.2 Improvements To Address Roadway Segment Deficiencies

The recommended roadway segment improvement necessary to improve deficiencies along Ethanac Road are shown in Table 6-5 which consists of widening Ethanac Road to four lanes between the I-215 Freeway and Sherman Road. The improvements have been identified to improve the deficiencies back to acceptable levels with the exception of the segment of Encanto Drive to Trumble Road, but this segment improves from the pre-project condition.

6.7.3 Improvements To Address Off-Ramp Queuing Deficiencies

Although there are off-ramp queuing issues under EAC and EAPC (2028) traffic conditions as shown previously in Table 6-2, the addition of Project traffic has a nominal effect on the 95th percentile peak hour queues. There is no increase in the 95th percentile peak hour queues for all movements as compared to EAC (2028) traffic conditions, with the exception of the northbound right turn movement which the Project would increase the 95th percentile queue by 51-feet during the AM peak hour. Although there are no lane improvements required at the I-215 Northbound Ramps on Ethanac Road on the off-ramps to address peak hour operational deficiencies, lengthening of the turn pocket from 270-feet to 600-feet would address the EAPC (2028) queuing deficiency.

The eastbound left turn lane during the AM and PM peak hours are reflective of the dual eastbound left turn lanes shown in Table 6-4. Future interchange improvements to the I-215/Ethanac Road interchange to a partial cloverleaf to eliminate the left turns on Ethanac Road onto the on-ramps would also resolve this queue issue as it would eliminate any conflicts/delays for this movement. The summary of resulting queues is reflected in Table 6-6. It should be noted that Table 6-6 also assumes the same right-in/right-out restriction at Encanto Drive along Ethanac Road and a new 550-foot westbound right turn lane at the I-215 Northbound Ramps and Ethanac Road. Worksheets for EAPC (2028) traffic conditions queuing analysis, with improvements, are provided in Appendix 6.7.

TABLE 6-4: EAPC (2028) INTERSECTION ANALYSIS WITH IMPROVEMENTS

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	I-215 SB Ramps & Ethanac Rd.																	
	Pre-Project:	TS	0	0	0	0	1	1	0	1	1	1	2	0	**287.1**	**326.5**	**F**	**F**
	With Improvements:[4]	TS	0	0	0	0	1	1	0	1	1	**2**	2	0	**218.5**	**258.8**	**F**	**F**
	With Add'l Improvements:[5]	TS	0	0	0	**1**	1	1	0	**3**	**1>>**	**2**	**3**	0	31.3	35.2	C	D
2	I-215 NB Ramps & Ethanac Rd.																	
	Pre-Project:	TS	0	1	1	0	0	0	1	1	0	0	1	0	**422.8**	**560.0**	**F**	**F**
	With Improvements:[4]	TS	0	1	1	0	0	0	**2**	**2**	0	0	**2**	**1**	**111.5**	**178.7**	**F**	**F**
	With Add'l Improvements:[5]	TS	**2**	1	1	0	0	0	**2**	**3**	0	0	**3**	**1**	41.7	40.3	D	D
3	Encanto Dr. & Ethanac Rd.																	
	Pre-Project:	CSS	0	1	0	0	0	0	0	1	0	1	1	0	**1340.3**	**1578.1**	**F**	**F**
	With Improvements:[4]	CSS	0	**0**	**1**	0	0	0	0	**2**	0	**0**	**2**	0	23.8	26.3	C	D
4	Trumble Rd. & Ethanac Rd.																	
	Pre-Project:	TS	1	1	0	1	1	0	1	1	1	1	1	0	**404.0**	**521.6**	**F**	**F**
	With Improvements:[4]	TS	1	1	0	1	1	0	1	**2**	1	1	**2**	0	54.2	**129.0**	D	**F**
	With Add'l Improvements:[5]	TS	**2**	1	0	1	1	0	1	**3**	**0**	1	**3**	0	24.7	45.9	C	D
7	Sherman Rd. & Ethanac Rd.																	
	Pre-Project:	CSS	0	1	0	0	1	0	0	1	0	0	1	0	**>100.0**	**>100.0**	**F**	**F**
	With Improvements:[4]	**TS**	**1**	1	0	**1**	1	0	**1**	**2**	0	**1**	**2**	0	41.2	**80.7**	D	**F**
	With Add'l Improvements:[5]	**TS**	**1**	1	0	**1**	1	0	**1**	**3**	0	**1**	**3**	0	24.9	51.1	C	D

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; **1** = Improvement; >= Right-Turn Overlap Phasing

[2] Per the Highway Capacity Manual (7th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single

[3] TS = Traffic Signal; CSS = Cross-Street Stop; **TS** = Improvement

[4] Improvements are consistent with the Menifee Commerce Center TPM 38156 Signing, Striping and Traffic Signal Modification Plans, which reflect a right-in/right-out access at Encanto Drive.

[5] Additional intersection improvements recommended to achieve acceptable LOS per the City of Perris' Guidelines.

TABLE 6-5: EAPC (2028) ROADWAY SEGMENT ANALYSIS WITH IMPROVEMENTS

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	EAC 2028			EAPC 2028		
					2028 NP	V/C[2]	LOS[3]	2028 WP	V/C[2]	LOS[3]
1	Ethanac Rd.	I-215 Freeway to Encanto Dr.	**5D**	44,917	38,969	0.868	D	39,811	0.886	D
2		Encanto Dr. to Trumble Rd.	**4D**	35,900	**34,670**	**0.966**	**E**	**35,512**	**0.989**	**E**
3		Trumble Rd. to Sherman Rd.	**4D**	35,900	28,407	0.791	C	28,679	0.799	C

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] The volumes shown are based on LOS "E" roadway segment capacity thresholds as defined by the applicable City Guidelines.

[2] V/C = Volume to Capacity Ratio

[3] LOS = Level of Service

TABLE 6-6: EAPC (2028) OFF-RAMP QUEUING ANALYSIS WITH IMPROVEMENTS

#	Intersection	Movement	Available Stacking Distance (Feet)	Without Improvements				EAPC 2028 With Add'l Improvements			
				95th Percentile Queue (Feet)		Acceptable? [1]		95th Percentile Queue (Feet)		Acceptable? [1]	
				AM	PM	AM	PM	AM	PM	AM	PM
1	I-215 SB Ramps & Ethanac Rd.	SBT	**850**	--	--	--	--	610 [2]	728 [2]	Yes	Yes
		SBT	1,375	866 [2]	938 [2]	Yes	Yes	689 [2]	765 [2]	Yes	Yes
		SBR	**750**	**1,390** [2]	**1,346** [2]	**No**	**No**	572 [2]	645 [2]	Yes	Yes
		EBT	625	**1,912** [2]	**1,998** [2]	**No**	**No**	524	601 [2]	Yes	Yes
		EBR	625	**714** [2]	**714** [2]	**No**	**No**	0	0	Yes	Yes
		WBL	275	281 [2]	**673** [2]	Yes	**No**	156 [2]	291 [2]	Yes	Yes
		WBT	680	357	375	Yes	Yes	407	375 [2]	Yes	Yes
2	I-215 NB Ramps & Ethanac Rd.	NBL	**600**	--	--	--	--	444	539 [2]	Yes	Yes
		NBT/R	1,325	1,291 [2]	**1,391** [2]	Yes	**No**	206	200	Yes	Yes
		NBR	270	**595** [2]	**567** [2]	**No**	**No**	206	198	Yes	Yes
		EBL	245	**1,167** [2]	**1,362** [2]	**No**	**No**	**430** [2]	**535** [2]	**No**	**No**
		EBT	680	**1,492** [2]	**1,482** [2]	**No**	**No**	294	281	Yes	Yes
		WBT	**910**	**1,708** [2]	**2,242** [2]	**No**	**No**	286	370	Yes	Yes
		WBR	**550**	--	--	--	--	100	406 [2]	Yes	Yes

BOLD = 95th percentile queue exceeds the available storage.

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 25 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

[2] 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

7 HORIZON YEAR (2045) TRAFFIC CONDITIONS

This section discusses the traffic forecasts for Horizon Year (2045) traffic conditions and the resulting intersection operations, roadway segment, traffic signal warrant, and freeway off-ramp queuing analyses.

7.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Horizon Year (2045) conditions are consistent with those shown previously in Exhibit 3-1, with the exception of the following:

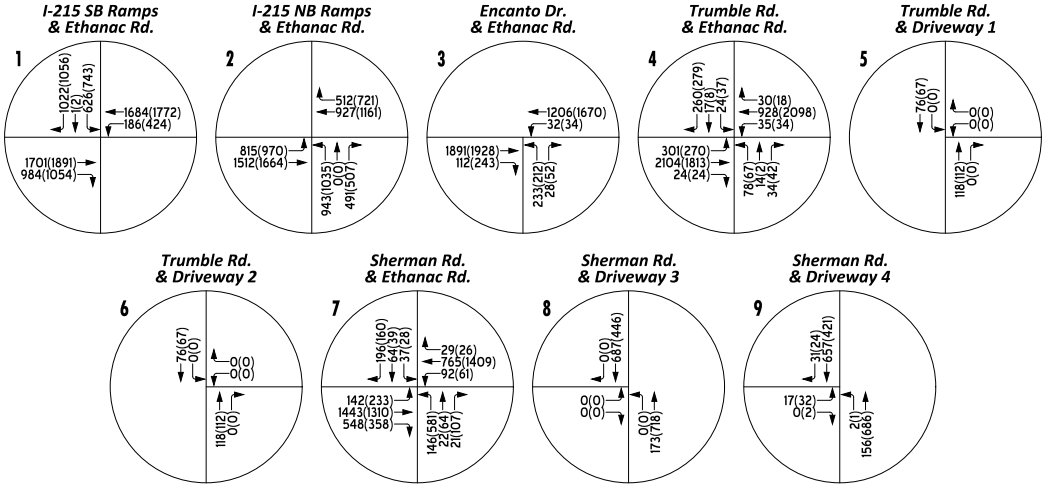
- Project driveways and those facilities assumed to be constructed by the Project (Project Buildout) to provide site access are also assumed to be in place for Horizon Year (2045) conditions (e.g., intersection and roadway improvements at the Project's frontage and driveways).
- Driveways and those facilities assumed to be constructed by cumulative developments to provide site access are also assumed to be in place for Horizon Year (2045) conditions (e.g., intersection and roadway improvements along the cumulative development's frontages).
- Other parallel facilities, that although not evaluated for the purposes of this analysis, are anticipated to be in place for Horizon Year traffic conditions and would affect the travel patterns within the study area.

7.2 HORIZON YEAR (2045) TRAFFIC VOLUME FORECASTS

This scenario includes the refined post-process volumes obtained from RIVCOM, plus the traffic generated by the proposed Project for With Project conditions only. The weekday ADT and weekday AM and PM peak hour volumes which can be expected for Horizon Year (2045) Without and With Project traffic conditions, in actual vehicles, are shown in Exhibits 7-1 and 7-2, respectively. The weekday peak hour intersection turning movement volumes, in PCE, which can be expected for Horizon Year (2045) Without and With Project traffic conditions are shown on Exhibits 6-2 and 6-4, respectively. It should be noted that in order to evaluate the proposed right-in/right-out access restriction for the intersection of Encanto Drive at Ethanac Road, the northbound left and westbound left turn volumes have been reallocated to the intersection of Trumble Road and Ethanac Road for the purposes of these near-term cumulative analysis scenarios.

EXHIBIT 7-1 : HORIZON YEAR (2045) WITHOUT PROJECT VOLUMES (ACTUAL VOLUMES)



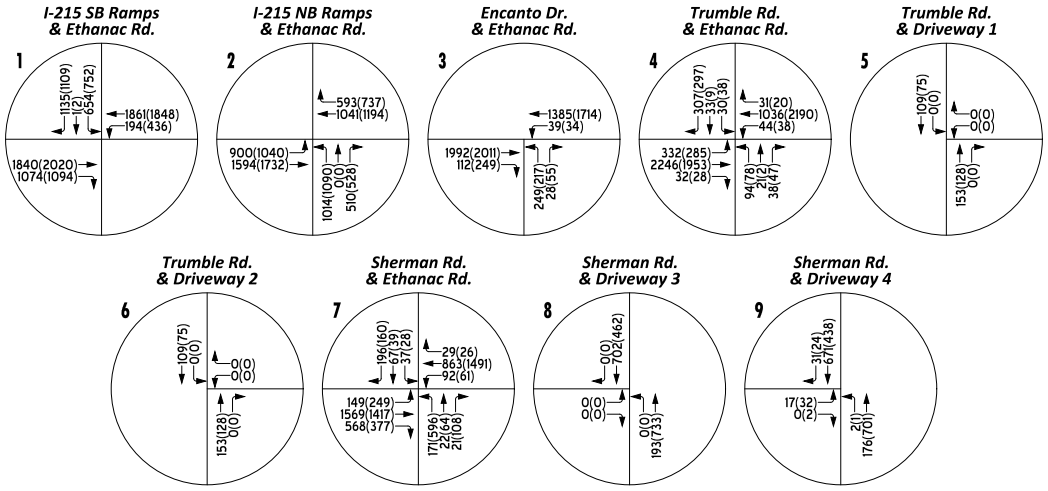


LEGEND:

- **0** = *Existing Intersection Analysis Location*
- (0) = *Future Intersection Analysis Location*
- 00(00) = *Peak Hour Volume AM(PM)*
- **00** = *Average Daily Traffic (ADT) In Thousands*

EXHIBIT 7-2 : HORIZON YEAR (2045) WITHOUT PROJECT PCE VOLUMES



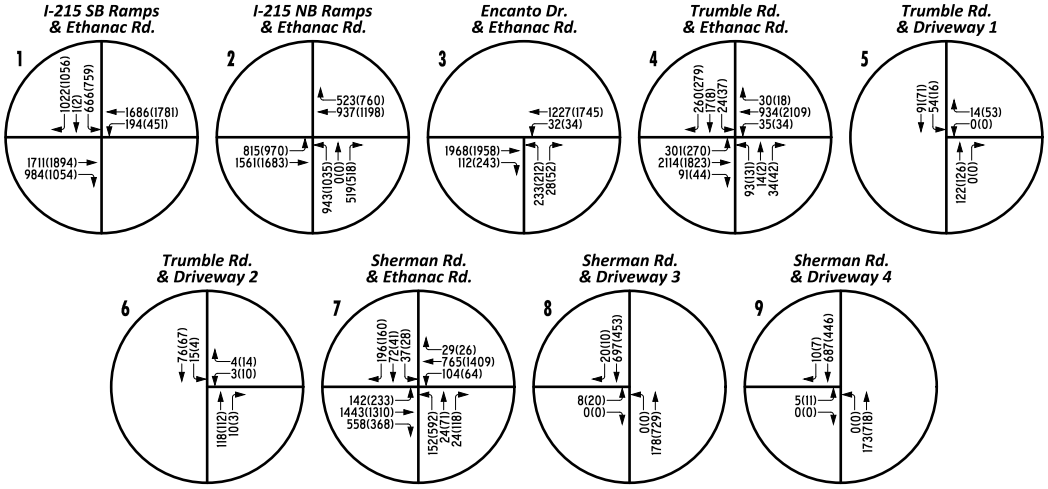


LEGEND:

- **0** = *Existing Intersection Analysis Location*
- (0) = *Future Intersection Analysis Location*
- 00(00) = *Peak Hour Volume AM(PM)*
- **00** = *Average Daily Traffic (ADT) In Thousands*

EXHIBIT 7-3 : HORIZON YEAR (2045) WITH PROJECT VOLUMES (ACTUAL VOLUMES)



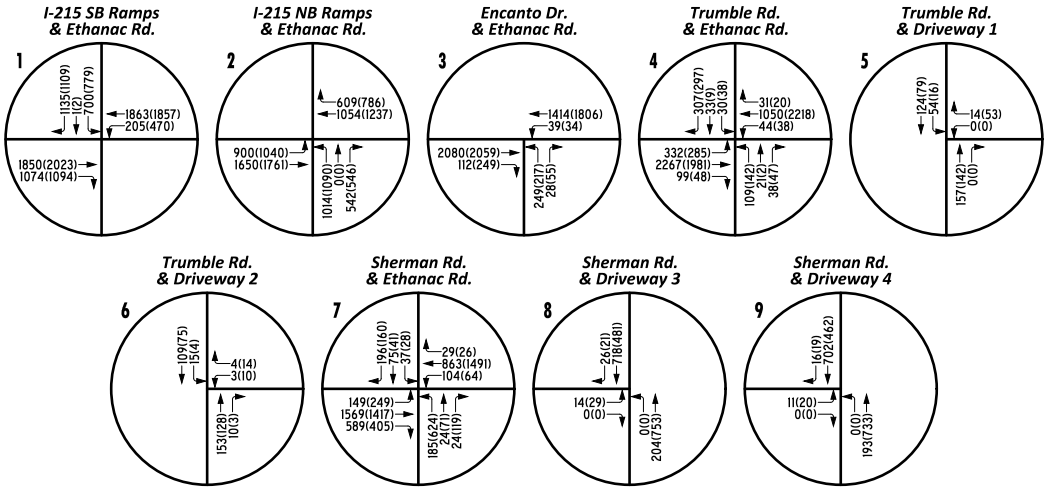


LEGEND:

- **0** = *Existing Intersection Analysis Location*
- (0) = *Future Intersection Analysis Location*
- 00(00) = *Peak Hour Volume AM(PM)*
- **00** = *Average Daily Traffic (ADT) In Thousands*

EXHIBIT 7-4 : HORIZON YEAR (2045) WITH PROJECT PCE VOLUMES





LEGEND:

- **0** = *Existing Intersection Analysis Location*
- (0) = *Future Intersection Analysis Location*
- 00(00) = *Peak Hour Volume AM(PM)*
- **00** = *Average Daily Traffic (ADT) In Thousands*

7.3 INTERSECTION OPERATIONS ANALYSIS

Horizon Year (2045) Without Project peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2 *Methodologies.* The intersection analysis results are summarized in Table 7-1 for Horizon Year (2045) Without Project traffic conditions, which indicates that the following study area intersections are anticipated to operate at an unacceptable LOS during the peak hours:

- I-215 SB Ramps & Ethanac Rd. (#1) – LOS F AM and PM peak hours
- I-215 NB Ramps & Ethanac Rd. (#2) – LOS F AM and PM peak hours
- Encanto Dr. & Ethanac Rd. (#3) – LOS F AM and PM peak hours
- Trumble Rd. & Ethanac Rd. (#4) – LOS F AM and PM peak hours
- Sherman Rd. & Ethanac Rd. (#7) – LOS F AM and PM peak hours

The intersection analysis results are also summarized in Table 7-1 for Horizon Year (2045) With Project traffic conditions, which indicates that there are no additional study area intersections anticipated to operate at an unacceptable LOS during the peak hours with the addition of Project traffic. The intersection operations analysis worksheets for Horizon Year (2045) Without and With Project traffic conditions are included in Appendices 7.1 and 7.2, respectively.

TABLE 7-1: HORIZON YEAR (2045) INTERSECTION ANALYSIS

#	Intersection	Traffic Control[2]	2045 NP				2045 WP			
			Delay[1] (secs.)		Level of Service		Delay[1] (secs.)		Level of Service	
			AM	PM	AM	PM	AM	PM	AM	PM
1	I-215 SB Ramps & Ethanac Rd.	TS	**>200.0**	**>200.0**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**
2	I-215 NB Ramps & Ethanac Rd.	TS	**>200.0**	**>200.0**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**
3	Encanto Dr. & Ethanac Rd.	CSS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
4	Trumble Rd. & Ethanac Rd.	TS	**>200.0**	**>200.0**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**
5	Trumble Rd. & Driveway 1	**CSS**	Future Intersection				9.2	9.3	A	A
6	Trumble Rd. & Driveway 2	**CSS**	Future Intersection				9.7	9.4	A	A
7	Sherman Rd. & Ethanac Rd.	CSS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
8	Sherman Rd. & Driveway 3	**CSS**	Future Intersection				15.2	18.3	C	C
9	Sherman Rd. & Driveway 4	**CSS**	Future Intersection				14.8	17.4	B	C

BOLD = LOS does not meet the applicable jurisdictional
* requirements (i.e., unacceptable LOS).

1 Per the Highway Capacity Manual (7th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown. HCM delay reported in seconds.

2 TS = Traffic Signal; CSS = Cross-street Stop; **CSS** = Improvement

7.4 TRAFFIC SIGNAL WARRANTS ANALYSIS

All unsignalized study area intersections met a peak hour volume based traffic signal warrant under Existing traffic conditions. As such, traffic signal warrants have not been evaluated for Horizon Year (2045) Without Project traffic conditions. Traffic signal warrants have been performed for Horizon Year (2045) With Project traffic conditions based on planning level (ADT) volumes. There are no unsignalized study area intersections anticipated to meet a traffic signal warrant under Horizon Year (2045) With Project traffic conditions. The Horizon Year (2045) With Project traffic conditions traffic signal warrant analysis worksheets are provided in Appendix 7.3.

7.5 ROADWAY SEGMENT CAPACITY ANALYSIS

The roadway capacities utilized for the study area roadway segment analysis are obtained from the City Guidelines. These roadway segment capacities are approximate figures only and are used at the General Plan level to assist in determining the roadway functional classification (number of through lanes) needed to meet traffic demand. Table 7-2 provides a summary of the Horizon Year (2045) Without and With Project traffic conditions roadway segment capacity analysis. As shown in Table 7-2, the following study area roadway segments are anticipated to operate at an unacceptable LOS based on the daily roadway capacity thresholds and minimum LOS criteria under Horizon Year (2045) Without Project traffic conditions:

- Ethanac Rd., between I-215 Freeway and Encanto Dr. (#1) – LOS F
- Ethanac Rd., between Encanto Dr. and Trumble Rd. (#2) – LOS F
- Ethanac Rd., between Trumble Rd. and Sherman Rd. (#3) – LOS F

As shown in Table 7-2, there are no additional study area roadway segments that are anticipated to operate at an unacceptable LOS with the addition of Project traffic under Horizon Year (2045) With Project traffic conditions with the addition of Project traffic.

TABLE 7-2: HORIZON YEAR (2045) ROADWAY SEGMENT ANALYSIS

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	2045 Without Project			2045 With Project		
					2045 NP	V/C[2]	LOS[3]	2045 WP	V/C[2]	LOS[3]
1	Ethanac Road	I-215 Freeway to Encanto Dr.	2D	18,000	**43,768**	**2.432**	**F**	**44,610**	**2.478**	**F**
2		Encanto Dr. to Trumble Rd.	2D	18,000	**38,137**	**2.119**	**F**	**38,979**	**2.166**	**F**
3		Trumble Rd. to Sherman Rd.	2U	18,000	**31,248**	**1.736**	**F**	**31,520**	**1.751**	**F**
4	Trumble Road	South of Ethanac Rd.	2D	18,000	1,865	0.104	A	2,435	0.135	A
5	Sherman Road	South of Ethanac Rd.	2U	17,050	6,773	0.397	A	7,209	0.423	A

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] The volumes shown are based on LOS "E" roadway segment capacity thresholds as defined by the applicable City Guidelines.

[2] V/C = Volume to Capacity Ratio

[3] LOS = Level of Service

7.6 OFF-RAMP QUEUING ANALYSIS

Off-ramp queuing analysis findings for Horizon Year (2045) Without and With Project are presented in Table 7-3. As shown in Table 7-3, the following off-ramp movements are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows under Horizon Year (2045) Without Project traffic conditions:

- I-215 SB Ramps & Ethanac Rd. (#1):
  - southbound right turn movement during the AM and PM peak hours
  - eastbound through movement during the AM and PM peak hours
  - eastbound right turn movement during the AM and PM peak hours
  - westbound left turn movement during the AM and PM peak hours
- I-215 NB Ramps & Ethanac Rd. (#2):
  - northbound shared left-through lane during the PM peak hour only
  - northbound right turn lane during the AM and PM peak hours
  - eastbound left turn movement during the AM and PM peak hours
  - eastbound through movement during the AM and PM peak hours
  - westbound through movement during the AM and PM peak hours

There are no additional deficient movements with the addition of Project traffic under Horizon Year (2045) With Project traffic conditions. Worksheets for Horizon Year (2045) Without and With Project traffic conditions queuing analysis are provided in Appendices 7.4 and 7.5, respectively.

TABLE 7-3: HORIZON YEAR (2045) OFF-RAMP QUEUING ANALYSIS

#	Intersection	Movement	Available Stacking Distance (Feet)	2045 NP				2045 WP			
				95th Percentile Queue (Feet)		Acceptable?[1]		95th Percentile Queue (Feet)		Acceptable?[1]	
				AM	PM	AM	PM	AM	PM	AM	PM
1	I-215 SB Ramps & Ethanac Rd.	SBT	1,375	887 [2]	1,028 [2]	Yes	Yes	955 [2]	1,068 [2]	Yes	Yes
		SBR	240	**1,543** [2]	**1,493** [2]	**No**	**No**	**1,543** [2]	**1,493** [2]	**No**	**No**
		EBT	625	**2,136** [2]	**2,337** [2]	**No**	**No**	**2,149** [2]	**2,342** [2]	**No**	**No**
		EBR	625	**856** [2]	**867** [2]	**No**	**No**	**858** [2]	**868** [2]	**No**	**No**
		WBL	275	**290** [2]	**681** [2]	**No**	**No**	**309** [2]	**735** [2]	**No**	**No**
		WBT	680	478	451	Yes	Yes	480	455	Yes	Yes
2	I-215 NB Ramps & Ethanac Rd.	NBL/T	1,325	**1,427** [2]	**1,534** [2]	**No**	**No**	**1,427** [2]	**1,534** [2]	**No**	**No**
		NBR	270	**617** [2]	**646** [2]	**No**	**No**	**668** [2]	**675** [2]	**No**	**No**
		EBL	245	**1,285** [2]	**1,498** [2]	**No**	**No**	**1,285** [2]	**1,498** [2]	**No**	**No**
		EBT	680	**1,626** [2]	**1,782** [2]	**No**	**No**	**1,704** [2]	**1,822** [2]	**No**	**No**
		WBT	460	**2,003** [2]	**2,365** [2]	**No**	**No**	**2,044** [2]	**2,493** [2]	**No**	**No**

BOLD = 95th percentile queue exceeds the available storage.

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 25 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

[2] 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

7.7 DEFICIENCIES AND IMPROVEMENTS

Improvements needed to achieve acceptable LOS have been identified at intersections, roadway segments, or off-ramps that are anticipated to operate at a deficient LOS under Horizon Year (2045) With Project traffic conditions. Improvements have been recommended to bring intersection operations back to acceptable LOS within the limits identified by the General Plan for each roadway classification.

7.7.1 Improvements To Address Intersection Deficiencies

Intersection improvements necessary to improve project-related traffic deficiencies are shown in Table 7-4. The improvements have been identified to improve the deficiencies back to acceptable levels. Worksheets for Horizon Year (2045) With Project conditions, with improvements, HCM calculation worksheets are provided in Appendix 7.6.

7.7.2 Improvements To Address Roadway Segment Deficiencies

The recommended roadway segment improvement necessary to improve deficiencies along Ethanac Road are shown in Table 7-5 which consists of widening Ethanac Road to its planned ultimate six lanes between the I-215 Freeway and Sherman Road. The improvements have been identified to improve the deficiencies back to acceptable levels.

7.7.3 Improvements To Address Off-Ramp Queuing Deficiencies

The recommended improvements per the intersection operations analysis results shown in Table 7-4 have been taken into account for the off-ramp queuing analysis results shown in Table 7-6. In addition to the lane geometric improvements identified in Table 7-4, the southbound off-ramps should be improved to accommodate 850-feet of storage for the southbound left turn movement and 750-feet of storage for the southbound right turn movement. Similarly, the northbound off-ramp should accommodate 600-feet of storage for the northbound left turn movement.

For the movements along Ethanac Road, additional improvements would be required to provide additional capacity along Ethanac Road. Specifically:

- I-215 SB Ramps & Ethanac Rd. (#1) – the eastbound through queue during the PM peak hour could be addressed with additional capacity (a 4th through lane) approaching the interchange. However, it should be noted that the 95th percentile queue only exceeds the available storage by approximately 4-5 passenger cars.
- I-215 SB Ramps & Ethanac Rd. (#1) – the westbound left turn lane queue during the PM peak hour is reflective of the dual westbound left turn lanes shown in Table 7-4. It should be noted that the queue exceeds the available storage by approximately 2-3 passenger car vehicles. Future interchange improvements to the I-215/Ethanac Road interchange to a partial cloverleaf to eliminate the left turns on Ethanac Road onto the on-ramps would also resolve this queuing issue as it would eliminate any conflicts/delays for this movement.
- I-215 NB Ramps & Ethanac Rd. (#2) – the eastbound left turn lane during the AM and PM peak hours are reflective of the dual eastbound left turn lanes shown in Table 7-4. Future interchange improvements to the I-215/Ethanac Road interchange to a partial cloverleaf to eliminate the left turns on Ethanac Road onto the on-ramps would also resolve this queue issue as it would eliminate any conflicts/delays for this movement.

The summary of resulting queues is reflected in Table 7-6. It should be noted that Table 7-6 also assumes the same right-in/right-out restriction at Encanto Drive along Ethanac Road and a 550-foot westbound right turn lane at the I-215 Northbound Ramps and Ethanac Road (consistent with EAPC traffic conditions). Worksheets for Horizon Year (2045) With Project conditions, with improvements, queuing analysis worksheets are provided in Appendix 7.7.

TABLE 7-4: HORIZON YEAR (2045) INTERSECTION ANALYSIS WITH IMPROVEMENTS

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	I-215 SB Ramps & Ethanac Rd.																	
	Pre-Project:	TS	0	0	0	0	1	1	0	1	1	1	2	0	**>200.0**	**>200.0**	**F**	**F**
	With Improvements:	TS	0	0	0	**1**	1	1	0	**3**	**1>>**	**2**	**3**	0	39.7	53.9	D	D
2	I-215 NB Ramps & Ethanac Rd.																	
	Pre-Project:	TS	0	1	1	0	0	0	1	1	0	0	1	0	**>200.0**	**>200.0**	**F**	**F**
	With Improvements:	TS	**2**	1	1	0	0	0	**2**	**3**	0	0	**3**	**1**	38.9	54.6	D	D
3	Encanto Dr. & Ethanac Rd.																	
	Pre-Project:	CSS	0	1	0	0	0	0	0	1	0	1	1	0	**>100.0**	**>100.0**	**F**	**F**
	With Improvements[4]:	CSS	0	**0**	**1**	0	0	0	0	**3**	0	**0**	**3**	0	34.4	34.2	D	D
4	Trumble Rd. & Ethanac Rd.																	
	Pre-Project:	TS	1	1	0	1	1	0	1	1	1	1	1	0	**>200.0**	**>200.0**	**F**	**F**
	With Improvements:	TS	**2**	1	0	1	1	0	1	**3**	**0**	1	**3**	0	47.5	52.1	D	D
7	Sherman Rd. & Ethanac Rd.																	
	Pre-Project:	CSS	0	1	0	0	1	0	0	1	0	0	1	0	**>100.0**	**>100.0**	**F**	**F**
	With Improvements:	**TS**	**2**	1	0	**1**	1	0	**1**	**3**	**1**	**1**	**3**	0	28.5	44.0	C	D

1 When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; **1** = Improvement; > = Right-Turn Overlap Phasing

2 Per the Highway Capacity Manual (7th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

3 TS = Traffic Signal; CSS = Cross-Street Stop; **TS** = Improvement

4 Improvements are consistent with the Menifee Commerce Center TPM 38156 Signing, Striping and Traffic Signal Modification Plans, which reflect a right-in/right-out access at Encanto Drive.

TABLE 7-5: HORIZON YEAR (2045) ROADWAY SEGMENT ANALYSIS WITH IMPROVEMENTS

#	Roadway	Segment Limits	Roadway Section	LOS Capacity[1]	2045 Without Project			2045 With Project		
					2045 NP	V/C[2]	LOS[3]	2045 WP	V/C[2]	LOS[3]
1	Ethanac Road	I-215 Freeway to Encanto Dr.	**6D**	53,900	43,768	0.812	D	44,610	0.828	D
2		Encanto Dr. to Trumble Rd.	**6D**	53,900	38,137	0.708	B	38,979	0.723	C
3		Trumble Rd. to Sherman Rd.	**6D**	53,900	31,248	0.580	A	31,520	0.585	A

[1] The volumes shown are based on LOS "E" roadway segment capacity thresholds as defined by the applicable City Guidelines.

[2] V/C = Volume to Capacity Ratio

[3] LOS = Level of Service

TABLE 7-6: HORIZON YEAR (2045) OFF-RAMP QUEUING ANALYSIS WITH IMPROVEMENTS

#	Intersection	Movement	Available Stacking Distance (Feet)	2045 WP Without Improvements				2045 WP With Improvements			
				95th Percentile Queue (Feet)		Acceptable?[1]		95th Percentile Queue (Feet)		Acceptable?[1]	
				AM	PM	AM	PM	AM	PM	AM	PM
1	I-215 SB Ramps & Ethanac Rd.	SBL	**850**	--	--	--	--	760 [2]	854 [2]	Yes	Yes
		SBT	1,375	955 [2]	1,068 [2]	Yes	Yes	824 [2]	901 [2]	Yes	Yes
		SBR	**750**	**1,543** [2]	**1,493** [2]	**No**	**No**	696 [2]	753 [2]	Yes	Yes
		EBT	625	**2,149** [2]	**2,342** [2]	**No**	**No**	634 [2]	**740** [2]	Yes	**No**
		EBR	625	**858** [2]	**868** [2]	**No**	**No**	0	0	Yes	Yes
		WBL	275	**309** [2]	**735** [2]	**No**	**No**	161 [2]	**341** [2]	Yes	**No**
		WBT	680	480	455	Yes	Yes	486	431	Yes	Yes
2	I-215 NB Ramps & Ethanac Rd.	NBL	**600**	--	--	--	--	532 [2]	615 [2]	Yes	Yes
		NBT/R	1,325	**1,427** [2]	**1,534** [2]	**No**	**No**	229	234	Yes	Yes
		NBR	270	**668** [2]	**675** [2]	**No**	**No**	228	233	Yes	Yes
		EBL	245	**1,285** [2]	**1,498** [2]	**No**	**No**	**515** [2]	**595** [2]	**No**	**No**
		EBT	680	**1,704** [2]	**1,822** [2]	**No**	**No**	344	355	Yes	Yes
		WBT	**910**	**2,044** [2]	**2,493** [2]	**No**	**No**	354	473 [2]	Yes	Yes
		WBR	**550**	--	--	--	--	153	547 [2]	Yes	Yes

BOLD = 95th percentile queue exceeds the available storage.

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 25 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

[2] 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

8 LOCAL AND REGIONAL FUNDING MECHANISMS

Transportation improvements within the City of Menifee are funded through a combination of improvements constructed by the County, those constructed by private development, and those funded through local and regional development impact fee programs. Fee programs applicable to the Project are described below.

8.1 CITY OF MENIFEE DEVELOPMENT IMPACT FEE (DIF) PROGRAM

The Project will also be subject to City of Menifee's DIF program which includes a component for roads and signals. The City's DIF program was updated in November 2022 and discusses the local (as opposed to regional) streets and signal improvements planned for the City through build-out of the existing City limits.

8.2 RIVERSIDE COUNTY TRANSPORTATION UNIFORM MITIGATION FEE (TUMF)

The TUMF program is administered by the Western Riverside Council of Governments (WRCOG) based upon a regional Nexus Study most recently updated in 2016 to address major changes in right of way acquisition and improvement cost factors. (3) This regional program was put into place to ensure that development pays its fair share and that funding is in place for construction of facilities needed to maintain the requisite level of service and critical to mobility in the region. TUMF is a truly regional mitigation fee program imposed and implemented in every jurisdiction in Western Riverside County.

8.3 MEASURE A

Measure A, Riverside County's half-cent sales tax for transportation, was adopted by voters in 1988 and extended in 2002. It will continue to fund transportation improvements through 2039. Measure A funds a wide variety of transportation projects and services throughout the County. The Riverside County Transportation Commission (RCTC) is responsible for administering the program. Measure A dollars are spent in accordance with a voter-approved expenditure plan that was adopted as part of the 1988 election.

8.4 FAIR SHARE CONTRIBUTION

Project 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. Improvements constructed by development may be eligible for a fee credit or reimbursement through the program where appropriate (to be determined at the City's discretion). When off-site improvements are identified with a minor share of responsibility assigned to proposed development, the approving jurisdiction may elect to collect a fair share contribution or require the development to construct improvements. Detailed fair share calculations, for each peak hour, have been provided for the applicable deficient study area intersections in Table 8-1 for EAPC (2028) traffic conditions and Table 8-2 for Horizon Year (2045) traffic conditions. These fees are collected with the proceeds solely used as part of a funding mechanism aimed at ensuring that regional highways and arterial expansions keep pace with the projected population increases.

TABLE 8-1: EAPC (2028) PROJECT FAIR SHARE CALCULATIONS

#	Intersection		Existing (2025)	Project	EAPC 2028	Total New Traffic	Project % of New Traffic[1]
1	I-215 SB Ramps & Ethanac Rd.						
		AM:	2,585	69	6,126	3,541	**1.9%**
		PM:	2,477	73	6,587	4,110	1.8%
2	I-215 NB Ramps & Ethanac Rd.						
		AM:	2,203	117	5,166	2,963	**3.9%**
		PM:	2,198	139	5,777	3,579	3.9%
3	Encanto Dr. & Ethanac Rd.						
		AM:	1,633	117	3,479	1,846	**6.3%**
		PM:	1,612	140	3,922	2,310	6.1%
4	Trumble Rd. & Ethanac Rd.						
		AM:	1,663	117	3,976	2,313	**5.1%**
		PM:	1,528	140	4,651	3,123	4.5%
7	Sherman Rd. & Ethanac Rd.						
		AM:	1,310	60	3,370	2,060	**2.9%**
		PM:	1,316	79	4,222	2,906	2.7%

[1] **BOLD =** Highest fair share percentage is highlighted.

TABLE 8-2: HORIZON YEAR (2045) PROJECT FAIR SHARE CALCULATIONS

#	Intersection	Existing (2025)	Project	2045 WP	Total New Traffic	Project % of New Traffic[1]
1	I-215 SB Ramps & Ethanac Rd.					
	AM:	2,585	69	6,828	4,243	**1.6%**
	PM:	2,477	73	7,334	4,857	1.5%
2	I-215 NB Ramps & Ethanac Rd.					
	AM:	2,203	117	5,769	3,566	**3.3%**
	PM:	2,198	139	6,460	4,262	3.3%
3	Encanto Dr. & Ethanac Rd.					
	AM:	1,633	117	3,922	2,289	**5.1%**
	PM:	1,612	140	4,420	2,808	5.0%
4	Trumble Rd. & Ethanac Rd.					
	AM:	1,663	117	4,361	2,698	**4.3%**
	PM:	1,528	140	5,125	3,597	3.9%
7	Sherman Rd. & Ethanac Rd.					
	AM:	1,310	60	3,844	2,534	**2.4%**
	PM:	1,316	79	4,695	3,379	2.3%

[1] **BOLD** = Highest fair share percentage is highlighted.

#	Roadway Segment	Existing (2025)	Project	2045 WP	Total New Traffic	Project % of New Traffic[1]
1	Ethanac Rd., I-215 to Encanto Dr.					
	ADT:	16,922	842	44,610	27,688	**3.0%**
2	Ethanac Rd., Encanto Dr. to Trumble Rd.					
	ADT:	14,335	842	38,979	24,644	**3.4%**
3	Ethanac Rd., Trumble Rd. to Sherman Rd.					
	ADT:	1,633	117	3,922	2,289	**5.1%**

9 REFERENCES

1. **City of Menifee Engineering Department.** *LOS Traffic Study Guidelines.* City of Menifee : s.n., October 2020 (Revised).
2. **Institute of Transportation Engineers.** *Trip Generation Manual.* 11th Edition. 2021.
3. **Western Riverside Council of Governments.** *TUMF Nexus Study, 2024 Program Update.* Adopted September 9, 2024.
4. **Transportation Research Board.** *Highway Capacity Manual (HCM).* 7th Edition. s.l. : National Academy of Sciences, 2022.
5. **California Department of Transportation.** California Manual on Uniform Traffic Control Devices (CA MUTCD). [book auth.] California Department of Transportation. *California Manual on Uniform Traffic Control Devices (CA MUTCD).* 2014, Updated March 30, 2021 (Revision 6).

10 CERTIFICATION

The contents of this Traffic Analysis represent an accurate depiction of the transportation environment and deficiencies associated with the proposed Heritage Valley Business Center Project. The information contained in this Traffic Analysis is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 861-0177.

Charlene So, P.E.
Principal
URBAN CROSSROADS, INC.
1133 Camelback #8329
Newport Beach, CA 92658
(949) 861-0177
cso@urbanxroads.com

Education

Bachelor of Science in Civil Engineering
University of California, Irvine • June 2004

Professional Registrations

PE – Registered Professional Traffic Engineer – TR 2414 • January 2007

Professional Affiliations

ITE – Institute of Transportation Engineers
WTS – Women's Transportation Seminar

APPENDIX 1.1:

APPROVED SCOPING AGREEMENT

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Charlene So

From: Fernando Herrera <fherrera@cityofmenifee.us>
Sent: Monday, June 23, 2025 2:08 PM
To: Cano, Kari
Cc: Christopher Heron
Subject: FW: JN:16568 Heritage Valley Business Center (PLN24-0195) - Draft Scoping Agreement

Fernando Herrera | Senior Planner
Community Development Department
City of Menifee | 29844 Haun Road | Menifee, CA 92586
Direct: (951) 723-3718 | City Hall: (951) 672-6777 |
fherrera@cityofmenifee.us | cityofmenifee.us



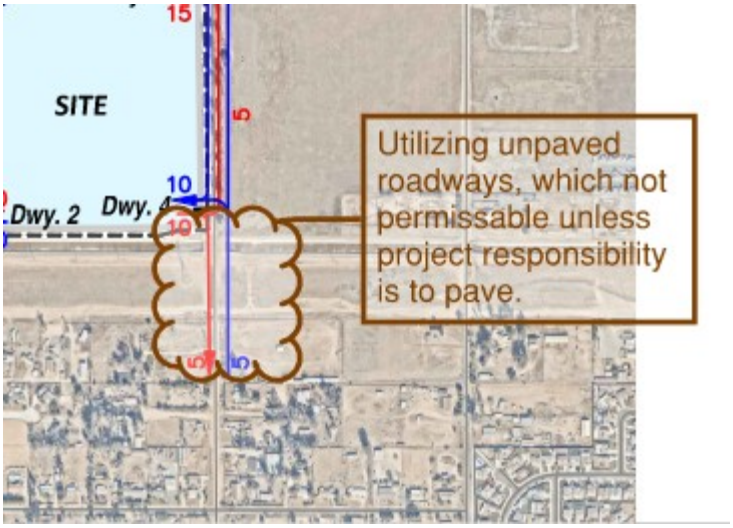
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From: Christopher Heron <cheron@cityofmenifee.us>
Sent: Wednesday, May 14, 2025 10:51 AM
To: Cano, Kari <Kari.Cano@kimley-horn.com>; Fernando Herrera <fherrera@cityofmenifee.us>; Kelly, Jon <JKelly@C5IP.com>
Subject: Re: JN:16568 Heritage Valley Business Center (PLN24-0195) - Draft Scoping Agreement

Good Morning,

In general the proposed draft scoping is adequate, with one main comment.

The trip distribution shows utilizing passenger vehicle trips south on Sherman across dirt road, which would not be permissible unless the project is to be conditioned to pave said road. See screenshot below. Note also that we also want Perris' input prior to approving said scope.



Thank you,

Christopher Heron, EIT | Associate Engineer

Engineering Department

City of Menifee | 29844 Haun Road | Menifee, CA 92586

Direct: (951) 723-3723 | City Hall: (951) 672-6777

cheron@cityofmenifee.us |

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From: Christopher Heron <cheron@cityofmenifee.us>
Sent: Monday, May 12, 2025 2:11 PM
To: Cano, Kari <Kari.Cano@kimley-horn.com>; Fernando Herrera <fherrera@cityofmenifee.us>; Kelly, Jon <JKelly@C5IP.com>
Subject: Re: JN:16568 Heritage Valley Business Center (PLN24-0195) - Draft Scoping Agreement

Good Afternoon Kari,

Will provide comments here shortly, expecting within the next few days. Please keep in mind review times, as this was provided on May 2nd for first plancheck.

Thank you,

Christopher Heron, EIT | Associate Engineer

Engineering Department

City of Menifee | 29844 Haun Road | Menifee, CA 92586

Direct: (951) 723-3723 | City Hall: (951) 672-6777

cheron@cityofmenifee.us |

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From: Cano, Kari <Kari.Cano@kimley-horn.com>
Sent: Monday, May 12, 2025 12:54 PM
To: Fernando Herrera <fherrera@cityofmenifee.us>; Kelly, Jon <JKelly@C5IP.com>
Cc: Christopher Heron <cheron@cityofmenifee.us>
Subject: RE: JN:16568 Heritage Valley Business Center (PLN24-0195) - Draft Scoping Agreement

[CAUTION]: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon Fernando,

Do you have an update on the review of the Traffic Scoping Agreement? Let me know if you think we should just go ahead and schedule the traffic counts based on what is in the scoping agreement before getting an official approval on the scoping agreement. We don't want to get stuck missing the train on counts. We have about 3 weeks, but because of the Memorial Day holiday I'd like to get the counts done before 5/22. Additionally, school will be getting out around the end of this month as well.

Thank you,
Kari

Kari Cano, Associate, Kimley-Horn
3801 University Avenue, Suite 300, Riverside, CA 92501
Direct: 951-543-9869 | Mobile Phone: 951-212-3848 |
Connect with us: Twitter | LinkedIn | Facebook | Instagram | Kimley-Horn.com

Celebrating 18 years as one of FORTUNE's 100 Best Companies to Work For

From: Fernando Herrera <fherrera@cityofmenifee.us>
Sent: Friday, May 2, 2025 8:20 AM
To: Cano, Kari <Kari.Cano@kimley-horn.com>; Kelly, Jon <JKelly@C5IP.com>
Cc: Christopher Heron <cheron@cityofmenifee.us>
Subject: RE: JN:16568 Heritage Valley Business Center (PLN24-0195) - Draft Scoping Agreement

Good morning,

Thank you, let me forward this to Engineering for review.

Fernando Herrera | Senior Planner
Community Development Department
City of Menifee | 29844 Haun Road | Menifee, CA 92586
Direct: (951) 723-3718 | City Hall: (951) 672-6777 |
fherrera@cityofmenifee.us | cityofmenifee.us



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From: Cano, Kari <Kari.Cano@kimley-horn.com>
Sent: Thursday, May 1, 2025 6:05 PM
To: Kelly, Jon <JKelly@C5IP.com>; Fernando Herrera <fherrera@cityofmenifee.us>
Subject: FW: JN:16568 Heritage Valley Business Center (PLN24-0195) - Draft Scoping Agreement

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Good afternoon all,

Please see the link below to the scoping agreement for Heritage Valley. Please review and let me know if you have any questions. Please note per Charlene's' email below she has not submitted this to the City traffic dept yet, as I told her that you wanted to do a quick review prior. Note her comment on traffic counts, and getting them before school ends.

Kari Cano, Associate, Kimley-Horn
3801 University Avenue, Suite 300, Riverside, CA 92501
Direct: 951-543-9869 | Mobile Phone: 951-212-3848 |
Connect with us: Twitter | LinkedIn | Facebook | Instagram | Kimley-Horn.com

Celebrating 18 years as one of FORTUNE's 100 Best Companies to Work For

From: Charlene So <cso@urbanxroads.com>
Sent: Thursday, May 1, 2025 5:49 PM
To: Cano, Kari <Kari.Cano@kimley-horn.com>
Cc: Aric Evatt <aevatt@urbanxroads.com>; Alex So <aso@urbanxroads.com>
Subject: JN:16568 Heritage Valley Business Center (PLN24-0195) - Draft Scoping Agreement

Hi Kari,

Below is a link to the draft scoping agreement for the Heritage Valley Business Center. Let me know if you have any questions/comments. Also, let me know if you will be submitting this to City staff for their review – not clear on whether or not the City of Menifee plans to submit to Perris for their review or if we need to reach out. Confirm whether you want to wait for the City's review/input on the study area before conducting counts or if

you want those scheduled now? The schools in this area are in until the first week of June, but with the Memorial Day holiday, not sure if we want to try to get the counts done before May 23rd.

Draft Traffic Scoping Agreement: https://urbanxroads.egnyte.com/dl/T9euPcFYsw

Regards,
CHARLENE SO, P.E.
Principal
Mobile: (949) 861-0177
urbanxroads.com | LinkedIn

JUNE 24, 2025

Mr. Brad Brophy
Assistant City Engineer
CITY OF PERRIS
24 South "D" Street
Perris, CA 92570

SUBJECT: HERITAGE VALLEY BUSINESS CENTER (PLN24-0195) TRAFFIC STUDY SCOPING AGREEMENT (PEER REVIEW ON BEHALF OF CITY OF PERRIS)

Dear Mr. Brophy:

INTRODUCTION

RK ENGINEERING GROUP, INC. (RK) is pleased to provide this review of the Heritage Valley Business Center (PLN24-0195) Traffic Study Scoping Agreement. The proposed Heritage Valley Business Center project is located south of Ethanac Road, east of Trumble Road, west of Sherman Road, and north of McLaughlin Road in the City of Menifee. Since the project may impact City of Perris intersections, RK has reviewed this scoping agreement on behalf of the City of Perris.

The Project includes the development of an 829,755-square-foot warehouse building, which includes 10,000 square feet of office support space on a 41.16-acre site.

The Traffic Study Scoping Agreement was prepared by Urban Crossroads, Inc. and is dated May 1, 2025. RK has reviewed the Traffic Study Scoping Agreement based upon City of Perris traffic engineering standards and thresholds and has identified a couple items that need to be addressed in the forthcoming traffic study.

COMMENTS

1. General. Study Intersections #1, #2, #3, #4, & #7 are either fully or partially located in the City of Perris. The forthcoming traffic study shall analyze these facilities utilizing the appropriate City of Perris traffic engineering standards and thresholds.

2. Page 4, Proposed Project Trip Generation. Please disclose if a tenant has been identified for this site. If so, please describe their operations and how ITE Land Use 150: Warehousing trip rates are most applicable. If an end user has yet to be identified, the analysis should use the most conservative trip rates applicable to the project to ensure ingress/egress and off-site intersections continue to operate adequately regardless of the ultimate tenant. Using warehousing trip rates may significantly understate the future traffic operations for the site.

3. Page 9, Study Are Intersections. Based on Comment #2, the study area may need to be expanded if the project's trip generation is increased.

4. Page 11, Traffic Counts. The traffic counts shall include truck classifications and appropriate PCE factors shall be applied.

5. Page 12, Fair Share Calculation Methodology. For any improvements identified under Opening Year (2028) conditions, the fair share calculations shall be based on 2028 traffic volumes as opposed to 2045 volumes.

6. Page 13, Exhibit 5: Cumulative Development Project Location Map. Please confirm the list of cumulative developments with the City of Perris Planning Department.

7. Page 16, Special Issues. Please assess intersection queueing at all study intersections. This shall include queuing for the through lanes along the Ethanac Road/I-215 overpass (i.e., between intersections #1 & #2).

CONCLUSIONS

RK has reviewed the Traffic Study Scoping Agreement for the proposed Heritage Valley Business Center (PLN24-0195). . The proposed Heritage Valley Business Center project is located south of Ethanac Road, east of Trumble Road, west of Sherman Road, and north of McLaughlin Road in the City of Menifee. Since the project may impact City of Perris intersections, RK has reviewed this scoping agreement on behalf of the City of Perris. RK has reviewed the Traffic Study Scoping Agreement based upon City of Perris traffic engineering standards and thresholds and has identified a couple items that need to be addressed in the forthcoming traffic study.

RK Engineering Group, Inc. appreciates this opportunity to work with the City of Perris on this project. If you have any questions regarding this review or need further clarification, please contact us at (949) 474-0809.

Sincerely,

RK ENGINEERING GROUP, INC.

Justin Tucker, P.E., T.E.
Principal

Registered Civil Engineer 92866
Registered Traffic Engineer 3055

Robert Kahn, P.E., T.E.
Founding Principal

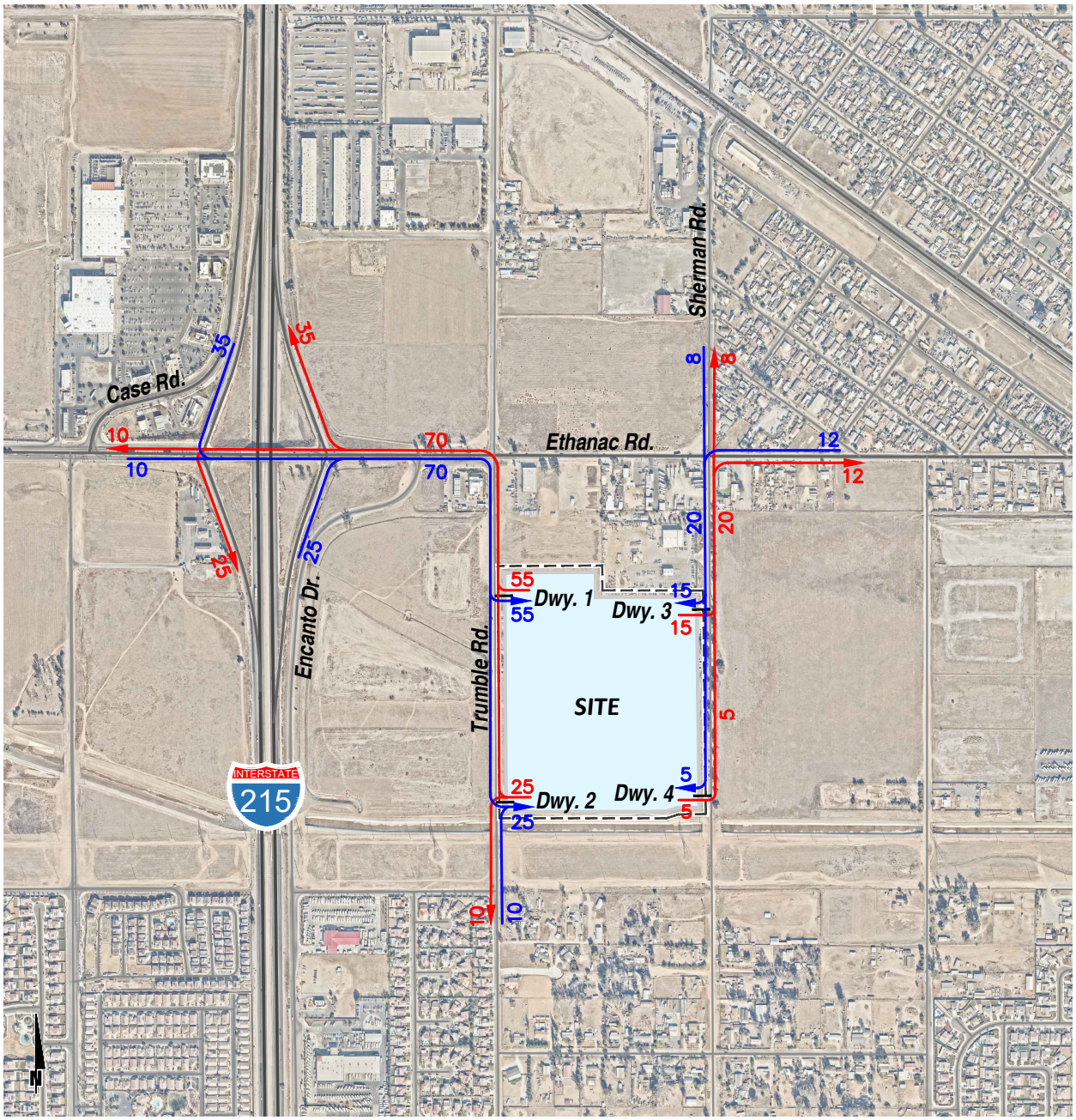
Registered Civil Engineer 20285
Registered Traffic Engineer 0555

XC: Kenneth Phung, City of Perris
XC: John Pourkazemi, City of Perris
XC: Patricia Brenes, City of Perris





Revised Project Passenger Car Trip Distribution



LEGEND:

10 = *Car Percent To/From Project*

= *Inbound Distribution*

= *Outbound Distribution*

TECHNICAL MEMORANDUM

DATE: May 9, 2025
TO: Fernando Herrera, City of Menifee
FROM: Charlene So, Urban Crossroads, Inc.
JOB NO: 16568-01 TA Scope

SUBJECT: HERITAGE VALLEY BUSINESS CENTER (PLN24-0195) TRAFFIC STUDY SCOPING AGREEMENT

Urban Crossroads, Inc. has prepared the following Traffic Study Scoping Agreement for the Heritage Valley Business Center (Project), which is located south of Ethanac Road, east of Trumble Road, west of Sherman Road, and north of McLaughlin Road in the City of Menifee (Assessor's Parcel Number (APN) 331-110-023, 024-027, 031, 035, 038, 039, and 041). This letter describes the proposed Project trip generation, trip distribution, and analysis methodology, which have been used to establish the draft proposed Project study area and analysis locations. The following scope of work is based on the City's Level of Service (**LOS**) Traffic Study Guidelines (revised October 2020) (City Guidelines). The City's Scoping Form is included in Appendix 1.

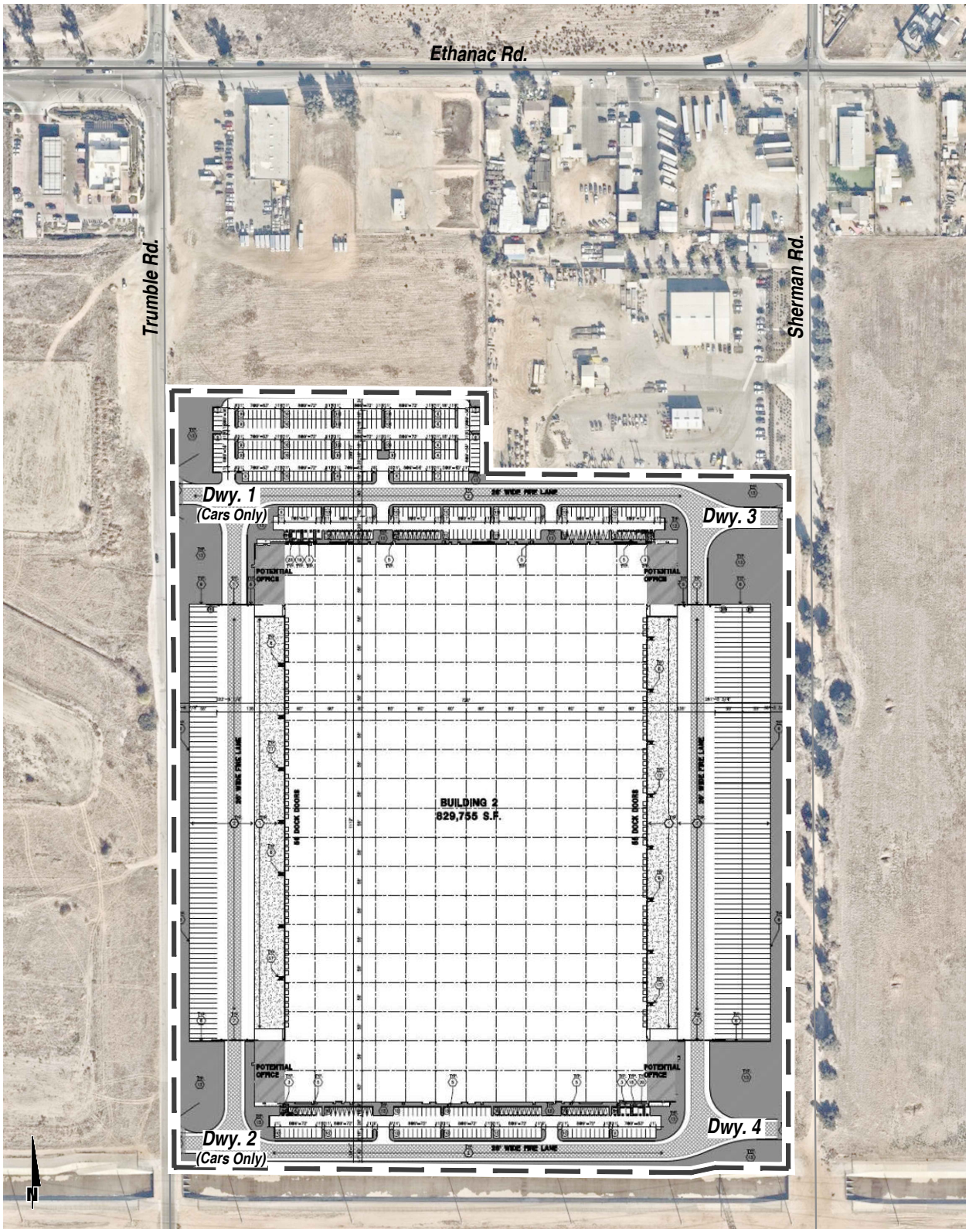
PROPOSED PROJECT

The Project includes the development of an 829,755 square foot warehouse building which includes 10,000 square feet of office support space on a 41.16-acre site (see Exhibit 1). It is our understanding the proposed Project Planning Application consists of a Plot Plan (PLN24-0195), General Plan Amendment (PLN24-0197) to change the land use from Heavy Industrial to Menifee North Specific Plan for APNs 331-110-024, 025, and 026, Change of Zone (PLN24-0198) to change to zoning from Heavy Industrial to Menifee North Specific Plan for APNs 331-110-024, 025, and 026, and a Specific Plan Amendment (PLN24-0199) to modify the boundary of the existing Menifee North Specific Plan to include the proposed Project and designating it as Planning Area 2 (Industrial).

The site is currently occupied by a few non-conforming existing residential units and businesses. Driveway counts were collected to determine the trips associated with the existing uses in order to be utilized as a credit against the Project trip generation.

The proposed Project is anticipated to have an Opening Year of 2027. Access is proposed along Trumble Road (via two passenger car driveways only) and Sherman Road (via two driveways that would serve cars and trucks). All driveways are assumed to allow for full access (no turn restrictions).

EXHIBIT 1: SITE PLAN



TRIP GENERATION

Trip generation represents the amount of traffic, which is both attracted to, and produced by, a land use project. Determining traffic generation for a specific project is therefore based upon forecasting the amount of traffic that is expected to be both attracted to, and produced by, specific land uses being proposed for a given development.

EXISTING USES

The site is currently developed with existing non-conforming residential homes and businesses. In an effort to determine the trip generation associated with the existing buildings, driveway counts were collected at the existing driveway location. Traffic associated with each of the existing uses were captured through driveway counts collected on Tuesday, April 22nd, 2025, through Thursday, April 24th, 2025. Table 1 below summarizes the average existing trip generation based on the count data collected over the three consecutive days. The existing sites currently generate an average of 177 two-way trips per day, with 8 trips during the AM peak hour and 7 trips during the PM peak hour. A detailed summary of the count data collected at the existing sites is provided in Appendix 2 (see Table 2-1).

For the purposes of the operations analysis, the Passenger Car Equivalent (PCE)-based trip generation shown in Table 2 will be utilized. PCE factors were applied to the trip generation rates for heavy trucks (large 2-axles, 3-axles, 4+-axles). PCEs allow the typical "real-world" mix of vehicle types to be represented as a single, standardized unit, such as the passenger car, to be used for the purposes of capacity and level of service analyses. The PCE factors are consistent with the recommended PCE factors in City's guidelines. Table 1 also summarizes the existing trip generation in PCE with 278 two-way PCE trips per day, 13 PCE AM peak hour trips, and 12 PCE PM peak hour trips.

TABLE 1: EXISTING TRIP GENERATION

Existing Uses	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	
Actual Vehicles							
Passenger Cars:	3	3	6	1	4	4	108
2-axle Trucks:	0	0	1	0	0	1	18
3-axle Trucks:	0	0	0	0	0	1	11
4+-axle Trucks:	0	1	1	1	0	1	40
Total Truck Trips (Actual Vehicles):	0	2	2	2	1	3	69
Existing Total Trips (Actual Vehicles)[2]	**3**	**5**	**8**	**3**	**4**	**7**	**177**
Passenger Car Equivalent (PCE)							
Passenger Cars:	3	3	6	1	4	4	108
2-axle Trucks (PCE = 1.5):	1	1	2	1	1	2	27
3-axle Trucks (PCE = 2.0):	0	1	1	1	1	2	23
4+-axle Trucks (PCE = 3.0):	0	4	4	4	0	4	120
Total Truck Trips (PCE):	1	6	7	6	2	8	170
Existing Total Trips (PCE)[2]	**4**	**9**	**13**	**7**	**6**	**12**	**278**

PROPOSED PROJECT

In order to develop the traffic characteristics of the proposed project, trip-generation statistics published in the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition, 2021) was used to estimate the trip generation based on the following land use category:

- ITE Land Use Code 150 (Warehousing) has been used to derive site specific trip generation estimates for up to 829,755 square feet. A warehouse is primarily devoted to the storage of materials but may also include office and maintenance areas. The vehicle mix has been obtained from the ITE's Trip Generation Manual and the truck percentages were further broken down by axle type per the following South Coast Air Quality Management District (SCAQMD) recommended truck mix: 2-Axle = 16.7%; 3-Axle = 20.7%; 4+-Axle = 62.6%.

As noted in Table 2, refinements to the raw trip generation estimates have been made to provide a more detailed breakdown of trips between passenger cars and trucks. Trip generation for heavy trucks was further broken down by truck type (or axle type). The total truck percentage is comprised of 3 different truck types: 2-axle, 3-axle, and 4+-axle trucks.

The proposed Project may consider including refrigerated uses, however, if the Project proceeds with that land use category, a supplemental trip generation will be prepared to demonstrate the trips fit within that evaluated for the proposed Traffic Study.

TABLE 2: TRIP GENERATION RATES

Land Use[1]	Units[2]	ITE LU CODE	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Actual Vehicles:									
Warehousing[3]	TSF	150	0.131	0.039	0.170	0.050	0.130	0.180	1.710
Passenger Cars			0.120	0.030	0.150	0.034	0.116	0.150	1.110
2-axle Trucks			0.002	0.001	0.003	0.003	0.002	0.005	0.100
3-axle Trucks			0.002	0.002	0.004	0.003	0.003	0.006	0.124
4+-axle Trucks			0.007	0.006	0.013	0.010	0.009	0.019	0.376
Passenger Car Equivalent (PCE):									
Warehousing[3]	TSF	150	0.131	0.039	0.170	0.050	0.130	0.180	1.710
Passenger Cars			0.120	0.030	0.150	0.034	0.116	0.150	1.110
2-Axle Trucks (PCE = 1.5)			0.003	0.002	0.005	0.005	0.003	0.008	0.150
3-Axle Trucks (PCE = 2.0)			0.004	0.004	0.008	0.006	0.006	0.012	0.248
4+-Axle Trucks (PCE = 3.0)			0.021	0.017	0.038	0.030	0.026	0.056	1.127

[1] Trip Generation & Vehicle Mix Source: ITE, Trip Generation Manual, Eleventh Edition (2021).

[2] TSF = thousand square feet

[3] Truck Mix: South Coast Air Quality Management District's (SCAQMD) recommended truck mix, by axle type.
Normalized % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks.

The Project is estimated to generate a total of 1,422 two-way trips per day on a typical weekday with approximately 142 AM peak hour trips and 149 PM peak hour trips as shown in Table 3 (actual vehicles). The Project is anticipated to generate a total of 2,190 two-way PCE trips per day on a typical weekday with approximately 166 PCE AM peak hour trips and 189 PCE PM peak hour trips.

TABLE 3: PROJECT TRIP GENERATION

Project Trip Generation	Quantity	Units[1]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Actual Vehicles:									
Warehousing	829.755	TSF							
Passenger Cars:			99	25	124	29	96	125	922
2-axle Trucks:			2	1	3	2	2	4	84
3-axle Trucks:			2	2	4	2	3	5	104
4+-axle Trucks:			6	5	11	8	7	15	312
Total Truck Trips:			10	8	18	12	12	24	500
Project Trips (Actual Vehicles)[2]			**109**	**33**	**142**	**41**	**108**	**149**	**1,422**
Passenger Car Equivalent (PCE):									
Warehousing	829.755	TSF							
Passenger Cars:			99	25	124	29	96	125	922
2-axle Trucks (PCE = 1.5):			2	2	4	4	3	7	126
3-axle Trucks (PCE = 2.0):			3	4	7	5	5	10	206
4+-axle Trucks (PCE = 3.0):			17	14	31	25	22	47	936
Total Truck Trips:			22	20	42	34	30	64	1,268
Project Trips (PCE)[2]			**121**	**45**	**166**	**63**	**126**	**189**	**2,190**

[1] TSF = thousand square feet

[2] Total Trips = Passenger Cars + Truck Trips.

Table 4 summarizes the net new trip generation to be evaluated for the Project once the credit is taken for existing uses. As shown, the proposed Project will be evaluated assuming 1,632 two-way PCE trips per day with a net reduction of 215 PCE AM peak hour trips and 836 PCE PM peak hour trips after credits for the existing uses.

TABLE 4: NET NEW PROJECT TRIP GENERATION

Net New Trip Generation	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	
Actual Vehicles:							
Warehousing							
Passenger Cars:	96	22	118	28	92	121	814
2-axle Trucks:	2	1	2	2	2	3	66
3-axle Trucks:	2	2	4	2	3	4	93
4+-axle Trucks:	6	4	10	7	7	14	272
Total Truck Trips:	10	6	16	10	11	21	431
Project Trips (Actual Vehicles)	**106**	**28**	**134**	**38**	**104**	**142**	**1,245**
Passenger Car Equivalent (PCE):							
Warehousing							
Passenger Cars:	96	22	118	28	92	121	814
2-axle Trucks (PCE = 1.5):	1	1	2	3	2	5	99
3-axle Trucks (PCE = 2.0):	3	3	6	4	4	8	183
4+-axle Trucks (PCE = 3.0):	17	10	27	21	22	43	816
Total Truck Trips:	21	14	35	28	28	56	1,098
Project Trips (PCE)	**117**	**36**	**153**	**56**	**120**	**177**	**1,912**

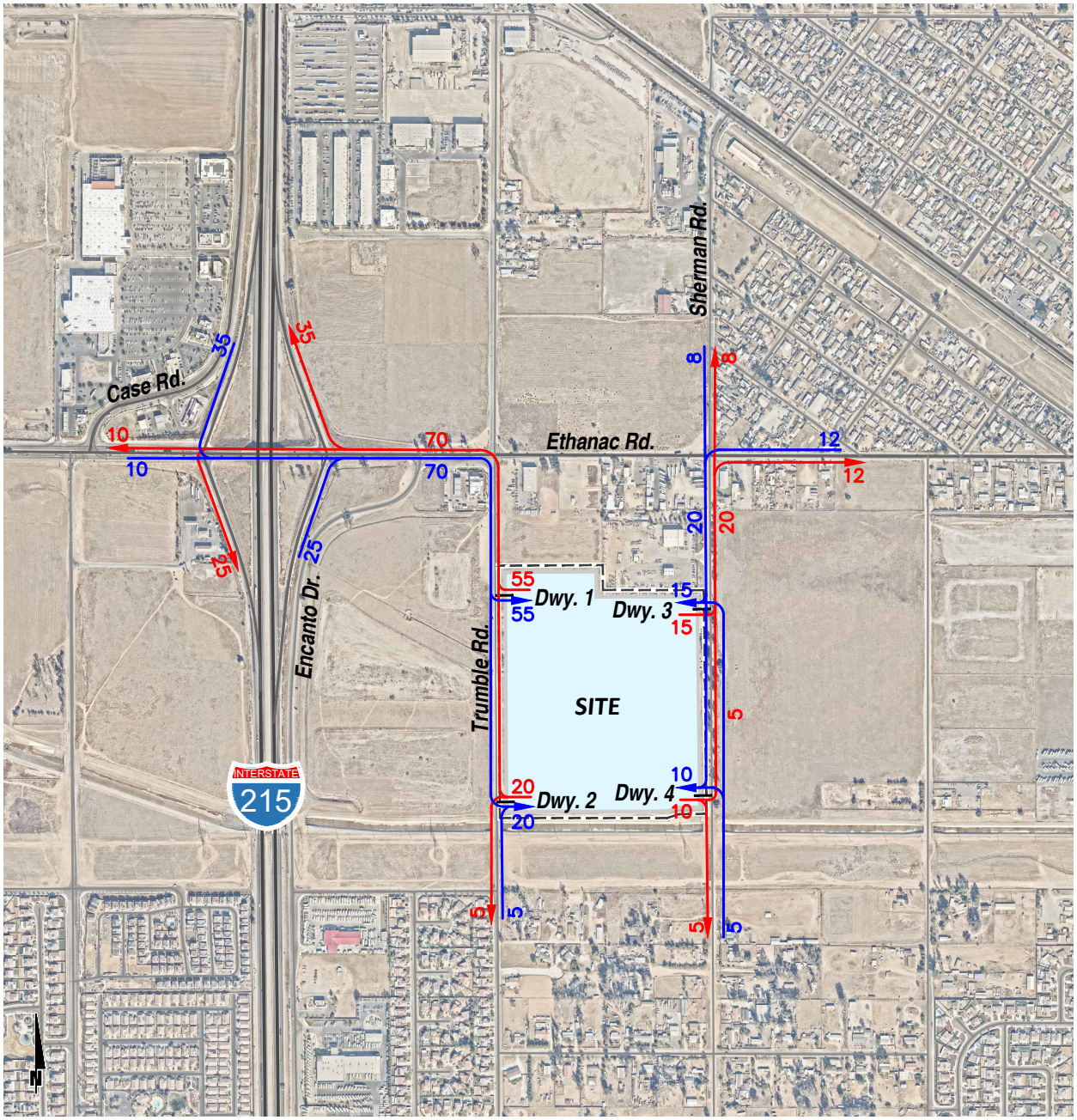
TRIP DISTRIBUTION

Trip distribution is the process of identifying the probable destinations, directions or traffic routes that will be utilized by Project traffic. The potential interaction between the planned land uses and surrounding regional access routes are considered, to identify the route where the Project traffic would distribute. The Project trip distribution and assignment process represents the directional orientation of traffic to and from the Project site. The trip distribution pattern is heavily influenced by the geographical location of the site, the location of surrounding land uses, and the proximity to the regional freeway system.

The project trip distribution patterns for both passenger cars and trucks are consistent with those evaluated as part of the Menifee Commerce Center Project Traffic Impact Analysis (prepared by Albert A. Webb Associates and dated August 2021). Passenger car distribution patterns are based on existing and planned land uses and roadway infrastructure in the area. Truck distribution patterns take into consideration City truck routes, proximity to the freeway system, and the Project

Applicant's input on percentage of traffic oriented to the Port of Long Beach or other destination. The truck and passenger car trip distributions are illustrated on Exhibits 2 and 3, respectively. Trucks will utilize Sherman Road only to access Ethanac Road (no trucks to access on Trumble Road).

EXHIBIT 2: PROJECT (PASSENGER CAR) TRIP DISTRIBUTION



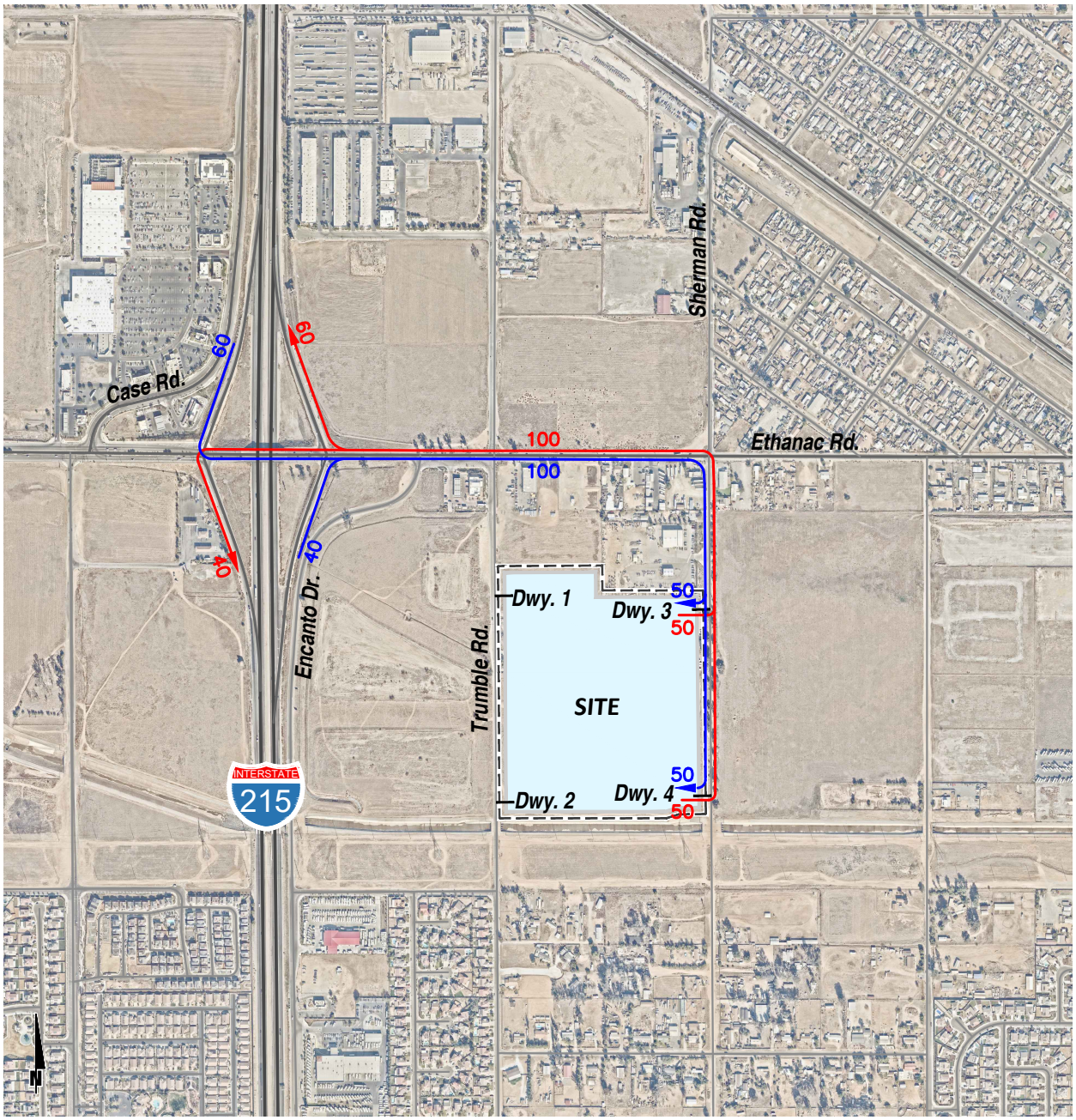
LEGEND:

10 = *Car Percent To/From Project*

→ = *Inbound Distribution*

→ = *Outbound Distribution*

EXHIBIT 3: PROJECT (TRUCK) TRIP DISTRIBUTION



LEGEND:

10 = *Truck Percent To/From Project*

= *Inbound Distribution*

= *Outbound Distribution*

ANALYSIS SCENARIOS

Consistent with the City's Guidelines, intersection analysis will be provided for the following scenarios:

- Existing (2025) Conditions
- Existing plus Project (E+P) Conditions
- Existing plus Ambient Growth plus Cumulatives (EAC) (2028) Conditions
- Existing plus Ambient Growth plus Project plus Cumulatives (EAPC) (2028) Conditions
- Horizon Year (2045) Without Project – to be based on post-processed Riverside County Transportation Model (RIVCOM) model data
- Horizon Year (2045) With Project

All study area intersections will be evaluated using the Highway Capacity Manual (HCM) 7th Edition analysis methodology using the latest Synchro 12 analysis software package.

STUDY AREA INTERSECTIONS

Based on the Project's anticipated travel patterns and trip generation characteristics (where the Project could contribute 50 or more peak hour trips) or added at the request of City Staff, the following study area intersection locations shown on Exhibit 4 and listed below were selected for analysis (see Table 5) and roadway segments listed in Table 6.

TABLE 5: STUDY AREA INTERSECTIONS

#	Intersection
1	I-215 SB Ramps & Ethanac Rd.
2	I-215 NB Ramps & Ethanac Rd.
3	Encanto Dr. & Ethanac Rd.
4	Trumble Rd. & Ethanac Rd.
5	Trumble Rd. & Driveway 1
6	Trumble Rd. & Driveway 2
7	Sherman Rd. & Ethanac Rd.
8	Sherman Rd. & Driveway 3
9	Sherman Rd. & Driveway 4

TABLE 6: STUDY ROADWAY SEGMENTS

#	Roadway Segment	Limits
1	Ethanac Rd.	I-215 Freeway to Encanto Dr.
2	Ethanac Rd.	Encanto Dr. to Trumble Rd.
3	Ethanac Rd.	Trumble Rd. to Sherman Rd.
4	Trumble Rd.	South of Ethanac Rd.
5	Sherman Rd.	South of Ethanac Rd.

EXHIBIT 4: STUDY AREA



LEGEND:

0 = *Existing Intersection Analysis Location*

(0) = *Future Intersection Analysis Location*

TRAFFIC COUNTS

New traffic counts will be conducted when local schools are in session and operating on normal bell schedules after the City's approval of the scoping agreement and analysis assumptions. No additional adjustments are proposed for the purpose of establishing the existing baseline conditions.

- Weekday AM peak hour (7-9 AM)
- Weekday PM peak hour (4-6 PM)

It is requested that the City provide input on the study area so that traffic counts can be collected prior to May 23rd, 2025 (before Graduations and Summer Break).

AMBIENT GROWTH

An ambient growth rate of 3% per year is proposed for the study area intersection to approximate background growth not identified by nearby cumulative development projects. As such, a total of 6.09% will be applied to the baseline to reflect 2027 conditions (3% per year over 2 years). Although the City of Menifee utilizes a growth rate of 2% per year, a growth rate of 3% per year is proposed consistent with the City of Perris' Guidelines.

Growth for the Master Plan Future Phases (Year 2045) will be based on the regional growth as determined by the RIVCOM traffic model. Manual refinements and adjustments will be made accordingly to adequately reflect regional growth in line with projected growth in the Southern California Association of Governments (SCAG) Connect SoCal 2024 report which is the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) plan.

LEVEL OF SERVICE (LOS) CRITERIA

Per Policy C-1.2 of the City of Menifee General Plan, the following LOS will be utilized for study area intersections located within the City: Require development to mitigate its traffic impacts and achieve a peak hour Level of Service (LOS) D or better at intersections, except at constrained intersections at close proximity to the I-215 where LOS E may be permitted.

The definition of an intersection deficiency has been obtained from the City of Perris General Plan. 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. For the purposes of this traffic analysis, LOS D will be considered the acceptable threshold for all intersections within the study area.

GENERAL PLAN CONSISTENCY REQUIREMENTS

Project-related impacts shall be clearly identified as direct or cumulative in the Traffic Study report. Only feasible improvements should be recommended in the Traffic Study report. Consideration should be made for existing right-of-way, availability of receiving lanes for additional through or turn lanes, environmental constraints, utility conflicts, and economically feasible improvement costs. Analysis of the recommended improvements shall be provided to demonstrate the proposed improvement will reduce the project impact to LOS to meet LOS standards.

All studies that propose increasing the number of travel lanes on a roadway or intersections to improve LOS conditions, either beyond existing conditions or for General Plan conditions beyond

what is planned for that segment shall clearly identify the impacts associated with such a change. Exhibits and preliminary cost estimates must be provided to show the feasibility of the improvement.

The Traffic Study shall identify whether or not the recommended improvements to achieve LOS standards are within the scope of a funding mechanism. The funding mechanism identified shall also include the availability of the funds and anticipated construction dates (if available). A fair share contribution toward the identified funding mechanism shall be calculated in order to reduce identified cumulative project impacts.

LOS improvements may also include connectivity improvements for bicycles and pedestrians. Improvements along the project frontage shall include pedestrian and bicycle facilities in compliance with the goals and policies established in the City's General Plan and mandated through the Complete Streets Act of 2008. The project should clearly identify pedestrian and bicycle facilities within the community that connect the development to existing sidewalk and bicycle facilities.

LOS improvements that are determined to be infeasible should be discussed in the Traffic Study and the factors resulting in the improvement being infeasible should be identified.

FAIR SHARE CALCULATION METHODOLOGY

Improvements found to be included in the City of Menifee's Development Impact Fee (DIF) program and Western Riverside Council of Governments (WRCOG) Transportation Uniform Mitigation Fee (TUMF), will be identified as such and in any City of Menifee RBBD program. For improvements that do not appear to be in either of the pre-existing fee programs, a fair share financial contribution based on the Project's fair share impact may be imposed in order to mitigate the Project's share of impacts in lieu of construction. The Project's fair share cost of improvements would be determined based on the following equation, which is the ratio of Project traffic to new traffic, where new traffic is total future traffic less existing baseline traffic:

Project Fair Share % = Project Traffic / (2045 With Project Total Traffic – Existing Traffic)

CUMULATIVE DEVELOPMENT PROJECTS

It is requested the City of Moreno Valley provide a list of cumulative projects to ensure that the currently known cumulative projects are adequately represented in the long-range traffic forecasting. A preliminary list of cumulative projects is shown on Table 3 and locations are illustrated on Exhibit 5. A list of cumulative projects will also be requested from the City of Perris.

EXHIBIT 5: CUMULATIVE DEVELOPMENT PROJECT LOCATION MAP

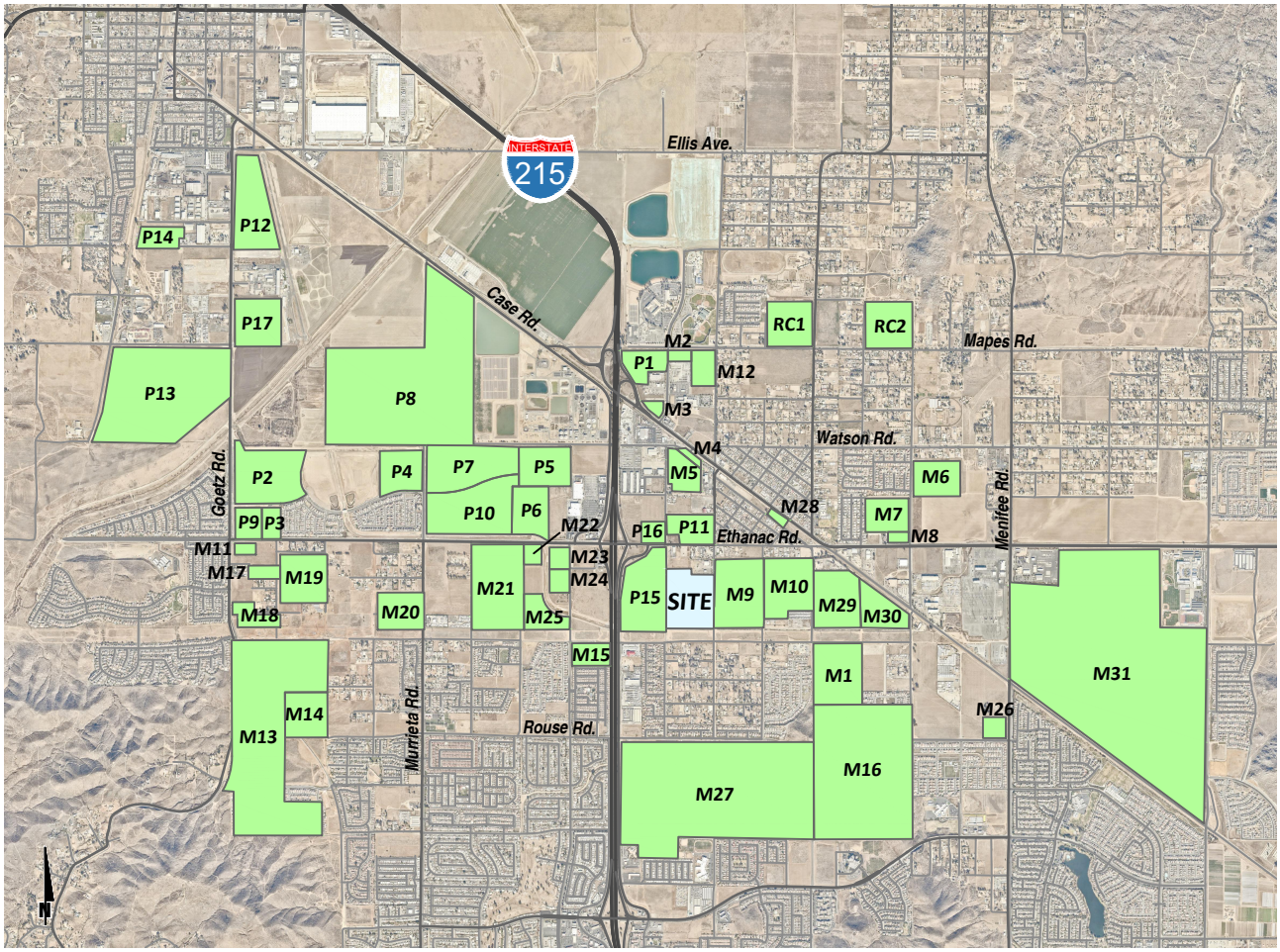


TABLE 7: SUMMARY OF CUMULATIVE DEVELOPMENT PROJECTS

No.	Project Name / Case Number	Jurisdiction	Land Use	Quantity	Units[1]
P1	Mapes and Trumble Industrial	Perris	High-Cube Fulfillment Center Warehouse	396.000	TSF
	Green Valley Specific Plan (GVSP)	Perris			
P2	GVSP - Track 37262		Single Family Housing	191	DU
P3	GVSP - Track 37816		Multifamily Housing	97	DU
P4	GVSP - Track 37722 (25% Complete)		Single Family Housing	116	DU
P5	GVSP - Track 37817		Multifamily Housing	227	DU
P6	GVSP - Track 37818		Multifamily Housing	374	DU
P7	GVSP - Track 37223		Single Family Housing	235	DU
P8	GVSP - Phase 2 (North)		Multifamily Housing	1,183	DU
			Single Family Housing	462	DU
			Commercial	5.9	AC
			School	15.0	AC
P9	GVSP - Phase 2 (South)		Multifamily Housing	111	DU
			Commercial	5.4	AC
P10	GVSP (PA 46, 47, & 48)		Single Family Housing	483	DU
P11	Hillwood Ethanac	Perris	High-Cube Transload Warehouse	362.348	TSF
			High-Cube Cold Storage Warehouse	50.000	TSF
P12	Perris Airport Center Industrial	Perris	High-Cube Fulfillment Center Warehouse	795.109	TSF
			General Light Industrial	71.961	TSF
			Truck/Trailer Lot	323	Spaces
P13	Perris Logistics Center South	Perris	High-Cube Warehouse	3,448.734	TSF
P14	Case Road Mixed-Use	Perris	Self-Storage Facility	211.900	TSF
			Recreational Vehicle (RV) Storage	215	Spaces
			High-Cube Fulfillment Center (Sort)	498.000	TSF
			Hotel	128	RM
			High Turnover (Sit-Down) Restaurant	27.000	TSF
			Fast-Food Restaurant with Drive-Thru	5.000	TSF
P15	Motte Towne Center (DPR06-0337)	Perris	Commercial	286.000	TSF
			Free-Standing Discount Store	221.000	TSF
P16	Perris Travel Center (P22-05002)	Perris	Gas Station and Truck Stop	23	VFP
P17	Airport Industrial	Perris	Industrial	650.000	TSF
RC1	TTM/TR37358	County	Residential lots	154	DU
RC2	TR31687	County	Single Family Residential	65	DU
M1	McLaughlin Warehouses (DEV2024-016)	Menifee	Warehouse	491.467	TSF
M2	United Carports Warehouse (DEV2024-009)	Menifee	Warehouse	58.643	TSF
M3	Trumble Retail (CUP2016-290)	Menifee	Hotel	108	RM
			Quality Restaurant	5.500	TSF
			Fast-Food w/ Drive-Thru	3.000	TSF
			Gas Station	12	VFP
M4	Paragon Framing (CUP2018-126)	Menifee	Office/Storage	10.454	TSF

No.	Project Name / Case Number	Jurisdiction	Land Use	Quantity	Units[1]
M5	Trumble/Watson Warehouse (DEV2024-019)	Menifee	Warehouse	327.631	TSF
M6	TR 38132 & 38133 (SPA DEV2021-005)	Menifee	Single Family Residential	322	DU
M7	MR-27 LLC Rancon (TTM 34118)	Menifee	Multifamily (Low-Rise)	85	DU
M8	Motte Country Plaza (PP2018-300)	Menifee	Gas Station	12	VFP
M9	Menifee Commerce Center (PP2019-005)	Menifee	Warehouse	1,640.130	TSF
M10	Motte Business Center	Menifee	Warehouse	1,138.638	TSF
M11	Goetz/Ethanac Commercial (PP PLN21-0319)	Menifee	Gas Station w/ C-Store	7.250	TSF
			Car Wash	2.790	TSF
			Retail	7.040	TSF
M12	Mapes and Sherman Warehouse	Menifee	High-Cube Fulfillment Center Warehouse	277.578	TSF
M13	Cimarron Ridge	Menifee	Residential	756	DU
M14	TTM 38128 (DEV2024-001)	Menifee	Single Family Residential	96	DU
M15	McLaughlin Village	Menifee	Condominiums	126	DU
M16	Underwood	Menifee	Residential	543	DU
M17	Wheat Warehouse	Menifee	Warehouse Distribution Center	87.676	TSF
M18	Corsica Business Park (DEV2024-010)	Menifee	Business Park	234.921	TSF
M19	CADO Warehouse	Menifee	Warehouse	700.037	TSF
M20	Ares Warehouse on Murrieta (DEV2024-017)	Menifee	Warehouse	517.720	TSF
M21	Northern Gateway Commerce Center II (PP PLN21-0281)	Menifee	High-Cube Warehouse	1,286.607	TSF
M22	Ethanac/Evans Warehouse (DEV2024-018)	Menifee	Warehouse	137.896	TSF
M23	Ethanac Square (MJMOD PLN21-0104)	Menifee	Gas Station	3.800	TSF
M24	Ethanac/Barnett Warehouse (PP PLN21-0290)	Menifee	Warehouse	251.133	TSF
M25	Menifee Logistics (PLN23-0040)	Menifee	Warehouse	411.829	TSF
M26	LDW TTM 38346	Menifee	Condominiums	162	DU
M27	Legado SP	Menifee	Single Family Detached Residential	1,061	DU
			Shopping Center	225.000	TSF
			Sports Park	11.23	AC
			Recreational Community Center	10.000	TSF
M28	Self-Storage Facility	Menifee	Self-Storage Facility		
M29	Nova Battery Project (DEV2024-015)	Menifee	Battery Energy Storage System	44.220	AC
M30	Double Butte (DEV2024-026)	Menifee	Battery Energy Storage System	27.000	AC
M31	Menifee Valley Specific Plan	Menifee	Single Family Housing	1,328	DU
			Multifamily (Low-Rise)	390	DU
			Elementary School	750	STU
			Industrial Uses	5,510.000	TSF
			Commercial	560.000	TSF
			Public Facilities	120.000	TSF
			Sports Park w/ Aquatic Sports	54.000	TSF

[1] TSF = Thousand Square Feet; DU = Dwelling Units; VSP = Vehicle Fueling Positions; STU = Students; AC = Acres

SPECIAL ISSUES

The following special issues will also be addressed:

- *Site Access Evaluation:* The turn pocket lengths will be determined through peak hour traffic simulations developed using Synchro and SimTraffic software in an effort to identify the required storage capacity for turn lanes at each Project driveway. Specifically, the queuing analysis will be conducted in order to determine the necessary turn pocket storage lengths needed to accommodate peak hour queues at the Project Driveways along both Trumble Road and Sherman Road.
- *Traffic Signal Warrant:* A traffic signal warrant analysis will be prepared for all analysis scenarios for the unsignalized, full access study area intersections. Peak hour volume-based traffic signal warrants will be run for existing intersections while planning level, ADT-based traffic signal warrants will be evaluated for future intersections. The posted speed limit will be used to determine whether the urban or rural warrants are utilized.
- *Truck Access Assessment:* A truck turning template will be overlaid on the site plan for both driveways along Sherman Road as well as the intersection of Sherman Road at Ethanac Road to determine the appropriate curb radii and verify that trucks will have sufficient space to execute turning maneuvers. Since no trucks are permitted along Trumble Road, this assessment would only be applicable to driveways along Sherman Road.
- *Vehicle Miles Traveled*: VMT will be addressed under separate cover. A VMT memo will be prepared summarizing the screening assessment.

If you have any questions, please contact me directly at cso@urbanxroads.com.

APPENDIX 1

CITY SCOPING FORM

ATTACHMENT A

SCOPING AGREEMENT FOR TRAFFIC STUDY

This letter acknowledges the City Menifee Engineering Department requirements for the traffic study of the following project. The analysis must follow the latest City Traffic Study Guidelines dated October 2020

Case No. PLN24-00195 (PP)
Related Cases -
SP No. PLN24-0199 (SPA)
EIR No.
GPA No. PLN24-0197 (GPA)
CZ No. PLN24-198 (ZC)
Project Name: Heritage Valley Business Center
Project Location: South of Ethanac Road between Trumble Road and Sherman Road
Project Description: 829,755 SF of warehousing use

	Consultant	Developer
Name:	Urban Crossroads - Charlene So	Core5 Industrial Partners - Jon Kelly
Address:	1133 Camelback St. #8329 Newport Beach, CA 92658	300 Spectrum Center Dr., Suite 880 Irvine, CA 92618
Telephone:	949-861-0177	949-467-3290

A. Trip Generation Source: ITE *Trip Generation Manual,* most recent edition

Existing Land Use	Heavy Industrial (HI)	Proposed Land Use	SP (Menifee North)
Existing Zoning	Heavy Industrial (HI)	Proposed Zoning	SP (Menifee North)
Total Daily Trips			

	In	Out	Total
AM Trips	-		
PM Trips	-		

Internal Trip Allowance: Yes ☐ No ☑ (% Trip Discount)

Pass-By Trip Allowance: ☐ Yes ☑ No (% Trip Discount)

(Attach additional sheet if this is a multi-use site with a breakdown of trips generated)

B. Trip Geographic Distribution: N % S % E % W %
(See attached exhibit for detailed assignment) Varies - See Attachment Memo

C. Background Traffic

Project Completion Year: 2028 Annual Ambient Growth Rate: 2.0 %
Other area projects to be included: Updated projects to be provided by the City

Please contact the Engineering Department or use the most recently provided data

Model/Forecast methodology if required RIVCOM

D. Horizon Year Analysis: Does this project require a Horizon Year Analysis? ☑ Yes ☐ No

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

1. See attached memo
2.
3.
4.
5.
6.
7.
8.

F. Study Roadway Segments:

1. See attachment memo
2.
3.
4.
5.
6.
7.
8.

G. Other Jurisdictional Impacts

Is this project within any other Agency's Sphere of Influence or one-mile radius of boundaries? ☑ Yes ☐ No

If so, name of Jurisdiction: City of Perris; Caltrans (I-215 Freeway, SR-74)

H. Site Plan (please attach a legible 11'X17' copy) See attached memo

I. Specific issues to be addressed in the Study (in addition to the standard analysis described in the Guideline) (To be filled out by Engineering Department)

See attached memo

Recommended by:

Charlene So — 5/9/2025

Consultant's Representative — Date

5/9/2025

Scoping Agreement Submitted on — Date

Scoping Agreement Resubmitted on — Date

Approved Scoping Agreement:

City of Menifee — Date

APPENDIX 2

DRIVEWAY COUNTS

TABLE 2-1: SUMMARY OF DRIVEWAY COUNTS

Count Dates	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	
Day 1: April 22, 2025							
Passenger Cars:	4	3	7	1	2	3	104
2-axle Trucks:	0	1	1	0	1	1	21
3-axle Trucks:	0	1	1	0	0	0	10
4+-axle Trucks:	0	2	2	1	0	1	38
Total Truck Trips:	0	4	4	1	1	2	69
Day 1 Total Trips[1]	**4**	**7**	**11**	**2**	**3**	**5**	**173**
Day 2: April 23, 2025							
Passenger Cars:	2	3	5	1	3	4	101
2-axle Trucks:	1	0	1	0	0	0	22
3-axle Trucks:	0	0	0	1	0	1	15
4+-axle Trucks:	0	1	1	2	0	2	28
Total Truck Trips:	1	1	2	3	0	3	65
Day 2 Total Trips[1]	**3**	**4**	**7**	**4**	**3**	**7**	**166**
Day 3: April 24, 2025							
Passenger Cars:	3	2	5	0	6	6	118
2-axle Trucks:	0	0	0	1	0	1	11
3-axle Trucks:	0	0	0	0	1	1	9
4+-axle Trucks:	0	1	1	1	0	1	54
Total Truck Trips:	0	1	1	2	2	3	74
Day 3 Total Trips[1]	**3**	**3**	**6**	**2**	**8**	**9**	**192**

[1] Total Trips = Passenger Cars + Total Truck Trips.

24 Hour Driveway Counts

LOCATION: Site Between Trumble Rd and Sherman Rd
TOTAL
CITY: Menifee

DATE: 4/22/2025
DAY: Tuesday

ENTERING

Time	Passenger Vehicles	Large 2 Axle Vehicles	3 Axle Vehicles	4+ Axle Trucks	TOTAL
0:00	0	0	0	0	**0**
0:15	0	0	0	0	**0**
0:30	1	0	0	0	**1**
0:45	1	0	0	0	**1**
1:00	0	0	0	0	**0**
1:15	0	0	0	0	**0**
1:30	0	0	0	0	**0**
1:45	1	0	0	0	**1**
2:00	2	0	0	0	**2**
2:15	1	0	0	0	**1**
2:30	0	0	0	0	**0**
2:45	0	0	1	0	**1**
3:00	0	0	0	0	**0**
3:15	1	0	0	0	**1**
3:30	0	0	0	0	**0**
3:45	0	0	0	0	**0**
4:00	2	0	0	0	**2**
4:15	0	0	0	0	**0**
4:30	2	0	0	0	**2**
4:45	0	1	0	0	**1**
5:00	3	0	0	0	**3**
5:15	2	0	0	0	**2**
5:30	2	2	0	0	**4**
5:45	0	0	0	0	**0**
6:00	2	0	0	0	**2**
6:15	1	0	0	0	**1**
6:30	1	0	0	1	**2**
6:45	1	0	0	0	**1**
7:00	3	0	0	0	**3**
7:15	1	0	0	0	**1**
7:30	0	0	0	0	**0**
7:45	0	0	0	0	**0**
8:00	0	0	0	0	**0**
8:15	0	1	0	0	**1**
8:30	1	0	0	0	**1**
8:45	0	0	0	0	**0**
9:00	1	0	0	0	**1**
9:15	2	0	0	1	**3**
9:30	1	0	1	0	**2**
9:45	0	0	0	0	**0**
10:00	0	1	0	0	**1**
10:15	0	1	0	0	**1**
10:30	0	0	0	0	**0**
10:45	0	0	0	0	**0**
11:00	0	0	0	0	**0**
11:15	0	1	0	0	**1**
11:30	0	0	0	1	**1**
11:45	1	0	0	1	**2**
12:00	0	0	0	1	**1**
12:15	2	0	0	0	**2**
12:30	1	0	0	2	**3**
12:45	1	0	0	2	**3**
13:00	0	0	0	2	**2**
13:15	0	1	0	0	**1**
13:30	1	2	1	1	**5**
13:45	1	0	0	4	**5**
14:00	0	0	0	1	**1**
14:15	0	0	0	1	**1**
14:30	0	0	0	0	**0**
14:45	0	1	0	0	**1**
15:00	2	0	0	0	**2**
15:15	0	0	0	0	**0**
15:30	0	0	0	0	**0**
15:45	1	0	0	0	**1**
16:00	0	0	0	0	**0**
16:15	1	0	0	1	**2**
16:30	0	0	0	0	**0**
16:45	0	0	0	0	**0**
17:00	0	0	0	0	**0**

EXITING

Time	Passenger Vehicles	Large 2 Axle Vehicles	3 Axle Vehicles	4+ Axle Trucks	TOTAL
0:00	1	0	0	0	**1**
0:15	0	0	0	0	**0**
0:30	0	0	0	0	**0**
0:45	0	0	0	0	**0**
1:00	0	0	0	0	**0**
1:15	0	0	0	0	**0**
1:30	0	0	0	0	**0**
1:45	0	0	0	0	**0**
2:00	0	0	0	1	**1**
2:15	0	0	0	2	**2**
2:30	0	0	0	2	**2**
2:45	0	0	0	0	**0**
3:00	0	0	0	1	**1**
3:15	0	0	0	0	**0**
3:30	1	0	0	1	**2**
3:45	0	0	0	0	**0**
4:00	0	0	0	0	**0**
4:15	1	0	0	0	**1**
4:30	0	0	1	0	**1**
4:45	0	0	0	0	**0**
5:00	0	0	0	2	**2**
5:15	0	1	1	1	**3**
5:30	0	1	0	1	**2**
5:45	1	0	0	1	**2**
6:00	0	0	0	1	**1**
6:15	0	0	0	0	**0**
6:30	0	0	0	0	**0**
6:45	0	0	0	0	**0**
7:00	1	0	1	0	**2**
7:15	0	1	0	1	**2**
7:30	2	0	0	0	**2**
7:45	0	0	0	1	**1**
8:00	1	0	0	0	**1**
8:15	0	0	0	0	**0**
8:30	0	0	0	0	**0**
8:45	0	1	0	0	**1**
9:00	1	0	0	0	**1**
9:15	0	0	0	0	**0**
9:30	2	0	0	1	**3**
9:45	0	0	0	0	**0**
10:00	0	0	0	0	**0**
10:15	0	1	1	0	**2**
10:30	0	0	0	0	**0**
10:45	1	0	0	0	**1**
11:00	2	0	0	0	**2**
11:15	0	1	0	0	**1**
11:30	0	0	0	0	**0**
11:45	0	0	0	0	**0**
12:00	2	0	0	1	**3**
12:15	2	0	0	0	**2**
12:30	2	0	0	0	**2**
12:45	5	0	0	0	**5**
13:00	2	0	0	0	**2**
13:15	2	0	0	0	**2**
13:30	2	0	0	0	**2**
13:45	3	0	1	0	**4**
14:00	4	0	2	0	**6**
14:15	0	0	0	0	**0**
14:30	1	0	0	0	**1**
14:45	0	0	0	0	**0**
15:00	1	0	0	0	**1**
15:15	1	0	0	0	**1**
15:30	0	1	0	0	**1**
15:45	1	0	0	0	**1**
16:00	1	1	0	0	**2**
16:15	1	0	0	0	**1**
16:30	0	0	0	0	**0**
16:45	0	0	0	0	**0**
17:00	0	0	0	0	**0**

Counts Unlimited, Inc.
PO Box 1278
Corona, CA 92878
951-268-6268

24 Hour Driveway Counts

LOCATION: Site Between Trumble Rd and Sherman Rd
TOTAL
CITY: Menifee

DATE: 4/22/2025
DAY: Tuesday

ENTERING

Time	Passenger Vehicles	Large 2 Axle Vehicles	3 Axle Vehicles	4+ Axle Trucks	TOTAL
17:15	0	0	0	0	**0**
17:30	0	0	0	0	**0**
17:45	1	0	0	0	**1**
18:00	1	0	0	1	**2**
18:15	4	0	0	0	**4**
18:30	0	0	0	0	**0**
18:45	0	0	0	0	**0**
19:00	1	0	0	0	**1**
19:15	0	0	0	0	**0**
19:30	0	0	0	0	**0**
19:45	0	0	0	0	**0**
20:00	0	0	0	0	**0**
20:15	1	0	0	0	**1**
20:30	0	0	0	1	**1**
20:45	0	0	0	0	**0**
21:00	0	0	0	0	**0**
21:15	0	0	0	0	**0**
21:30	0	0	0	0	**0**
21:45	0	0	0	0	**0**
22:00	0	0	0	0	**0**
22:15	0	0	0	0	**0**
22:30	0	0	0	0	**0**
22:45	0	0	0	0	**0**
23:00	0	0	0	0	**0**
23:15	1	0	0	0	**1**
23:30	0	0	0	0	**0**
23:45	0	0	0	0	**0**
AM TOTAL	33	7	2	4	**46**
PM TOTAL	19	4	1	17	**41**
AM PEAK 7:00-9:00	5	1	0	0	**6**
PM PEAK 16:00-18:0	2	0	0	1	**3**
24 HOUR TOTAL	**52**	**11**	**3**	**21**	**87**

Passenger Vehicles %	Large 2 Axle Vehicles %	3 Axle Vehicles %	4+ Axle Trucks %
59.8%	12.6%	3.4%	24.1%

EXITING

Time	Passenger Vehicles	Large 2 Axle Vehicles	3 Axle Vehicles	4+ Axle Trucks	TOTAL
17:15	0	0	0	0	**0**
17:30	0	0	0	0	**0**
17:45	0	0	0	0	**0**
18:00	3	0	0	0	**3**
18:15	1	0	0	0	**1**
18:30	0	0	0	0	**0**
18:45	0	1	0	0	**1**
19:00	0	1	0	0	**1**
19:15	0	0	0	0	**0**
19:30	1	0	0	0	**1**
19:45	1	0	0	0	**1**
20:00	0	0	0	0	**0**
20:15	0	0	0	0	**0**
20:30	1	0	0	0	**1**
20:45	0	0	0	0	**0**
21:00	0	0	0	0	**0**
21:15	0	0	0	0	**0**
21:30	0	0	0	0	**0**
21:45	0	0	0	0	**0**
22:00	0	0	0	0	**0**
22:15	0	0	0	0	**0**
22:30	0	0	0	0	**0**
22:45	0	0	0	0	**0**
23:00	0	0	0	0	**0**
23:15	0	0	0	0	**0**
23:30	1	0	0	0	**1**
23:45	0	0	0	0	**0**
AM TOTAL	14	6	4	16	**40**
PM TOTAL	38	4	3	1	**46**
AM PEAK 7:00-9:00	4	2	1	2	**9**
PM PEAK 16:00-18:0	2	1	0	0	**3**
24 HOUR TOTAL	**52**	**10**	**7**	**17**	**86**

Passenger Vehicles %	Large 2 Axle Vehicles %	3 Axle Vehicles %	4+ Axle Trucks %
60.5%	11.6%	8.1%	19.8%

Counts Unlimited, Inc.
PO Box 1878
Corona, CA 92878
951-268-6268

24 Hour Driveway Counts

LOCATION: Site Between Trumble Rd and Sherman Rd
TOTAL
CITY: Menifee

DATE: 4/23/2025
DAY: Wednesday

ENTERING						EXITING					
Time	Passenger Vehicles	Large 2 Axle Vehicles	3 Axle Vehicles	4+ Axle Trucks	TOTAL	Time	Passenger Vehicles	Large 2 Axle Vehicles	3 Axle Vehicles	4+ Axle Trucks	TOTAL
0:00	0	0	0	0	**0**	0:00	0	0	0	0	**0**
0:15	0	0	0	0	**0**	0:15	0	0	0	0	**0**
0:30	1	0	0	0	**1**	0:30	0	0	0	0	**0**
0:45	0	0	0	0	**0**	0:45	0	0	0	0	**0**
1:00	0	0	0	0	**0**	1:00	0	0	0	0	**0**
1:15	0	0	0	0	**0**	1:15	0	0	0	0	**0**
1:30	0	0	0	0	**0**	1:30	0	0	0	0	**0**
1:45	1	0	1	0	**2**	1:45	0	0	0	0	**0**
2:00	2	0	0	0	**2**	2:00	0	0	0	4	**4**
2:15	1	1	0	0	**2**	2:15	0	0	0	0	**0**
2:30	0	0	0	0	**0**	2:30	1	0	0	2	**3**
2:45	0	0	0	0	**0**	2:45	0	0	0	0	**0**
3:00	0	0	0	0	**0**	3:00	0	0	0	0	**0**
3:15	1	0	0	0	**1**	3:15	0	0	0	1	**1**
3:30	0	0	0	0	**0**	3:30	0	0	0	0	**0**
3:45	0	0	0	0	**0**	3:45	0	0	0	0	**0**
4:00	0	0	0	0	**0**	4:00	0	0	0	0	**0**
4:15	2	0	0	0	**2**	4:15	0	0	0	1	**1**
4:30	0	0	1	0	**1**	4:30	0	0	2	0	**2**
4:45	3	0	0	0	**3**	4:45	0	0	0	0	**0**
5:00	1	1	0	0	**2**	5:00	0	0	1	1	**2**
5:15	1	0	0	0	**1**	5:15	0	0	1	0	**1**
5:30	3	0	0	0	**3**	5:30	0	0	1	1	**2**
5:45	0	1	0	0	**1**	5:45	1	0	1	2	**4**
6:00	0	0	0	0	**0**	6:00	0	0	0	0	**0**
6:15	0	0	0	0	**0**	6:15	0	1	0	0	**1**
6:30	0	0	0	0	**0**	6:30	0	0	0	0	**0**
6:45	2	0	0	0	**2**	6:45	0	0	0	0	**0**
7:00	1	0	0	0	**1**	7:00	1	0	0	0	**1**
7:15	1	0	0	0	**1**	7:15	0	0	0	0	**0**
7:30	0	0	0	0	**0**	7:30	0	1	0	0	**1**
7:45	1	0	0	0	**1**	7:45	0	0	0	0	**0**
8:00	0	0	0	0	**0**	8:00	2	0	0	0	**2**
8:15	1	0	0	0	**1**	8:15	1	0	0	0	**1**
8:30	1	0	0	0	**1**	8:30	0	0	0	0	**0**
8:45	0	1	0	0	**1**	8:45	0	0	0	1	**1**
9:00	0	0	0	0	**0**	9:00	0	0	0	0	**0**
9:15	2	1	0	0	**3**	9:15	2	1	0	0	**3**
9:30	2	0	0	0	**2**	9:30	1	0	0	0	**1**
9:45	1	0	1	0	**2**	9:45	2	0	0	0	**2**
10:00	0	0	0	0	**0**	10:00	0	0	1	0	**1**
10:15	1	0	0	0	**1**	10:15	0	0	0	0	**0**
10:30	0	1	0	1	**2**	10:30	0	0	0	0	**0**
10:45	0	0	0	0	**0**	10:45	2	0	0	0	**2**
11:00	0	0	0	0	**0**	11:00	1	1	0	0	**2**
11:15	1	0	0	0	**1**	11:15	0	0	0	0	**0**
11:30	0	0	0	0	**0**	11:30	0	0	0	0	**0**
11:45	1	0	0	0	**1**	11:45	1	0	0	0	**1**
12:00	1	0	0	3	**4**	12:00	2	0	0	0	**2**
12:15	0	1	0	0	**1**	12:15	3	0	0	0	**3**
12:30	0	0	0	1	**1**	12:30	1	1	0	0	**2**
12:45	0	1	0	0	**1**	12:45	1	0	0	0	**1**
13:00	0	1	0	0	**1**	13:00	0	1	0	0	**1**
13:15	0	0	0	0	**0**	13:15	0	0	0	0	**0**
13:30	0	1	1	1	**3**	13:30	0	0	0	0	**0**
13:45	0	0	2	0	**2**	13:45	0	0	1	0	**1**
14:00	0	0	0	1	**1**	14:00	1	0	0	1	**2**
14:15	1	0	0	1	**2**	14:15	4	0	0	0	**4**
14:30	1	0	0	1	**2**	14:30	4	1	0	0	**5**
14:45	0	2	0	0	**2**	14:45	2	0	0	0	**2**
15:00	0	0	0	0	**0**	15:00	2	0	0	0	**2**
15:15	2	0	0	1	**3**	15:15	1	0	0	0	**1**
15:30	3	0	0	0	**3**	15:30	0	1	0	0	**1**
15:45	2	0	0	0	**2**	15:45	0	1	0	0	**1**
16:00	0	0	0	0	**0**	16:00	0	0	0	0	**0**
16:15	0	0	0	0	**0**	16:15	3	0	0	0	**3**
16:30	1	0	0	0	**1**	16:30	1	0	0	0	**1**
16:45	0	0	0	0	**0**	16:45	0	0	0	0	**0**
17:00	0	0	0	0	**0**	17:00	0	0	0	0	**0**

Counts Unlimited, Inc.
PO Box 1478
Corona, CA 92878
951-268-6268

24 Hour Driveway Counts

LOCATION: Site Between Trumble Rd and Sherman Rd
TOTAL
CITY: Menifee

DATE: 4/23/2025
DAY: Wednesday

ENTERING

Time	Passenger Vehicles	Large 2 Axle Vehicles	3 Axle Vehicles	4+ Axle Trucks	TOTAL
17:15	0	0	1	2	**3**
17:30	0	0	0	0	**0**
17:45	1	0	0	0	**1**
18:00	1	0	0	1	**2**
18:15	1	0	0	0	**1**
18:30	0	0	0	0	**0**
18:45	0	0	0	0	**0**
19:00	1	0	0	1	**2**
19:15	0	0	0	0	**0**
19:30	0	0	0	0	**0**
19:45	1	0	0	0	**1**
20:00	1	0	0	0	**1**
20:15	0	0	0	0	**0**
20:30	0	0	0	0	**0**
20:45	0	0	0	0	**0**
21:00	1	0	0	0	**1**
21:15	0	1	0	0	**1**
21:30	0	0	0	0	**0**
21:45	0	0	0	0	**0**
22:00	0	0	0	0	**0**
22:15	0	0	0	0	**0**
22:30	0	0	0	0	**0**
22:45	0	0	0	0	**0**
23:00	0	0	0	0	**0**
23:15	0	0	0	0	**0**
23:30	0	0	0	0	**0**
23:45	0	0	0	0	**0**
AM TOTAL	31	6	3	1	**41**
PM TOTAL	18	7	4	13	**42**
AM PEAK 7:00-9:00	5	1	0	0	**6**
PM PEAK 16:00-18:0	2	0	1	2	**5**
24 HOUR TOTAL	**49**	**13**	**7**	**14**	**83**

Passenger Vehicles %	Large 2 Axle Vehicles %	3 Axle Vehicles %	4+ Axle Trucks %
59.0%	15.7%	8.4%	16.9%

EXITING

Time	Passenger Vehicles	Large 2 Axle Vehicles	3 Axle Vehicles	4+ Axle Trucks	TOTAL
17:15	1	0	0	0	**1**
17:30	1	0	0	0	**1**
17:45	1	0	0	0	**1**
18:00	0	0	0	0	**0**
18:15	2	0	0	0	**2**
18:30	2	0	0	0	**2**
18:45	0	0	0	0	**0**
19:00	2	0	0	0	**2**
19:15	0	0	0	0	**0**
19:30	1	0	0	0	**1**
19:45	0	0	0	0	**0**
20:00	1	0	0	0	**1**
20:15	0	0	0	0	**0**
20:30	0	0	0	0	**0**
20:45	0	0	0	0	**0**
21:00	0	0	0	0	**0**
21:15	0	0	0	0	**0**
21:30	1	0	0	0	**1**
21:45	0	0	0	0	**0**
22:00	0	0	0	0	**0**
22:15	0	0	0	0	**0**
22:30	0	0	0	0	**0**
22:45	0	0	0	0	**0**
23:00	0	0	0	0	**0**
23:15	0	0	0	0	**0**
23:30	0	0	0	0	**0**
23:45	0	0	0	0	**0**
AM TOTAL	15	4	7	13	**39**
PM TOTAL	37	5	1	1	**44**
AM PEAK 7:00-9:00	4	1	0	1	**6**
PM PEAK 16:00-18:0	7	0	0	0	**7**
24 HOUR TOTAL	**52**	**9**	**8**	**14**	**83**

Passenger Vehicles %	Large 2 Axle Vehicles %	3 Axle Vehicles %	4+ Axle Trucks %
62.7%	10.8%	9.6%	16.9%

Counts Unlimited, Inc.
PO Box 1578
Corona, CA 92878
951-268-6268

24 Hour Driveway Counts

LOCATION: Site Between Trumble Rd and Sherman Rd
TOTAL
CITY: Menifee

DATE: 4/24/2025
DAY: Thursday

ENTERING

Time	Passenger Vehicles	Large 2 Axle Vehicles	3 Axle Vehicles	4+ Axle Trucks	TOTAL
0:00	1	0	0	0	**1**
0:15	0	0	0	0	**0**
0:30	0	0	0	0	**0**
0:45	0	0	0	0	**0**
1:00	0	0	0	0	**0**
1:15	1	0	0	0	**1**
1:30	0	0	0	0	**0**
1:45	0	0	0	0	**0**
2:00	3	1	0	0	**4**
2:15	1	1	0	0	**2**
2:30	0	0	0	0	**0**
2:45	0	0	0	0	**0**
3:00	1	0	0	0	**1**
3:15	0	0	0	0	**0**
3:30	1	0	0	0	**1**
3:45	0	0	0	0	**0**
4:00	0	0	0	0	**0**
4:15	1	1	0	0	**2**
4:30	1	0	1	0	**2**
4:45	3	1	0	0	**4**
5:00	4	0	0	0	**4**
5:15	3	0	0	0	**3**
5:30	3	0	0	0	**3**
5:45	3	0	0	0	**3**
6:00	1	0	0	0	**1**
6:15	0	0	0	0	**0**
6:30	1	0	0	0	**1**
6:45	1	0	0	0	**1**
7:00	1	0	0	0	**1**
7:15	0	0	0	0	**0**
7:30	0	0	0	0	**0**
7:45	0	0	0	0	**0**
8:00	0	0	0	0	**0**
8:15	0	0	0	0	**0**
8:30	1	0	0	0	**1**
8:45	2	0	0	0	**2**
9:00	1	0	0	0	**1**
9:15	2	0	0	0	**2**
9:30	1	1	1	0	**3**
9:45	2	0	1	0	**3**
10:00	0	0	0	0	**0**
10:15	3	0	0	0	**3**
10:30	1	0	0	0	**1**
10:45	0	1	0	0	**1**
11:00	1	0	0	0	**1**
11:15	0	0	0	1	**1**
11:30	2	0	0	1	**3**
11:45	0	0	0	0	**0**
12:00	0	0	0	1	**1**
12:15	0	0	0	0	**0**
12:30	1	0	0	0	**1**
12:45	1	0	0	1	**2**
13:00	1	0	0	2	**3**
13:15	0	1	0	0	**1**
13:30	0	0	0	2	**2**
13:45	1	0	0	0	**1**
14:00	1	0	0	0	**1**
14:15	0	0	0	4	**4**
14:30	1	0	0	1	**2**
14:45	0	0	0	5	**5**
15:00	0	0	0	2	**2**
15:15	0	0	0	3	**3**
15:30	0	0	0	1	**1**
15:45	0	0	0	3	**3**
16:00	0	0	0	0	**0**
16:15	0	0	0	0	**0**
16:30	0	1	0	0	**1**
16:45	0	0	0	1	**1**
17:00	0	0	0	0	**0**

EXITING

Time	Passenger Vehicles	Large 2 Axle Vehicles	3 Axle Vehicles	4+ Axle Trucks	TOTAL
0:00	0	0	0	0	**0**
0:15	0	0	0	0	**0**
0:30	1	0	0	0	**1**
0:45	0	0	0	0	**0**
1:00	0	0	0	0	**0**
1:15	0	0	0	0	**0**
1:30	0	0	0	0	**0**
1:45	0	0	0	0	**0**
2:00	1	0	0	1	**2**
2:15	0	0	0	4	**4**
2:30	1	0	0	0	**1**
2:45	0	0	0	0	**0**
3:00	0	0	0	0	**0**
3:15	0	0	0	1	**1**
3:30	0	0	0	1	**1**
3:45	0	0	0	0	**0**
4:00	1	0	0	0	**1**
4:15	0	0	0	0	**0**
4:30	0	0	0	0	**0**
4:45	0	0	0	1	**1**
5:00	0	0	0	2	**2**
5:15	0	0	1	2	**3**
5:30	0	0	1	3	**4**
5:45	1	0	0	3	**4**
6:00	0	0	0	3	**3**
6:15	0	0	0	2	**2**
6:30	0	0	0	0	**0**
6:45	1	0	0	0	**1**
7:00	1	0	0	0	**1**
7:15	1	0	0	0	**1**
7:30	0	0	0	0	**0**
7:45	0	0	0	0	**0**
8:00	0	0	0	0	**0**
8:15	0	0	0	0	**0**
8:30	0	0	0	1	**1**
8:45	2	0	0	0	**2**
9:00	0	0	0	0	**0**
9:15	2	0	0	1	**3**
9:30	1	0	0	0	**1**
9:45	0	0	0	0	**0**
10:00	1	0	0	0	**1**
10:15	3	0	0	0	**3**
10:30	0	1	0	0	**1**
10:45	2	1	1	0	**4**
11:00	1	0	0	0	**1**
11:15	0	0	0	0	**0**
11:30	1	0	0	0	**1**
11:45	1	0	0	0	**1**
12:00	1	0	0	0	**1**
12:15	1	0	0	1	**2**
12:30	2	0	0	0	**2**
12:45	1	0	0	0	**1**
13:00	1	0	0	0	**1**
13:15	2	0	0	0	**2**
13:30	0	0	0	0	**0**
13:45	2	1	0	0	**3**
14:00	2	0	0	0	**2**
14:15	2	0	1	0	**3**
14:30	2	0	0	0	**2**
14:45	2	0	0	0	**2**
15:00	4	0	0	0	**4**
15:15	0	0	1	0	**1**
15:30	4	0	0	0	**4**
15:45	1	0	0	0	**1**
16:00	3	0	0	0	**3**
16:15	1	0	0	0	**1**
16:30	1	0	1	0	**2**
16:45	1	0	0	0	**1**
17:00	0	0	0	0	**0**

Counts Unlimited, Inc.
PO Box 1678
Corona, CA 92878
951-268-6268

24 Hour Driveway Counts

LOCATION: Site Between Trumble Rd and Sherman Rd
TOTAL
CITY: Menifee

DATE: 4/24/2025
DAY: Thursday

ENTERING

Time	Passenger Vehicles	Large 2 Axle Vehicles	3 Axle Vehicles	4+ Axle Trucks	TOTAL
17:15	0	0	0	0	**0**
17:30	0	0	0	0	**0**
17:45	1	0	0	0	**1**
18:00	0	0	0	0	**0**
18:15	2	0	0	0	**2**
18:30	1	0	0	0	**1**
18:45	0	0	0	0	**0**
19:00	0	0	0	0	**0**
19:15	0	0	0	0	**0**
19:30	0	0	0	0	**0**
19:45	0	0	0	0	**0**
20:00	0	0	0	0	**0**
20:15	0	0	0	0	**0**
20:30	0	0	0	0	**0**
20:45	0	0	0	0	**0**
21:00	0	0	0	0	**0**
21:15	0	0	0	0	**0**
21:30	0	0	0	0	**0**
21:45	0	0	0	0	**0**
22:00	0	0	0	0	**0**
22:15	0	0	0	0	**0**
22:30	2	0	0	0	**2**
22:45	0	0	0	0	**0**
23:00	0	0	0	0	**0**
23:15	0	0	0	0	**0**
23:30	0	0	0	0	**0**
23:45	0	0	0	0	**0**
AM TOTAL	46	6	3	2	**57**
PM TOTAL	12	2	0	26	**40**
AM PEAK 7:00-9:00	4	0	0	0	**4**
PM PEAK 16:00-18:0	1	1	0	1	**3**
24 HOUR TOTAL	**58**	**8**	**3**	**28**	**97**

Passenger Vehicles %	Large 2 Axle Vehicles %	3 Axle Vehicles %	4+ Axle Trucks %
59.8%	8.2%	3.1%	28.9%

EXITING

Time	Passenger Vehicles	Large 2 Axle Vehicles	3 Axle Vehicles	4+ Axle Trucks	TOTAL
17:15	0	0	0	0	**0**
17:30	1	0	0	0	**1**
17:45	2	0	0	0	**2**
18:00	1	0	0	0	**1**
18:15	0	0	0	0	**0**
18:30	0	0	0	0	**0**
18:45	1	0	0	0	**1**
19:00	0	0	0	0	**0**
19:15	0	0	0	0	**0**
19:30	0	0	0	0	**0**
19:45	0	0	0	0	**0**
20:00	0	0	0	0	**0**
20:15	0	0	0	0	**0**
20:30	0	0	0	0	**0**
20:45	0	0	0	0	**0**
21:00	0	0	0	0	**0**
21:15	0	0	0	0	**0**
21:30	0	0	0	0	**0**
21:45	0	0	0	0	**0**
22:00	0	0	0	0	**0**
22:15	0	0	0	0	**0**
22:30	0	0	0	0	**0**
22:45	0	0	0	0	**0**
23:00	0	0	0	0	**0**
23:15	0	0	0	0	**0**
23:30	0	0	0	0	**0**
23:45	0	0	0	0	**0**
AM TOTAL	22	2	3	25	**52**
PM TOTAL	38	1	3	1	**43**
AM PEAK 7:00-9:00	4	0	0	1	**5**
PM PEAK 16:00-18:0	9	0	1	0	**10**
24 HOUR TOTAL	**60**	**3**	**6**	**26**	**95**

Passenger Vehicles %	Large 2 Axle Vehicles %	3 Axle Vehicles %	4+ Axle Trucks %
63.2%	3.2%	6.3%	27.4%

Counts Unlimited, Inc.
PO Box 1778
Corona, CA 92878
951-268-6268

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APPENDIX 1.2:

SITE ACCESS QUEUES

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Intersection: 5: Trumble Rd. & Driveway 1

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	35	44
Average Queue (ft)	11	6
95th Queue (ft)	35	27
Link Distance (ft)	236	778
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Trumble Rd. & Driveway 2

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	31	17
Average Queue (ft)	6	1
95th Queue (ft)	27	11
Link Distance (ft)	219	1210
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Sherman Rd. & Driveway 3

Movement	EB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	12
95th Queue (ft)	36
Link Distance (ft)	181
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: Sherman Rd. & Driveway 4

Movement	EB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	8
95th Queue (ft)	30
Link Distance (ft)	167
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 0

Intersection: 5: Trumble Rd. & Driveway 1

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	86	100	23
Average Queue (ft)	39	30	1
95th Queue (ft)	117	202	10
Link Distance (ft)	236	1210	785
Upstream Blk Time (%)	3		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Trumble Rd. & Driveway 2

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	31	6
Average Queue (ft)	15	0
95th Queue (ft)	40	6
Link Distance (ft)	219	1210
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Sherman Rd. & Driveway 3

Movement	EB	NB
Directions Served	LR	T
Maximum Queue (ft)	112	639
Average Queue (ft)	30	108
95th Queue (ft)	87	604
Link Distance (ft)	181	1124
Upstream Blk Time (%)	1	2
Queuing Penalty (veh)	0	12
Storage Bay Dist (ft)		
Storage Blk Time (%)		10
Queuing Penalty (veh)		0

Intersection: 9: Sherman Rd. & Driveway 4

Movement	EB	NB
Directions Served	LR	T
Maximum Queue (ft)	38	101
Average Queue (ft)	13	11
95th Queue (ft)	38	94
Link Distance (ft)	172	237
Upstream Blk Time (%)		3
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		3
Queuing Penalty (veh)		0

Zone Summary

Zone wide Queuing Penalty: 12

APPENDIX 3.1:

TRAFFIC COUNTS

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INTERSECTION TURNING MOVEMENT COUNTS

T020624

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 20, 25

LOCATION: Perris
NORTH & SOUTH: I-215 SB Ramps
EAST & WEST: Ethanac Rd

PROJECT #: SC5408
LOCATION #: 1
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

		NORTHBOUND I-215 SB Ramps			SOUTHBOUND I-215 SB Ramps			EASTBOUND Ethanac Rd			WESTBOUND Ethanac Rd			
	LANES:	NL X	NT X	NR X	SL 0.5	ST 0.5	SR 1	EL X	ET 1	ER 1	WL 1	WT 2	WR X	TOTAL
AM	7:00 AM	0	0	0	28	0	51	0	146	90	19	121	0	455
	7:15 AM	0	0	0	25	1	54	0	165	115	28	120	0	508
	7:30 AM	0	0	0	32	0	65	0	189	129	23	139	0	577
	7:45 AM	0	0	0	26	0	75	0	194	115	13	154	0	577
	8:00 AM	0	0	0	34	0	78	0	174	104	9	151	0	550
	8:15 AM	0	0	0	26	1	68	0	143	82	28	165	0	513
	8:30 AM	0	0	0	24	1	63	0	125	76	25	145	0	459
	8:45 AM	0	0	0	18	0	72	0	138	91	17	124	0	460
	VOLUMES	0	0	0	213	3	526	0	1,274	802	162	1,119	0	4,099
	APPROACH %	0%	0%	0%	29%	0%	71%	0%	61%	39%	13%	87%	0%	
	APP/DEPART	0	/	0	742	/	967	2,076	/	1,487	1,281	/	1,645	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	118	1	286	0	700	430	73	609	0	2,217
	APPROACH %	0%	0%	0%	29%	0%	71%	0%	62%	38%	11%	89%	0%	
	PEAK HR FACTOR		0.000			0.904			0.888			0.883		0.961
	APP/DEPART	0	/	0	405	/	504	1,130	/	818	682	/	895	0
PM	4:00 PM	0	0	0	43	0	111	0	127	83	23	169	0	556
	4:15 PM	0	0	0	52	0	98	0	169	91	15	155	0	580
	4:30 PM	0	0	0	50	0	86	0	145	80	26	148	0	535
	4:45 PM	0	0	0	86	1	87	0	139	64	25	173	0	575
	5:00 PM	0	0	0	62	1	76	0	176	91	32	153	0	591
	5:15 PM	0	0	0	55	1	99	0	150	59	18	160	0	542
	5:30 PM	0	0	0	47	1	89	0	168	74	14	157	0	550
	5:45 PM	0	0	0	54	0	97	0	138	54	19	154	0	516
	VOLUMES	0	0	0	449	4	743	0	1,212	596	172	1,269	0	4,445
	APPROACH %	0%	0%	0%	38%	0%	62%	0%	67%	33%	12%	88%	0%	
	APP/DEPART	0	/	0	1,196	/	772	1,808	/	1,661	1,441	/	2,012	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	0	0	0	250	2	347	0	629	326	98	629	0	2,281
	APPROACH %	0%	0%	0%	42%	0%	58%	0%	66%	34%	13%	87%	0%	
	PEAK HR FACTOR		0.000			0.861			0.894			0.918		0.965
	APP/DEPART	0	/	0	599	/	426	955	/	879	727	/	976	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	

RTOR

NRR X	SRR 0	ERR 0	WRR X
0	29	9	0
0	33	10	0
0	36	27	0
0	39	34	0
0	42	29	0
0	31	11	0
0	29	14	0
0	51	12	0
0	290	146	0
0	148	101	0
0	32	18	0
0	44	19	0
0	31	11	0
0	41	28	0
0	39	19	0
0	43	11	0
0	23	16	0
0	42	14	0
0	295	136	0
0	155	77	0

I-215 SB Ramps

NORTH LEG

Ethanac Rd WEST LEG — EAST LEG **Ethanac Rd**

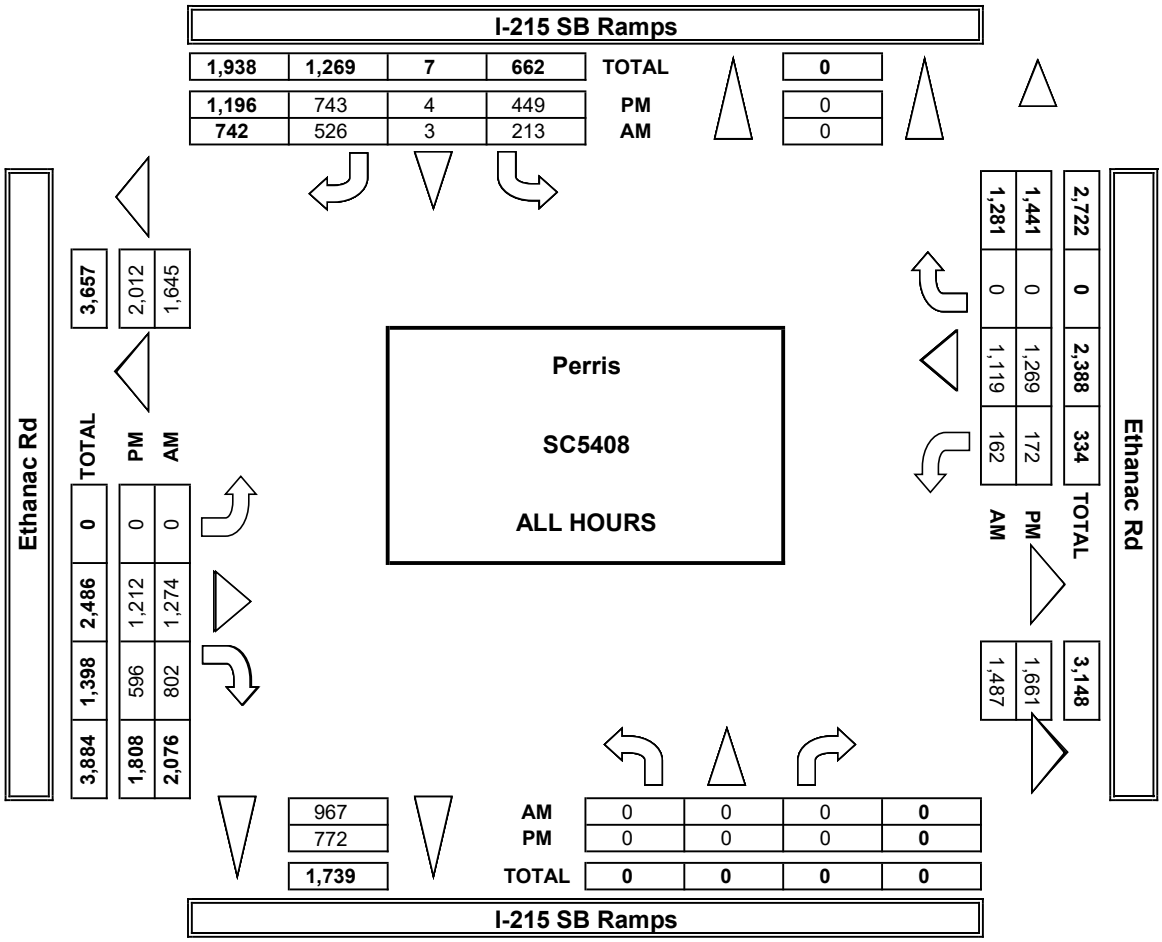
SOUTH LEG

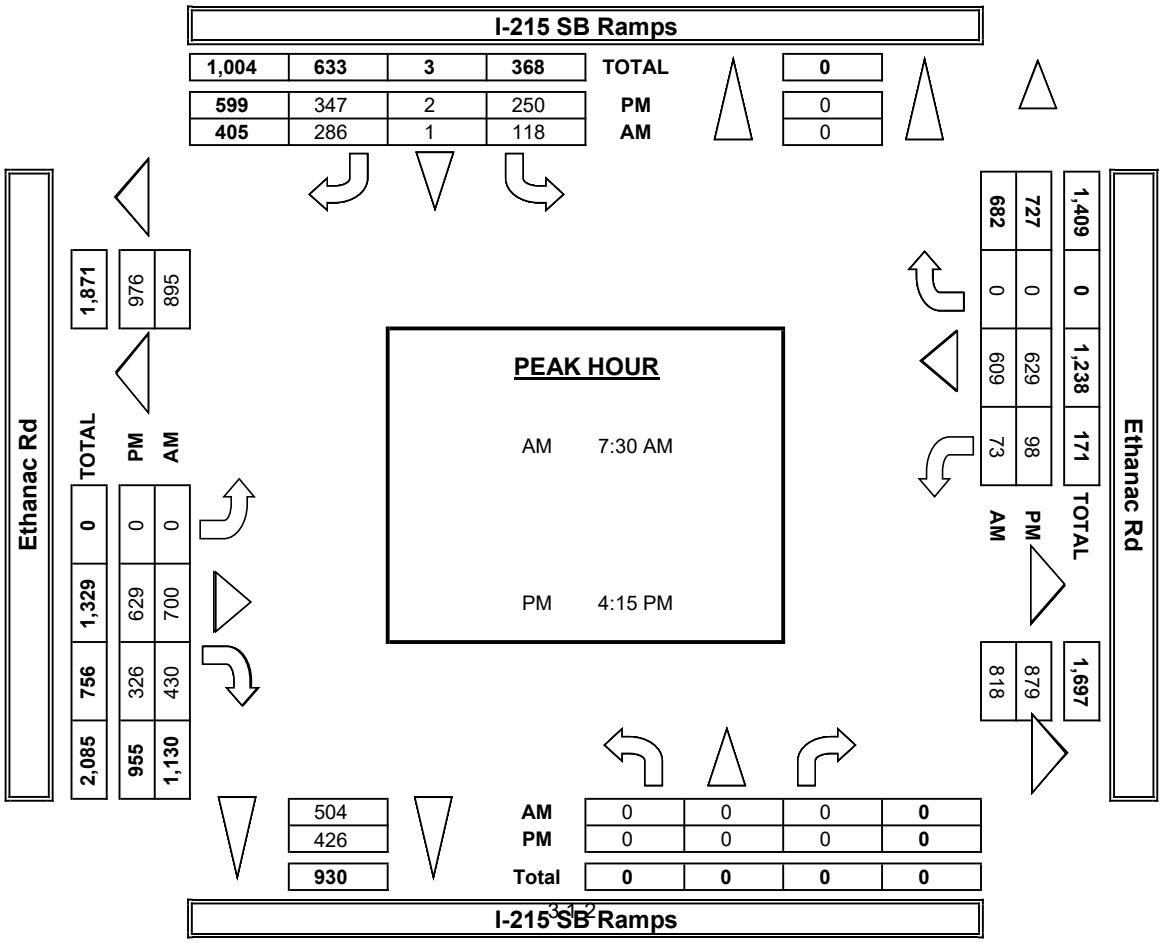
I-215 SB Ramps

		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		E LEG	W LEG	S LEG	N LEG	TOTAL	E LEG	W LEG	S LEG	N LEG	TOTAL	EL	WL	SL	NL	TOTAL
AM	7:00 AM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	7:15 AM	1	0	1	1	3	1	0	1	1	3	0	0	0	0	0
	7:30 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	8:15 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	8:30 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	8:45 AM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	TOTAL	3	0	3	3	9	1	0	0	0	7	0	0	1	1	2
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	1	0	0	2	3	0	0	0	1	1	1	0	0	1	2
	4:45 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	3	0	0	3	6	3	0	0	3	6	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	5	0	0	5	10	0	0	0	1	7	2	0	0	1	3

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Perris	PROJECT #:	SC5408
5/20/25	NORTH & SOUTH:	I-215 SB Ramps	LOCATION #:	1
TUESDAY	EAST & WEST:	Ethanac Rd	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND I-215 SB Ramps			SOUTHBOUND I-215 SB Ramps			EASTBOUND Ethanac Rd			WESTBOUND Ethanac Rd			
	LANES:	NL X	NT X	NR X	SL 0.5	ST 0.5	SR 1	EL X	ET 1	ER 1	WL 1	WT 2	WR X	TOTAL
AM	7:00 AM	0	0	0	4	0	10	0	5	9	3	16	0	47
	7:15 AM	0	0	0	4	0	14	0	9	8	1	11	0	47
	7:30 AM	0	0	0	6	0	3	0	11	10	6	12	0	48
	7:45 AM	0	0	0	0	0	12	0	10	9	1	18	0	50
	8:00 AM	0	0	0	2	0	6	0	12	2	0	10	0	32
	8:15 AM	0	0	0	1	0	5	0	13	5	2	4	0	30
	8:30 AM	0	0	0	1	0	6	0	7	6	1	5	0	26
	8:45 AM	0	0	0	2	0	7	0	9	8	2	6	0	34
	VOLUMES	0	0	0	20	0	63	0	76	57	16	82	0	314
	APPROACH %	0%	0%	0%	24%	0%	76%	0%	57%	43%	16%	84%	0%	
	APP/DEPART	0	/	0	83	/	73	133	/	96	98	/	145	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	9	0	26	0	46	26	9	44	0	160
	APPROACH %	0%	0%	0%	26%	0%	74%	0%	64%	36%	17%	83%	0%	
	PEAK HR FACTOR		0.000			0.729			0.857			0.697		0.800
	APP/DEPART	0	/	0	35	/	35	72	/	55	53	/	70	0
PM	4:00 PM	0	0	0	1	0	2	0	10	3	3	10	0	29
	4:15 PM	0	0	0	5	0	8	0	9	1	0	6	0	29
	4:30 PM	0	0	0	1	0	2	0	6	4	1	5	0	19
	4:45 PM	0	0	0	2	0	3	0	11	1	1	8	0	26
	5:00 PM	0	0	0	2	0	3	0	10	2	1	6	0	24
	5:15 PM	0	0	0	3	0	2	0	8	2	0	9	0	24
	5:30 PM	0	0	0	1	0	4	0	11	4	0	4	0	24
	5:45 PM	0	0	0	1	0	3	0	9	1	0	5	0	19
	VOLUMES	0	0	0	16	0	27	0	74	18	6	53	0	194
	APPROACH %	0%	0%	0%	37%	0%	63%	0%	80%	20%	10%	90%	0%	
	APP/DEPART	0	/	0	43	/	24	92	/	90	59	/	80	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	0	0	0	10	0	16	0	36	8	3	25	0	98
	APPROACH %	0%	0%	0%	38%	0%	62%	0%	82%	18%	11%	89%	0%	
	PEAK HR FACTOR		0.000			0.500			0.917			0.778		0.845
	APP/DEPART	0	/	0	26	/	11	44	/	46	28	/	41	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	

RTOR

NRR X	SRR 0	ERR 0	WRR X
0	7	2	0
0	10	1	0
0	2	0	0
0	6	2	0
0	4	1	0
0	2	0	0
0	3	1	0
0	3	0	0
0	37	7	0
0	14	3	0
0	1	2	0
0	4	0	0
0	1	0	0
0	2	0	0
0	3	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	12	2	0
0	10	0	0

I-215 SB Ramps

NORTH SIDE

Ethanac Rd WEST SIDE EAST SIDE **Ethanac Rd**

SOUTH SIDE

I-215 SB Ramps

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Perris	PROJECT #:	SC5408
5/20/25	NORTH & SOUTH:	I-215 SB Ramps	LOCATION #:	1
TUESDAY	EAST & WEST:	Ethanac Rd	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND I-215 SB Ramps			SOUTHBOUND I-215 SB Ramps			EASTBOUND Ethanac Rd			WESTBOUND Ethanac Rd			
	LANES:	NL X	NT X	NR X	SL 0.5	ST 0.5	SR 1	EL X	ET 1	ER 1	WL 1	WT 2	WR X	TOTAL
AM	7:00 AM	0	0	0	2	0	0	0	5	1	0	5	0	13
	7:15 AM	0	0	0	2	0	0	0	2	2	0	3	0	9
	7:30 AM	0	0	0	3	0	1	0	1	5	0	5	0	15
	7:45 AM	0	0	0	0	0	1	0	3	3	0	2	0	9
	8:00 AM	0	0	0	1	0	1	0	2	3	1	2	0	10
	8:15 AM	0	0	0	2	0	1	0	3	0	0	3	0	9
	8:30 AM	0	0	0	2	0	1	0	2	1	1	1	0	8
	8:45 AM	0	0	0	1	0	0	0	3	0	0	2	0	6
	VOLUMES	0	0	0	13	0	5	0	21	15	2	23	0	79
	APPROACH %	0%	0%	0%	72%	0%	28%	0%	58%	42%	8%	92%	0%	
	APP/DEPART	0	/	0	18	/	17	36	/	34	25	/	28	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	6	0	4	0	9	11	1	12	0	43
	APPROACH %	0%	0%	0%	60%	0%	40%	0%	45%	55%	8%	92%	0%	
	PEAK HR FACTOR		0.000			0.625			0.833			0.650		0.717
	APP/DEPART	0	/	0	10	/	12	20	/	15	13	/	16	0
PM	4:00 PM	0	0	0	0	0	0	0	1	0	1	1	0	3
	4:15 PM	0	0	0	0	0	0	0	1	0	0	4	0	5
	4:30 PM	0	0	0	1	0	0	0	0	1	0	4	0	6
	4:45 PM	0	0	0	0	0	1	0	2	0	0	3	0	6
	5:00 PM	0	0	0	0	0	0	0	1	0	0	2	0	3
	5:15 PM	0	0	0	0	0	0	0	0	1	0	1	0	2
	5:30 PM	0	0	0	1	0	0	0	2	0	0	2	0	5
	5:45 PM	0	0	0	0	0	0	0	1	0	0	2	0	3
	VOLUMES	0	0	0	2	0	1	0	8	2	1	19	0	33
	APPROACH %	0%	0%	0%	67%	0%	33%	0%	80%	20%	5%	95%	0%	
	APP/DEPART	0	/	0	3	/	3	10	/	10	20	/	20	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	0	0	0	1	0	1	0	4	1	0	13	0	20
	APPROACH %	0%	0%	0%	50%	0%	50%	0%	80%	20%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.500			0.625			0.813		0.833
	APP/DEPART	0	/	0	2	/	1	5	/	5	13	/	14	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR 0	WRR X
0	0	0	0
0	0	0	0
0	1	1	0
0	1	0	0
0	1	1	0
0	1	0	0
0	1	0	0
0	0	0	0
0	5	2	0
0	4	2	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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-215 SB Ramps

NORTH SIDE

Ethanac Rd WEST SIDE EAST SIDE **Ethanac Rd**

SOUTH SIDE

I-215 SB Ramps

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Perris	PROJECT #:	SC5408
5/20/25	NORTH & SOUTH:	I-215 SB Ramps	LOCATION #:	1
TUESDAY	EAST & WEST:	Ethanac Rd	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND I-215 SB Ramps			SOUTHBOUND I-215 SB Ramps			EASTBOUND Ethanac Rd			WESTBOUND Ethanac Rd			
	LANES:	NL X	NT X	NR X	SL 0.5	ST 0.5	SR 1	EL X	ET 1	ER 1	WL 1	WT 2	WR X	TOTAL
AM	7:00 AM	0	0	0	0	0	5	0	9	1	0	12	0	27
	7:15 AM	0	0	0	1	1	5	0	4	3	3	10	0	27
	7:30 AM	0	0	0	2	0	6	0	5	7	1	8	0	29
	7:45 AM	0	0	0	0	0	4	0	5	7	0	4	0	20
	8:00 AM	0	0	0	2	0	3	0	6	1	2	7	0	21
	8:15 AM	0	0	0	1	0	3	0	6	2	2	3	0	17
	8:30 AM	0	0	0	1	0	2	0	5	3	2	4	0	17
	8:45 AM	0	0	0	1	0	5	0	4	5	2	2	0	19
	VOLUMES	0	0	0	8	1	33	0	44	29	12	50	0	177
	APPROACH %	0%	0%	0%	19%	2%	79%	0%	60%	40%	19%	81%	0%	
	APP/DEPART	0	/	0	42	/	42	73	/	52	62	/	83	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	5	0	16	0	22	17	5	22	0	87
	APPROACH %	0%	0%	0%	24%	0%	76%	0%	56%	44%	19%	81%	0%	
	PEAK HR FACTOR		0.000			0.656			0.813			0.750		0.750
	APP/DEPART	0	/	0	21	/	22	39	/	27	27	/	38	0
PM	4:00 PM	0	0	0	1	0	1	0	2	0	0	4	0	8
	4:15 PM	0	0	0	0	0	0	0	3	1	0	3	0	7
	4:30 PM	0	0	0	0	0	0	0	3	1	1	3	0	8
	4:45 PM	0	0	0	0	0	0	0	4	1	2	0	0	7
	5:00 PM	0	0	0	0	0	1	0	3	0	0	1	0	5
	5:15 PM	0	0	0	1	0	0	0	4	2	0	2	0	9
	5:30 PM	0	0	0	0	0	2	0	1	0	0	5	0	8
	5:45 PM	0	0	0	0	0	1	0	2	0	0	3	0	6
	VOLUMES	0	0	0	2	0	5	0	22	5	3	21	0	58
	APPROACH %	0%	0%	0%	29%	0%	71%	0%	81%	19%	13%	88%	0%	
	APP/DEPART	0	/	0	7	/	8	27	/	24	24	/	26	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	0	0	0	0	0	1	0	13	3	3	7	0	27
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	81%	19%	30%	70%	0%	
	PEAK HR FACTOR		0.000			0.250			0.800			0.625		0.844
	APP/DEPART	0	/	0	1	/	6	16	/	13	10	/	8	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	

RTOR

NRR X	SRR 0	ERR 0	WRR X
0	1	0	0
0	4	0	0
0	3	2	0
0	1	0	0
0	1	0	0
0	0	0	0
0	0	1	0
0	4	0	0
0	14	3	0
0	5	2	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	1	0
0	1	0	0

I-215 SB Ramps

NORTH SIDE

Ethanac Rd WEST SIDE EAST SIDE **Ethanac Rd**

SOUTH SIDE

I-215 SB Ramps

INTERSECTION TURNING MOVEMENT COUNTS

T020624

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 20, 25	LOCATION:	Perris	PROJECT #: SC5408
	NORTH & SOUTH:	I-215 NB Ramps	LOCATION #: 2
	EAST & WEST:	Ethanac Rd	CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (I-215 NB Ramps)			SOUTHBOUND (I-215 NB Ramps)			EASTBOUND (Ethanac Rd)			WESTBOUND (Ethanac Rd)			
	LANES:	NL 0.5	NT 0.5	NR 1	SL X	ST X	SR X	EL 1	ET 1	ER X	WL X	WT 1	WR 0	TOTAL
AM	7:00 AM	52	3	25	0	0	0	67	107	0	0	88	67	409
	7:15 AM	54	1	24	0	0	0	62	126	0	0	94	65	426
	7:30 AM	62	0	29	0	0	0	54	169	0	0	100	68	482
	7:45 AM	71	0	40	0	0	0	58	162	0	0	97	65	493
	8:00 AM	65	0	45	0	0	0	78	130	0	0	95	49	462
	8:15 AM	72	0	26	0	0	0	68	100	0	0	123	48	437
	8:30 AM	59	0	36	0	0	0	58	90	0	0	112	31	386
	8:45 AM	59	2	41	0	0	0	58	98	0	0	82	53	393
	VOLUMES	494	6	266	0	0	0	503	982	0	0	791	446	3,488
	APPROACH %	64%	1%	35%	0%	0%	0%	34%	66%	0%	0%	64%	36%	
	APP/DEPART	766	/	955	0	/	0	1,485	/	1,248	1,237	/	1,285	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	270	0	140	0	0	0	258	561	0	0	415	230	1,874
	APPROACH %	66%	0%	34%	0%	0%	0%	32%	68%	0%	0%	64%	36%	
	PEAK HR FACTOR		0.923			0.000			0.918			0.943		0.950
	APP/DEPART	410	/	488	0	/	0	819	/	701	645	/	685	0
PM	4:00 PM	81	0	60	0	0	0	35	122	0	0	114	50	462
	4:15 PM	86	0	58	0	0	0	66	160	0	0	84	41	495
	4:30 PM	90	1	55	0	0	0	54	134	0	0	84	41	459
	4:45 PM	92	0	63	0	0	0	50	171	0	0	109	36	521
	5:00 PM	84	0	42	0	0	0	65	179	0	0	101	56	527
	5:15 PM	101	0	60	0	0	0	58	147	0	0	77	44	487
	5:30 PM	82	0	65	0	0	0	65	157	0	0	89	32	490
	5:45 PM	76	2	58	0	0	0	51	141	0	0	97	37	462
	VOLUMES	692	3	461	0	0	0	444	1,211	0	0	755	337	3,903
	APPROACH %	60%	0%	40%	0%	0%	0%	27%	73%	0%	0%	69%	31%	
	APP/DEPART	1,156	/	784	0	/	0	1,655	/	1,672	1,092	/	1,447	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	359	0	230	0	0	0	238	654	0	0	376	168	2,025
	APPROACH %	61%	0%	39%	0%	0%	0%	27%	73%	0%	0%	69%	31%	
	PEAK HR FACTOR		0.915			0.000			0.914			0.866		0.961
	APP/DEPART	589	/	406	0	/	0	892	/	884	544	/	735	0

U-TURNS

NB 0	SB 0	EB 0	WB 0	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	

RTOR

NRR 0	SRR X	ERR X	WRR 0
22	0	0	9
17	0	0	7
13	0	0	13
15	0	0	16
19	0	0	16
10	0	0	18
22	0	0	9
26	0	0	8
144	0	0	96
57	0	0	63
26	0	0	14
26	0	0	7
17	0	0	12
19	0	0	3
12	0	0	19
19	0	0	8
26	0	0	5
24	0	0	7
169	0	0	75
76	0	0	35

I-215 NB Ramps

NORTH LEG

Ethanac Rd WEST LEG — EAST LEG **Ethanac Rd**

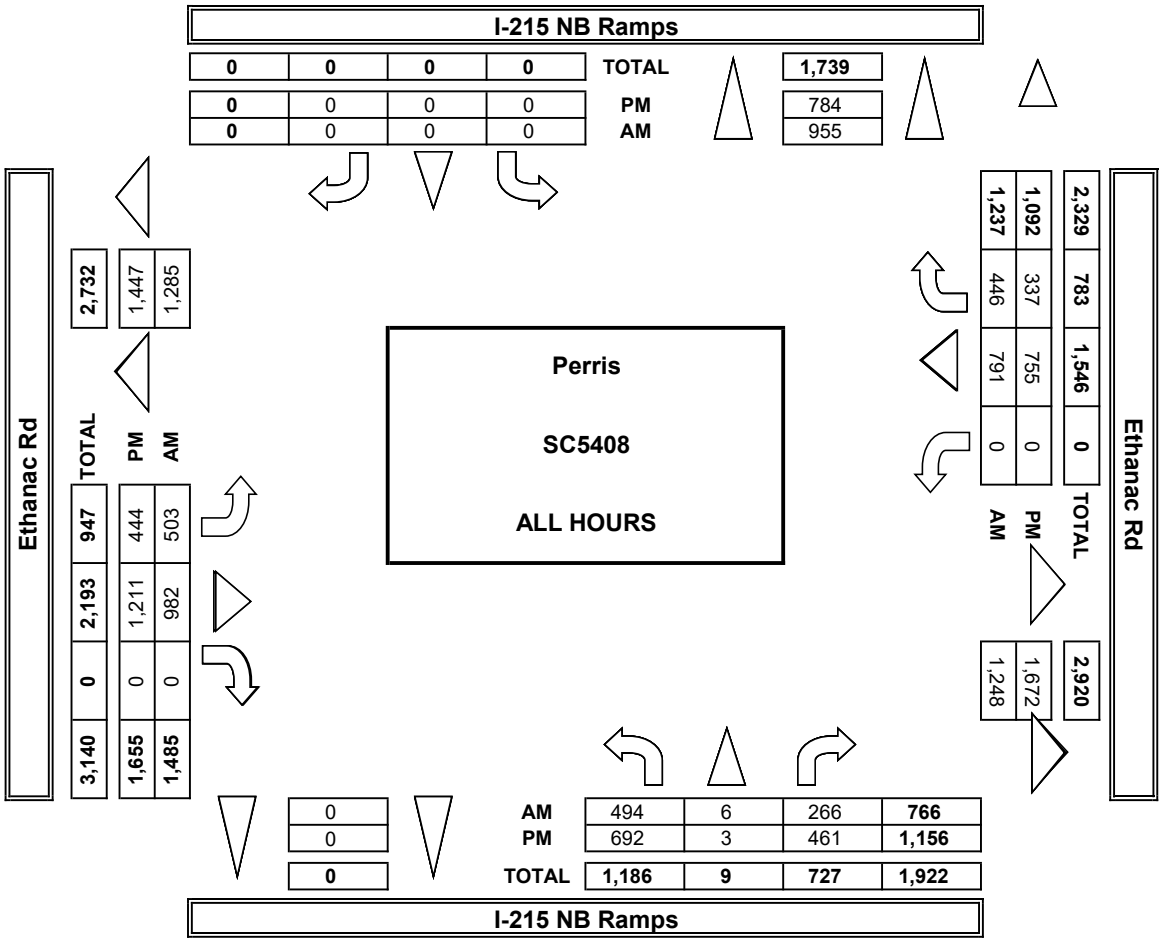
SOUTH LEG

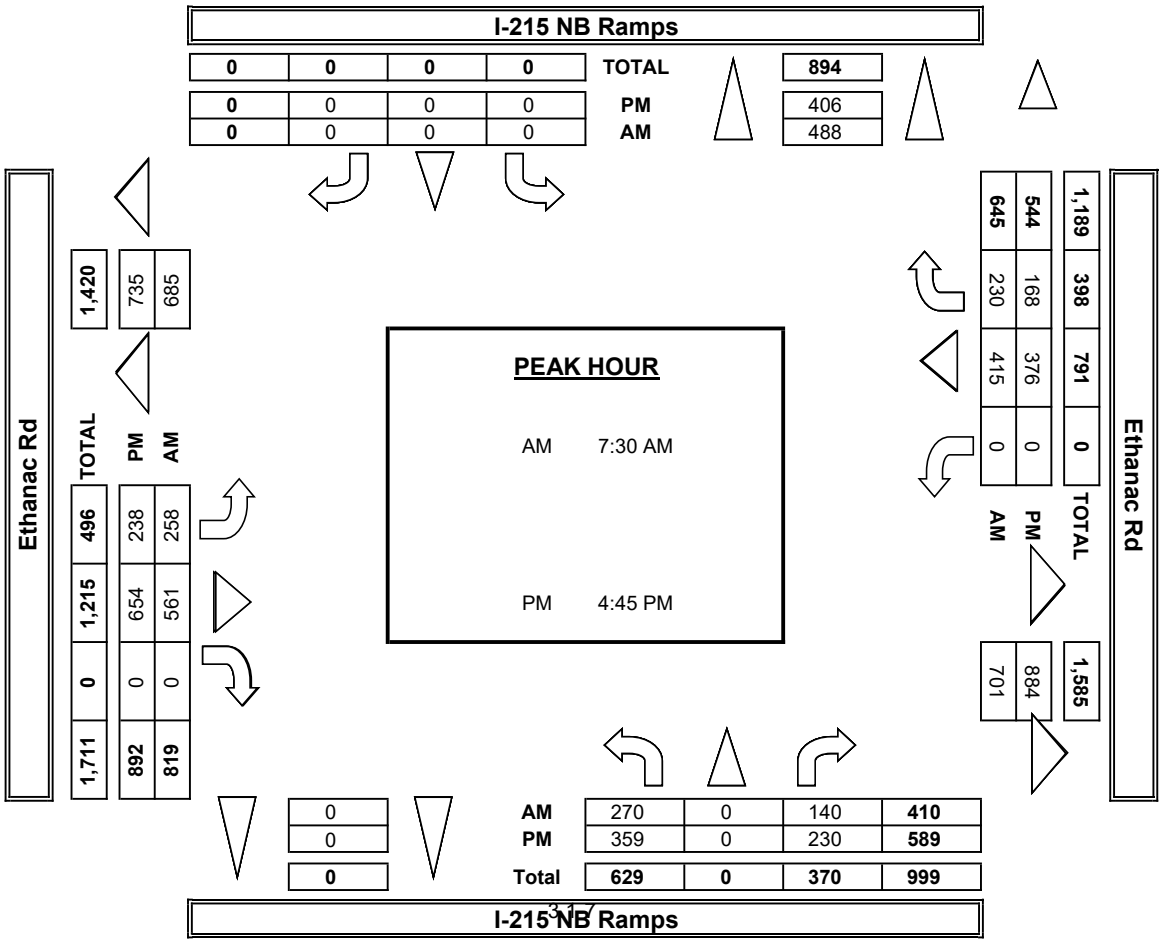
I-215 NB Ramps

		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		E LEG	W LEG	S LEG	N LEG	TOTAL	E LEG	W LEG	S LEG	N LEG	TOTAL	EL	WL	SL	NL	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	2	0	2	0	0	2	0	2	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	2	0	2	0	0	2	0	2	0	0	0	0	0
	8:45 AM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	TOTAL	0	0	4	1	5	0	0	0	0	5	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

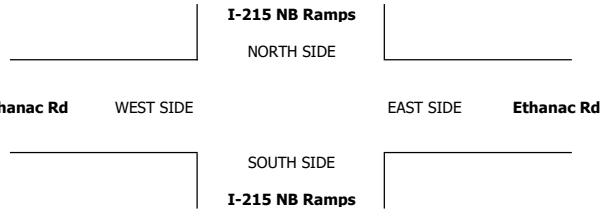
DATE:	LOCATION:	Perris	PROJECT #:	SC5408
5/20/25	NORTH & SOUTH:	I-215 NB Ramps	LOCATION #:	2
TUESDAY	EAST & WEST:	Ethanac Rd	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND I-215 NB Ramps			SOUTHBOUND I-215 NB Ramps			EASTBOUND Ethanac Rd			WESTBOUND Ethanac Rd				U-TURNS					RTOR			
	LANES:	NL 0.5	NT 0.5	NR 1	SL X	ST X	SR X	EL 1	ET 1	ER X	WL X	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL	NRR 0	SRR X	ERR X	WRR 0
AM	7:00 AM	7	0	3	0	0	0	0	8	0	0	14	1	33	0	0	0	0	0	3	0	0	0
	7:15 AM	2	1	3	0	0	0	3	11	0	0	8	2	30	0	0	0	0	0	2	0	0	0
	7:30 AM	5	0	1	0	0	0	2	15	0	0	13	3	39	0	0	0	0	0	1	0	0	2
	7:45 AM	9	0	4	0	0	0	3	7	0	0	10	2	35	0	0	0	0	0	3	0	0	0
	8:00 AM	3	0	6	0	0	0	5	9	0	0	7	9	39	0	0	0	0	0	4	0	0	2
	8:15 AM	1	0	2	0	0	0	5	9	0	0	5	3	25	0	0	0	0	0	1	0	0	1
	8:30 AM	2	0	4	0	0	0	4	4	0	0	4	4	22	0	0	0	0	0	1	0	0	2
	8:45 AM	2	0	1	0	0	0	2	9	0	0	6	2	22	0	0	0	0	0	1	0	0	0
	VOLUMES	31	1	24	0	0	0	24	72	0	0	67	26	245	0	0	0	0	0	16	0	0	7
	APPROACH %	55%	2%	43%	0%	0%	0%	25%	75%	0%	0%	72%	28%										
	APP/DEPART	56	/	51	0	/	0	96	/	96	93	/	98	0									
	BEGIN PEAK HR		7:30 AM																				
	VOLUMES	18	0	13	0	0	0	15	40	0	0	35	17	138	0	0	0	0		9	0	0	5
	APPROACH %	58%	0%	42%	0%	0%	0%	27%	73%	0%	0%	67%	33%										
	PEAK HR FACTOR		0.596			0.000			0.809			0.813		0.885									
	APP/DEPART	31	/	32	0	/	0	55	/	53	52	/	53	0									
PM	4:00 PM	5	0	5	0	0	0	4	7	0	0	8	4	33	0	0	0	0	0	2	0	0	1
	4:15 PM	2	0	7	0	0	0	3	11	0	0	4	1	28	0	0	0	0	0	4	0	0	0
	4:30 PM	3	0	5	0	0	0	3	3	0	0	3	4	21	0	0	0	0	0	1	0	0	2
	4:45 PM	3	0	10	0	0	0	4	10	0	0	6	3	36	0	0	0	0	0	0	0	0	0
	5:00 PM	2	0	3	0	0	0	5	7	0	0	5	2	24	0	0	0	0	0	0	0	0	2
	5:15 PM	6	0	4	0	0	0	2	8	0	0	4	1	25	0	0	0	0	0	0	0	0	0
	5:30 PM	2	0	7	0	0	0	5	8	0	0	1	1	24	0	0	0	0	0	4	0	0	0
	5:45 PM	2	1	1	0	0	0	3	7	0	0	3	0	17	0	0	0	0	0	1	0	0	0
	VOLUMES	25	1	42	0	0	0	29	61	0	0	34	16	208	0	0	0	0	0	12	0	0	5
	APPROACH %	37%	1%	62%	0%	0%	0%	32%	68%	0%	0%	68%	32%										
	APP/DEPART	68	/	46	0	/	0	90	/	103	50	/	59	0									
	BEGIN PEAK HR		4:45 PM																				
	VOLUMES	13	0	24	0	0	0	16	33	0	0	16	7	109	0	0	0	0		4	0	0	2
	APPROACH %	35%	0%	65%	0%	0%	0%	33%	67%	0%	0%	70%	30%										
	PEAK HR FACTOR		0.712			0.000			0.875			0.639		0.757									
	APP/DEPART	37	/	23	0	/	0	49	/	57	23	/	29	0									



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Perris	PROJECT #:	SC5408
5/20/25	NORTH & SOUTH:	I-215 NB Ramps	LOCATION #:	2
TUESDAY	EAST & WEST:	Ethanac Rd	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND I-215 NB Ramps			SOUTHBOUND I-215 NB Ramps			EASTBOUND Ethanac Rd			WESTBOUND Ethanac Rd			
	LANES:	NL 0.5	NT 0.5	NR 1	SL X	ST X	SR X	EL 1	ET 1	ER X	WL X	WT 1	WR 0	TOTAL
AM	7:00 AM	3	0	1	0	0	0	1	7	0	0	3	0	15
	7:15 AM	1	0	0	0	0	0	0	3	0	0	1	4	9
	7:30 AM	2	0	0	0	0	0	0	4	0	0	3	1	10
	7:45 AM	1	0	1	0	0	0	0	3	0	0	1	1	7
	8:00 AM	2	0	1	0	0	0	2	2	0	0	1	0	8
	8:15 AM	1	0	0	0	0	0	2	2	0	0	2	0	7
	8:30 AM	0	0	0	0	0	0	1	3	0	0	2	1	7
	8:45 AM	2	0	0	0	0	0	1	3	0	0	0	0	6
	VOLUMES	12	0	3	0	0	0	7	27	0	0	13	7	69
	APPROACH %	80%	0%	20%	0%	0%	0%	21%	79%	0%	0%	65%	35%	
	APP/DEPART	15	/	14	0	/	0	34	/	30	20	/	25	0
	BEGIN PEAK HR	7:30 AM												
	VOLUMES	6	0	2	0	0	0	4	11	0	0	7	2	32
	APPROACH %	75%	0%	25%	0%	0%	0%	27%	73%	0%	0%	78%	22%	
	PEAK HR FACTOR	0.667			0.000			0.938			0.563			0.800
	APP/DEPART	8	/	6	0	/	0	15	/	13	9	/	13	0
PM	4:00 PM	0	0	0	0	0	0	0	1	0	0	2	0	3
	4:15 PM	4	0	0	0	0	0	1	0	0	0	0	0	5
	4:30 PM	3	0	0	0	0	0	0	1	0	0	1	0	5
	4:45 PM	1	0	0	0	0	0	0	2	0	0	3	0	6
	5:00 PM	1	0	0	0	0	0	0	1	0	0	0	0	2
	5:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
	5:30 PM	1	0	0	0	0	0	1	2	0	0	1	0	5
	5:45 PM	2	0	0	0	0	0	1	0	0	0	0	1	4
	VOLUMES	13	0	0	0	0	0	3	7	0	0	7	1	31
	APPROACH %	100%	0%	0%	0%	0%	0%	30%	70%	0%	0%	88%	13%	
	APP/DEPART	13	/	4	0	/	0	10	/	7	8	/	20	0
	BEGIN PEAK HR	4:45 PM												
	VOLUMES	4	0	0	0	0	0	1	5	0	0	4	0	14
	APPROACH %	100%	0%	0%	0%	0%	0%	17%	83%	0%	0%	100%	0%	
	PEAK HR FACTOR	1.000			0.000			0.500			0.333			0.583
	APP/DEPART	4	/	1	0	/	0	6	/	5	4	/	8	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	

RTOR

NRR 0	SRR X	ERR X	WRR 0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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-215 NB Ramps

NORTH SIDE

Ethanac Rd WEST SIDE EAST SIDE **Ethanac Rd**

SOUTH SIDE

I-215 NB Ramps

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Perris	PROJECT #:	SC5408
5/20/25	NORTH & SOUTH:	I-215 NB Ramps	LOCATION #:	2
TUESDAY	EAST & WEST:	Ethanac Rd	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND I-215 NB Ramps			SOUTHBOUND I-215 NB Ramps			EASTBOUND Ethanac Rd			WESTBOUND Ethanac Rd			
	LANES:	NL 0.5	NT 0.5	NR 1	SL X	ST X	SR X	EL 1	ET 1	ER X	WL X	WT 1	WR 0	TOTAL
AM	7:00 AM	7	0	0	0	0	0	7	4	0	0	6	1	25
	7:15 AM	3	0	0	0	0	0	1	2	0	0	9	3	18
	7:30 AM	2	0	0	0	0	0	4	3	0	0	7	5	21
	7:45 AM	2	0	1	0	0	0	1	4	0	0	2	4	14
	8:00 AM	5	0	2	0	0	0	5	2	0	0	4	3	21
	8:15 AM	3	0	0	0	0	0	4	4	0	0	2	2	15
	8:30 AM	3	0	0	0	0	0	1	5	0	0	4	2	15
	8:45 AM	1	0	1	0	0	0	4	1	0	0	2	3	12
	VOLUMES	26	0	4	0	0	0	27	25	0	0	36	23	141
	APPROACH %	87%	0%	13%	0%	0%	0%	52%	48%	0%	0%	61%	39%	
	APP/DEPART	30	/	50	0	/	0	52	/	29	59	/	62	0
	BEGIN PEAK HR	7:30 AM												
	VOLUMES	12	0	3	0	0	0	14	13	0	0	15	14	71
	APPROACH %	80%	0%	20%	0%	0%	0%	52%	48%	0%	0%	52%	48%	
	PEAK HR FACTOR	0.536			0.000			0.844			0.604			0.845
	APP/DEPART	15	/	28	0	/	0	27	/	16	29	/	27	0
PM	4:00 PM	3	0	2	0	0	0	2	1	0	0	1	1	10
	4:15 PM	2	0	2	0	0	0	1	2	0	0	2	2	11
	4:30 PM	2	0	2	0	0	0	1	2	0	0	1	2	10
	4:45 PM	0	0	0	0	0	0	1	3	0	0	2	3	9
	5:00 PM	1	0	0	0	0	0	1	2	0	0	0	0	4
	5:15 PM	2	0	1	0	0	0	2	3	0	0	0	0	8
	5:30 PM	4	0	1	0	0	0	1	0	0	0	1	0	7
	5:45 PM	2	0	2	0	0	0	2	0	0	0	1	1	8
	VOLUMES	16	0	10	0	0	0	11	13	0	0	8	9	67
	APPROACH %	62%	0%	38%	0%	0%	0%	46%	54%	0%	0%	47%	53%	
	APP/DEPART	26	/	20	0	/	0	24	/	23	17	/	24	0
	BEGIN PEAK HR	4:45 PM												
	VOLUMES	7	0	2	0	0	0	5	8	0	0	3	3	28
	APPROACH %	78%	0%	22%	0%	0%	0%	38%	62%	0%	0%	50%	50%	
	PEAK HR FACTOR	0.450			0.000			0.650			0.300			0.778
	APP/DEPART	9	/	8	0	/	0	13	/	10	6	/	10	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	

RTOR

NRR 0	SRR X	ERR X	WRR 0
0	0	0	0
0	0	0	0
0	0	0	1
1	0	0	0
1	0	0	0
0	0	0	1
0	0	0	1
1	0	0	1
3	0	0	4
2	0	0	2
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
2	0	0	0
0	0	0	0

I-215 NB Ramps

NORTH SIDE

Ethanac Rd WEST SIDE EAST SIDE **Ethanac Rd**

SOUTH SIDE

I-215 NB Ramps

INTERSECTION TURNING MOVEMENT COUNTS

T020624

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 20, 25	LOCATION:	Perris	PROJECT #: SC5408
	NORTH & SOUTH:	Encanto Dr	LOCATION #: 3
	EAST & WEST:	Ethanac Rd	CONTROL: STOP N

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Encanto Dr			SOUTHBOUND Encanto Dr			EASTBOUND Ethanac Rd			WESTBOUND Ethanac Rd			
	LANES:	NL 0.5	NT X	NR 0.5	SL X	ST X	SR X	EL X	ET 1	ER 0	WL 1	WT 1	WR X	TOTAL
AM	7:00 AM	13	0	6	0	0	0	0	121	14	7	145	0	306
	7:15 AM	9	0	0	0	0	0	0	140	11	2	146	0	308
	7:30 AM	9	0	4	0	0	0	0	187	12	6	161	0	379
	7:45 AM	6	0	7	0	0	0	0	182	19	12	158	0	384
	8:00 AM	7	0	4	0	0	0	0	161	9	7	145	0	333
	8:15 AM	7	0	8	0	0	0	0	109	18	5	156	0	303
	8:30 AM	12	0	1	0	0	0	0	124	9	8	131	0	285
	8:45 AM	10	0	5	0	0	0	0	106	21	6	118	0	266
	VOLUMES	73	0	35	0	0	0	0	1,130	113	53	1,160	0	2,564
	APPROACH %	68%	0%	32%	0%	0%	0%	0%	91%	9%	4%	96%	0%	
	APP/DEPART	108	/	0	0	/	166	1,243	/	1,165	1,213	/	1,233	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	31	0	15	0	0	0	0	670	51	27	610	0	1,404
	APPROACH %	67%	0%	33%	0%	0%	0%	0%	93%	7%	4%	96%	0%	
	PEAK HR FACTOR		0.885			0.000			0.897			0.937		0.914
	APP/DEPART	46	/	0	0	/	78	721	/	685	637	/	641	0
PM	4:00 PM	17	0	12	0	0	0	0	169	24	7	139	0	368
	4:15 PM	13	0	13	0	0	0	0	191	32	4	103	0	356
	4:30 PM	21	0	9	0	0	0	0	163	26	10	113	0	342
	4:45 PM	11	0	9	0	0	0	0	203	26	2	138	0	389
	5:00 PM	14	0	12	0	0	0	0	191	25	9	142	0	393
	5:15 PM	8	0	11	0	0	0	0	197	16	8	111	0	351
	5:30 PM	10	0	9	0	0	0	0	196	21	5	110	0	351
	5:45 PM	10	0	5	0	0	0	0	182	19	7	124	0	347
	VOLUMES	104	0	80	0	0	0	0	1,492	189	52	980	0	2,899
	APPROACH %	57%	0%	43%	0%	0%	0%	0%	89%	11%	5%	95%	0%	
	APP/DEPART	184	/	0	0	/	241	1,681	/	1,574	1,034	/	1,084	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	43	0	41	0	0	0	0	787	88	24	501	0	1,484
	APPROACH %	51%	0%	49%	0%	0%	0%	0%	90%	10%	5%	95%	0%	
	PEAK HR FACTOR		0.808			0.000			0.955			0.869		0.944
	APP/DEPART	84	/	0	0	/	112	875	/	828	525	/	544	0

U-TURNS

NB 0	SB 0	EB 0	WB 0	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	2	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	2	2
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Encanto Dr

NORTH LEG

Ethanac Rd WEST LEG — EAST LEG **Ethanac Rd**

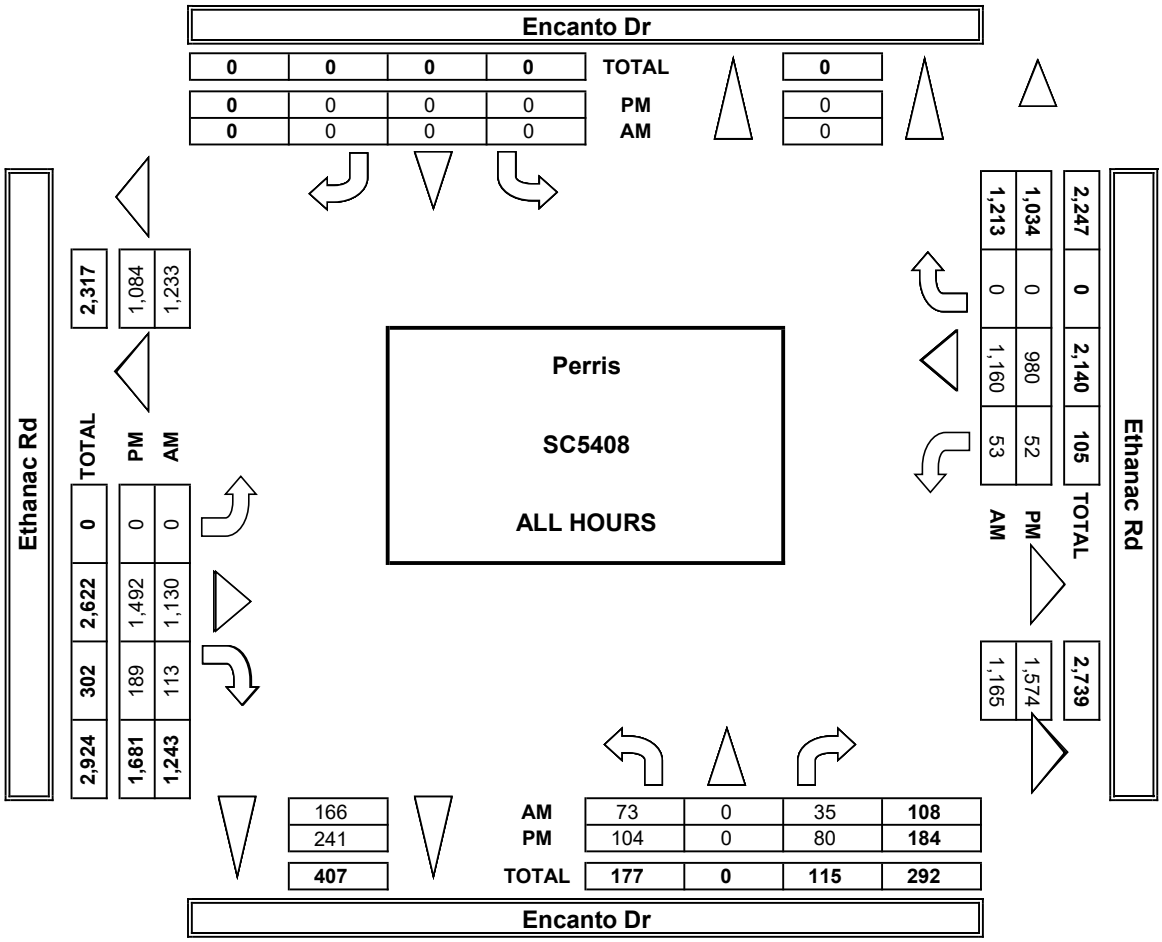
SOUTH LEG

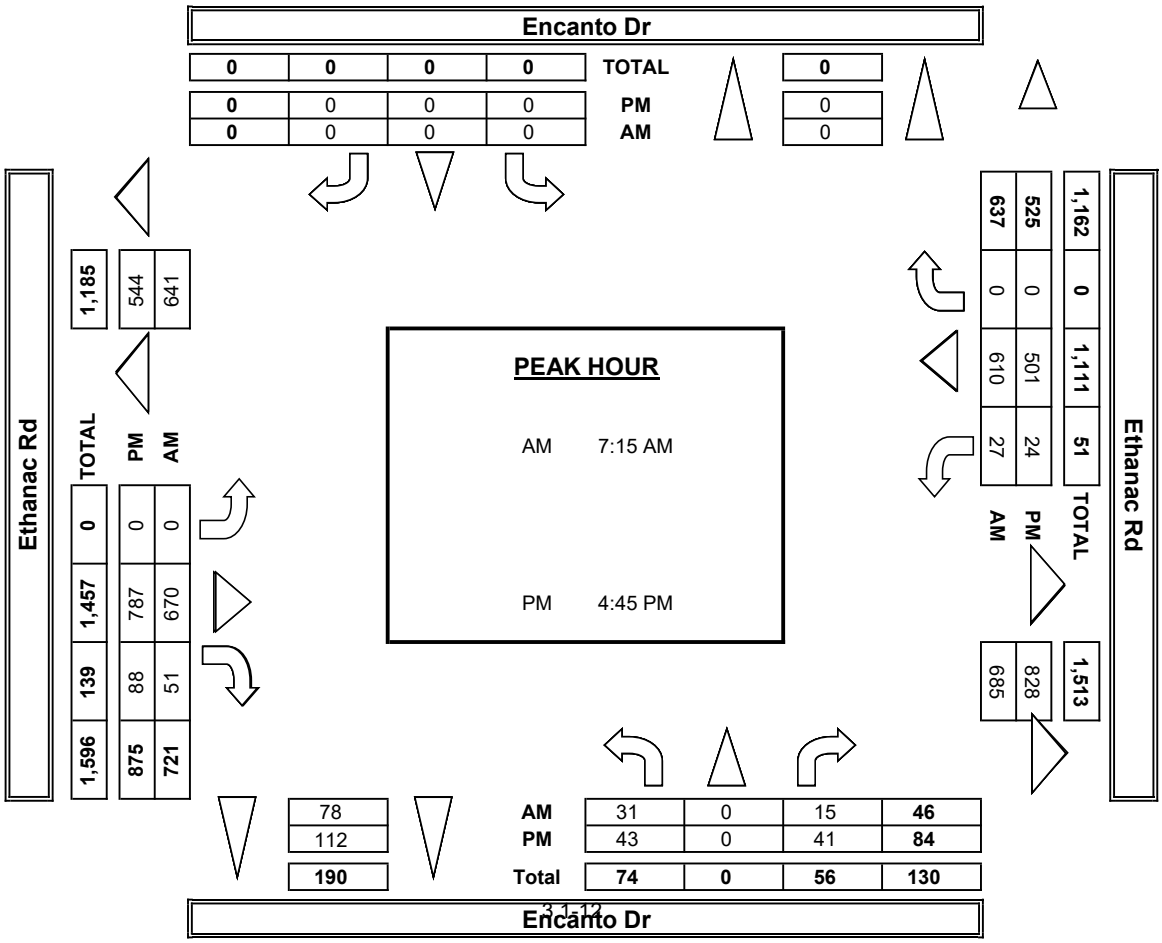
Encanto Dr

		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		E LEG	W LEG	S LEG	N LEG	TOTAL	E LEG	W LEG	S LEG	N LEG	TOTAL	EL	WL	SL	NL	TOTAL
AM	7:00 AM	0	0	2	0	2	0	0	1	0	1	0	0	1	0	1
	7:15 AM	0	0	2	0	2	0	0	2	0	2	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	2	0	2	0	0	1	0	1	0	0	1	0	1
	8:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	TOTAL	0	0	7	0	7	0	0	2	0	4	0	0	0	0	3
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	4:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	3	0	3	0	0	3	0	3	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	5	0	5	0	0	3	0	3	0	0	1	0	2

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

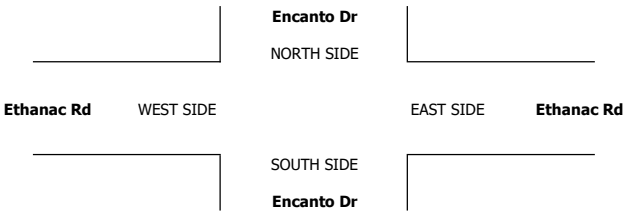
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Perris	PROJECT #:	SC5408
5/20/25	NORTH & SOUTH:	Encanto Dr	LOCATION #:	3
TUESDAY	EAST & WEST:	Ethanac Rd	CONTROL:	STOP N

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Encanto Dr			SOUTHBOUND Encanto Dr			EASTBOUND Ethanac Rd			WESTBOUND Ethanac Rd				U-TURNS					RTOR			
	LANES:	NL 0.5	NT X	NR 0.5	SL X	ST X	SR X	EL X	ET 1	ER 0	WL 1	WT 1	WR X	TOTAL	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	0	0	0	0	0	0	11	0	0	14	0	25	0	0	0	0	0	0	0	0	0
	7:15 AM	1	0	0	0	0	0	0	14	0	0	9	0	24	0	0	0	0	0	0	0	0	0
	7:30 AM	2	0	0	0	0	0	0	14	1	0	13	0	30	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	6	2	1	12	0	21	0	0	0	0	0	0	0	0	0
	8:00 AM	1	0	1	0	0	0	0	15	0	0	16	0	33	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	2	0	0	0	0	11	2	1	10	0	26	0	0	0	0	0	0	0	0	0
	8:30 AM	1	0	0	0	0	0	0	8	1	2	6	0	18	0	0	0	0	0	0	0	0	0
	8:45 AM	1	0	1	0	0	0	0	9	2	0	7	0	20	0	0	0	0	0	0	0	0	0
	VOLUMES	6	0	4	0	0	0	0	88	8	4	87	0	197	0	0	0	0	0	0	0	0	0
	APPROACH %	60%	0%	40%	0%	0%	0%	0%	92%	8%	4%	96%	0%										
	APP/DEPART	10	/	0	0	/	12	96	/	92	91	/	93	0									
	BEGIN PEAK HR		7:15 AM																				
	VOLUMES	4	0	1	0	0	0	0	49	3	1	50	0	108	0	0	0	0		0	0	0	0
	APPROACH %	80%	0%	20%	0%	0%	0%	0%	94%	6%	2%	98%	0%										
	PEAK HR FACTOR		0.625			0.000			0.867			0.797		0.818									
	APP/DEPART	5	/	0	0	/	4	52	/	50	51	/	54	0									
PM	4:00 PM	0	0	0	0	0	0	0	14	0	0	12	0	26	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	15	2	1	4	0	22	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	2	0	0	0	0	9	0	0	9	0	20	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	16	0	0	8	0	24	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	10	0	0	6	0	16	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	13	1	0	5	0	19	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	17	0	1	4	0	22	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	6	0	0	2	0	8	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	2	0	0	0	0	100	3	2	50	0	157	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	97%	3%	4%	96%	0%										
	APP/DEPART	2	/	0	0	/	5	103	/	102	52	/	50	0									
	BEGIN PEAK HR		4:45 PM																				
	VOLUMES	0	0	0	0	0	0	0	56	1	1	23	0	81	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	98%	2%	4%	96%	0%										
	PEAK HR FACTOR		0.000			0.000			0.838			0.750		0.844									
	APP/DEPART	0	/	0	0	/	2	57	/	56	24	/	23	0									



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

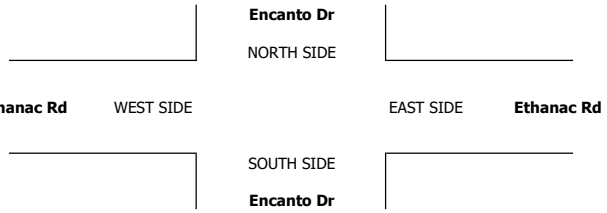
DATE:	LOCATION:	Perris	PROJECT #:	SC5408
5/20/25	NORTH & SOUTH:	Encanto Dr	LOCATION #:	3
TUESDAY	EAST & WEST:	Ethanac Rd	CONTROL:	STOP N

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Encanto Dr)			SOUTHBOUND (Encanto Dr)			EASTBOUND (Ethanac Rd)			WESTBOUND (Ethanac Rd)				U-TURNS					RTOR			
	LANES:	NL 0.5	NT X	NR 0.5	SL X	ST X	SR X	EL X	ET 1	ER 0	WL 1	WT 1	WR X	TOTAL	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	0	0	0	0	0	0	9	0	0	2	0	11	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	3	0	0	8	0	11	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	4	0	0	1	0	5	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	3	0	0	1	0	4	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	2	0	0	3	0	5	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	1	0	0	0	0	2	0	0	1	0	4	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	5	0	0	4	0	9	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	1	0	0	0	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	2	0	0	0	0	30	0	0	20	0	52	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	100%	0%										
	APP/DEPART	2	/	0	0	/	0	30	/	32	20	/	20	0									
	BEGIN PEAK HR		7:15 AM																				
	VOLUMES	0	0	0	0	0	0	0	12	0	0	13	0	25	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%										
	PEAK HR FACTOR		0.000			0.000			0.750			0.406		0.568									
	APP/DEPART	0	/	0	0	/	0	12	/	12	13	/	13	0									
PM	4:00 PM	0	0	0	0	0	0	0	1	0	0	2	0	3	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
	4:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	1	0	0	3	0	4	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	2	0	0	1	0	3	0	0	0	0	0	0	0	0	0
	5:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	VOLUMES	2	0	0	0	0	0	0	5	2	0	6	0	15	0	0	0	0	0	0	0	0	0
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	71%	29%	0%	100%	0%										
	APP/DEPART	2	/	0	0	/	2	7	/	5	6	/	8	0									
	BEGIN PEAK HR		4:45 PM																				
	VOLUMES	0	0	0	0	0	0	0	4	1	0	4	0	9	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	80%	20%	0%	100%	0%										
	PEAK HR FACTOR		0.000			0.000			0.625			0.333		0.563									
	APP/DEPART	0	/	0	0	/	1	5	/	4	4	/	4	0									



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Perris	PROJECT #:	SC5408
5/20/25	NORTH & SOUTH:	Encanto Dr	LOCATION #:	3
TUESDAY	EAST & WEST:	Ethanac Rd	CONTROL:	STOP N

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Encanto Dr			SOUTHBOUND Encanto Dr			EASTBOUND Ethanac Rd			WESTBOUND Ethanac Rd			
	LANES:	NL 0.5	NT X	NR 0.5	SL X	ST X	SR X	EL X	ET 1	ER 0	WL 1	WT 1	WR X	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	3	0	3	8	0	14
	7:15 AM	1	0	0	0	0	0	0	2	0	0	10	0	13
	7:30 AM	3	0	0	0	0	0	0	3	1	1	10	0	18
	7:45 AM	1	0	0	0	0	0	0	5	0	0	6	0	12
	8:00 AM	0	0	0	0	0	0	0	5	0	1	6	0	12
	8:15 AM	0	0	0	0	0	0	0	3	1	2	3	0	9
	8:30 AM	0	0	0	0	0	0	0	4	0	0	6	0	10
	8:45 AM	1	0	0	0	0	0	0	0	2	0	4	0	7
	VOLUMES	6	0	0	0	0	0	0	25	4	7	53	0	95
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	86%	14%	12%	88%	0%	
	APP/DEPART	6	/	0	0	/	11	29	/	25	60	/	59	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	5	0	0	0	0	0	0	15	1	2	32	0	55
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	94%	6%	6%	94%	0%	
	PEAK HR FACTOR		0.417			0.000			0.800			0.773		0.764
	APP/DEPART	5	/	0	0	/	3	16	/	15	34	/	37	0
PM	4:00 PM	0	0	1	0	0	0	0	3	1	0	2	0	7
	4:15 PM	1	0	0	0	0	0	0	4	0	0	3	0	8
	4:30 PM	0	0	0	0	0	0	0	4	0	0	3	0	7
	4:45 PM	1	0	0	0	0	0	0	4	0	0	3	0	8
	5:00 PM	0	0	2	0	0	0	0	2	0	0	0	0	4
	5:15 PM	0	0	0	0	0	0	0	3	0	0	1	0	4
	5:30 PM	0	0	0	0	0	0	0	1	0	1	1	0	3
	5:45 PM	0	0	0	0	0	0	0	1	0	0	2	0	3
	VOLUMES	2	0	3	0	0	0	0	22	1	1	15	0	44
	APPROACH %	40%	0%	60%	0%	0%	0%	0%	96%	4%	6%	94%	0%	
	APP/DEPART	5	/	0	0	/	2	23	/	25	16	/	17	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	1	0	2	0	0	0	0	10	0	1	5	0	19
	APPROACH %	33%	0%	67%	0%	0%	0%	0%	100%	0%	17%	83%	0%	
	PEAK HR FACTOR		0.375			0.000			0.625			0.500		0.594
	APP/DEPART	3	/	0	0	/	1	10	/	12	6	/	6	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Encanto Dr

NORTH SIDE

Ethanac Rd WEST SIDE EAST SIDE **Ethanac Rd**

SOUTH SIDE

Encanto Dr

INTERSECTION TURNING MOVEMENT COUNTS

T020624

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 20, 25

LOCATION: Perris
NORTH & SOUTH: Trumble Rd
EAST & WEST: Ethanac Rd

PROJECT #: SC5408
LOCATION #: 4
CONTROL: SIGNAL

NOTES:
Queue WB AM/PM

AM
PM
MD
OTHER
OTHER

N ▲ ▼ S
◄ W
E ►

		NORTHBOUND Trumble Rd			SOUTHBOUND Trumble Rd			EASTBOUND Ethanac Rd			WESTBOUND Ethanac Rd			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL
AM	7:00 AM	16	0	2	2	1	9	21	102	8	7	122	7	297
	7:15 AM	16	1	6	4	3	12	14	118	3	8	123	2	310
	7:30 AM	10	1	9	5	2	22	15	163	7	5	135	4	378
	7:45 AM	13	5	8	0	6	20	19	162	3	9	137	5	387
	8:00 AM	19	5	5	8	3	17	24	137	7	6	108	2	341
	8:15 AM	19	1	7	3	3	17	15	83	5	8	130	3	294
	8:30 AM	13	2	7	3	4	19	13	101	2	3	107	1	275
	8:45 AM	17	2	3	1	0	16	25	84	3	6	88	4	249
	VOLUMES	123	17	47	26	22	132	146	950	38	52	950	28	2,531
	APPROACH %	66%	9%	25%	14%	12%	73%	13%	84%	3%	5%	92%	3%	
	APP/DEPART	187	/	191	180	/	112	1,134	/	1,023	1,030	/	1,205	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	58	12	28	17	14	71	72	580	20	28	503	13	1,416
	APPROACH %	59%	12%	29%	17%	14%	70%	11%	86%	3%	5%	92%	2%	
	PEAK HR FACTOR		0.845			0.879			0.908			0.901		0.915
	APP/DEPART	98	/	97	102	/	62	672	/	625	544	/	632	0
PM	4:00 PM	23	4	6	7	8	26	12	151	3	5	94	1	340
	4:15 PM	19	1	7	5	1	14	8	166	9	5	73	2	310
	4:30 PM	25	2	9	3	1	20	15	148	4	4	79	0	310
	4:45 PM	19	0	11	1	0	21	6	191	4	6	98	4	361
	5:00 PM	11	1	8	11	3	44	12	173	5	6	98	4	376
	5:15 PM	10	0	8	1	1	13	5	192	9	4	97	2	342
	5:30 PM	16	1	8	5	3	14	7	180	2	6	84	0	326
	5:45 PM	12	0	6	4	2	23	8	158	5	9	96	4	327
	VOLUMES	135	9	63	37	19	175	73	1,359	41	45	719	17	2,692
	APPROACH %	65%	4%	30%	16%	8%	76%	5%	92%	3%	6%	92%	2%	
	APP/DEPART	207	/	99	231	/	105	1,473	/	1,459	781	/	1,029	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	56	2	35	18	7	92	30	736	20	22	377	10	1,405
	APPROACH %	60%	2%	38%	15%	6%	79%	4%	94%	3%	5%	92%	2%	
	PEAK HR FACTOR		0.775			0.504			0.954			0.947		0.934
	APP/DEPART	93	/	42	117	/	49	786	/	789	409	/	525	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	

RTOR

NRR	SRR	ERR	WRR
1	2	2	0
3	9	1	0
6	11	1	0
3	8	1	2
2	4	4	0
3	6	2	0
6	12	2	0
1	10	2	0
25	62	15	2
14	32	7	2
3	12	1	1
3	11	2	0
5	15	0	0
5	13	1	1
6	23	1	0
4	9	2	0
3	10	0	0
3	17	2	1
32	110	9	3
18	55	4	1

Trumble Rd
NORTH LEG

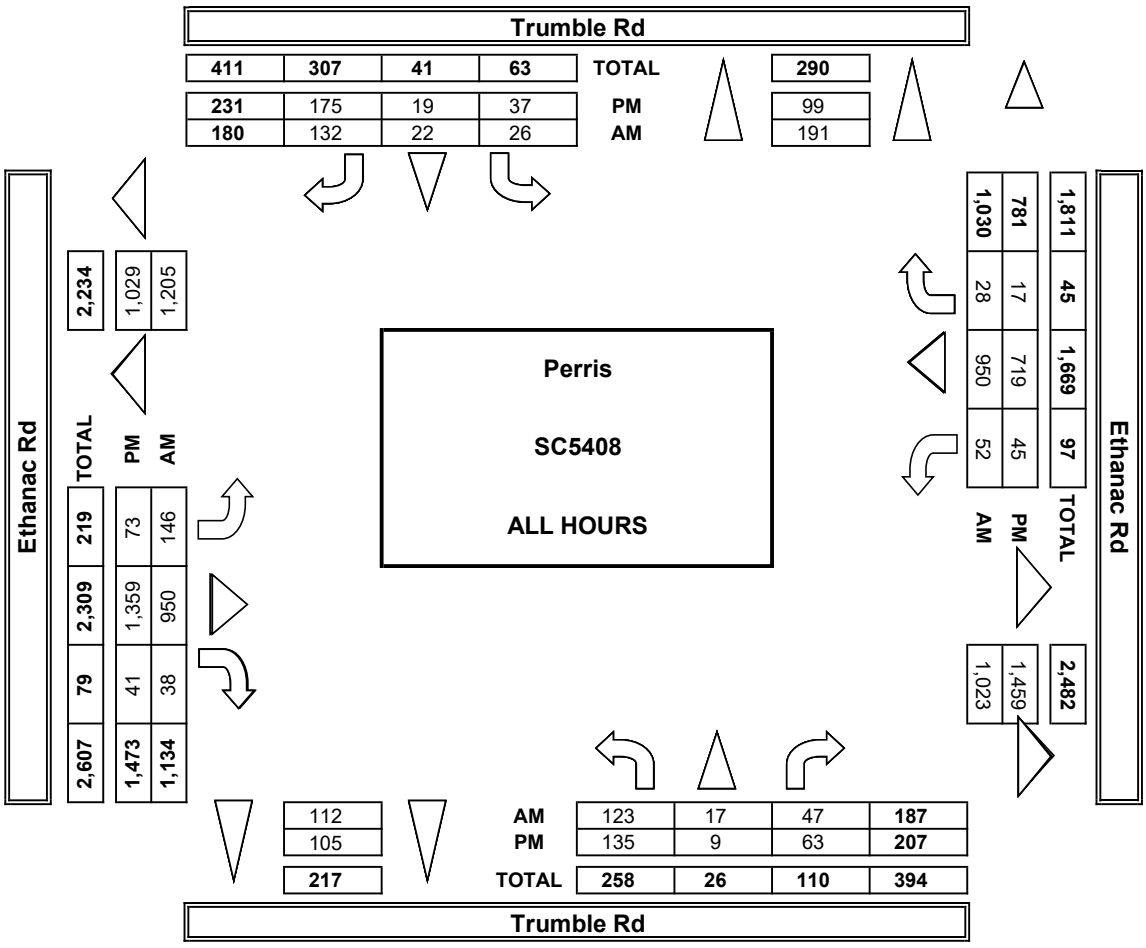
Ethanac Rd WEST LEG EAST LEG **Ethanac Rd**

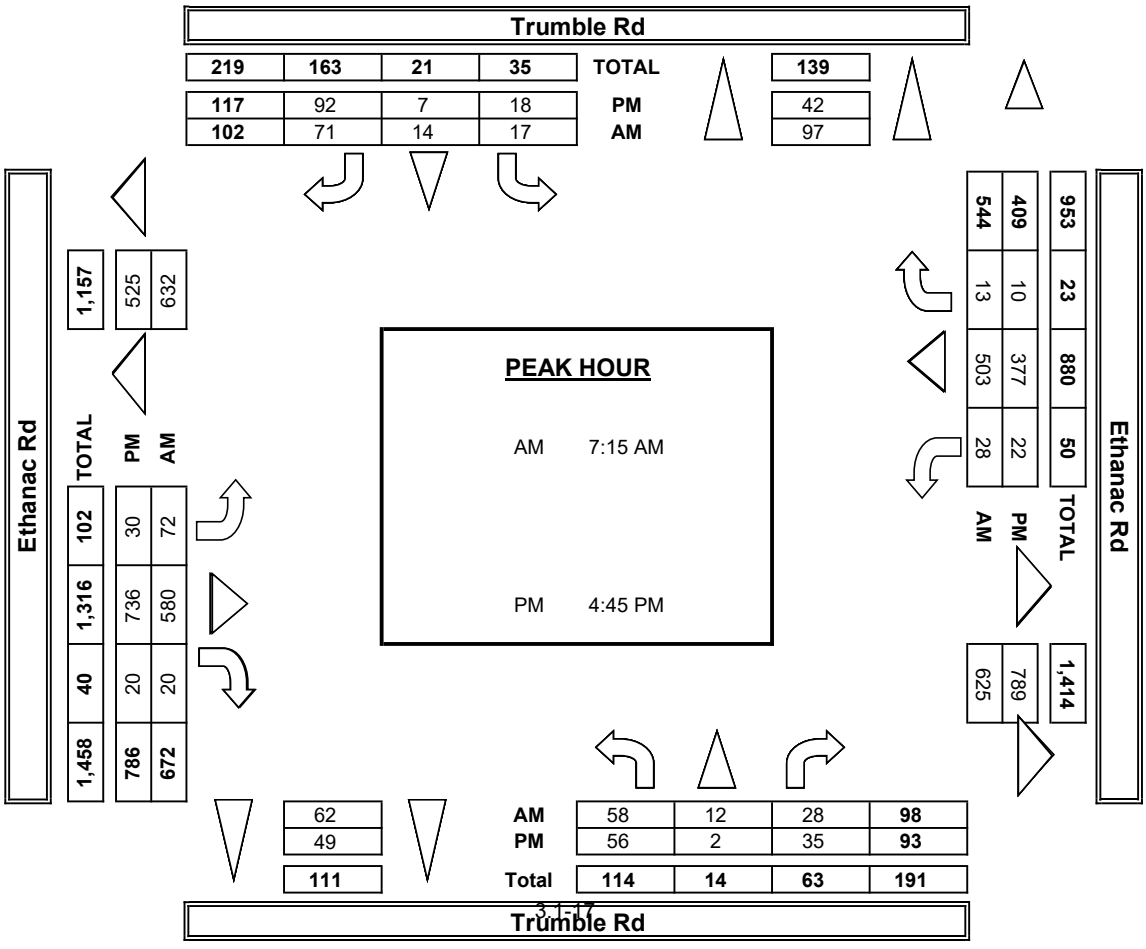
SOUTH LEG
Trumble Rd

		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		E LEG	W LEG	S LEG	N LEG	TOTAL	E LEG	W LEG	S LEG	N LEG	TOTAL	EL	WL	SL	NL	TOTAL
AM	7:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	7:15 AM	0	0	2	0	2	0	0	2	0	2	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	TOTAL	0	0	5	0	5	0	0	2	0	3	0	0	0	0	2
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	5	0	5	0	0	5	0	5	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	5	0	5	0	0	5	0	5	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Perris	PROJECT #:	SC5408
5/20/25	NORTH & SOUTH:	Trumble Rd	LOCATION #:	4
TUESDAY	EAST & WEST:	Ethanac Rd	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Trumble Rd			SOUTHBOUND Trumble Rd			EASTBOUND Ethanac Rd			WESTBOUND Ethanac Rd			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL
AM	7:00 AM	3	0	1	1	0	3	2	7	1	2	8	3	31
	7:15 AM	1	1	0	2	1	1	4	10	0	2	5	0	27
	7:30 AM	0	1	1	1	1	10	1	11	2	1	5	0	34
	7:45 AM	2	0	1	0	4	3	1	6	0	1	6	1	25
	8:00 AM	9	0	2	1	0	5	5	10	2	0	4	0	38
	8:15 AM	1	1	1	0	2	3	4	6	1	1	5	0	25
	8:30 AM	3	0	3	0	1	6	1	10	1	1	2	0	28
	8:45 AM	1	0	0	0	0	1	4	5	0	0	4	0	15
	VOLUMES	20	3	9	5	9	32	22	65	7	8	39	4	223
	APPROACH %	63%	9%	28%	11%	20%	70%	23%	69%	7%	16%	76%	8%	
	APP/DEPART	32	/	29	46	/	24	94	/	79	51	/	91	0
	BEGIN PEAK HR	7:15 AM												
	VOLUMES	12	2	4	4	6	19	11	37	4	4	20	1	124
	APPROACH %	67%	11%	22%	14%	21%	66%	21%	71%	8%	16%	80%	4%	
	PEAK HR FACTOR	0.409			0.604			0.765			0.781			0.816
	APP/DEPART	18	/	14	29	/	14	52	/	45	25	/	51	0
PM	4:00 PM	2	1	0	1	0	4	2	12	0	2	4	1	29
	4:15 PM	0	0	0	2	0	0	2	12	0	0	4	0	20
	4:30 PM	3	0	2	0	0	1	0	14	0	0	6	0	26
	4:45 PM	1	0	3	0	0	2	2	16	0	0	4	0	28
	5:00 PM	0	0	1	1	0	3	3	9	0	1	6	1	25
	5:15 PM	1	0	0	0	0	0	0	8	2	0	3	0	14
	5:30 PM	3	0	3	0	1	0	1	14	0	0	1	0	23
	5:45 PM	0	0	2	0	0	2	1	3	0	0	2	1	11
	VOLUMES	10	1	11	4	1	12	11	88	2	3	30	3	176
	APPROACH %	45%	5%	50%	24%	6%	71%	11%	87%	2%	8%	83%	8%	
	APP/DEPART	22	/	15	17	/	6	101	/	103	36	/	52	0
	BEGIN PEAK HR	4:45 PM												
	VOLUMES	5	0	7	1	1	5	6	47	2	1	14	1	90
	APPROACH %	42%	0%	58%	14%	14%	71%	11%	85%	4%	6%	88%	6%	
	PEAK HR FACTOR	0.500			0.438			0.764			0.500			0.804
	APP/DEPART	12	/	7	7	/	4	55	/	55	16	/	24	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	2	0	0
0	0	0	0
0	7	0	0
0	2	0	1
1	0	1	0
0	3	0	0
2	2	1	0
0	1	0	0
3	17	2	1
1	9	1	1
0	1	0	1
0	0	0	0
1	1	0	0
1	2	0	0
1	1	0	0
0	0	1	0
2	0	0	0
1	2	0	0
6	7	1	1
4	3	1	0

Trumble Rd

NORTH SIDE

Ethanac Rd WEST SIDE EAST SIDE **Ethanac Rd**

SOUTH SIDE

Trumble Rd

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

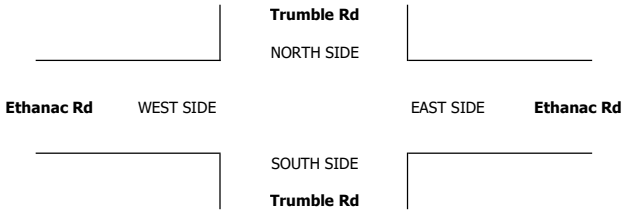
DATE:	LOCATION:	Perris	PROJECT #:	SC5408
5/20/25	NORTH & SOUTH:	Trumble Rd	LOCATION #:	4
TUESDAY	EAST & WEST:	Ethanac Rd	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Trumble Rd			SOUTHBOUND Trumble Rd			EASTBOUND Ethanac Rd			WESTBOUND Ethanac Rd				U-TURNS					RTOR			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL	NRR 0	SRR 0	ERR 0	WRR 0
AM	7:00 AM	0	0	0	0	0	0	3	4	2	0	2	0	11	0	0	0	0	0	0	0	1	0
	7:15 AM	0	0	1	0	0	0	2	1	0	0	8	0	12	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	3	0	0	1	2	2	1	1	0	10	0	0	0	0	0	0	0	1	0
	7:45 AM	1	2	0	0	0	1	2	1	0	0	0	0	7	0	0	0	0	0	0	0	0	0
	8:00 AM	0	2	0	0	0	0	2	0	0	0	2	0	6	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	1	2	1	0	0	0	0	4	0	0	0	0	0	0	0	0	0
	8:30 AM	0	1	1	1	0	1	3	0	0	0	2	0	9	0	0	0	0	0	1	1	0	0
	8:45 AM	0	1	1	0	0	1	4	0	0	1	0	0	8	0	0	0	0	0	0	1	0	0
	VOLUMES	1	6	3	4	0	4	19	9	4	2	15	0	67	0	0	0	0	0	1	2	2	0
	APPROACH %	10%	60%	30%	50%	0%	50%	59%	28%	13%	12%	88%	0%										
	APP/DEPART	10	/	25	8	/	6	32	/	16	17	/	20	0									
	BEGIN PEAK HR		7:15 AM																				
	VOLUMES	1	4	1	3	0	1	7	4	2	1	11	0	35	0	0	0	0		0	0	1	0
	APPROACH %	17%	67%	17%	75%	0%	25%	54%	31%	15%	8%	92%	0%										
	PEAK HR FACTOR		0.500			0.333			0.650			0.375		0.729									
	APP/DEPART	6	/	11	4	/	3	13	/	8	12	/	13	0									
PM	4:00 PM	0	0	0	0	0	0	1	0	0	0	2	0	3	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	4:45 PM	1	0	0	0	0	0	1	1	0	0	2	1	6	0	0	0	0	0	0	0	0	1
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	1	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	VOLUMES	1	1	1	0	0	0	3	1	0	0	5	1	13	0	0	0	0	0	0	0	0	1
	APPROACH %	33%	33%	33%	0%	0%	0%	75%	25%	0%	0%	83%	17%										
	APP/DEPART	3	/	5	0	/	0	4	/	2	6	/	6	0									
	BEGIN PEAK HR		4:45 PM																				
	VOLUMES	1	0	0	0	0	0	2	1	0	0	3	1	8	0	0	0	0		0	0	0	1
	APPROACH %	100%	0%	0%	0%	0%	0%	67%	33%	0%	0%	75%	25%										
	PEAK HR FACTOR		0.250			0.000			0.375			0.333		0.333									
	APP/DEPART	1	/	3	0	/	0	3	/	1	4	/	4	0									



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Perris	PROJECT #:	SC5408
5/20/25	NORTH & SOUTH:	Trumble Rd	LOCATION #:	4
TUESDAY	EAST & WEST:	Ethanac Rd	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Trumble Rd			SOUTHBOUND Trumble Rd			EASTBOUND Ethanac Rd			WESTBOUND Ethanac Rd			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL
AM	7:00 AM	1	0	0	0	1	3	0	4	1	0	7	0	17
	7:15 AM	1	0	0	0	2	2	0	1	1	0	7	0	14
	7:30 AM	2	0	0	0	0	4	1	1	0	0	4	0	12
	7:45 AM	0	0	0	0	0	5	1	4	0	2	1	0	13
	8:00 AM	3	0	0	0	3	3	1	4	0	0	2	0	16
	8:15 AM	0	0	0	0	0	3	2	1	0	0	2	0	8
	8:30 AM	0	0	0	1	2	4	1	3	0	0	3	0	14
	8:45 AM	0	0	0	0	0	2	0	0	0	0	1	0	3
	VOLUMES	7	0	0	1	8	26	6	18	2	2	27	0	97
	APPROACH %	100%	0%	0%	3%	23%	74%	23%	69%	8%	7%	93%	0%	
	APP/DEPART	7	/	6	35	/	12	26	/	19	29	/	60	0
	BEGIN PEAK HR	7:15 AM												
	VOLUMES	6	0	0	0	5	14	3	10	1	2	14	0	55
	APPROACH %	100%	0%	0%	0%	26%	74%	21%	71%	7%	13%	88%	0%	
	PEAK HR FACTOR	0.500			0.792			0.700			0.571			0.859
	APP/DEPART	6	/	3	19	/	8	14	/	10	16	/	34	0
PM	4:00 PM	0	0	0	0	0	1	0	3	0	1	1	0	6
	4:15 PM	2	0	0	0	0	0	0	3	1	0	1	0	7
	4:30 PM	2	0	0	0	0	1	1	3	0	0	0	0	7
	4:45 PM	1	0	0	0	0	2	0	4	0	1	0	0	8
	5:00 PM	0	0	0	0	0	0	1	3	1	0	0	0	5
	5:15 PM	0	0	0	0	0	0	0	4	0	0	1	0	5
	5:30 PM	1	0	0	0	0	1	0	0	0	0	0	0	2
	5:45 PM	0	0	1	0	0	1	0	1	0	0	1	0	4
	VOLUMES	6	0	1	0	0	6	2	21	2	2	4	0	44
	APPROACH %	86%	0%	14%	0%	0%	100%	8%	84%	8%	33%	67%	0%	
	APP/DEPART	7	/	2	6	/	4	25	/	22	6	/	16	0
	BEGIN PEAK HR	4:45 PM												
	VOLUMES	2	0	0	0	0	3	1	11	1	1	1	0	20
	APPROACH %	100%	0%	0%	0%	0%	100%	8%	85%	8%	50%	50%	0%	
	PEAK HR FACTOR	0.500			0.375			0.650			0.500			0.625
	APP/DEPART	2	/	1	3	/	2	13	/	11	2	/	6	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR 0	ERR 0	WRR 0
0	0	0	0
0	1	0	0
0	0	0	0
0	2	0	0
0	0	0	0
0	2	0	0
0	3	0	0
0	0	0	0
0	8	0	0
0	3	0	0
0	1	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	1	0	0
1	0	0	0
1	3	2	0
0	2	1	0

Trumble Rd

NORTH SIDE

Ethanac Rd WEST SIDE EAST SIDE **Ethanac Rd**

SOUTH SIDE

Trumble Rd

INTERSECTION TURNING MOVEMENT COUNTS

T020624

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 20, 25	LOCATION:	Perris	PROJECT #: SC5408
	NORTH & SOUTH:	Sherman Rd	LOCATION #: 5
	EAST & WEST:	Ethanac Rd	CONTROL: STOP N/S

NOTES:

Queue WB AM

AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

		NORTHBOUND (Sherman Rd)			SOUTHBOUND (Sherman Rd)			EASTBOUND (Ethanac Rd)			WESTBOUND (Ethanac Rd)				U-TURNS					RTOR			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	0	0	0	0	16	31	93	0	2	139	1	282	0	0	0	0	0	0	0	0	0
	7:15 AM	2	0	0	0	1	29	23	99	0	0	96	2	252	0	0	0	0	0	0	0	0	0
	7:30 AM	1	1	0	0	0	14	27	146	0	0	122	2	313	0	0	0	0	0	0	0	0	0
	7:45 AM	1	1	0	0	1	29	27	132	5	2	117	1	316	0	0	0	0	0	0	0	0	0
	8:00 AM	1	0	1	1	2	13	23	117	2	1	122	5	288	0	0	0	0	0	0	0	0	0
	8:15 AM	1	1	0	1	1	24	25	62	2	2	96	4	219	0	0	0	0	0	0	0	0	0
	8:30 AM	3	1	0	0	0	25	20	86	2	0	77	0	214	0	0	0	0	0	0	0	0	0
	8:45 AM	0	1	0	1	0	27	30	54	1	1	69	2	186	0	0	0	0	0	0	0	0	0
	VOLUMES	9	5	1	3	5	177	206	789	12	8	838	17	2,070	0	0	0	0	0	0	0	0	0
	APPROACH %	60%	33%	7%	2%	3%	96%	20%	78%	1%	1%	97%	2%										
	APP/DEPART	15	/	228	185	/	25	1,007	/	793	863	/	1,024	0									
	BEGIN PEAK HR		7:15 AM																				
	VOLUMES	5	2	1	1	4	85	100	494	7	3	457	10	1,169	0	0	0	0		0	0	0	0
	APPROACH %	63%	25%	13%	1%	4%	94%	17%	82%	1%	1%	97%	2%										
	PEAK HR FACTOR		1.000			0.750			0.868			0.918		0.925									
	APP/DEPART	8	/	112	90	/	14	601	/	496	470	/	547	0									
PM	4:00 PM	2	1	2	2	0	17	36	117	2	1	65	3	248	0	0	0	0	0	0	0	0	0
	4:15 PM	2	0	0	0	0	21	33	153	1	0	58	0	268	0	0	0	0	0	0	0	0	0
	4:30 PM	1	0	2	1	1	18	33	127	1	2	62	0	248	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	4	1	0	18	36	167	0	2	85	0	313	0	0	0	0	0	0	0	0	0
	5:00 PM	4	1	2	1	0	24	50	147	1	1	78	0	309	0	0	0	0	0	0	0	0	0
	5:15 PM	5	0	2	2	0	22	51	146	3	0	72	0	303	0	0	0	0	0	0	0	0	0
	5:30 PM	4	1	5	2	1	17	38	150	2	0	68	2	290	0	0	0	0	0	0	0	0	0
	5:45 PM	6	1	1	0	2	23	36	125	9	1	66	0	270	0	0	0	0	0	0	0	0	0
	VOLUMES	24	4	18	9	4	160	313	1,132	19	7	554	5	2,249	0	0	0	0	0	0	0	0	0
	APPROACH %	52%	9%	39%	5%	2%	92%	21%	77%	1%	1%	98%	1%										
	APP/DEPART	46	/	322	173	/	30	1,464	/	1,159	566	/	738	0									
	BEGIN PEAK HR		4:45 PM																				
	VOLUMES	13	2	13	6	1	81	175	610	6	3	303	2	1,215	0	0	0	0		0	0	0	0
	APPROACH %	46%	7%	46%	7%	1%	92%	22%	77%	1%	1%	98%	1%										
	PEAK HR FACTOR		0.700			0.880			0.974			0.885		0.970									
	APP/DEPART	28	/	179	88	/	10	791	/	629	308	/	397	0									

Sherman Rd

NORTH LEG

Ethanac Rd WEST LEG EAST LEG **Ethanac Rd**

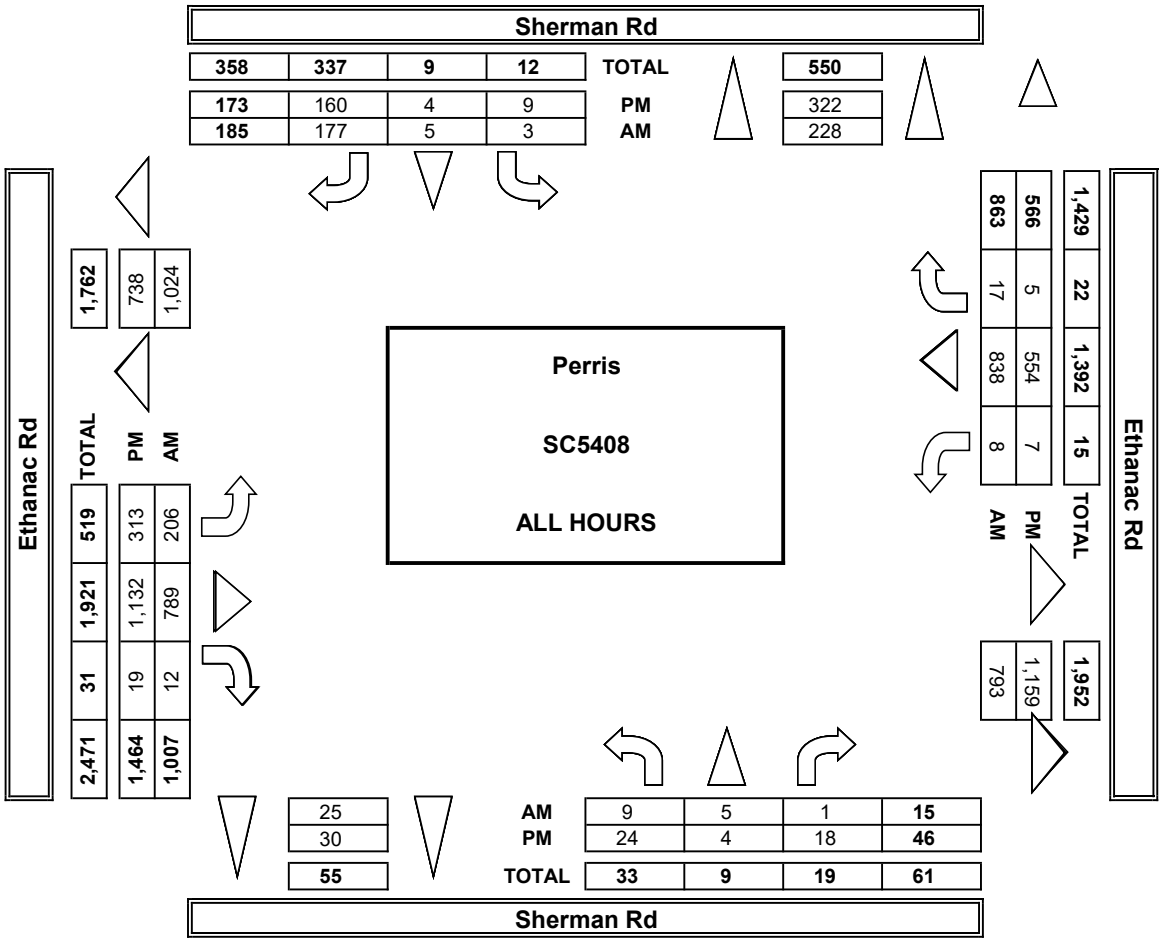
SOUTH LEG

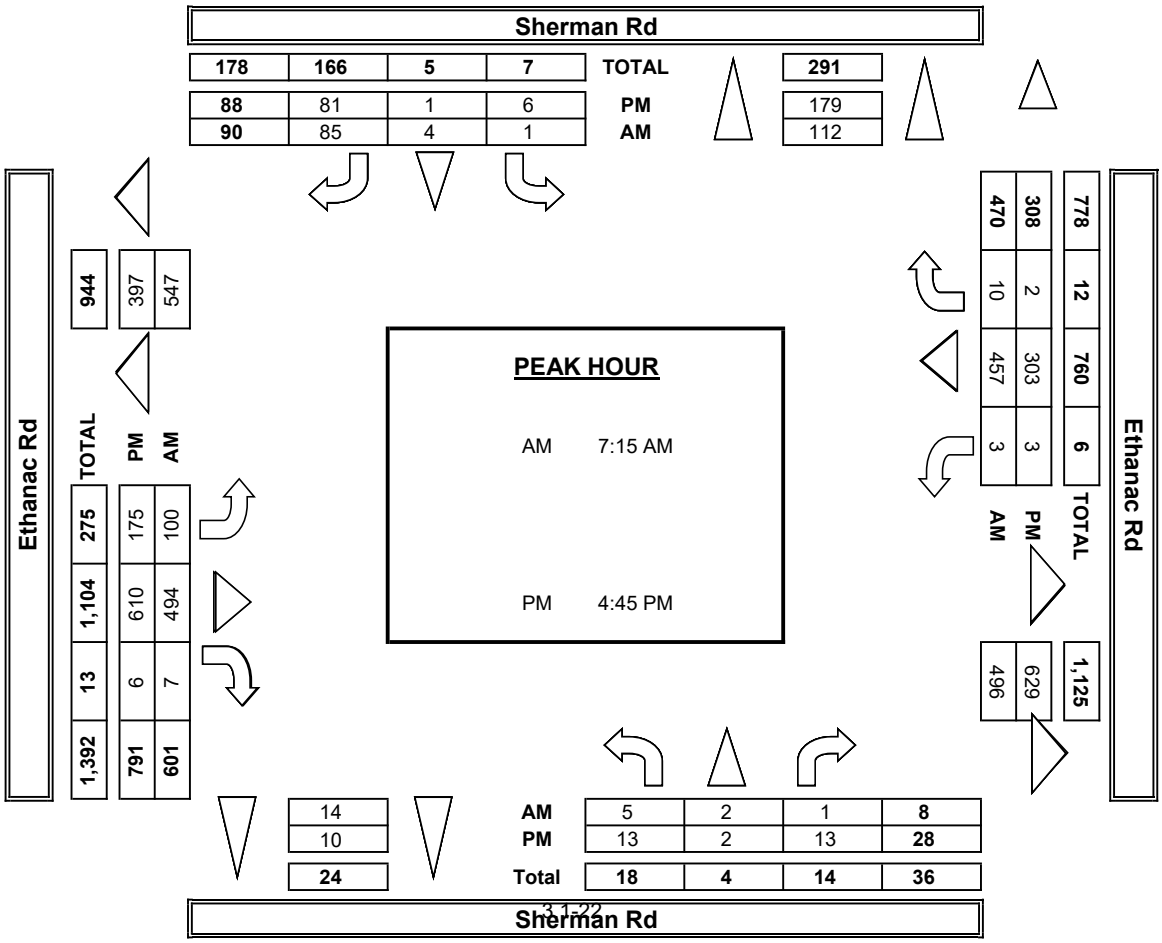
Sherman Rd

		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		E LEG	W LEG	S LEG	N LEG	TOTAL	E LEG	W LEG	S LEG	N LEG	TOTAL	EL	WL	SL	NL	TOTAL
AM	7:00 AM	1	0	2	0	3	1	0	1	0	2	0	0	1	0	1
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	2	0	1	3	0	1	0	1	2	0	1	0	0	1
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	1	2	2	1	6	0	0	0	0	4	0	0	0	0	2
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	5:30 PM	0	0	3	0	3	0	0	3	0	3	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	1	3	0	4	0	1	3	0	4	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

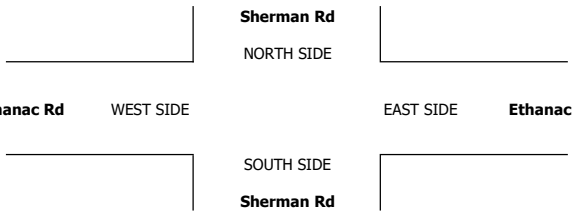
DATE:	LOCATION:	Perris	PROJECT #:	SC5408
5/20/25	NORTH & SOUTH:	Sherman Rd	LOCATION #:	5
TUESDAY	EAST & WEST:	Ethanac Rd	CONTROL:	STOP N/S

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Sherman Rd			SOUTHBOUND Sherman Rd			EASTBOUND Ethanac Rd			WESTBOUND Ethanac Rd				U-TURNS					RTOR			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	0	0	0	0	2	1	8	0	0	15	0	26	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	3	4	10	0	0	2	1	20	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	1	9	0	0	4	1	15	0	0	0	0	0	0	0	0	0
	7:45 AM	1	0	0	0	0	1	0	7	1	0	7	0	17	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	12	0	0	7	1	20	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	5	0	0	3	1	9	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	1	2	6	0	0	1	0	10	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	1	1	4	0	0	3	2	11	0	0	0	0	0	0	0	0	0
	VOLUMES	1	0	0	0	0	8	9	61	1	0	42	6	128	0	0	0	0	0	0	0	0	0
	APPROACH %	100%	0%	0%	0%	0%	100%	13%	86%	1%	0%	88%	13%										
	APP/DEPART	1	/	15	8	/	1	71	/	61	48	/	51	0									
	BEGIN PEAK HR		7:15 AM																				
	VOLUMES	1	0	0	0	0	4	5	38	1	0	20	3	72	0	0	0	0		0	0	0	0
	APPROACH %	100%	0%	0%	0%	0%	100%	11%	86%	2%	0%	87%	13%										
	PEAK HR FACTOR		0.250			0.333			0.786			0.719		0.900									
	APP/DEPART	1	/	8	4	/	1	44	/	38	23	/	25	0									
PM	4:00 PM	0	0	0	0	0	0	2	11	1	0	7	0	21	0	0	0	0	0	0	0	0	0
	4:15 PM	1	0	0	0	0	1	5	8	0	0	2	0	17	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	1	5	8	0	0	5	0	19	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	1	0	0	0	4	13	0	0	5	0	23	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	2	2	9	0	0	2	0	15	0	0	0	0	0	0	0	0	0
	5:15 PM	1	0	0	1	0	0	2	6	0	0	2	0	12	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	1	2	14	0	0	2	0	19	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	1	2	4	0	0	0	0	7	0	0	0	0	0	0	0	0	0
	VOLUMES	2	0	1	1	0	6	24	73	1	0	25	0	133	0	0	0	0	0	0	0	0	0
	APPROACH %	67%	0%	33%	14%	0%	86%	24%	74%	1%	0%	100%	0%										
	APP/DEPART	3	/	24	7	/	1	98	/	75	25	/	33	0									
	BEGIN PEAK HR		4:45 PM																				
	VOLUMES	1	0	1	1	0	3	10	42	0	0	11	0	69	0	0	0	0		0	0	0	0
	APPROACH %	50%	0%	50%	25%	0%	75%	19%	81%	0%	0%	100%	0%										
	PEAK HR FACTOR		0.500			0.500			0.765			0.550		0.750									
	APP/DEPART	2	/	10	4	/	0	52	/	44	11	/	15	0									



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Perris	PROJECT #:	SC5408
5/20/25	NORTH & SOUTH:	Sherman Rd	LOCATION #:	5
TUESDAY	EAST & WEST:	Ethanac Rd	CONTROL:	STOP N/S

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

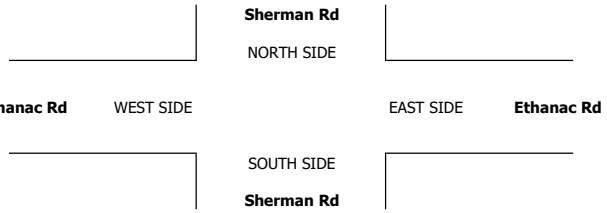
		NORTHBOUND Sherman Rd			SOUTHBOUND Sherman Rd			EASTBOUND Ethanac Rd			WESTBOUND Ethanac Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	1	1	4	0	0	1	0	7
	7:15 AM	0	0	0	0	0	1	0	2	0	0	7	0	10
	7:30 AM	0	0	0	0	0	0	1	3	0	0	1	0	5
	7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	8:30 AM	0	0	0	0	0	0	0	1	0	0	3	0	4
	8:45 AM	0	1	0	0	0	0	0	0	1	0	0	0	2
	VOLUMES	0	1	0	0	0	2	2	12	1	0	13	0	31
	APPROACH %	0%	100%	0%	0%	0%	100%	13%	80%	7%	0%	100%	0%	
	APP/DEPART	1	/	3	2	/	1	15	/	12	13	/	15	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	0	1	1	6	0	0	9	0	17
	APPROACH %	0%	0%	0%	0%	0%	100%	14%	86%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.250			0.438			0.321		0.425
	APP/DEPART	0	/	1	1	/	0	7	/	6	9	/	10	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	3	0	1	0	0	4
	VOLUMES	0	0	0	0	0	1	0	3	0	2	2	0	8
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	50%	50%	0%	
	APP/DEPART	0	/	0	1	/	2	3	/	3	4	/	3	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	0	0	0	0	1	0	0	0	0	2	0	3
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.250			0.000			0.250		0.375
	APP/DEPART	0	/	0	1	/	0	0	/	0	2	/	3	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	
0	0	0	0	

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Perris	PROJECT #:	SC5408
5/20/25	NORTH & SOUTH:	Sherman Rd	LOCATION #:	5
TUESDAY	EAST & WEST:	Ethanac Rd	CONTROL:	STOP N/S

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Sherman Rd			SOUTHBOUND Sherman Rd			EASTBOUND Ethanac Rd			WESTBOUND Ethanac Rd			
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	2	0	3	0	0	5	0	10
	7:15 AM	2	0	0	0	1	2	0	1	0	0	4	0	10
	7:30 AM	0	0	0	0	0	3	0	2	0	0	1	0	6
	7:45 AM	0	0	0	0	0	2	0	4	0	0	1	0	7
	8:00 AM	0	0	0	1	0	0	0	2	2	0	2	0	7
	8:15 AM	0	1	0	0	0	0	0	1	0	0	2	0	4
	8:30 AM	2	0	0	0	0	0	0	4	0	0	1	0	7
	8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	VOLUMES	4	1	0	1	1	9	0	17	2	0	17	0	52
	APPROACH %	80%	20%	0%	9%	9%	82%	0%	89%	11%	0%	100%	0%	
	APP/DEPART	5	/	1	11	/	3	19	/	18	17	/	30	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	2	0	0	1	1	7	0	9	2	0	8	0	30
	APPROACH %	100%	0%	0%	11%	11%	78%	0%	82%	18%	0%	100%	0%	
	PEAK HR FACTOR		0.250			0.750			0.688			0.500		0.750
	APP/DEPART	2	/	0	9	/	3	11	/	10	8	/	17	0
PM	4:00 PM	0	0	0	0	0	0	2	1	0	0	2	0	5
	4:15 PM	0	0	0	0	0	0	0	3	0	0	1	0	4
	4:30 PM	0	0	0	0	0	0	1	3	0	0	0	0	4
	4:45 PM	0	0	0	0	0	0	1	2	0	0	1	0	4
	5:00 PM	0	0	0	0	0	0	1	2	0	0	0	0	3
	5:15 PM	0	0	0	0	0	0	0	3	1	0	0	0	4
	5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	5:45 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
	VOLUMES	0	0	0	0	0	0	5	16	1	0	6	0	28
	APPROACH %	0%	0%	0%	0%	0%	0%	23%	73%	5%	0%	100%	0%	
	APP/DEPART	0	/	5	0	/	1	22	/	16	6	/	6	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	0	0	0	0	0	2	7	1	0	2	0	12
	APPROACH %	0%	0%	0%	0%	0%	0%	20%	70%	10%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.625			0.500		0.750
	APP/DEPART	0	/	2	0	/	1	10	/	7	2	/	2	0

	U-TURNS					RTOR			
	NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
AM TOTAL	0	0	0	0	0	0	0	0	0
AM PEAK HR	0	0	0	0		0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
PM TOTAL	0	0	0	0	0	0	0	0	0
PM PEAK HR	0	0	0	0		0	0	0	0

Sherman Rd

NORTH SIDE

Ethanac Rd WEST SIDE EAST SIDE **Ethanac Rd**

SOUTH SIDE

Sherman Rd

11925

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, May 20, 2025 **CITY:** Perris

JOB #: SC5408 **LOCATION:** CLASS1 Ethanac Rd west of Encanto Dr

AM	COMBINED							PM	COMBINED						
TIME	1	2	3	4	5	6	TOTAL	Time	1	2	3	4	5	6	TOTAL
0:00	25	3	0	1	0	0	29	12:00	220	19	4	15	0	0	258
0:15	32	1	0	0	0	0	33	12:15	278	17	5	16	0	0	316
0:30	27	0	1	1	0	0	29	12:30	243	16	4	11	0	0	274
0:45	24	0	0	0	0	0	24	12:45	241	21	7	17	0	0	286
1:00	27	0	0	3	0	0	30	13:00	204	17	5	11	0	1	238
1:15	16	1	0	2	0	0	19	13:15	259	19	5	8	1	2	294
1:30	15	1	0	0	0	0	16	13:30	233	12	3	13	1	0	262
1:45	21	0	0	2	0	0	23	13:45	283	22	1	16	1	0	323
2:00	12	0	0	2	0	0	14	14:00	256	20	1	12	0	0	289
2:15	20	1	0	2	0	0	23	14:15	304	21	5	13	1	2	346
2:30	29	0	0	3	0	0	32	14:30	280	19	8	8	0	0	315
2:45	26	1	0	1	0	0	28	14:45	322	20	6	12	0	2	362
3:00	25	1	0	0	0	0	26	15:00	301	19	7	6	1	0	334
3:15	27	0	1	1	0	0	29	15:15	304	26	8	8	0	0	346
3:30	28	1	0	0	0	0	29	15:30	327	16	4	6	0	0	353
3:45	42	0	0	3	0	0	45	15:45	310	23	6	8	0	2	349
4:00	55	2	0	4	0	0	61	16:00	309	26	3	6	0	5	349
4:15	76	0	0	3	0	0	79	16:15	307	21	1	8	0	2	339
4:30	87	4	0	5	0	0	96	16:30	297	18	1	7	0	0	323
4:45	91	4	0	1	0	0	96	16:45	341	24	4	8	0	1	378
5:00	85	6	4	9	0	0	104	17:00	352	16	1	2	1	0	372
5:15	116	10	1	5	0	1	133	17:15	308	19	1	4	0	0	332
5:30	158	13	1	8	0	0	180	17:30	309	21	3	2	2	0	337
5:45	181	7	5	5	0	1	199	17:45	322	8	1	3	1	0	335
6:00	172	21	6	5	0	1	205	18:00	282	11	1	3	0	0	297
6:15	216	23	4	6	0	0	249	18:15	272	13	2	0	0	0	287
6:30	199	16	5	12	1	2	235	18:30	241	13	2	4	0	0	260
6:45	215	35	7	20	0	1	278	18:45	211	11	0	1	0	0	223
7:00	246	25	11	11	0	0	293	19:00	204	9	2	1	0	0	216
7:15	254	24	11	13	0	4	306	19:15	199	15	1	3	0	0	218
7:30	316	30	5	17	0	1	369	19:30	193	8	0	2	0	0	203
7:45	326	20	4	12	0	3	365	19:45	180	6	1	3	0	0	190
8:00	274	32	5	11	0	0	322	20:00	175	2	1	2	0	0	180
8:15	256	23	3	7	0	1	290	20:15	201	5	1	6	0	0	213
8:30	240	16	9	10	1	0	276	20:30	174	7	0	0	0	0	181
8:45	227	19	2	7	0	0	255	20:45	182	4	0	1	0	0	187
9:00	180	9	4	12	0	0	205	21:00	151	4	0	1	0	0	156
9:15	163	30	6	9	1	0	209	21:15	145	0	0	4	0	0	149
9:30	177	23	5	6	0	0	211	21:30	122	1	0	1	1	0	125
9:45	187	24	7	5	0	0	223	21:45	139	2	0	0	0	0	141
10:00	193	18	6	11	1	0	229	22:00	86	1	0	1	0	0	88
10:15	197	15	5	12	1	0	230	22:15	74	0	0	2	0	0	76
10:30	190	17	1	9	2	1	220	22:30	70	2	0	1	0	0	73
10:45	178	17	5	12	0	0	212	22:45	60	0	0	2	0	0	62
11:00	212	20	3	13	1	0	249	23:00	49	2	0	0	0	0	51
11:15	209	20	6	12	0	0	247	23:15	48	0	1	0	0	0	49
11:30	204	16	4	15	0	0	239	23:30	41	2	0	1	0	0	44
11:45	199	20	3	10	1	1	234	23:45	38	0	0	1	0	0	39
TOTAL	6,475	569	140	318	9	17	7,528	TOTAL	10,447	578	106	260	10	17	11,418

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	1,362

PM PEAK HOUR	4:45 PM
PM PEAK VOLUME	1,419

TOTAL: AM+PM	16,922	1,147	246	578	19	34	18,946
% OF TOTAL	89.3%	6.1%	1.3%	3.1%	0.1%	0.2%	100.0%

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	Buses

11925

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, May 20, 2025 **CITY:** Perris

JOB #: SC5408 **LOCATION:** CLASS2 Ethanac Rd west of Sherman Rd

AM	COMBINED						
TIME	1	2	3	4	5	6	TOTAL
0:00	26	0	0	1	0	0	27
0:15	24	0	0	0	0	0	24
0:30	20	0	0	1	0	0	21
0:45	18	1	0	0	0	0	19
1:00	19	0	1	2	0	0	22
1:15	19	0	0	2	0	0	21
1:30	14	0	0	0	1	0	15
1:45	14	0	0	2	0	0	16
2:00	7	0	0	2	0	0	9
2:15	20	0	1	2	0	0	23
2:30	19	0	0	3	0	0	22
2:45	17	0	0	1	0	0	18
3:00	19	0	0	0	0	0	19
3:15	23	0	0	1	0	0	24
3:30	18	0	0	0	0	0	18
3:45	32	0	0	3	0	0	35
4:00	38	0	2	2	0	0	42
4:15	61	5	0	3	0	0	69
4:30	62	5	1	5	0	0	73
4:45	70	5	0	1	0	0	76
5:00	63	6	2	7	0	0	78
5:15	91	6	1	1	0	1	100
5:30	127	13	3	1	0	0	144
5:45	134	4	7	2	0	1	148
6:00	138	14	6	3	0	1	162
6:15	175	13	3	2	1	0	194
6:30	156	12	2	8	0	2	180
6:45	197	26	2	5	0	1	231
7:00	234	26	7	10	0	2	279
7:15	209	19	10	9	0	2	249
7:30	284	14	5	6	0	1	310
7:45	283	17	1	7	0	3	311
8:00	252	19	1	6	0	0	278
8:15	198	8	1	3	0	0	210
8:30	190	10	4	7	1	1	213
8:45	170	9	1	1	0	0	181
9:00	138	9	3	8	0	0	158
9:15	147	18	4	4	0	0	173
9:30	140	15	2	4	0	0	161
9:45	148	15	5	5	0	0	173
10:00	150	15	1	7	0	0	173
10:15	151	5	2	7	0	0	165
10:30	165	10	2	4	2	1	184
10:45	133	16	1	8	0	0	158
11:00	159	12	3	7	1	0	182
11:15	167	10	2	6	0	0	185
11:30	168	16	5	7	0	0	196
11:45	163	9	1	9	0	1	183
TOTAL	5,270	382	92	185	6	17	5,952

AM PEAK HOUR	7:00 AM
AM PEAK VOLUME	1,149

PM	COMBINED						
Time	1	2	3	4	5	6	TOTAL
12:00	153	15	2	9	0	0	179
12:15	184	13	2	6	0	0	205
12:30	180	9	1	9	0	0	199
12:45	165	10	7	12	0	0	194
13:00	172	15	4	7	0	1	199
13:15	191	17	1	4	0	1	214
13:30	186	14	2	6	2	1	211
13:45	230	9	1	12	2	0	254
14:00	222	16	5	7	0	0	250
14:15	251	18	7	7	1	0	284
14:30	216	13	3	6	0	1	239
14:45	263	5	8	3	1	1	281
15:00	242	12	5	8	0	0	267
15:15	241	11	3	4	0	0	259
15:30	260	15	2	3	0	0	280
15:45	245	19	5	6	0	4	279
16:00	210	21	0	5	0	3	239
16:15	245	17	0	4	0	2	268
16:30	219	19	0	4	0	0	242
16:45	277	22	2	4	0	1	306
17:00	285	15	0	3	1	0	304
17:15	283	11	1	4	0	0	299
17:30	258	19	0	1	1	0	279
17:45	251	7	3	3	1	0	265
18:00	245	13	0	2	0	0	260
18:15	232	8	2	1	0	0	243
18:30	201	13	1	1	0	0	216
18:45	181	8	3	1	0	0	193
19:00	172	11	0	2	0	0	185
19:15	189	13	2	3	0	0	207
19:30	161	6	0	0	0	0	167
19:45	145	4	0	2	0	0	151
20:00	129	5	0	0	0	0	134
20:15	176	7	1	4	0	0	188
20:30	140	4	0	0	0	0	144
20:45	149	5	0	1	0	0	155
21:00	123	5	0	2	0	0	130
21:15	126	0	2	1	0	0	129
21:30	100	1	0	1	0	0	102
21:45	104	1	0	1	0	0	106
22:00	69	2	0	0	0	0	71
22:15	62	1	0	1	0	0	64
22:30	53	1	0	0	0	0	54
22:45	43	0	0	1	0	0	44
23:00	43	2	0	0	0	0	45
23:15	41	0	1	0	0	0	42
23:30	41	2	0	0	0	0	43
23:45	29	0	0	1	0	0	30
TOTAL	8,383	454	76	162	9	15	9,099

PM PEAK HOUR	4:45 PM
PM PEAK VOLUME	1,188

TOTAL: AM+PM	13,653	836	168	347	15	32	15,051
% OF TOTAL	90.7%	5.6%	1.1%	2.3%	0.1%	0.2%	100.0%

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	Buses

11925

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Tuesday, May 20, 2025 **CITY:** Perris

JOB #: SC5408 **LOCATION:** CLASS3 Sherman Rd south of Ethanac Rd

AM	COMBINED						
TIME	1	2	3	4	5	6	TOTAL
0:00	0	0	0	0	0	0	0
0:15	0	0	0	0	0	0	0
0:30	0	0	0	0	0	0	0
0:45	1	0	0	0	0	0	1
1:00	0	0	0	0	0	0	0
1:15	0	0	0	1	0	0	1
1:30	0	0	0	0	0	0	0
1:45	3	0	0	0	0	0	3
2:00	2	0	0	1	0	0	3
2:15	3	0	0	2	0	0	5
2:30	1	0	0	3	0	0	4
2:45	1	0	0	1	0	0	2
3:00	0	0	0	0	0	0	0
3:15	0	0	0	1	0	0	1
3:30	1	0	0	0	0	0	1
3:45	1	0	0	2	0	0	3
4:00	3	0	1	1	0	0	5
4:15	2	0	0	1	0	0	3
4:30	0	0	1	2	0	0	3
4:45	0	0	0	0	0	0	0
5:00	1	0	1	0	0	0	2
5:15	0	1	0	1	0	0	2
5:30	3	0	0	0	0	0	3
5:45	3	0	0	0	0	0	3
6:00	4	1	0	0	0	0	5
6:15	1	0	0	3	0	0	4
6:30	6	0	0	1	0	0	7
6:45	8	0	0	0	0	0	8
7:00	2	0	0	0	0	0	2
7:15	0	0	0	3	0	0	3
7:30	2	0	0	0	0	0	2
7:45	8	2	0	0	0	0	10
8:00	5	0	0	2	0	0	7
8:15	6	0	0	1	0	0	7
8:30	4	0	0	2	0	0	6
8:45	1	0	2	0	0	0	3
9:00	6	0	0	1	0	0	7
9:15	2	6	0	1	0	0	9
9:30	3	3	0	1	0	0	7
9:45	4	1	0	1	0	0	6
10:00	2	0	0	3	0	0	5
10:15	2	0	0	1	0	0	3
10:30	0	0	0	0	0	0	0
10:45	3	0	0	3	0	0	6
11:00	5	0	0	1	0	0	6
11:15	4	2	0	1	0	0	7
11:30	7	0	0	1	0	0	8
11:45	5	0	0	2	0	0	7
TOTAL	115	16	5	44	0	0	180

PM	COMBINED						
Time	1	2	3	4	5	6	TOTAL
12:00	4	2	0	1	0	0	7
12:15	6	5	1	3	0	0	15
12:30	6	0	0	1	0	0	7
12:45	3	1	0	2	0	0	6
13:00	1	0	0	1	0	0	2
13:15	5	1	0	1	0	0	7
13:30	8	0	0	1	0	0	9
13:45	3	2	0	3	0	0	8
14:00	3	1	0	2	0	0	6
14:15	7	2	2	1	0	0	12
14:30	0	0	0	1	0	0	1
14:45	4	1	0	0	0	0	5
15:00	4	0	0	2	0	0	6
15:15	9	0	0	1	0	0	10
15:30	3	0	1	0	0	0	4
15:45	5	2	0	1	0	0	8
16:00	7	1	0	0	0	0	8
16:15	2	1	0	0	0	0	3
16:30	6	0	1	0	0	0	7
16:45	5	1	0	0	0	0	6
17:00	9	0	0	0	0	0	9
17:15	8	1	0	1	0	0	10
17:30	13	0	0	0	0	0	13
17:45	19	0	1	0	0	0	20
18:00	12	1	0	0	0	0	13
18:15	8	0	0	0	0	0	8
18:30	4	0	0	1	0	0	5
18:45	0	0	0	0	0	0	0
19:00	1	0	0	0	0	0	1
19:15	3	0	0	0	0	0	3
19:30	6	0	0	0	0	0	6
19:45	0	0	0	0	0	0	0
20:00	1	1	0	1	0	0	3
20:15	6	0	2	0	0	0	8
20:30	3	0	0	0	0	0	3
20:45	23	0	0	1	0	0	24
21:00	7	0	0	1	0	0	8
21:15	0	0	0	0	0	0	0
21:30	1	0	0	0	0	0	1
21:45	0	0	0	0	0	0	0
22:00	2	0	0	0	0	0	2
22:15	2	0	0	1	0	0	3
22:30	1	0	0	0	0	0	1
22:45	1	0	0	0	0	0	1
23:00	0	0	0	1	0	0	1
23:15	1	0	0	0	0	0	1
23:30	0	0	2	0	0	0	2
23:45	0	0	0	0	0	0	0
TOTAL	222	23	10	28	0	0	283

AM PEAK HOUR	7:45 AM
AM PEAK VOLUME	30
PM PEAK HOUR	5:15 PM
PM PEAK VOLUME	56

		1	2	3	4	5	6	
CLASS 1	PASSENGER VEHICLES							
CLASS 2	2-AXLE TRUCKS							
CLASS 3	3-AXLE TRUCKS							
CLASS 4	4 OR MORE AXLE TRUCKS							
CLASS 5	RV							
CLASS 6	Buses							
TOTAL: AM+PM		337	39	15	72	0	0	463
% OF TOTAL		72.8%	8.4%	3.2%	15.6%	0.0%	0.0%	100.0%

APPENDIX 3.2:

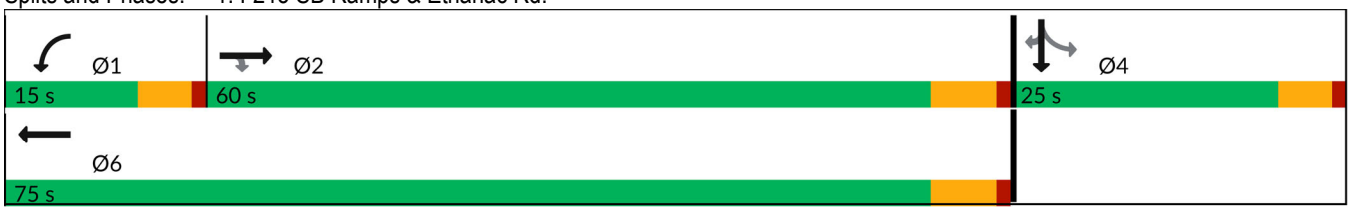
EXISTING (2025) INTERSECTION ANALYSIS

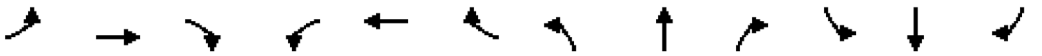
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Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	807	498	90	704	1	342
Future Volume (vph)	807	498	90	704	1	342
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Detector Phase	2	2	1	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.4	23.4	10.0	24.5	24.5	24.5
Total Split (s)	60.0	60.0	15.0	75.0	25.0	25.0
Total Split (%)	60.0%	60.0%	15.0%	75.0%	25.0%	25.0%
Yellow Time (s)	5.0	5.0	4.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	41.7	41.7	9.3	52.1	13.1	13.1
Actuated g/C Ratio	0.54	0.54	0.12	0.67	0.17	0.17
v/c Ratio	0.83	0.47	0.44	0.30	0.49	0.71
Control Delay (s/veh)	24.5	2.7	45.9	5.3	40.3	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.5	2.7	45.9	5.3	40.3	18.5
LOS	C	A	D	A	D	B
Approach Delay (s/veh)	16.2			9.9	25.0	
Approach LOS	B			A	C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 77.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay (s/veh): 15.9	Intersection LOS: B
Intersection Capacity Utilization 90.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: I-215 SB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	807	498	90	704	0	0	0	0	143	1	342
Future Volume (veh/h)	0	807	498	90	704	0	0	0	0	143	1	342
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	841	414	94	733	0				149	1	202
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1006	842	123	2425	0				295	2	264
Arrive On Green	0.00	0.53	0.53	0.07	0.67	0.00				0.16	0.16	0.16
Sat Flow, veh/h	0	1900	1590	1810	3705	0				1798	12	1610
Grp Volume(v), veh/h	0	841	414	94	733	0				150	0	202
Grp Sat Flow(s),veh/h/ln	0	1900	1590	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	25.0	11.1	3.4	5.6	0.0				5.1	0.0	8.0
Cycle Q Clear(g_c), s	0.0	25.0	11.1	3.4	5.6	0.0				5.1	0.0	8.0
Prop In Lane	0.00		1.00	1.00		0.00				0.99		1.00
Lane Grp Cap(c), veh/h	0	1006	842	123	2425	0				297	0	264
V/C Ratio(X)	0.00	0.84	0.49	0.77	0.30	0.00				0.51	0.00	0.77
Avail Cap(c_a), veh/h	0	1533	1283	270	3722	0				541	0	481
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.3	10.0	30.7	4.5	0.0				25.5	0.0	26.7
Incr Delay (d2), s/veh	0.0	2.6	0.4	9.6	0.1	0.0				1.3	0.0	4.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.9	3.1	1.7	1.3	0.0				2.0	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	15.9	10.5	40.3	4.6	0.0				26.8	0.0	31.3
LnGrp LOS		B	B	D	A					C		C
Approach Vol, veh/h		1255			827						352	
Approach Delay, s/veh		14.1			8.6						29.4	
Approach LOS		B			A						C	

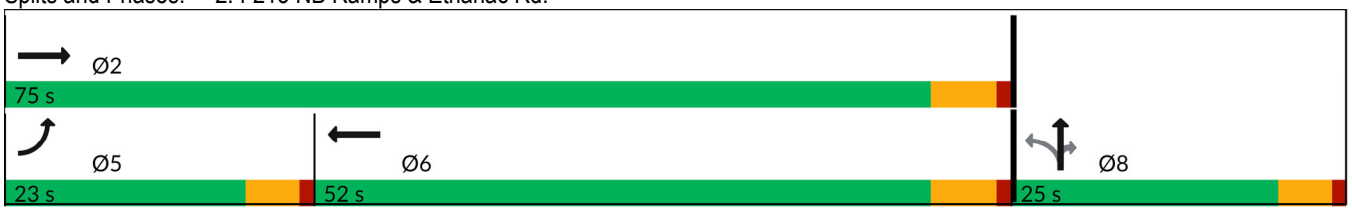
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	9.5	41.4		16.0		50.9						
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0						
Max Green Setting (Gmax), s	10.0	54.0		20.0		69.0						
Max Q Clear Time (g_c+I1), s	5.4	27.0		10.0		7.6						
Green Ext Time (p_c), s	0.1	8.4		1.0		5.5						

Intersection Summary												
HCM 7th Control Delay, s/veh			14.5									
HCM 7th LOS			B									

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Configurations					
Traffic Volume (vph)	303	647	479	0	162
Future Volume (vph)	303	647	479	0	162
Turn Type	Prot	NA	NA	NA	Perm
Protected Phases	5	2	6	8	
Permitted Phases					8
Detector Phase	5	2	6	8	8
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.5	23.4	23.4	23.4
Total Split (s)	23.0	75.0	52.0	25.0	25.0
Total Split (%)	23.0%	75.0%	52.0%	25.0%	25.0%
Yellow Time (s)	4.0	5.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	None	None	None	None
Act Effct Green (s)	18.0	68.0	44.9	19.6	19.6
Actuated g/C Ratio	0.18	0.69	0.46	0.20	0.20
v/c Ratio	0.97	0.52	0.97	0.92	0.37
Control Delay (s/veh)	84.4	9.2	50.6	72.1	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	84.4	9.2	50.6	72.1	8.0
LOS	F	A	D	E	A
Approach Delay (s/veh)		33.2	50.6	50.3	
Approach LOS		C	D	D	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 98.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay (s/veh): 43.0	Intersection LOS: D
Intersection Capacity Utilization 90.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: I-215 NB Ramps & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	303	647	0	0	479	297	315	0	162	0	0	0
Future Volume (veh/h)	303	647	0	0	479	297	315	0	162	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	319	681	0	0	504	247	332	0	111			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	338	1299	0	0	536	263	365	0	325			
Arrive On Green	0.19	0.68	0.00	0.00	0.45	0.45	0.20	0.00	0.20			
Sat Flow, veh/h	1810	1900	0	0	1204	590	1810	0	1610			
Grp Volume(v), veh/h	319	681	0	0	0	751	332	0	111			
Grp Sat Flow(s),veh/h/ln	1810	1900	0	0	0	1794	1810	0	1610			
Q Serve(g_s), s	16.8	17.0	0.0	0.0	0.0	38.5	17.3	0.0	5.7			
Cycle Q Clear(g_c), s	16.8	17.0	0.0	0.0	0.0	38.5	17.3	0.0	5.7			
Prop In Lane	1.00		0.00	0.00		0.33	1.00		1.00			
Lane Grp Cap(c), veh/h	338	1299	0	0	0	798	365	0	325			
V/C Ratio(X)	0.94	0.52	0.00	0.00	0.00	0.94	0.91	0.00	0.34			
Avail Cap(c_a), veh/h	338	1361	0	0	0	857	376	0	334			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	38.6	7.5	0.0	0.0	0.0	25.5	37.6	0.0	32.9			
Incr Delay (d2), s/veh	34.3	0.3	0.0	0.0	0.0	17.4	25.0	0.0	0.6			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	10.4	5.5	0.0	0.0	0.0	18.7	9.6	0.0	2.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	73.0	7.8	0.0	0.0	0.0	42.9	62.5	0.0	33.6			
LnGrp LOS	E	A				D	E		C			
Approach Vol, veh/h		1000			751			443				
Approach Delay, s/veh		28.6			42.9			55.3				
Approach LOS		C			D			E				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		71.9			23.0	48.9		24.4				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		69.0			18.0	46.0		20.0				
Max Q Clear Time (g_c+I1), s		19.0			18.8	40.5		19.3				
Green Ext Time (p_c), s		5.1			0.0	2.4		0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh			38.9									
HCM 7th LOS			D									

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	751	57	32	728	48	16
Future Vol, veh/h	751	57	32	728	48	16
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	825	63	35	800	53	18

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	890	0	1729	859
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	870	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	770	-	98	359
Stage 1	-	-	-	-	418	-
Stage 2	-	-	-	-	413	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	768	-	94	359
Mov Cap-2 Maneuver	-	-	-	-	228	-
Stage 1	-	-	-	-	418	-
Stage 2	-	-	-	-	394	-

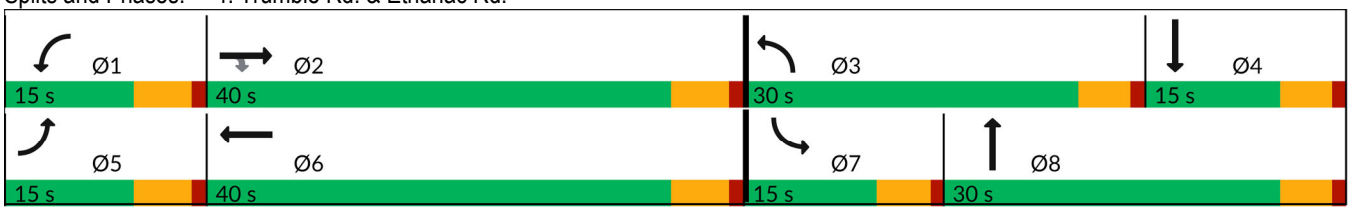
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.42	24.87
HCM LOS			C

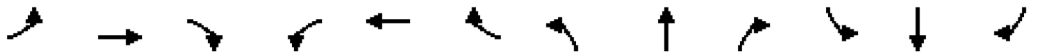
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	251	-	-	768	-
HCM Lane V/C Ratio	0.281	-	-	0.046	-
HCM Ctrl Dly (s/v)	24.9	-	-	9.9	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.1	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	92	635	27	36	568	79	17	22	28
Future Volume (vph)	92	635	27	36	568	79	17	22	28
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	5	2	2	1	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.3	35.3	35.3	10.3	27.8	9.9	29.9	9.9	10.4
Total Split (s)	15.0	40.0	40.0	15.0	40.0	30.0	30.0	15.0	15.0
Total Split (%)	15.0%	40.0%	40.0%	15.0%	40.0%	30.0%	30.0%	15.0%	15.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.9	3.9	3.9	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	4.9	4.9	4.9	4.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	8.1	38.8	38.8	6.5	35.0	8.3	12.2	6.0	8.3
Actuated g/C Ratio	0.11	0.52	0.52	0.09	0.47	0.11	0.16	0.08	0.11
v/c Ratio	0.52	0.70	0.03	0.25	0.71	0.43	0.17	0.17	0.52
Control Delay (s/veh)	46.2	24.2	0.1	41.3	26.8	42.2	15.7	41.0	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.2	24.2	0.1	41.3	26.8	42.2	15.7	41.0	17.3
LOS	D	C	A	D	C	D	B	D	B
Approach Delay (s/veh)		26.1			27.6		32.1		20.5
Approach LOS		C			C		C		C

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 75	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay (s/veh): 26.6	Intersection LOS: C
Intersection Capacity Utilization 67.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: Trumble Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	635	27	36	568	14	79	17	32	22	28	114
Future Volume (veh/h)	92	635	27	36	568	14	79	17	32	22	28	114
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	100	690	21	39	617	13	86	18	20	24	30	89
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	131	793	670	74	716	15	122	107	119	51	38	113
Arrive On Green	0.07	0.42	0.42	0.04	0.39	0.39	0.07	0.13	0.13	0.03	0.09	0.09
Sat Flow, veh/h	1810	1900	1606	1810	1854	39	1810	822	913	1810	422	1252
Grp Volume(v), veh/h	100	690	21	39	0	630	86	0	38	24	0	119
Grp Sat Flow(s),veh/h/ln	1810	1900	1606	1810	0	1893	1810	0	1736	1810	0	1675
Q Serve(g_s), s	2.9	17.7	0.4	1.1	0.0	16.3	2.5	0.0	1.0	0.7	0.0	3.7
Cycle Q Clear(g_c), s	2.9	17.7	0.4	1.1	0.0	16.3	2.5	0.0	1.0	0.7	0.0	3.7
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.53	1.00		0.75
Lane Grp Cap(c), veh/h	131	793	670	74	0	731	122	0	226	51	0	152
V/C Ratio(X)	0.76	0.87	0.03	0.52	0.00	0.86	0.70	0.00	0.17	0.47	0.00	0.78
Avail Cap(c_a), veh/h	330	1239	1047	330	0	1234	853	0	818	343	0	318
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.2	14.2	9.2	25.0	0.0	15.0	24.3	0.0	20.6	25.5	0.0	23.7
Incr Delay (d2), s/veh	3.4	2.7	0.0	2.1	0.0	1.5	2.7	0.0	0.1	2.5	0.0	3.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	6.1	0.1	0.5	0.0	5.5	1.0	0.0	0.4	0.3	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.6	16.9	9.2	27.1	0.0	16.5	27.0	0.0	20.7	28.0	0.0	27.0
LnGrp LOS	C	B	A	C		B	C		C	C		C
Approach Vol, veh/h		811			669			124			143	
Approach Delay, s/veh		18.0			17.2			25.1			27.2	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	27.5	8.5	9.7	9.2	25.8	6.4	11.8
Change Period (Y+Rc), s	5.3	5.3	4.9	4.9	5.3	5.3	4.9	4.9
Max Green Setting (Gmax), s	9.7	34.7	25.1	10.1	9.7	34.7	10.1	25.1
Max Q Clear Time (g_c+I1), s	3.1	19.7	4.5	5.7	4.9	18.3	2.7	3.0
Green Ext Time (p_c), s	0.0	2.4	0.1	0.1	0.0	2.2	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	18.9
HCM 7th LOS	B

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	106	548	12	3	504	12	10	2	1	3	6	104
Future Vol, veh/h	106	548	12	3	504	12	10	2	1	3	6	104
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	114	589	13	3	542	13	11	2	1	3	6	112

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	555	0	0	602	0	0	1375	1385	596	1373	1385	548
Stage 1	-	-	-	-	-	-	824	824	-	555	555	-
Stage 2	-	-	-	-	-	-	552	561	-	818	830	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1026	-	-	985	-	-	124	145	507	124	145	540
Stage 1	-	-	-	-	-	-	370	390	-	520	517	-
Stage 2	-	-	-	-	-	-	522	513	-	373	388	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1026	-	-	985	-	-	78	120	507	101	120	540
Mov Cap-2 Maneuver	-	-	-	-	-	-	78	120	-	101	120	-
Stage 1	-	-	-	-	-	-	308	325	-	517	514	-
Stage 2	-	-	-	-	-	-	407	511	-	308	323	-

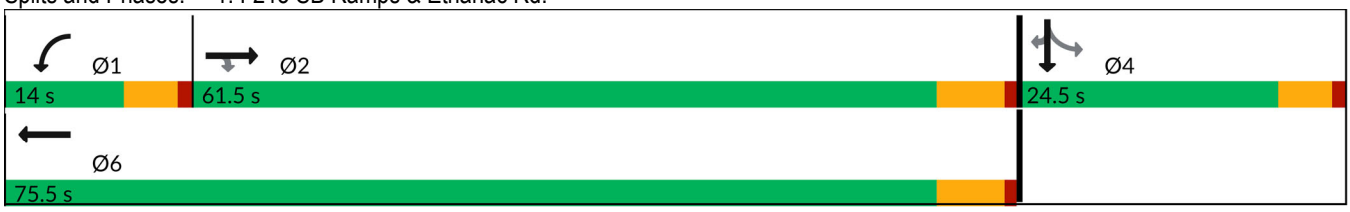
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.42	0.05	53.35	17.23
HCM LOS			F	C

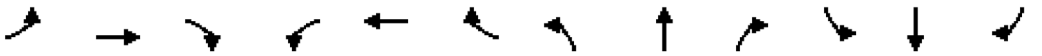
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	88	285	-	-	10	-	-	415
HCM Lane V/C Ratio	0.158	0.111	-	-	0.003	-	-	0.293
HCM Ctrl Dly (s/v)	53.4	8.9	0	-	8.7	0	-	17.2
HCM Lane LOS	F	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.5	0.4	-	-	0	-	-	1.2

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	706	344	108	691	2	365
Future Volume (vph)	706	344	108	691	2	365
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Detector Phase	2	2	1	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.4	23.4	10.0	24.5	24.5	24.5
Total Split (s)	61.5	61.5	14.0	75.5	24.5	24.5
Total Split (%)	61.5%	61.5%	14.0%	75.5%	24.5%	24.5%
Yellow Time (s)	5.0	5.0	4.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	38.4	38.4	9.0	48.7	16.8	16.8
Actuated g/C Ratio	0.50	0.50	0.12	0.63	0.22	0.22
v/c Ratio	0.77	0.36	0.53	0.31	0.69	0.66
Control Delay (s/veh)	23.4	2.4	49.3	6.6	42.4	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.4	2.4	49.3	6.6	42.4	15.1
LOS	C	A	D	A	D	B
Approach Delay (s/veh)	16.5			12.4	26.6	
Approach LOS	B			B	C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 77.4	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay (s/veh): 17.7	Intersection LOS: B
Intersection Capacity Utilization 82.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: I-215 SB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	706	344	108	691	0	0	0	0	261	2	365
Future Volume (veh/h)	0	706	344	108	691	0	0	0	0	261	2	365
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	728	276	111	712	0				269	2	216
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	889	753	144	2266	0				352	3	315
Arrive On Green	0.00	0.47	0.47	0.08	0.63	0.00				0.20	0.20	0.20
Sat Flow, veh/h	0	1900	1610	1810	3705	0				1797	13	1610
Grp Volume(v), veh/h	0	728	276	111	712	0				271	0	216
Grp Sat Flow(s),veh/h/ln	0	1900	1610	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	20.6	6.9	3.7	5.7	0.0				8.8	0.0	7.8
Cycle Q Clear(g_c), s	0.0	20.6	6.9	3.7	5.7	0.0				8.8	0.0	7.8
Prop In Lane	0.00		1.00	1.00		0.00				0.99		1.00
Lane Grp Cap(c), veh/h	0	889	753	144	2266	0				355	0	315
V/C Ratio(X)	0.00	0.82	0.37	0.77	0.31	0.00				0.76	0.00	0.68
Avail Cap(c_a), veh/h	0	1691	1433	261	4024	0				566	0	504
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	14.3	10.7	28.1	5.4	0.0				23.7	0.0	23.3
Incr Delay (d2), s/veh	0.0	1.9	0.3	8.4	0.1	0.0				3.4	0.0	2.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.4	2.0	1.8	1.4	0.0				3.5	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	16.2	11.0	36.5	5.5	0.0				27.1	0.0	25.9
LnGrp LOS		B	B	D	A					C		C
Approach Vol, veh/h		1004			823						487	
Approach Delay, s/veh		14.8			9.6						26.6	
Approach LOS		B			A						C	

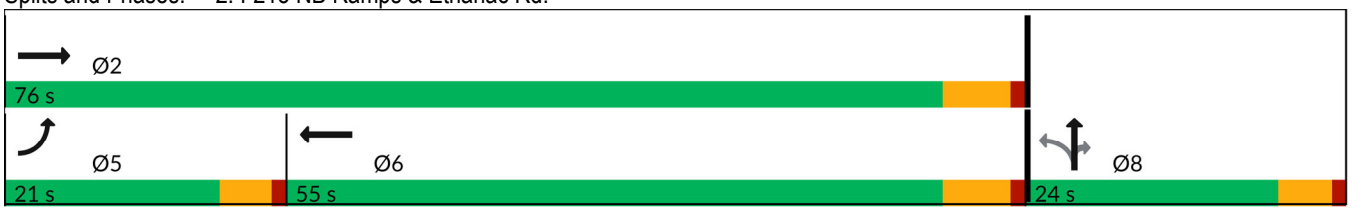
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	10.0	35.2		17.2		45.1						
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0						
Max Green Setting (Gmax), s	9.0	55.5		19.5		69.5						
Max Q Clear Time (g_c+I1), s	5.7	22.6		10.8		7.7						
Green Ext Time (p_c), s	0.1	6.6		1.4		5.3						

Intersection Summary												
HCM 7th Control Delay, s/veh			15.4									
HCM 7th LOS			B									

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Configurations					
Traffic Volume (vph)	262	705	402	0	251
Future Volume (vph)	262	705	402	0	251
Turn Type	Prot	NA	NA	NA	Perm
Protected Phases	5	2	6	8	
Permitted Phases					8
Detector Phase	5	2	6	8	8
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.5	23.4	23.4	23.4
Total Split (s)	21.0	76.0	55.0	24.0	24.0
Total Split (%)	21.0%	76.0%	55.0%	24.0%	24.0%
Yellow Time (s)	4.0	5.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	None	None	None	None
Act Effct Green (s)	15.9	53.1	32.2	19.3	19.3
Actuated g/C Ratio	0.19	0.64	0.39	0.23	0.23
v/c Ratio	0.80	0.61	0.84	0.99	0.46
Control Delay (s/veh)	53.1	11.2	33.3	78.7	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	53.1	11.2	33.3	78.7	7.3
LOS	D	B	C	E	A
Approach Delay (s/veh)		22.6	33.3	51.0	
Approach LOS		C	C	D	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 83.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay (s/veh): 33.8	Intersection LOS: C
Intersection Capacity Utilization 82.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: I-215 NB Ramps & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	262	705	0	0	402	181	396	0	251	0	0	0
Future Volume (veh/h)	262	705	0	0	402	181	396	0	251	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	273	734	0	0	419	153	413	0	182			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	317	1155	0	0	488	178	450	0	400			
Arrive On Green	0.18	0.61	0.00	0.00	0.37	0.37	0.25	0.00	0.25			
Sat Flow, veh/h	1810	1900	0	0	1328	485	1810	0	1610			
Grp Volume(v), veh/h	273	734	0	0	0	572	413	0	182			
Grp Sat Flow(s),veh/h/ln	1810	1900	0	0	0	1813	1810	0	1610			
Q Serve(g_s), s	11.2	18.9	0.0	0.0	0.0	22.3	17.0	0.0	7.3			
Cycle Q Clear(g_c), s	11.2	18.9	0.0	0.0	0.0	22.3	17.0	0.0	7.3			
Prop In Lane	1.00		0.00	0.00		0.27	1.00		1.00			
Lane Grp Cap(c), veh/h	317	1155	0	0	0	666	450	0	400			
V/C Ratio(X)	0.86	0.64	0.00	0.00	0.00	0.86	0.92	0.00	0.45			
Avail Cap(c_a), veh/h	379	1740	0	0	0	1162	450	0	400			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	30.6	9.6	0.0	0.0	0.0	22.4	28.0	0.0	24.3			
Incr Delay (d2), s/veh	15.9	0.6	0.0	0.0	0.0	3.4	23.9	0.0	0.8			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.9	6.1	0.0	0.0	0.0	9.0	9.4	0.0	2.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	46.5	10.2	0.0	0.0	0.0	25.8	51.8	0.0	25.2			
LnGrp LOS	D	B				C	D		C			
Approach Vol, veh/h		1007			572			595				
Approach Delay, s/veh		20.0			25.8			43.7				
Approach LOS		C			C			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		52.5			18.4	34.1		24.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		70.0			16.0	49.0		19.0				
Max Q Clear Time (g_c+I1), s		20.9			13.2	24.3		19.0				
Green Ext Time (p_c), s		5.7			0.2	3.8		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh			28.0									
HCM 7th LOS			C									

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	865	91	27	537	46	46
Future Vol, veh/h	865	91	27	537	46	46
Conflicting Peds, #/hr	0	3	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	920	97	29	571	49	49

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1020	0	1600	972
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	629	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	688	-	118	309
Stage 1	-	-	-	-	370	-
Stage 2	-	-	-	-	535	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	686	-	113	308
Mov Cap-2 Maneuver	-	-	-	-	246	-
Stage 1	-	-	-	-	369	-
Stage 2	-	-	-	-	513	-

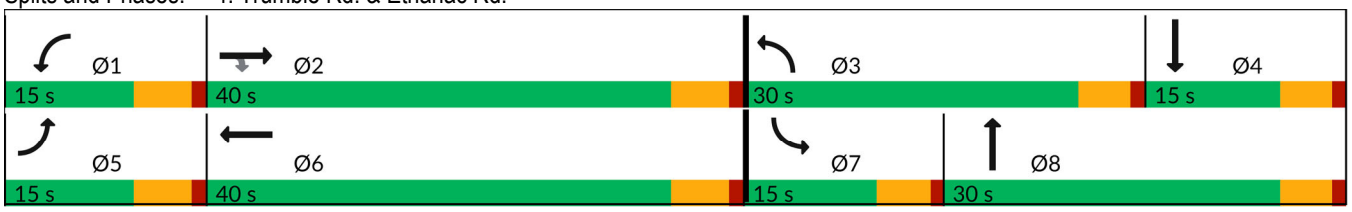
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.5	25.34
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	273	-	-	686	-
HCM Lane V/C Ratio	0.358	-	-	0.042	-
HCM Ctrl Dly (s/v)	25.3	-	-	10.5	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	1.6	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	38	798	23	25	397	65	2	19	8
Future Volume (vph)	38	798	23	25	397	65	2	19	8
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	5	2	2	1	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.3	35.3	35.3	10.3	27.8	9.9	29.9	9.9	10.4
Total Split (s)	15.0	40.0	40.0	15.0	40.0	30.0	30.0	15.0	15.0
Total Split (%)	15.0%	40.0%	40.0%	15.0%	40.0%	30.0%	30.0%	15.0%	15.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.9	3.9	3.9	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	4.9	4.9	4.9	4.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	6.6	40.0	40.0	6.2	39.7	7.6	13.2	6.0	7.9
Actuated g/C Ratio	0.10	0.62	0.62	0.10	0.61	0.12	0.20	0.09	0.12
v/c Ratio	0.22	0.73	0.02	0.16	0.38	0.33	0.12	0.12	0.41
Control Delay (s/veh)	37.2	23.5	0.0	37.6	15.4	37.0	10.0	37.9	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.2	23.5	0.0	37.6	15.4	37.0	10.0	37.9	12.7
LOS	D	C	A	D	B	D	A	D	B
Approach Delay (s/veh)		23.5			16.7		26.5		16.3
Approach LOS		C			B		C		B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 64.8	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay (s/veh): 21.2	Intersection LOS: C
Intersection Capacity Utilization 60.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Trumble Rd. & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	798	23	25	397	12	65	2	39	19	8	103
Future Volume (veh/h)	38	798	23	25	397	12	65	2	39	19	8	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	41	858	21	27	427	12	70	2	23	20	9	52
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	76	944	796	55	893	25	107	12	134	43	13	76
Arrive On Green	0.04	0.50	0.50	0.03	0.49	0.49	0.06	0.09	0.09	0.02	0.05	0.05
Sat Flow, veh/h	1810	1900	1602	1810	1839	52	1810	130	1500	1810	243	1404
Grp Volume(v), veh/h	41	858	21	27	0	439	70	0	25	20	0	61
Grp Sat Flow(s),veh/h/ln	1810	1900	1602	1810	0	1891	1810	0	1630	1810	0	1647
Q Serve(g_s), s	1.3	23.5	0.4	0.8	0.0	8.8	2.2	0.0	0.8	0.6	0.0	2.1
Cycle Q Clear(g_c), s	1.3	23.5	0.4	0.8	0.0	8.8	2.2	0.0	0.8	0.6	0.0	2.1
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.92	1.00		0.85
Lane Grp Cap(c), veh/h	76	944	796	55	0	918	107	0	146	43	0	90
V/C Ratio(X)	0.54	0.91	0.03	0.49	0.00	0.48	0.66	0.00	0.17	0.46	0.00	0.68
Avail Cap(c_a), veh/h	309	1161	979	309	0	1155	800	0	720	322	0	293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.7	13.1	7.3	27.1	0.0	9.8	26.2	0.0	23.9	27.4	0.0	26.4
Incr Delay (d2), s/veh	2.2	8.2	0.0	2.5	0.0	0.1	2.6	0.0	0.2	2.9	0.0	3.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	9.0	0.1	0.4	0.0	2.6	0.9	0.0	0.3	0.3	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.9	21.3	7.3	29.6	0.0	9.9	28.7	0.0	24.1	30.2	0.0	29.7
LnGrp LOS	C	C	A	C		A	C		C	C		C
Approach Vol, veh/h		920			466			95			81	
Approach Delay, s/veh		21.3			11.1			27.5			29.8	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	33.5	8.2	8.0	7.7	32.9	6.3	10.0
Change Period (Y+Rc), s	5.3	5.3	4.9	4.9	5.3	5.3	4.9	4.9
Max Green Setting (Gmax), s	9.7	34.7	25.1	10.1	9.7	34.7	10.1	25.1
Max Q Clear Time (g_c+I1), s	2.8	25.5	4.2	4.1	3.3	10.8	2.6	2.8
Green Ext Time (p_c), s	0.0	2.6	0.1	0.1	0.0	1.5	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	19.1
HCM 7th LOS	B

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	188	658	8	3	335	2	14	2	14	7	1	85
Future Vol, veh/h	188	658	8	3	335	2	14	2	14	7	1	85
Conflicting Peds, #/hr	0	0	3	0	0	0	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	194	678	8	3	345	2	14	2	14	7	1	88

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	347	0	0	690	0	0	1426	1427	685	1420	1430	347
Stage 1	-	-	-	-	-	-	1073	1073	-	353	353	-
Stage 2	-	-	-	-	-	-	353	354	-	1067	1077	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1223	-	-	914	-	-	114	137	451	115	136	700
Stage 1	-	-	-	-	-	-	269	299	-	668	635	-
Stage 2	-	-	-	-	-	-	668	634	-	271	298	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1223	-	-	912	-	-	73	101	450	81	100	700
Mov Cap-2 Maneuver	-	-	-	-	-	-	73	101	-	81	100	-
Stage 1	-	-	-	-	-	-	199	222	-	666	632	-
Stage 2	-	-	-	-	-	-	580	631	-	193	221	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.87	0.08	43.54	15.83
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	124	395	-	-	16	-	-	428
HCM Lane V/C Ratio	0.25	0.159	-	-	0.003	-	-	0.224
HCM Ctrl Dly (s/v)	43.5	8.5	0	-	9	0	-	15.8
HCM Lane LOS	E	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.9	0.6	-	-	0	-	-	0.8

APPENDIX 3.3:

EXISTING (2025) SIGNAL WARRANTS

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

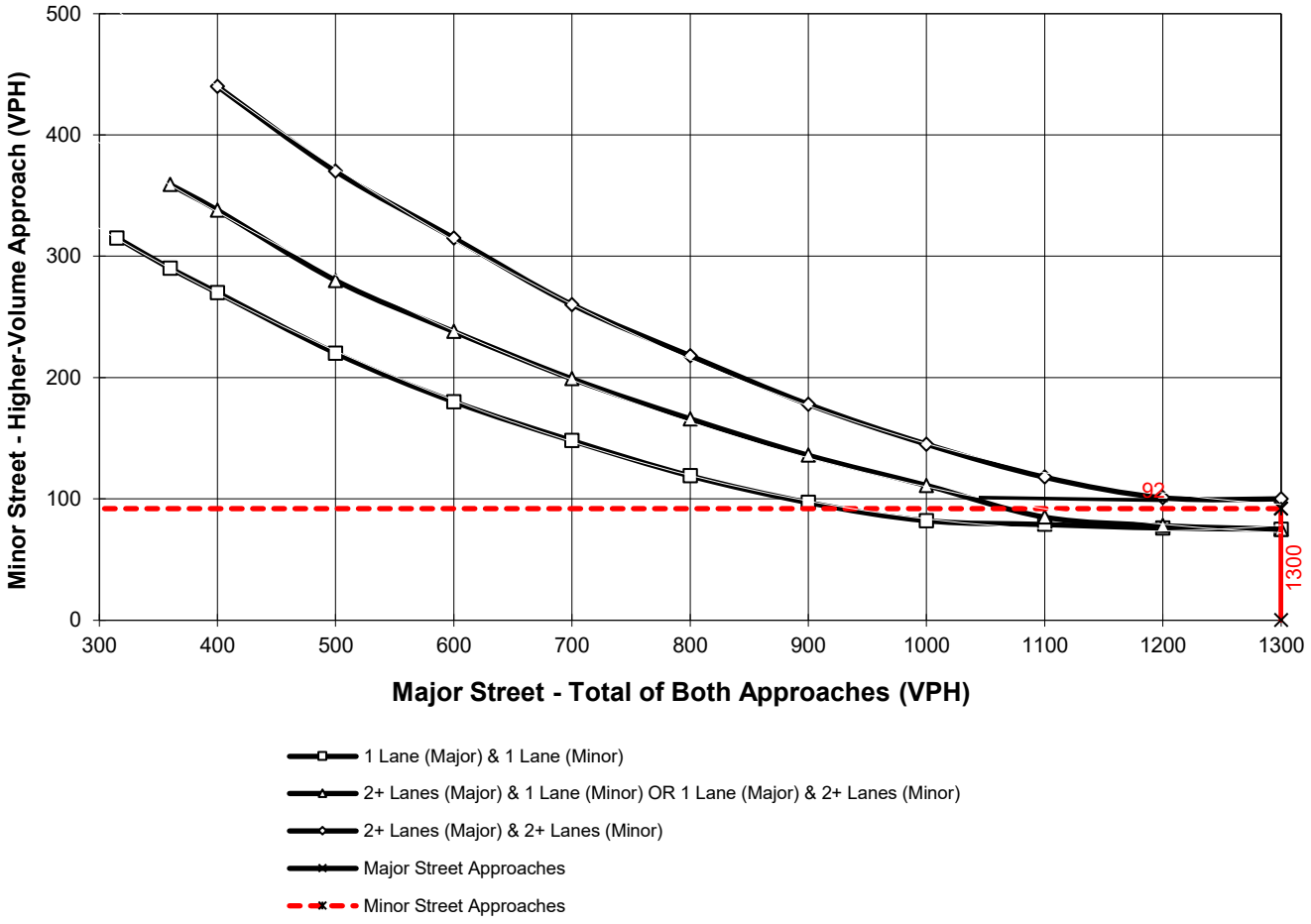
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2025) Conditions - Weekday AM Peak Hour**

Major Street Name = **Ethanac Road** Total of Both Approaches (VPH) = **1520**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Encanto Drive** High Volume Approach (VPH) = **92**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

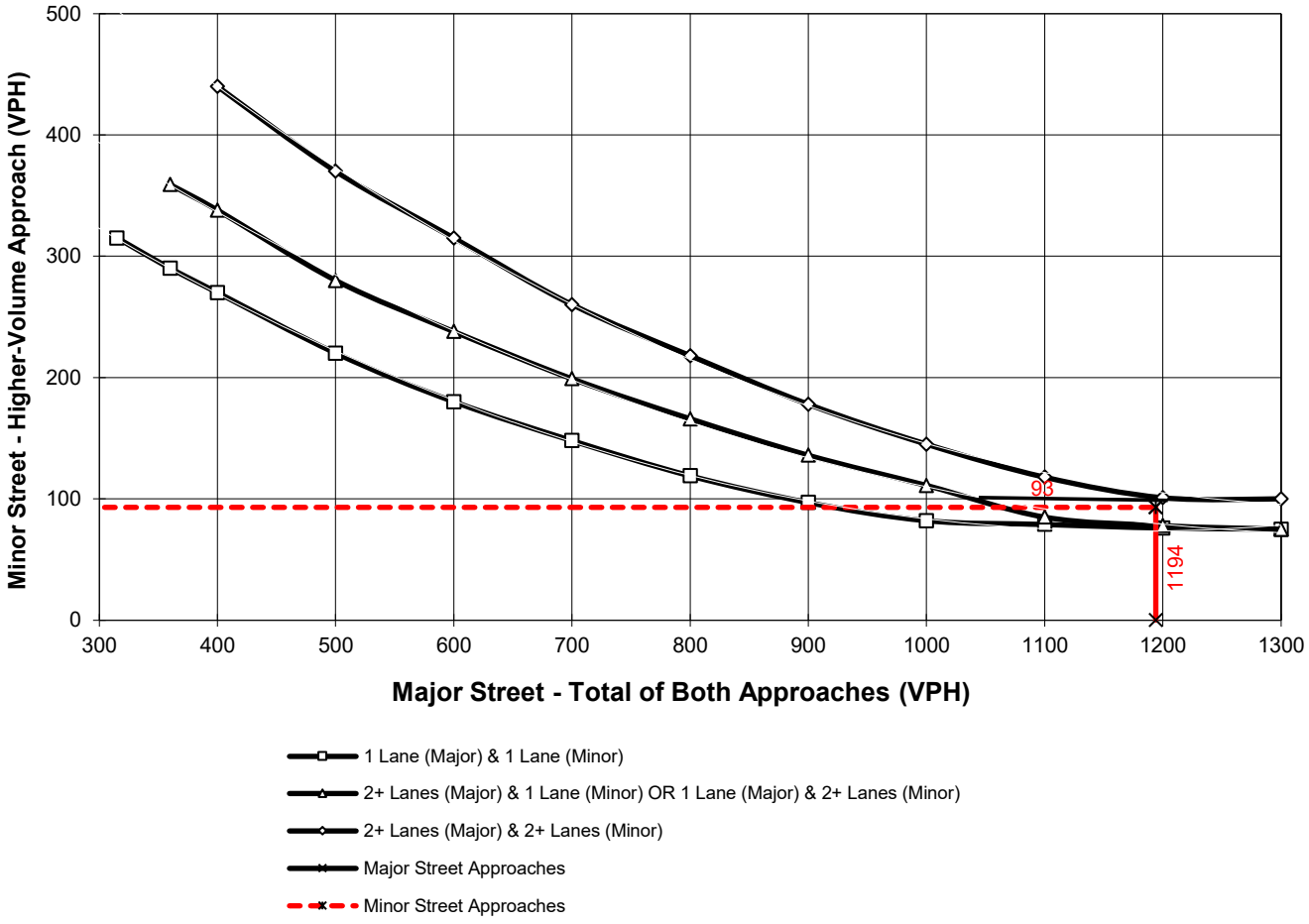
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2025) Conditions - Weekday PM Peak Hour**

Major Street Name = **Ethanac Road** Total of Both Approaches (VPH) = **1194**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Sherman Road** High Volume Approach (VPH) = **93**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

APPENDIX 3.4:

EXISTING (2025) OFF-RAMP QUEUING ANALYSIS

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Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	841	519	94	733	150	356
v/c Ratio	0.83	0.47	0.44	0.30	0.49	0.71
Control Delay (s/veh)	24.5	2.7	45.9	5.3	40.3	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.5	2.7	45.9	5.3	40.3	18.5
Queue Length 50th (ft)	343	0	48	59	75	40
Queue Length 95th (ft)	605	46	110	109	145	141
Internal Link Dist (ft)	624			681	1327	
Turn Bay Length (ft)			275			240
Base Capacity (vph)	1332	1273	263	3034	529	666
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.41	0.36	0.24	0.28	0.53

Intersection Summary



Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	319	681	817	332	171
v/c Ratio	0.97	0.52	0.97	0.92	0.37
Control Delay (s/veh)	84.4	9.2	50.6	72.1	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	84.4	9.2	50.6	72.1	8.0
Queue Length 50th (ft)	205	185	471	209	0
Queue Length 95th (ft)	#378	265	#740	#374	54
Internal Link Dist (ft)		681	457	1327	
Turn Bay Length (ft)	245				270
Base Capacity (vph)	329	1331	863	367	464
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.97	0.51	0.95	0.90	0.37

Intersection Summary

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



Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	728	355	111	712	271	376
v/c Ratio	0.77	0.36	0.53	0.31	0.69	0.66
Control Delay (s/veh)	23.4	2.4	49.3	6.6	42.4	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.4	2.4	49.3	6.6	42.4	15.1
Queue Length 50th (ft)	310	0	55	77	128	38
Queue Length 95th (ft)	453	39	#150	104	#285	151
Internal Link Dist (ft)	624			681	1327	
Turn Bay Length (ft)			275			240
Base Capacity (vph)	1378	1269	228	3097	495	650
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.28	0.49	0.23	0.55	0.58

Intersection Summary

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



Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	273	734	608	413	261
v/c Ratio	0.80	0.61	0.84	0.99	0.46
Control Delay (s/veh)	53.1	11.2	33.3	78.7	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	53.1	11.2	33.3	78.7	7.3
Queue Length 50th (ft)	136	200	268	215	0
Queue Length 95th (ft)	#324	287	396	#499	66
Internal Link Dist (ft)		681	457	1327	
Turn Bay Length (ft)	245				270
Base Capacity (vph)	350	1612	1095	416	573
Starvation Cap Reductn	0	71	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.78	0.48	0.56	0.99	0.46

Intersection Summary

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

APPENDIX 4.1:

POST PROCESSING WORKSHEETS

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Project:	Heritage Village Business Center	Job #:	16568
Scenario:	Horizon Year (2045) Without Project	Analyst:	CS
		Date:	8/15/25

LOCATION: I-215 Southbound Ramps & Ethanac Road
FORECAST YEAR: 2045

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
SOUTH BOUND	Left	120	150	30	25%	250	235	-15	-6%
	Through	1	1	0	0%	2	1	-1	-50%
	Right	286	473	187	65%	347	458	111	32%
	SB Total	407	624	217	53%	599	694	95	16%
EAST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	715	1,130	415	58%	642	1,195	553	86%
	Right	430	493	63	15%	326	366	40	12%
	EB Total	1,145	1,623	478	42%	968	1,561	593	61%
WEST BOUND	Left	73	76	3	4%	98	63	-35	-36%
	Through	612	1,157	545	89%	637	952	315	49%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	WB Total	685	1,233	548	80%	735	1,015	280	38%
TOTAL ENTERING VOLUME		2,237	3,480	1243	56%	2,302	3,270	968	42%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	624	694			
North Leg	Outbound	0	0			
North Leg	**TOTAL**	**624**	**694**	**5%**	**6%**	**12,148**
South Leg	Inbound	0	0			
South Leg	Outbound	570	430			
South Leg	**TOTAL**	**570**	**430**	**10%**	**7%**	**5,939**
East Leg	Inbound	1,233	1,015			
East Leg	Outbound	1,280	1,430			
East Leg	**TOTAL**	**2,513**	**2,445**	**7%**	**7%**	**34,725**
West Leg	Inbound	1,623	1,561			
West Leg	Outbound	1,630	1,410			
West Leg	**TOTAL**	**3,253**	**2,971**	**7%**	**7%**	**44,608**
OVERALL TOTAL		***6,960***	***6,540***	***7%***	***7%***	***97,421***

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Project: Heritage Village Business Center
Scenario: Horizon Year (2045) Without Project

Job #: 16568
Analyst: CS
Date: 8/15/25

LOCATION: I-215 Northbound Ramps & Ethanac Road
FORECAST YEAR: 2045

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	270	302	32	12%	359	393	34	9%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	144	109	-35	-24%	230	289	59	26%
	NB Total	414	411	-3	-1%	589	682	93	16%
SOUTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	SB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
EAST BOUND	Left	258	326	68	26%	238	314	76	32%
	Through	577	948	371	64%	654	1,121	467	71%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	EB Total	835	1,274	439	53%	892	1,435	543	61%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	415	927	512	123%	376	597	221	59%
	Right	230	268	38	17%	168	236	68	40%
	WB Total	645	1,195	550	85%	544	833	289	53%
TOTAL ENTERING VOLUME		1,894	2,880	986	52%	2,025	2,950	925	46%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	0	0			
North Leg	Outbound	594	550			
North Leg	**TOTAL**	**594**	**550**	**7%**	**6%**	**8,720**
South Leg	Inbound	411	682			
South Leg	Outbound	0	0			
South Leg	**TOTAL**	**411**	**682**	**5%**	**8%**	**8,311**
East Leg	Inbound	1,195	833			
East Leg	Outbound	1,057	1,410			
East Leg	**TOTAL**	**2,252**	**2,243**	**6%**	**6%**	**37,972**
West Leg	Inbound	1,274	1,435			
West Leg	Outbound	1,229	990			
West Leg	**TOTAL**	**2,503**	**2,425**	**7%**	**7%**	**34,725**
OVERALL TOTAL		***5,760***	***5,900***	**6%**	***7%***	***89,729***

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Project:	Heritage Village Business Center	Job #:	16568
Scenario:	Horizon Year (2045) Without Project	Analyst:	CS
		Date:	8/15/25

LOCATION: Encanto Drive & Ethanac Road
FORECAST YEAR: 2045

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	35	179	144	411%	43	100	57	133%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	15	28	13	87%	41	52	11	27%
	NB Total	50	207	157	314%	84	152	68	81%
SOUTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	SB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
EAST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	670	852	182	27%	796	1,129	333	42%
	Right	51	112	61	120%	88	239	151	172%
	EB Total	721	964	243	34%	884	1,368	484	55%
WEST BOUND	Left	27	28	1	4%	24	34	10	42%
	Through	610	1,031	421	69%	501	677	176	35%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	WB Total	637	1,059	422	66%	525	711	186	35%
TOTAL ENTERING VOLUME		1,408	2,230	822	58%	1,493	2,231	738	49%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	0	0			
North Leg	Outbound	0	0			
North Leg	**TOTAL**	**0**	**0**	**#DIV/0!**	**#DIV/0!**	**-**
South Leg	Inbound	207	152			
South Leg	Outbound	140	273			
South Leg	**TOTAL**	**347**	**425**	**5%**	**6%**	**6,540**
East Leg	Inbound	1,059	711			
East Leg	Outbound	880	1,181			
East Leg	**TOTAL**	**1,939**	**1,892**	**7%**	**7%**	**26,513**
West Leg	Inbound	964	1,368			
West Leg	Outbound	1,210	777			
West Leg	**TOTAL**	**2,174**	**2,145**	**6%**	**6%**	**35,930**
OVERALL TOTAL		***4,460***	***4,462***	**6%**	***6%***	***68,983***

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Project: Heritage Village Business Center
Scenario: Horizon Year (2045) Without Project

Job #: 16568
Analyst: CS
Date: 8/15/25

LOCATION: Sherman Road & Ethanac Road
FORECAST YEAR: 2045

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	49	48	4800%	1	25	24	2400%
	Through	2	22	20	1000%	2	12	10	500%
	Right	1	9	8	800%	1	4	3	300%
	NB Total	4	80	76	1900%	4	41	37	925%
SOUTH BOUND	Left	1	37	36	3600%	1	28	27	2700%
	Through	2	20	18	900%	2	18	16	800%
	Right	1	196	195	19500%	1	160	159	15900%
	SB Total	4	253	249	6225%	4	206	202	5050%
EAST BOUND	Left	1	111	110	11000%	1	147	146	14600%
	Through	2	420	418	20900%	1	492	491	49100%
	Right	1	25	24	2400%	1	36	35	3500%
	EB Total	4	556	552	13800%	3	675	672	22400%
WEST BOUND	Left	1	6	5	500%	1	6	5	500%
	Through	2	576	574	28700%	2	440	438	21900%
	Right	1	29	28	2800%	1	23	22	2200%
	WB Total	4	611	607	15175%	4	469	465	11625%
TOTAL ENTERING VOLUME		16	1,500	1484	9275%	15	1,391	1376	9173%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	253	206			
North Leg	Outbound	162	182			
North Leg	**TOTAL**	**415**	**388**	**8%**	**7%**	**5,205**
South Leg	Inbound	80	41			
South Leg	Outbound	51	60			
South Leg	**TOTAL**	**131**	**101**	**21%**	**16%**	**624**
East Leg	Inbound	611	469			
East Leg	Outbound	466	524			
East Leg	**TOTAL**	**1,077**	**993**	**4%**	**4%**	**23,992**
West Leg	Inbound	556	675			
West Leg	Outbound	821	625			
West Leg	**TOTAL**	**1,377**	**1,300**	**4%**	**4%**	**32,795**
OVERALL TOTAL		***3,000***	***2,782***	**5%**	***4%***	***62,615***

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APPENDIX 5.1:

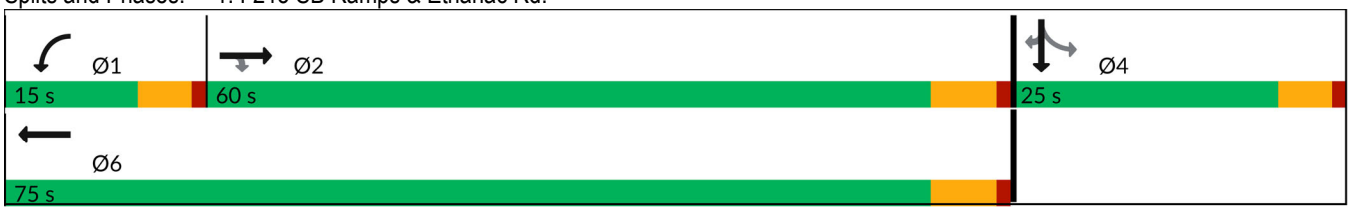
E+P INTERSECTION ANALYSIS

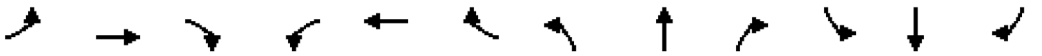
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Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	817	498	101	706	1	342
Future Volume (vph)	817	498	101	706	1	342
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Detector Phase	2	2	1	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.4	23.4	10.0	24.5	24.5	24.5
Total Split (s)	60.0	60.0	15.0	75.0	25.0	25.0
Total Split (%)	60.0%	60.0%	15.0%	75.0%	25.0%	25.0%
Yellow Time (s)	5.0	5.0	4.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	43.2	43.2	9.4	53.7	15.0	15.0
Actuated g/C Ratio	0.53	0.53	0.12	0.66	0.18	0.18
v/c Ratio	0.84	0.48	0.50	0.31	0.59	0.68
Control Delay (s/veh)	26.5	2.7	49.6	5.8	42.7	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	26.5	2.7	49.6	5.8	42.7	17.3
LOS	C	A	D	A	D	B
Approach Delay (s/veh)	17.5			11.3	26.4	
Approach LOS	B			B	C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 81.1	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay (s/veh): 17.4	Intersection LOS: B
Intersection Capacity Utilization 92.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 1: I-215 SB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	817	498	101	706	0	0	0	0	189	1	342
Future Volume (veh/h)	0	817	498	101	706	0	0	0	0	189	1	342
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	851	414	105	735	0				197	1	202
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1007	843	136	2445	0				297	2	265
Arrive On Green	0.00	0.53	0.53	0.08	0.68	0.00				0.16	0.16	0.16
Sat Flow, veh/h	0	1900	1590	1810	3705	0				1801	9	1610
Grp Volume(v), veh/h	0	851	414	105	735	0				198	0	202
Grp Sat Flow(s),veh/h/ln	0	1900	1590	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	26.5	11.5	4.0	5.7	0.0				7.1	0.0	8.3
Cycle Q Clear(g_c), s	0.0	26.5	11.5	4.0	5.7	0.0				7.1	0.0	8.3
Prop In Lane	0.00		1.00	1.00		0.00				0.99		1.00
Lane Grp Cap(c), veh/h	0	1007	843	136	2445	0				298	0	265
V/C Ratio(X)	0.00	0.84	0.49	0.77	0.30	0.00				0.66	0.00	0.76
Avail Cap(c_a), veh/h	0	1473	1233	260	3577	0				520	0	462
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.9	10.4	31.6	4.6	0.0				27.3	0.0	27.8
Incr Delay (d2), s/veh	0.0	3.1	0.4	8.8	0.1	0.0				2.5	0.0	4.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.7	3.3	2.0	1.4	0.0				2.9	0.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	17.1	10.8	40.4	4.6	0.0				29.8	0.0	32.3
LnGrp LOS		B	B	D	A					C		C
Approach Vol, veh/h		1265			840						400	
Approach Delay, s/veh		15.0			9.1						31.0	
Approach LOS		B			A						C	

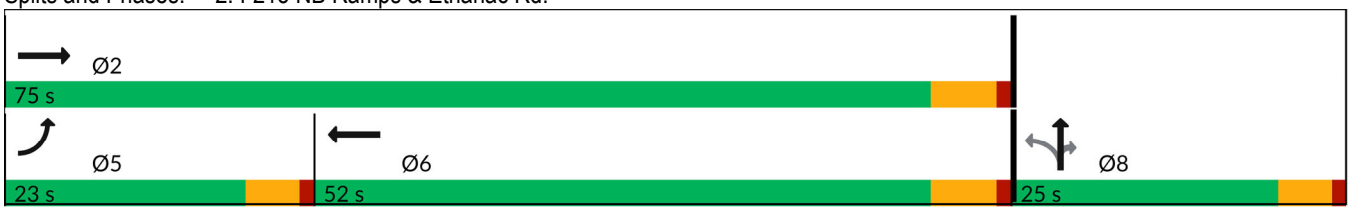
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.2	42.9		16.5		53.2
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	10.0	54.0		20.0		69.0
Max Q Clear Time (g_c+I1), s	6.0	28.5		10.3		7.7
Green Ext Time (p_c), s	0.1	8.4		1.1		5.6

Intersection Summary	
HCM 7th Control Delay, s/veh	15.6
HCM 7th LOS	B

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Configurations					
Traffic Volume (vph)	303	703	492	0	194
Future Volume (vph)	303	703	492	0	194
Turn Type	Prot	NA	NA	NA	Perm
Protected Phases	5	2	6	8	
Permitted Phases					8
Detector Phase	5	2	6	8	8
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.5	23.4	23.4	23.4
Total Split (s)	23.0	75.0	52.0	25.0	25.0
Total Split (%)	23.0%	75.0%	52.0%	25.0%	25.0%
Yellow Time (s)	4.0	5.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	None	None	None	None
Act Effct Green (s)	18.0	69.0	46.0	19.7	19.7
Actuated g/C Ratio	0.18	0.69	0.46	0.20	0.20
v/c Ratio	0.98	0.56	0.99	0.93	0.42
Control Delay (s/veh)	87.8	9.9	55.9	73.5	7.9
Queue Delay	0.0	0.4	0.0	0.0	0.0
Total Delay (s/veh)	87.8	10.3	55.9	73.5	7.9
LOS	F	B	E	E	A
Approach Delay (s/veh)		33.6	55.9	48.5	
Approach LOS		C	E	D	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 99.7	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay (s/veh): 44.6	Intersection LOS: D
Intersection Capacity Utilization 92.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 2: I-215 NB Ramps & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	303	703	0	0	492	313	315	0	194	0	0	0
Future Volume (veh/h)	303	703	0	0	492	313	315	0	194	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	319	740	0	0	518	263	332	0	144			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	330	1307	0	0	540	274	363	0	323			
Arrive On Green	0.18	0.69	0.00	0.00	0.45	0.45	0.20	0.00	0.20			
Sat Flow, veh/h	1810	1900	0	0	1188	603	1810	0	1610			
Grp Volume(v), veh/h	319	740	0	0	0	781	332	0	144			
Grp Sat Flow(s),veh/h/ln	1810	1900	0	0	0	1791	1810	0	1610			
Q Serve(g_s), s	17.2	19.6	0.0	0.0	0.0	41.6	17.7	0.0	7.7			
Cycle Q Clear(g_c), s	17.2	19.6	0.0	0.0	0.0	41.6	17.7	0.0	7.7			
Prop In Lane	1.00		0.00	0.00		0.34	1.00		1.00			
Lane Grp Cap(c), veh/h	330	1307	0	0	0	814	363	0	323			
V/C Ratio(X)	0.97	0.57	0.00	0.00	0.00	0.96	0.91	0.00	0.45			
Avail Cap(c_a), veh/h	330	1330	0	0	0	836	367	0	327			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	40.0	7.9	0.0	0.0	0.0	26.0	38.6	0.0	34.6			
Incr Delay (d2), s/veh	40.2	0.5	0.0	0.0	0.0	21.5	26.6	0.0	1.0			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	11.1	6.5	0.0	0.0	0.0	20.9	10.0	0.0	2.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	80.2	8.4	0.0	0.0	0.0	47.5	65.2	0.0	35.6			
LnGrp LOS	F	A				D	E		D			
Approach Vol, veh/h		1059			781			476				
Approach Delay, s/veh		30.0			47.5			56.2				
Approach LOS		C			D			E				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		73.8			23.0	50.8		24.8				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		69.0			18.0	46.0		20.0				
Max Q Clear Time (g_c+I1), s		21.6			19.2	43.6		19.7				
Green Ext Time (p_c), s		5.8			0.0	1.2		0.1				
Intersection Summary												
HCM 7th Control Delay, s/veh			41.3									
HCM 7th LOS			D									

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	839	57	32	757	48	16
Future Vol, veh/h	839	57	32	757	48	16
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	922	63	35	832	53	18

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	987	0	1857	955
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	902	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	708	-	82	316
Stage 1	-	-	-	-	377	-
Stage 2	-	-	-	-	399	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	707	-	78	315
Mov Cap-2 Maneuver	-	-	-	-	208	-
Stage 1	-	-	-	-	376	-
Stage 2	-	-	-	-	379	-

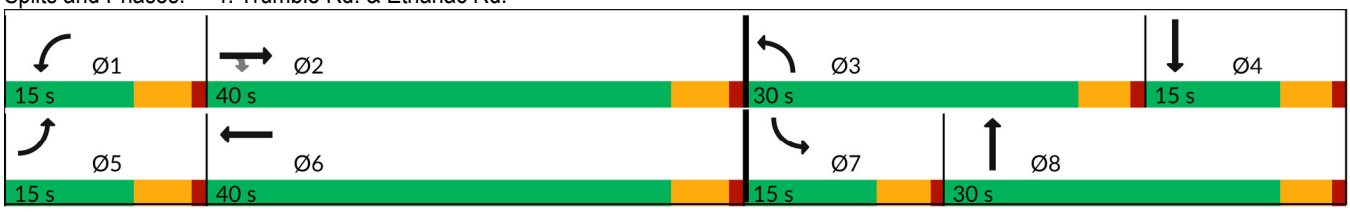
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.42	27.8
HCM LOS			D

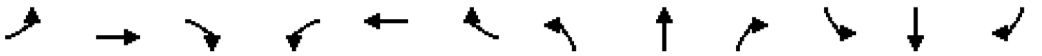
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	227	-	-	707	-
HCM Lane V/C Ratio	0.31	-	-	0.05	-
HCM Ctrl Dly (s/v)	27.8	-	-	10.4	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	1.3	-	-	0.2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	92	656	94	36	582	94	17	22	28
Future Volume (vph)	92	656	94	36	582	94	17	22	28
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	5	2	2	1	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.3	35.3	35.3	10.3	27.8	9.9	29.9	9.9	10.4
Total Split (s)	15.0	40.0	40.0	15.0	40.0	30.0	30.0	15.0	15.0
Total Split (%)	15.0%	40.0%	40.0%	15.0%	40.0%	30.0%	30.0%	15.0%	15.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.9	3.9	3.9	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	4.9	4.9	4.9	4.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	8.1	39.7	39.7	6.5	36.0	9.0	12.6	6.0	8.1
Actuated g/C Ratio	0.11	0.52	0.52	0.09	0.47	0.12	0.16	0.08	0.11
v/c Ratio	0.52	0.72	0.11	0.25	0.73	0.48	0.17	0.17	0.53
Control Delay (s/veh)	47.3	25.2	0.3	41.9	27.4	43.1	15.6	41.5	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.3	25.2	0.3	41.9	27.4	43.1	15.6	41.5	18.0
LOS	D	C	A	D	C	D	B	D	B
Approach Delay (s/veh)		24.8			28.3		33.7		21.2
Approach LOS		C			C		C		C

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 76.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay (s/veh): 26.4	Intersection LOS: C
Intersection Capacity Utilization 69.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: Trumble Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	656	94	36	582	14	94	17	32	22	28	114
Future Volume (veh/h)	92	656	94	36	582	14	94	17	32	22	28	114
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	100	713	94	39	633	13	102	18	20	24	30	89
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	129	812	687	74	736	15	134	112	125	50	38	113
Arrive On Green	0.07	0.43	0.43	0.04	0.40	0.40	0.07	0.14	0.14	0.03	0.09	0.09
Sat Flow, veh/h	1810	1900	1606	1810	1855	38	1810	822	913	1810	422	1252
Grp Volume(v), veh/h	100	713	94	39	0	646	102	0	38	24	0	119
Grp Sat Flow(s),veh/h/ln	1810	1900	1606	1810	0	1893	1810	0	1736	1810	0	1675
Q Serve(g_s), s	3.0	19.1	2.0	1.2	0.0	17.4	3.1	0.0	1.1	0.7	0.0	3.9
Cycle Q Clear(g_c), s	3.0	19.1	2.0	1.2	0.0	17.4	3.1	0.0	1.1	0.7	0.0	3.9
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.53	1.00		0.75
Lane Grp Cap(c), veh/h	129	812	687	74	0	751	134	0	237	50	0	152
V/C Ratio(X)	0.77	0.88	0.14	0.53	0.00	0.86	0.76	0.00	0.16	0.48	0.00	0.78
Avail Cap(c_a), veh/h	316	1187	1004	316	0	1183	818	0	784	329	0	305
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.3	14.6	9.7	26.1	0.0	15.3	25.2	0.0	21.2	26.6	0.0	24.7
Incr Delay (d2), s/veh	3.7	3.9	0.0	2.2	0.0	2.3	3.4	0.0	0.1	2.6	0.0	3.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	6.9	0.6	0.5	0.0	6.1	1.3	0.0	0.4	0.3	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.0	18.5	9.7	28.3	0.0	17.7	28.6	0.0	21.3	29.2	0.0	28.1
LnGrp LOS	C	B	A	C		B	C		C	C		C
Approach Vol, veh/h		907			685			140			143	
Approach Delay, s/veh		18.7			18.3			26.6			28.3	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	29.0	9.0	9.9	9.3	27.3	6.4	12.5
Change Period (Y+Rc), s	5.3	5.3	4.9	4.9	5.3	5.3	4.9	4.9
Max Green Setting (Gmax), s	9.7	34.7	25.1	10.1	9.7	34.7	10.1	25.1
Max Q Clear Time (g_c+I1), s	3.2	21.1	5.1	5.9	5.0	19.4	2.7	3.1
Green Ext Time (p_c), s	0.0	2.5	0.1	0.1	0.0	2.2	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	19.9
HCM 7th LOS	B

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	14	132	0	54	105
Future Vol, veh/h	0	14	132	0	54	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	15	143	0	59	114

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	375	143	0	0	143	0
Stage 1	143	-	-	-	-	-
Stage 2	232	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	630	909	-	-	1451	-
Stage 1	889	-	-	-	-	-
Stage 2	812	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	603	909	-	-	1451	-
Mov Cap-2 Maneuver	603	-	-	-	-	-
Stage 1	889	-	-	-	-	-
Stage 2	777	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.03	0	2.58
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	909	611	-
HCM Lane V/C Ratio	-	-	0.017	0.04	-
HCM Ctrl Dly (s/v)	-	-	9	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	4	128	10	15	90
Future Vol, veh/h	3	4	128	10	15	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	4	139	11	16	98

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	275	145	0	0	150	0
Stage 1	145	-	-	-	-	-
Stage 2	130	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	719	908	-	-	1444	-
Stage 1	888	-	-	-	-	-
Stage 2	901	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	710	908	-	-	1444	-
Mov Cap-2 Maneuver	710	-	-	-	-	-
Stage 1	888	-	-	-	-	-
Stage 2	890	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.48	0	1.07
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	811	257	-
HCM Lane V/C Ratio	-	-	0.009	0.011	-
HCM Ctrl Dly (s/v)	-	-	9.5	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	106	548	33	15	504	12	24	4	4	3	14	104
Future Vol, veh/h	106	548	33	15	504	12	24	4	4	3	14	104
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	114	589	35	16	542	13	26	4	4	3	15	112

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	555	0	0	625	0	0	1417	1422	607	1400	1433	548
Stage 1	-	-	-	-	-	-	835	835	-	581	581	-
Stage 2	-	-	-	-	-	-	582	587	-	819	853	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1026	-	-	966	-	-	116	137	500	119	135	540
Stage 1	-	-	-	-	-	-	365	386	-	503	503	-
Stage 2	-	-	-	-	-	-	503	500	-	372	379	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1026	-	-	966	-	-	66	111	500	92	109	540
Mov Cap-2 Maneuver	-	-	-	-	-	-	66	111	-	92	109	-
Stage 1	-	-	-	-	-	-	302	320	-	491	491	-
Stage 2	-	-	-	-	-	-	377	488	-	302	314	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.38	0.25	82.94	21.8
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	78	275	-	-	51	-	-	343
HCM Lane V/C Ratio	0.439	0.111	-	-	0.017	-	-	0.38
HCM Ctrl Dly (s/v)	82.9	8.9	0	-	8.8	0	-	21.8
HCM Lane LOS	F	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.8	0.4	-	-	0.1	-	-	1.7

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	0	0	11	16	26
Future Vol, veh/h	14	0	0	11	16	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	15	0	0	12	17	28

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	43	32	46	0	-	0
Stage 1	32	-	-	-	-	-
Stage 2	12	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	972	1048	1575	-	-	-
Stage 1	996	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	972	1048	1575	-	-	-
Mov Cap-2 Maneuver	902	-	-	-	-	-
Stage 1	996	-	-	-	-	-
Stage 2	1016	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.06	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1575	-	902	-	-
HCM Lane V/C Ratio	-	-	0.017	-	-
HCM Ctrl Dly (s/v)	0	-	9.1	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	0	0	0	0	16
Future Vol, veh/h	11	0	0	0	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	12	0	0	0	0	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	9	9	17	0	-	0
Stage 1	9	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	1017	1079	1613	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1017	1079	1613	-	-	-
Mov Cap-2 Maneuver	931	-	-	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	-	-	-	-	-	-

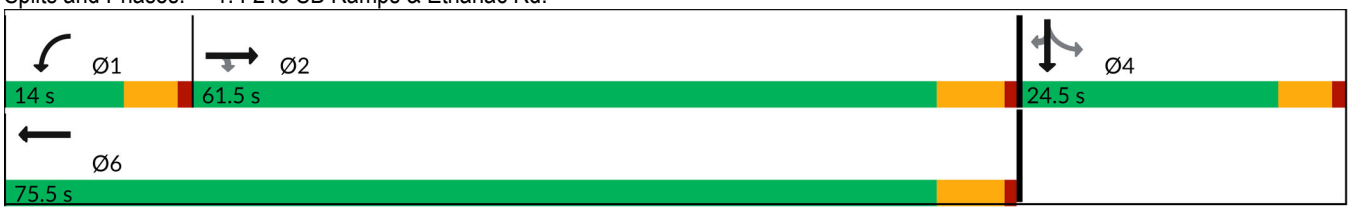
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	8.92	0	0
HCM LOS	A		

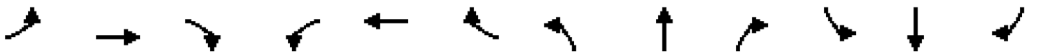
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1613	-	931	-	-
HCM Lane V/C Ratio	-	-	0.013	-	-
HCM Ctrl Dly (s/v)	0	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	709	344	142	700	2	365
Future Volume (vph)	709	344	142	700	2	365
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Detector Phase	2	2	1	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.4	23.4	10.0	24.5	24.5	24.5
Total Split (s)	61.5	61.5	14.0	75.5	24.5	24.5
Total Split (%)	61.5%	61.5%	14.0%	75.5%	24.5%	24.5%
Yellow Time (s)	5.0	5.0	4.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	38.6	38.6	9.3	53.0	17.5	17.5
Actuated g/C Ratio	0.47	0.47	0.11	0.65	0.21	0.21
v/c Ratio	0.82	0.37	0.72	0.31	0.77	0.66
Control Delay (s/veh)	26.7	2.5	60.3	6.7	47.5	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	26.7	2.5	60.3	6.7	47.5	15.6
LOS	C	A	E	A	D	B
Approach Delay (s/veh)	18.8			15.7	29.7	
Approach LOS	B			B	C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 81.8	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay (s/veh): 20.6	Intersection LOS: C
Intersection Capacity Utilization 87.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: I-215 SB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	709	344	142	700	0	0	0	0	288	2	365
Future Volume (veh/h)	0	709	344	142	700	0	0	0	0	288	2	365
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	731	276	146	722	0				297	2	216
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	875	742	185	2293	0				368	2	330
Arrive On Green	0.00	0.46	0.46	0.10	0.64	0.00				0.20	0.20	0.20
Sat Flow, veh/h	0	1900	1610	1810	3705	0				1798	12	1610
Grp Volume(v), veh/h	0	731	276	146	722	0				299	0	216
Grp Sat Flow(s),veh/h/ln	0	1900	1610	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	23.2	7.7	5.4	6.3	0.0				10.8	0.0	8.5
Cycle Q Clear(g_c), s	0.0	23.2	7.7	5.4	6.3	0.0				10.8	0.0	8.5
Prop In Lane	0.00		1.00	1.00		0.00				0.99		1.00
Lane Grp Cap(c), veh/h	0	875	742	185	2293	0				371	0	330
V/C Ratio(X)	0.00	0.84	0.37	0.79	0.31	0.00				0.81	0.00	0.65
Avail Cap(c_a), veh/h	0	1532	1298	237	3645	0				513	0	456
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	16.3	12.1	30.2	5.7	0.0				26.1	0.0	25.1
Incr Delay (d2), s/veh	0.0	2.2	0.3	13.0	0.1	0.0				6.5	0.0	2.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.8	2.4	2.9	1.7	0.0				4.7	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	18.5	12.4	43.2	5.8	0.0				32.6	0.0	27.3
LnGrp LOS		B	B	D	A					C		C
Approach Vol, veh/h		1007			868						515	
Approach Delay, s/veh		16.8			12.1						30.4	
Approach LOS		B			B						C	

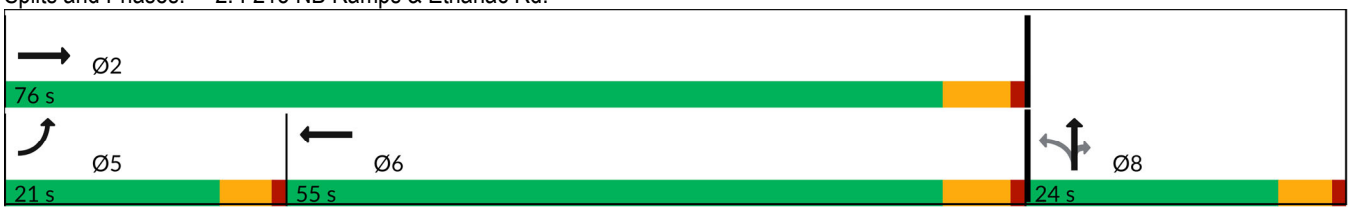
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	12.0	37.7		19.1		49.7
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	9.0	55.5		19.5		69.5
Max Q Clear Time (g_c+I1), s	7.4	25.2		12.8		8.3
Green Ext Time (p_c), s	0.1	6.5		1.3		5.4

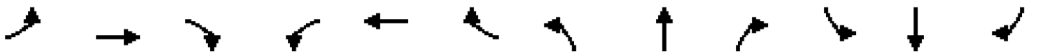
Intersection Summary		
HCM 7th Control Delay, s/veh		18.0
HCM 7th LOS		B

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Configurations					
Traffic Volume (vph)	262	734	445	0	269
Future Volume (vph)	262	734	445	0	269
Turn Type	Prot	NA	NA	NA	Perm
Protected Phases	5	2	6	8	
Permitted Phases					8
Detector Phase	5	2	6	8	8
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.5	23.4	23.4	23.4
Total Split (s)	21.0	76.0	55.0	24.0	24.0
Total Split (%)	21.0%	76.0%	55.0%	24.0%	24.0%
Yellow Time (s)	4.0	5.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	None	None	None	None
Act Effct Green (s)	15.9	58.7	37.7	19.2	19.2
Actuated g/C Ratio	0.18	0.66	0.42	0.22	0.22
v/c Ratio	0.85	0.61	0.89	1.06	0.51
Control Delay (s/veh)	62.1	10.8	37.0	99.7	9.2
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay (s/veh)	62.1	10.9	37.0	99.7	9.2
LOS	E	B	D	F	A
Approach Delay (s/veh)		24.4	37.0	63.2	
Approach LOS		C	D	E	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 89	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay (s/veh): 39.1	Intersection LOS: D
Intersection Capacity Utilization 87.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: I-215 NB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	262	734	0	0	445	230	396	0	269	0	0	0
Future Volume (veh/h)	262	734	0	0	445	230	396	0	269	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	273	765	0	0	464	204	413	0	201			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	311	1230	0	0	521	229	404	0	360			
Arrive On Green	0.17	0.65	0.00	0.00	0.42	0.42	0.22	0.00	0.22			
Sat Flow, veh/h	1810	1900	0	0	1251	550	1810	0	1610			
Grp Volume(v), veh/h	273	765	0	0	0	668	413	0	201			
Grp Sat Flow(s),veh/h/ln	1810	1900	0	0	0	1801	1810	0	1610			
Q Serve(g_s), s	12.5	20.2	0.0	0.0	0.0	29.3	19.0	0.0	9.4			
Cycle Q Clear(g_c), s	12.5	20.2	0.0	0.0	0.0	29.3	19.0	0.0	9.4			
Prop In Lane	1.00		0.00	0.00		0.31	1.00		1.00			
Lane Grp Cap(c), veh/h	311	1230	0	0	0	751	404	0	360			
V/C Ratio(X)	0.88	0.62	0.00	0.00	0.00	0.89	1.02	0.00	0.56			
Avail Cap(c_a), veh/h	340	1563	0	0	0	1037	404	0	360			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	34.4	8.9	0.0	0.0	0.0	23.0	33.0	0.0	29.3			
Incr Delay (d2), s/veh	20.8	0.5	0.0	0.0	0.0	7.5	50.5	0.0	1.9			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.0	6.6	0.0	0.0	0.0	12.7	13.1	0.0	3.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	55.2	9.4	0.0	0.0	0.0	30.5	83.5	0.0	31.3			
LnGrp LOS	E	A				C	F		C			
Approach Vol, veh/h		1038			668			614				
Approach Delay, s/veh		21.4			30.5			66.4				
Approach LOS		C			C			E				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		61.1			19.6	41.5		24.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		70.0			16.0	49.0		19.0				
Max Q Clear Time (g_c+I1), s		22.2			14.5	31.3		21.0				
Green Ext Time (p_c), s		6.1			0.1	4.2		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh			35.9									
HCM 7th LOS			D									

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	913	91	27	629	46	46
Future Vol, veh/h	913	91	27	629	46	46
Conflicting Peds, #/hr	0	3	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	971	97	29	669	49	49

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1071	0	1749	1023
Stage 1	-	-	-	-	1023	-
Stage 2	-	-	-	-	727	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	658	-	95	289
Stage 1	-	-	-	-	350	-
Stage 2	-	-	-	-	482	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	657	-	91	288
Mov Cap-2 Maneuver	-	-	-	-	222	-
Stage 1	-	-	-	-	349	-
Stage 2	-	-	-	-	461	-

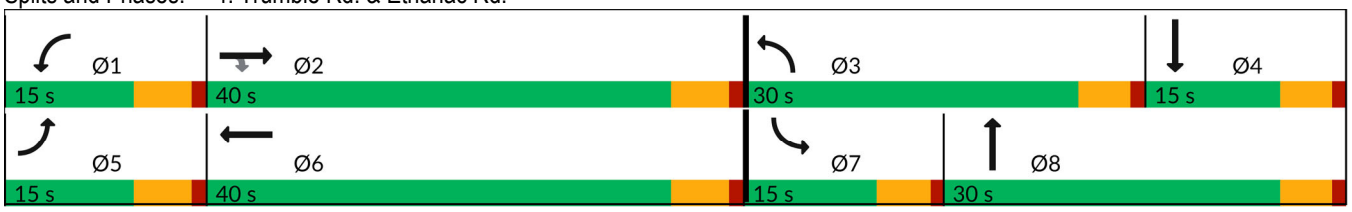
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.44	28.27
HCM LOS			D

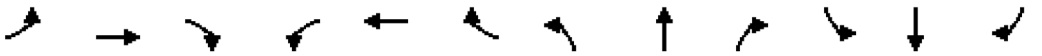
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	251	-	-	657	-
HCM Lane V/C Ratio	0.39	-	-	0.044	-
HCM Ctrl Dly (s/v)	28.3	-	-	10.7	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	1.8	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	38	826	43	25	425	129	2	19	8
Future Volume (vph)	38	826	43	25	425	129	2	19	8
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	5	2	2	1	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.3	35.3	35.3	10.3	27.8	9.9	29.9	9.9	10.4
Total Split (s)	15.0	40.0	40.0	15.0	40.0	30.0	30.0	15.0	15.0
Total Split (%)	15.0%	40.0%	40.0%	15.0%	40.0%	30.0%	30.0%	15.0%	15.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.9	3.9	3.9	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	4.9	4.9	4.9	4.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	6.5	36.6	36.6	6.0	33.8	10.2	12.8	5.8	7.1
Actuated g/C Ratio	0.09	0.52	0.52	0.08	0.48	0.14	0.18	0.08	0.10
v/c Ratio	0.25	0.91	0.05	0.18	0.52	0.54	0.13	0.14	0.46
Control Delay (s/veh)	39.1	35.9	0.1	39.1	20.2	39.3	10.8	39.2	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.1	35.9	0.1	39.1	20.2	39.3	10.8	39.2	15.1
LOS	D	D	A	D	C	D	B	D	B
Approach Delay (s/veh)		34.3			21.2		32.5		18.5
Approach LOS		C			C		C		B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 71	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay (s/veh): 29.3	Intersection LOS: C
Intersection Capacity Utilization 65.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: Trumble Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	826	43	25	425	12	129	2	39	19	8	103
Future Volume (veh/h)	38	826	43	25	425	12	129	2	39	19	8	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	41	888	42	27	457	12	139	2	23	20	9	52
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	73	948	799	54	900	24	180	17	192	42	13	73
Arrive On Green	0.04	0.50	0.50	0.03	0.49	0.49	0.10	0.13	0.13	0.02	0.05	0.05
Sat Flow, veh/h	1810	1900	1602	1810	1843	48	1810	130	1500	1810	243	1404
Grp Volume(v), veh/h	41	888	42	27	0	469	139	0	25	20	0	61
Grp Sat Flow(s),veh/h/ln	1810	1900	1602	1810	0	1891	1810	0	1630	1810	0	1647
Q Serve(g_s), s	1.4	28.0	0.9	0.9	0.0	10.8	4.8	0.0	0.9	0.7	0.0	2.3
Cycle Q Clear(g_c), s	1.4	28.0	0.9	0.9	0.0	10.8	4.8	0.0	0.9	0.7	0.0	2.3
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.92	1.00		0.85
Lane Grp Cap(c), veh/h	73	948	799	54	0	924	180	0	208	42	0	85
V/C Ratio(X)	0.56	0.94	0.05	0.50	0.00	0.51	0.77	0.00	0.12	0.47	0.00	0.71
Avail Cap(c_a), veh/h	275	1034	872	275	0	1029	712	0	642	287	0	261
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.0	15.0	8.2	30.5	0.0	11.1	28.0	0.0	24.6	30.7	0.0	29.8
Incr Delay (d2), s/veh	2.5	13.9	0.0	2.7	0.0	0.2	2.7	0.0	0.1	3.0	0.0	4.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	12.5	0.2	0.4	0.0	3.5	2.0	0.0	0.3	0.3	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.5	29.0	8.2	33.1	0.0	11.3	30.7	0.0	24.7	33.8	0.0	33.9
LnGrp LOS	C	C	A	C		B	C		C	C		C
Approach Vol, veh/h		971			496			164			81	
Approach Delay, s/veh		28.2			12.4			29.8			33.8	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	37.1	11.2	8.2	7.9	36.4	6.4	13.0
Change Period (Y+Rc), s	5.3	5.3	4.9	4.9	5.3	5.3	4.9	4.9
Max Green Setting (Gmax), s	9.7	34.7	25.1	10.1	9.7	34.7	10.1	25.1
Max Q Clear Time (g_c+I1), s	2.9	30.0	6.8	4.3	3.4	12.8	2.7	2.9
Green Ext Time (p_c), s	0.0	1.8	0.1	0.1	0.0	1.6	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	24.1
HCM 7th LOS	C

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	53	120	0	16	60
Future Vol, veh/h	0	53	120	0	16	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	58	130	0	17	65

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	230	130	0	0	130	0
Stage 1	130	-	-	-	-	-
Stage 2	100	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	762	925	-	-	1467	-
Stage 1	901	-	-	-	-	-
Stage 2	929	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	753	925	-	-	1467	-
Mov Cap-2 Maneuver	753	-	-	-	-	-
Stage 1	901	-	-	-	-	-
Stage 2	918	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.15	0	1.58
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	925	379	-
HCM Lane V/C Ratio	-	-	0.062	0.012	-
HCM Ctrl Dly (s/v)	-	-	9.2	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	14	106	3	4	56
Future Vol, veh/h	10	14	106	3	4	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	15	115	3	4	61

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	186	117	0	0	118	0
Stage 1	117	-	-	-	-	-
Stage 2	70	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	807	941	-	-	1482	-
Stage 1	913	-	-	-	-	-
Stage 2	958	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	805	941	-	-	1482	-
Mov Cap-2 Maneuver	805	-	-	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	955	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.22	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	879	120	-
HCM Lane V/C Ratio	-	-	0.03	0.003	-
HCM Ctrl Dly (s/v)	-	-	9.2	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	8.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	188	658	36	6	335	2	42	9	25	7	3	85
Future Vol, veh/h	188	658	36	6	335	2	42	9	25	7	3	85
Conflicting Peds, #/hr	0	0	3	0	0	0	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	194	678	37	6	345	2	43	9	26	7	3	88

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	347	0	0	718	0	0	1448	1447	700	1429	1465	347
Stage 1	-	-	-	-	-	-	1088	1088	-	359	359	-
Stage 2	-	-	-	-	-	-	360	360	-	1071	1106	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1223	-	-	892	-	-	110	133	443	114	129	700
Stage 1	-	-	-	-	-	-	264	294	-	663	631	-
Stage 2	-	-	-	-	-	-	662	630	-	270	289	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1223	-	-	889	-	-	68	96	442	72	94	700
Mov Cap-2 Maneuver	-	-	-	-	-	-	68	96	-	72	94	-
Stage 1	-	-	-	-	-	-	193	216	-	658	625	-
Stage 2	-	-	-	-	-	-	571	625	-	179	212	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.81	0.16	116.5	17.74
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	99	380	-	-	31	-	-	380
HCM Lane V/C Ratio	0.788	0.159	-	-	0.007	-	-	0.258
HCM Ctrl Dly (s/v)	116.5	8.5	0	-	9.1	0	-	17.7
HCM Lane LOS	F	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	4.3	0.6	-	-	0	-	-	1

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	0	0	20	19	21
Future Vol, veh/h	29	0	0	20	19	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	32	0	0	22	21	23

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	54	32	43	0	-	0
Stage 1	32	-	-	-	-	-
Stage 2	22	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	959	1048	1578	-	-	-
Stage 1	996	-	-	-	-	-
Stage 2	1006	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	959	1048	1578	-	-	-
Mov Cap-2 Maneuver	894	-	-	-	-	-
Stage 1	996	-	-	-	-	-
Stage 2	1006	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.17	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1578	-	894	-	-
HCM Lane V/C Ratio	-	-	0.035	-	-
HCM Ctrl Dly (s/v)	0	-	9.2	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	0	0	0	0	19
Future Vol, veh/h	20	0	0	0	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	22	0	0	0	0	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	10	10	21	0	-	0
Stage 1	10	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	1015	1077	1608	-	-	-
Stage 1	1018	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1015	1077	1608	-	-	-
Mov Cap-2 Maneuver	929	-	-	-	-	-
Stage 1	1018	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	8.97	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1608	-	929	-	-
HCM Lane V/C Ratio	-	-	0.023	-	-
HCM Ctrl Dly (s/v)	0	-	9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

APPENDIX 5.2:

E+P SIGNAL WARRANTS

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Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS		E+P	
				CALC	CS	DATE	08/29/25
Jurisdiction:	City of Menifee			CHK	CS	DATE	08/29/25
Major Street:	Trumble Road			Critical Approach Speed (Major)		40	mph
Minor Street:	Driveway 1			Critical Approach Speed (Minor)		25	mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes = **1** lane

Major Street Future ADT = **1,887** vpd Minor Street Future ADT = **254** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. or **RURAL (R)**

In built up area of isolated community of < 10,000 population ……..

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
XX					
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **1,887**	*1* **254**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **1,887**	*1* **254**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 11% **B** 16%	2 CONDITIONS 80%		2 CONDITIONS 80%	

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS			E+P
				CALC	CS	DATE	08/29/25
Jurisdiction:	City of Menifee			CHK	CS	DATE	08/29/25
Major Street:	Trumble Road			Critical Approach Speed (Major)			40 mph
Minor Street:	Driveway 2			Critical Approach Speed (Minor)			25 mph

Major Street Approach Lanes = **1** lane

Minor Street Approach Lanes = **1** lane

Major Street Future ADT = **1,610** vpd

Minor Street Future ADT = **115** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……..

or

In built up area of isolated community of < 10,000 population ……..

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
XX					
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **1,610**	*1* **115**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **1,610**	*1* **115**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 5% **B** 10%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	E+P
				CALC CS	DATE 08/29/25
Jurisdiction: City of Menifee				CHK CS	DATE 08/29/25
Major Street: Sherman Road				Critical Approach Speed (Major)	40 mph
Minor Street: Driveway 3				Critical Approach Speed (Minor)	25 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes = **1** lane

Major Street Future ADT = **491** vpd Minor Street Future ADT = **193** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [ ]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …….. [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL	Minimum Requirements EADT: Vehicles Per Day on Major Street (Total of Both Approaches)		Minimum Requirements EADT: Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
XX	Urban	Rural	Urban	Rural
CONDITION A - Minimum Vehicular Volume				
Satisfied / Not Satisfied XX				
Number of lanes for moving traffic on each approach: Major Street / Minor Street				
1 **491** / 1 **193**	8,000	5,600	2,400	1,680
2 + / 1	9,600	6,720	2,400	1,680
2 + / 2 +	9,600	6,720	3,200	2,240
1 / 2 +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic				
Satisfied / Not Satisfied XX				
Number of lanes for moving traffic on each approach: Major Street / Minor Street				
1 **491** / 1 **193**	12,000	8,400	1,200	850
2 + / 1	14,400	10,080	1,200	850
2 + / 2 +	14,400	10,080	1,600	1,120
1 / 2 +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B				
Satisfied / Not Satisfied XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more ….. A 6% B 4%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	E+P
				CALC CS	DATE 08/29/25
Jurisdiction: City of Menifee				CHK CS	DATE 08/29/25
Major Street: Sherman Road				Critical Approach Speed (Major)	40 mph
Minor Street: Driveway 4				Critical Approach Speed (Minor)	25 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes = **1** lane

Major Street Future ADT = **149** vpd Minor Street Future ADT = **149** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [ ]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …….. [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL	Minimum Requirements EADT			
XX				
CONDITION A - Minimum Vehicular Volume	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied / Not Satisfied: XX				
Number of lanes for moving traffic on each approach	Urban	Rural	Urban	Rural
Major Street: *1* **149** / Minor Street: *1* **149**	8,000	5,600	2,400	1,680
2 + / *1*	9,600	6,720	2,400	1,680
2 + / *2* +	9,600	6,720	3,200	2,240
1 / *2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied / Not Satisfied: XX				
Number of lanes for moving traffic on each approach	Urban	Rural	Urban	Rural
Major Street: *1* **149** / Minor Street: *1* **149**	12,000	8,400	1,200	850
2 + / *1*	14,400	10,080	1,200	850
2 + / *2* +	14,400	10,080	1,600	1,120
1 / *2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B				
Satisfied / Not Satisfied: XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more ….. A: 2% B: 1%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

APPENDIX 5.3:

E+P QUEUING ANALYSIS

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Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	851	519	105	735	198	356
v/c Ratio	0.84	0.48	0.50	0.31	0.59	0.68
Control Delay (s/veh)	26.5	2.7	49.6	5.8	42.7	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	26.5	2.7	49.6	5.8	42.7	17.3
Queue Length 50th (ft)	380	0	58	68	107	42
Queue Length 95th (ft)	619	46	#126	110	187	142
Internal Link Dist (ft)	624			681	1327	
Turn Bay Length (ft)			275			240
Base Capacity (vph)	1289	1249	250	2929	503	645
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.42	0.42	0.25	0.39	0.55

Intersection Summary

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

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	319	740	847	332	204
v/c Ratio	0.98	0.56	0.99	0.93	0.42
Control Delay (s/veh)	87.8	9.9	55.9	73.5	7.9
Queue Delay	0.0	0.4	0.0	0.0	0.0
Total Delay (s/veh)	87.8	10.3	55.9	73.5	7.9
Queue Length 50th (ft)	205	210	504	209	0
Queue Length 95th (ft)	#378	302	#783	#374	59
Internal Link Dist (ft)		681	457	1327	
Turn Bay Length (ft)	245				270
Base Capacity (vph)	325	1314	853	362	487
Starvation Cap Reductn	0	194	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.98	0.66	0.99	0.92	0.42

Intersection Summary

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



Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	731	355	146	722	299	376
v/c Ratio	0.82	0.37	0.72	0.31	0.77	0.66
Control Delay (s/veh)	26.7	2.5	60.3	6.7	47.5	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	26.7	2.5	60.3	6.7	47.5	15.6
Queue Length 50th (ft)	318	0	75	81	144	40
Queue Length 95th (ft)	456	39	#211	105	#329	155
Internal Link Dist (ft)	624			681	1327	
Turn Bay Length (ft)			275			240
Base Capacity (vph)	1326	1235	204	3058	444	609
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.29	0.72	0.24	0.67	0.62

Intersection Summary

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



Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	273	765	704	413	280
v/c Ratio	0.85	0.61	0.89	1.06	0.51
Control Delay (s/veh)	62.1	10.8	37.0	99.7	9.2
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay (s/veh)	62.1	10.9	37.0	99.7	9.2
Queue Length 50th (ft)	151	214	339	~264	8
Queue Length 95th (ft)	#330	307	497	#509	81
Internal Link Dist (ft)		681	457	1327	
Turn Bay Length (ft)	245				270
Base Capacity (vph)	328	1511	1026	389	554
Starvation Cap Reductn	0	129	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.83	0.55	0.69	1.06	0.51

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

APPENDIX 5.4:

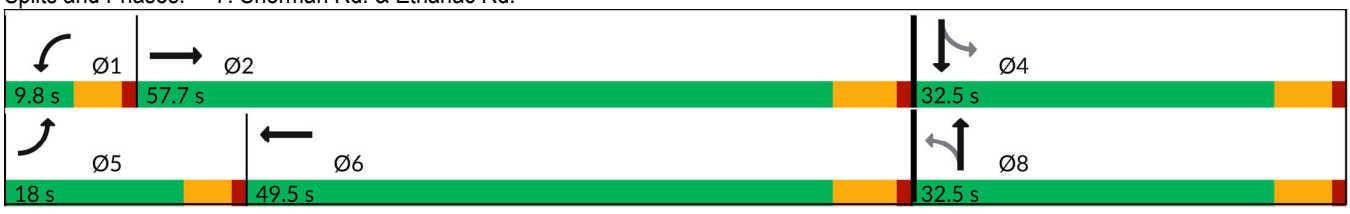
E+P INTERSECTION ANALYSIS WITH IMPROVEMENTS

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	106	548	15	504	24	4	3	14
Future Volume (vph)	106	548	15	504	24	4	3	14
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	27.8	32.4	32.4	20.0	20.0
Total Split (s)	18.0	57.7	9.8	49.5	32.5	32.5	32.5	32.5
Total Split (%)	18.0%	57.7%	9.8%	49.5%	32.5%	32.5%	32.5%	32.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.4	4.4	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.4	5.4	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	8.9	34.0	5.7	24.5	13.3	13.3	13.3	13.3
Actuated g/C Ratio	0.15	0.56	0.09	0.40	0.22	0.22	0.22	0.22
v/c Ratio	0.43	0.59	0.10	0.73	0.09	0.02	0.01	0.28
Control Delay (s/veh)	34.7	12.4	36.9	23.1	25.2	19.6	24.7	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.7	12.4	36.9	23.1	25.2	19.6	24.7	9.4
LOS	C	B	D	C	C	B	C	A
Approach Delay (s/veh)		15.9		23.5		23.9		9.7
Approach LOS		B		C		C		A

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 61	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay (s/veh): 18.5	Intersection LOS: B
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 7: Sherman Rd. & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	548	33	15	504	12	24	4	4	3	14	104
Future Volume (veh/h)	106	548	33	15	504	12	24	4	4	3	14	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	114	589	35	16	542	13	26	4	4	3	15	112
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	148	775	46	36	692	17	337	184	184	448	41	305
Arrive On Green	0.08	0.44	0.44	0.02	0.37	0.37	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1810	1776	106	1810	1848	44	1284	872	872	1430	194	1446
Grp Volume(v), veh/h	114	0	624	16	0	555	26	0	8	3	0	127
Grp Sat Flow(s),veh/h/ln	1810	0	1881	1810	0	1892	1284	0	1743	1430	0	1640
Q Serve(g_s), s	2.9	0.0	13.3	0.4	0.0	12.3	0.8	0.0	0.2	0.1	0.0	3.1
Cycle Q Clear(g_c), s	2.9	0.0	13.3	0.4	0.0	12.3	4.0	0.0	0.2	0.3	0.0	3.1
Prop In Lane	1.00		0.06	1.00		0.02	1.00		0.50	1.00		0.88
Lane Grp Cap(c), veh/h	148	0	821	36	0	708	337	0	367	448	0	346
V/C Ratio(X)	0.77	0.00	0.76	0.44	0.00	0.78	0.08	0.00	0.02	0.01	0.00	0.37
Avail Cap(c_a), veh/h	511	0	2057	198	0	1742	800	0	995	963	0	936
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.3	0.0	11.3	23.0	0.0	13.1	17.7	0.0	14.9	15.0	0.0	16.0
Incr Delay (d2), s/veh	3.1	0.0	1.5	3.1	0.0	1.9	0.1	0.0	0.0	0.0	0.0	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	3.9	0.2	0.0	4.1	0.2	0.0	0.1	0.0	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.5	0.0	12.8	26.1	0.0	15.1	17.8	0.0	14.9	15.0	0.0	16.7
LnGrp LOS	C		B	C		B	B		B	B		B
Approach Vol, veh/h		738			571			34			130	
Approach Delay, s/veh		14.6			15.4			17.1			16.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.6	26.5		15.4	8.5	23.6		15.4				
Change Period (Y+Rc), s	4.6	5.8		5.4	4.6	5.8		5.4				
Max Green Setting (Gmax), s	5.2	51.9		27.1	13.4	43.7		27.1				
Max Q Clear Time (g_c+I1), s	2.4	15.3		5.1	4.9	14.3		6.0				
Green Ext Time (p_c), s	0.0	4.2		0.7	0.1	3.5		0.1				

Intersection Summary		
HCM 7th Control Delay, s/veh		15.1
HCM 7th LOS		B

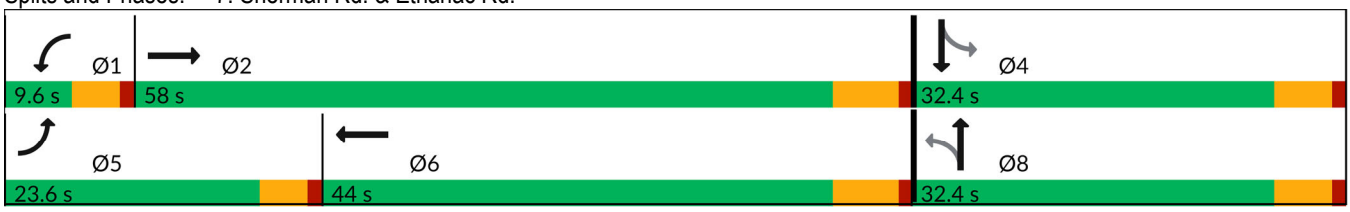
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	188	658	6	335	42	9	7	3
Future Volume (vph)	188	658	6	335	42	9	7	3
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	27.8	32.4	32.4	26.6	26.6
Total Split (s)	23.6	58.0	9.6	44.0	32.4	32.4	32.4	32.4
Total Split (%)	23.6%	58.0%	9.6%	44.0%	32.4%	32.4%	32.4%	32.4%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.4	4.4	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.4	5.4	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	11.2	32.9	5.5	17.8	13.0	13.0	13.0	13.0
Actuated g/C Ratio	0.19	0.55	0.09	0.30	0.22	0.22	0.22	0.22
v/c Ratio	0.57	0.68	0.04	0.61	0.15	0.09	0.02	0.22
Control Delay (s/veh)	32.1	14.7	35.3	23.3	23.8	13.0	23.0	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.1	14.7	35.3	23.3	23.8	13.0	23.0	8.2
LOS	C	B	D	C	C	B	C	A
Approach Delay (s/veh)		18.4		23.5		19.0		9.2
Approach LOS		B		C		B		A

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 59.3	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay (s/veh): 19.1	Intersection LOS: B
Intersection Capacity Utilization 63.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 7: Sherman Rd. & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	658	36	6	335	2	42	9	25	7	3	85
Future Volume (veh/h)	188	658	36	6	335	2	42	9	25	7	3	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	194	678	37	6	345	2	43	9	26	7	3	88
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	249	837	46	14	641	4	351	87	252	405	11	317
Arrive On Green	0.14	0.47	0.47	0.01	0.34	0.34	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1810	1785	97	1810	1887	11	1324	431	1245	1395	53	1561
Grp Volume(v), veh/h	194	0	715	6	0	347	43	0	35	7	0	91
Grp Sat Flow(s),veh/h/ln	1810	0	1882	1810	0	1898	1324	0	1676	1395	0	1614
Q Serve(g_s), s	5.1	0.0	16.0	0.2	0.0	7.3	1.4	0.0	0.8	0.2	0.0	2.3
Cycle Q Clear(g_c), s	5.1	0.0	16.0	0.2	0.0	7.3	3.7	0.0	0.8	1.0	0.0	2.3
Prop In Lane	1.00		0.05	1.00		0.01	1.00		0.74	1.00		0.97
Lane Grp Cap(c), veh/h	249	0	883	14	0	644	351	0	340	405	0	327
V/C Ratio(X)	0.78	0.00	0.81	0.41	0.00	0.54	0.12	0.00	0.10	0.02	0.00	0.28
Avail Cap(c_a), veh/h	697	0	1992	183	0	1470	807	0	917	886	0	884
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.5	0.0	11.2	24.4	0.0	13.2	18.2	0.0	16.0	16.4	0.0	16.6
Incr Delay (d2), s/veh	2.0	0.0	1.8	6.9	0.0	0.7	0.2	0.0	0.1	0.0	0.0	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	4.7	0.1	0.0	2.4	0.4	0.0	0.3	0.1	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.6	0.0	13.1	31.2	0.0	13.9	18.4	0.0	16.1	16.5	0.0	17.1
LnGrp LOS	C		B	C		B	B		B	B		B
Approach Vol, veh/h		909			353			78			98	
Approach Delay, s/veh		15.1			14.2			17.4			17.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	28.9		15.4	11.4	22.5		15.4				
Change Period (Y+Rc), s	4.6	5.8		5.4	4.6	5.8		5.4				
Max Green Setting (Gmax), s	5.0	52.2		27.0	19.0	38.2		27.0				
Max Q Clear Time (g_c+I1), s	2.2	18.0		4.3	7.1	9.3		5.7				
Green Ext Time (p_c), s	0.0	5.1		0.5	0.2	1.9		0.2				

Intersection Summary		
HCM 7th Control Delay, s/veh		15.1
HCM 7th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.

APPENDIX 6.1:

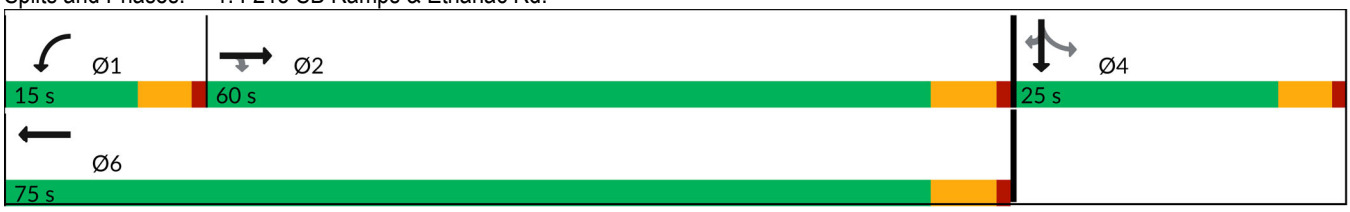
EAC (2028) INTERSECTION ANALYSIS

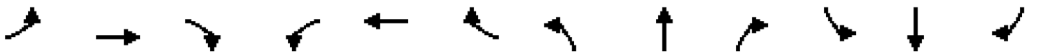
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Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1669	976	177	1611	1	1031
Future Volume (vph)	1669	976	177	1611	1	1031
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Detector Phase	2	2	1	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.4	23.4	10.0	24.5	24.5	24.5
Total Split (s)	60.0	60.0	15.0	75.0	25.0	25.0
Total Split (%)	60.0%	60.0%	15.0%	75.0%	25.0%	25.0%
Yellow Time (s)	5.0	5.0	4.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	54.0	54.0	10.0	69.0	20.0	20.0
Actuated g/C Ratio	0.54	0.54	0.10	0.69	0.20	0.20
v/c Ratio	1.69	0.93	1.02	0.67	1.71	2.74
Control Delay (s/veh)	339.5	26.8	119.2	10.7	361.3	808.1
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0
Total Delay (s/veh)	339.5	26.8	119.2	11.0	361.3	808.1
LOS	F	C	F	B	F	F
Approach Delay (s/veh)	224.1			21.7	644.8	
Approach LOS	F			C	F	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.74	
Intersection Signal Delay (s/veh): 277.2	Intersection LOS: F
Intersection Capacity Utilization 188.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1: I-215 SB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1669	976	177	1611	0	0	0	0	593	1	1031
Future Volume (veh/h)	0	1669	976	177	1611	0	0	0	0	593	1	1031
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1739	912	184	1678	0				618	1	920
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1026	859	181	2491	0				361	1	322
Arrive On Green	0.00	0.54	0.54	0.10	0.69	0.00				0.20	0.20	0.20
Sat Flow, veh/h	0	1900	1590	1810	3705	0				1807	3	1610
Grp Volume(v), veh/h	0	1739	912	184	1678	0				619	0	920
Grp Sat Flow(s),veh/h/ln	0	1900	1590	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	54.0	54.0	10.0	26.9	0.0				20.0	0.0	20.0
Cycle Q Clear(g_c), s	0.0	54.0	54.0	10.0	26.9	0.0				20.0	0.0	20.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1026	859	181	2491	0				362	0	322
V/C Ratio(X)	0.00	1.69	1.06	1.02	0.67	0.00				1.71	0.00	2.86
Avail Cap(c_a), veh/h	0	1026	859	181	2491	0				362	0	322
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	23.0	23.0	45.0	9.0	0.0				40.0	0.0	40.0
Incr Delay (d2), s/veh	0.0	316.9	48.6	71.4	0.7	0.0				331.2	0.0	844.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	111.4	29.2	7.9	8.5	0.0				41.5	0.0	82.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	339.9	71.6	116.4	9.7	0.0				371.2	0.0	884.1
LnGrp LOS		F	F	F	A					F		F
Approach Vol, veh/h		2651			1862						1539	
Approach Delay, s/veh		247.6			20.2						677.8	
Approach LOS		F			C						F	

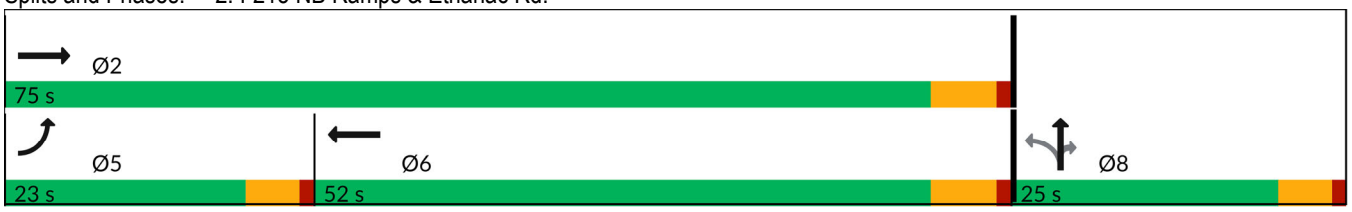
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	15.0	60.0		25.0		75.0
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	10.0	54.0		20.0		69.0
Max Q Clear Time (g_c+I1), s	12.0	56.0		22.0		28.9
Green Ext Time (p_c), s	0.0	0.0		0.0		18.2

Intersection Summary	
HCM 7th Control Delay, s/veh	287.1
HCM 7th LOS	F

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Configurations					
Traffic Volume (vph)	819	1444	863	0	464
Future Volume (vph)	819	1444	863	0	464
Turn Type	Prot	NA	NA	NA	Perm
Protected Phases	5	2	6	8	
Permitted Phases					8
Detector Phase	5	2	6	8	8
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.5	23.4	23.4	23.4
Total Split (s)	23.0	75.0	52.0	25.0	25.0
Total Split (%)	23.0%	75.0%	52.0%	25.0%	25.0%
Yellow Time (s)	4.0	5.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	None	None	None	None
Act Effct Green (s)	18.0	69.0	46.0	20.0	20.0
Actuated g/C Ratio	0.18	0.69	0.46	0.20	0.20
v/c Ratio	2.66	1.16	1.73	2.68	1.24
Control Delay (s/veh)	775.9	99.4	358.1	785.3	159.9
Queue Delay	0.0	0.2	0.0	0.0	0.0
Total Delay (s/veh)	775.9	99.6	358.1	785.3	159.9
LOS	F	F	F	F	F
Approach Delay (s/veh)		344.3	358.1	575.8	
Approach LOS		F	F	F	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.68	
Intersection Signal Delay (s/veh): 411.6	Intersection LOS: F
Intersection Capacity Utilization 188.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 2: I-215 NB Ramps & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	819	1444	0	0	863	539	921	0	464	0	0	0
Future Volume (veh/h)	819	1444	0	0	863	539	921	0	464	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	862	1520	0	0	908	501	969	0	428			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	326	1311	0	0	529	292	362	0	322			
Arrive On Green	0.18	0.69	0.00	0.00	0.46	0.46	0.20	0.00	0.20			
Sat Flow, veh/h	1810	1900	0	0	1151	635	1810	0	1610			
Grp Volume(v), veh/h	862	1520	0	0	0	1409	969	0	428			
Grp Sat Flow(s),veh/h/ln	1810	1900	0	0	0	1786	1810	0	1610			
Q Serve(g_s), s	18.0	69.0	0.0	0.0	0.0	46.0	20.0	0.0	20.0			
Cycle Q Clear(g_c), s	18.0	69.0	0.0	0.0	0.0	46.0	20.0	0.0	20.0			
Prop In Lane	1.00		0.00	0.00		0.36	1.00		1.00			
Lane Grp Cap(c), veh/h	326	1311	0	0	0	821	362	0	322			
V/C Ratio(X)	2.65	1.16	0.00	0.00	0.00	1.72	2.68	0.00	1.33			
Avail Cap(c_a), veh/h	326	1311	0	0	0	821	362	0	322			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	41.0	15.5	0.0	0.0	0.0	27.0	40.0	0.0	40.0			
Incr Delay (d2), s/veh	749.7	80.6	0.0	0.0	0.0	327.1	762.7	0.0	168.0			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	75.5	51.6	0.0	0.0	0.0	92.4	84.9	0.0	22.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	790.7	96.1	0.0	0.0	0.0	354.1	802.7	0.0	208.0			
LnGrp LOS	F	F				F	F		F			
Approach Vol, veh/h		2382			1409			1397				
Approach Delay, s/veh		347.5			354.1			620.5				
Approach LOS		F			F			F				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		75.0			23.0	52.0		25.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		69.0			18.0	46.0		20.0				
Max Q Clear Time (g_c+I1), s		71.0			20.0	48.0		22.0				
Green Ext Time (p_c), s		0.0			0.0	0.0		0.0				

Intersection Summary												
HCM 7th Control Delay, s/veh			422.8									
HCM 7th LOS			F									

Intersection	
Int Delay, s/veh	91.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1808	99	35	1190	212	17
Future Vol, veh/h	1808	99	35	1190	212	17
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1987	109	38	1308	233	19

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2098	0	3428	2043
Stage 1	-	-	-	-	2043	-
Stage 2	-	-	-	-	1385	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	266	-	~ 8	72
Stage 1	-	-	-	-	~ 110	-
Stage 2	-	-	-	-	235	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	266	-	~ 7	71
Mov Cap-2 Maneuver	-	-	-	-	~ 68	-
Stage 1	-	-	-	-	~ 110	-
Stage 2	-	-	-	-	~ 201	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.59	$ 1340.29
HCM LOS			F

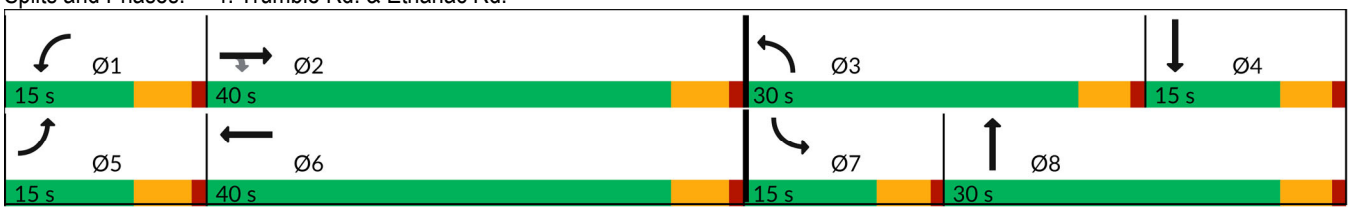
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	68	-	-	266	-
HCM Lane V/C Ratio	3.697	-	-	0.145	-
HCM Ctrl Dly (s/v)	$ 1340.3	-	-	20.8	-
HCM Lane LOS	F	-	-	C	-
HCM 95th %tile Q(veh)	26.5	-	-	0.5	-

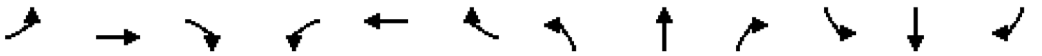
Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	302	2042	29	40	942	86	19	28	30
Future Volume (vph)	302	2042	29	40	942	86	19	28	30
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	5	2	2	1	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.3	35.3	35.3	10.3	27.8	9.9	29.9	9.9	10.4
Total Split (s)	15.0	40.0	40.0	15.0	40.0	30.0	30.0	15.0	15.0
Total Split (%)	15.0%	40.0%	40.0%	15.0%	40.0%	30.0%	30.0%	15.0%	15.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.9	3.9	3.9	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	4.9	4.9	4.9	4.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	9.9	43.4	43.4	6.6	35.3	8.6	13.2	6.1	9.0
Actuated g/C Ratio	0.12	0.54	0.54	0.08	0.44	0.11	0.16	0.08	0.11
v/c Ratio	1.50	2.19	0.03	0.29	1.28	0.48	0.19	0.22	0.75
Control Delay (s/veh)	275.9	555.0	0.1	43.5	159.7	45.1	15.8	42.9	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	275.9	555.0	0.1	43.5	159.7	45.1	15.8	42.9	17.2
LOS	F	F	A	D	F	D	B	D	B
Approach Delay (s/veh)		512.6			155.2		33.7		19.3
Approach LOS		F			F		C		B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 81.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.19	
Intersection Signal Delay (s/veh): 358.7	Intersection LOS: F
Intersection Capacity Utilization 152.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 4: Trumble Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	302	2042	29	40	942	28	86	19	35	28	30	279
Future Volume (veh/h)	302	2042	29	40	942	28	86	19	35	28	30	279
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	328	2220	24	43	1024	28	93	21	23	30	33	268
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	219	978	827	70	796	22	121	135	147	55	23	183
Arrive On Green	0.12	0.51	0.51	0.04	0.43	0.43	0.07	0.16	0.16	0.03	0.13	0.13
Sat Flow, veh/h	1810	1900	1607	1810	1841	50	1810	829	908	1810	180	1458
Grp Volume(v), veh/h	328	2220	24	43	0	1052	93	0	44	30	0	301
Grp Sat Flow(s),veh/h/ln	1810	1900	1607	1810	0	1891	1810	0	1737	1810	0	1638
Q Serve(g_s), s	9.7	41.3	0.6	1.9	0.0	34.7	4.1	0.0	1.7	1.3	0.0	10.1
Cycle Q Clear(g_c), s	9.7	41.3	0.6	1.9	0.0	34.7	4.1	0.0	1.7	1.3	0.0	10.1
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.52	1.00		0.89
Lane Grp Cap(c), veh/h	219	978	827	70	0	817	121	0	282	55	0	206
V/C Ratio(X)	1.50	2.27	0.03	0.62	0.00	1.29	0.77	0.00	0.16	0.55	0.00	1.46
Avail Cap(c_a), veh/h	219	978	827	219	0	817	566	0	543	228	0	206
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.3	19.5	9.6	38.0	0.0	22.8	36.8	0.0	28.9	38.4	0.0	35.1
Incr Delay (d2), s/veh	247.5	574.8	0.0	3.3	0.0	138.4	3.8	0.0	0.1	3.1	0.0	232.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.0	170.8	0.2	0.9	0.0	44.5	1.8	0.0	0.7	0.6	0.0	17.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	282.8	594.3	9.6	41.3	0.0	161.2	40.6	0.0	29.0	41.5	0.0	267.3
LnGrp LOS	F	F	A	D		F	D		C	D		F
Approach Vol, veh/h		2572			1095			137			331	
Approach Delay, s/veh		549.1			156.5			36.9			246.8	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	46.6	10.3	15.0	15.0	40.0	7.3	17.9
Change Period (Y+Rc), s	5.3	5.3	4.9	4.9	5.3	5.3	4.9	4.9
Max Green Setting (Gmax), s	9.7	34.7	25.1	10.1	9.7	34.7	10.1	25.1
Max Q Clear Time (g_c+I1), s	3.9	43.3	6.1	12.1	11.7	36.7	3.3	3.7
Green Ext Time (p_c), s	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	404.0
HCM 7th LOS	F

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	135	1427	517	83	731	18	156	14	19	23	61	127
Future Vol, veh/h	135	1427	517	83	731	18	156	14	19	23	61	127
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	145	1534	556	89	786	19	168	15	20	25	66	137

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	805	0	0	2090	0	0	3100	3087	1812	2806	3355	796
Stage 1	-	-	-	-	-	-	2103	2103	-	974	974	-
Stage 2	-	-	-	-	-	-	997	984	-	1832	2381	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	828	-	-	268	-	-	~ 7	~ 12	99	~ 12	~ 8	390
Stage 1	-	-	-	-	-	-	~ 68	94	-	305	333	-
Stage 2	-	-	-	-	-	-	296	329	-	99	67	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	828	-	-	268	-	-	-	~ 5	99	-	~ 3	390
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 5	-	-	~ 3	-
Stage 1	-	-	-	-	-	-	~ 68	94	-	121	131	-
Stage 2	-	-	-	-	-	-	~ 38	130	-	66	67	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.67	2.49		
HCM LOS			-	-

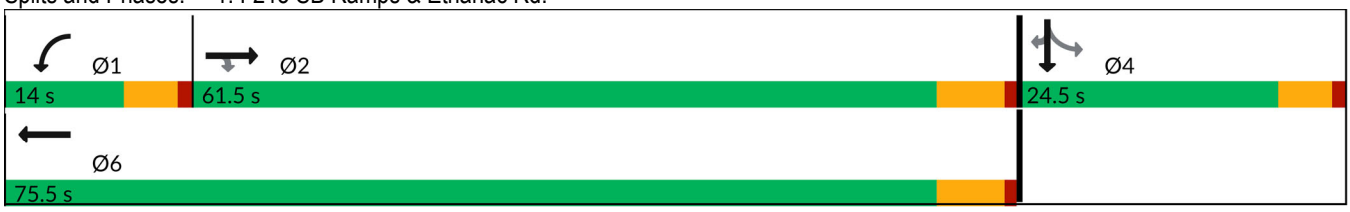
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	~ 111	-	-	148	-	-	-
HCM Lane V/C Ratio	-	0.175	-	-	0.333	-	-	-
HCM Ctrl Dly (s/v)	-	10.3	0	-	25	0	-	-
HCM Lane LOS	-	B	A	-	C	A	-	-
HCM 95th %tile Q(veh)	-	0.6	-	-	1.4	-	-	-

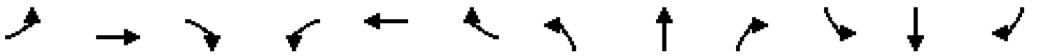
Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1770	995	396	1680	2	1008
Future Volume (vph)	1770	995	396	1680	2	1008
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Detector Phase	2	2	1	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.4	23.4	10.0	24.5	24.5	24.5
Total Split (s)	61.5	61.5	14.0	75.5	24.5	24.5
Total Split (%)	61.5%	61.5%	14.0%	75.5%	24.5%	24.5%
Yellow Time (s)	5.0	5.0	4.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	55.5	55.5	9.0	69.5	19.5	19.5
Actuated g/C Ratio	0.56	0.56	0.09	0.70	0.20	0.20
v/c Ratio	1.73	0.92	2.52	0.69	1.95	2.71
Control Delay (s/veh)	355.2	24.5	722.8	10.8	461.6	793.2
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay (s/veh)	355.2	24.5	722.8	11.1	461.6	793.2
LOS	F	C	F	B	F	F
Approach Delay (s/veh)	236.2			146.8	661.2	
Approach LOS	F			F	F	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.71	
Intersection Signal Delay (s/veh): 316.9	Intersection LOS: F
Intersection Capacity Utilization 305.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1: I-215 SB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1770	995	396	1680	0	0	0	0	664	2	1008
Future Volume (veh/h)	0	1770	995	396	1680	0	0	0	0	664	2	1008
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1825	947	408	1732	0				685	2	879
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1055	894	163	2509	0				352	1	314
Arrive On Green	0.00	0.56	0.56	0.09	0.69	0.00				0.19	0.19	0.19
Sat Flow, veh/h	0	1900	1610	1810	3705	0				1805	5	1610
Grp Volume(v), veh/h	0	1825	947	408	1732	0				687	0	879
Grp Sat Flow(s),veh/h/ln	0	1900	1610	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	55.5	55.5	9.0	28.1	0.0				19.5	0.0	19.5
Cycle Q Clear(g_c), s	0.0	55.5	55.5	9.0	28.1	0.0				19.5	0.0	19.5
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1055	894	163	2509	0				353	0	314
V/C Ratio(X)	0.00	1.73	1.06	2.51	0.69	0.00				1.95	0.00	2.80
Avail Cap(c_a), veh/h	0	1055	894	163	2509	0				353	0	314
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	22.3	22.3	45.5	8.9	0.0				40.3	0.0	40.2
Incr Delay (d2), s/veh	0.0	332.8	47.2	695.3	0.8	0.0				436.3	0.0	818.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	118.8	29.8	35.4	8.8	0.0				50.8	0.0	78.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	355.0	69.5	740.8	9.8	0.0				476.5	0.0	858.9
LnGrp LOS		F	F	F	A					F		F
Approach Vol, veh/h		2772			2140						1566	
Approach Delay, s/veh		257.5			149.1						691.1	
Approach LOS		F			F						F	

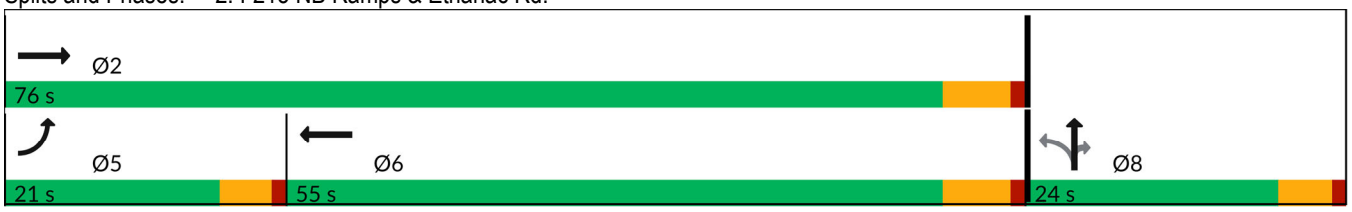
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	14.0	61.5		24.5		75.5
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	9.0	55.5		19.5		69.5
Max Q Clear Time (g_c+I1), s	11.0	57.5		21.5		30.1
Green Ext Time (p_c), s	0.0	0.0		0.0		19.0

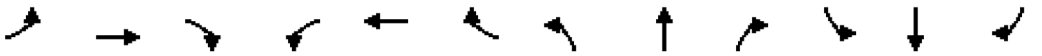
Intersection Summary		
HCM 7th Control Delay, s/veh		326.5
HCM 7th LOS		F

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Configurations					
Traffic Volume (vph)	945	1489	1084	0	459
Future Volume (vph)	945	1489	1084	0	459
Turn Type	Prot	NA	NA	NA	Perm
Protected Phases	5	2	6	8	
Permitted Phases					8
Detector Phase	5	2	6	8	8
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.5	23.4	23.4	23.4
Total Split (s)	21.0	76.0	55.0	24.0	24.0
Total Split (%)	21.0%	76.0%	55.0%	24.0%	24.0%
Yellow Time (s)	4.0	5.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	None	None	None	None
Act Effct Green (s)	16.0	70.0	49.0	19.0	19.0
Actuated g/C Ratio	0.16	0.70	0.49	0.19	0.19
v/c Ratio	3.42	1.17	2.02	3.02	1.27
Control Delay (s/veh)	Error	101.8	484.3	933.4	169.7
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay (s/veh)	Error	101.9	484.3	933.4	169.7
LOS	F	F	F	F	F
Approach Delay (s/veh)		494.1	484.3	691.7	
Approach LOS		F	F	F	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 3.42	
Intersection Signal Delay (s/veh): 541.9	Intersection LOS: F
Intersection Capacity Utilization 305.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 2: I-215 NB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	945	1489	0	0	1084	670	991	0	459	0	0	0
Future Volume (veh/h)	945	1489	0	0	1084	670	991	0	459	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	984	1551	0	0	1129	662	1032	0	399			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	290	1330	0	0	550	323	344	0	306			
Arrive On Green	0.16	0.70	0.00	0.00	0.49	0.49	0.19	0.00	0.19			
Sat Flow, veh/h	1810	1900	0	0	1123	658	1810	0	1610			
Grp Volume(v), veh/h	984	1551	0	0	0	1791	1032	0	399			
Grp Sat Flow(s),veh/h/ln	1810	1900	0	0	0	1781	1810	0	1610			
Q Serve(g_s), s	16.0	70.0	0.0	0.0	0.0	49.0	19.0	0.0	19.0			
Cycle Q Clear(g_c), s	16.0	70.0	0.0	0.0	0.0	49.0	19.0	0.0	19.0			
Prop In Lane	1.00		0.00	0.00		0.37	1.00		1.00			
Lane Grp Cap(c), veh/h	290	1330	0	0	0	873	344	0	306			
V/C Ratio(X)	3.40	1.17	0.00	0.00	0.00	2.05	3.00	0.00	1.30			
Avail Cap(c_a), veh/h	290	1330	0	0	0	873	344	0	306			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	42.0	15.0	0.0	0.0	0.0	25.5	40.5	0.0	40.5			
Incr Delay (d2), s/veh	1088.1	83.3	0.0	0.0	0.0	477.3	908.5	0.0	158.7			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	94.4	52.9	0.0	0.0	0.0	134.3	94.6	0.0	20.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	1130.1	98.3	0.0	0.0	0.0	502.8	949.0	0.0	199.2			
LnGrp LOS	F	F				F	F		F			
Approach Vol, veh/h		2535			1791			1431				
Approach Delay, s/veh		498.8			502.8			739.9				
Approach LOS		F			F			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		76.0			21.0	55.0		24.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		70.0			16.0	49.0		19.0				
Max Q Clear Time (g_c+I1), s		72.0			18.0	51.0		21.0				
Green Ext Time (p_c), s		0.0			0.0	0.0		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh			560.0									
HCM 7th LOS			F									

Intersection	
Int Delay, s/veh	102.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1828	120	30	1558	196	50
Future Vol, veh/h	1828	120	30	1558	196	50
Conflicting Peds, #/hr	0	3	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1945	128	32	1657	209	53

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2075	0	3733	2012
Stage 1	-	-	-	-	2012	-
Stage 2	-	-	-	-	1721	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	272	-	~ 5	75
Stage 1	-	-	-	-	~ 115	-
Stage 2	-	-	-	-	~ 160	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	271	-	~ 4	75
Mov Cap-2 Maneuver	-	-	-	-	~ 60	-
Stage 1	-	-	-	-	~ 114	-
Stage 2	-	-	-	-	~ 141	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.38	$ 1578.06
HCM LOS			F

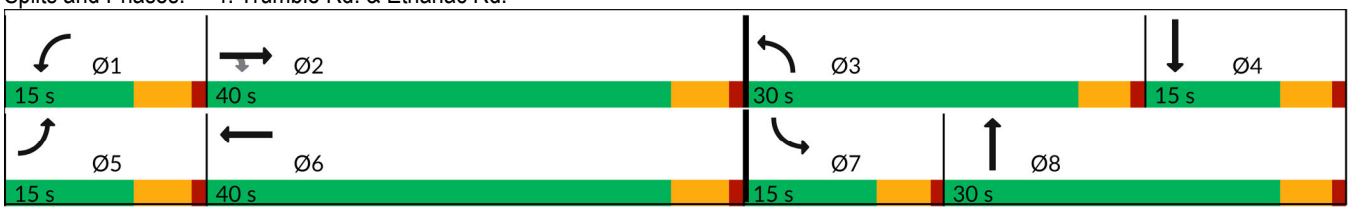
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	62	-	-	271	-
HCM Lane V/C Ratio	4.206	-	-	0.118	-
HCM Ctrl Dly (s/v)	$ 1578.1	-	-	20.1	-
HCM Lane LOS	F	-	-	C	-
HCM 95th %tile Q(veh)	28.4	-	-	0.4	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	259	1775	26	34	1970	71	2	35	8
Future Volume (vph)	259	1775	26	34	1970	71	2	35	8
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	5	2	2	1	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.3	35.3	35.3	10.3	27.8	9.9	29.9	9.9	10.4
Total Split (s)	15.0	40.0	40.0	15.0	40.0	30.0	30.0	15.0	15.0
Total Split (%)	15.0%	40.0%	40.0%	15.0%	40.0%	30.0%	30.0%	15.0%	15.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.9	3.9	3.9	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	4.9	4.9	4.9	4.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	9.9	43.6	43.6	6.4	35.4	7.9	9.8	6.4	8.5
Actuated g/C Ratio	0.12	0.55	0.55	0.08	0.44	0.10	0.12	0.08	0.11
v/c Ratio	1.25	1.84	0.03	0.26	2.55	0.43	0.20	0.26	0.69
Control Delay (s/veh)	178.1	403.3	0.1	42.4	718.1	43.9	12.1	42.6	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	178.1	403.3	0.1	42.4	718.1	43.9	12.1	42.6	14.0
LOS	F	F	A	D	F	D	B	D	B
Approach Delay (s/veh)		369.9			706.6		31.6		17.2
Approach LOS		F			F		C		B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 80	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.55	
Intersection Signal Delay (s/veh): 487.7	Intersection LOS: F
Intersection Capacity Utilization 157.4%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 4: Trumble Rd. & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	259	1775	26	34	1970	18	71	2	43	35	8	270
Future Volume (veh/h)	259	1775	26	34	1970	18	71	2	43	35	8	270
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	278	1909	24	37	2118	18	76	2	27	38	9	231
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	221	998	841	64	824	7	99	16	222	65	8	199
Arrive On Green	0.12	0.53	0.53	0.04	0.44	0.44	0.05	0.15	0.15	0.04	0.13	0.13
Sat Flow, veh/h	1810	1900	1603	1810	1881	16	1810	112	1515	1810	61	1559
Grp Volume(v), veh/h	278	1909	24	37	0	2136	76	0	29	38	0	240
Grp Sat Flow(s),veh/h/ln	1810	1900	1603	1810	0	1897	1810	0	1627	1810	0	1619
Q Serve(g_s), s	9.7	41.6	0.6	1.6	0.0	34.7	3.3	0.0	1.2	1.6	0.0	10.1
Cycle Q Clear(g_c), s	9.7	41.6	0.6	1.6	0.0	34.7	3.3	0.0	1.2	1.6	0.0	10.1
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.93	1.00		0.96
Lane Grp Cap(c), veh/h	221	998	841	64	0	831	99	0	239	65	0	206
V/C Ratio(X)	1.26	1.91	0.03	0.58	0.00	2.57	0.77	0.00	0.12	0.59	0.00	1.16
Avail Cap(c_a), veh/h	221	998	841	221	0	831	573	0	515	231	0	206
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.8	18.8	9.1	37.7	0.0	22.3	36.9	0.0	29.4	37.6	0.0	34.6
Incr Delay (d2), s/veh	146.2	414.8	0.0	3.1	0.0	710.7	4.5	0.0	0.1	3.1	0.0	113.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.0	129.4	0.2	0.7	0.0	177.0	1.5	0.0	0.5	0.7	0.0	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	181.0	433.6	9.1	40.8	0.0	732.9	41.5	0.0	29.5	40.8	0.0	148.1
LnGrp LOS	F	F	A	D		F	D		C	D		F
Approach Vol, veh/h		2211			2173			105			278	
Approach Delay, s/veh		397.2			721.2			38.2			133.4	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	46.9	9.2	15.0	15.0	40.0	7.7	16.5
Change Period (Y+Rc), s	5.3	5.3	4.9	4.9	5.3	5.3	4.9	4.9
Max Green Setting (Gmax), s	9.7	34.7	25.1	10.1	9.7	34.7	10.1	25.1
Max Q Clear Time (g_c+I1), s	3.6	43.6	5.3	12.1	11.7	36.7	3.6	3.2
Green Ext Time (p_c), s	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	521.6
HCM 7th LOS	F

Intersection	
Int Delay, s/veh	9.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	0	0	116	0	0	68	0
Future Vol, veh/h	0	0	0	0	0	0	0	116	0	0	68	0
Conflicting Peds, #/hr	0	0	3	0	0	0	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	0	0	0	0	120	0	0	70	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	4	0	0	41	5	4	62	5	2
Stage 1	-	-	-	-	-	-	4	4	-	1	1	-
Stage 2	-	-	-	-	-	-	37	1	-	61	4	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1635	-	-	1631	-	-	968	894	1085	938	894	1088
Stage 1	-	-	-	-	-	-	1024	896	-	1027	899	-
Stage 2	-	-	-	-	-	-	983	899	-	956	896	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1635	-	-	1626	-	-	888	892	1082	812	892	1087
Mov Cap-2 Maneuver	-	-	-	-	-	-	888	892	-	812	892	-
Stage 1	-	-	-	-	-	-	1021	894	-	1027	899	-
Stage 2	-	-	-	-	-	-	906	899	-	828	894	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	9.66	9.38
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	892	1635	-	-	1626	-	-	892
HCM Lane V/C Ratio	0.134	-	-	-	-	-	-	0.079
HCM Ctrl Dly (s/v)	9.7	0	-	-	0	-	-	9.4
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.3

APPENDIX 6.2:

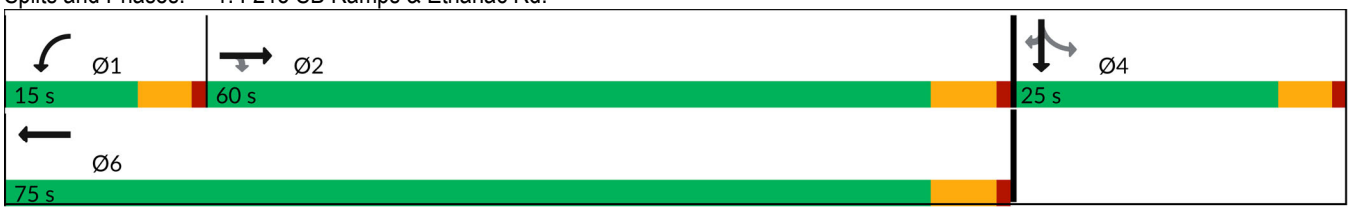
EAPC (2028) INTERSECTION ANALYSIS

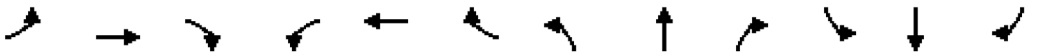
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Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1679	976	188	1613	1	1031
Future Volume (vph)	1679	976	188	1613	1	1031
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Detector Phase	2	2	1	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.4	23.4	10.0	24.5	24.5	24.5
Total Split (s)	60.0	60.0	15.0	75.0	25.0	25.0
Total Split (%)	60.0%	60.0%	15.0%	75.0%	25.0%	25.0%
Yellow Time (s)	5.0	5.0	4.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	54.0	54.0	10.0	69.0	20.0	20.0
Actuated g/C Ratio	0.54	0.54	0.10	0.69	0.20	0.20
v/c Ratio	1.70	0.93	1.09	0.67	1.85	2.74
Control Delay (s/veh)	343.8	27.0	136.6	10.7	418.6	808.1
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0
Total Delay (s/veh)	343.8	27.0	136.6	11.0	418.6	808.1
LOS	F	C	F	B	F	F
Approach Delay (s/veh)	227.3			24.1	658.9	
Approach LOS	F			C	F	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.74	
Intersection Signal Delay (s/veh): 285.3	Intersection LOS: F
Intersection Capacity Utilization 189.7%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1: I-215 SB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1679	976	188	1613	0	0	0	0	639	1	1031
Future Volume (veh/h)	0	1679	976	188	1613	0	0	0	0	639	1	1031
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1749	912	196	1680	0				666	1	920
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1026	859	181	2491	0				361	1	322
Arrive On Green	0.00	0.54	0.54	0.10	0.69	0.00				0.20	0.20	0.20
Sat Flow, veh/h	0	1900	1590	1810	3705	0				1807	3	1610
Grp Volume(v), veh/h	0	1749	912	196	1680	0				667	0	920
Grp Sat Flow(s),veh/h/ln	0	1900	1590	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	54.0	54.0	10.0	27.0	0.0				20.0	0.0	20.0
Cycle Q Clear(g_c), s	0.0	54.0	54.0	10.0	27.0	0.0				20.0	0.0	20.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1026	859	181	2491	0				362	0	322
V/C Ratio(X)	0.00	1.70	1.06	1.08	0.67	0.00				1.84	0.00	2.86
Avail Cap(c_a), veh/h	0	1026	859	181	2491	0				362	0	322
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	23.0	23.0	45.0	9.0	0.0				40.0	0.0	40.0
Incr Delay (d2), s/veh	0.0	321.3	48.6	90.8	0.7	0.0				389.9	0.0	844.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	112.6	29.2	8.9	8.5	0.0				47.4	0.0	82.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	344.3	71.6	135.8	9.7	0.0				429.9	0.0	884.1
LnGrp LOS		F	F	F	A					F		F
Approach Vol, veh/h		2661			1876						1587	
Approach Delay, s/veh		250.8			22.9						693.2	
Approach LOS		F			C						F	

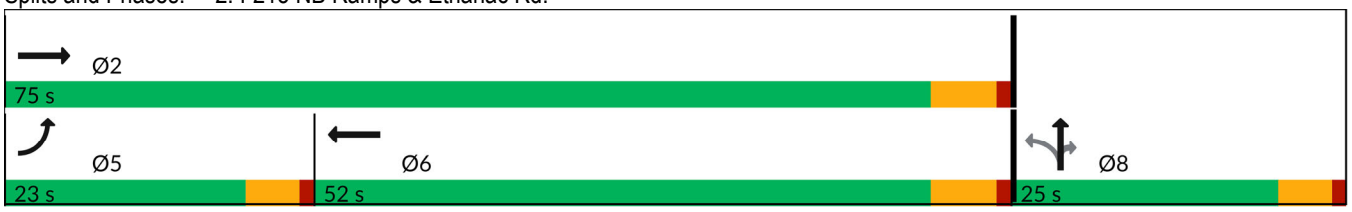
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	15.0	60.0		25.0		75.0
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	10.0	54.0		20.0		69.0
Max Q Clear Time (g_c+I1), s	12.0	56.0		22.0		29.0
Green Ext Time (p_c), s	0.0	0.0		0.0		18.2

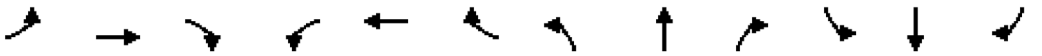
Intersection Summary	
HCM 7th Control Delay, s/veh	295.6
HCM 7th LOS	F

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Configurations					
Traffic Volume (vph)	819	1500	876	0	496
Future Volume (vph)	819	1500	876	0	496
Turn Type	Prot	NA	NA	NA	Perm
Protected Phases	5	2	6	8	
Permitted Phases					8
Detector Phase	5	2	6	8	8
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.5	23.4	23.4	23.4
Total Split (s)	23.0	75.0	52.0	25.0	25.0
Total Split (%)	23.0%	75.0%	52.0%	25.0%	25.0%
Yellow Time (s)	4.0	5.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	None	None	None	None
Act Effct Green (s)	18.0	69.0	46.0	20.0	20.0
Actuated g/C Ratio	0.18	0.69	0.46	0.20	0.20
v/c Ratio	2.66	1.20	1.77	2.68	1.33
Control Delay (s/veh)	775.9	118.7	374.1	785.3	194.7
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay (s/veh)	775.9	118.8	374.1	785.3	194.7
LOS	F	F	F	F	F
Approach Delay (s/veh)		350.8	374.1	578.6	
Approach LOS		F	F	F	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.68	
Intersection Signal Delay (s/veh): 419.7	Intersection LOS: F
Intersection Capacity Utilization 189.7%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 2: I-215 NB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	819	1500	0	0	876	555	921	0	496	0	0	0
Future Volume (veh/h)	819	1500	0	0	876	555	921	0	496	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	862	1579	0	0	922	518	969	0	462			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	326	1311	0	0	526	295	362	0	322			
Arrive On Green	0.18	0.69	0.00	0.00	0.46	0.46	0.20	0.00	0.20			
Sat Flow, veh/h	1810	1900	0	0	1143	642	1810	0	1610			
Grp Volume(v), veh/h	862	1579	0	0	0	1440	969	0	462			
Grp Sat Flow(s),veh/h/ln	1810	1900	0	0	0	1784	1810	0	1610			
Q Serve(g_s), s	18.0	69.0	0.0	0.0	0.0	46.0	20.0	0.0	20.0			
Cycle Q Clear(g_c), s	18.0	69.0	0.0	0.0	0.0	46.0	20.0	0.0	20.0			
Prop In Lane	1.00		0.00	0.00		0.36	1.00		1.00			
Lane Grp Cap(c), veh/h	326	1311	0	0	0	821	362	0	322			
V/C Ratio(X)	2.65	1.20	0.00	0.00	0.00	1.75	2.68	0.00	1.43			
Avail Cap(c_a), veh/h	326	1311	0	0	0	821	362	0	322			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	41.0	15.5	0.0	0.0	0.0	27.0	40.0	0.0	40.0			
Incr Delay (d2), s/veh	749.7	99.5	0.0	0.0	0.0	344.5	762.7	0.0	212.6			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	75.5	58.5	0.0	0.0	0.0	96.2	84.9	0.0	26.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	790.7	115.0	0.0	0.0	0.0	371.5	802.7	0.0	252.6			
LnGrp LOS	F	F				F	F		F			
Approach Vol, veh/h		2441			1440			1431				
Approach Delay, s/veh		353.6			371.5			625.1				
Approach LOS		F			F			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		75.0			23.0	52.0		25.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		69.0			18.0	46.0		20.0				
Max Q Clear Time (g_c+I1), s		71.0			20.0	48.0		22.0				
Green Ext Time (p_c), s		0.0			0.0	0.0		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh			431.6									
HCM 7th LOS			F									

Intersection	
Int Delay, s/veh	100.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1896	99	35	1219	212	17
Future Vol, veh/h	1896	99	35	1219	212	17
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2084	109	38	1340	233	19

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2194	0	3556	2140
Stage 1	-	-	-	-	2140	-
Stage 2	-	-	-	-	1416	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	244	-	~ 7	62
Stage 1	-	-	-	-	~ 99	-
Stage 2	-	-	-	-	~ 226	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	244	-	~ 6	62
Mov Cap-2 Maneuver	-	-	-	-	~ 62	-
Stage 1	-	-	-	-	~ 99	-
Stage 2	-	-	-	-	~ 191	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.63	$ 1525.24
HCM LOS			F

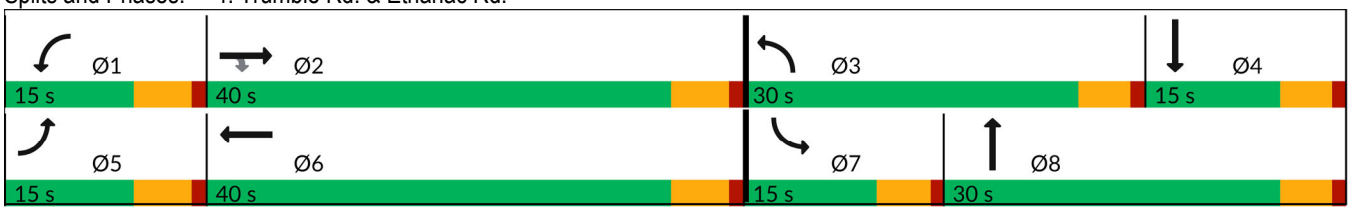
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	62	-	-	244	-
HCM Lane V/C Ratio	4.085	-	-	0.158	-
HCM Ctrl Dly (s/v)	$ 1525.2	-	-	22.5	-
HCM Lane LOS	F	-	-	C	-
HCM 95th %tile Q(veh)	27.2	-	-	0.6	-

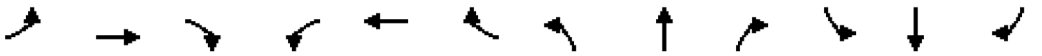
Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	302	2063	96	40	956	101	19	28	30
Future Volume (vph)	302	2063	96	40	956	101	19	28	30
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	5	2	2	1	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.3	35.3	35.3	10.3	27.8	9.9	29.9	9.9	10.4
Total Split (s)	15.0	40.0	40.0	15.0	40.0	30.0	30.0	15.0	15.0
Total Split (%)	15.0%	40.0%	40.0%	15.0%	40.0%	30.0%	30.0%	15.0%	15.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.9	3.9	3.9	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	4.9	4.9	4.9	4.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	9.9	43.4	43.4	6.6	35.3	9.4	13.5	6.1	8.8
Actuated g/C Ratio	0.12	0.53	0.53	0.08	0.43	0.12	0.17	0.07	0.11
v/c Ratio	1.50	2.22	0.11	0.29	1.30	0.53	0.19	0.22	0.75
Control Delay (s/veh)	279.5	570.1	0.3	43.8	170.7	45.5	15.6	43.2	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	279.5	570.1	0.3	43.8	170.7	45.5	15.6	43.2	17.8
LOS	F	F	A	D	F	D	B	D	B
Approach Delay (s/veh)		512.3			165.8		35.0		19.8
Approach LOS		F			F		D		B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 81.6	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.22	
Intersection Signal Delay (s/veh): 362.7	Intersection LOS: F
Intersection Capacity Utilization 154.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 4: Trumble Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	302	2063	96	40	956	28	101	19	35	28	30	279
Future Volume (veh/h)	302	2063	96	40	956	28	101	19	35	28	30	279
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	328	2242	96	43	1039	28	110	21	23	30	33	268
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	216	965	816	69	786	21	142	143	157	55	22	181
Arrive On Green	0.12	0.51	0.51	0.04	0.43	0.43	0.08	0.17	0.17	0.03	0.12	0.12
Sat Flow, veh/h	1810	1900	1607	1810	1841	50	1810	829	908	1810	180	1458
Grp Volume(v), veh/h	328	2242	96	43	0	1067	110	0	44	30	0	301
Grp Sat Flow(s),veh/h/ln	1810	1900	1607	1810	0	1891	1810	0	1737	1810	0	1638
Q Serve(g_s), s	9.7	41.3	2.5	1.9	0.0	34.7	4.8	0.0	1.7	1.3	0.0	10.1
Cycle Q Clear(g_c), s	9.7	41.3	2.5	1.9	0.0	34.7	4.8	0.0	1.7	1.3	0.0	10.1
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.52	1.00		0.89
Lane Grp Cap(c), veh/h	216	965	816	69	0	807	142	0	300	55	0	203
V/C Ratio(X)	1.52	2.32	0.12	0.62	0.00	1.32	0.77	0.00	0.15	0.55	0.00	1.48
Avail Cap(c_a), veh/h	216	965	816	216	0	807	559	0	536	225	0	203
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.8	20.0	10.5	38.5	0.0	23.3	36.7	0.0	28.6	38.9	0.0	35.6
Incr Delay (d2), s/veh	255.8	598.4	0.0	3.4	0.0	153.4	3.4	0.0	0.1	3.1	0.0	240.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.3	175.3	0.8	0.9	0.0	47.6	2.2	0.0	0.7	0.6	0.0	17.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	291.5	618.4	10.5	41.9	0.0	176.7	40.1	0.0	28.6	42.0	0.0	275.7
LnGrp LOS	F	F	B	D		F	D		C	D		F
Approach Vol, veh/h		2666			1110			154			331	
Approach Delay, s/veh		556.3			171.4			36.8			254.6	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	46.6	11.3	15.0	15.0	40.0	7.4	18.9
Change Period (Y+Rc), s	5.3	5.3	4.9	4.9	5.3	5.3	4.9	4.9
Max Green Setting (Gmax), s	9.7	34.7	25.1	10.1	9.7	34.7	10.1	25.1
Max Q Clear Time (g_c+I1), s	3.9	43.3	6.8	12.1	11.7	36.7	3.3	3.7
Green Ext Time (p_c), s	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	413.8
HCM 7th LOS	F

Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	14	143	0	54	114
Future Vol, veh/h	0	14	143	0	54	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	15	155	0	59	124

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	397	155	0	0	155	0
Stage 1	155	-	-	-	-	-
Stage 2	241	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	612	896	-	-	1437	-
Stage 1	878	-	-	-	-	-
Stage 2	804	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	585	896	-	-	1437	-
Mov Cap-2 Maneuver	585	-	-	-	-	-
Stage 1	878	-	-	-	-	-
Stage 2	768	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.09	0	2.45
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	896	579	-
HCM Lane V/C Ratio	-	-	0.017	0.041	-
HCM Ctrl Dly (s/v)	-	-	9.1	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	4	139	10	15	99
Future Vol, veh/h	3	4	139	10	15	99
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	4	151	11	16	108

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	297	157	0	0	162	0
Stage 1	157	-	-	-	-	-
Stage 2	140	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	699	894	-	-	1429	-
Stage 1	877	-	-	-	-	-
Stage 2	892	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	690	894	-	-	1429	-
Mov Cap-2 Maneuver	690	-	-	-	-	-
Stage 1	877	-	-	-	-	-
Stage 2	881	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.58	0	0.99
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	794	237	-
HCM Lane V/C Ratio	-	-	0.01	0.011	-
HCM Ctrl Dly (s/v)	-	-	9.6	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	135	1427	538	95	731	18	170	16	22	23	69	127
Future Vol, veh/h	135	1427	538	95	731	18	170	16	22	23	69	127
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	145	1534	578	102	786	19	183	17	24	25	74	137

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	805	0	0	2113	0	0	3141	3124	1824	2833	3403	796
Stage 1	-	-	-	-	-	-	2114	2114	-	1000	1000	-
Stage 2	-	-	-	-	-	-	1027	1010	-	1833	2403	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	828	-	-	263	-	-	~ 7	~ 11	97	~ 11	~ 7	390
Stage 1	-	-	-	-	-	-	~ 67	92	-	295	324	-
Stage 2	-	-	-	-	-	-	285	320	-	99	~ 66	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	828	-	-	263	-	-	-	~ 3	97	-	~ 2	390
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 3	-	-	~ 2	-
Stage 1	-	-	-	-	-	-	~ 67	92	-	87	95	-
Stage 2	-	-	-	-	-	-	~ 12	94	-	61	~ 66	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.66	3.06		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	~ 110	-	-	145	-	-	-
HCM Lane V/C Ratio	-	0.175	-	-	0.389	-	-	-
HCM Ctrl Dly (s/v)	-	10.3	0	-	27.2	0	-	-
HCM Lane LOS	-	B	A	-	D	A	-	-
HCM 95th %tile Q(veh)	-	0.6	-	-	1.8	-	-	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	0	0	186	654	26
Future Vol, veh/h	14	0	0	186	654	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	15	0	0	202	711	28

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	927	725	739	0	-	0
Stage 1	725	-	-	-	-	-
Stage 2	202	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	300	428	876	-	-	-
Stage 1	483	-	-	-	-	-
Stage 2	837	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	300	428	876	-	-	-
Mov Cap-2 Maneuver	399	-	-	-	-	-
Stage 1	483	-	-	-	-	-
Stage 2	837	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	14.39	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	876	-	399	-	-
HCM Lane V/C Ratio	-	-	0.038	-	-
HCM Ctrl Dly (s/v)	0	-	14.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	0	0	175	638	16
Future Vol, veh/h	11	0	0	175	638	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	12	0	0	190	693	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	892	702	711	0	-	0
Stage 1	702	-	-	-	-	-
Stage 2	190	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	315	441	898	-	-	-
Stage 1	495	-	-	-	-	-
Stage 2	847	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	315	441	898	-	-	-
Mov Cap-2 Maneuver	410	-	-	-	-	-
Stage 1	495	-	-	-	-	-
Stage 2	847	-	-	-	-	-

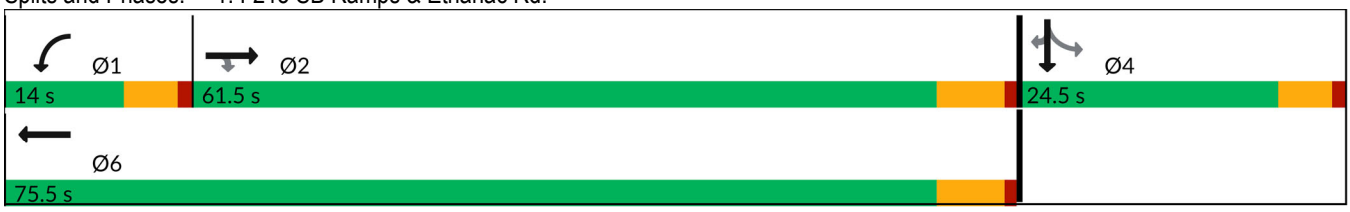
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	14.04	0	0
HCM LOS	B		

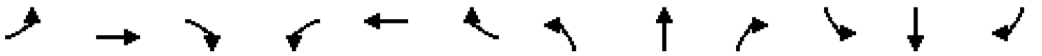
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	898	-	410	-	-
HCM Lane V/C Ratio	-	-	0.029	-	-
HCM Ctrl Dly (s/v)	0	-	14	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1773	995	430	1689	2	1008
Future Volume (vph)	1773	995	430	1689	2	1008
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Detector Phase	2	2	1	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.4	23.4	10.0	24.5	24.5	24.5
Total Split (s)	61.5	61.5	14.0	75.5	24.5	24.5
Total Split (%)	61.5%	61.5%	14.0%	75.5%	24.5%	24.5%
Yellow Time (s)	5.0	5.0	4.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	55.5	55.5	9.0	69.5	19.5	19.5
Actuated g/C Ratio	0.56	0.56	0.09	0.70	0.20	0.20
v/c Ratio	1.73	0.92	2.73	0.69	2.02	2.71
Control Delay (s/veh)	356.5	24.5	817.7	10.9	494.9	793.2
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay (s/veh)	356.5	24.5	817.7	11.2	494.9	793.2
LOS	F	C	F	B	F	F
Approach Delay (s/veh)	237.1			174.8	671.7	
Approach LOS	F			F	F	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.73	
Intersection Signal Delay (s/veh): 329.3	Intersection LOS: F
Intersection Capacity Utilization 310.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1: I-215 SB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1773	995	430	1689	0	0	0	0	691	2	1008
Future Volume (veh/h)	0	1773	995	430	1689	0	0	0	0	691	2	1008
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1828	947	443	1741	0				712	2	879
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1055	894	163	2509	0				352	1	314
Arrive On Green	0.00	0.56	0.56	0.09	0.69	0.00				0.19	0.19	0.19
Sat Flow, veh/h	0	1900	1610	1810	3705	0				1805	5	1610
Grp Volume(v), veh/h	0	1828	947	443	1741	0				714	0	879
Grp Sat Flow(s),veh/h/ln	0	1900	1610	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	55.5	55.5	9.0	28.4	0.0				19.5	0.0	19.5
Cycle Q Clear(g_c), s	0.0	55.5	55.5	9.0	28.4	0.0				19.5	0.0	19.5
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1055	894	163	2509	0				353	0	314
V/C Ratio(X)	0.00	1.73	1.06	2.72	0.69	0.00				2.02	0.00	2.80
Avail Cap(c_a), veh/h	0	1055	894	163	2509	0				353	0	314
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	22.3	22.3	45.5	9.0	0.0				40.3	0.0	40.2
Incr Delay (d2), s/veh	0.0	334.1	47.2	791.2	0.8	0.0				470.3	0.0	818.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	119.2	29.8	39.7	8.9	0.0				54.1	0.0	78.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	356.3	69.5	836.7	9.8	0.0				510.6	0.0	858.9
LnGrp LOS		F	F	F	A					F		F
Approach Vol, veh/h		2775			2184						1593	
Approach Delay, s/veh		258.4			177.5						702.7	
Approach LOS		F			F						F	

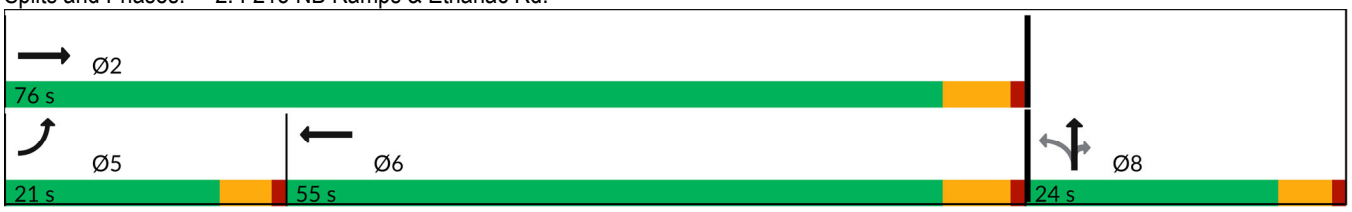
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	14.0	61.5		24.5		75.5
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	9.0	55.5		19.5		69.5
Max Q Clear Time (g_c+I1), s	11.0	57.5		21.5		30.4
Green Ext Time (p_c), s	0.0	0.0		0.0		19.1

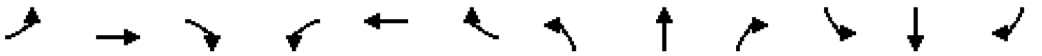
Intersection Summary	
HCM 7th Control Delay, s/veh	339.5
HCM 7th LOS	F

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Configurations					
Traffic Volume (vph)	945	1518	1127	0	477
Future Volume (vph)	945	1518	1127	0	477
Turn Type	Prot	NA	NA	NA	Perm
Protected Phases	5	2	6	8	
Permitted Phases					8
Detector Phase	5	2	6	8	8
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.5	23.4	23.4	23.4
Total Split (s)	21.0	76.0	55.0	24.0	24.0
Total Split (%)	21.0%	76.0%	55.0%	24.0%	24.0%
Yellow Time (s)	4.0	5.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	None	None	None	None
Act Effct Green (s)	16.0	70.0	49.0	19.0	19.0
Actuated g/C Ratio	0.16	0.70	0.49	0.19	0.19
v/c Ratio	3.42	1.19	2.13	3.02	1.32
Control Delay (s/veh)	Error	111.4	531.3	933.4	189.9
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay (s/veh)	Error	111.6	531.3	933.4	189.9
LOS	F	F	F	F	F
Approach Delay (s/veh)		495.5	531.3	691.8	
Approach LOS		F	F	F	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 3.42	
Intersection Signal Delay (s/veh): 556.8	Intersection LOS: F
Intersection Capacity Utilization 310.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 2: I-215 NB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	945	1518	0	0	1127	719	991	0	477	0	0	0
Future Volume (veh/h)	945	1518	0	0	1127	719	991	0	477	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	984	1581	0	0	1174	713	1032	0	418			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	290	1330	0	0	542	329	344	0	306			
Arrive On Green	0.16	0.70	0.00	0.00	0.49	0.49	0.19	0.00	0.19			
Sat Flow, veh/h	1810	1900	0	0	1107	672	1810	0	1610			
Grp Volume(v), veh/h	984	1581	0	0	0	1887	1032	0	418			
Grp Sat Flow(s),veh/h/ln	1810	1900	0	0	0	1779	1810	0	1610			
Q Serve(g_s), s	16.0	70.0	0.0	0.0	0.0	49.0	19.0	0.0	19.0			
Cycle Q Clear(g_c), s	16.0	70.0	0.0	0.0	0.0	49.0	19.0	0.0	19.0			
Prop In Lane	1.00		0.00	0.00		0.38	1.00		1.00			
Lane Grp Cap(c), veh/h	290	1330	0	0	0	872	344	0	306			
V/C Ratio(X)	3.40	1.19	0.00	0.00	0.00	2.16	3.00	0.00	1.37			
Avail Cap(c_a), veh/h	290	1330	0	0	0	872	344	0	306			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	42.0	15.0	0.0	0.0	0.0	25.5	40.5	0.0	40.5			
Incr Delay (d2), s/veh	1088.1	92.7	0.0	0.0	0.0	527.9	908.5	0.0	184.5			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	94.4	56.4	0.0	0.0	0.0	146.3	94.6	0.0	22.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	1130.1	107.7	0.0	0.0	0.0	553.4	949.0	0.0	225.0			
LnGrp LOS	F	F				F	F		F			
Approach Vol, veh/h		2565			1887			1450				
Approach Delay, s/veh		500.0			553.4			740.3				
Approach LOS		F			F			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		76.0			21.0	55.0		24.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		70.0			16.0	49.0		19.0				
Max Q Clear Time (g_c+I1), s		72.0			18.0	51.0		21.0				
Green Ext Time (p_c), s		0.0			0.0	0.0		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh			576.1									
HCM 7th LOS			F									

Intersection	
Int Delay, s/veh	110.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1876	120	30	1650	196	50
Future Vol, veh/h	1876	120	30	1650	196	50
Conflicting Peds, #/hr	0	3	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1996	128	32	1755	209	53

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2126	0	3882	2063
Stage 1	-	-	-	-	2063	-
Stage 2	-	-	-	-	1819	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	260	-	~ 4	70
Stage 1	-	-	-	-	~ 108	-
Stage 2	-	-	-	-	~ 143	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	259	-	~ 3	69
Mov Cap-2 Maneuver	-	-	-	-	~ 55	-
Stage 1	-	-	-	-	~ 108	-
Stage 2	-	-	-	-	~ 126	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.37	$ 1761.31
HCM LOS			F

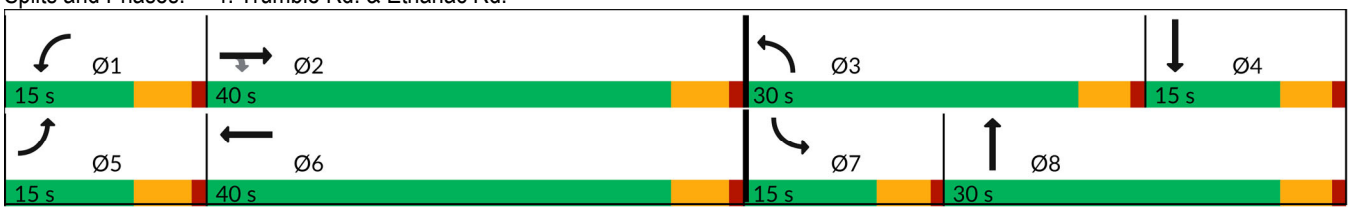
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	57	-	-	259	-
HCM Lane V/C Ratio	4.591	-	-	0.123	-
HCM Ctrl Dly (s/v)	$ 1761.3	-	-	20.9	-
HCM Lane LOS	F	-	-	C	-
HCM 95th %tile Q(veh)	29	-	-	0.4	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	259	1803	46	34	1998	135	2	35	8
Future Volume (vph)	259	1803	46	34	1998	135	2	35	8
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	5	2	2	1	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.3	35.3	35.3	10.3	27.8	9.9	29.9	9.9	10.4
Total Split (s)	15.0	40.0	40.0	15.0	40.0	30.0	30.0	15.0	15.0
Total Split (%)	15.0%	40.0%	40.0%	15.0%	40.0%	30.0%	30.0%	15.0%	15.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.9	3.9	3.9	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	4.9	4.9	4.9	4.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	9.8	42.9	42.9	6.4	35.0	11.1	11.3	6.4	7.7
Actuated g/C Ratio	0.12	0.51	0.51	0.08	0.42	0.13	0.13	0.08	0.09
v/c Ratio	1.33	2.01	0.06	0.27	2.75	0.61	0.19	0.28	0.73
Control Delay (s/veh)	210.2	476.2	0.1	43.9	808.2	46.3	11.5	44.1	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	210.2	476.2	0.1	43.9	808.2	46.3	11.5	44.1	16.3
LOS	F	F	A	D	F	D	B	D	B
Approach Delay (s/veh)		433.3			795.3		37.6		19.4
Approach LOS		F			F		D		B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 84.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.75	
Intersection Signal Delay (s/veh): 549.7	Intersection LOS: F
Intersection Capacity Utilization 162.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 4: Trumble Rd. & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	259	1803	46	34	1998	18	135	2	43	35	8	270
Future Volume (veh/h)	259	1803	46	34	1998	18	135	2	43	35	8	270
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	278	1939	45	37	2148	18	145	2	27	38	9	231
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	211	947	799	62	784	7	182	21	283	64	7	189
Arrive On Green	0.12	0.50	0.50	0.03	0.42	0.42	0.10	0.19	0.19	0.04	0.12	0.12
Sat Flow, veh/h	1810	1900	1602	1810	1881	16	1810	112	1515	1810	61	1559
Grp Volume(v), veh/h	278	1939	45	37	0	2166	145	0	29	38	0	240
Grp Sat Flow(s),veh/h/ln	1810	1900	1602	1810	0	1897	1810	0	1627	1810	0	1619
Q Serve(g_s), s	9.7	41.5	1.2	1.7	0.0	34.7	6.5	0.0	1.2	1.7	0.0	10.1
Cycle Q Clear(g_c), s	9.7	41.5	1.2	1.7	0.0	34.7	6.5	0.0	1.2	1.7	0.0	10.1
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.93	1.00		0.96
Lane Grp Cap(c), veh/h	211	947	799	62	0	791	182	0	304	64	0	196
V/C Ratio(X)	1.32	2.05	0.06	0.59	0.00	2.74	0.80	0.00	0.10	0.60	0.00	1.22
Avail Cap(c_a), veh/h	211	947	799	211	0	791	545	0	490	219	0	196
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.8	20.9	10.8	39.6	0.0	24.3	36.6	0.0	28.0	39.6	0.0	36.6
Incr Delay (d2), s/veh	172.8	474.6	0.0	3.3	0.0	786.5	3.0	0.0	0.1	3.3	0.0	136.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.1	140.1	0.4	0.8	0.0	186.2	2.9	0.0	0.5	0.8	0.0	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	209.6	495.5	10.8	42.9	0.0	810.8	39.6	0.0	28.1	42.9	0.0	173.3
LnGrp LOS	F	F	B	D		F	D		C	D		F
Approach Vol, veh/h		2262			2203			174			278	
Approach Delay, s/veh		450.7			797.9			37.7			155.5	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	46.8	13.3	15.0	15.0	40.0	7.8	20.4
Change Period (Y+Rc), s	5.3	5.3	4.9	4.9	5.3	5.3	4.9	4.9
Max Green Setting (Gmax), s	9.7	34.7	25.1	10.1	9.7	34.7	10.1	25.1
Max Q Clear Time (g_c+I1), s	3.7	43.5	8.5	12.1	11.7	36.7	3.7	3.2
Green Ext Time (p_c), s	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	575.0
HCM 7th LOS	F

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	53	130	0	16	72
Future Vol, veh/h	0	53	130	0	16	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	58	141	0	17	78

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	254	141	0	0	141	0
Stage 1	141	-	-	-	-	-
Stage 2	113	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	739	912	-	-	1454	-
Stage 1	891	-	-	-	-	-
Stage 2	917	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	729	912	-	-	1454	-
Mov Cap-2 Maneuver	729	-	-	-	-	-
Stage 1	891	-	-	-	-	-
Stage 2	905	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.21	0	1.36
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	912	327	-
HCM Lane V/C Ratio	-	-	0.063	0.012	-
HCM Ctrl Dly (s/v)	-	-	9.2	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	14	116	3	4	68
Future Vol, veh/h	10	14	116	3	4	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	15	126	3	4	74

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	210	128	0	0	129	0
Stage 1	128	-	-	-	-	-
Stage 2	83	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	783	928	-	-	1469	-
Stage 1	903	-	-	-	-	-
Stage 2	946	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	780	928	-	-	1469	-
Mov Cap-2 Maneuver	780	-	-	-	-	-
Stage 1	903	-	-	-	-	-
Stage 2	943	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.32	0	0.41
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	860	100	-
HCM Lane V/C Ratio	-	-	0.03	0.003	-
HCM Ctrl Dly (s/v)	-	-	9.3	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	226	1288	371	58	1356	23	570	65	109	20	37	98
Future Vol, veh/h	226	1288	371	58	1356	23	570	65	109	20	37	98
Conflicting Peds, #/hr	0	0	3	0	0	0	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	233	1328	382	60	1398	24	588	67	112	21	38	101

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1422	0	0	1713	0	0	3526	3529	1522	3357	3709	1411
Stage 1	-	-	-	-	-	-	1988	1988	-	1529	1529	-
Stage 2	-	-	-	-	-	-	1538	1541	-	1827	2179	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	485	-	-	375	-	-	~ 3	~ 6	147	~ 5	~ 5	171
Stage 1	-	-	-	-	-	-	~ 80	107	-	148	181	-
Stage 2	-	-	-	-	-	-	~ 146	179	-	99	86	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	485	-	-	374	-	-	-	0	147	-	0	171
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	~ 80	0	-	34	42	-
Stage 2	-	-	-	-	-	-	~ 1	~ 41	-	23	0	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	2.29	0.66		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	~ 4	-	-	72	-	-	-
HCM Lane V/C Ratio	-	0.48	-	-	0.16	-	-	-
HCM Ctrl Dly (s/v)	-	19.1	0	-	16.4	0	-	-
HCM Lane LOS	-	C	A	-	C	A	-	-
HCM 95th %tile Q(veh)	-	2.6	-	-	0.6	-	-	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	0	0	686	439	21
Future Vol, veh/h	29	0	0	686	439	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	32	0	0	746	477	23

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1234	489	500	0	-	0
Stage 1	489	-	-	-	-	-
Stage 2	746	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	197	583	1075	-	-	-
Stage 1	621	-	-	-	-	-
Stage 2	473	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	197	583	1075	-	-	-
Mov Cap-2 Maneuver	332	-	-	-	-	-
Stage 1	621	-	-	-	-	-
Stage 2	473	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	16.97	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1075	-	332	-	-
HCM Lane V/C Ratio	-	-	0.095	-	-
HCM Ctrl Dly (s/v)	0	-	17	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	0	0	666	420	19
Future Vol, veh/h	20	0	0	666	420	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	22	0	0	724	457	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1191	467	477	0	-	0
Stage 1	467	-	-	-	-	-
Stage 2	724	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	209	600	1096	-	-	-
Stage 1	635	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	209	600	1096	-	-	-
Mov Cap-2 Maneuver	343	-	-	-	-	-
Stage 1	635	-	-	-	-	-
Stage 2	484	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	16.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1096	-	343	-	-
HCM Lane V/C Ratio	-	-	0.063	-	-
HCM Ctrl Dly (s/v)	0	-	16.2	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

APPENDIX 6.3:

EAPC (2028) SIGNAL WARRANTS

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Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS		EAPC 2028
				CALC CS	DATE	08/29/25
Jurisdiction: **City of Menifee**				CHK CS	DATE	08/29/25
Major Street: **Trumble Road**				Critical Approach Speed (Major)		40 mph
Minor Street: **Driveway 1**				Critical Approach Speed (Minor)		25 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **2,087** vpd Minor Street Future ADT = **254** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [ ]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …….. [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
XX					
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **2,087**	*1* **254**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **2,087**	*1* **254**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 11% **B** 17%	2 CONDITIONS 80%		2 CONDITIONS 80%	

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS		EAPC 2028
				CALC CS	DATE	08/29/25
Jurisdiction: City of Menifee				CHK CS	DATE	08/29/25
Major Street: Trumble Road				Critical Approach Speed (Major)		40 mph
Minor Street: Driveway 2				Critical Approach Speed (Minor)		25 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **1,810** vpd Minor Street Future ADT = **115** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [ ]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …….. [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
XX					
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **1,810**	*1* **115**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **1,810**	*1* **115**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 5% **B** 10%	2 CONDITIONS 80%		2 CONDITIONS 80%	

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS		EAPC 2028
				CALC CS	DATE	08/29/25
Jurisdiction: City of Menifee				CHK CS	DATE	08/29/25
Major Street: Sherman Road				Critical Approach Speed (Major)		40 mph
Minor Street: Driveway 3				Critical Approach Speed (Minor)		25 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **6,280** vpd Minor Street Future ADT = **193** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [ ]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …….. [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL	Minimum Requirements EADT			
XX	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
CONDITION A - Minimum Vehicular Volume	Urban	Rural	Urban	Rural
Satisfied / Not Satisfied: XX				
Number of lanes for moving traffic on each approach				
Major Street / Minor Street				
1 **6,280** / *1* **193**	8,000	5,600	2,400	1,680
2 + / *1*	9,600	6,720	2,400	1,680
2 + / *2* +	9,600	6,720	3,200	2,240
1 / *2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied / Not Satisfied: XX				
Number of lanes for moving traffic on each approach				
Major Street / Minor Street	Urban	Rural	Urban	Rural
1 **6,280** / *1* **193**	12,000	8,400	1,200	850
2 + / *1*	14,400	10,080	1,200	850
2 + / *2* +	14,400	10,080	1,600	1,120
1 / *2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B				
Satisfied / Not Satisfied: XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more ….. A: 8% B: 16%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS		EAPC 2028
				CALC CS	DATE	08/29/25
Jurisdiction: City of Menifee				CHK CS	DATE	08/29/25
Major Street: Sherman Road				Critical Approach Speed (Major)		40 mph
Minor Street: Driveway 4				Critical Approach Speed (Minor)		25 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **5,938** vpd Minor Street Future ADT = **149** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……..

or

In built up area of isolated community of < 10,000 population ……..

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL	Minimum Requirements EADT			
XX				
CONDITION A - Minimum Vehicular Volume	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied / Not Satisfied: XX	Urban	Rural	Urban	Rural
Number of lanes for moving traffic on each approach				
Major Street / Minor Street				
1 **5,938** / *1* **149**	8,000	5,600	2,400	1,680
2 + / *1*	9,600	6,720	2,400	1,680
2 + / *2* +	9,600	6,720	3,200	2,240
1 / *2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied / Not Satisfied: XX	Urban	Rural	Urban	Rural
Number of lanes for moving traffic on each approach				
Major Street / Minor Street				
1 **5,938** / *1* **149**	12,000	8,400	1,200	850
2 + / *1*	14,400	10,080	1,200	850
2 + / *2* +	14,400	10,080	1,600	1,120
1 / *2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B				
Satisfied / Not Satisfied: XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more ….. A: 6% B: 12%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

APPENDIX 6.4:

EAC (2028) QUEUING ANALYSIS

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Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1739	1017	184	1678	619	1074
v/c Ratio	1.69	0.93	1.02	0.67	1.71	2.74
Control Delay (s/veh)	339.5	26.8	119.2	10.7	361.3	808.1
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0
Total Delay (s/veh)	339.5	26.8	119.2	11.0	361.3	808.1
Queue Length 50th (ft)	~1636	338	~122	287	~584	~1141
Queue Length 95th (ft)	#1898	#713	#261	356	#798	#1390
Internal Link Dist (ft)	624			681	1327	
Turn Bay Length (ft)			275			240
Base Capacity (vph)	1026	1092	180	2490	361	392
Starvation Cap Reductn	0	0	0	276	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.69	0.93	1.02	0.76	1.71	2.74

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	862	1520	1475	969	488
v/c Ratio	2.66	1.16	1.73	2.68	1.24
Control Delay (s/veh)	775.9	99.4	358.1	785.3	159.9
Queue Delay	0.0	0.2	0.0	0.0	0.0
Total Delay (s/veh)	775.9	99.6	358.1	785.3	159.9
Queue Length 50th (ft)	~933	~1153	~1401	~1052	~343
Queue Length 95th (ft)	#1167	#1413	#1665	#1291	#544
Internal Link Dist (ft)		681	457	1327	
Turn Bay Length (ft)	245				270
Base Capacity (vph)	324	1311	851	361	392
Starvation Cap Reductn	0	50	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	2.66	1.21	1.73	2.68	1.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1825	1026	408	1732	687	1039
v/c Ratio	1.73	0.92	2.52	0.69	1.95	2.71
Control Delay (s/veh)	355.2	24.5	722.8	10.8	461.6	793.2
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay (s/veh)	355.2	24.5	722.8	11.1	461.6	793.2
Queue Length 50th (ft)	~1731	330	~436	298	~681	~1099
Queue Length 95th (ft)	#1994	#713	#620	371	#900	#1346
Internal Link Dist (ft)	624			681	1327	
Turn Bay Length (ft)			275			240
Base Capacity (vph)	1054	1118	162	2508	353	384
Starvation Cap Reductn	0	0	0	276	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.73	0.92	2.52	0.78	1.95	2.71

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	984	1551	1827	1032	478
v/c Ratio	3.42	1.17	2.02	3.02	1.27
Control Delay (s/veh)	Error	101.8	484.3	933.4	169.7
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay (s/veh)	Error	101.9	484.3	933.4	169.7
Queue Length 50th (ft)	~1120	~1182	~1843	~1148	~340
Queue Length 95th (ft)	#1362	#1442	#2112	#1391	#540
Internal Link Dist (ft)		681	457	1327	
Turn Bay Length (ft)	245				270
Base Capacity (vph)	288	1330	904	342	377
Starvation Cap Reductn	0	47	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	3.42	1.21	2.02	3.02	1.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

APPENDIX 6.5:

EAPC (2028) QUEUING ANALYSIS

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Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1749	1017	196	1680	667	1074
v/c Ratio	1.70	0.93	1.09	0.67	1.85	2.74
Control Delay (s/veh)	343.8	27.0	136.6	10.7	418.6	808.1
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0
Total Delay (s/veh)	343.8	27.0	136.6	11.0	418.6	808.1
Queue Length 50th (ft)	~1649	339	~141	287	~648	~1141
Queue Length 95th (ft)	#1912	#714	#281	357	#866	#1390
Internal Link Dist (ft)	624			681	1327	
Turn Bay Length (ft)			275			240
Base Capacity (vph)	1026	1091	180	2490	361	392
Starvation Cap Reductn	0	0	0	276	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.70	0.93	1.09	0.76	1.85	2.74

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	862	1579	1506	969	522
v/c Ratio	2.66	1.20	1.77	2.68	1.33
Control Delay (s/veh)	775.9	118.7	374.1	785.3	194.7
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay (s/veh)	775.9	118.8	374.1	785.3	194.7
Queue Length 50th (ft)	~933	~1232	~1444	~1052	~390
Queue Length 95th (ft)	#1167	#1492	#1708	#1291	#595
Internal Link Dist (ft)		681	457	1327	
Turn Bay Length (ft)	245				270
Base Capacity (vph)	324	1311	851	361	392
Starvation Cap Reductn	0	39	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	2.66	1.24	1.77	2.68	1.33

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1828	1026	443	1741	714	1039
v/c Ratio	1.73	0.92	2.73	0.69	2.02	2.71
Control Delay (s/veh)	356.5	24.5	817.7	10.9	494.9	793.2
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay (s/veh)	356.5	24.5	817.7	11.2	494.9	793.2
Queue Length 50th (ft)	~1735	331	~483	302	~717	~1099
Queue Length 95th (ft)	#1998	#714	#673	375	#938	#1346
Internal Link Dist (ft)	624			681	1327	
Turn Bay Length (ft)			275			240
Base Capacity (vph)	1054	1118	162	2508	353	384
Starvation Cap Reductn	0	0	0	275	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.73	0.92	2.73	0.78	2.02	2.71

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	984	1581	1923	1032	497
v/c Ratio	3.42	1.19	2.13	3.02	1.32
Control Delay (s/veh)	Error	111.4	531.3	933.4	189.9
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay (s/veh)	Error	111.6	531.3	933.4	189.9
Queue Length 50th (ft)	~1120	~1222	~1974	~1148	~366
Queue Length 95th (ft)	#1362	#1482	#2242	#1391	#567
Internal Link Dist (ft)		681	457	1327	
Turn Bay Length (ft)	245				270
Base Capacity (vph)	288	1330	904	342	377
Starvation Cap Reductn	0	41	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	3.42	1.23	2.13	3.02	1.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

APPENDIX 6.6:

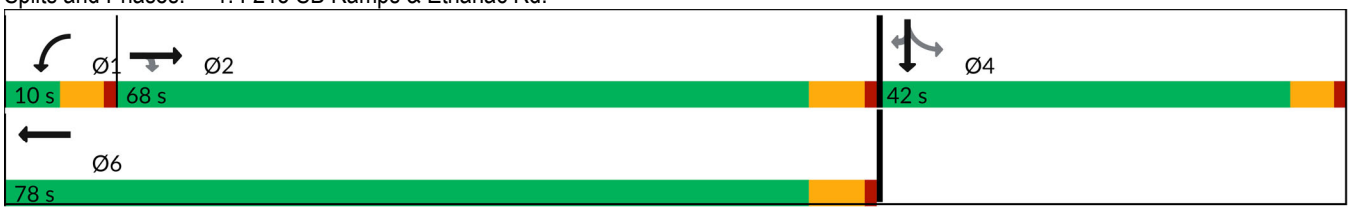
EAPC (2028) INTERSECTION ANALYSIS WITH IMPROVEMENTS

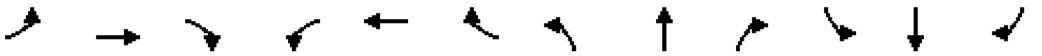
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Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1679	976	188	1613	1	1031
Future Volume (vph)	1679	976	188	1613	1	1031
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Detector Phase	2	2	1	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.4	23.4	10.0	24.5	24.5	24.5
Total Split (s)	68.0	68.0	10.0	78.0	42.0	42.0
Total Split (%)	56.7%	56.7%	8.3%	65.0%	35.0%	35.0%
Yellow Time (s)	5.0	5.0	4.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	62.0	62.0	5.0	72.0	37.0	37.0
Actuated g/C Ratio	0.52	0.52	0.04	0.60	0.31	0.31
v/c Ratio	1.78	1.00	1.35	0.78	1.20	1.96
Control Delay (s/veh)	380.3	47.3	239.7	21.2	142.6	462.9
Queue Delay	0.0	0.0	0.0	1.3	0.0	0.0
Total Delay (s/veh)	380.3	47.3	239.7	22.5	142.6	462.9
LOS	F	D	F	C	F	F
Approach Delay (s/veh)	257.9			45.2	340.2	
Approach LOS	F			D	F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.96	
Intersection Signal Delay (s/veh): 217.8	Intersection LOS: F
Intersection Capacity Utilization 142.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1: I-215 SB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1679	976	188	1613	0	0	0	0	639	1	1031
Future Volume (veh/h)	0	1679	976	188	1613	0	0	0	0	639	1	1031
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1749	912	196	1680	0				666	1	920
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	982	822	146	2166	0				557	1	496
Arrive On Green	0.00	0.52	0.52	0.04	0.60	0.00				0.31	0.31	0.31
Sat Flow, veh/h	0	1900	1590	3510	3705	0				1807	3	1610
Grp Volume(v), veh/h	0	1749	912	196	1680	0				667	0	920
Grp Sat Flow(s),veh/h/ln	0	1900	1590	1755	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	62.0	62.0	5.0	41.8	0.0				37.0	0.0	37.0
Cycle Q Clear(g_c), s	0.0	62.0	62.0	5.0	41.8	0.0				37.0	0.0	37.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	982	822	146	2166	0				558	0	496
V/C Ratio(X)	0.00	1.78	1.11	1.34	0.78	0.00				1.20	0.00	1.85
Avail Cap(c_a), veh/h	0	982	822	146	2166	0				558	0	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.0	29.0	57.5	18.0	0.0				41.5	0.0	41.5
Incr Delay (d2), s/veh	0.0	355.9	66.1	191.7	1.8	0.0				104.5	0.0	391.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	123.0	36.8	6.1	16.2	0.0				31.5	0.0	67.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	384.9	95.1	249.2	19.8	0.0				146.0	0.0	433.1
LnGrp LOS		F	F	F	B					F		F
Approach Vol, veh/h		2661			1876						1587	
Approach Delay, s/veh		285.6			43.8						312.5	
Approach LOS		F			D						F	

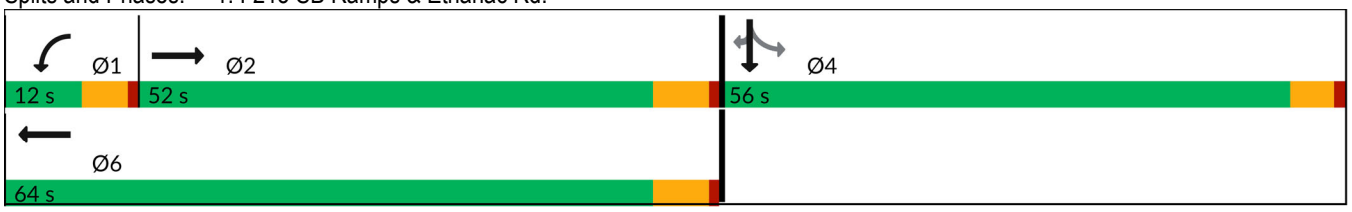
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.0	68.0		42.0		78.0
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	5.0	62.0		37.0		72.0
Max Q Clear Time (g_c+I1), s	7.0	64.0		39.0		43.8
Green Ext Time (p_c), s	0.0	0.0		0.0		15.3

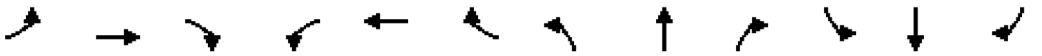
Intersection Summary	
HCM 7th Control Delay, s/veh	218.5
HCM 7th LOS	F

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1679	976	188	1613	639	1	1031
Future Volume (vph)	1679	976	188	1613	639	1	1031
Turn Type	NA	Free	Prot	NA	Perm	NA	Perm
Protected Phases	2		1	6		4	
Permitted Phases		Free			4		4
Detector Phase	2		1	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.4		10.0	24.5	24.5	24.5	24.5
Total Split (s)	52.0		12.0	64.0	56.0	56.0	56.0
Total Split (%)	43.3%		10.0%	53.3%	46.7%	46.7%	46.7%
Yellow Time (s)	5.0		4.0	5.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		5.0	6.0	5.0	5.0	5.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None		None	None	None	None	None
Act Effct Green (s)	44.6	116.1	7.0	56.7	48.4	48.4	48.4
Actuated g/C Ratio	0.38	1.00	0.06	0.49	0.42	0.42	0.42
v/c Ratio	0.88	0.64	0.92	0.66	0.84	0.92	0.84
Control Delay (s/veh)	39.6	2.0	100.7	24.4	42.7	52.6	38.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.6	2.0	100.7	24.4	42.7	52.6	38.8
LOS	D	A	F	C	D	D	D
Approach Delay (s/veh)	25.8			32.4		44.7	
Approach LOS	C			C		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay (s/veh): 32.9	Intersection LOS: C
Intersection Capacity Utilization 97.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 1: I-215 SB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱	↰↰	↑↑↑					↰	✣	↱
Traffic Volume (veh/h)	0	1679	976	188	1613	0	0	0	0	639	1	1031
Future Volume (veh/h)	0	1679	976	188	1613	0	0	0	0	639	1	1031
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1749	0	196	1680	0				992	0	571
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2046		224	2613	0				1433	0	638
Arrive On Green	0.00	0.39	0.00	0.06	0.50	0.00				0.40	0.00	0.40
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1749	0	196	1680	0				992	0	571
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	33.8	0.0	6.1	26.1	0.0				25.0	0.0	36.4
Cycle Q Clear(g_c), s	0.0	33.8	0.0	6.1	26.1	0.0				25.0	0.0	36.4
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2046		224	2613	0				1433	0	638
V/C Ratio(X)	0.00	0.85		0.88	0.64	0.00				0.69	0.00	0.90
Avail Cap(c_a), veh/h	0	2174		224	2741	0				1682	0	748
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	30.4	0.0	50.9	20.0	0.0				27.6	0.0	31.0
Incr Delay (d2), s/veh	0.0	3.4	0.0	29.7	0.5	0.0				1.0	0.0	12.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.9	0.0	3.5	9.9	0.0				10.0	0.0	14.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	33.8	0.0	80.6	20.5	0.0				28.6	0.0	43.1
LnGrp LOS		C		F	C					C		D
Approach Vol, veh/h		1749			1876						1563	
Approach Delay, s/veh		33.8			26.8						33.9	
Approach LOS		C			C						C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	12.0	49.3		48.5		61.3						
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0						
Max Green Setting (Gmax), s	7.0	46.0		51.0		58.0						
Max Q Clear Time (g_c+I1), s	8.1	35.8		38.4		28.1						
Green Ext Time (p_c), s	0.0	7.5		5.0		14.9						

Intersection Summary												
HCM 7th Control Delay, s/veh			31.3									
HCM 7th LOS			C									

Notes

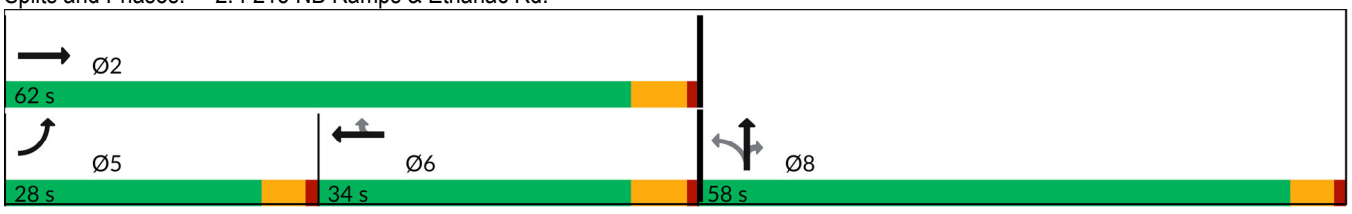
User approved volume balancing among the lanes for turning movement.

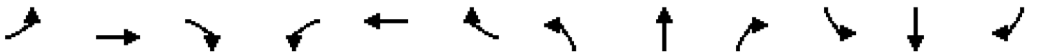
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations						
Traffic Volume (vph)	819	1500	876	555	0	496
Future Volume (vph)	819	1500	876	555	0	496
Turn Type	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Detector Phase	5	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.5	23.4	23.4	23.4	23.4
Total Split (s)	28.0	62.0	34.0	34.0	58.0	58.0
Total Split (%)	23.3%	51.7%	28.3%	28.3%	48.3%	48.3%
Yellow Time (s)	4.0	5.0	5.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	23.0	56.0	28.0	28.0	53.0	53.0
Actuated g/C Ratio	0.19	0.47	0.23	0.23	0.44	0.44
v/c Ratio	1.28	0.94	1.10	0.71	1.22	0.69
Control Delay (s/veh)	178.9	42.2	103.4	8.5	139.9	28.7
Queue Delay	0.0	1.4	0.0	0.0	0.0	0.0
Total Delay (s/veh)	178.9	43.7	103.4	8.5	139.9	28.7
LOS	F	D	F	A	F	C
Approach Delay (s/veh)		91.4	66.6		101.0	
Approach LOS		F	E		F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.28	
Intersection Signal Delay (s/veh): 87.2	Intersection LOS: F
Intersection Capacity Utilization 142.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 2: I-215 NB Ramps & Ethanac Rd.



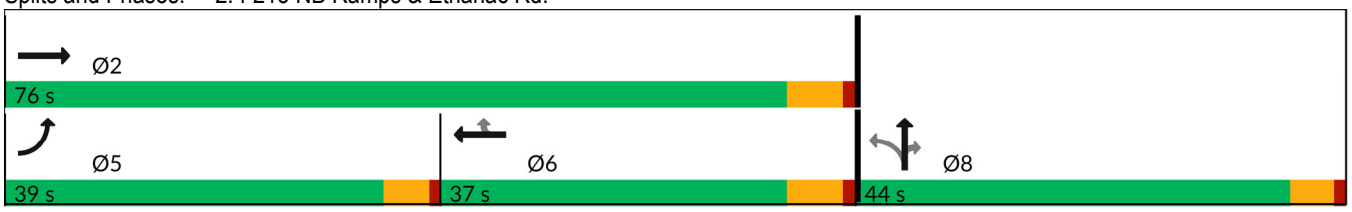


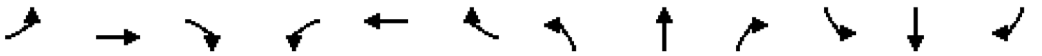
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	819	1500	0	0	876	555	921	0	496	0	0	0
Future Volume (veh/h)	819	1500	0	0	876	555	921	0	496	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	862	1579	0	0	922	518	969	0	462			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	673	1685	0	0	842	376	799	0	711			
Arrive On Green	0.19	0.47	0.00	0.00	0.23	0.23	0.44	0.00	0.44			
Sat Flow, veh/h	3510	3705	0	0	3705	1610	1810	0	1610			
Grp Volume(v), veh/h	862	1579	0	0	922	518	969	0	462			
Grp Sat Flow(s),veh/h/ln	1755	1805	0	0	1805	1610	1810	0	1610			
Q Serve(g_s), s	23.0	49.8	0.0	0.0	28.0	28.0	53.0	0.0	27.0			
Cycle Q Clear(g_c), s	23.0	49.8	0.0	0.0	28.0	28.0	53.0	0.0	27.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	673	1685	0	0	842	376	799	0	711			
V/C Ratio(X)	1.28	0.94	0.00	0.00	1.09	1.38	1.21	0.00	0.65			
Avail Cap(c_a), veh/h	673	1685	0	0	842	376	799	0	711			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	48.5	30.3	0.0	0.0	46.0	46.0	33.5	0.0	26.2			
Incr Delay (d2), s/veh	137.7	10.5	0.0	0.0	60.1	186.4	107.1	0.0	2.1			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	22.7	22.7	0.0	0.0	19.2	30.3	44.7	0.0	9.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	186.2	40.8	0.0	0.0	106.1	232.4	140.6	0.0	28.3			
LnGrp LOS	F	D			F	F	F		C			
Approach Vol, veh/h		2441			1440			1431				
Approach Delay, s/veh		92.2			151.5			104.3				
Approach LOS		F			F			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		62.0			28.0	34.0		58.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		56.0			23.0	28.0		53.0				
Max Q Clear Time (g_c+I1), s		51.8			25.0	30.0		55.0				
Green Ext Time (p_c), s		3.3			0.0	0.0		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh			111.5									
HCM 7th LOS			F									

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	819	1500	876	555	921	0	496
Future Volume (vph)	819	1500	876	555	921	0	496
Turn Type	Prot	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases				6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.5	23.4	23.4	23.4	23.4	23.4
Total Split (s)	39.0	76.0	37.0	37.0	44.0	44.0	44.0
Total Split (%)	32.5%	63.3%	30.8%	30.8%	36.7%	36.7%	36.7%
Yellow Time (s)	4.0	5.0	5.0	5.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	None	None	None	None	None	None
Act Effct Green (s)	31.4	65.3	28.8	28.8	36.5	36.5	36.5
Actuated g/C Ratio	0.28	0.58	0.25	0.25	0.32	0.32	0.32
v/c Ratio	0.89	0.53	0.70	0.69	0.86	0.48	0.48
Control Delay (s/veh)	51.5	15.3	42.0	7.8	45.1	25.7	25.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	51.5	15.3	42.0	7.8	45.1	25.7	25.7
LOS	D	B	D	A	D	C	C
Approach Delay (s/veh)		28.1	28.7			38.3	
Approach LOS		C	C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay (s/veh): 31.1	Intersection LOS: C
Intersection Capacity Utilization 97.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 2: I-215 NB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	819	1500	0	0	876	555	921	0	496	0	0	0
Future Volume (veh/h)	819	1500	0	0	876	555	921	0	496	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	862	1579	0	0	922	518	969	0	462			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	952	3085	0	0	1445	449	1108	0	986			
Arrive On Green	0.27	0.59	0.00	0.00	0.28	0.28	0.31	0.00	0.31			
Sat Flow, veh/h	3510	5358	0	0	5358	1610	3619	0	3220			
Grp Volume(v), veh/h	862	1579	0	0	922	518	969	0	462			
Grp Sat Flow(s),veh/h/ln	1755	1729	0	0	1729	1610	1810	0	1610			
Q Serve(g_s), s	26.4	19.7	0.0	0.0	17.3	31.0	28.2	0.0	12.9			
Cycle Q Clear(g_c), s	26.4	19.7	0.0	0.0	17.3	31.0	28.2	0.0	12.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	952	3085	0	0	1445	449	1108	0	986			
V/C Ratio(X)	0.91	0.51	0.00	0.00	0.64	1.15	0.87	0.00	0.47			
Avail Cap(c_a), veh/h	1073	3264	0	0	1445	449	1269	0	1129			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	39.2	13.1	0.0	0.0	35.2	40.1	36.6	0.0	31.3			
Incr Delay (d2), s/veh	10.1	0.1	0.0	0.0	0.9	92.1	6.4	0.0	0.3			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	12.3	7.0	0.0	0.0	7.2	23.3	12.5	0.0	4.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	49.3	13.3	0.0	0.0	36.1	132.3	42.9	0.0	31.6			
LnGrp LOS	D	B			D	F	D		C			
Approach Vol, veh/h		2441			1440			1431				
Approach Delay, s/veh		26.0			70.7			39.3				
Approach LOS		C			E			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		72.2			35.2	37.0		39.1				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		70.0			34.0	31.0		39.0				
Max Q Clear Time (g_c+I1), s		21.7			28.4	33.0		30.2				
Green Ext Time (p_c), s		16.4			1.8	0.0		3.9				

Intersection Summary	
HCM 7th Control Delay, s/veh	41.7
HCM 7th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1896	99	0	1431	0	17
Future Vol, veh/h	1896	99	0	1431	0	17
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2084	109	0	1573	0	19

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1098
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	-	-	0	-	0	211
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	211
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

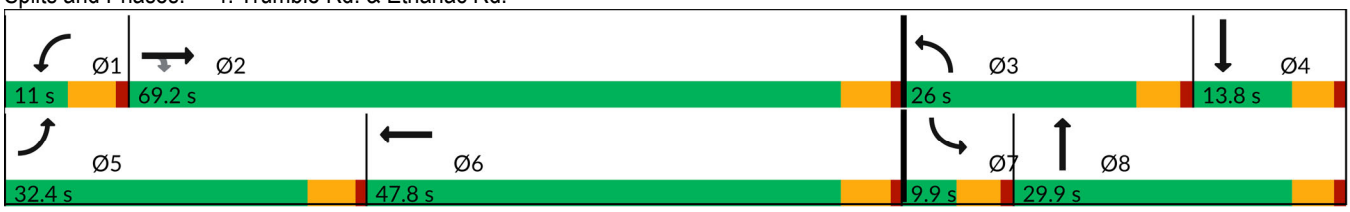
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	23.76
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	211	-	-	-
HCM Lane V/C Ratio	0.089	-	-	-
HCM Ctrl Dly (s/v)	23.8	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	302	1789	96	75	921	313	19	28	30
Future Volume (vph)	302	1789	96	75	921	313	19	28	30
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	5	2	2	1	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.3	35.3	35.3	10.3	27.8	9.9	29.9	9.9	10.4
Total Split (s)	32.4	69.2	69.2	11.0	47.8	26.0	29.9	9.9	13.8
Total Split (%)	27.0%	57.7%	57.7%	9.2%	39.8%	21.7%	24.9%	8.3%	11.5%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.9	3.9	3.9	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	4.9	4.9	4.9	4.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	24.1	62.0	62.0	5.7	43.6	21.1	22.2	5.0	7.8
Actuated g/C Ratio	0.21	0.53	0.53	0.05	0.37	0.18	0.19	0.04	0.07
v/c Ratio	0.88	0.95	0.11	0.94	0.72	1.05	0.17	0.39	0.87
Control Delay (s/veh)	70.4	38.3	0.8	137.4	35.6	109.3	19.5	70.8	32.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	70.4	38.3	0.8	137.4	35.6	109.3	19.5	70.8	32.3
LOS	E	D	A	F	D	F	B	E	C
Approach Delay (s/veh)		41.1			43.1		96.0		35.4
Approach LOS		D			D		F		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay (s/veh): 46.3	Intersection LOS: D
Intersection Capacity Utilization 106.8%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 4: Trumble Rd. & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	302	1789	96	75	921	28	313	19	35	28	30	279
Future Volume (veh/h)	302	1789	96	75	921	28	313	19	35	28	30	279
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1976	1900	1900	1976	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	328	1945	96	82	1001	28	340	21	23	30	33	105
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	355	1995	854	86	1428	40	319	186	204	48	30	95
Arrive On Green	0.20	0.53	0.53	0.05	0.38	0.38	0.18	0.22	0.22	0.03	0.07	0.07
Sat Flow, veh/h	1810	3754	1607	1810	3730	104	1810	829	908	1810	400	1272
Grp Volume(v), veh/h	328	1945	96	82	504	525	340	0	44	30	0	138
Grp Sat Flow(s),veh/h/ln	1810	1877	1607	1810	1877	1957	1810	0	1737	1810	0	1671
Q Serve(g_s), s	21.3	60.3	3.6	5.4	27.1	27.1	21.1	0.0	2.4	2.0	0.0	8.9
Cycle Q Clear(g_c), s	21.3	60.3	3.6	5.4	27.1	27.1	21.1	0.0	2.4	2.0	0.0	8.9
Prop In Lane	1.00		1.00	1.00		0.05	1.00		0.52	1.00		0.76
Lane Grp Cap(c), veh/h	355	1995	854	86	719	749	319	0	389	48	0	124
V/C Ratio(X)	0.92	0.97	0.11	0.95	0.70	0.70	1.07	0.00	0.11	0.63	0.00	1.11
Avail Cap(c_a), veh/h	410	2004	858	86	719	749	319	0	389	76	0	124
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.2	27.3	14.0	56.9	31.2	31.2	49.3	0.0	37.0	57.7	0.0	55.4
Incr Delay (d2), s/veh	23.2	14.5	0.0	80.1	2.6	2.5	69.0	0.0	0.0	5.0	0.0	113.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.6	28.3	1.3	4.3	12.2	12.7	15.4	0.0	1.0	1.0	0.0	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	70.4	41.8	14.0	137.0	33.8	33.7	118.3	0.0	37.0	62.7	0.0	169.1
LnGrp LOS	E	D	B	F	C	C	F		D	E		F
Approach Vol, veh/h		2369			1111			384			168	
Approach Delay, s/veh		44.6			41.3			109.0			150.1	
Approach LOS		D			D			F			F	

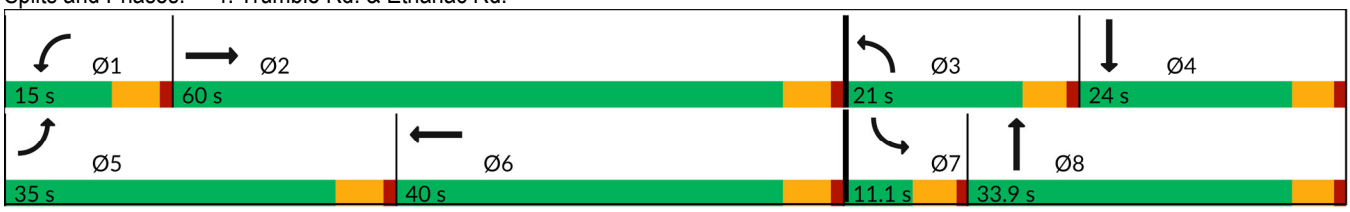
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	68.9	26.0	13.8	28.8	51.1	8.1	31.7
Change Period (Y+Rc), s	5.3	5.3	4.9	4.9	5.3	5.3	4.9	4.9
Max Green Setting (Gmax), s	5.7	63.9	21.1	8.9	27.1	42.5	5.0	25.0
Max Q Clear Time (g_c+I1), s	7.4	62.3	23.1	10.9	23.3	29.1	4.0	4.4
Green Ext Time (p_c), s	0.0	1.3	0.0	0.0	0.2	3.3	0.0	0.1

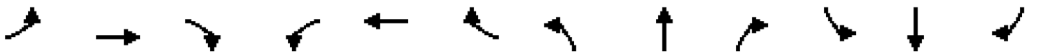
Intersection Summary	
HCM 7th Control Delay, s/veh	54.2
HCM 7th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	302	1789	75	921	313	19	28	30
Future Volume (vph)	302	1789	75	921	313	19	28	30
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	3	8	7	4
Permitted Phases								
Detector Phase	5	2	1	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.3	35.3	10.3	27.8	9.9	29.9	9.9	10.4
Total Split (s)	35.0	60.0	15.0	40.0	21.0	33.9	11.1	24.0
Total Split (%)	29.2%	50.0%	12.5%	33.3%	17.5%	28.3%	9.3%	20.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	3.9	3.9	3.9	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	4.9	4.9	4.9	4.9
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	21.8	45.3	8.2	28.6	13.4	17.6	6.0	8.9
Actuated g/C Ratio	0.23	0.48	0.09	0.30	0.14	0.19	0.06	0.09
v/c Ratio	0.79	0.78	0.52	0.62	0.68	0.17	0.26	0.78
Control Delay (s/veh)	50.8	24.1	59.8	30.8	49.1	18.8	56.2	21.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.8	24.1	59.8	30.8	49.1	18.8	56.2	21.6
LOS	D	C	E	C	D	B	E	C
Approach Delay (s/veh)		27.8		33.0		44.7		24.4
Approach LOS		C		C		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay (s/veh): 30.4	Intersection LOS: C
Intersection Capacity Utilization 85.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Trumble Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	302	1789	96	75	921	28	313	19	35	28	30	279
Future Volume (veh/h)	302	1789	96	75	921	28	313	19	35	28	30	279
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1976	1900	1900	1976	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	328	1945	96	82	1001	28	340	21	23	30	33	105
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	370	2467	121	106	1739	49	430	163	178	54	41	132
Arrive On Green	0.20	0.47	0.47	0.06	0.32	0.32	0.12	0.20	0.20	0.03	0.10	0.10
Sat Flow, veh/h	1810	5266	259	1810	5394	151	3510	829	908	1810	400	1272
Grp Volume(v), veh/h	328	1327	714	82	667	362	340	0	44	30	0	138
Grp Sat Flow(s),veh/h/ln	1810	1798	1929	1810	1798	1949	1755	0	1737	1810	0	1671
Q Serve(g_s), s	14.6	25.7	25.9	3.7	12.8	12.8	7.8	0.0	1.7	1.4	0.0	6.7
Cycle Q Clear(g_c), s	14.6	25.7	25.9	3.7	12.8	12.8	7.8	0.0	1.7	1.4	0.0	6.7
Prop In Lane	1.00		0.13	1.00		0.08	1.00		0.52	1.00		0.76
Lane Grp Cap(c), veh/h	370	1685	904	106	1160	628	430	0	341	54	0	174
V/C Ratio(X)	0.89	0.79	0.79	0.77	0.58	0.58	0.79	0.00	0.13	0.55	0.00	0.80
Avail Cap(c_a), veh/h	649	2376	1274	212	1507	817	683	0	608	136	0	386
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.0	18.5	18.6	38.4	23.3	23.3	35.3	0.0	27.4	39.6	0.0	36.2
Incr Delay (d2), s/veh	3.2	0.7	1.4	4.4	0.2	0.3	1.2	0.0	0.1	3.2	0.0	3.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	9.3	10.2	1.7	4.9	5.4	3.2	0.0	0.7	0.6	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	35.2	19.3	20.0	42.9	23.5	23.6	36.5	0.0	27.5	42.8	0.0	39.4
LnGrp LOS	D	B	B	D	C	C	D		C	D		D
Approach Vol, veh/h		2369			1111			384			168	
Approach Delay, s/veh		21.7			25.0			35.5			40.0	
Approach LOS		C			C			D			D	

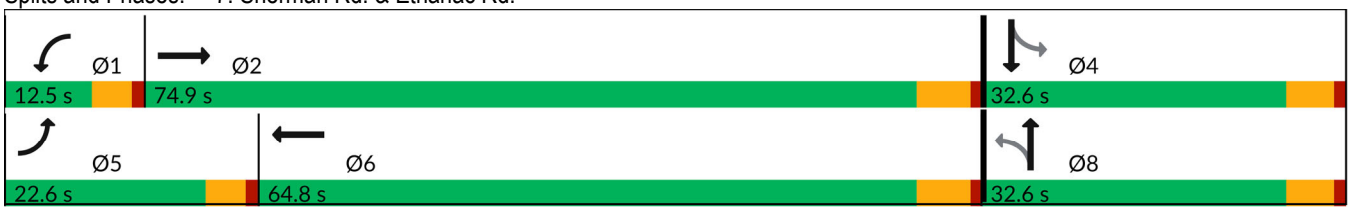
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	44.1	15.1	13.5	22.2	32.0	7.4	21.2
Change Period (Y+Rc), s	5.3	5.3	4.9	4.9	5.3	5.3	4.9	4.9
Max Green Setting (Gmax), s	9.7	54.7	16.1	19.1	29.7	34.7	6.2	29.0
Max Q Clear Time (g_c+I1), s	5.7	27.9	9.8	8.7	16.6	14.8	3.4	3.7
Green Ext Time (p_c), s	0.0	10.9	0.4	0.3	0.4	3.9	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	24.7
HCM 7th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	135	1427	95	731	170	16	23	69
Future Volume (vph)	135	1427	95	731	170	16	23	69
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	27.8	32.4	32.4	20.0	20.0
Total Split (s)	22.6	74.9	12.5	64.8	32.6	32.6	32.6	32.6
Total Split (%)	18.8%	62.4%	10.4%	54.0%	27.2%	27.2%	27.2%	27.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.4	4.4	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.4	5.4	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	13.6	69.1	7.9	63.5	26.1	26.1	26.1	26.1
Actuated g/C Ratio	0.11	0.58	0.07	0.53	0.22	0.22	0.22	0.22
v/c Ratio	0.71	1.03	0.86	0.42	0.95	0.10	0.08	0.49
Control Delay (s/veh)	68.9	53.8	106.3	18.2	100.7	20.6	37.6	30.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	68.9	53.8	106.3	18.2	100.7	20.6	37.6	30.4
LOS	E	D	F	B	F	C	D	C
Approach Delay (s/veh)		54.8		28.1		86.1		31.2
Approach LOS		D		C		F		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay (s/veh): 48.5	Intersection LOS: D
Intersection Capacity Utilization 100.4%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 7: Sherman Rd. & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	1427	538	95	731	18	170	16	22	23	69	127
Future Volume (veh/h)	135	1427	538	95	731	18	170	16	22	23	69	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	145	1534	417	102	786	19	183	17	24	25	74	137
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	173	1632	424	119	1967	48	200	162	228	348	135	250
Arrive On Green	0.10	0.58	0.58	0.07	0.55	0.55	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1810	2836	737	1810	3602	87	1189	713	1006	1388	597	1105
Grp Volume(v), veh/h	145	950	1001	102	394	411	183	0	41	25	0	211
Grp Sat Flow(s),veh/h/ln	1810	1805	1767	1810	1805	1884	1189	0	1719	1388	0	1701
Q Serve(g_s), s	9.5	56.6	66.4	6.7	15.2	15.2	14.1	0.0	2.3	1.7	0.0	13.1
Cycle Q Clear(g_c), s	9.5	56.6	66.4	6.7	15.2	15.2	27.2	0.0	2.3	4.0	0.0	13.1
Prop In Lane	1.00		0.42	1.00		0.05	1.00		0.59	1.00		0.65
Lane Grp Cap(c), veh/h	173	1039	1017	119	986	1029	200	0	390	348	0	386
V/C Ratio(X)	0.84	0.91	0.98	0.86	0.40	0.40	0.92	0.00	0.11	0.07	0.00	0.55
Avail Cap(c_a), veh/h	272	1040	1018	119	986	1029	200	0	390	348	0	386
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.3	22.8	24.9	55.5	15.8	15.8	54.6	0.0	36.7	38.3	0.0	40.9
Incr Delay (d2), s/veh	7.1	12.2	24.1	40.5	0.3	0.3	41.3	0.0	0.1	0.1	0.0	1.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	24.8	31.2	4.3	5.9	6.1	7.8	0.0	1.0	0.6	0.0	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.4	35.0	49.0	96.0	16.1	16.1	95.9	0.0	36.8	38.4	0.0	42.5
LnGrp LOS	E	D	D	F	B	B	F		D	D		D
Approach Vol, veh/h		2096			907			224			236	
Approach Delay, s/veh		43.5			25.1			85.1			42.1	
Approach LOS		D			C			F			D	

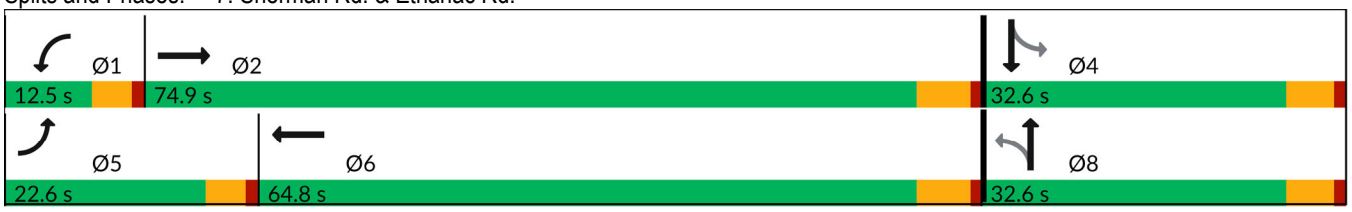
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.5	74.8		32.6	16.0	71.3		32.6				
Change Period (Y+Rc), s	4.6	5.8		5.4	4.6	5.8		5.4				
Max Green Setting (Gmax), s	7.9	69.1		27.2	18.0	59.0		27.2				
Max Q Clear Time (g_c+I1), s	8.7	68.4		15.1	11.5	17.2		29.2				
Green Ext Time (p_c), s	0.0	0.6		0.9	0.1	5.1		0.0				

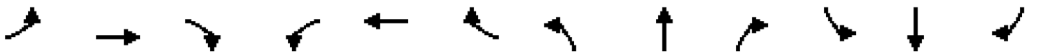
Intersection Summary												
HCM 7th Control Delay, s/veh			41.2									
HCM 7th LOS			D									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	135	1427	95	731	170	16	23	69
Future Volume (vph)	135	1427	95	731	170	16	23	69
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	27.8	32.4	32.4	20.0	20.0
Total Split (s)	22.6	74.9	12.5	64.8	32.6	32.6	32.6	32.6
Total Split (%)	18.8%	62.4%	10.4%	54.0%	27.2%	27.2%	27.2%	27.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.4	4.4	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.4	5.4	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	12.9	58.9	8.0	54.1	25.6	25.6	25.6	25.6
Actuated g/C Ratio	0.12	0.54	0.07	0.50	0.24	0.24	0.24	0.24
v/c Ratio	0.68	0.77	0.77	0.31	0.84	0.10	0.08	0.46
Control Delay (s/veh)	63.9	20.0	88.4	16.9	72.8	20.4	36.3	28.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	63.9	20.0	88.4	16.9	72.8	20.4	36.3	28.1
LOS	E	C	F	B	E	C	D	C
Approach Delay (s/veh)		22.8		25.0		63.2		29.0
Approach LOS		C		C		E		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay (s/veh): 26.3	Intersection LOS: C
Intersection Capacity Utilization 83.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 7: Sherman Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	1427	538	95	731	18	170	16	22	23	69	127
Future Volume (veh/h)	135	1427	538	95	731	18	170	16	22	23	69	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	145	1534	417	102	786	19	183	17	24	25	74	137
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	177	2062	555	128	2503	60	265	190	269	416	159	295
Arrive On Green	0.10	0.51	0.51	0.07	0.48	0.48	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1810	4067	1094	1810	5210	126	1189	713	1006	1388	597	1105
Grp Volume(v), veh/h	145	1302	649	102	521	284	183	0	41	25	0	211
Grp Sat Flow(s),veh/h/ln	1810	1729	1703	1810	1729	1877	1189	0	1719	1388	0	1701
Q Serve(g_s), s	8.0	30.3	30.9	5.7	9.4	9.4	15.5	0.0	1.8	1.4	0.0	10.6
Cycle Q Clear(g_c), s	8.0	30.3	30.9	5.7	9.4	9.4	26.1	0.0	1.8	3.2	0.0	10.6
Prop In Lane	1.00		0.64	1.00		0.07	1.00		0.59	1.00		0.65
Lane Grp Cap(c), veh/h	177	1754	864	128	1662	902	265	0	459	416	0	454
V/C Ratio(X)	0.82	0.74	0.75	0.79	0.31	0.31	0.69	0.00	0.09	0.06	0.00	0.46
Avail Cap(c_a), veh/h	320	2344	1155	140	2002	1087	265	0	459	416	0	454
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.1	19.9	20.0	46.6	16.2	16.2	42.2	0.0	28.1	29.3	0.0	31.3
Incr Delay (d2), s/veh	3.6	0.9	1.9	21.8	0.1	0.2	7.5	0.0	0.1	0.1	0.0	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	11.1	11.4	3.2	3.4	3.8	5.0	0.0	0.8	0.5	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	48.7	20.7	21.9	68.5	16.3	16.4	49.7	0.0	28.1	29.3	0.0	32.0
LnGrp LOS	D	C	C	E	B	B	D		C	C		C
Approach Vol, veh/h		2096			907			224			236	
Approach Delay, s/veh		23.0			22.2			45.7			31.7	
Approach LOS		C			C			D			C	

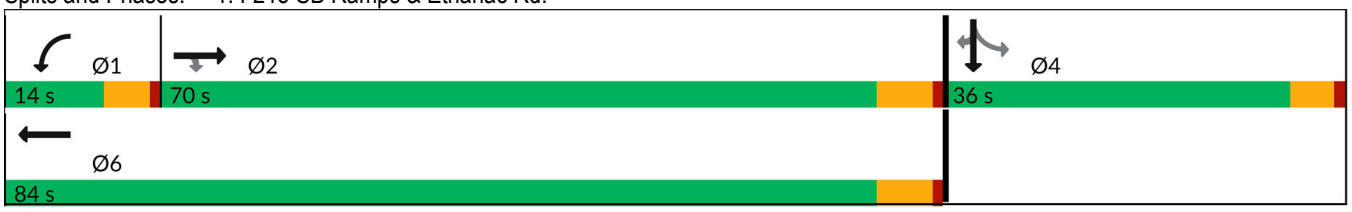
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.8	57.5		32.6	14.5	54.8		32.6				
Change Period (Y+Rc), s	4.6	5.8		5.4	4.6	5.8		5.4				
Max Green Setting (Gmax), s	7.9	69.1		27.2	18.0	59.0		27.2				
Max Q Clear Time (g_c+I1), s	7.7	32.9		12.6	10.0	11.4		28.1				
Green Ext Time (p_c), s	0.0	18.8		1.1	0.1	5.4		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	24.9
HCM 7th LOS	C

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1773	995	430	1689	2	1008
Future Volume (vph)	1773	995	430	1689	2	1008
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Detector Phase	2	2	1	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.4	23.4	10.0	24.5	24.5	24.5
Total Split (s)	70.0	70.0	14.0	84.0	36.0	36.0
Total Split (%)	58.3%	58.3%	11.7%	70.0%	30.0%	30.0%
Yellow Time (s)	5.0	5.0	4.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	64.0	64.0	9.0	78.0	31.0	31.0
Actuated g/C Ratio	0.53	0.53	0.08	0.65	0.26	0.26
v/c Ratio	1.80	0.98	1.69	0.74	1.53	2.21
Control Delay (s/veh)	389.4	41.2	360.8	16.7	281.3	572.2
Queue Delay	0.0	0.0	0.0	1.2	0.0	0.0
Total Delay (s/veh)	389.4	41.2	360.8	17.9	281.3	572.2
LOS	F	D	F	B	F	F
Approach Delay (s/veh)	264.2			87.4	453.7	
Approach LOS	F			F	F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.21	
Intersection Signal Delay (s/veh): 256.3	Intersection LOS: F
Intersection Capacity Utilization 157.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1: I-215 SB Ramps & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1773	995	430	1689	0	0	0	0	691	2	1008
Future Volume (veh/h)	0	1773	995	430	1689	0	0	0	0	691	2	1008
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1828	947	443	1741	0				712	2	879
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1013	859	263	2347	0				466	1	416
Arrive On Green	0.00	0.53	0.53	0.08	0.65	0.00				0.26	0.26	0.26
Sat Flow, veh/h	0	1900	1610	3510	3705	0				1805	5	1610
Grp Volume(v), veh/h	0	1828	947	443	1741	0				714	0	879
Grp Sat Flow(s),veh/h/ln	0	1900	1610	1755	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	64.0	64.0	9.0	39.1	0.0				31.0	0.0	31.0
Cycle Q Clear(g_c), s	0.0	64.0	64.0	9.0	39.1	0.0				31.0	0.0	31.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1013	859	263	2347	0				468	0	416
V/C Ratio(X)	0.00	1.80	1.10	1.68	0.74	0.00				1.53	0.00	2.11
Avail Cap(c_a), veh/h	0	1013	859	263	2347	0				468	0	416
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	28.0	28.0	55.5	14.2	0.0				44.5	0.0	44.5
Incr Delay (d2), s/veh	0.0	365.7	62.8	323.2	1.3	0.0				247.9	0.0	509.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	129.5	37.5	15.7	14.4	0.0				45.2	0.0	70.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	393.7	90.8	378.7	15.5	0.0				292.4	0.0	553.5
LnGrp LOS		F	F	F	B					F		F
Approach Vol, veh/h		2775			2184						1593	
Approach Delay, s/veh		290.3			89.2						436.5	
Approach LOS		F			F						F	

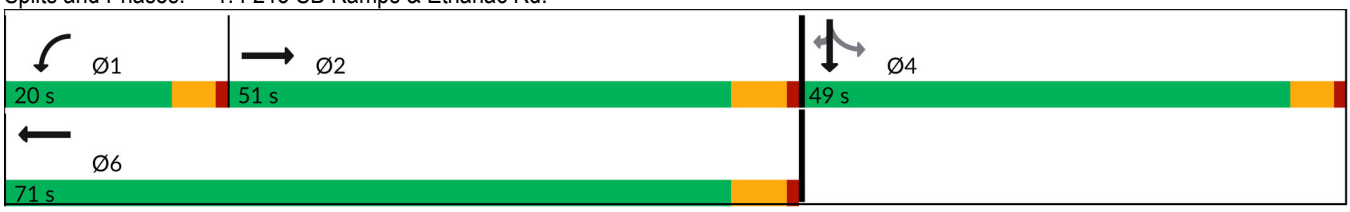
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	14.0	70.0		36.0		84.0
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	9.0	64.0		31.0		78.0
Max Q Clear Time (g_c+I1), s	11.0	66.0		33.0		41.1
Green Ext Time (p_c), s	0.0	0.0		0.0		18.6

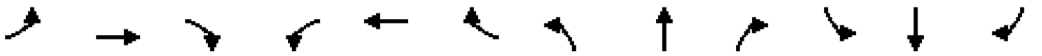
Intersection Summary	
HCM 7th Control Delay, s/veh	258.8
HCM 7th LOS	F

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1773	995	430	1689	691	2	1008
Future Volume (vph)	1773	995	430	1689	691	2	1008
Turn Type	NA	Free	Prot	NA	Perm	NA	Perm
Protected Phases	2		1	6		4	
Permitted Phases		Free			4		4
Detector Phase	2		1	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.4		10.0	24.5	24.5	24.5	24.5
Total Split (s)	51.0		20.0	71.0	49.0	49.0	49.0
Total Split (%)	42.5%		16.7%	59.2%	40.8%	40.8%	40.8%
Yellow Time (s)	5.0		4.0	5.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		5.0	6.0	5.0	5.0	5.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None		None	None	None	None	None
Act Effct Green (s)	45.0	120.0	15.0	65.0	44.0	44.0	44.0
Actuated g/C Ratio	0.38	1.00	0.13	0.54	0.37	0.37	0.37
v/c Ratio	0.94	0.64	1.01	0.62	0.96	1.03	0.94
Control Delay (s/veh)	46.9	1.9	98.6	20.2	65.8	83.7	57.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.9	1.9	98.6	20.2	65.8	83.7	57.0
LOS	D	A	F	C	E	F	E
Approach Delay (s/veh)	30.7			36.1		68.8	
Approach LOS	C			D		E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay (s/veh): 42.3	Intersection LOS: D
Intersection Capacity Utilization 113.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1: I-215 SB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱	↰↰	↑↑↑					↰	✣	↱
Traffic Volume (veh/h)	0	1773	995	430	1689	0	0	0	0	691	2	1008
Future Volume (veh/h)	0	1773	995	430	1689	0	0	0	0	691	2	1008
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1828	0	443	1741	0				940	0	482
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2019		466	2937	0				1218	0	542
Arrive On Green	0.00	0.39	0.00	0.13	0.57	0.00				0.34	0.00	0.34
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1828	0	443	1741	0				940	0	482
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	37.6	0.0	14.2	24.8	0.0				26.3	0.0	32.1
Cycle Q Clear(g_c), s	0.0	37.6	0.0	14.2	24.8	0.0				26.3	0.0	32.1
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2019		466	2937	0				1218	0	542
V/C Ratio(X)	0.00	0.91		0.95	0.59	0.00				0.77	0.00	0.89
Avail Cap(c_a), veh/h	0	2064		466	2981	0				1408	0	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	32.6	0.0	48.7	16.0	0.0				33.6	0.0	35.5
Incr Delay (d2), s/veh	0.0	6.1	0.0	29.7	0.3	0.0				2.3	0.0	13.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	16.1	0.0	8.0	9.1	0.0				11.1	0.0	13.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	38.7	0.0	78.3	16.3	0.0				36.0	0.0	49.0
LnGrp LOS		D		E	B					D		D
Approach Vol, veh/h		1828			2184						1422	
Approach Delay, s/veh		38.7			28.9						40.4	
Approach LOS		D			C						D	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	20.0	50.0		43.1		70.0						
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0						
Max Green Setting (Gmax), s	15.0	45.0		44.0		65.0						
Max Q Clear Time (g_c+I1), s	16.2	39.6		34.1		26.8						
Green Ext Time (p_c), s	0.0	4.4		4.0		17.6						

Intersection Summary	
HCM 7th Control Delay, s/veh	35.2
HCM 7th LOS	D

Notes

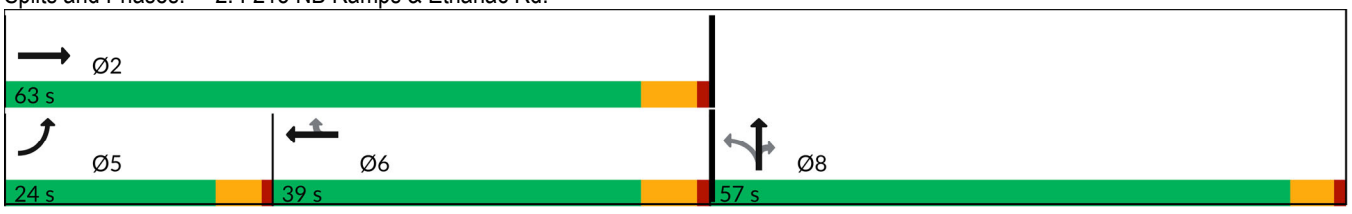
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations						
Traffic Volume (vph)	945	1518	1127	719	0	477
Future Volume (vph)	945	1518	1127	719	0	477
Turn Type	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Detector Phase	5	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.5	23.4	23.4	23.4	23.4
Total Split (s)	24.0	63.0	39.0	39.0	57.0	57.0
Total Split (%)	20.0%	52.5%	32.5%	32.5%	47.5%	47.5%
Yellow Time (s)	4.0	5.0	5.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	19.0	57.0	33.0	33.0	52.0	52.0
Actuated g/C Ratio	0.16	0.48	0.28	0.28	0.43	0.43
v/c Ratio	1.78	0.92	1.18	0.82	1.32	0.67
Control Delay (s/veh)	387.3	39.7	131.9	14.4	183.3	28.2
Queue Delay	0.0	1.6	0.0	0.0	0.0	0.0
Total Delay (s/veh)	387.3	41.3	131.9	14.4	183.3	28.2
LOS	F	D	F	B	F	C
Approach Delay (s/veh)		174.0	86.1		132.9	
Approach LOS		F	F		F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.78	
Intersection Signal Delay (s/veh): 135.5	Intersection LOS: F
Intersection Capacity Utilization 157.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 2: I-215 NB Ramps & Ethanac Rd.

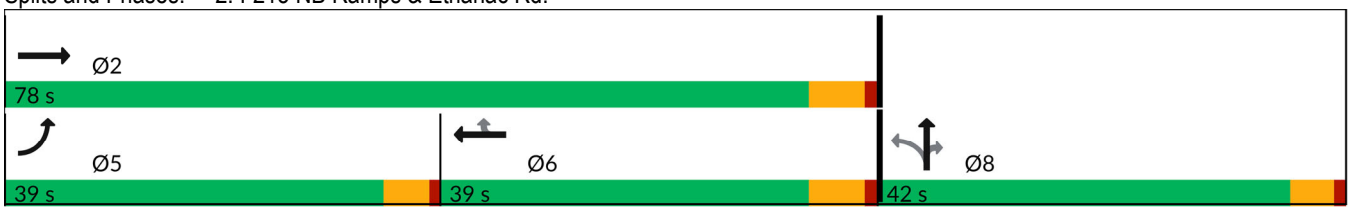


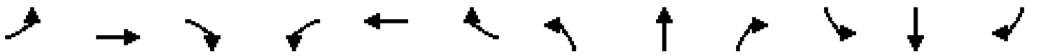
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	945	1518	0	0	1127	719	991	0	477	0	0	0
Future Volume (veh/h)	945	1518	0	0	1127	719	991	0	477	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	984	1581	0	0	1174	713	1032	0	418			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	556	1715	0	0	993	443	784	0	698			
Arrive On Green	0.16	0.47	0.00	0.00	0.28	0.28	0.43	0.00	0.43			
Sat Flow, veh/h	3510	3705	0	0	3705	1610	1810	0	1610			
Grp Volume(v), veh/h	984	1581	0	0	1174	713	1032	0	418			
Grp Sat Flow(s),veh/h/ln	1755	1805	0	0	1805	1610	1810	0	1610			
Q Serve(g_s), s	19.0	49.1	0.0	0.0	33.0	33.0	52.0	0.0	23.8			
Cycle Q Clear(g_c), s	19.0	49.1	0.0	0.0	33.0	33.0	52.0	0.0	23.8			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	556	1715	0	0	993	443	784	0	698			
V/C Ratio(X)	1.77	0.92	0.00	0.00	1.18	1.61	1.32	0.00	0.60			
Avail Cap(c_a), veh/h	556	1715	0	0	993	443	784	0	698			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	50.5	29.4	0.0	0.0	43.5	43.5	34.0	0.0	26.0			
Incr Delay (d2), s/veh	353.9	8.7	0.0	0.0	92.6	284.9	151.2	0.0	1.4			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	35.5	22.0	0.0	0.0	27.0	47.8	53.5	0.0	8.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	404.4	38.1	0.0	0.0	136.1	328.4	185.2	0.0	27.4			
LnGrp LOS	F	D			F	F	F		C			
Approach Vol, veh/h		2565			1887			1450				
Approach Delay, s/veh		178.7			208.8			139.8				
Approach LOS		F			F			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		63.0			24.0	39.0		57.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		57.0			19.0	33.0		52.0				
Max Q Clear Time (g_c+I1), s		51.1			21.0	35.0		54.0				
Green Ext Time (p_c), s		4.5			0.0	0.0		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh			178.7									
HCM 7th LOS			F									

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	945	1518	1127	719	991	0	477
Future Volume (vph)	945	1518	1127	719	991	0	477
Turn Type	Prot	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases				6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.5	23.4	23.4	23.4	23.4	23.4
Total Split (s)	39.0	78.0	39.0	39.0	42.0	42.0	42.0
Total Split (%)	32.5%	65.0%	32.5%	32.5%	35.0%	35.0%	35.0%
Yellow Time (s)	4.0	5.0	5.0	5.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	None	None	None	None	None	None
Act Effct Green (s)	34.0	72.0	33.0	33.0	37.0	37.0	37.0
Actuated g/C Ratio	0.28	0.60	0.28	0.28	0.31	0.31	0.31
v/c Ratio	0.99	0.51	0.82	0.87	0.96	0.48	0.47
Control Delay (s/veh)	69.8	14.5	46.5	22.0	59.8	26.8	26.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	69.8	14.5	46.5	22.0	59.8	26.8	26.7
LOS	E	B	D	C	E	C	C
Approach Delay (s/veh)		35.7	37.0			49.0	
Approach LOS		D	D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay (s/veh): 39.5	Intersection LOS: D
Intersection Capacity Utilization 113.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 2: I-215 NB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	945	1518	0	0	1127	719	991	0	477	0	0	0
Future Volume (veh/h)	945	1518	0	0	1127	719	991	0	477	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	984	1581	0	0	1174	369	1032	0	418			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	1018	3110	0	0	1385	430	1110	0	988			
Arrive On Green	0.29	0.60	0.00	0.00	0.27	0.27	0.31	0.00	0.31			
Sat Flow, veh/h	3510	5358	0	0	5358	1610	3619	0	3220			
Grp Volume(v), veh/h	984	1581	0	0	1174	369	1032	0	418			
Grp Sat Flow(s),veh/h/ln	1755	1729	0	0	1729	1610	1810	0	1610			
Q Serve(g_s), s	32.4	20.6	0.0	0.0	25.1	25.6	32.4	0.0	12.1			
Cycle Q Clear(g_c), s	32.4	20.6	0.0	0.0	25.1	25.6	32.4	0.0	12.1			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1018	3110	0	0	1385	430	1110	0	988			
V/C Ratio(X)	0.97	0.51	0.00	0.00	0.85	0.86	0.93	0.00	0.42			
Avail Cap(c_a), veh/h	1018	3184	0	0	1460	453	1142	0	1016			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	41.1	13.5	0.0	0.0	40.7	40.9	39.4	0.0	32.4			
Incr Delay (d2), s/veh	20.6	0.1	0.0	0.0	4.7	14.6	13.0	0.0	0.3			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	16.4	7.4	0.0	0.0	11.0	11.6	15.4	0.0	4.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	61.7	13.7	0.0	0.0	45.4	55.5	52.4	0.0	32.7			
LnGrp LOS	E	B			D	E	D		C			
Approach Vol, veh/h		2565			1543			1450				
Approach Delay, s/veh		32.1			47.8			46.7				
Approach LOS		C			D			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		76.3			39.0	37.3		41.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		72.0			34.0	33.0		37.0				
Max Q Clear Time (g_c+I1), s		22.6			34.4	27.6		34.4				
Green Ext Time (p_c), s		16.5			0.0	3.8		1.5				

Intersection Summary	
HCM 7th Control Delay, s/veh	40.3
HCM 7th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1876	120	0	1846	0	50
Future Vol, veh/h	1876	120	0	1846	0	50
Conflicting Peds, #/hr	0	3	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1996	128	0	1964	0	53

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1065
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	-	-	0	-	0	222
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	221
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

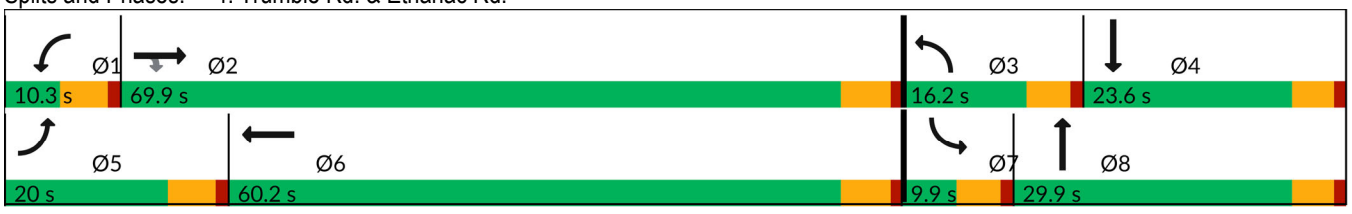
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	26.33
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	221	-	-	-
HCM Lane V/C Ratio	0.24	-	-	-
HCM Ctrl Dly (s/v)	26.3	-	-	-
HCM Lane LOS	D	-	-	-
HCM 95th %tile Q(veh)	0.9	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	259	1803	46	64	1968	331	2	35	8
Future Volume (vph)	259	1803	46	64	1968	331	2	35	8
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	5	2	2	1	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.3	35.3	35.3	10.3	27.8	9.9	29.9	9.9	10.4
Total Split (s)	20.0	69.9	69.9	10.3	60.2	16.2	29.9	9.9	23.6
Total Split (%)	16.7%	58.3%	58.3%	8.6%	50.2%	13.5%	24.9%	8.3%	19.7%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.9	3.9	3.9	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	4.9	4.9	4.9	4.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	14.7	64.7	64.7	5.0	55.0	11.3	21.4	5.0	14.9
Actuated g/C Ratio	0.13	0.56	0.56	0.04	0.47	0.10	0.18	0.04	0.13
v/c Ratio	1.22	0.91	0.05	0.90	1.18	2.03	0.14	0.49	0.89
Control Delay (s/veh)	175.4	31.2	0.1	133.0	114.7	513.5	12.9	77.2	52.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	175.4	31.2	0.1	133.0	114.7	513.5	12.9	77.2	52.9
LOS	F	C	A	F	F	F	B	E	D
Approach Delay (s/veh)		48.2			115.3		454.0		55.6
Approach LOS		D			F		F		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.4	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.03	
Intersection Signal Delay (s/veh): 108.5	Intersection LOS: F
Intersection Capacity Utilization 121.8%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 4: Trumble Rd. & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	259	1803	46	64	1968	18	331	2	43	35	8	270
Future Volume (veh/h)	259	1803	46	64	1968	18	331	2	43	35	8	270
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1976	1900	1900	1976	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	278	1939	45	69	2116	18	356	2	27	38	9	231
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	222	2021	863	75	1745	15	170	25	333	54	9	243
Arrive On Green	0.12	0.54	0.54	0.04	0.46	0.46	0.09	0.22	0.22	0.03	0.16	0.16
Sat Flow, veh/h	1810	3754	1603	1810	3815	32	1810	112	1515	1810	61	1559
Grp Volume(v), veh/h	278	1939	45	69	1040	1094	356	0	29	38	0	240
Grp Sat Flow(s),veh/h/ln	1810	1877	1603	1810	1877	1970	1810	0	1627	1810	0	1619
Q Serve(g_s), s	14.7	59.2	1.6	4.6	54.9	54.9	11.3	0.0	1.7	2.5	0.0	17.6
Cycle Q Clear(g_c), s	14.7	59.2	1.6	4.6	54.9	54.9	11.3	0.0	1.7	2.5	0.0	17.6
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.93	1.00		0.96
Lane Grp Cap(c), veh/h	222	2021	863	75	859	901	170	0	358	54	0	252
V/C Ratio(X)	1.25	0.96	0.05	0.92	1.21	1.21	2.09	0.00	0.08	0.70	0.00	0.95
Avail Cap(c_a), veh/h	222	2021	863	75	859	901	170	0	358	75	0	252
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.6	26.4	13.2	57.3	32.6	32.6	54.3	0.0	37.2	57.7	0.0	50.2
Incr Delay (d2), s/veh	145.8	11.8	0.0	74.0	105.6	106.6	509.6	0.0	0.0	6.5	0.0	42.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.5	27.1	0.6	3.6	48.2	50.8	29.2	0.0	0.7	1.2	0.0	10.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	198.4	38.3	13.2	131.3	138.1	139.1	564.0	0.0	37.2	64.2	0.0	93.0
LnGrp LOS	F	D	B	F	F	F	F		D	E		F
Approach Vol, veh/h		2262			2203			385			278	
Approach Delay, s/veh		57.5			138.4			524.3			89.1	
Approach LOS		E			F			F			F	

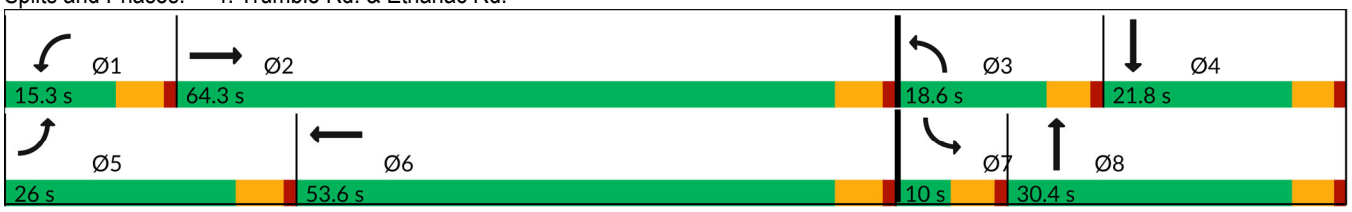
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	69.9	16.2	23.6	20.0	60.2	8.5	31.3
Change Period (Y+Rc), s	5.3	5.3	4.9	4.9	5.3	5.3	4.9	4.9
Max Green Setting (Gmax), s	5.0	64.6	11.3	18.7	14.7	54.9	5.0	25.0
Max Q Clear Time (g_c+I1), s	6.6	61.2	13.3	19.6	16.7	56.9	4.5	3.7
Green Ext Time (p_c), s	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	129.0
HCM 7th LOS	F

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	259	1803	64	1968	331	2	35	8
Future Volume (vph)	259	1803	64	1968	331	2	35	8
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	3	8	7	4
Permitted Phases								
Detector Phase	5	2	1	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.3	35.3	10.3	27.8	9.9	29.9	9.9	10.4
Total Split (s)	26.0	64.3	15.3	53.6	18.6	30.4	10.0	21.8
Total Split (%)	21.7%	53.6%	12.8%	44.7%	15.5%	25.3%	8.3%	18.2%
Yellow Time (s)	4.3	4.3	4.3	4.3	3.9	3.9	3.9	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	4.9	4.9	4.9	4.9
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	19.5	61.0	8.1	47.1	13.4	14.7	5.1	9.9
Actuated g/C Ratio	0.18	0.55	0.07	0.43	0.12	0.13	0.05	0.09
v/c Ratio	0.87	0.65	0.52	0.91	0.84	0.19	0.46	0.83
Control Delay (s/veh)	72.4	20.2	65.9	37.1	66.9	13.6	72.2	32.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	72.4	20.2	65.9	37.1	66.9	13.6	72.2	32.8
LOS	E	C	E	D	E	B	E	C
Approach Delay (s/veh)		26.6		38.0		60.6		37.2
Approach LOS		C		D		E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.5	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay (s/veh): 34.8	Intersection LOS: C
Intersection Capacity Utilization 96.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 4: Trumble Rd. & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	259	1803	46	64	1968	18	331	2	43	35	8	270
Future Volume (veh/h)	259	1803	46	64	1968	18	331	2	43	35	8	270
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1976	1900	1900	1976	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	278	1939	45	69	2116	18	356	2	27	38	9	231
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	304	2831	66	89	2223	19	405	26	344	54	9	222
Arrive On Green	0.17	0.52	0.52	0.05	0.40	0.40	0.12	0.23	0.23	0.03	0.14	0.14
Sat Flow, veh/h	1810	5423	126	1810	5517	47	3510	112	1515	1810	61	1559
Grp Volume(v), veh/h	278	1285	699	69	1379	755	356	0	29	38	0	240
Grp Sat Flow(s),veh/h/ln	1810	1798	1953	1810	1798	1968	1755	0	1627	1810	0	1619
Q Serve(g_s), s	18.0	31.6	31.7	4.5	44.1	44.2	11.9	0.0	1.7	2.5	0.0	16.9
Cycle Q Clear(g_c), s	18.0	31.6	31.7	4.5	44.1	44.2	11.9	0.0	1.7	2.5	0.0	16.9
Prop In Lane	1.00		0.06	1.00		0.02	1.00		0.93	1.00		0.96
Lane Grp Cap(c), veh/h	304	1877	1019	89	1449	793	405	0	370	54	0	230
V/C Ratio(X)	0.91	0.68	0.69	0.78	0.95	0.95	0.88	0.00	0.08	0.70	0.00	1.04
Avail Cap(c_a), veh/h	315	1877	1019	152	1461	799	405	0	370	78	0	230
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.6	21.1	21.2	55.9	34.4	34.4	51.8	0.0	36.1	57.1	0.0	51.0
Incr Delay (d2), s/veh	28.4	0.9	1.6	5.4	13.5	20.7	18.9	0.0	0.0	5.9	0.0	70.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	12.5	13.8	2.1	20.8	24.4	6.2	0.0	0.7	1.2	0.0	11.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	77.0	22.0	22.8	61.3	47.9	55.1	70.6	0.0	36.2	63.0	0.0	121.9
LnGrp LOS	E	C	C	E	D	E	E		D	E		F
Approach Vol, veh/h		2262			2203			385			278	
Approach Delay, s/veh		29.0			50.8			68.0			113.8	
Approach LOS		C			D			E			F	

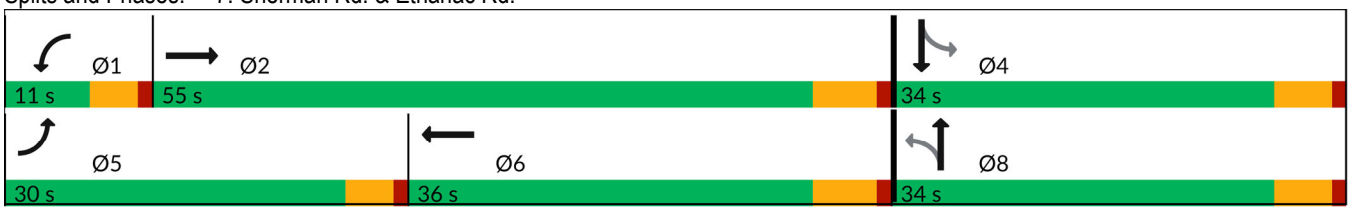
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	67.4	18.6	21.8	25.3	53.2	8.5	31.9
Change Period (Y+Rc), s	5.3	5.3	4.9	4.9	5.3	5.3	4.9	4.9
Max Green Setting (Gmax), s	10.0	59.0	13.7	16.9	20.7	48.3	5.1	25.5
Max Q Clear Time (g_c+I1), s	6.5	33.7	13.9	18.9	20.0	46.2	4.5	3.7
Green Ext Time (p_c), s	0.0	10.2	0.0	0.0	0.0	1.7	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	45.9
HCM 7th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	226	1288	58	1356	570	65	20	37
Future Volume (vph)	226	1288	58	1356	570	65	20	37
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	27.8	32.4	32.4	20.0	20.0
Total Split (s)	30.0	55.0	11.0	36.0	34.0	34.0	34.0	34.0
Total Split (%)	30.0%	55.0%	11.0%	36.0%	34.0%	34.0%	34.0%	34.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.4	4.4	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.4	5.4	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	17.0	49.3	6.1	36.3	28.7	28.7	28.7	28.7
Actuated g/C Ratio	0.17	0.50	0.06	0.37	0.29	0.29	0.29	0.29
v/c Ratio	0.74	0.96	0.54	1.06	1.61	0.32	0.06	0.25
Control Delay (s/veh)	52.9	38.6	63.3	74.5	314.8	16.7	26.8	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	52.9	38.6	63.3	74.5	314.8	16.7	26.8	10.6
LOS	D	D	E	E	F	B	C	B
Approach Delay (s/veh)		40.4		74.1		245.2		12.7
Approach LOS		D		E		F		B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 97.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.61	
Intersection Signal Delay (s/veh): 86.9	Intersection LOS: F
Intersection Capacity Utilization 109.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 7: Sherman Rd. & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	226	1288	371	58	1356	23	570	65	109	20	37	98
Future Volume (veh/h)	226	1288	371	58	1356	23	570	65	109	20	37	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	233	1328	227	60	1398	24	588	67	112	21	38	101
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	270	1500	254	78	1379	24	382	194	324	348	139	370
Arrive On Green	0.15	0.49	0.49	0.04	0.38	0.38	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1810	3087	522	1810	3631	62	1269	639	1068	1224	459	1220
Grp Volume(v), veh/h	233	771	784	60	694	728	588	0	179	21	0	139
Grp Sat Flow(s),veh/h/ln	1810	1805	1804	1810	1805	1889	1269	0	1708	1224	0	1679
Q Serve(g_s), s	11.9	36.1	37.3	3.1	35.8	35.8	22.7	0.0	7.7	1.3	0.0	5.9
Cycle Q Clear(g_c), s	11.9	36.1	37.3	3.1	35.8	35.8	28.6	0.0	7.7	9.0	0.0	5.9
Prop In Lane	1.00		0.29	1.00		0.03	1.00		0.63	1.00		0.73
Lane Grp Cap(c), veh/h	270	877	877	78	685	717	382	0	518	348	0	509
V/C Ratio(X)	0.86	0.88	0.89	0.77	1.01	1.01	1.54	0.00	0.35	0.06	0.00	0.27
Avail Cap(c_a), veh/h	488	942	942	123	685	717	382	0	518	348	0	509
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.2	21.7	22.0	44.7	29.2	29.2	38.1	0.0	25.5	29.0	0.0	24.9
Incr Delay (d2), s/veh	3.2	9.1	10.5	6.0	37.7	37.2	256.1	0.0	0.4	0.1	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	15.5	16.3	1.5	21.2	22.1	35.9	0.0	3.1	0.4	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	42.4	30.8	32.5	50.7	66.9	66.4	294.1	0.0	25.9	29.1	0.0	25.2
LnGrp LOS	D	C	C	D	F	F	F		C	C		C
Approach Vol, veh/h		1788			1482			767			160	
Approach Delay, s/veh		33.1			66.0			231.6			25.7	
Approach LOS		C			E			F			C	

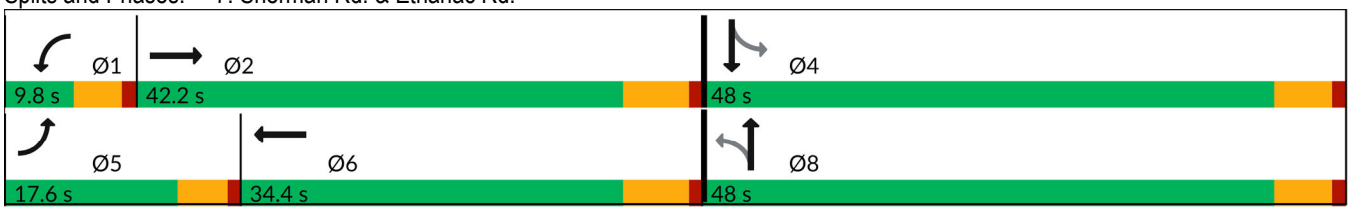
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.6	51.6		34.0	18.7	41.6		34.0				
Change Period (Y+Rc), s	4.6	5.8		5.4	4.6	5.8		5.4				
Max Green Setting (Gmax), s	6.4	49.2		28.6	25.4	30.2		28.6				
Max Q Clear Time (g_c+I1), s	5.1	39.3		11.0	13.9	37.8		30.6				
Green Ext Time (p_c), s	0.0	6.5		0.7	0.2	0.0		0.0				

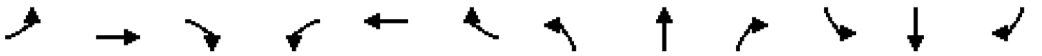
Intersection Summary	
HCM 7th Control Delay, s/veh	80.7
HCM 7th LOS	F

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	226	1288	58	1356	570	65	20	37
Future Volume (vph)	226	1288	58	1356	570	65	20	37
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	27.8	32.4	32.4	20.0	20.0
Total Split (s)	17.6	42.2	9.8	34.4	48.0	48.0	48.0	48.0
Total Split (%)	17.6%	42.2%	9.8%	34.4%	48.0%	48.0%	48.0%	48.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.4	4.4	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.4	5.4	5.4	5.4
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	13.0	38.4	5.2	28.6	42.6	42.6	42.6	42.6
Actuated g/C Ratio	0.13	0.38	0.05	0.29	0.43	0.43	0.43	0.43
v/c Ratio	1.00	0.87	0.65	0.96	1.09	0.23	0.04	0.18
Control Delay (s/veh)	103.0	33.8	78.3	51.5	94.7	8.6	17.2	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	103.0	33.8	78.3	51.5	94.7	8.6	17.2	6.7
LOS	F	C	E	D	F	A	B	A
Approach Delay (s/veh)		42.1		52.6		74.6		8.0
Approach LOS		D		D		E		A

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay (s/veh): 50.1	Intersection LOS: D
Intersection Capacity Utilization 96.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 7: Sherman Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	226	1288	371	58	1356	23	570	65	109	20	37	98
Future Volume (veh/h)	226	1288	371	58	1356	23	570	65	109	20	37	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	233	1328	227	60	1398	24	588	67	112	21	38	101
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	236	1659	283	78	1496	26	548	273	456	512	196	521
Arrive On Green	0.13	0.37	0.37	0.04	0.28	0.28	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1810	4456	761	1810	5252	90	1269	639	1068	1224	459	1220
Grp Volume(v), veh/h	233	1031	524	60	921	501	588	0	179	21	0	139
Grp Sat Flow(s),veh/h/ln	1810	1729	1759	1810	1729	1884	1269	0	1708	1224	0	1679
Q Serve(g_s), s	12.8	26.6	26.6	3.3	25.9	25.9	37.4	0.0	6.7	1.1	0.0	5.2
Cycle Q Clear(g_c), s	12.8	26.6	26.6	3.3	25.9	25.9	42.6	0.0	6.7	7.8	0.0	5.2
Prop In Lane	1.00		0.43	1.00		0.05	1.00		0.63	1.00		0.73
Lane Grp Cap(c), veh/h	236	1287	655	78	985	537	548	0	729	512	0	717
V/C Ratio(X)	0.99	0.80	0.80	0.77	0.93	0.93	1.07	0.00	0.25	0.04	0.00	0.19
Avail Cap(c_a), veh/h	236	1287	655	94	991	540	548	0	729	512	0	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.3	28.0	28.0	47.3	34.8	34.8	33.7	0.0	18.3	20.8	0.0	17.9
Incr Delay (d2), s/veh	55.3	3.7	7.0	21.7	15.3	23.6	59.6	0.0	0.2	0.0	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	10.8	11.6	1.9	12.3	14.6	22.5	0.0	2.6	0.3	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	98.6	31.7	35.1	69.0	50.1	58.4	93.2	0.0	18.5	20.9	0.0	18.0
LnGrp LOS	F	C	D	E	D	E	F		B	C		B
Approach Vol, veh/h		1788			1482			767			160	
Approach Delay, s/veh		41.4			53.7			75.8			18.4	
Approach LOS		D			D			E			B	

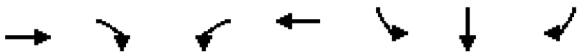
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.9	43.0		48.0	17.6	34.2		48.0				
Change Period (Y+Rc), s	4.6	5.8		5.4	4.6	5.8		5.4				
Max Green Setting (Gmax), s	5.2	36.4		42.6	13.0	28.6		42.6				
Max Q Clear Time (g_c+I1), s	5.3	28.6		9.8	14.8	27.9		44.6				
Green Ext Time (p_c), s	0.0	5.3		0.9	0.0	0.5		0.0				

Intersection Summary			
HCM 7th Control Delay, s/veh		51.1	
HCM 7th LOS		D	

APPENDIX 6.7:

EAPC (2028) QUEUING ANALYSIS WITH IMPROVEMENTS

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Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1749	1017	196	1680	599	573	569
v/c Ratio	0.88	0.64	0.92	0.66	0.84	0.92	0.84
Control Delay (s/veh)	39.6	2.0	100.7	24.4	42.7	52.6	38.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.6	2.0	100.7	24.4	42.7	52.6	38.8
Queue Length 50th (ft)	456	0	79	354	424	439	357
Queue Length 95th (ft)	524	0	#156	407	#610	#689	#572
Internal Link Dist (ft)	624			681		1327	
Turn Bay Length (ft)			275		850		750
Base Capacity (vph)	2064	1595	212	2603	756	663	717
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.64	0.92	0.65	0.79	0.86	0.79

Intersection Summary

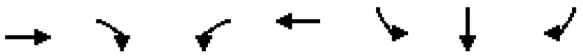
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	862	1579	922	584	969	261	261
v/c Ratio	0.89	0.53	0.70	0.69	0.86	0.48	0.48
Control Delay (s/veh)	51.5	15.3	42.0	7.8	45.1	25.7	25.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	51.5	15.3	42.0	7.8	45.1	25.7	25.7
Queue Length 50th (ft)	327	254	236	0	359	120	120
Queue Length 95th (ft)	#430	294	286	100	444	206	206
Internal Link Dist (ft)		681	457			1327	
Turn Bay Length (ft)	245			550	600		270
Base Capacity (vph)	1068	3257	1442	870	1225	584	584
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.48	0.64	0.67	0.79	0.45	0.45

Intersection Summary

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



Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	
Lane Group Flow (vph)	1828	1026	443	1741	605	577	571
v/c Ratio	0.94	0.64	1.01	0.62	0.96	1.03	0.94
Control Delay (s/veh)	46.9	1.9	98.6	20.2	65.8	83.7	57.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.9	1.9	98.6	20.2	65.8	83.7	57.0
Queue Length 50th (ft)	495	0	~181	326	478	~519	401
Queue Length 95th (ft)	#601	0	#291	375	#728	#765	#645
Internal Link Dist (ft)	624			681		1327	
Turn Bay Length (ft)			275		850		750
Base Capacity (vph)	1945	1615	437	2809	628	559	608
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.64	1.01	0.62	0.96	1.03	0.94

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	984	1581	1174	749	1032	249	248
v/c Ratio	0.99	0.51	0.82	0.87	0.96	0.48	0.47
Control Delay (s/veh)	69.8	14.5	46.5	22.0	59.8	26.8	26.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	69.8	14.5	46.5	22.0	59.8	26.8	26.7
Queue Length 50th (ft)	392	243	312	140	403	114	113
Queue Length 95th (ft)	#535	281	370	#406	#539	200	198
Internal Link Dist (ft)		681	457			1327	
Turn Bay Length (ft)	245			300	600		270
Base Capacity (vph)	992	3112	1426	859	1079	523	523
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.51	0.82	0.87	0.96	0.48	0.47

Intersection Summary

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

APPENDIX 7.1:

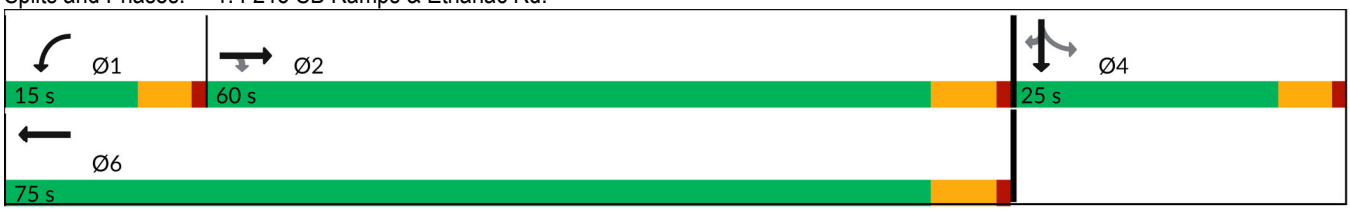
2045 WITHOUT PROJECT INTERSECTION ANALYSIS

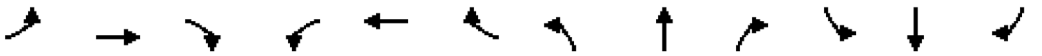
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Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1840	1074	194	1861	1	1135
Future Volume (vph)	1840	1074	194	1861	1	1135
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Detector Phase	2	2	1	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.4	23.4	10.0	24.5	24.5	24.5
Total Split (s)	60.0	60.0	15.0	75.0	25.0	25.0
Total Split (%)	60.0%	60.0%	15.0%	75.0%	25.0%	25.0%
Yellow Time (s)	5.0	5.0	4.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	54.0	54.0	10.0	69.0	20.0	20.0
Actuated g/C Ratio	0.54	0.54	0.10	0.69	0.20	0.20
v/c Ratio	1.87	1.02	1.12	0.78	1.89	3.02
Control Delay (s/veh)	416.0	48.2	146.4	13.2	436.6	930.4
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0
Total Delay (s/veh)	416.0	48.2	146.4	13.9	436.6	930.4
LOS	F	D	F	B	F	F
Approach Delay (s/veh)	280.4			26.4	749.7	
Approach LOS	F			C	F	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 3.02	
Intersection Signal Delay (s/veh): 327.4	Intersection LOS: F
Intersection Capacity Utilization 310.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1: I-215 SB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1840	1074	194	1861	0	0	0	0	654	1	1135
Future Volume (veh/h)	0	1840	1074	194	1861	0	0	0	0	654	1	1135
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1917	1014	202	1939	0				681	1	1028
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1026	859	181	2491	0				361	1	322
Arrive On Green	0.00	0.54	0.54	0.10	0.69	0.00				0.20	0.20	0.20
Sat Flow, veh/h	0	1900	1590	1810	3705	0				1807	3	1610
Grp Volume(v), veh/h	0	1917	1014	202	1939	0				682	0	1028
Grp Sat Flow(s),veh/h/ln	0	1900	1590	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	54.0	54.0	10.0	36.0	0.0				20.0	0.0	20.0
Cycle Q Clear(g_c), s	0.0	54.0	54.0	10.0	36.0	0.0				20.0	0.0	20.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1026	859	181	2491	0				362	0	322
V/C Ratio(X)	0.00	1.87	1.18	1.12	0.78	0.00				1.88	0.00	3.19
Avail Cap(c_a), veh/h	0	1026	859	181	2491	0				362	0	322
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	23.0	23.0	45.0	10.4	0.0				40.0	0.0	40.0
Incr Delay (d2), s/veh	0.0	394.5	93.3	101.5	1.6	0.0				408.3	0.0	994.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	133.5	39.9	9.5	11.6	0.0				49.3	0.0	96.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	417.5	116.3	146.5	12.0	0.0				448.3	0.0	1034.6
LnGrp LOS		F	F	F	B					F		F
Approach Vol, veh/h		2931			2141						1710	
Approach Delay, s/veh		313.3			24.7						800.7	
Approach LOS		F			C						F	

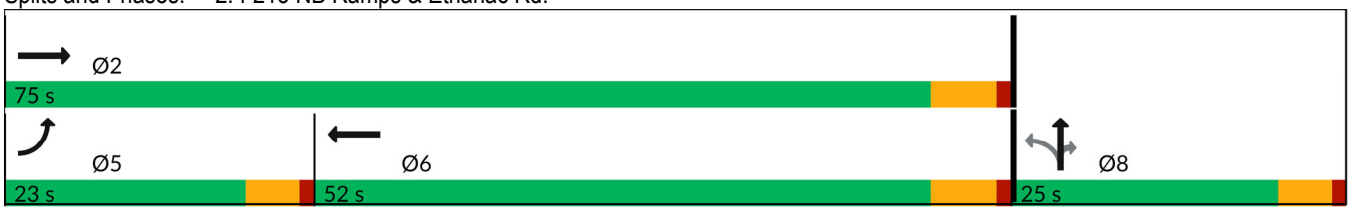
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	15.0	60.0		25.0		75.0
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	10.0	54.0		20.0		69.0
Max Q Clear Time (g_c+I1), s	12.0	56.0		22.0		38.0
Green Ext Time (p_c), s	0.0	0.0		0.0		19.6

Intersection Summary	
HCM 7th Control Delay, s/veh	345.1
HCM 7th LOS	F

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Configurations					
Traffic Volume (vph)	900	1594	1041	0	510
Future Volume (vph)	900	1594	1041	0	510
Turn Type	Prot	NA	NA	NA	Perm
Protected Phases	5	2	6	8	
Permitted Phases					8
Detector Phase	5	2	6	8	8
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.5	23.4	23.4	23.4
Total Split (s)	23.0	75.0	52.0	25.0	25.0
Total Split (%)	23.0%	75.0%	52.0%	25.0%	25.0%
Yellow Time (s)	4.0	5.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	None	None	None	None
Act Effct Green (s)	18.0	69.0	46.0	20.0	20.0
Actuated g/C Ratio	0.18	0.69	0.46	0.20	0.20
v/c Ratio	2.92	1.28	2.02	2.96	1.37
Control Delay (s/veh)	891.9	151.7	485.0	905.5	210.5
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay (s/veh)	891.9	151.8	485.0	905.5	210.5
LOS	F	F	F	F	F
Approach Delay (s/veh)		418.8	485.0	672.8	
Approach LOS		F	F	F	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.96	
Intersection Signal Delay (s/veh): 506.4	Intersection LOS: F
Intersection Capacity Utilization 310.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 2: I-215 NB Ramps & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	900	1594	0	0	1041	593	1014	0	510	0	0	0
Future Volume (veh/h)	900	1594	0	0	1041	593	1014	0	510	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	947	1678	0	0	1096	558	1067	0	477			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	326	1311	0	0	546	278	362	0	322			
Arrive On Green	0.18	0.69	0.00	0.00	0.46	0.46	0.20	0.00	0.20			
Sat Flow, veh/h	1810	1900	0	0	1187	604	1810	0	1610			
Grp Volume(v), veh/h	947	1678	0	0	0	1654	1067	0	477			
Grp Sat Flow(s),veh/h/ln	1810	1900	0	0	0	1791	1810	0	1610			
Q Serve(g_s), s	18.0	69.0	0.0	0.0	0.0	46.0	20.0	0.0	20.0			
Cycle Q Clear(g_c), s	18.0	69.0	0.0	0.0	0.0	46.0	20.0	0.0	20.0			
Prop In Lane	1.00		0.00	0.00		0.34	1.00		1.00			
Lane Grp Cap(c), veh/h	326	1311	0	0	0	824	362	0	322			
V/C Ratio(X)	2.91	1.28	0.00	0.00	0.00	2.01	2.95	0.00	1.48			
Avail Cap(c_a), veh/h	326	1311	0	0	0	824	362	0	322			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	41.0	15.5	0.0	0.0	0.0	27.0	40.0	0.0	40.0			
Incr Delay (d2), s/veh	866.7	132.0	0.0	0.0	0.0	457.6	884.2	0.0	232.6			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	86.1	70.3	0.0	0.0	0.0	122.5	97.1	0.0	28.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	907.7	147.5	0.0	0.0	0.0	484.6	924.2	0.0	272.6			
LnGrp LOS	F	F				F	F		F			
Approach Vol, veh/h		2625			1654			1544				
Approach Delay, s/veh		421.7			484.6			722.9				
Approach LOS		F			F			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		75.0			23.0	52.0		25.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		69.0			18.0	46.0		20.0				
Max Q Clear Time (g_c+I1), s		71.0			20.0	48.0		22.0				
Green Ext Time (p_c), s		0.0			0.0	0.0		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh			519.4									
HCM 7th LOS			F									

Intersection	
Int Delay, s/veh	173.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1992	112	39	1385	249	28
Future Vol, veh/h	1992	112	39	1385	249	28
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2189	123	43	1522	274	31

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2314	0	3860	2253
Stage 1	-	-	-	-	2253	-
Stage 2	-	-	-	-	1608	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	219	-	~ 4	53
Stage 1	-	-	-	-	~ 86	-
Stage 2	-	-	-	-	~ 182	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	219	-	~ 3	53
Mov Cap-2 Maneuver	-	-	-	-	~ 51	-
Stage 1	-	-	-	-	~ 86	-
Stage 2	-	-	-	-	~ 147	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.7	$ 2381.44
HCM LOS			F

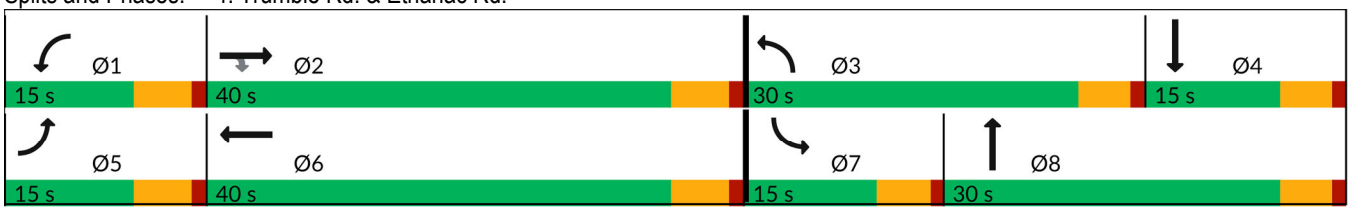
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	51	-	-	219	-
HCM Lane V/C Ratio	5.944	-	-	0.196	-
HCM Ctrl Dly (s/v)	$ 2381.4	-	-	25.4	-
HCM Lane LOS	F	-	-	D	-
HCM 95th %tile Q(veh)	34.9	-	-	0.7	-

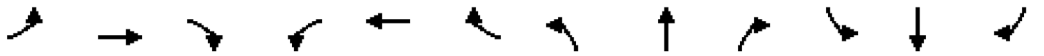
Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	332	2246	32	44	1036	94	21	30	33
Future Volume (vph)	332	2246	32	44	1036	94	21	30	33
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	5	2	2	1	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.3	35.3	35.3	10.3	27.8	9.9	29.9	9.9	10.4
Total Split (s)	15.0	40.0	40.0	15.0	40.0	30.0	30.0	15.0	15.0
Total Split (%)	15.0%	40.0%	40.0%	15.0%	40.0%	30.0%	30.0%	15.0%	15.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.9	3.9	3.9	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	4.9	4.9	4.9	4.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	9.9	43.3	43.3	6.8	35.3	9.1	11.3	6.2	9.2
Actuated g/C Ratio	0.12	0.53	0.53	0.08	0.43	0.11	0.14	0.08	0.11
v/c Ratio	1.66	2.43	0.04	0.32	1.42	0.51	0.24	0.24	0.77
Control Delay (s/veh)	343.3	662.8	0.1	44.1	218.6	45.4	16.9	43.3	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	343.3	662.8	0.1	44.1	218.6	45.4	16.9	43.3	17.8
LOS	F	F	A	D	F	D	B	D	B
Approach Delay (s/veh)		614.0			211.7		34.4		19.9
Approach LOS		F			F		C		B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 81.7	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.43	
Intersection Signal Delay (s/veh): 435.9	Intersection LOS: F
Intersection Capacity Utilization 165.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 4: Trumble Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	332	2246	32	44	1036	31	94	21	38	30	33	307
Future Volume (veh/h)	332	2246	32	44	1036	31	94	21	38	30	33	307
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	361	2441	27	48	1126	32	102	23	26	33	36	299
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	217	966	817	74	789	22	132	135	153	59	22	183
Arrive On Green	0.12	0.51	0.51	0.04	0.43	0.43	0.07	0.17	0.17	0.03	0.12	0.12
Sat Flow, veh/h	1810	1900	1607	1810	1838	52	1810	814	920	1810	176	1461
Grp Volume(v), veh/h	361	2441	27	48	0	1158	102	0	49	33	0	335
Grp Sat Flow(s),veh/h/ln	1810	1900	1607	1810	0	1891	1810	0	1734	1810	0	1637
Q Serve(g_s), s	9.7	41.1	0.7	2.1	0.0	34.7	4.5	0.0	2.0	1.5	0.0	10.1
Cycle Q Clear(g_c), s	9.7	41.1	0.7	2.1	0.0	34.7	4.5	0.0	2.0	1.5	0.0	10.1
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.53	1.00		0.89
Lane Grp Cap(c), veh/h	217	966	817	74	0	812	132	0	287	59	0	205
V/C Ratio(X)	1.66	2.53	0.03	0.65	0.00	1.43	0.77	0.00	0.17	0.56	0.00	1.64
Avail Cap(c_a), veh/h	217	966	817	217	0	812	562	0	539	226	0	205
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.6	19.9	9.9	38.2	0.0	23.1	36.8	0.0	28.9	38.5	0.0	35.4
Incr Delay (d2), s/veh	317.4	689.7	0.0	3.6	0.0	199.0	3.5	0.0	0.1	3.1	0.0	307.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.1	199.9	0.2	1.0	0.0	58.1	2.0	0.0	0.8	0.7	0.0	21.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	353.0	709.6	9.9	41.7	0.0	222.1	40.3	0.0	29.0	41.7	0.0	343.2
LnGrp LOS	F	F	A	D		F	D		C	D		F
Approach Vol, veh/h		2829			1206			151			368	
Approach Delay, s/veh		657.4			214.9			36.7			316.2	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	46.4	10.8	15.0	15.0	40.0	7.5	18.3
Change Period (Y+Rc), s	5.3	5.3	4.9	4.9	5.3	5.3	4.9	4.9
Max Green Setting (Gmax), s	9.7	34.7	25.1	10.1	9.7	34.7	10.1	25.1
Max Q Clear Time (g_c+I1), s	4.1	43.1	6.5	12.1	11.7	36.7	3.5	4.0
Green Ext Time (p_c), s	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	492.1
HCM 7th LOS	F

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	149	1569	568	92	863	29	171	22	21	37	67	196
Future Vol, veh/h	149	1569	568	92	863	29	171	22	21	37	67	196
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	160	1687	611	99	928	31	184	24	23	40	72	211

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	959	0	0	2298	0	0	3475	3470	1992	3161	3760	944
Stage 1	-	-	-	-	-	-	2313	2313	-	1141	1141	-
Stage 2	-	-	-	-	-	-	1162	1157	-	2019	2618	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	725	-	-	222	-	-	~ 4	~ 7	77	~ 7	~ 4	321
Stage 1	-	-	-	-	-	-	~ 51	73	-	246	278	-
Stage 2	-	-	-	-	-	-	240	273	-	77	~ 51	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	725	-	-	222	-	-	-	~ 0	77	-	~ 0	321
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 0	-	-	~ 0	-
Stage 1	-	-	-	-	-	-	~ 51	73	-	~ 10	~ 11	-
Stage 2	-	-	-	-	-	-	-	~ 11	-	~ 37	~ 51	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.74	3.14		
HCM LOS			-	-

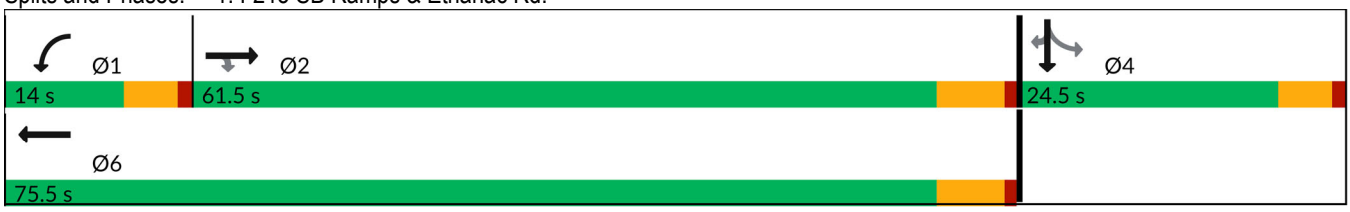
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	~ 111	-	-	103	-	-	-
HCM Lane V/C Ratio	-	0.221	-	-	0.445	-	-	-
HCM Ctrl Dly (s/v)	-	11.4	0	-	33.5	0	-	-
HCM Lane LOS	-	B	A	-	D	A	-	-
HCM 95th %tile Q(veh)	-	0.8	-	-	2.1	-	-	-

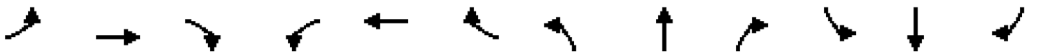
Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2020	1094	436	1848	2	1109
Future Volume (vph)	2020	1094	436	1848	2	1109
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Detector Phase	2	2	1	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.4	23.4	10.0	24.5	24.5	24.5
Total Split (s)	61.5	61.5	14.0	75.5	24.5	24.5
Total Split (%)	61.5%	61.5%	14.0%	75.5%	24.5%	24.5%
Yellow Time (s)	5.0	5.0	4.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	55.5	55.5	9.0	69.5	19.5	19.5
Actuated g/C Ratio	0.56	0.56	0.09	0.70	0.20	0.20
v/c Ratio	1.98	1.02	2.77	0.76	2.21	2.98
Control Delay (s/veh)	463.0	45.6	834.0	12.4	575.6	913.4
Queue Delay	0.0	0.0	0.0	0.6	0.0	0.0
Total Delay (s/veh)	463.0	45.6	834.0	13.0	575.6	913.4
LOS	F	D	F	B	F	F
Approach Delay (s/veh)	316.3			169.6	776.7	
Approach LOS	F			F	F	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.98	
Intersection Signal Delay (s/veh): 388.3	Intersection LOS: F
Intersection Capacity Utilization 339.8%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1: I-215 SB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2020	1094	436	1848	0	0	0	0	752	2	1109
Future Volume (veh/h)	0	2020	1094	436	1848	0	0	0	0	752	2	1109
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	2082	1049	449	1905	0				775	2	983
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1055	894	163	2509	0				352	1	314
Arrive On Green	0.00	0.56	0.56	0.09	0.69	0.00				0.19	0.19	0.19
Sat Flow, veh/h	0	1900	1610	1810	3705	0				1805	5	1610
Grp Volume(v), veh/h	0	2082	1049	449	1905	0				777	0	983
Grp Sat Flow(s),veh/h/ln	0	1900	1610	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	55.5	55.5	9.0	34.1	0.0				19.5	0.0	19.5
Cycle Q Clear(g_c), s	0.0	55.5	55.5	9.0	34.1	0.0				19.5	0.0	19.5
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1055	894	163	2509	0				353	0	314
V/C Ratio(X)	0.00	1.97	1.17	2.76	0.76	0.00				2.20	0.00	3.13
Avail Cap(c_a), veh/h	0	1055	894	163	2509	0				353	0	314
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	22.3	22.3	45.5	9.8	0.0				40.3	0.0	40.2
Incr Delay (d2), s/veh	0.0	441.9	90.0	807.6	1.4	0.0				550.0	0.0	967.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	150.8	40.5	40.5	10.8	0.0				62.0	0.0	91.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	464.2	112.3	853.1	11.2	0.0				590.2	0.0	1007.4
LnGrp LOS		F	F	F	B					F		F
Approach Vol, veh/h		3131			2354						1760	
Approach Delay, s/veh		346.3			171.8						823.2	
Approach LOS		F			F						F	

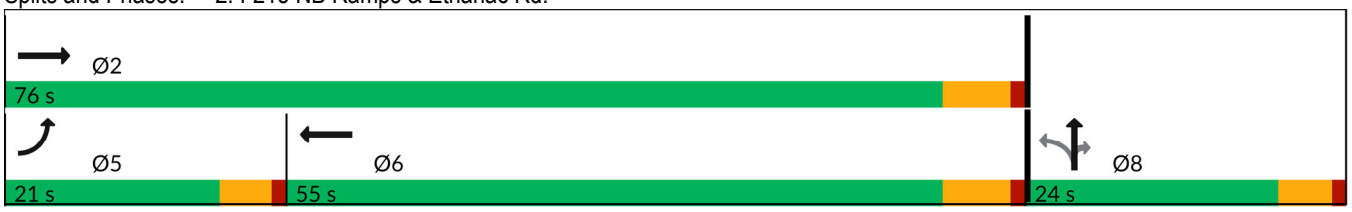
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	14.0	61.5		24.5		75.5
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	9.0	55.5		19.5		69.5
Max Q Clear Time (g_c+I1), s	11.0	57.5		21.5		36.1
Green Ext Time (p_c), s	0.0	0.0		0.0		20.1

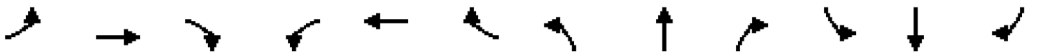
Intersection Summary	
HCM 7th Control Delay, s/veh	405.5
HCM 7th LOS	F

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Configurations					
Traffic Volume (vph)	1040	1732	1194	0	528
Future Volume (vph)	1040	1732	1194	0	528
Turn Type	Prot	NA	NA	NA	Perm
Protected Phases	5	2	6	8	
Permitted Phases					8
Detector Phase	5	2	6	8	8
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.5	23.4	23.4	23.4
Total Split (s)	21.0	76.0	55.0	24.0	24.0
Total Split (%)	21.0%	76.0%	55.0%	24.0%	24.0%
Yellow Time (s)	4.0	5.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	None	None	None	None
Act Effct Green (s)	16.0	70.0	49.0	19.0	19.0
Actuated g/C Ratio	0.16	0.70	0.49	0.19	0.19
v/c Ratio	3.76	1.36	2.23	3.32	1.46
Control Delay (s/veh)	Error	185.1	574.9	Error	248.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	Error	185.2	574.9	Error	248.3
LOS	F	F	F	F	F
Approach Delay (s/veh)		590.4	574.9	799.9	
Approach LOS		F	F	F	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 3.76	
Intersection Signal Delay (s/veh): 639.3	Intersection LOS: F
Intersection Capacity Utilization 339.8%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 2: I-215 NB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1040	1732	0	0	1194	737	1090	0	528	0	0	0
Future Volume (veh/h)	1040	1732	0	0	1194	737	1090	0	528	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	1083	1804	0	0	1244	732	1135	0	471			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	290	1330	0	0	549	323	344	0	306			
Arrive On Green	0.16	0.70	0.00	0.00	0.49	0.49	0.19	0.00	0.19			
Sat Flow, veh/h	1810	1900	0	0	1121	660	1810	0	1610			
Grp Volume(v), veh/h	1083	1804	0	0	0	1976	1135	0	471			
Grp Sat Flow(s),veh/h/ln	1810	1900	0	0	0	1781	1810	0	1610			
Q Serve(g_s), s	16.0	70.0	0.0	0.0	0.0	49.0	19.0	0.0	19.0			
Cycle Q Clear(g_c), s	16.0	70.0	0.0	0.0	0.0	49.0	19.0	0.0	19.0			
Prop In Lane	1.00		0.00	0.00		0.37	1.00		1.00			
Lane Grp Cap(c), veh/h	290	1330	0	0	0	873	344	0	306			
V/C Ratio(X)	3.74	1.36	0.00	0.00	0.00	2.26	3.30	0.00	1.54			
Avail Cap(c_a), veh/h	290	1330	0	0	0	873	344	0	306			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	42.0	15.0	0.0	0.0	0.0	25.5	40.5	0.0	40.5			
Incr Delay (d2), s/veh	1241.7	165.4	0.0	0.0	0.0	572.5	1043.0	0.0	258.6			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	106.8	83.3	0.0	0.0	0.0	157.3	107.5	0.0	29.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	1283.7	180.4	0.0	0.0	0.0	598.0	1083.5	0.0	299.1			
LnGrp LOS	F	F				F	F		F			
Approach Vol, veh/h		2887			1976			1606				
Approach Delay, s/veh		594.3			598.0			853.5				
Approach LOS		F			F			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		76.0			21.0	55.0		24.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		70.0			16.0	49.0		19.0				
Max Q Clear Time (g_c+I1), s		72.0			18.0	51.0		21.0				
Green Ext Time (p_c), s		0.0			0.0	0.0		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh			659.7									
HCM 7th LOS			F									

Intersection	
Int Delay, s/veh	165.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2011	249	34	1714	217	55
Future Vol, veh/h	2011	249	34	1714	217	55
Conflicting Peds, #/hr	0	3	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2139	265	36	1823	231	59

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2407	0	4171	2275
Stage 1	-	-	-	-	2275	-
Stage 2	-	-	-	-	1896	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	201	-	~ 3	~ 52
Stage 1	-	-	-	-	~ 84	-
Stage 2	-	-	-	-	~ 131	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	201	-	~ 2	~ 52
Mov Cap-2 Maneuver	-	-	-	-	~ 44	-
Stage 1	-	-	-	-	~ 84	-
Stage 2	-	-	-	-	~ 108	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.52	$ 2598.58
HCM LOS			F

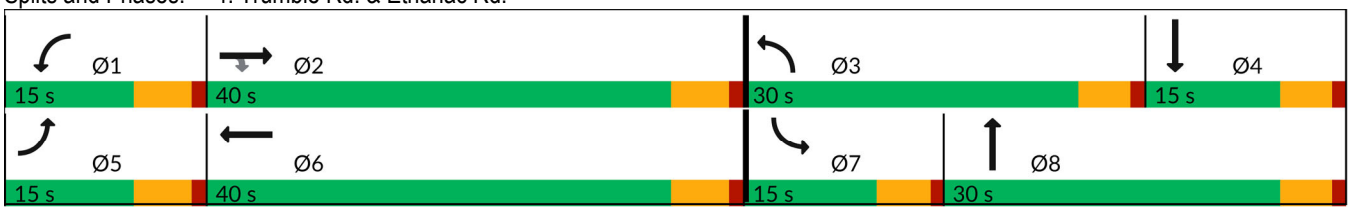
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	45	-	-	201	-
HCM Lane V/C Ratio	6.385	-	-	0.18	-
HCM Ctrl Dly (s/v)	$ 2598.6	-	-	26.8	-
HCM Lane LOS	F	-	-	D	-
HCM 95th %tile Q(veh)	33.7	-	-	0.6	-

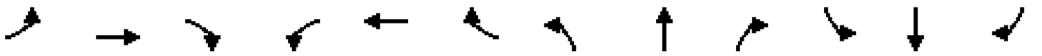
Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	285	1953	28	38	2190	78	2	38	9
Future Volume (vph)	285	1953	28	38	2190	78	2	38	9
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	5	2	2	1	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.3	35.3	35.3	10.3	27.8	9.9	29.9	9.9	10.4
Total Split (s)	15.0	40.0	40.0	15.0	40.0	30.0	30.0	15.0	15.0
Total Split (%)	15.0%	40.0%	40.0%	15.0%	40.0%	30.0%	30.0%	15.0%	15.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.9	3.9	3.9	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	4.9	4.9	4.9	4.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	9.9	43.5	43.5	6.5	35.3	8.2	10.0	6.5	8.6
Actuated g/C Ratio	0.12	0.54	0.54	0.08	0.44	0.10	0.12	0.08	0.11
v/c Ratio	1.38	2.04	0.03	0.28	2.85	0.46	0.21	0.28	0.72
Control Delay (s/veh)	230.3	492.3	0.1	43.0	851.3	44.5	11.7	43.0	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	230.3	492.3	0.1	43.0	851.3	44.5	11.7	43.0	14.3
LOS	F	F	A	D	F	D	B	D	B
Approach Delay (s/veh)		453.4			837.6		31.8		17.5
Approach LOS		F			F		C		B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 80.4	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.85	
Intersection Signal Delay (s/veh): 585.8	Intersection LOS: F
Intersection Capacity Utilization 172.4%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 4: Trumble Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	285	1953	28	38	2190	20	78	2	47	38	9	297
Future Volume (veh/h)	285	1953	28	38	2190	20	78	2	47	38	9	297
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	306	2100	26	41	2355	21	84	2	32	41	10	260
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	220	987	832	68	818	7	110	14	229	68	8	198
Arrive On Green	0.12	0.52	0.52	0.04	0.44	0.44	0.06	0.15	0.15	0.04	0.13	0.13
Sat Flow, veh/h	1810	1900	1602	1810	1880	17	1810	96	1529	1810	60	1559
Grp Volume(v), veh/h	306	2100	26	41	0	2376	84	0	34	41	0	270
Grp Sat Flow(s),veh/h/ln	1810	1900	1602	1810	0	1897	1810	0	1625	1810	0	1619
Q Serve(g_s), s	9.7	41.4	0.6	1.8	0.0	34.7	3.6	0.0	1.4	1.8	0.0	10.1
Cycle Q Clear(g_c), s	9.7	41.4	0.6	1.8	0.0	34.7	3.6	0.0	1.4	1.8	0.0	10.1
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.94	1.00		0.96
Lane Grp Cap(c), veh/h	220	987	832	68	0	826	110	0	244	68	0	205
V/C Ratio(X)	1.39	2.13	0.03	0.61	0.00	2.88	0.77	0.00	0.14	0.61	0.00	1.32
Avail Cap(c_a), veh/h	220	987	832	220	0	826	570	0	511	229	0	205
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.0	19.2	9.4	37.8	0.0	22.5	36.9	0.0	29.4	37.8	0.0	34.8
Incr Delay (d2), s/veh	201.0	511.0	0.0	3.2	0.0	848.5	4.1	0.0	0.1	3.2	0.0	172.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.3	154.6	0.2	0.8	0.0	207.6	1.7	0.0	0.5	0.8	0.0	13.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	236.0	530.1	9.4	41.0	0.0	871.0	41.0	0.0	29.5	41.0	0.0	207.3
LnGrp LOS	F	F	A	D		F	D		C	D		F
Approach Vol, veh/h		2432			2417			118			311	
Approach Delay, s/veh		487.5			856.9			37.7			185.4	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	46.7	9.7	15.0	15.0	40.0	7.9	16.9
Change Period (Y+Rc), s	5.3	5.3	4.9	4.9	5.3	5.3	4.9	4.9
Max Green Setting (Gmax), s	9.7	34.7	25.1	10.1	9.7	34.7	10.1	25.1
Max Q Clear Time (g_c+I1), s	3.8	43.4	5.6	12.1	11.7	36.7	3.8	3.4
Green Ext Time (p_c), s	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	628.8
HCM 7th LOS	F

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	249	1417	377	61	1491	26	596	64	108	28	39	160
Future Vol, veh/h	249	1417	377	61	1491	26	596	64	108	28	39	160
Conflicting Peds, #/hr	0	0	3	0	0	0	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	257	1461	389	63	1537	27	614	66	111	29	40	165

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1564	0	0	1852	0	0	3856	3861	1658	3684	4042	1552
Stage 1	-	-	-	-	-	-	2172	2172	-	1676	1676	-
Stage 2	-	-	-	-	-	-	1684	1690	-	2007	2366	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	428	-	-	332	-	-	~ 2	~ 4	122	~ 3	~ 3	~ 141
Stage 1	-	-	-	-	-	-	~ 62	86	-	122	153	-
Stage 2	-	-	-	-	-	-	~ 121	151	-	78	69	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	428	-	-	331	-	-	-	0	122	-	0	~ 141
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	~ 62	86	-	122	0	-
Stage 2	-	-	-	-	-	-	-	0	-	~ 2	68	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	3.08	0.71		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	~ 211	-	-	~ 42	-	-	-
HCM Lane V/C Ratio	-	0.6	-	-	0.19	-	-	-
HCM Ctrl Dly (s/v)	-	25.2	0	-	18.4	0	-	-
HCM Lane LOS	-	D	A	-	C	A	-	-
HCM 95th %tile Q(veh)	-	3.8	-	-	0.7	-	-	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

APPENDIX 7.2:

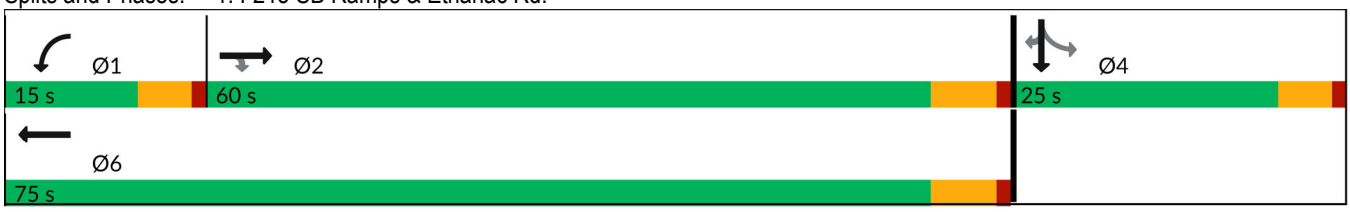
2045 WITH PROJECT INTERSECTION ANALYSIS

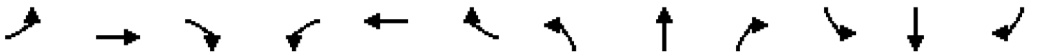
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Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1850	1074	205	1863	1	1135
Future Volume (vph)	1850	1074	205	1863	1	1135
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Detector Phase	2	2	1	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.4	23.4	10.0	24.5	24.5	24.5
Total Split (s)	60.0	60.0	15.0	75.0	25.0	25.0
Total Split (%)	60.0%	60.0%	15.0%	75.0%	25.0%	25.0%
Yellow Time (s)	5.0	5.0	4.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	54.0	54.0	10.0	69.0	20.0	20.0
Actuated g/C Ratio	0.54	0.54	0.10	0.69	0.20	0.20
v/c Ratio	1.88	1.03	1.19	0.78	2.02	3.02
Control Delay (s/veh)	420.3	48.5	167.8	13.3	494.4	930.4
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0
Total Delay (s/veh)	420.3	48.5	167.8	14.0	494.4	930.4
LOS	F	D	F	B	F	F
Approach Delay (s/veh)	283.7			29.2	764.0	
Approach LOS	F			C	F	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 3.02	
Intersection Signal Delay (s/veh): 335.7	Intersection LOS: F
Intersection Capacity Utilization 313.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1: I-215 SB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1850	1074	205	1863	0	0	0	0	700	1	1135
Future Volume (veh/h)	0	1850	1074	205	1863	0	0	0	0	700	1	1135
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1927	1014	214	1941	0				729	1	1028
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1026	859	181	2491	0				361	0	322
Arrive On Green	0.00	0.54	0.54	0.10	0.69	0.00				0.20	0.20	0.20
Sat Flow, veh/h	0	1900	1590	1810	3705	0				1807	2	1610
Grp Volume(v), veh/h	0	1927	1014	214	1941	0				730	0	1028
Grp Sat Flow(s),veh/h/ln	0	1900	1590	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	54.0	54.0	10.0	36.1	0.0				20.0	0.0	20.0
Cycle Q Clear(g_c), s	0.0	54.0	54.0	10.0	36.1	0.0				20.0	0.0	20.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1026	859	181	2491	0				362	0	322
V/C Ratio(X)	0.00	1.88	1.18	1.18	0.78	0.00				2.02	0.00	3.19
Avail Cap(c_a), veh/h	0	1026	859	181	2491	0				362	0	322
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	23.0	23.0	45.0	10.4	0.0				40.0	0.0	40.0
Incr Delay (d2), s/veh	0.0	398.9	93.3	124.7	1.6	0.0				467.3	0.0	994.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	134.7	39.9	10.6	11.6	0.0				55.2	0.0	96.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	421.9	116.3	169.7	12.0	0.0				507.3	0.0	1034.6
LnGrp LOS		F	F	F	B					F		F
Approach Vol, veh/h		2941			2155						1758	
Approach Delay, s/veh		316.5			27.7						815.6	
Approach LOS		F			C						F	

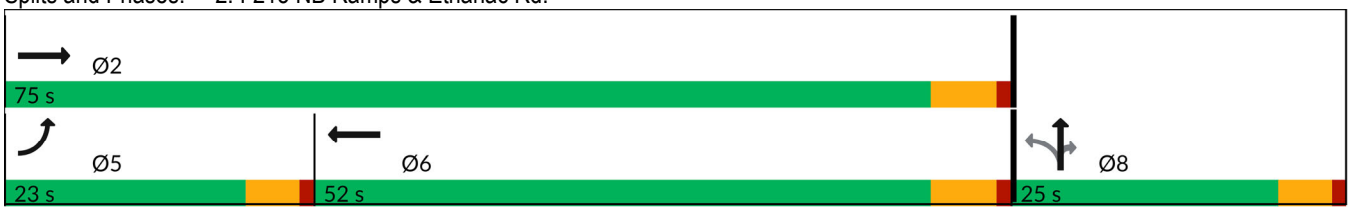
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	15.0	60.0		25.0		75.0						
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0						
Max Green Setting (Gmax), s	10.0	54.0		20.0		69.0						
Max Q Clear Time (g_c+I1), s	12.0	56.0		22.0		38.1						
Green Ext Time (p_c), s	0.0	0.0		0.0		19.6						

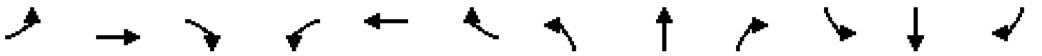
Intersection Summary												
HCM 7th Control Delay, s/veh			353.7									
HCM 7th LOS			F									

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Configurations					
Traffic Volume (vph)	900	1650	1054	0	542
Future Volume (vph)	900	1650	1054	0	542
Turn Type	Prot	NA	NA	NA	Perm
Protected Phases	5	2	6	8	
Permitted Phases					8
Detector Phase	5	2	6	8	8
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.5	23.4	23.4	23.4
Total Split (s)	23.0	75.0	52.0	25.0	25.0
Total Split (%)	23.0%	75.0%	52.0%	25.0%	25.0%
Yellow Time (s)	4.0	5.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	None	None	None	None
Act Effct Green (s)	18.0	69.0	46.0	20.0	20.0
Actuated g/C Ratio	0.18	0.69	0.46	0.20	0.20
v/c Ratio	2.92	1.32	2.05	2.96	1.46
Control Delay (s/veh)	891.9	171.6	499.5	905.5	246.8
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay (s/veh)	891.9	171.6	499.5	905.5	246.8
LOS	F	F	F	F	F
Approach Delay (s/veh)		425.8	499.5	675.9	
Approach LOS		F	F	F	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.96	
Intersection Signal Delay (s/veh): 514.5	Intersection LOS: F
Intersection Capacity Utilization 313.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 2: I-215 NB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	900	1650	0	0	1054	609	1014	0	542	0	0	0
Future Volume (veh/h)	900	1650	0	0	1054	609	1014	0	542	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	947	1737	0	0	1109	575	1067	0	511			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	326	1311	0	0	542	281	362	0	322			
Arrive On Green	0.18	0.69	0.00	0.00	0.46	0.46	0.20	0.00	0.20			
Sat Flow, veh/h	1810	1900	0	0	1179	611	1810	0	1610			
Grp Volume(v), veh/h	947	1737	0	0	0	1684	1067	0	511			
Grp Sat Flow(s),veh/h/ln	1810	1900	0	0	0	1790	1810	0	1610			
Q Serve(g_s), s	18.0	69.0	0.0	0.0	0.0	46.0	20.0	0.0	20.0			
Cycle Q Clear(g_c), s	18.0	69.0	0.0	0.0	0.0	46.0	20.0	0.0	20.0			
Prop In Lane	1.00		0.00	0.00		0.34	1.00		1.00			
Lane Grp Cap(c), veh/h	326	1311	0	0	0	823	362	0	322			
V/C Ratio(X)	2.91	1.32	0.00	0.00	0.00	2.05	2.95	0.00	1.59			
Avail Cap(c_a), veh/h	326	1311	0	0	0	823	362	0	322			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	41.0	15.5	0.0	0.0	0.0	27.0	40.0	0.0	40.0			
Incr Delay (d2), s/veh	866.7	151.6	0.0	0.0	0.0	474.6	884.2	0.0	278.4			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	86.1	77.5	0.0	0.0	0.0	126.3	97.1	0.0	32.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	907.7	167.1	0.0	0.0	0.0	501.6	924.2	0.0	318.4			
LnGrp LOS	F	F				F	F		F			
Approach Vol, veh/h		2684			1684			1578				
Approach Delay, s/veh		428.4			501.6			728.0				
Approach LOS		F			F			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		75.0			23.0	52.0		25.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		69.0			18.0	46.0		20.0				
Max Q Clear Time (g_c+I1), s		71.0			20.0	48.0		22.0				
Green Ext Time (p_c), s		0.0			0.0	0.0		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh			528.6									
HCM 7th LOS			F									

Intersection	
Int Delay, s/veh	189.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2080	112	39	1414	249	28
Future Vol, veh/h	2080	112	39	1414	249	28
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2286	123	43	1554	274	31

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2411	0	3989	2349
Stage 1	-	-	-	-	2349	-
Stage 2	-	-	-	-	1640	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	201	-	~ 3	46
Stage 1	-	-	-	-	~ 77	-
Stage 2	-	-	-	-	~ 176	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	200	-	~ 3	46
Mov Cap-2 Maneuver	-	-	-	-	~ 46	-
Stage 1	-	-	-	-	~ 77	-
Stage 2	-	-	-	-	~ 138	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.75	$ 2682.07
HCM LOS			F

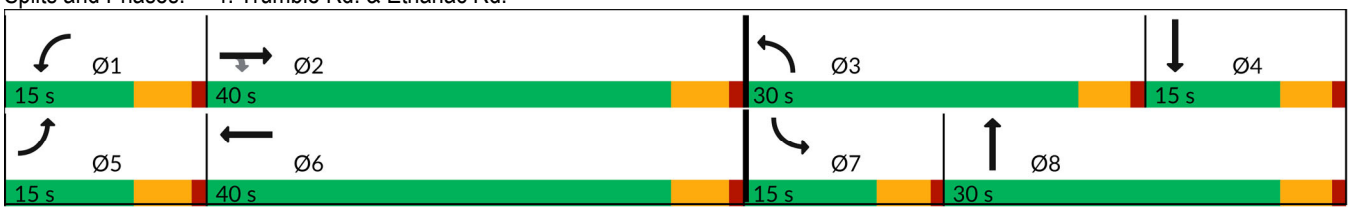
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	46	-	-	200	-
HCM Lane V/C Ratio	6.579	-	-	0.214	-
HCM Ctrl Dly (s/v)	$ 2682.1	-	-	27.8	-
HCM Lane LOS	F	-	-	D	-
HCM 95th %tile Q(veh)	35.5	-	-	0.8	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	332	2267	99	44	1050	109	21	30	33
Future Volume (vph)	332	2267	99	44	1050	109	21	30	33
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	5	2	2	1	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.3	35.3	35.3	10.3	27.8	9.9	29.9	9.9	10.4
Total Split (s)	15.0	40.0	40.0	15.0	40.0	30.0	30.0	15.0	15.0
Total Split (%)	15.0%	40.0%	40.0%	15.0%	40.0%	30.0%	30.0%	15.0%	15.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.9	3.9	3.9	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	4.9	4.9	4.9	4.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	9.9	43.2	43.2	6.8	35.3	9.8	11.6	6.2	9.0
Actuated g/C Ratio	0.12	0.53	0.53	0.08	0.43	0.12	0.14	0.08	0.11
v/c Ratio	1.67	2.46	0.12	0.32	1.44	0.55	0.23	0.24	0.78
Control Delay (s/veh)	348.0	678.7	0.4	44.5	230.2	45.6	16.7	43.6	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	348.0	678.7	0.4	44.5	230.2	45.6	16.7	43.6	18.3
LOS	F	F	A	D	F	D	B	D	B
Approach Delay (s/veh)		613.0			222.9		35.4		20.4
Approach LOS		F			F		D		C

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 82.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.46	
Intersection Signal Delay (s/veh): 439.9	Intersection LOS: F
Intersection Capacity Utilization 167.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 4: Trumble Rd. & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	332	2267	99	44	1050	31	109	21	38	30	33	307
Future Volume (veh/h)	332	2267	99	44	1050	31	109	21	38	30	33	307
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	361	2464	100	48	1141	32	118	23	26	33	36	299
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	215	955	808	73	781	22	151	142	161	58	22	181
Arrive On Green	0.12	0.50	0.50	0.04	0.42	0.42	0.08	0.18	0.18	0.03	0.12	0.12
Sat Flow, veh/h	1810	1900	1607	1810	1839	52	1810	814	920	1810	176	1461
Grp Volume(v), veh/h	361	2464	100	48	0	1173	118	0	49	33	0	335
Grp Sat Flow(s),veh/h/ln	1810	1900	1607	1810	0	1891	1810	0	1734	1810	0	1637
Q Serve(g_s), s	9.7	41.1	2.7	2.1	0.0	34.7	5.2	0.0	2.0	1.5	0.0	10.1
Cycle Q Clear(g_c), s	9.7	41.1	2.7	2.1	0.0	34.7	5.2	0.0	2.0	1.5	0.0	10.1
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.53	1.00		0.89
Lane Grp Cap(c), veh/h	215	955	808	73	0	803	151	0	304	58	0	202
V/C Ratio(X)	1.68	2.58	0.12	0.65	0.00	1.46	0.78	0.00	0.16	0.57	0.00	1.66
Avail Cap(c_a), veh/h	215	955	808	215	0	803	556	0	533	224	0	202
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.0	20.3	10.8	38.6	0.0	23.5	36.7	0.0	28.6	39.0	0.0	35.8
Incr Delay (d2), s/veh	326.0	714.2	0.0	3.6	0.0	214.5	3.3	0.0	0.1	3.2	0.0	316.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.4	204.3	0.9	1.0	0.0	61.1	2.3	0.0	0.8	0.7	0.0	21.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	362.0	734.6	10.8	42.3	0.0	238.0	40.0	0.0	28.7	42.2	0.0	352.1
LnGrp LOS	F	F	B	D		F	D		C	D		F
Approach Vol, veh/h		2925			1221			167			368	
Approach Delay, s/veh		663.8			230.4			36.7			324.3	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	46.4	11.7	15.0	15.0	40.0	7.5	19.2
Change Period (Y+Rc), s	5.3	5.3	4.9	4.9	5.3	5.3	4.9	4.9
Max Green Setting (Gmax), s	9.7	34.7	25.1	10.1	9.7	34.7	10.1	25.1
Max Q Clear Time (g_c+I1), s	4.1	43.1	7.2	12.1	11.7	36.7	3.5	4.0
Green Ext Time (p_c), s	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	501.7
HCM 7th LOS	F

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	14	157	0	54	124
Future Vol, veh/h	0	14	157	0	54	124
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	15	171	0	59	135

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	423	171	0	0	171	0
Stage 1	171	-	-	-	-	-
Stage 2	252	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	592	878	-	-	1419	-
Stage 1	864	-	-	-	-	-
Stage 2	795	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	565	878	-	-	1419	-
Mov Cap-2 Maneuver	565	-	-	-	-	-
Stage 1	864	-	-	-	-	-
Stage 2	759	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.17	0	2.32
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	878	546	-
HCM Lane V/C Ratio	-	-	0.017	0.041	-
HCM Ctrl Dly (s/v)	-	-	9.2	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	4	153	10	15	109
Future Vol, veh/h	3	4	153	10	15	109
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	4	166	11	16	118

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	323	172	0	0	177	0
Stage 1	172	-	-	-	-	-
Stage 2	151	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	675	877	-	-	1411	-
Stage 1	863	-	-	-	-	-
Stage 2	882	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	667	877	-	-	1411	-
Mov Cap-2 Maneuver	667	-	-	-	-	-
Stage 1	863	-	-	-	-	-
Stage 2	871	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.71	0	0.92
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	773	218	-
HCM Lane V/C Ratio	-	-	0.01	0.012	-
HCM Ctrl Dly (s/v)	-	-	9.7	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	149	1569	589	104	863	29	185	24	24	37	75	196
Future Vol, veh/h	149	1569	589	104	863	29	185	24	24	37	75	196
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	160	1687	633	112	928	31	199	26	26	40	81	211

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	959	0	0	2320	0	0	3516	3507	2004	3188	3808	944
Stage 1	-	-	-	-	-	-	2324	2324	-	1167	1167	-
Stage 2	-	-	-	-	-	-	1192	1183	-	2020	2641	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	725	-	-	218	-	-	~ 4	~ 6	76	~ 6	~ 4	321
Stage 1	-	-	-	-	-	-	~ 51	72	-	238	270	-
Stage 2	-	-	-	-	-	-	231	265	-	77	~ 49	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	725	-	-	218	-	-	-	0	76	-	0	321
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	~ 51	72	-	238	0	-
Stage 2	-	-	-	-	-	-	~ 79	0	-	~ 32	~ 49	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.73	3.94		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	~ 110	-	-	~ 101	-	-	-
HCM Lane V/C Ratio	-	0.221	-	-	0.513	-	-	-
HCM Ctrl Dly (s/v)	-	11.4	0	-	37.7	0	-	-
HCM Lane LOS	-	B	A	-	E	A	-	-
HCM 95th %tile Q(veh)	-	0.8	-	-	2.6	-	-	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	0	0	204	718	26
Future Vol, veh/h	14	0	0	204	718	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	15	0	0	222	780	28

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1016	795	809	0	-	0
Stage 1	795	-	-	-	-	-
Stage 2	222	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	266	391	826	-	-	-
Stage 1	448	-	-	-	-	-
Stage 2	820	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	266	391	826	-	-	-
Mov Cap-2 Maneuver	368	-	-	-	-	-
Stage 1	448	-	-	-	-	-
Stage 2	820	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	15.21	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	826	-	368	-	-
HCM Lane V/C Ratio	-	-	0.041	-	-
HCM Ctrl Dly (s/v)	0	-	15.2	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	0	0	193	702	16
Future Vol, veh/h	11	0	0	193	702	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	12	0	0	210	763	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	982	772	780	0	-	0
Stage 1	772	-	-	-	-	-
Stage 2	210	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	279	403	846	-	-	-
Stage 1	459	-	-	-	-	-
Stage 2	830	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	279	403	846	-	-	-
Mov Cap-2 Maneuver	379	-	-	-	-	-
Stage 1	459	-	-	-	-	-
Stage 2	830	-	-	-	-	-

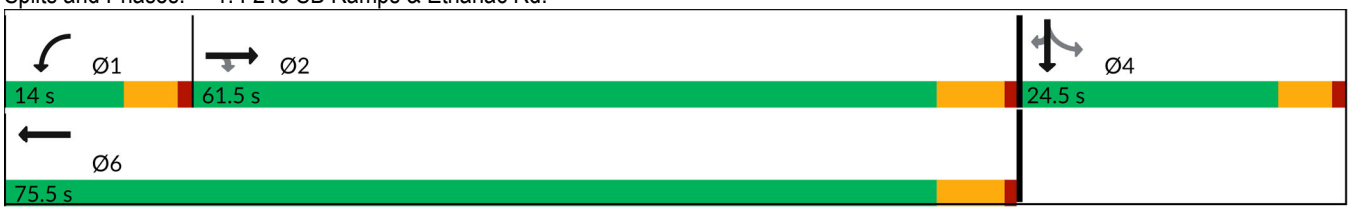
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	14.82	0	0
HCM LOS	B		

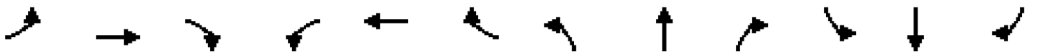
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	846	-	379	-	-
HCM Lane V/C Ratio	-	-	0.032	-	-
HCM Ctrl Dly (s/v)	0	-	14.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2023	1094	470	1857	2	1109
Future Volume (vph)	2023	1094	470	1857	2	1109
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Detector Phase	2	2	1	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.4	23.4	10.0	24.5	24.5	24.5
Total Split (s)	61.5	61.5	14.0	75.5	24.5	24.5
Total Split (%)	61.5%	61.5%	14.0%	75.5%	24.5%	24.5%
Yellow Time (s)	5.0	5.0	4.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	55.5	55.5	9.0	69.5	19.5	19.5
Actuated g/C Ratio	0.56	0.56	0.09	0.70	0.20	0.20
v/c Ratio	1.98	1.02	2.99	0.76	2.29	2.98
Control Delay (s/veh)	464.7	45.6	932.0	12.5	610.5	913.4
Queue Delay	0.0	0.0	0.0	0.6	0.0	0.0
Total Delay (s/veh)	464.7	45.6	932.0	13.1	610.5	913.4
LOS	F	D	F	B	F	F
Approach Delay (s/veh)	317.6			198.9	788.2	
Approach LOS	F			F	F	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.99	
Intersection Signal Delay (s/veh): 401.2	Intersection LOS: F
Intersection Capacity Utilization 345.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1: I-215 SB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2023	1094	470	1857	0	0	0	0	779	2	1109
Future Volume (veh/h)	0	2023	1094	470	1857	0	0	0	0	779	2	1109
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	2086	1049	485	1914	0				803	2	983
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	1055	894	163	2509	0				352	1	314
Arrive On Green	0.00	0.56	0.56	0.09	0.69	0.00				0.19	0.19	0.19
Sat Flow, veh/h	0	1900	1610	1810	3705	0				1805	4	1610
Grp Volume(v), veh/h	0	2086	1049	485	1914	0				805	0	983
Grp Sat Flow(s),veh/h/ln	0	1900	1610	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	55.5	55.5	9.0	34.4	0.0				19.5	0.0	19.5
Cycle Q Clear(g_c), s	0.0	55.5	55.5	9.0	34.4	0.0				19.5	0.0	19.5
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1055	894	163	2509	0				353	0	314
V/C Ratio(X)	0.00	1.98	1.17	2.98	0.76	0.00				2.28	0.00	3.13
Avail Cap(c_a), veh/h	0	1055	894	163	2509	0				353	0	314
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	22.3	22.3	45.5	9.9	0.0				40.3	0.0	40.2
Incr Delay (d2), s/veh	0.0	443.6	90.0	906.5	1.4	0.0				585.4	0.0	967.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	151.3	40.5	44.9	10.9	0.0				65.4	0.0	91.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	465.9	112.3	952.0	11.3	0.0				625.7	0.0	1007.4
LnGrp LOS		F	F	F	B					F		F
Approach Vol, veh/h		3135			2399						1788	
Approach Delay, s/veh		347.6			201.5						835.6	
Approach LOS		F			F						F	

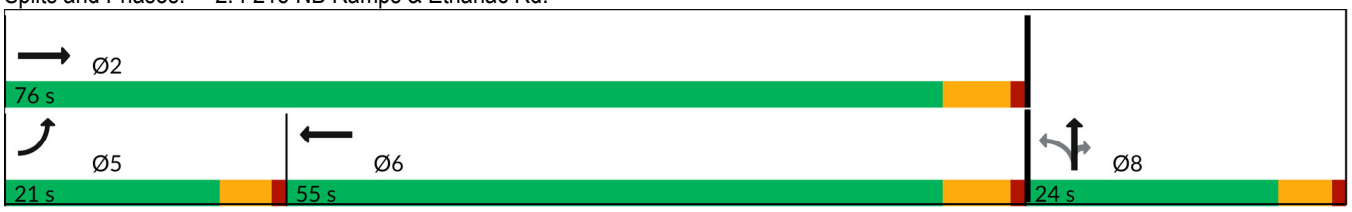
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	14.0	61.5		24.5		75.5						
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0						
Max Green Setting (Gmax), s	9.0	55.5		19.5		69.5						
Max Q Clear Time (g_c+I1), s	11.0	57.5		21.5		36.4						
Green Ext Time (p_c), s	0.0	0.0		0.0		20.1						

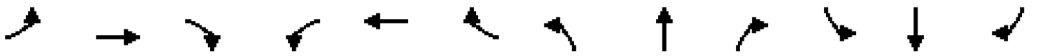
Intersection Summary												
HCM 7th Control Delay, s/veh			418.9									
HCM 7th LOS			F									

Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Configurations					
Traffic Volume (vph)	1040	1761	1237	0	546
Future Volume (vph)	1040	1761	1237	0	546
Turn Type	Prot	NA	NA	NA	Perm
Protected Phases	5	2	6	8	
Permitted Phases					8
Detector Phase	5	2	6	8	8
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.5	23.4	23.4	23.4
Total Split (s)	21.0	76.0	55.0	24.0	24.0
Total Split (%)	21.0%	76.0%	55.0%	24.0%	24.0%
Yellow Time (s)	4.0	5.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	None	None	None	None
Act Effct Green (s)	16.0	70.0	49.0	19.0	19.0
Actuated g/C Ratio	0.16	0.70	0.49	0.19	0.19
v/c Ratio	3.76	1.38	2.33	3.32	1.51
Control Delay (s/veh)	Error	195.2	620.8	Error	269.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	Error	195.2	620.8	Error	269.6
LOS	F	F	F	F	F
Approach Delay (s/veh)		592.5	620.8	800.9	
Approach LOS		F	F	F	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 3.76	
Intersection Signal Delay (s/veh): 654.1	Intersection LOS: F
Intersection Capacity Utilization 345.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 2: I-215 NB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1040	1761	0	0	1237	786	1090	0	546	0	0	0
Future Volume (veh/h)	1040	1761	0	0	1237	786	1090	0	546	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	1083	1834	0	0	1289	783	1135	0	490			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	290	1330	0	0	542	329	344	0	306			
Arrive On Green	0.16	0.70	0.00	0.00	0.49	0.49	0.19	0.00	0.19			
Sat Flow, veh/h	1810	1900	0	0	1107	672	1810	0	1610			
Grp Volume(v), veh/h	1083	1834	0	0	0	2072	1135	0	490			
Grp Sat Flow(s),veh/h/ln	1810	1900	0	0	0	1779	1810	0	1610			
Q Serve(g_s), s	16.0	70.0	0.0	0.0	0.0	49.0	19.0	0.0	19.0			
Cycle Q Clear(g_c), s	16.0	70.0	0.0	0.0	0.0	49.0	19.0	0.0	19.0			
Prop In Lane	1.00		0.00	0.00		0.38	1.00		1.00			
Lane Grp Cap(c), veh/h	290	1330	0	0	0	872	344	0	306			
V/C Ratio(X)	3.74	1.38	0.00	0.00	0.00	2.38	3.30	0.00	1.60			
Avail Cap(c_a), veh/h	290	1330	0	0	0	872	344	0	306			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	42.0	15.0	0.0	0.0	0.0	25.5	40.5	0.0	40.5			
Incr Delay (d2), s/veh	1241.7	175.3	0.0	0.0	0.0	623.2	1043.0	0.0	285.6			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	106.8	86.9	0.0	0.0	0.0	169.4	107.5	0.0	31.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	1283.7	190.3	0.0	0.0	0.0	648.7	1083.5	0.0	326.1			
LnGrp LOS	F	F				F	F		F			
Approach Vol, veh/h		2917			2072			1625				
Approach Delay, s/veh		596.3			648.7			855.1				
Approach LOS		F			F			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		76.0			21.0	55.0		24.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		70.0			16.0	49.0		19.0				
Max Q Clear Time (g_c+I1), s		72.0			18.0	51.0		21.0				
Green Ext Time (p_c), s		0.0			0.0	0.0		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh			676.3									
HCM 7th LOS			F									

Intersection	
Int Delay, s/veh	177.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2059	249	34	1806	217	55
Future Vol, veh/h	2059	249	34	1806	217	55
Conflicting Peds, #/hr	0	3	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2190	265	36	1921	231	59

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2458	0	4319	2326
Stage 1	-	-	-	-	2326	-
Stage 2	-	-	-	-	1994	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	192	-	~ 2	~ 48
Stage 1	-	-	-	-	~ 79	-
Stage 2	-	-	-	-	~ 117	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	192	-	~ 2	~ 48
Mov Cap-2 Maneuver	-	-	-	-	~ 40	-
Stage 1	-	-	-	-	~ 79	-
Stage 2	-	-	-	-	~ 95	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.52	$ 2877.76
HCM LOS			F

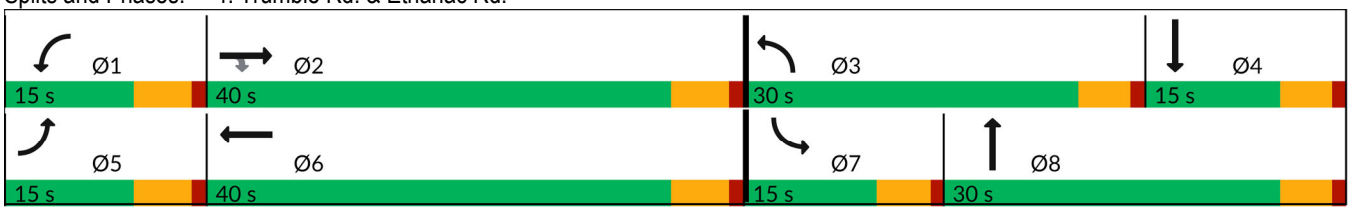
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	41	-	-	192	-
HCM Lane V/C Ratio	6.974	-	-	0.189	-
HCM Ctrl Dly (s/v)	$ 2877.8	-	-	28.1	-
HCM Lane LOS	F	-	-	D	-
HCM 95th %tile Q(veh)	34.2	-	-	0.7	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	285	1981	48	38	2218	142	2	38	9
Future Volume (vph)	285	1981	48	38	2218	142	2	38	9
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	5	2	2	1	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.3	35.3	35.3	10.3	27.8	9.9	29.9	9.9	10.4
Total Split (s)	15.0	40.0	40.0	15.0	40.0	30.0	30.0	15.0	15.0
Total Split (%)	15.0%	40.0%	40.0%	15.0%	40.0%	30.0%	30.0%	15.0%	15.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	3.9	3.9	3.9	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	5.3	4.9	4.9	4.9	4.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	9.8	42.8	42.8	6.6	35.0	11.6	11.6	6.6	7.9
Actuated g/C Ratio	0.12	0.50	0.50	0.08	0.41	0.14	0.14	0.08	0.09
v/c Ratio	1.47	2.23	0.06	0.29	3.07	0.62	0.20	0.29	0.75
Control Delay (s/veh)	267.7	573.4	0.1	44.5	951.4	46.6	11.2	44.5	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	267.7	573.4	0.1	44.5	951.4	46.6	11.2	44.5	16.5
LOS	F	F	A	D	F	D	B	D	B
Approach Delay (s/veh)		523.8			936.2		37.5		19.6
Approach LOS		F			F		D		B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 84.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 3.07	
Intersection Signal Delay (s/veh): 655.0	Intersection LOS: F
Intersection Capacity Utilization 177.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 4: Trumble Rd. & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	285	1981	48	38	2218	20	142	2	47	38	9	297
Future Volume (veh/h)	285	1981	48	38	2218	20	142	2	47	38	9	297
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	306	2130	48	41	2385	21	153	2	32	41	10	260
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	210	938	791	66	779	7	191	18	289	66	7	188
Arrive On Green	0.12	0.49	0.49	0.04	0.41	0.41	0.11	0.19	0.19	0.04	0.12	0.12
Sat Flow, veh/h	1810	1900	1602	1810	1880	17	1810	96	1529	1810	60	1559
Grp Volume(v), veh/h	306	2130	48	41	0	2406	153	0	34	41	0	270
Grp Sat Flow(s),veh/h/ln	1810	1900	1602	1810	0	1897	1810	0	1625	1810	0	1619
Q Serve(g_s), s	9.7	41.3	1.3	1.9	0.0	34.7	6.9	0.0	1.5	1.9	0.0	10.1
Cycle Q Clear(g_c), s	9.7	41.3	1.3	1.9	0.0	34.7	6.9	0.0	1.5	1.9	0.0	10.1
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.94	1.00		0.96
Lane Grp Cap(c), veh/h	210	938	791	66	0	786	191	0	308	66	0	195
V/C Ratio(X)	1.46	2.27	0.06	0.62	0.00	3.06	0.80	0.00	0.11	0.62	0.00	1.38
Avail Cap(c_a), veh/h	210	938	791	210	0	786	543	0	487	218	0	195
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.0	21.2	11.1	39.7	0.0	24.5	36.6	0.0	28.1	39.7	0.0	36.8
Incr Delay (d2), s/veh	231.2	575.4	0.0	3.4	0.0	930.4	3.0	0.0	0.1	3.4	0.0	200.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.5	165.1	0.4	0.9	0.0	216.7	3.1	0.0	0.5	0.9	0.0	14.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	268.2	596.6	11.1	43.2	0.0	954.9	39.6	0.0	28.2	43.2	0.0	237.3
LnGrp LOS	F	F	B	D		F	D		C	D		F
Approach Vol, veh/h		2484			2447			187			311	
Approach Delay, s/veh		544.8			939.6			37.5			211.7	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	46.6	13.7	15.0	15.0	40.0	8.0	20.7
Change Period (Y+Rc), s	5.3	5.3	4.9	4.9	5.3	5.3	4.9	4.9
Max Green Setting (Gmax), s	9.7	34.7	25.1	10.1	9.7	34.7	10.1	25.1
Max Q Clear Time (g_c+I1), s	3.9	43.3	8.9	12.1	11.7	36.7	3.9	3.5
Green Ext Time (p_c), s	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	686.2
HCM 7th LOS	F

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	53	142	0	16	79
Future Vol, veh/h	0	53	142	0	16	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	58	154	0	17	86

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	275	154	0	0	154	0
Stage 1	154	-	-	-	-	-
Stage 2	121	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	719	897	-	-	1438	-
Stage 1	879	-	-	-	-	-
Stage 2	910	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	710	897	-	-	1438	-
Mov Cap-2 Maneuver	710	-	-	-	-	-
Stage 1	879	-	-	-	-	-
Stage 2	898	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.29	0	1.27
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	897	303	-
HCM Lane V/C Ratio	-	-	0.064	0.012	-
HCM Ctrl Dly (s/v)	-	-	9.3	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	14	128	3	4	75
Future Vol, veh/h	10	14	128	3	4	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	15	139	3	4	82

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	231	141	0	0	142	0
Stage 1	141	-	-	-	-	-
Stage 2	90	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	762	912	-	-	1453	-
Stage 1	891	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	759	912	-	-	1453	-
Mov Cap-2 Maneuver	759	-	-	-	-	-
Stage 1	891	-	-	-	-	-
Stage 2	935	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.41	0	0.38
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	842	91	-
HCM Lane V/C Ratio	-	-	0.031	0.003	-
HCM Ctrl Dly (s/v)	-	-	9.4	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	249	1417	405	64	1491	26	624	71	119	28	41	160
Future Vol, veh/h	249	1417	405	64	1491	26	624	71	119	28	41	160
Conflicting Peds, #/hr	0	0	3	0	0	0	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	257	1461	418	66	1537	27	643	73	123	29	42	165

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1564	0	0	1881	0	0	3877	3882	1673	3693	4077	1552
Stage 1	-	-	-	-	-	-	2186	2186	-	1682	1682	-
Stage 2	-	-	-	-	-	-	1691	1696	-	2011	2395	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	428	-	-	323	-	-	~ 2	~ 4	~ 120	~ 3	~ 3	~ 141
Stage 1	-	-	-	-	-	-	~ 61	85	-	121	152	-
Stage 2	-	-	-	-	-	-	~ 119	150	-	78	66	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	428	-	-	322	-	-	-	0	~ 119	-	0	~ 141
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	~ 61	85	-	121	0	-
Stage 2	-	-	-	-	-	-	-	0	-	-	66	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	3.03	0.77		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	~ 207	-	-	~ 41	-	-	-
HCM Lane V/C Ratio	-	0.6	-	-	0.205	-	-	-
HCM Ctrl Dly (s/v)	-	25.2	0	-	19	0	-	-
HCM Lane LOS	-	D	A	-	C	A	-	-
HCM 95th %tile Q(veh)	-	3.8	-	-	0.8	-	-	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	0	0	753	481	21
Future Vol, veh/h	29	0	0	753	481	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	32	0	0	818	523	23

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1353	534	546	0	-	0
Stage 1	534	-	-	-	-	-
Stage 2	818	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	167	550	1034	-	-	-
Stage 1	592	-	-	-	-	-
Stage 2	437	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	167	550	1034	-	-	-
Mov Cap-2 Maneuver	303	-	-	-	-	-
Stage 1	592	-	-	-	-	-
Stage 2	437	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	18.25	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1034	-	303	-	-
HCM Lane V/C Ratio	-	-	0.104	-	-
HCM Ctrl Dly (s/v)	0	-	18.3	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	0	0	733	462	19
Future Vol, veh/h	20	0	0	733	462	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	22	0	0	797	502	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1309	513	523	0	-	0
Stage 1	513	-	-	-	-	-
Stage 2	797	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	177	566	1054	-	-	-
Stage 1	605	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	177	566	1054	-	-	-
Mov Cap-2 Maneuver	313	-	-	-	-	-
Stage 1	605	-	-	-	-	-
Stage 2	447	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	17.36	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1054	-	313	-	-
HCM Lane V/C Ratio	-	-	0.069	-	-
HCM Ctrl Dly (s/v)	0	-	17.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

APPENDIX 7.3:

2045 WITH PROJECT SIGNAL WARRANT ANALYSIS

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Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS		2045 WP
				CALC CS	DATE	08/29/25
Jurisdiction: City of Menifee				CHK CS	DATE	08/29/25
Major Street: Trumble Road				Critical Approach Speed (Major)		40 mph
Minor Street: Driveway 1				Critical Approach Speed (Minor)		25 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **2,257** vpd Minor Street Future ADT = **254** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [ ]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …….. [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
XX					
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **2,257**	*1* **254**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **2,257**	*1* **254**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 11% **B** 19%	2 CONDITIONS 80%		2 CONDITIONS 80%	

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	2045 WP
				CALC CS	DATE 08/29/25
Jurisdiction: City of Menifee				CHK CS	DATE 08/29/25
Major Street: Trumble Road				Critical Approach Speed (Major)	40 mph
Minor Street: Driveway 2				Critical Approach Speed (Minor)	25 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **1,980** vpd Minor Street Future ADT = **115** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [ ]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …….. [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
XX					
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **1,980**	*1* **115**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **1,980**	*1* **115**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 5% **B** 10%	2 CONDITIONS 80%		2 CONDITIONS 80%	

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS		2045 WP
				CALC CS	DATE	08/29/25
Jurisdiction: City of Menifee				CHK CS	DATE	08/29/25
Major Street: Sherman Road				Critical Approach Speed (Major)		40 mph
Minor Street: Driveway 3				Critical Approach Speed (Minor)		25 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **6,859** vpd Minor Street Future ADT = **193** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [ ]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …….. [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
XX					
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **6,859**	*1* **193**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **6,859**	*1* **193**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 8% **B** 16%	2 CONDITIONS 80%		2 CONDITIONS 80%	

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS		2045 WP
				CALC CS	DATE	08/29/25
Jurisdiction: City of Menifee				CHK CS	DATE	08/29/25
Major Street: Sherman Road				Critical Approach Speed (Major)		40 mph
Minor Street: Driveway 4				Critical Approach Speed (Minor)		25 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **6,517** vpd Minor Street Future ADT = **149** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [ ]

or **RURAL (R)**

In built up area of isolated community of < 10,000 population …….. [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
XX					
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **6,517**	*1* **149**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **6,517**	*1* **149**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 6% **B** 12%	2 CONDITIONS 80%		2 CONDITIONS 80%	

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

APPENDIX 7.4:

2045 WITHOUT PROJECT QUEUING ANALYSIS

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Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1917	1119	202	1939	682	1182
v/c Ratio	1.87	1.02	1.12	0.78	1.89	3.02
Control Delay (s/veh)	416.0	48.2	146.4	13.2	436.6	930.4
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0
Total Delay (s/veh)	416.0	48.2	146.4	13.9	436.6	930.4
Queue Length 50th (ft)	~1873	~604	~149	383	~669	~1288
Queue Length 95th (ft)	#2136	#856	#290	478	#887	#1543
Internal Link Dist (ft)	624			681	1327	
Turn Bay Length (ft)			275			240
Base Capacity (vph)	1026	1092	180	2490	361	392
Starvation Cap Reductn	0	0	0	236	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.87	1.02	1.12	0.86	1.89	3.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	947	1678	1720	1067	537
v/c Ratio	2.92	1.28	2.02	2.96	1.37
Control Delay (s/veh)	891.9	151.7	485.0	905.5	210.5
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay (s/veh)	891.9	151.8	485.0	905.5	210.5
Queue Length 50th (ft)	~1047	~1364	~1736	~1183	~410
Queue Length 95th (ft)	#1285	#1626	#2003	#1427	#617
Internal Link Dist (ft)		681	457	1327	
Turn Bay Length (ft)	245				270
Base Capacity (vph)	324	1311	851	361	392
Starvation Cap Reductn	0	26	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	2.92	1.31	2.02	2.96	1.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	2082	1128	449	1905	777	1143
v/c Ratio	1.98	1.02	2.77	0.76	2.21	2.98
Control Delay (s/veh)	463.0	45.6	834.0	12.4	575.6	913.4
Queue Delay	0.0	0.0	0.0	0.6	0.0	0.0
Total Delay (s/veh)	463.0	45.6	834.0	13.0	575.6	913.4
Queue Length 50th (ft)	~2074	~547	~491	361	~801	~1240
Queue Length 95th (ft)	#2337	#867	#681	451	#1028	#1493
Internal Link Dist (ft)	624			681	1327	
Turn Bay Length (ft)			275			240
Base Capacity (vph)	1054	1110	162	2508	352	384
Starvation Cap Reductn	0	0	0	248	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.98	1.02	2.77	0.84	2.21	2.98

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	1083	1804	2012	1135	550
v/c Ratio	3.76	1.36	2.23	3.32	1.46
Control Delay (s/veh)	Error	185.1	574.9	Error	248.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	Error	185.2	574.9	Error	248.3
Queue Length 50th (ft)	~1252	~1520	~2095	~1285	~438
Queue Length 95th (ft)	#1498	#1782	#2365	#1534	#646
Internal Link Dist (ft)		681	457	1327	
Turn Bay Length (ft)	245				270
Base Capacity (vph)	288	1330	904	342	377
Starvation Cap Reductn	0	12	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	3.76	1.37	2.23	3.32	1.46

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

APPENDIX 7.5:

2045 WITH PROJECT QUEUING ANALYSIS

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Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1927	1119	214	1941	730	1182
v/c Ratio	1.88	1.03	1.19	0.78	2.02	3.02
Control Delay (s/veh)	420.3	48.5	167.8	13.3	494.4	930.4
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0
Total Delay (s/veh)	420.3	48.5	167.8	14.0	494.4	930.4
Queue Length 50th (ft)	~1886	~606	~165	384	~733	~1288
Queue Length 95th (ft)	#2149	#858	#309	480	#955	#1543
Internal Link Dist (ft)	624			681	1327	
Turn Bay Length (ft)			275			240
Base Capacity (vph)	1026	1091	180	2490	361	392
Starvation Cap Reductn	0	0	0	235	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.88	1.03	1.19	0.86	2.02	3.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	947	1737	1750	1067	571
v/c Ratio	2.92	1.32	2.05	2.96	1.46
Control Delay (s/veh)	891.9	171.6	499.5	905.5	246.8
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay (s/veh)	891.9	171.6	499.5	905.5	246.8
Queue Length 50th (ft)	~1047	~1443	~1776	~1183	~456
Queue Length 95th (ft)	#1285	#1704	#2044	#1427	#668
Internal Link Dist (ft)		681	457	1327	
Turn Bay Length (ft)	245				270
Base Capacity (vph)	324	1311	852	361	392
Starvation Cap Reductn	0	19	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	2.92	1.34	2.05	2.96	1.46

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	2086	1128	485	1914	805	1143
v/c Ratio	1.98	1.02	2.99	0.76	2.29	2.98
Control Delay (s/veh)	464.7	45.6	932.0	12.5	610.5	913.4
Queue Delay	0.0	0.0	0.0	0.6	0.0	0.0
Total Delay (s/veh)	464.7	45.6	932.0	13.1	610.5	913.4
Queue Length 50th (ft)	~2079	~549	~539	364	~839	~1240
Queue Length 95th (ft)	#2342	#868	#735	455	#1068	#1493
Internal Link Dist (ft)	624			681	1327	
Turn Bay Length (ft)			275			240
Base Capacity (vph)	1054	1110	162	2508	352	384
Starvation Cap Reductn	0	0	0	247	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.98	1.02	2.99	0.85	2.29	2.98

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	1083	1834	2108	1135	569
v/c Ratio	3.76	1.38	2.33	3.32	1.51
Control Delay (s/veh)	Error	195.2	620.8	Error	269.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	Error	195.2	620.8	Error	269.6
Queue Length 50th (ft)	~1252	~1560	~2225	~1285	~464
Queue Length 95th (ft)	#1498	#1822	#2493	#1534	#675
Internal Link Dist (ft)		681	457	1327	
Turn Bay Length (ft)	245				270
Base Capacity (vph)	288	1330	905	342	377
Starvation Cap Reductn	0	8	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	3.76	1.39	2.33	3.32	1.51

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

APPENDIX 7.6:

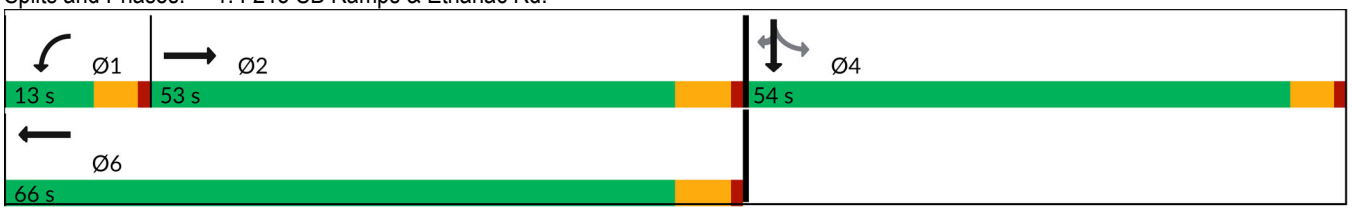
2045 WITH PROJECT INTERSECTIONS ANALYSIS WITH IMPROVEMENTS

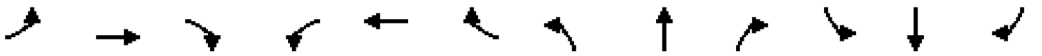
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Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1850	1074	205	1863	700	1	1135
Future Volume (vph)	1850	1074	205	1863	700	1	1135
Turn Type	NA	Free	Prot	NA	Perm	NA	Perm
Protected Phases	2		1	6		4	
Permitted Phases		Free			4		4
Detector Phase	2		1	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.4		10.0	24.5	24.5	24.5	24.5
Total Split (s)	53.0		13.0	66.0	54.0	54.0	54.0
Total Split (%)	44.2%		10.8%	55.0%	45.0%	45.0%	45.0%
Yellow Time (s)	5.0		4.0	5.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		5.0	6.0	5.0	5.0	5.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None		None	None	None	None	None
Act Effct Green (s)	47.0	120.0	8.0	60.0	49.0	49.0	49.0
Actuated g/C Ratio	0.39	1.00	0.07	0.50	0.41	0.41	0.41
v/c Ratio	0.95	0.70	0.92	0.75	0.94	1.03	0.94
Control Delay (s/veh)	46.7	2.6	97.0	26.3	56.5	79.5	53.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.7	2.6	97.0	26.3	56.5	79.5	53.0
LOS	D	A	F	C	E	E	D
Approach Delay (s/veh)	30.5			33.3		62.9	
Approach LOS	C			C		E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay (s/veh): 40.1	Intersection LOS: D
Intersection Capacity Utilization 95.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 1: I-215 SB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1850	1074	205	1863	0	0	0	0	700	1	1135
Future Volume (veh/h)	0	1850	1074	205	1863	0	0	0	0	700	1	1135
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	1927	0	214	1941	0				1096	0	636
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2029		235	2593	0				1477	0	657
Arrive On Green	0.00	0.39	0.00	0.07	0.50	0.00				0.41	0.00	0.41
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	1927	0	214	1941	0				1096	0	636
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	43.0	0.0	7.2	35.7	0.0				30.7	0.0	46.2
Cycle Q Clear(g_c), s	0.0	43.0	0.0	7.2	35.7	0.0				30.7	0.0	46.2
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2029		235	2593	0				1477	0	657
V/C Ratio(X)	0.00	0.95		0.91	0.75	0.00				0.74	0.00	0.97
Avail Cap(c_a), veh/h	0	2039		235	2603	0				1483	0	660
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	35.2	0.0	55.4	23.9	0.0				30.0	0.0	34.6
Incr Delay (d2), s/veh	0.0	10.4	0.0	35.7	1.2	0.0				2.0	0.0	27.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	19.2	0.0	4.3	14.0	0.0				12.7	0.0	21.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	45.7	0.0	91.1	25.1	0.0				32.1	0.0	61.8
LnGrp LOS		D		F	C					C		E
Approach Vol, veh/h		1927			2155						1732	
Approach Delay, s/veh		45.7			31.7						43.0	
Approach LOS		D			C						D	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	13.0	52.8		53.8		65.8						
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0						
Max Green Setting (Gmax), s	8.0	47.0		49.0		60.0						
Max Q Clear Time (g_c+I1), s	9.2	45.0		48.2		37.7						
Green Ext Time (p_c), s	0.0	1.8		0.6		14.8						

Intersection Summary		
HCM 7th Control Delay, s/veh	39.7	
HCM 7th LOS	D	

Notes

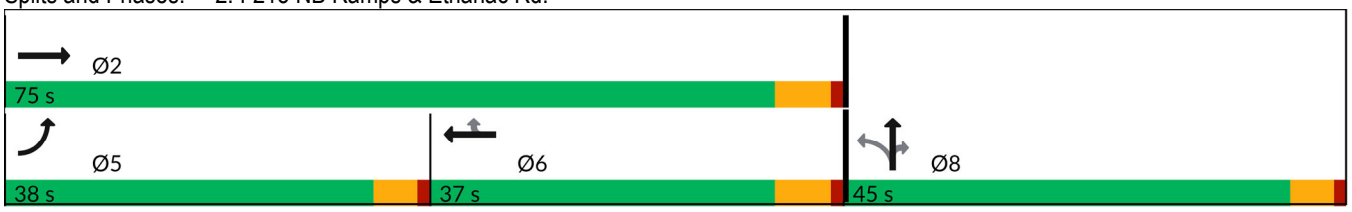
User approved volume balancing among the lanes for turning movement.

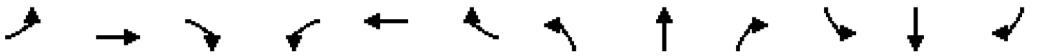
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	900	1650	1054	609	1014	0	542
Future Volume (vph)	900	1650	1054	609	1014	0	542
Turn Type	Prot	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases				6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.5	23.4	23.4	23.4	23.4	23.4
Total Split (s)	38.0	75.0	37.0	37.0	45.0	45.0	45.0
Total Split (%)	31.7%	62.5%	30.8%	30.8%	37.5%	37.5%	37.5%
Yellow Time (s)	4.0	5.0	5.0	5.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	None	None	None	None	None	None
Act Effct Green (s)	33.0	68.9	30.9	30.9	39.4	39.4	39.4
Actuated g/C Ratio	0.28	0.58	0.26	0.26	0.33	0.33	0.33
v/c Ratio	0.98	0.58	0.83	0.74	0.92	0.51	0.51
Control Delay (s/veh)	67.3	17.1	48.0	10.3	52.2	27.3	27.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	67.3	17.1	48.0	10.3	52.2	27.3	27.3
LOS	E	B	D	B	D	C	C
Approach Delay (s/veh)		34.8	34.2			43.5	
Approach LOS		C	C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay (s/veh): 37.0	Intersection LOS: D
Intersection Capacity Utilization 105.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 2: I-215 NB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	900	1650	0	0	1054	609	1014	0	542	0	0	0
Future Volume (veh/h)	900	1650	0	0	1054	609	1014	0	542	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	947	1737	0	0	1109	364	1067	0	511			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	992	3017	0	0	1330	413	1173	0	1044			
Arrive On Green	0.28	0.58	0.00	0.00	0.26	0.26	0.32	0.00	0.32			
Sat Flow, veh/h	3510	5358	0	0	5358	1610	3619	0	3220			
Grp Volume(v), veh/h	947	1737	0	0	1109	364	1067	0	511			
Grp Sat Flow(s),veh/h/ln	1755	1729	0	0	1729	1610	1810	0	1610			
Q Serve(g_s), s	30.9	24.6	0.0	0.0	23.6	25.4	33.0	0.0	14.9			
Cycle Q Clear(g_c), s	30.9	24.6	0.0	0.0	23.6	25.4	33.0	0.0	14.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	992	3017	0	0	1330	413	1173	0	1044			
V/C Ratio(X)	0.96	0.58	0.00	0.00	0.83	0.88	0.91	0.00	0.49			
Avail Cap(c_a), veh/h	992	3066	0	0	1377	428	1240	0	1103			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	41.2	15.4	0.0	0.0	41.1	41.7	37.8	0.0	31.7			
Incr Delay (d2), s/veh	18.6	0.3	0.0	0.0	4.5	18.5	9.7	0.0	0.4			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	15.5	9.0	0.0	0.0	10.3	11.9	15.1	0.0	5.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.8	15.6	0.0	0.0	45.5	60.2	47.5	0.0	32.0			
LnGrp LOS	E	B			D	E	D		C			
Approach Vol, veh/h		2684			1473			1578				
Approach Delay, s/veh		31.2			49.2			42.5				
Approach LOS		C			D			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		73.9			38.0	35.9		42.8				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		69.0			33.0	31.0		40.0				
Max Q Clear Time (g_c+I1), s		26.6			32.9	27.4		35.0				
Green Ext Time (p_c), s		18.3			0.0	2.6		2.9				

Intersection Summary	
HCM 7th Control Delay, s/veh	38.9
HCM 7th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2080	112	0	1663	0	28
Future Vol, veh/h	2080	112	0	1663	0	28
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2286	123	0	1827	0	31

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1206
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	-	-	0	-	0	153
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	153
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

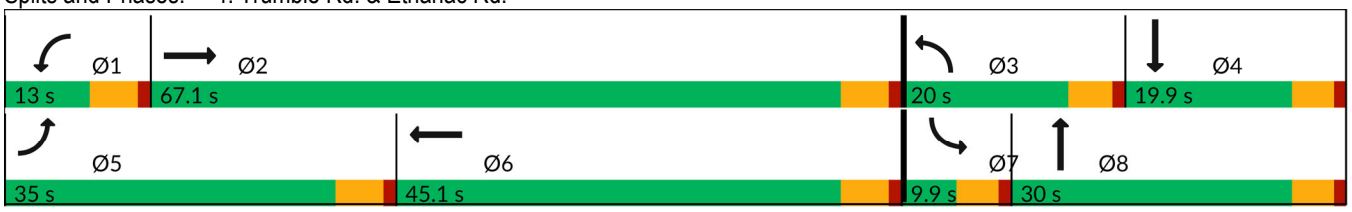
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	34.38
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	153	-	-	-
HCM Lane V/C Ratio	0.201	-	-	-
HCM Ctrl Dly (s/v)	34.4	-	-	-
HCM Lane LOS	D	-	-	-
HCM 95th %tile Q(veh)	0.7	-	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	332	2267	83	1011	358	21	30	33
Future Volume (vph)	332	2267	83	1011	358	21	30	33
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	3	8	7	4
Permitted Phases								
Detector Phase	5	2	1	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.3	35.3	10.3	27.8	9.9	29.9	9.9	10.4
Total Split (s)	35.0	67.1	13.0	45.1	20.0	30.0	9.9	19.9
Total Split (%)	29.2%	55.9%	10.8%	37.6%	16.7%	25.0%	8.3%	16.6%
Yellow Time (s)	4.3	4.3	4.3	4.3	3.9	3.9	3.9	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	4.9	4.9	4.9	4.9
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	25.6	60.8	7.5	42.7	14.7	19.5	5.0	9.6
Actuated g/C Ratio	0.23	0.54	0.07	0.38	0.13	0.17	0.04	0.08
v/c Ratio	0.88	0.93	0.75	0.58	0.85	0.19	0.41	0.86
Control Delay (s/veh)	66.3	31.9	89.1	30.7	67.5	19.8	70.8	29.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	66.3	31.9	89.1	30.7	67.5	19.8	70.8	29.6
LOS	E	C	F	C	E	B	E	C
Approach Delay (s/veh)		36.1		35.0		60.8		33.0
Approach LOS		D		D		E		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.1	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay (s/veh): 37.8	Intersection LOS: D
Intersection Capacity Utilization 98.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 4: Trumble Rd. & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	332	2267	99	83	1011	31	358	21	38	30	33	307
Future Volume (veh/h)	332	2267	99	83	1011	31	358	21	38	30	33	307
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	361	2464	100	90	1099	32	389	23	26	33	36	191
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	388	2625	106	113	1871	54	442	183	206	51	33	175
Arrive On Green	0.21	0.51	0.51	0.06	0.36	0.36	0.13	0.22	0.22	0.03	0.13	0.13
Sat Flow, veh/h	1810	5114	206	1810	5180	151	3510	814	920	1810	262	1388
Grp Volume(v), veh/h	361	1660	904	90	733	398	389	0	49	33	0	227
Grp Sat Flow(s),veh/h/ln	1810	1729	1862	1810	1729	1873	1755	0	1734	1810	0	1650
Q Serve(g_s), s	23.2	53.3	54.5	5.8	20.4	20.4	12.9	0.0	2.7	2.1	0.0	15.0
Cycle Q Clear(g_c), s	23.2	53.3	54.5	5.8	20.4	20.4	12.9	0.0	2.7	2.1	0.0	15.0
Prop In Lane	1.00		0.11	1.00		0.08	1.00		0.53	1.00		0.84
Lane Grp Cap(c), veh/h	388	1775	956	113	1249	676	442	0	389	51	0	209
V/C Ratio(X)	0.93	0.94	0.95	0.80	0.59	0.59	0.88	0.00	0.13	0.65	0.00	1.09
Avail Cap(c_a), veh/h	453	1801	970	117	1249	676	447	0	389	76	0	209
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.7	27.0	27.3	54.9	30.7	30.7	51.0	0.0	36.7	57.1	0.0	51.8
Incr Delay (d2), s/veh	22.4	9.5	17.0	27.2	0.5	0.9	17.2	0.0	0.1	5.2	0.0	87.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.5	22.3	26.5	3.4	8.2	9.0	6.6	0.0	1.1	1.0	0.0	11.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	68.1	36.5	44.3	82.1	31.2	31.7	68.2	0.0	36.8	62.3	0.0	139.7
LnGrp LOS	E	D	D	F	C	C	E		D	E		F
Approach Vol, veh/h		2925			1221			438			260	
Approach Delay, s/veh		42.8			35.1			64.7			129.9	
Approach LOS		D			D			E			F	

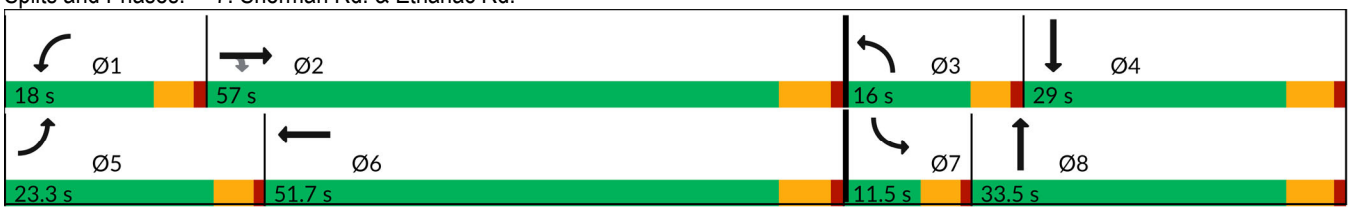
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	66.2	19.8	19.9	30.8	48.2	8.2	31.5
Change Period (Y+Rc), s	5.3	5.3	4.9	4.9	5.3	5.3	4.9	4.9
Max Green Setting (Gmax), s	7.7	61.8	15.1	15.0	29.7	39.8	5.0	25.1
Max Q Clear Time (g_c+I1), s	7.8	56.5	14.9	17.0	25.2	22.4	4.1	4.7
Green Ext Time (p_c), s	0.0	4.4	0.0	0.0	0.2	4.3	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	47.5
HCM 7th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	149	1569	589	104	863	185	24	37	75
Future Volume (vph)	149	1569	589	104	863	185	24	37	75
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	5	2	2	1	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.8	27.8	9.6	27.8	9.6	32.4	9.6	20.0
Total Split (s)	23.3	57.0	57.0	18.0	51.7	16.0	33.5	11.5	29.0
Total Split (%)	19.4%	47.5%	47.5%	15.0%	43.1%	13.3%	27.9%	9.6%	24.2%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	3.6	4.4	3.6	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	4.6	5.4	4.6	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	13.7	48.2	48.2	10.6	45.0	9.9	22.9	6.3	17.7
Actuated g/C Ratio	0.13	0.45	0.45	0.10	0.42	0.09	0.21	0.06	0.17
v/c Ratio	0.70	0.72	0.60	0.63	0.44	0.62	0.13	0.38	0.81
Control Delay (s/veh)	63.1	27.3	4.9	65.6	24.0	58.1	22.4	63.7	47.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	63.1	27.3	4.9	65.6	24.0	58.1	22.4	63.7	47.3
LOS	E	C	A	E	C	E	C	E	D
Approach Delay (s/veh)		23.9			28.3		50.7		49.2
Approach LOS		C			C		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.2	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay (s/veh): 28.7	Intersection LOS: C
Intersection Capacity Utilization 74.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 7: Sherman Rd. & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	1569	589	104	863	29	185	24	24	37	75	196
Future Volume (veh/h)	149	1569	589	104	863	29	185	24	24	37	75	196
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	160	1687	499	112	928	31	199	26	26	40	81	211
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	193	2282	708	141	2119	71	270	209	209	61	92	239
Arrive On Green	0.11	0.44	0.44	0.08	0.41	0.41	0.08	0.24	0.24	0.03	0.20	0.20
Sat Flow, veh/h	1810	5187	1610	1810	5155	172	3510	872	872	1810	466	1215
Grp Volume(v), veh/h	160	1687	499	112	622	337	199	0	52	40	0	292
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1869	1755	0	1743	1810	0	1681
Q Serve(g_s), s	8.5	26.4	24.6	6.0	12.6	12.7	5.4	0.0	2.3	2.1	0.0	16.5
Cycle Q Clear(g_c), s	8.5	26.4	24.6	6.0	12.6	12.7	5.4	0.0	2.3	2.1	0.0	16.5
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.50	1.00		0.72
Lane Grp Cap(c), veh/h	193	2282	708	141	1421	768	270	0	418	61	0	331
V/C Ratio(X)	0.83	0.74	0.70	0.79	0.44	0.44	0.74	0.00	0.12	0.65	0.00	0.88
Avail Cap(c_a), veh/h	346	2714	842	248	1622	877	409	0	501	128	0	405
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.8	22.7	22.2	44.3	20.7	20.7	44.2	0.0	29.1	46.7	0.0	38.2
Incr Delay (d2), s/veh	3.4	0.9	2.1	3.8	0.2	0.4	1.5	0.0	0.1	4.3	0.0	17.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	9.9	9.2	2.7	4.8	5.2	2.4	0.0	1.0	1.0	0.0	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	46.2	23.6	24.4	48.1	20.9	21.1	45.7	0.0	29.3	51.0	0.0	55.5
LnGrp LOS	D	C	C	D	C	C	D		C	D		E
Approach Vol, veh/h		2346			1071			251			332	
Approach Delay, s/veh		25.3			23.8			42.3			54.9	
Approach LOS		C			C			D			D	

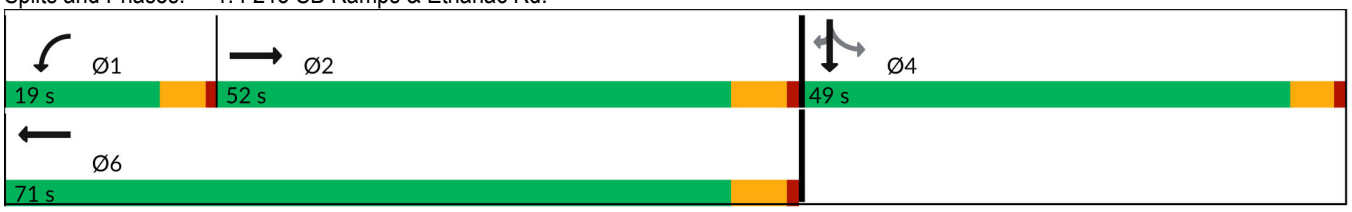
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	48.9	12.1	24.7	15.1	46.0	7.9	28.9
Change Period (Y+Rc), s	4.6	5.8	4.6	5.4	4.6	5.8	4.6	5.4
Max Green Setting (Gmax), s	13.4	51.2	11.4	23.6	18.7	45.9	6.9	28.1
Max Q Clear Time (g_c+I1), s	8.0	28.4	7.4	18.5	10.5	14.7	4.1	4.3
Green Ext Time (p_c), s	0.1	14.6	0.1	0.7	0.1	6.4	0.0	0.2

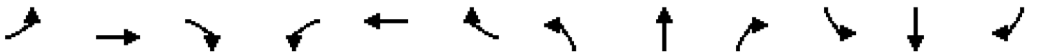
Intersection Summary	
HCM 7th Control Delay, s/veh	28.5
HCM 7th LOS	C

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	2023	1094	470	1857	779	2	1109
Future Volume (vph)	2023	1094	470	1857	779	2	1109
Turn Type	NA	Free	Prot	NA	Perm	NA	Perm
Protected Phases	2		1	6		4	
Permitted Phases		Free			4		4
Detector Phase	2		1	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.4		10.0	24.5	24.5	24.5	24.5
Total Split (s)	52.0		19.0	71.0	49.0	49.0	49.0
Total Split (%)	43.3%		15.8%	59.2%	40.8%	40.8%	40.8%
Yellow Time (s)	5.0		4.0	5.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		5.0	6.0	5.0	5.0	5.0
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None		None	None	None	None	None
Act Effct Green (s)	46.0	120.0	14.0	65.0	44.0	44.0	44.0
Actuated g/C Ratio	0.38	1.00	0.12	0.54	0.37	0.37	0.37
v/c Ratio	1.05	0.70	1.19	0.68	1.07	1.16	1.03
Control Delay (s/veh)	70.9	2.5	152.5	21.5	94.7	124.3	79.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	70.9	2.5	152.5	21.5	94.7	124.3	79.3
LOS	E	A	F	C	F	F	E
Approach Delay (s/veh)	46.9			48.0		99.5	
Approach LOS	D			D		F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay (s/veh): 60.8	Intersection LOS: E
Intersection Capacity Utilization 122.8%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1: I-215 SB Ramps & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2023	1094	470	1857	0	0	0	0	779	2	1109
Future Volume (veh/h)	0	2023	1094	470	1857	0	0	0	0	779	2	1109
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	2086	0	485	1914	0				1066	0	549
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	2005		413	2833	0				1308	0	582
Arrive On Green	0.00	0.39	0.00	0.12	0.55	0.00				0.36	0.00	0.36
Sat Flow, veh/h	0	5358	1610	3510	5358	0				3619	0	1610
Grp Volume(v), veh/h	0	2086	0	485	1914	0				1066	0	549
Grp Sat Flow(s),veh/h/ln	0	1729	1610	1755	1729	0				1810	0	1610
Q Serve(g_s), s	0.0	46.0	0.0	14.0	31.6	0.0				31.7	0.0	39.3
Cycle Q Clear(g_c), s	0.0	46.0	0.0	14.0	31.6	0.0				31.7	0.0	39.3
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2005		413	2833	0				1308	0	582
V/C Ratio(X)	0.00	1.04		1.17	0.68	0.00				0.81	0.00	0.94
Avail Cap(c_a), veh/h	0	2005		413	2833	0				1338	0	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	36.5	0.0	52.5	19.4	0.0				34.4	0.0	36.8
Incr Delay (d2), s/veh	0.0	31.6	0.0	101.3	0.6	0.0				3.9	0.0	23.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	24.3	0.0	11.9	12.0	0.0				13.6	0.0	18.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	68.1	0.0	153.8	20.1	0.0				38.3	0.0	60.3
LnGrp LOS		F		F	C					D		E
Approach Vol, veh/h		2086			2399						1615	
Approach Delay, s/veh		68.1			47.1						45.8	
Approach LOS		E			D						D	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	19.0	52.0		48.0		71.0						
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0						
Max Green Setting (Gmax), s	14.0	46.0		44.0		65.0						
Max Q Clear Time (g_c+I1), s	16.0	48.0		41.3		33.6						
Green Ext Time (p_c), s	0.0	0.0		1.7		18.1						

Intersection Summary	
HCM 7th Control Delay, s/veh	53.9
HCM 7th LOS	D

Notes

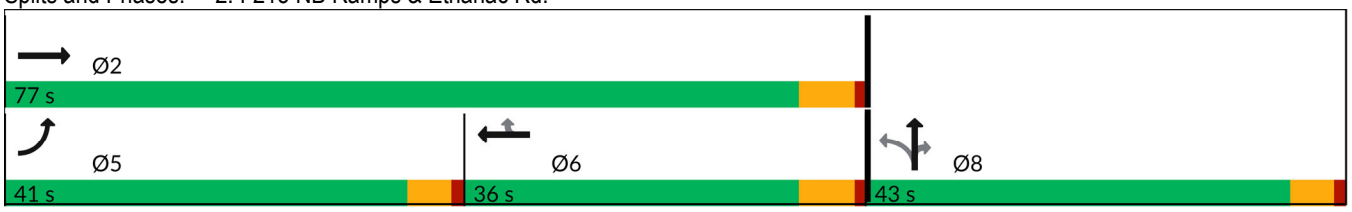
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	1040	1761	1237	786	1090	0	546
Future Volume (vph)	1040	1761	1237	786	1090	0	546
Turn Type	Prot	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases				6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.5	23.4	23.4	23.4	23.4	23.4
Total Split (s)	41.0	77.0	36.0	36.0	43.0	43.0	43.0
Total Split (%)	34.2%	64.2%	30.0%	30.0%	35.8%	35.8%	35.8%
Yellow Time (s)	4.0	5.0	5.0	5.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	None	None	None	None	None	None
Act Effct Green (s)	36.0	71.0	30.0	30.0	38.0	38.0	38.0
Actuated g/C Ratio	0.30	0.59	0.25	0.25	0.32	0.32	0.32
v/c Ratio	1.03	0.60	0.99	0.99	1.02	0.53	0.53
Control Delay (s/veh)	77.6	16.5	68.8	44.0	74.0	28.9	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	77.6	16.5	68.8	44.0	74.0	28.9	28.8
LOS	E	B	E	D	E	C	C
Approach Delay (s/veh)		39.2	59.2			58.9	
Approach LOS		D	E			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay (s/veh): 50.4	Intersection LOS: D
Intersection Capacity Utilization 122.8%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 2: I-215 NB Ramps & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1040	1761	0	0	1237	786	1090	0	546	0	0	0
Future Volume (veh/h)	1040	1761	0	0	1237	786	1090	0	546	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	1083	1834	0	0	1289	439	1135	0	490			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	1053	3069	0	0	1297	403	1146	0	1020			
Arrive On Green	0.30	0.59	0.00	0.00	0.25	0.25	0.32	0.00	0.32			
Sat Flow, veh/h	3510	5358	0	0	5358	1610	3619	0	3220			
Grp Volume(v), veh/h	1083	1834	0	0	1289	439	1135	0	490			
Grp Sat Flow(s),veh/h/ln	1755	1729	0	0	1729	1610	1810	0	1610			
Q Serve(g_s), s	36.0	26.8	0.0	0.0	29.8	30.0	37.5	0.0	14.7			
Cycle Q Clear(g_c), s	36.0	26.8	0.0	0.0	29.8	30.0	37.5	0.0	14.7			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1053	3069	0	0	1297	403	1146	0	1020			
V/C Ratio(X)	1.03	0.60	0.00	0.00	0.99	1.09	0.99	0.00	0.48			
Avail Cap(c_a), veh/h	1053	3069	0	0	1297	403	1146	0	1020			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	42.0	15.5	0.0	0.0	44.9	45.0	40.8	0.0	33.0			
Incr Delay (d2), s/veh	35.2	0.3	0.0	0.0	23.5	71.5	24.2	0.0	0.4			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	20.2	9.8	0.0	0.0	15.2	19.6	19.4	0.0	5.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	77.2	15.8	0.0	0.0	68.4	116.5	65.0	0.0	33.4			
LnGrp LOS	F	B			E	F	E		C			
Approach Vol, veh/h		2917			1728			1625				
Approach Delay, s/veh		38.6			80.6			55.5				
Approach LOS		D			F			E				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		77.0			41.0	36.0		43.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		71.0			36.0	30.0		38.0				
Max Q Clear Time (g_c+I1), s		28.8			38.0	32.0		39.5				
Green Ext Time (p_c), s		19.9			0.0	0.0		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	54.6
HCM 7th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2059	249	0	2023	0	55
Future Vol, veh/h	2059	249	0	2023	0	55
Conflicting Peds, #/hr	0	3	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2190	265	0	2152	0	59

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1231
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.5
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	-	-	0	-	0	181
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	181
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

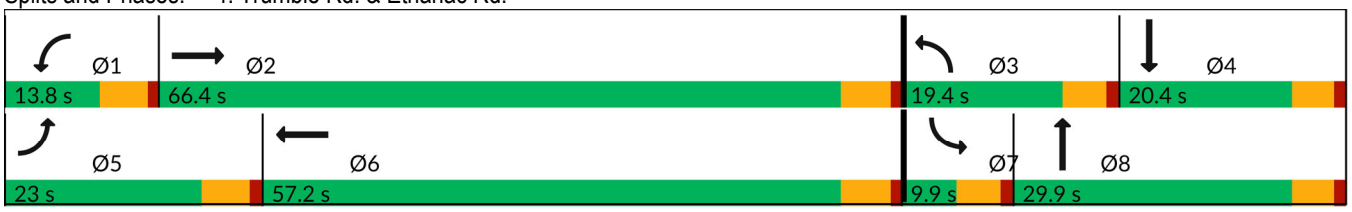
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	34.2
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	181	-	-	-
HCM Lane V/C Ratio	0.324	-	-	-
HCM Ctrl Dly (s/v)	34.2	-	-	-
HCM Lane LOS	D	-	-	-
HCM 95th %tile Q(veh)	1.3	-	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	285	1981	72	2184	359	2	38	9
Future Volume (vph)	285	1981	72	2184	359	2	38	9
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	3	8	7	4
Permitted Phases								
Detector Phase	5	2	1	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.3	35.3	10.3	27.8	9.9	29.9	9.9	10.4
Total Split (s)	23.0	66.4	13.8	57.2	19.4	29.9	9.9	20.4
Total Split (%)	19.2%	55.3%	11.5%	47.7%	16.2%	24.9%	8.3%	17.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	3.9	3.9	3.9	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	5.3	4.9	4.9	4.9	4.9
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	17.7	64.2	7.8	52.0	14.3	20.6	5.0	13.9
Actuated g/C Ratio	0.15	0.54	0.07	0.44	0.12	0.17	0.04	0.12
v/c Ratio	1.13	0.78	0.65	1.04	0.91	0.16	0.54	0.93
Control Delay (s/veh)	141.3	25.2	79.3	63.8	77.9	12.5	81.8	56.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	141.3	25.2	79.3	63.8	77.9	12.5	81.8	56.3
LOS	F	C	E	E	E	B	F	E
Approach Delay (s/veh)		39.4		64.3		70.0		59.1
Approach LOS		D		E		E		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay (s/veh): 53.7	Intersection LOS: D
Intersection Capacity Utilization 104.5%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 4: Trumble Rd. & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	285	1981	48	72	2184	20	359	2	47	38	9	297
Future Volume (veh/h)	285	1981	48	72	2184	20	359	2	47	38	9	297
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	306	2130	48	77	2348	21	386	2	32	41	10	152
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	271	2792	63	98	2330	21	431	20	316	57	12	176
Arrive On Green	0.15	0.54	0.54	0.05	0.44	0.44	0.12	0.21	0.21	0.03	0.12	0.12
Sat Flow, veh/h	1810	5219	117	1810	5302	47	3510	96	1529	1810	100	1525
Grp Volume(v), veh/h	306	1410	768	77	1530	839	386	0	34	41	0	162
Grp Sat Flow(s),veh/h/ln	1810	1729	1878	1810	1729	1891	1755	0	1625	1810	0	1625
Q Serve(g_s), s	17.7	37.8	38.0	5.0	51.9	51.9	12.8	0.0	2.0	2.7	0.0	11.6
Cycle Q Clear(g_c), s	17.7	37.8	38.0	5.0	51.9	51.9	12.8	0.0	2.0	2.7	0.0	11.6
Prop In Lane	1.00		0.06	1.00		0.03	1.00		0.94	1.00		0.94
Lane Grp Cap(c), veh/h	271	1850	1005	98	1520	831	431	0	336	57	0	187
V/C Ratio(X)	1.13	0.76	0.76	0.78	1.01	1.01	0.90	0.00	0.10	0.72	0.00	0.87
Avail Cap(c_a), veh/h	271	1850	1005	130	1520	831	431	0	344	77	0	213
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.2	21.6	21.6	55.2	33.1	33.1	51.1	0.0	38.0	56.7	0.0	51.4
Incr Delay (d2), s/veh	93.7	1.7	3.2	14.3	24.8	33.4	20.2	0.0	0.0	11.1	0.0	24.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.8	14.4	16.1	2.6	25.3	29.7	6.7	0.0	0.8	1.4	0.0	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	143.9	23.3	24.8	69.5	57.9	66.5	71.3	0.0	38.0	67.8	0.0	75.9
LnGrp LOS	F	C	C	E	F	F	E		D	E		E
Approach Vol, veh/h		2484			2446			420			203	
Approach Delay, s/veh		38.6			61.2			68.6			74.3	
Approach LOS		D			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	68.5	19.4	18.5	23.0	57.2	8.6	29.3
Change Period (Y+Rc), s	5.3	5.3	4.9	4.9	5.3	5.3	4.9	4.9
Max Green Setting (Gmax), s	8.5	61.1	14.5	15.5	17.7	51.9	5.0	25.0
Max Q Clear Time (g_c+I1), s	7.0	40.0	14.8	13.6	19.7	53.9	4.7	4.0
Green Ext Time (p_c), s	0.0	10.7	0.0	0.1	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	52.1
HCM 7th LOS	D

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	53	142	0	16	79
Future Vol, veh/h	0	53	142	0	16	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	58	154	0	17	86

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	275	154	0	0	154	0
Stage 1	154	-	-	-	-	-
Stage 2	121	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	719	897	-	-	1438	-
Stage 1	879	-	-	-	-	-
Stage 2	910	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	710	897	-	-	1438	-
Mov Cap-2 Maneuver	710	-	-	-	-	-
Stage 1	879	-	-	-	-	-
Stage 2	898	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.29	0	1.27
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	897	303	-
HCM Lane V/C Ratio	-	-	0.064	0.012	-
HCM Ctrl Dly (s/v)	-	-	9.3	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	14	128	3	4	75
Future Vol, veh/h	10	14	128	3	4	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	15	139	3	4	82

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	231	141	0	0	142	0
Stage 1	141	-	-	-	-	-
Stage 2	90	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	762	912	-	-	1453	-
Stage 1	891	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	759	912	-	-	1453	-
Mov Cap-2 Maneuver	759	-	-	-	-	-
Stage 1	891	-	-	-	-	-
Stage 2	935	-	-	-	-	-

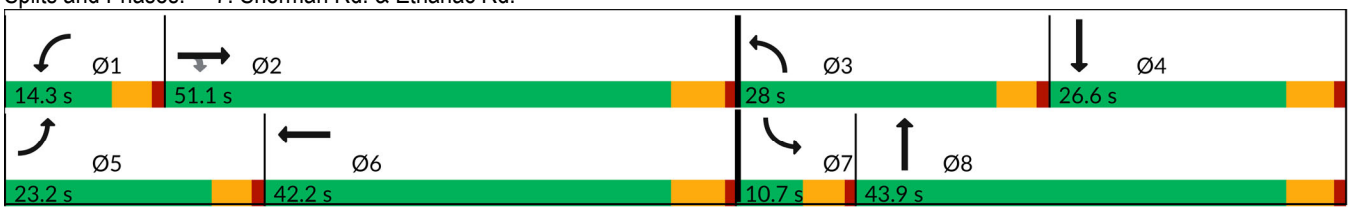
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.41	0	0.38
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	842	91	-
HCM Lane V/C Ratio	-	-	0.031	0.003	-
HCM Ctrl Dly (s/v)	-	-	9.4	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	249	1417	405	64	1491	624	71	28	41
Future Volume (vph)	249	1417	405	64	1491	624	71	28	41
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	5	2	2	1	6	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.8	27.8	9.6	27.8	9.6	32.4	9.6	26.6
Total Split (s)	23.2	51.1	51.1	14.3	42.2	28.0	43.9	10.7	26.6
Total Split (%)	19.3%	42.6%	42.6%	11.9%	35.2%	23.3%	36.6%	8.9%	22.2%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	3.6	4.4	3.6	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	4.6	5.4	4.6	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	18.0	48.7	48.7	7.9	36.5	22.8	33.2	5.7	12.1
Actuated g/C Ratio	0.16	0.44	0.44	0.07	0.33	0.21	0.30	0.05	0.11
v/c Ratio	0.87	0.64	0.45	0.51	0.91	0.89	0.34	0.31	0.67
Control Delay (s/veh)	73.4	26.6	3.9	63.9	44.6	57.9	21.2	60.5	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	73.4	26.6	3.9	63.9	44.6	57.9	21.2	60.5	27.4
LOS	E	C	A	E	D	E	C	E	C
Approach Delay (s/veh)		27.8			45.4		49.3		31.4
Approach LOS		C			D		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.8	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay (s/veh): 37.6	Intersection LOS: D
Intersection Capacity Utilization 90.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 7: Sherman Rd. & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	249	1417	405	64	1491	26	624	71	119	28	41	160
Future Volume (veh/h)	249	1417	405	64	1491	26	624	71	119	28	41	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	257	1461	418	66	1537	27	643	73	123	29	42	165
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	285	2222	687	85	1669	29	700	202	340	48	48	190
Arrive On Green	0.16	0.43	0.43	0.05	0.32	0.32	0.20	0.32	0.32	0.03	0.14	0.14
Sat Flow, veh/h	1810	5187	1605	1810	5249	92	3510	636	1071	1810	337	1322
Grp Volume(v), veh/h	257	1461	418	66	1013	551	643	0	196	29	0	207
Grp Sat Flow(s),veh/h/ln	1810	1729	1605	1810	1729	1883	1755	0	1707	1810	0	1659
Q Serve(g_s), s	15.7	25.2	22.7	4.1	31.8	31.8	20.2	0.0	10.0	1.8	0.0	13.7
Cycle Q Clear(g_c), s	15.7	25.2	22.7	4.1	31.8	31.8	20.2	0.0	10.0	1.8	0.0	13.7
Prop In Lane	1.00		1.00	1.00		0.05	1.00		0.63	1.00		0.80
Lane Grp Cap(c), veh/h	285	2222	687	85	1099	599	700	0	541	48	0	239
V/C Ratio(X)	0.90	0.66	0.61	0.77	0.92	0.92	0.92	0.00	0.36	0.61	0.00	0.87
Avail Cap(c_a), veh/h	299	2222	687	156	1118	609	729	0	584	98	0	312
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.6	25.6	24.9	53.1	37.0	37.0	44.2	0.0	29.7	54.2	0.0	47.1
Incr Delay (d2), s/veh	26.8	0.7	1.6	5.5	12.1	19.3	15.9	0.0	0.4	4.5	0.0	17.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	9.8	8.6	1.9	14.6	17.1	10.2	0.0	4.1	0.9	0.0	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	73.4	26.3	26.4	58.6	49.2	56.4	60.1	0.0	30.1	58.7	0.0	64.9
LnGrp LOS	E	C	C	E	D	E	E		C	E		E
Approach Vol, veh/h		2136			1630			839			236	
Approach Delay, s/veh		32.0			52.0			53.1			64.2	
Approach LOS		C			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	54.0	27.1	21.6	22.3	41.6	7.6	41.1
Change Period (Y+Rc), s	4.6	5.8	4.6	5.4	4.6	5.8	4.6	5.4
Max Green Setting (Gmax), s	9.7	45.3	23.4	21.2	18.6	36.4	6.1	38.5
Max Q Clear Time (g_c+I1), s	6.1	27.2	22.2	15.7	17.7	33.8	3.8	12.0
Green Ext Time (p_c), s	0.0	10.8	0.2	0.5	0.0	2.0	0.0	1.1

Intersection Summary	
HCM 7th Control Delay, s/veh	44.0
HCM 7th LOS	D

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	0	0	753	481	21
Future Vol, veh/h	29	0	0	753	481	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	32	0	0	818	523	23

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1353	534	546	0	-	0
Stage 1	534	-	-	-	-	-
Stage 2	818	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	167	550	1034	-	-	-
Stage 1	592	-	-	-	-	-
Stage 2	437	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	167	550	1034	-	-	-
Mov Cap-2 Maneuver	303	-	-	-	-	-
Stage 1	592	-	-	-	-	-
Stage 2	437	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	18.25	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1034	-	303	-	-
HCM Lane V/C Ratio	-	-	0.104	-	-
HCM Ctrl Dly (s/v)	0	-	18.3	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	52	2	1	701	438	43
Future Vol, veh/h	52	2	1	701	438	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	57	2	1	762	476	47

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1264	499	523	0	-	0
Stage 1	499	-	-	-	-	-
Stage 2	764	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	189	575	1054	-	-	-
Stage 1	614	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	189	575	1054	-	-	-
Mov Cap-2 Maneuver	324	-	-	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	463	-	-	-	-	-

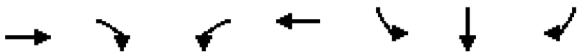
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	18.26	0.01	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1054	-	330	-	-
HCM Lane V/C Ratio	0.001	-	0.178	-	-
HCM Ctrl Dly (s/v)	8.4	-	18.3	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-

APPENDIX 7.7:

2045 WITH PROJECT QUEUING ANALYSIS WITH IMPROVEMENTS

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Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1927	1119	214	1941	656	630	626
v/c Ratio	0.95	0.70	0.92	0.75	0.94	1.03	0.94
Control Delay (s/veh)	46.7	2.6	97.0	26.3	56.5	79.5	53.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.7	2.6	97.0	26.3	56.5	79.5	53.0
Queue Length 50th (ft)	522	0	86	426	504	~571	438
Queue Length 95th (ft)	#634	0	#161	486	#760	#824	#696
Internal Link Dist (ft)	624			681		1327	
Turn Bay Length (ft)			275				240
Base Capacity (vph)	2031	1595	233	2593	700	612	669
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.70	0.92	0.75	0.94	1.03	0.94

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

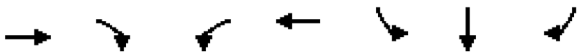
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	947	1737	1109	641	1067	286	285
v/c Ratio	0.98	0.58	0.83	0.74	0.92	0.51	0.51
Control Delay (s/veh)	67.3	17.1	48.0	10.3	52.2	27.3	27.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	67.3	17.1	48.0	10.3	52.2	27.3	27.3
Queue Length 50th (ft)	376	298	298	23	406	137	136
Queue Length 95th (ft)	#515	344	354	153	#532	229	228
Internal Link Dist (ft)		681	457			1327	
Turn Bay Length (ft)	245			300			270
Base Capacity (vph)	968	2999	1347	865	1174	563	563
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.58	0.82	0.74	0.91	0.51	0.51

Intersection Summary

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



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2086	1128	485	1914	675	644	629
v/c Ratio	1.05	0.70	1.19	0.68	1.07	1.16	1.03
Control Delay (s/veh)	70.9	2.5	152.5	21.5	94.7	124.3	79.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	70.9	2.5	152.5	21.5	94.7	124.3	79.3
Queue Length 50th (ft)	~644	0	~233	378	~611	~645	~510
Queue Length 95th (ft)	#740	0	#341	431	#854	#901	#753
Internal Link Dist (ft)	624			681		1327	
Turn Bay Length (ft)			275				240
Base Capacity (vph)	1988	1615	408	2809	628	557	608
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.70	1.19	0.68	1.07	1.16	1.03

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	1083	1834	1289	819	1135	285	284
v/c Ratio	1.03	0.60	0.99	0.99	1.02	0.53	0.53
Control Delay (s/veh)	77.6	16.5	68.8	44.0	74.0	28.9	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	77.6	16.5	68.8	44.0	74.0	28.9	28.8
Queue Length 50th (ft)	~463	310	366	255	~482	141	140
Queue Length 95th (ft)	#595	355	#473	#547	#615	234	233
Internal Link Dist (ft)		681	457			1327	
Turn Bay Length (ft)	245			300			270
Base Capacity (vph)	1050	3068	1296	826	1108	535	535
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.60	0.99	0.99	1.02	0.53	0.53

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

APPENDIX K2

VEHICLE MILES TRAVELED ANALYSIS

TECHNICAL MEMORANDUM

DATE: May 19, 2025
TO: Fernando Herrera, City of Menifee
FROM: Alex So, Urban Crossroads, Inc.
JOB NO: 16568-01 VMT

SUBJECT: HERITAGE VALLEY BUSINESS CENTER (PLN24-0195) VEHICLE MILES TRAVELED (VMT) ANALYSIS

Urban Crossroads, Inc. has completed the following Vehicle Miles Traveled (VMT) Analysis for the Heritage Valley Business Center (Project), which is located south of Ethanac Road, east of Trumble Road, west of Sherman Road, and north of McLaughlin Road in the City of Menifee. The Project site comprises Assessor's Parcel Numbers (APNs) 331-110-023, 024-027, 031, 035, 038, 039, and 041).

PROJECT OVERVIEW

The Project includes the development of an 829,755-square-foot warehouse building, which includes 10,000 square feet of office support space on a 41.16-acres (see Attachment A for site plan).

BACKGROUND

The California Environmental Quality Act (CEQA) requires all lead agencies to adopt VMT as the measure for identifying transportation impacts for land use projects. To comply with CEQA, the City of Menifee adopted the City of Menifee Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (January 2022) (**City Guidelines**) (1). This VMT Analysis has been prepared based on the adopted City Guidelines.

VMT SCREENING

City Guidelines state that a project may have a less-than-significant impact and screen from requiring a project-level VMT analysis if it meets any of the City's VMT screening steps. VMT screening steps are described below along with a determination of the Project's eligibility for each screening criterion.

TABLE 1: SCREENING FOR LAND USE PROJECTS EXEMPT FROM VMT ANALYSIS

Screening Criteria	Description	Result
1. Transit Priority (TPA) Screening	Projects located within a TPA (i.e., within a half mile of an existing major transit stop or an existing stop along a high-quality transit corridor) are presumed to have a less-than-significant impact on VMT.	Does not meet.
2. Low VMT Area Screening	Land use projects located within a low VMT-generating zone that can reasonably be expected to generate VMT per service population that is similar to the existing land uses in the low VMT area are presumed to have a less-than-significant VMT impact.	Does not meet.
3. Project Type Screening	Local-Serving Retail under 50,000 square feet, Local Essential Services, and projects generating less than 110 daily vehicle trips are presumed to have a less-than-significant impact on VMT.	Does not meet.

The Project was not found to be eligible for VMT screening and, consistent with City Guidelines, a project-level VMT analysis should be performed.

VMT ASSESSMENT FOR ROUTINE PROJECTS

WESTERN RIVERSIDE COUNCIL OF GOVERNMENTS (WRCOG) VMT TOOL

As described in the City Guidelines, WRCOG provides a VMT Calculator as an alternative function to mimic the results of Riverside County Transportation Model (RIVCOM) for VMT analysis on routine projects. RIVCOM is a travel demand model used to determine if the project has a significant impact. RIVCOM version 4.0.1 was released in January 2024 and is the most current sub-regional modeling tool for Western Riverside County.

Routine projects are simple in nature and are similar to other standard land uses in the City and model. The calculator can estimate the project VMT based on the project type, size, location, and average travel distance to the project site. The results can provide an expectation of the project VMT as compared to the adopted threshold to estimate if a significant impact will occur without the need to run RIVCOM.

The VMT Calculator can be sufficient to estimate VMT impact for routine projects with similar land use types in the project traffic analysis zone (TAZ). The VMT Calculator can be used to determine if the proposed project is similar in nature to the uses within the project TAZ. If the proposed project land use differs from the assumed land use in a project TAZ, it is not appropriate to assume that a project will result in similar VMT or trip length characteristics, and a full model run would be recommended.

As shown in Attachment B, Exhibits B-1 & B-2, our review of the existing land uses represented in the Project's TAZ (TAZ 1100) in the base year model contains low levels of employment, none of which are consistent with the proposed Project. In addition, the cumulative year model also contains low levels of employment. Therefore, the land use information represented in the base year and cumulative year models is not consistent with the proposed Project. The Project would increase employment as compared to what is contained in its TAZ, which could alter travel distances and travel patterns. The VMT assessment for routine projects is not applicable in this case and, consistent with City Guidelines, a full VMT assessment is required.

TRAFFIC MODELING METHODOLOGY

Consistent with City Guidelines, a project-level VMT analysis shall be conducted using RIVCOM. RIVCOM is a useful tool to estimate VMT as it considers interaction between different land uses based on socio-economic data such as population, households, and employment. The calculation of VMT for land use projects is based on the total number of trips generated and the average trip length of each vehicle type.

VMT ANALYSIS METHODOLOGY

As stated within the City's Guidelines, the analysis should include project-generated VMT and the project effect on VMT estimates for the Project TAZ under both baseline and cumulative conditions. For the purposes of this analysis, the Project's VMT estimates have been prepared using the Origin/Destination method to estimate Project-generated VMT and Boundary method to estimate the Project's effect on VMT. VMT has been presented as total VMT and total VMT per service population (i.e., population and employees). Total VMT represents all VMT generated by the Project on a typical weekday and total VMT per service population is an efficiency metric representing total VMT generated on a typical weekday per person who works at the Project or travels to the Project for another purpose.

ORIGIN/DESTINATION METHOD

The Origin/Destination (OD) method for calculating VMT sums all weekday VMT generated by trips with at least one trip-end in the study area (i.e., Project boundary or City boundary) and tracks those trips to their origin or destination. Origins are all vehicle trips that start in a specific TAZ, while destinations are all vehicle trips that end in a specific TAZ. The OD method accounts for all trips (i.e., both passenger cars and trucks) and trip purposes and therefore provides a more complete estimate of project-generated VMT.

BOUNDARY VMT METHOD

The boundary method is the sum of all weekday VMT on the roadway network within a designated boundary (i.e., City boundary or other designated geographic area). The boundary method estimates VMT by multiplying vehicle trips on each roadway segment within the boundary by that segment's length. This approach consists of all trips, including those trips that do not begin or end in the designated boundary. Consistent with City Guidelines, the City of Menifee was used as the boundary for this assessment, as "citywide" has been identified as the basis of measurement.

VMT METRIC AND SIGNIFICANCE THRESHOLD

The City of Menifee has adopted the following thresholds of significance related to VMT for land use projects. The following thresholds are to be applied to determine potential project-generated VMT impacts:[1]

[1] City Guidelines; Page 15

The City of Menifee has adopted the following thresholds of significance related to VMT for land use projects. The following thresholds are to be applied to determine potential project-generated VMT impacts:[2]

1. The baseline project-generated VMT per service population exceeds the County of Riverside General Plan Buildout VMT per service population, or
2. The cumulative project-generated VMT per service population exceeds the County of Riverside General Plan Buildout VMT per service population.

As identified in the City Guidelines, the impact threshold of the County of Riverside General Plan Buildout using the latest version of RIVCOM is **33.6 VMT per service population**.

In addition, the Project's effect on VMT would be considered significant if it results in one of the following two conditions are to be satisfied:

1. The baseline link-level[3] Citywide boundary VMT per service population to increase under the plus project condition compared to the no project condition, or
2. The cumulative link-level Citywide boundary VMT per service population to increase under the plus project condition compared to the no project condition.

PROJECT VMT ESTIMATES

To estimate project-generated VMT, standard land use information such as building square footage must first be converted into a RIVCOM-compatible dataset. The RIVCOM model utilizes socio-economic data (SED) (e.g., population, households, and employment) for the purposes of vehicle trip estimation. Table 2 summarizes the SED inputs used to represent the Project. Project SED data was then coded into the Project's TAZ to isolate Project-generated VMT.

TABLE 2: EMPLOYMENT ESTIMATES

Land Use	Quantity (in SF)	Employment Density Factor[1]	Estimated Employees
Industrial	829,755	1 employee per 1,030 SF	806

[1] Riverside County General Plan

Project-generated VMT and a comparison to the City's impact threshold is presented in Table 3. The Project is estimated to generate VMT per service population exceeding the City's adopted impact threshold. RIVCOM output information can be found in Attachment C.

[2] City Guidelines; Page 15

[3] Link-Level refers to the measurement of the total miles driven by vehicles on a specific road segment or link within a transportation network.

TABLE 3: PROJECT VMT PER EMPLOYEE

	Baseline	Cumulative
Employment	806	806
VMT	38,991	35,290
VMT/Employee	48.4	43.8
City Threshold	33.6	33.6
Exceeds Threshold?	Yes	Yes

VMT REDUCTION STRATEGIES

Table 4 illustrates the amount in which the Project exceeds the City's impact threshold for baseline conditions and the resulting reduction in VMT needed to bring the Project below the threshold.

TABLE 4: REQUIRED VMT REDUCTION

	Project
% VMT Reduction Required	30.6%
Total VMT above Threshold	11,909

The California Air Pollution Control Officers Association (**CAPCOA**) Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity (October 2024) (**Handbook**) (2) has been utilized to determine trip reduction measures that would be applicable to the Project. The Handbook describes methods to quantify reductions in greenhouse gas emissions and, in the case of Transportation measures (i.e., trip reduction strategies), the associated reductions to VMT. This evaluation will focus on a review of the Handbook's Transportation measures that are determined to be applicable to the Project.

SELECTING MEASURES

To determine which Transportation measures should be considered from the Handbook, land use type, scale, and locational context are each identified as key factors for determining an individual measure's applicability to a development project. The Handbook contains a fact sheet for each measure that describes the measure, locational context, scale of application, implementation requirements, and other considerations that should be reviewed to determine a measure's applicability.

Project Type

Project type is an important consideration when determining which measures are applicable for consideration. For example, measures associated with neighborhood design are not applicable to an office project, whereas trip reduction programs intended to reduce employee commute VMT would not be applicable to an apartment project.

Scale

The Handbook identifies that measures can be applied at different scales or geographic levels, however, "some measures may only be applicable at the project-level, whereas others may be more appropriate within a broader planning context such as for a general plan or climate action plan." The

geographic levels considered in the Handbook include Project/Site and Plan/Community. Project/Site applies to measures that can reduce VMT at the scale of an individual development project or employer. Plan/Community refers to measures that reduce VMT at the scale of a specific plan, general plan, or climate action plan. Transportation measures can be quantified at either the Project/Site scale or the Plan/Community scale, but never both.[4]

Locational Context

The Handbook describes locational context as "used to identify emission reduction measures within the transportation sector that are appropriate in certain types of neighborhoods differentiated by transportation characteristics and level of development (e.g., urban, rural, and suburban)." More specifically, urban, rural, and suburban are defined as follows.

Urban: An area located within the central city with higher density land uses than in the suburbs. Often characterized by multi-family housing, tall office buildings, and dense retail.

Rural: An area characterized by little development. Compared to urban and suburban areas, rural areas have a lower density of residences, higher numbers of single-family residences, and higher numbers of vehicle dependent land use patterns. Where applicable, the Handbook provides three land use distinctions within the rural locational context category—R_a, R_b, and R_c. R_a refers to rural areas within a master-planned community. These rural areas often include a broad offering of amenities and services, which may be accessed by walking or other alternative forms of transportation. R_b refers to rural areas adjacent to a commuter rail station with convenient rail service to a major employment center. As the name implies, these rural areas have greater access to commuter rail as an alternative mode of transportation. R_c refers to rural areas with transit service and that are near jobs/services.

Suburban: An area characterized by dispersed, low-density, single-use, automobile dependent land use patterns, usually outside of the central city. Also known as a suburb.

The Project's locational context is determined to be suburban.

Transportation Measures

As noted in the Handbook, the Transportation section measures "promote transit and alternative transportation, support use of alternatively fueled vehicles, or encourage land use planning practices that reduce vehicle trips and vehicle miles traveled (VMT). Measures within the transportation sector are separated into seven subsectors: Land Use, Neighborhood Design, Parking or Road Pricing/Management, Transit, Trip Reduction Programs, Clean Vehicles and Fuels, and School Programs."[5] For the purposes of this evaluation, the measures listed within the Trip Reduction Programs subsector that are focused on reducing employee commute VMT would be most applicable to the Project's employment-generating land uses.

Trip Reduction Programs Subsector

Each fact sheet within the Trip Reduction Programs subsector was reviewed to determine each measure's applicability to the Project.

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[4] Handbook, Page 37
[5] Handbook, Page 30

The following explores all applicable mitigation measures for an employment project located in a suburban area. The quantification below assumes that potential future tenants implement the identified measures using default values supplied by the Handbook's calculation fact sheet. Generally, trip reduction programs are more appropriate for the occupant/tenant (i.e., employer) to implement and monitor rather than the building owner or developer. As such, any VMT reductions are estimates only, as the Project does not have known tenants.

T-7 Implement Commute Trip Reduction (CTR) Marketing

Future project employers shall implement a marketing strategy to promote a CTR program. Information sharing and marketing promote and educate employees about their travel choices to the employment location beyond single occupancy driving such as carpooling, taking transit, walking, and biking, thereby reducing VMT. The following features (or similar alternatives) of the marketing strategy are essential for effectiveness.

- On-site or online commuter information services.
- Employee transportation coordinators.
- On-site or online transit pass sales.
- Guaranteed ride home service.

TABLE 5: T-7 VMT CALCULATION VARIABLES

ID	Variable	Value	Unit	Source
Output				
A	Percent reduction in GHG emissions from project/site employee commute VMT	0-4.0	%	calculated
User Inputs				
B	Percent of employees eligible for program	0-100	%	user input
Constants, Assumptions, and Available Defaults				
C	Percent reduction in employee commute vehicle trips	-4	%	TRB 2010
D	Adjustment from vehicle trips to VMT	1	unitless	assumed

$$A = B \times C \times D$$

Project employers will provide their employees with materials and online resources as a means to promote the commute trip reduction program. As calculated for the Project, with proper implementation and 90%[6] of the Project's employees eligible, this design feature is expected to reduce home-based work (HBW) attraction VMT by 3.6%.

T-8 Provide Ridesharing Program

The Project will provide a ridesharing program and establish a transportation management association. Ridesharing encourages carpooled vehicle trips in place of single-occupied vehicle trips,

[6] Employees who might not be able to participate could include those who work nighttime hours when transit and rideshare services are not available or employees who are required to drive to work as part of their job duties. As the Project is estimated to operate during typical business hours, it is expected that 90% of the employees will be operating during hours in which services associated with reduction measures are available.

thereby reducing the number of trips and VMT. Ridesharing must be promoted through a multifaceted approach. Examples include the following.

- Designating a certain percentage of desirable parking spaces for ridesharing vehicles.
- Designating adequate passenger loading and unloading and waiting areas for ridesharing vehicles.
- Providing an app or website for coordinating rides.

TABLE 6: T-8 VMT CALCULATION VARIABLES

ID	Variable	Value	Unit	Source
Output				
A	Percent reduction in GHG emissions from project/site employee commute VMT	0-8.0	%	calculated
User Inputs				
B	Percent of employees eligible for program	0-100	%	user input
Constants, Assumptions, and Available Defaults				
C	Percent reduction in employee commute VMT	-4	%	SANDAG 2019

$$A = B \times C$$

As calculated for the Project, with proper implementation and generally 90%[7] of the Project's employees eligible, the Project is expected to reduce VMT by 3.6%.

T-10 Provide End-of-Trip Bicycle Facilities

This measure is listed in the Handbook as available to projects in a suburban setting. As described in the Handbook, "the measure will install and maintain end-of-trip facilities for employee use. End-of-trip facilities include bike parking, bike lockers, showers, and personal lockers. The provision and maintenance of secure bike parking and related facilities encourages commuting by bicycle, thereby reducing VMT and GHG emissions."[8] The fact sheet for this measure was utilized to calculate the Project's potential VMT reduction.

[7] Employees who might not be able to participate could include those who work nighttime hours when transit and rideshare services are not available or employees who are required to drive to work as part of their job duties. As the Project is estimated to operate during typical business hours, it is expected that 90% of the employees will be operating during hours in which services associated with reduction measures are available.

[8] Handbook, Page 100

TABLE 7: T-10 VMT CALCULATION VARIABLES

ID	Variable	Value	Unit	Source
Output				
A	Percent reduction in GHG emissions from project/site employee commute VMT	0.1-4.4	%	calculated
User Inputs				
	None			
Constants, Assumptions, and Available Defaults				
B	Bike mode adjustment factor	1.78 or 4.86[1]	unitless	Buehler 2012
C	Existing bicycle trip length for all trips in region	2.2	miles	FHWA 2017a
D	Existing vehicle trip length for all trips in region	11.7	miles	FHWA 2017a
E	Existing bicycle mode share for work trips in region	0.4	%	FHWA 2017b
F	Existing vehicle mode share for work trips in region	95.3	%	FHWA 2017b

[1]The bike mode adjustment factor should be provided by the user based on type of bike facility. A study found that commuters with showers, lockers, and bike parking at work are associated with 4.86 times greater likelihood to commute by bicycle when compared to individuals without any bicycle facilities at work. Individuals with bike parking, but no showers and lockers at the workplace, are associated with 1.78 times greater likelihood to cycle to work than those without trip-end facilities.

$$A = \frac{C \times \left(E - (B \times E)\right)}{D \times F}$$

This will promote an alternative mode of commuting for employees. As calculated, the Project will reduce VMT by 0.1%.

TOTAL VMT REDUCTIONS

The Handbook states that effectiveness levels for multiple measures within a subsector may be multiplied to determine a combined effectiveness level. Because the combination of measures and independence of measures are complicated, the Handbook recommends that measure reductions within a subsector be multiplied unless the user can provide substantial evidence indicating that emission reductions are independent of one another and that they should therefore be added. Each subsector has a maximum allowable reduction. These were derived by combining the maximum allowable reduction of each individual non-mutually-exclusive measure within the subsector. As all the Project Design Features above fall under the Subsector of "Trip Reduction Programs," the Handbook states that the "Trip Reduction Subsector" has a maximum reduction of 45%. Therefore, a project cannot exceed the maximum allowable reduction. The Handbook provides the following equation for combining Subsector reductions:

$$Reduction_{Subsector} = 1 - [(1 - A) \times (1 - B) \times (1 - C) \dots]$$

The Project's VMT reductions are as follows:

$$-7.2\% = 1 - [(1 - 3.6\%) \times (1 - 3.6\%) \times (1 - 0.1\%)]$$

As outlined in the VMT reduction calculations above, the inclusion of the VMT mitigation measures is expected to reduce the Project's VMT impact by 7.2%. However, even with implementation and monitoring of these available trip reduction measures, the Project's VMT impact cannot be reduced to the required 30.6% needed to meet the City's threshold.

PROJECT'S CUMULATIVE EFFECT ON VMT

The Project's cumulative effect on VMT has been calculated using the boundary method. Land use information representing the proposed land use changes contemplated by the Project were coded into the Project TAZ to represent the "With Project" condition. Table 8 summarizes the boundary VMT under the No Project and With Project scenarios for both baseline and cumulative conditions and any increase to VMT per service population would be considered to have a significant cumulative VMT impact.

TABLE 8: CUMULATIVE BOUNDARY VMT

	Service Population	Boundary VMT	VMT per Service Population	Exceeds Threshold?
Citywide Baseline No Project	116,416	1,962,111	16.9	-
Citywide Baseline With Project	117,222	1,963,503	16.8	No
Citywide Cumulative No Project	155,312	2,529,895	16.3	-
Citywide Cumulative With Project	156,118	2,532,839	16.2	No

Boundary VMT increases under the With Project scenario for both baseline and cumulative conditions, which is expected as additional development is introduced into the model. However, to evaluate the efficiency of a land use project or plan, boundary VMT is divided by the service population to establish a per service population efficiency metric. Using this approach, the resulting VMT per service population is reduced in the With Project scenario under both baseline and cumulative conditions.

CONCLUSION

Based on the results of the VMT analysis, the following findings are made:

- The Project was evaluated against the screening criteria provided in the City Guidelines. The Project does not meet any of the applicable screening criteria that would exempt it from further VMT analysis.
- The Project was analyzed using the City's routine project assessment procedures. Due to inconsistencies between the Project's proposed land use assumptions and those represented in the default model, a customized VMT analysis using the RIVCOM travel demand model was conducted to provide a more accurate evaluation.
- The Project-generated VMT per service population was determined to exceed the City's VMT impact threshold under both baseline and cumulative conditions, even with the application of feasible mitigation measures.
- The Project's cumulative effect on VMT was found to be reduced in the With Project scenario compared to the No Project scenario, under both baseline and cumulative conditions, which is below the City's cumulative impact threshold.

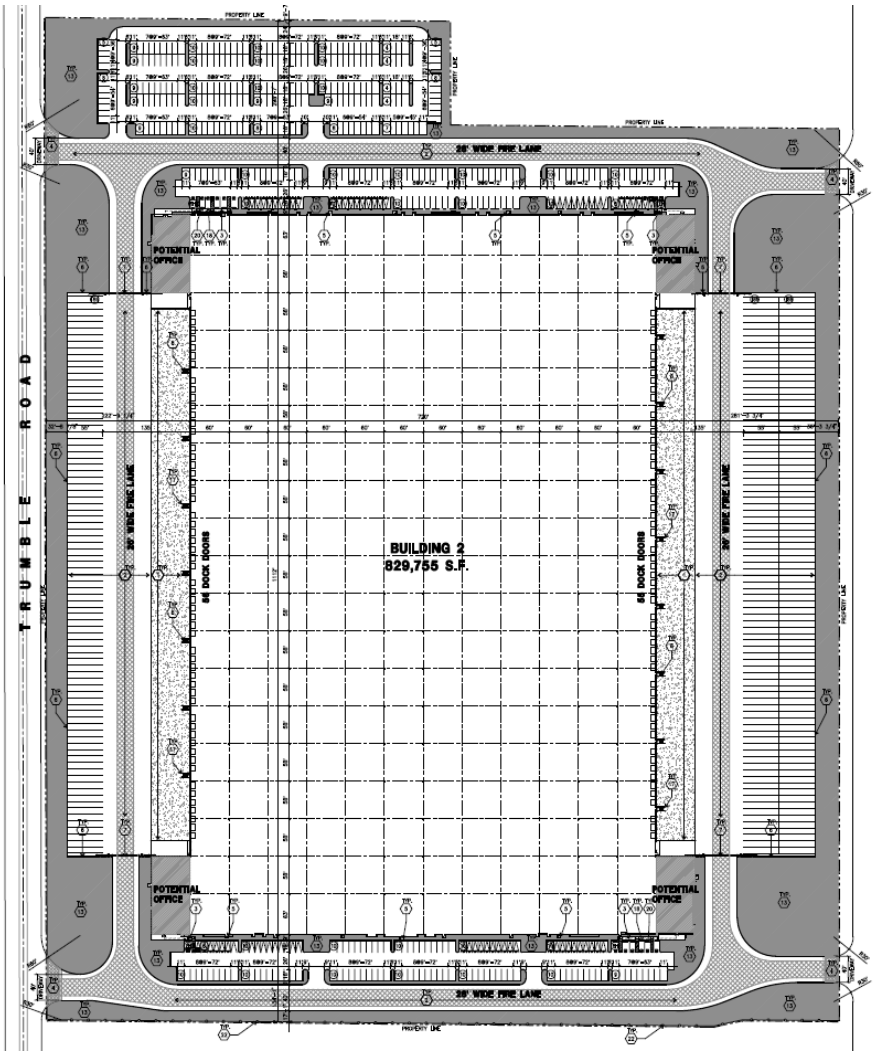
If you have any questions, please contact me directly at aso@urbanxroads.com.

REFERENCES

1. **City of Menifee.** *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled.* City of Menifee : s.n., January 2022.
2. **CAPCOA.** *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity.* October 2024.

ATTACHMENT A:
PROJECT SITE PLAN

EXHIBIT A-1: PROJECT SITE PLAN



ATTACHMENT B:
WRCOG VMT TOOL RESULTS

EXHIBIT B-1: RIVCOM 2018

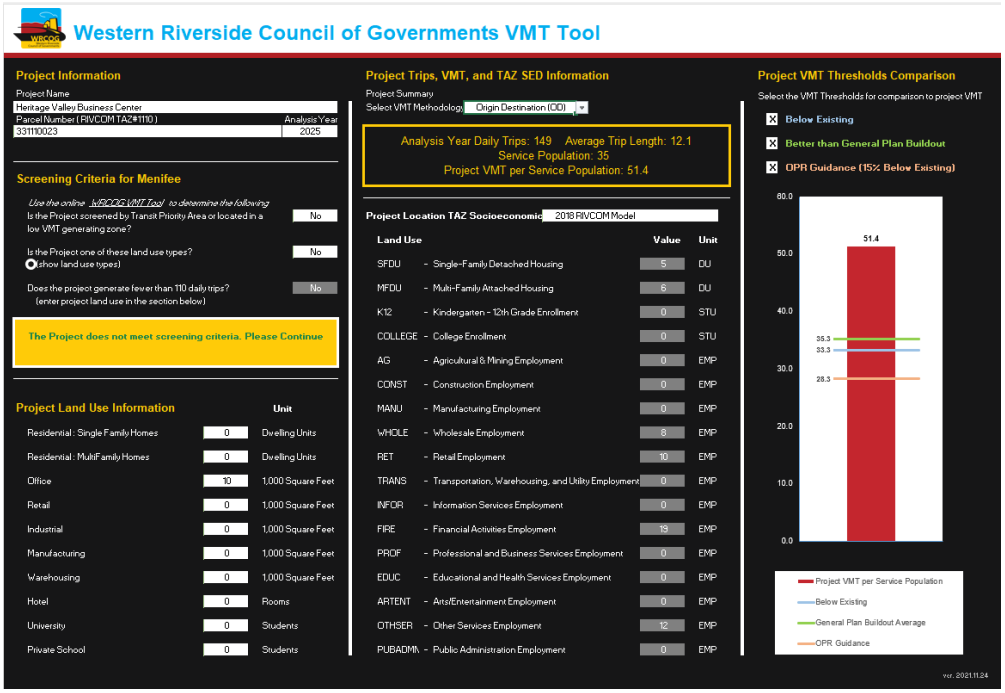
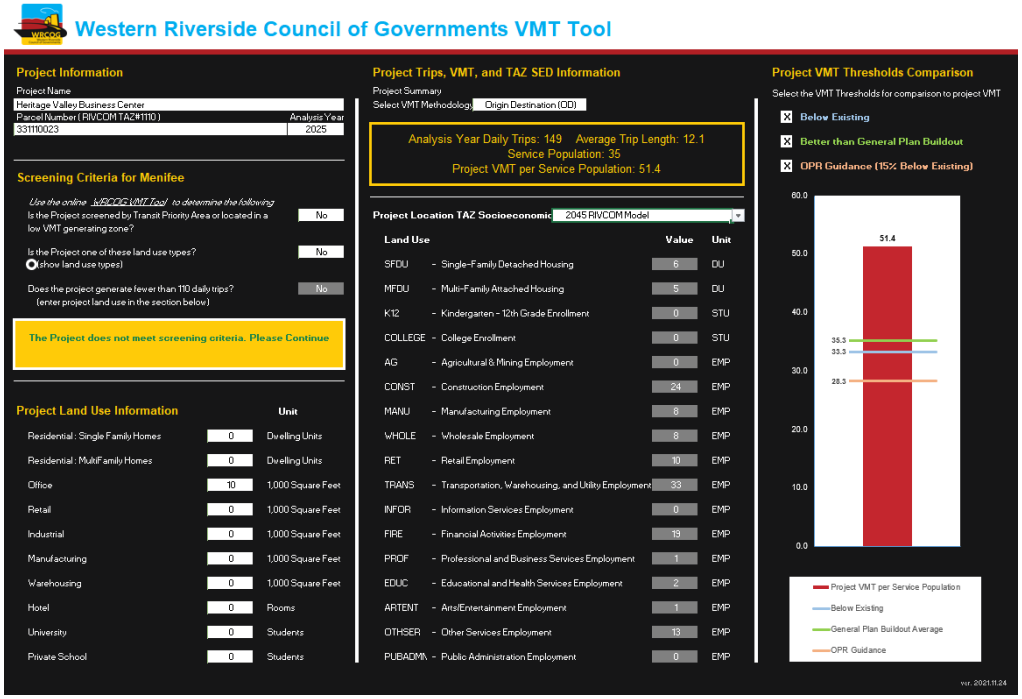


EXHIBIT B-2: RIVCOM 2045



ATTACHMENT C:
RIVCOM OUTPUT DATA

TABLE C-1: RIVCOM OUTPUT

	2018	2045
TAZ	1110	1110
Daily_Home-Based (incl. IEHB) Prod VMT	862.345459	847.064331
Daily_HBW (incl. EIHBW) Attr VMT	17851.56445	15636.66406
Daily_Total Auto OD From VMT	10094.24219	8920.05957
Daily_Total Auto OD To VMT	10902.92188	9663.423828
Daily_Total Auto OD Intra VMT	1.367812	0.722006
Daily_Total Truck OD From VMT	9631.291016	8340.487305
Daily_Total Truck OD To VMT	9658.610352	8365.577148
Daily_Total Truck OD Intra VMT	28.094749	19.569321
Daily_Total OD From VMT	19725.5332	17260.54688
Daily_Total OD To VMT	20561.53125	18029.00195
Daily_Total OD Intra VMT	29.462563	20.291325
Daily_Total_TripLen	18.726892	15.607257
Population	0	0
Employment	806	806
Enrollment	0	0