APPENDIX G

TRANSPORTATION

APPENDIX G.1

URBAN-F

Traffic Analysis

URBAN | CROSSROADS

HILLWOOD ETHANAC (DPR 22-00030)

TRAFFIC ANALYSIS

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Reference Number	Agency	Date
15109-13 TA Report	City of Perris	December 15, 2023

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LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
CA MUTCD	California Manual on Uniform Traffic Control Devices
Caltrans	California Department of Transportation
CMP	Congestion Management Program
DIF	Development Impact Fee
E+P	Existing Plus Project
EAC	Existing Plus Ambient Growth Plus Cumulative
EAPC	Existing Plus Ambient Growth Plus Cumulative Plus Project
HCM	Highway Capacity Manual
ITE	Institute of Transportation Engineers
LOS	Level of Service
NCHRP	National Cooperative Highway Research Program
PCE	Passenger Car Equivalent
PHF	Peak Hour Factor
Project	Hillwood Ethanac
RCTC	Riverside County Transportation Commission
RIVCOM	Riverside County Model
RIVTAM	Riverside County Transportation Analysis Model
RTA	Riverside Transit Agency
TA	Traffic Analysis
TUMF	Transportation Uniform Mitigation Fee
v/c	Volume to Capacity
VMT	Vehicles Miles Traveled
vphgpl	Vehicles per Hour Green per Lane
WRCOG	Western Riverside Council of Governments

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1 INTRODUCTION

This report presents the results of the Traffic Analysis (TA) for the proposed Hillwood Ethanac project (Project), which is located north of Ethanac Road between Trumble Road and Sherman Road within the City of Perris, as shown on Exhibit 1-1.

The purpose of this traffic analysis is to evaluate the potential deficiencies related to traffic and circulation system operations that may result from the development and operation of the proposed Project, and to recommend improvements necessary to resolve potential deficiencies in order to achieve acceptable circulation system operational conditions. This report has been prepared in accordance with the approved Project Traffic Study Scoping agreement developed through consultation with City of Perris staff, which is provided in Appendix 1.1 of this report. The scoping agreement provides an outline of the Project study area, trip generation, trip distribution, and analysis methodology.

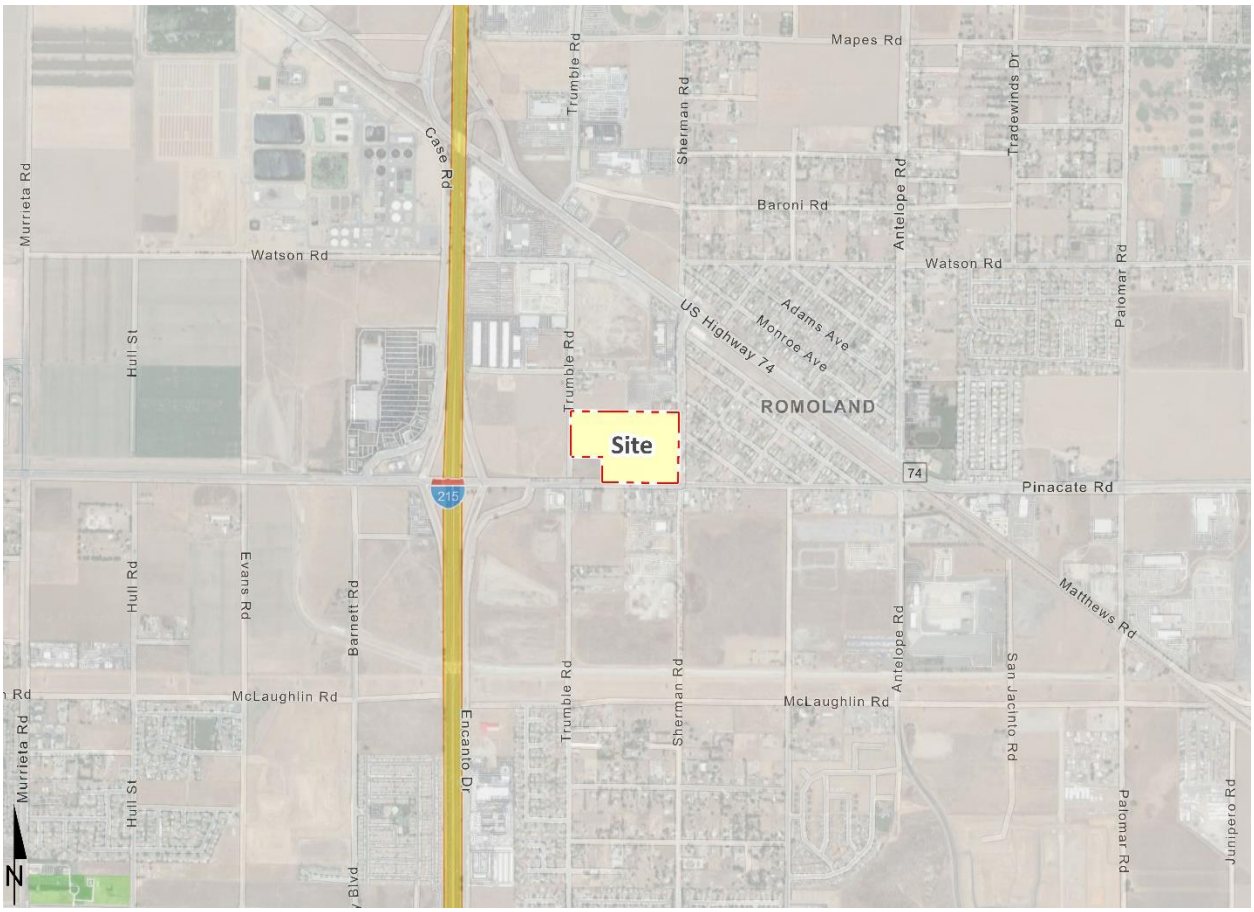
1.1 SUMMARY OF FINDINGS

The Project is to construct the following improvements as design features in conjunction with development of the site:

- Construct driveways on Trumble Road with stop controls for the westbound traffic (Driveway 1 and Driveway 2). Both driveways will accommodate ingress and egress truck access to and from the south on Trumble Road.
- Construct driveways on Ethanac Road with stop controls for the southbound traffic (Driveway 3 and Driveway 4). Both driveways will be restricted to right-in/right-out access only and will serve passenger cars. The Project will construct a median on Ethanac Road that will restrict access at Driveway 3 and Driveway 4 along Ethanac Road to right-in/right-out access only.
- Project to improve Trumble Road at its ultimate half-section as a Major Collector (78-foot right-of-way, 56-foot curb-to-curb) between Ethanac Road and the northern Project boundary consistent with the City of Perris General Plan Circulation Element. There is currently a 20-foot half-width right-of-way dedicated on Trumble Road along the Project's western boundary, however, the Project will dedicate an additional 19-foot right-of-way.
- Project to improve Sherman Road at its ultimate half-section as a Local roadway (60-foot right-of-way, 40-foot curb-to-curb) between Ethanac Road and the northern Project boundary consistent with the City of Perris General Plan Circulation Element. The Project will accommodate a 32-foot paved section along its frontage and a 36-foot paved section along its frontage towards the intersection of Sherman Road & Ethanac Road.
- Project to improve Ethanac Road at its ultimate half-section as an Expressway (184-foot right-of-way, 134-foot curb-to-curb) between Trumble Road and Sherman Road consistent with the City of Perris General Plan Circulation Element. There is currently a 30-foot half-width right-of-way dedicated on Ethanac Road along the Project's southern boundary, however, the Project will dedicate an additional 62-foot right-of-way. Additional right-of-way will be needed at the intersection of Trumble Road and Ethanac Road in order to accommodate turn lanes. The Project will construct a median that will restrict access at Driveway 3 and Driveway 4 along Ethanac Road to right-in/right-out access only.

Additional details and intersection lane geometrics are provided in Section 1.6 *Recommendations* of this report.

EXHIBIT 1-1: LOCATION MAP



1.2 PROJECT OVERVIEW

The Project is to consist of a 412,348 square foot (sf) warehouse building. The existing zoning for the Project site is Commercial Community; the proposed zoning for the site is Light Industrial. The Project is proposed to be developed in a single phase with an anticipated Opening Year of 2025. A preliminary site plan of which the traffic study will be based on, is shown on Exhibit 1-2. Exhibit 1-3 shows the Project footprint which also identifies the off-site areas with potential off-street/drainage improvements. For the purposes of the trip generation, the Project will be evaluated assuming 50,000 SF of high-cube cold storage warehouse use and 362,348 SF of high-cube transload/short-term storage warehouse use. The following describes the access proposed for the site:

- Driveway 1 on Trumble Road – full access trucks only
- Driveway 2 on Trumble Road – full access trucks only
- Driveway 3 on Ethanac Road – right-in/right-out only for passenger cars
- Driveway 4 on Ethanac Road – right-in/right-out only for passenger cars

Regional access to the Project site is available from the I-215 Freeway via Ethanac Road interchange. Trips generated by the Project's proposed land uses have been estimated based on trip generation rates collected by the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition, 2021. (1) The Project is estimated to generate 618 two-way trip-ends per day on a typical weekday with 34 AM peak hour trips and 39 PM peak hour trips (actual vehicles). 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.

1.3 ANALYSIS SCENARIOS

For the purposes of this traffic study, potential deficiencies to traffic and circulation have been assessed for each of the following conditions:

- Existing (2022)
- Existing Plus Project (E+P)
- Existing Plus Ambient Growth Plus Cumulative (E+A+C) (2025)
- Existing Plus Ambient Growth Plus Project Plus Cumulative (E+A+P+C) (2025)
- Horizon Year (2045) Without Project
- Horizon Year (2045) With Project

1.3.1 EXISTING (2022) CONDITIONS

Information for Existing (2022) conditions is disclosed to represent the baseline traffic conditions as they existed at the time this report was prepared.

1.3.2 EXISTING PLUS PROJECT CONDITIONS

The E+P analysis determines any significant traffic operation and circulation system deficiencies that would occur on the existing roadway system in the scenario of the Project being placed upon Existing conditions.

EXHIBIT 1-2: SITE MAP

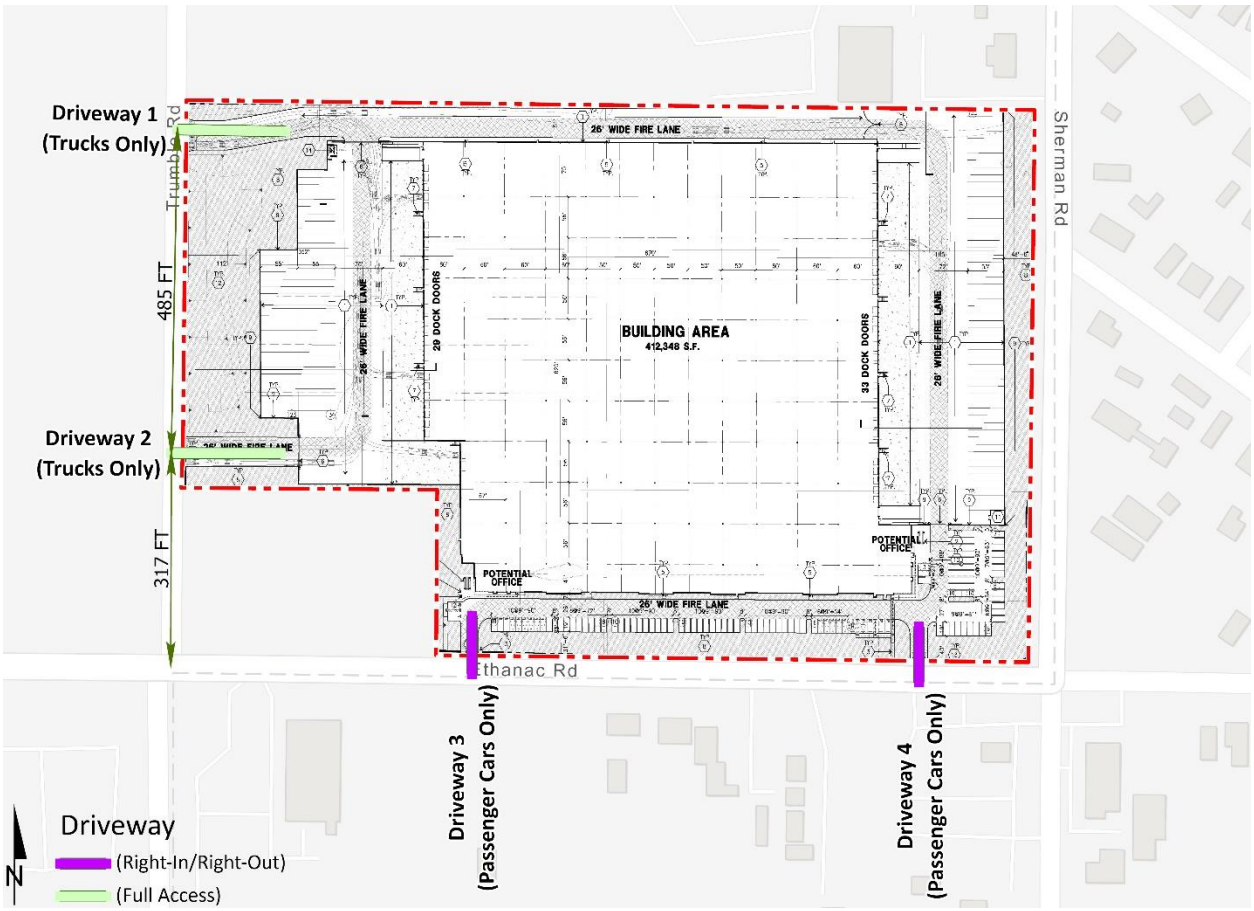
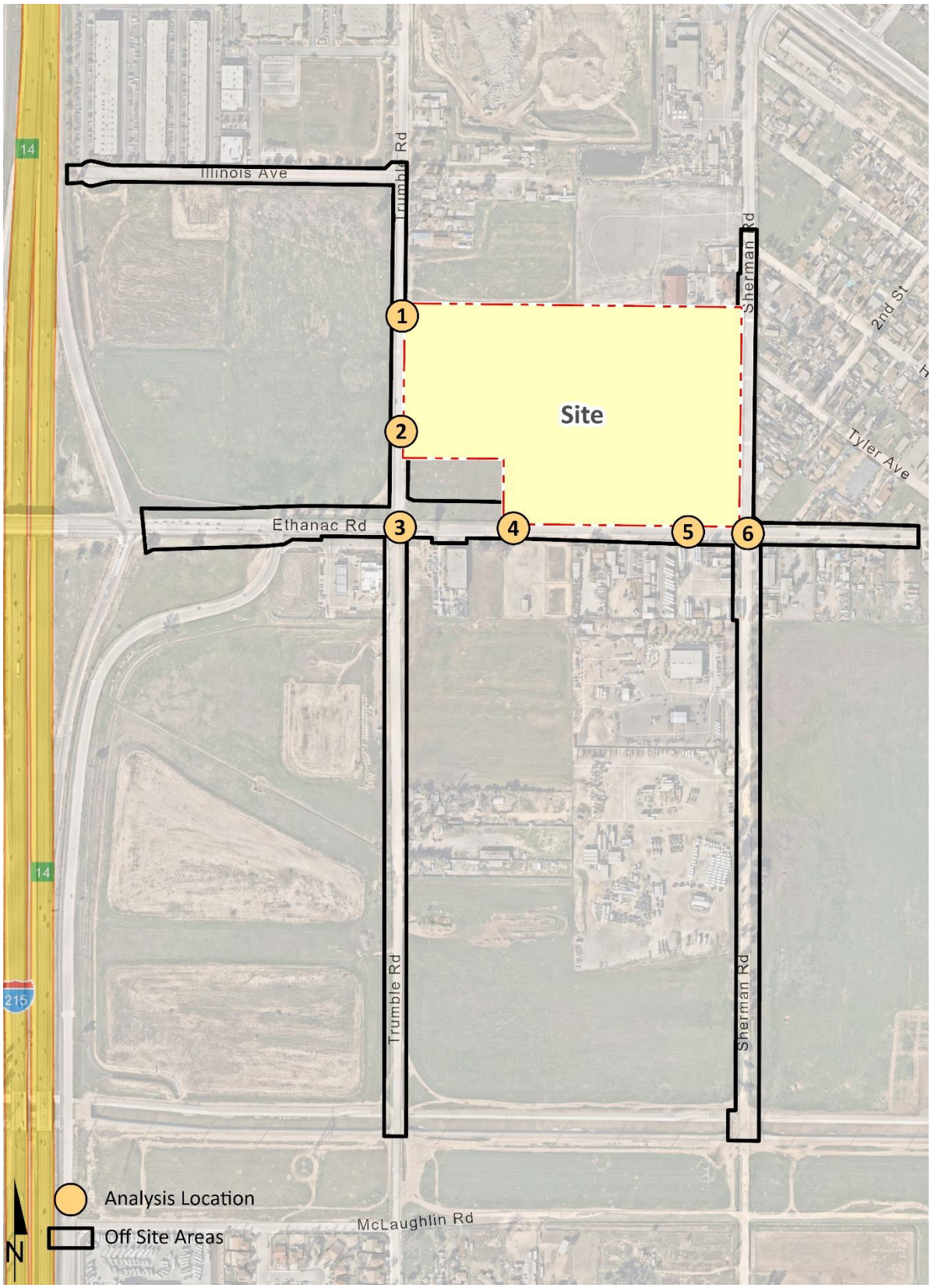


EXHIBIT 1-3: PROJECT BOUNDARY



1.3.3 EXISTING PLUS AMBIENT GROWTH PLUS CUMULATIVE & EXISTING PLUS AMBIENT GROWTH PLUS PROJECT PLUS CUMULATIVE (2025) CONDITIONS

The EAC and EAPC (2025) conditions analysis determines the potential circulation system deficiencies based on a comparison of the EAPC traffic conditions to EAC traffic conditions. The roadway network is similar to Existing conditions except for new connections/driveways to be constructed by the Project. To account for background traffic growth, an ambient growth factor from Existing (2022) conditions of 9.27% (3 percent per year, compounded over 3 years) is included for both EAC and EAPC (2025) traffic conditions. The assumed ambient growth factor is based on the requirements per the City of Perris and is consistent with other recently completed traffic studies in the area. The EAPC analysis is intended to identify "Opening Year" 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 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 2025 Opening Year time frame assumed for the Project. The resulting traffic growth utilized in this traffic study (ambient growth factor plus traffic generated by related projects) would therefore tend to overstate rather than understate background cumulative traffic deficiencies under 2025 conditions.

1.3.4 HORIZON YEAR (2045) CONDITIONS

Traffic projections for Horizon Year (2045) conditions were derived from the County of Riverside refined version of the Riverside County Transportation Analysis Model (RIVTAM) using accepted procedures for model forecast refinement and smoothing. Volumes from the current Riverside County Model (RIVCOM) were also reviewed but were deemed to be understated in the immediate vicinity of the Project. 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 and the City's Development Impact Fee (DIF), can accommodate the long-range cumulative traffic at the target Level of Service (LOS) identified in the City of Perris (lead agency) General Plan. (2) Each of these regional transportation fee programs are discussed in more detail in Section 8 *Local and Regional Funding Mechanisms*.

1.4 STUDY AREA

To ensure that this TA satisfies the City of Perris' traffic study requirements, Urban Crossroads, Inc. prepared a Project traffic study scoping package for review by City of Perris 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 agreement approved by the City is included in Appendix 1.1 of this TA.

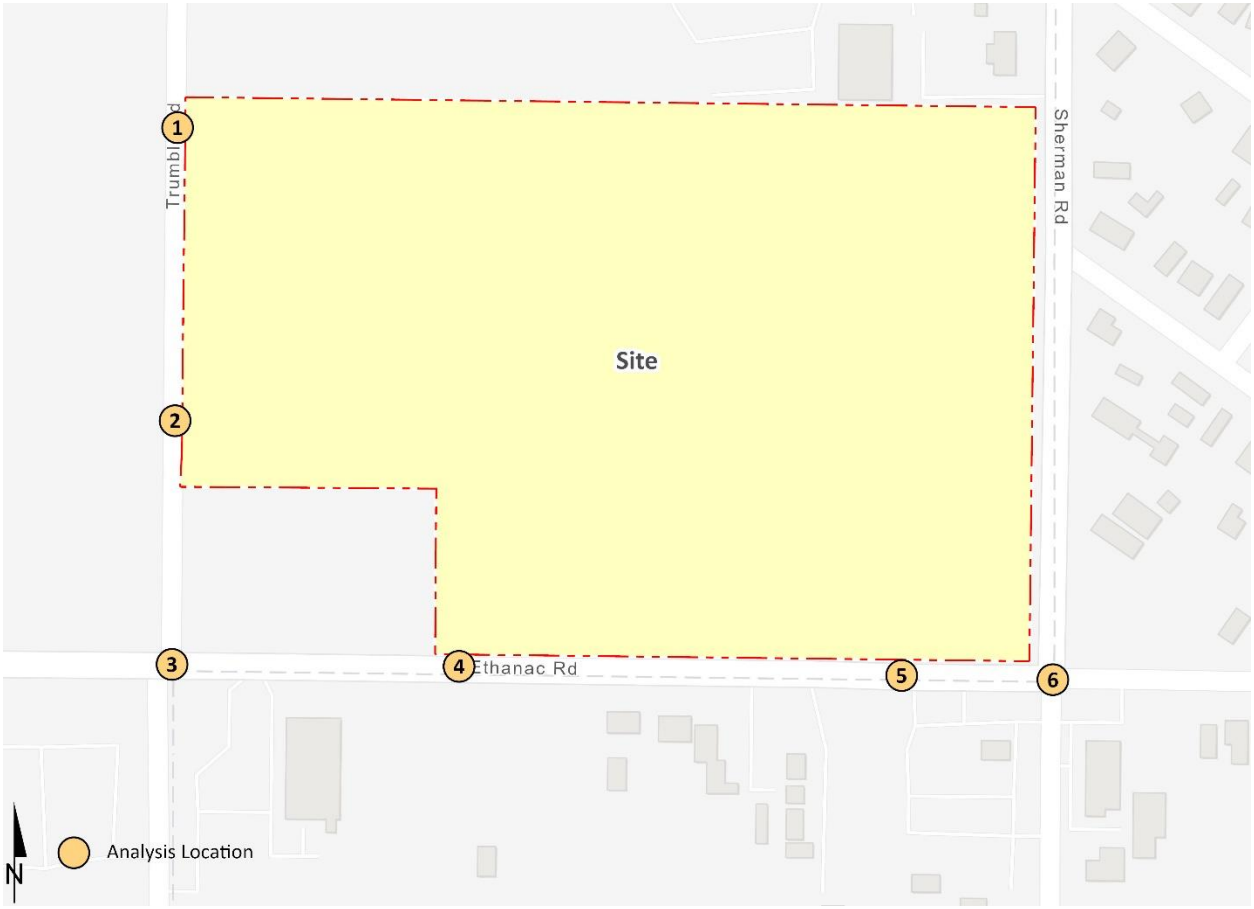
The 6 study area intersections shown on Exhibit 1-4 and listed in Table 1-1 were selected for evaluation in this TA based on consultation with City of Perris staff. At a minimum, the City's Guidelines requires the study area to include intersections where the Project is anticipated to contribute 50 or more peak hour trips per guidance from the City of Perris during the scoping process. (3) The "50 peak hour trip" criteria represent 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 and the City of Perris for estimating a potential area of influence (i.e., study area).

TABLE 1-1: INTERSECTION ANALYSIS LOCATIONS

#	Intersection	Jurisdiction	CMP Facility?
1	Trumble Rd. & Driveway 1	Perris	No
2	Trumble Rd. & Driveway 2	Perris	No
3	Trumble Rd. & Ethanac Rd.	Perris, Menifee	No
4	Driveway 3 & Ethanac Rd.	Perris, Menifee	No
5	Driveway 4 & Ethanac Rd.	Perris, Menifee	No
6	Sherman Rd. & Ethanac Rd.	Perris, Menifee, County	No

The intent of a Congestion Management Program (CMP) is to more directly link land use, transportation, and air quality, thereby prompting reasonable growth management programs that will effectively utilize new transportation funds, alleviate traffic congestion and related deficiencies, and improve air quality. The County of Riverside CMP became effective with the passage of Proposition 111 in 1990 and most recently updated in 2019 as part of the Riverside County Long Range Transportation Study. The Riverside County Transportation Commission (RCTC) adopted the 2019 CMP for the County of Riverside in December 2019. (4) There are no study area intersections identified as a Riverside County CMP intersection.

EXHIBIT 1-4: STUDY AREA



1.5 DEFICIENCIES

This section provides a summary of deficiencies by analysis scenario. Section 2 *Methodologies* provides information on the methodologies used in the analysis and Section 3 *Area Conditions*, Section 5 *E+P Traffic Conditions*, Section 6 *EAC & EAPC (2025) Conditions*, and Section 7 *Horizon Year (2045) Conditions* includes the detailed analysis. A summary of LOS results for all analysis scenarios is presented in Table 1-2.

1.5.1 EXISTING (2022) CONDITIONS

The following study area intersection is currently operating at an unacceptable LOS during the peak hours under Existing (2022) traffic conditions:

- Sherman Road & Ethanac Road (#6) – LOS E PM peak hour only

1.5.2 E+P CONDITIONS

Consistent with Existing (2022) conditions, the following study area intersection is anticipated to operate at an unacceptable LOS during the peak hours:

- Sherman Road & Ethanac Road (#6) – LOS E PM peak hour only

1.5.3 EAC & EAPC (2025) CONDITIONS

The following study area intersections are anticipated to operate at an unacceptable LOS during the peak hours EAC (2025) traffic conditions:

- Trumble Road & Ethanac Road (#3) – LOS F AM and PM peak hours
- Sherman Road & Ethanac Road (#6) – LOS F AM and PM peak hours

The following additional study area intersections are anticipated to operate at an unacceptable LOS during the peak hours under EAPC (2025) traffic conditions, in addition to the intersections identified under EAC (2025) traffic conditions:

- Driveway 3 & Ethanac Road (#4) – LOS F PM peak hour only
- Driveway 4 & Ethanac Road (#5) – LOS F PM peak hour only

TABLE 1-2: SUMMARY OF LOS

#	Intersection	Existing		E+P		EAC (2025)		EAPC (2025)		Horizon Year (2045) Without Project		Horizon Year (2045) With Project	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	Trumble Rd. & Driveway 1	N/A	N/A	●	●	N/A	N/A	●	●	N/A	N/A	●	●
2	Trumble Rd. & Driveway 2	N/A	N/A	●	●	N/A	N/A	●	●	N/A	N/A	●	●
3	Trumble Rd. & Ethanac Rd.	●	●	●	●	●	●	●	●	●	●	●	●
4	Driveway 3 & Ethanac Rd.	N/A	N/A	●	●	N/A	N/A	●	●	N/A	N/A	●	●
5	Driveway 4 & Ethanac Rd.	N/A	N/A	●	●	N/A	N/A	●	●	N/A	N/A	●	●
6	Sherman Rd. & Ethanac Rd.	●	●	●	●	●	●	●	●	●	●	●	●

● = A - D ● = E ● = F

1.5.4 HORIZON YEAR (2045) CONDITIONS

The following study area intersections are anticipated to operate at an unacceptable LOS under Horizon Year (2045) Without Project traffic conditions:

- Trumble Road & Ethanac Road (#3) – LOS F AM and PM peak hours
- Sherman Road & Ethanac Road (#6) – LOS F AM and PM peak hours

The following additional study area intersections are anticipated to operate at an unacceptable LOS during the peak hours, in addition to the intersections identified under Horizon Year (2045) Without Project traffic conditions:

- Driveway 3 & Ethanac Road (#4) – LOS F PM peak hour only
- Driveway 4 & Ethanac Road (#5) – LOS F PM peak hour only

1.6 RECOMMENDATIONS

This section provides a summary of deficiencies and recommended improvements. The same study area intersection deficiencies occur without and with Project traffic for all analysis scenarios (see Table 1-2), with the exception of the driveways along Ethanac Road which are anticipated to operate with a deficient level of service with the addition of Project traffic. As such, there are no direct project-related deficiencies, however, the Project would cumulatively contribute to each of the deficiencies identified in Table 1-2.

1.6.1 SITE ADJACENT AND SITE ACCESS RECOMMENDATIONS

The following recommendations are based on the minimum improvements needed to accommodate site access and maintain acceptable peak hour operations for the proposed Project. The site adjacent recommendations are shown on Exhibit 1-5. The site adjacent queuing analysis worksheets are provided in Appendix 1.2. It should be noted, the improvements within this section are considered Project design features and will be constructed by the Project. As such, they are included in the "With Project" analysis.

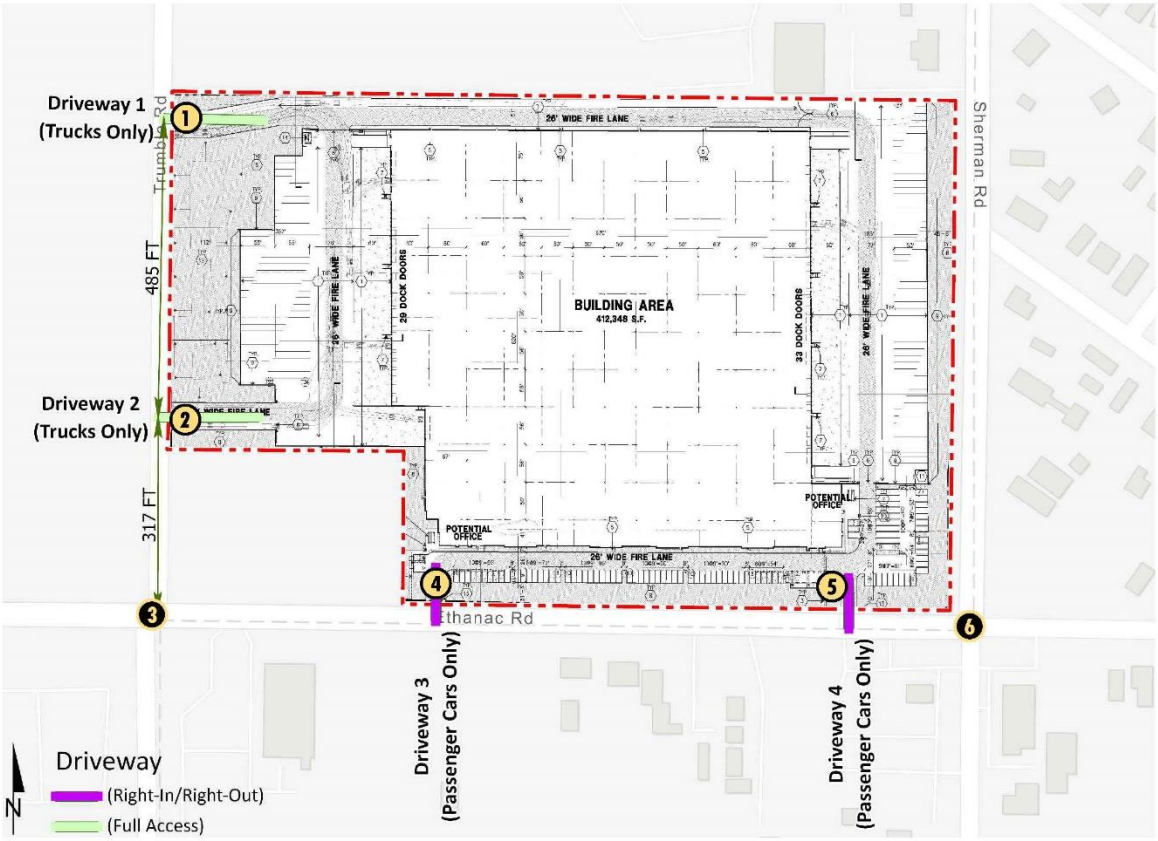
The existing lane configuration and traffic control should be maintained at the intersection of Trumble Road and Ethanac Road (#3). However, modifications may be necessary to the intersection in order to accommodate a westbound U-turn at the intersection of Trumble Road and Ethanac Road.

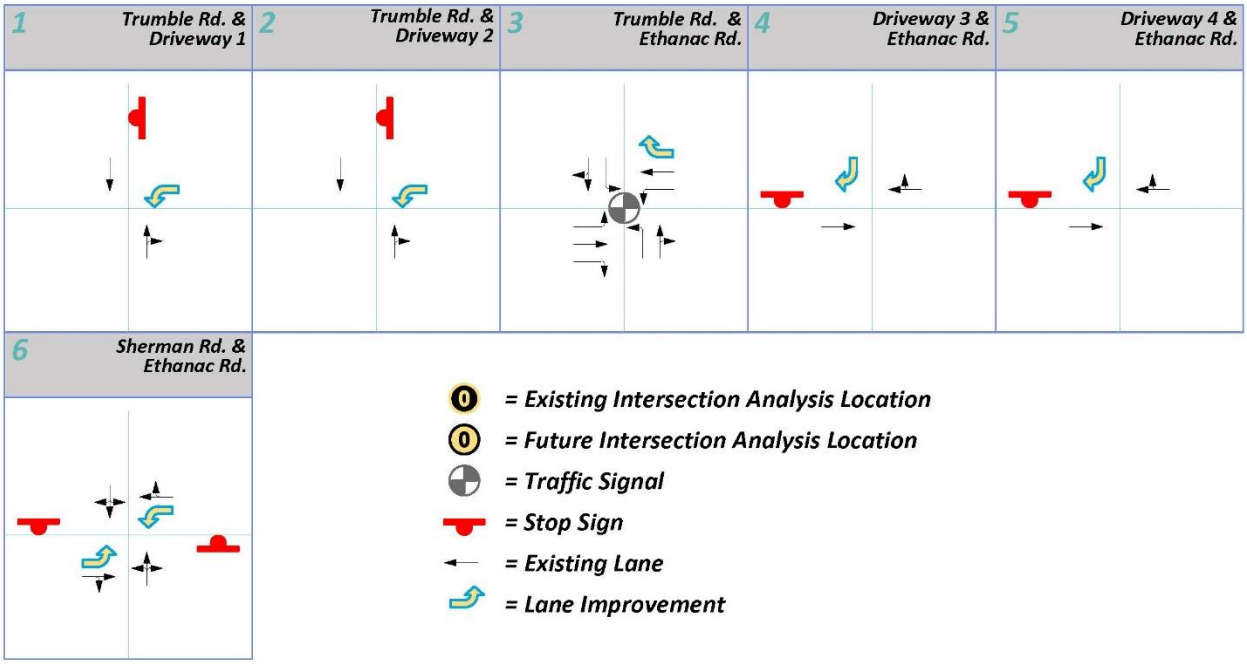
Recommendation 1 – Trumble Road & Driveway 1 (#1) – The following improvements are necessary to accommodate site access:

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

The driveway spacing has been reviewed and it has been determined that Driveway 1 on Trumble Road is consistent with the driveway spacing requirements for a Major Collector (330-foot spacing).

EXHIBIT 1-5: SITE ACCESS RECOMMENDATIONS





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

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

The driveway spacing for Driveway 2 on Trumble Road is 317-feet from Ethanac Road which does not meet the City's minimum intersection spacing criteria (330-feet). However, Driveway 2 will only provide northbound right turn and westbound left turn access for trucks (as all trucks would be directed to and from Ethanac Road). Queuing analysis results for Driveway 2 indicates that the proposed spacing of 317-feet is sufficient and no queuing issues or blockages are anticipated (see Appendix 1.2).

Recommendation 3 – Trumble Road & Ethanac Road (#3) – The following improvement is necessary to accommodate site access:

- Project to construct a westbound right turn lane.

Recommendation 4 – Driveway 3 & Ethanac Road (#4) – The following improvements are necessary to accommodate site access:

- Project to install a stop sign on the southbound approach (Project driveway).
- Project to construct a southbound right turn lane.
- Driveway will be restricted to right-in/right-out access only via a raised median to be constructed by the Project along the Project's frontage on Ethanac Road.

Recommendation 5 – Driveway 4 & Ethanac Road (#5) – The following improvements are necessary to accommodate site access:

- Project to install a stop sign on the southbound approach (Project driveway).
- Project to construct a southbound right turn lane.
- Driveway will be restricted to right-in/right-out access only via a raised median to be constructed by the Project along the Project's frontage on Ethanac Road.

Recommendation 6 – Sherman Road & Ethanac Road (#6) – The following improvements are necessary to accommodate site access:

- Project to construct an eastbound left turn lane.
- Project to construct a westbound left turn lane.

Recommendation 7 – Ethanac Road is an east-west oriented roadway located along the Project's southern boundary. Project to improve Ethanac Road at its ultimate half-section as an Expressway (184-foot right-of-way, 134-foot curb-to-curb) between Trumble Road and Sherman Road consistent with the City of Perris General Plan Circulation Element. There is currently a 30-foot half-width right-of-way dedicated on Ethanac Road along the Project's southern boundary, however, the Project will dedicate an additional 62-foot right-of-way. Additional right-of-way will be needed at the intersection of Trumble Road and Ethanac Road in order to accommodate turn lanes. The Project will construct a median that will restrict access at Driveway 3 and Driveway 4 along Ethanac Road to right-in/right-out access only. Improvements also include, but are not limited to, sidewalk, curb-and-gutter, and landscaping improvements on Ethanac Road between Trumble Road and Sherman Road.

Recommendation 8 – Trumble Road is a north-south oriented roadway located along the Project's western boundary. Project to improve Trumble Road at its ultimate half-section as a Major Collector (78-foot right-of-way, 56-foot curb-to-curb) between Ethanac Road and the northern Project boundary consistent with the City of Perris General Plan Circulation Element. There is currently a 20-foot half-width right-of-way dedicated on Trumble Road along the Project's western boundary, however, the Project will dedicate an additional 19-foot right-of-way. Improvements also include, but are not limited to, sidewalk, curb-and-gutter, and landscaping improvements on Trumble Road between the Project's northern boundary and Ethanac Road.

Recommendation 9 – Sherman Road is a north-south oriented roadway located on the Project's eastern boundary. Project to improve Sherman Road at its ultimate half-section as a Local roadway (60-foot right-of-way, 40-foot curb-to-curb) between Ethanac Road and the northern Project boundary consistent with the City of Perris General Plan Circulation Element. The Project will accommodate a 32-foot paved section along its frontage and a 36-foot paved section along its frontage towards the intersection of Sherman Road & Ethanac Road. Improvements also include, but are not limited to, sidewalk, curb-and-gutter, and landscaping improvements on Sherman Road between the Project's northern boundary and Ethanac Road.

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 Perris sight distance standards at the time of preparation of final grading, landscape, and street improvement plans.

A concept striping plan has been provided on Exhibit 1-6 which shows the proposed frontage improvements along the adjacent roadways of Trumble Road, Sherman Road, and Ethanac Road. The striping plan also demonstrates the U-turns at Trumble Road (westbound U-turn) and Sherman Road (eastbound U-turn).

1.6.2 OFF-SITE RECOMMENDATIONS

A summary of the off-site intersection improvements is provided in Table 1-3. These recommended improvements are consistent with or less than the geometrics assumed in the City of Perris and County of Riverside General Plan Circulation Elements. Improvements found to be included in the WRCOG TUMF program, City of Perris's (lead agency) DIF program, or any other pre-existing fee programs have been identified as such. For the improvements that do not appear in a pre-existing fee program have either been identified as Project construct obligations (as part of the frontage improvements) or applicable fair share. The off-site intersection improvements, consistent with Table 1-3, are shown on Exhibit 1-7. It should be noted, the final improvements and Project responsibility for such improvements is at the discretion of the City Engineer.

TABLE 1-3: SUMMARY OF IMPROVEMENTS BY ANALYSIS SCENARIO

#	Intersection Location	Jurisdiction	E+P	EAPC (2025)	Horizon Year (2045) With Project	Project Responsibility	Improvements in DIF[1,2]	Project Fair Share
3	Trumble Rd. & Ethanac Rd.	Perris, Menifee	Modify the traffic signal[5]	Same	Same	Construct	No	1.1%
				Add 2nd EB through lane	Same	Fees	Yes (TUMF)	
				Add 2nd WB through lane[4]	Same	Construct	Yes (TUMF)	
					Add 3rd EB through lane	Fair Share	No	
					Add 3rd WB through lane[4]	Construct	No	
4	Driveway 3 & Ethanac Rd.	Perris, Menifee	None	Add 2nd EB through lane	Same	Fees	Yes (TUMF)	1.1%
				Add 2nd WB through lane[4]	Same	Construct	Yes (TUMF)	
					Add 3rd EB through lane	Fair Share	No	
					Add 3rd WB through lane[4]	Construct	No	
5	Driveway 4 & Ethanac Rd.	Perris, Menifee	None	Add 2nd EB through lane	Same	Fees	Yes (TUMF)	1.1%
				Add 2nd WB through lane[4]	Same	Construct	Yes (TUMF)	
					Add 3rd EB through lane	Fair Share	No	
					Add 3rd WB through lane[4]	Construct	No	
6	Sherman Rd. & Ethanac Rd.	Perris, Menifee, County	Install a traffic signal[3]	Same	Same	Fair Share	No	1.0%
			Add NB left turn lane	Same	Same	Fair Share	No	
			Add SB left turn lane	Same	Same	Fair Share	No	
			Add EB left turn lane	Same	Same	Construct	No	
			Add WB left turn lane	Same	Same	Construct	No	
				Add 2nd NB left turn lane	Same	Fair Share	No	
				Add SB right turn lane	Same	Fair Share[6]	No	
				Add 2nd EB through lane	Same	Fees	Yes (TUMF)	
				Add EB right turn lane with overlap phasing	Same	Fair Share	No	
				Add 2nd WB through lane	Same	Fees	Yes (TUMF)	
				Add WB right turn lane	Same	Fair Share	No	
					Add NB right turn lane	Fair Share	No	0.5%
					Add 2nd EB left turn lane	Fair Share	No	
					Add 3rd EB through lane	Fair Share	No	
					Add 2nd WB left turn lane	Fair Share	No	
					Add 3rd WB through lane	Fair Share	No	

[1] Improvements included in regional/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] Traffic signal is warranted under existing conditions and is currently operating at a deficient LOS under Existing conditions. Typically the left turn pockets will be required with signalization.

[4] Project will accommodate the ultimate right-of-way along its frontage, however, striping for additional through lanes will depend on the future widening of Ethanac Road to the west and east of the Project.

[5] The Project will modify the traffic signal as part of the on-site and site adjacent Project improvements, as shown on the concept plans on Exhibit 1-6. However, it should be noted the traffic signal modification is not required per the intersection operations analysis.

[6] The Project will construct the pavement on Sherman Road along the Project's frontage, as shown on the concept striping plan and as required by the Project's conditions of approval and City of Perris requirements. The fair share percentage only applies for the future improvement of striping the southbound right turn lane improvement.

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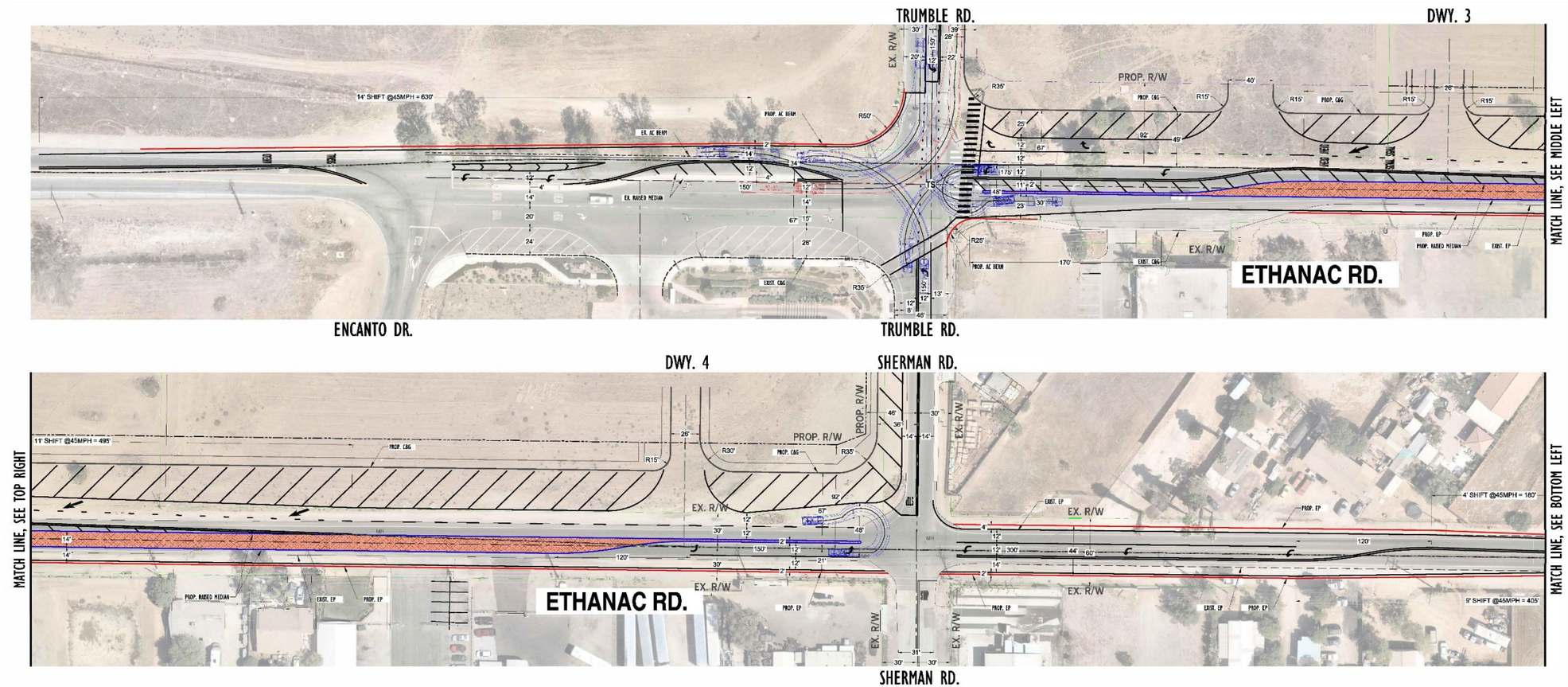
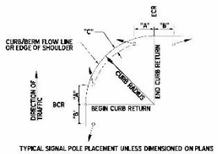
EXHIBIT 1-6: CONCEPT STRIPING RECOMMENDATIONS



POLE SCHEDULE

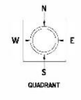
	POLE DATA				LUMINAIRE	SIGNAL MOUNTING			PED. PUSH BUTTON		POLE LOCATION			STRAIGHT ARM MOUNTED I.I.S.N.S.	REMARKS
NO.	TYPE	HEIGHT	SIG. M.A.	LUM. M.A.	L.E.D.	VEHICLE	MAST ARM	PEDESTRIAN	PHASE	QUAD.	A	B	C		
(A)	19-4-100	30'	30'	15'	70W	SV-1-T	2 MAS				15'	-	4'	Trumble Rd	F=12'
(B)	I-A	10'	-	-	-	TV-2-T	-	-	-	-	24'	-	4'	-	
(C)	26-4-100	30'	40'	15'	70W	SV-1-T	2 MAS	SP-1-T	-	-	12'	-	4'	Ethanac Rd	F=15'
(D)	15TS	30'		15'	70W	SV-2-T			8	W	14'	-	4'	-	
(E)	19-4-100	30'	30'	15'	70W	SV-1-T	2 MAS	SP-1-T	8	W	1'	-	3'	Trumble Rd	F=12'
(F)	I-A	10'	-	-	-	TV-2-T	-	SP-1-T	2	N	10'	-	4'		
(G)	19-4-100	30'	30'	15'	70W	SV-1-T	2 MAS	-	-	-	EX.	-	EX.	Ethanac Rd	F=12'
(H)	PPB POST	4'-5"	-	-	-	-	-	-	2	N	EX.	-	EX.	-	
(I)	15TS	30'	-	15'	70W	SV-1-T	-	SP-1-T	-	-	EX.	-	EX.	-	

EQUIPMENT IS EXISTING UNLESS SPECIFIED OTHERWISE; (N) = NEW
POTHOLE POLE LOCATIONS PRIOR TO ORDERING POLES.
EXACT POLE LOCATIONS TO BE DETERMINED BY ENGINEER IN THE FIELD.
EXISTING EQUIPMENT WILL BE VERIFIED DURING FINAL DESIGN.

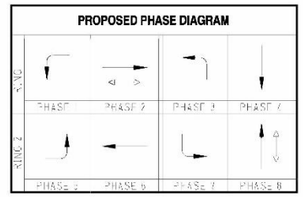


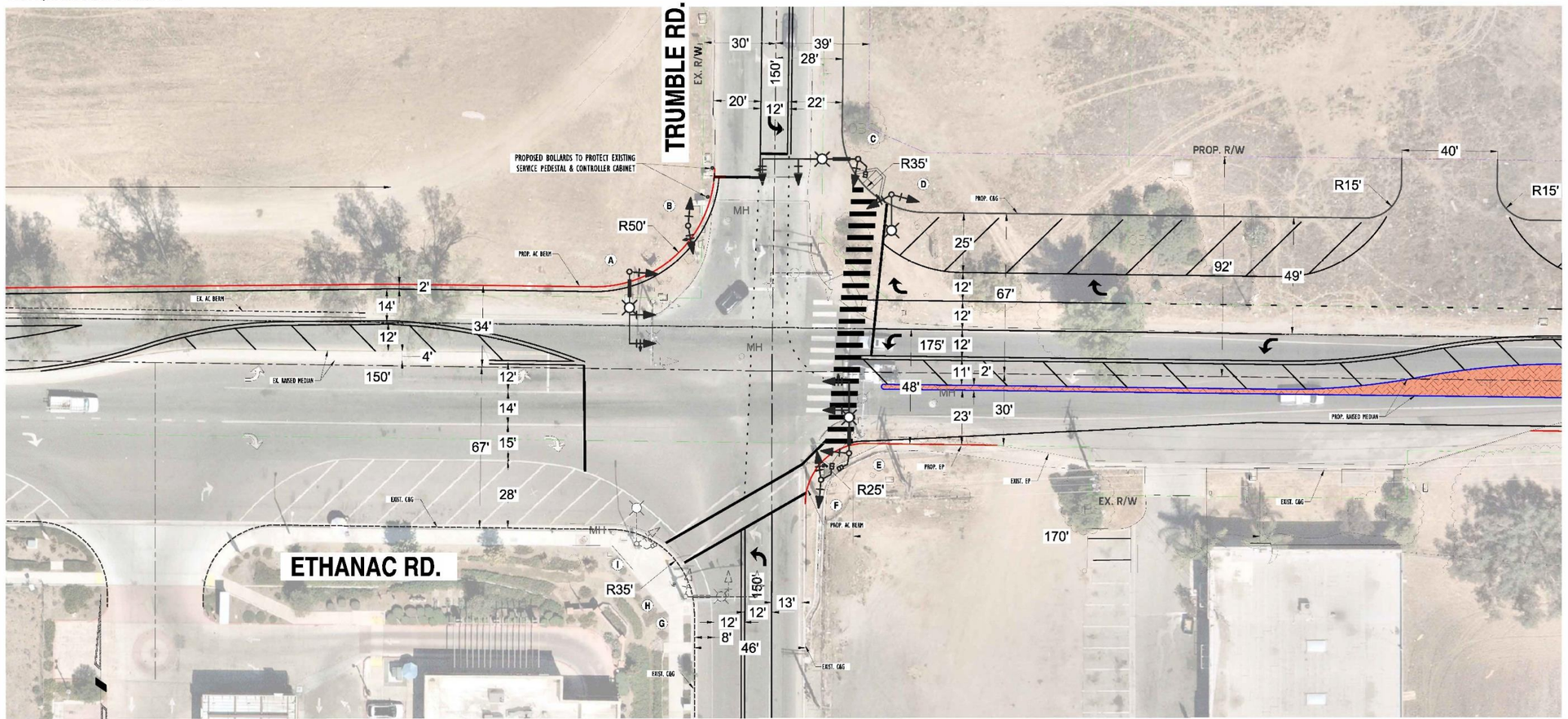
TYPICAL SIGNAL POLE PLACEMENT UNLESS DIMENSIONED ON PLANS

SIGNAL STANDARD PLACEMENT DIMENSIONS & EQUIPMENT LOCATIONS



PEDESTRIAN PUSH BUTTON LOCATION
(TOP VIEW)



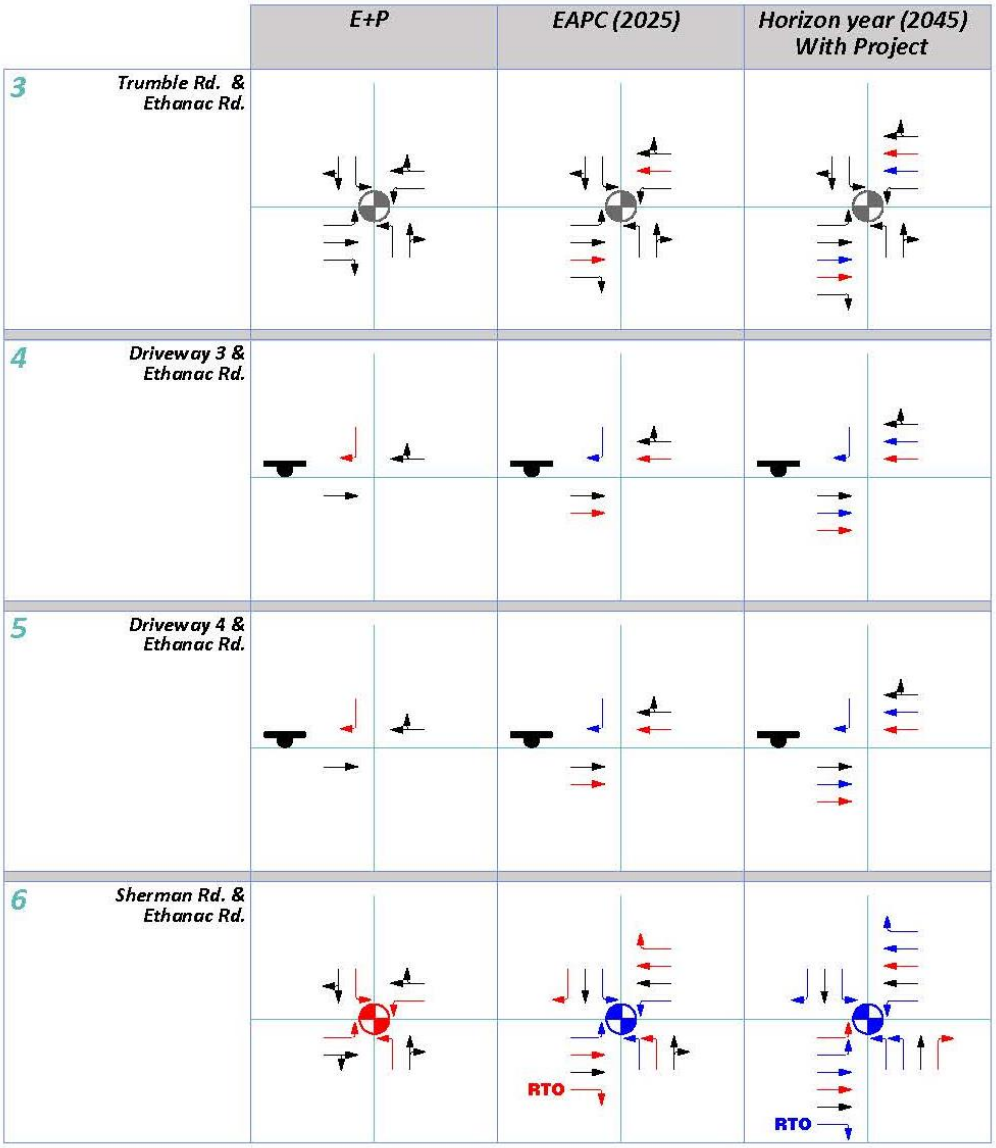


SCALE: 1" = 20' (ON 24" x 36" SHEET)
0 10 20 40 60 80

ETHANAC ROAD AND TRUMBLE ROAD CONCEPT TRAFFIC SIGNAL

URBAN CROSSROADS
www.urbanXroads.com
TELEPHONE: 949-660-1994

EXHIBIT 1-7: SUMMARY OF OFF-SITE IMPROVEMENTS



= New Scenario Traffic Signal Improvement
= Previous Scenario Traffic Signal Improvement
= Existing Stop Sign
= Existing Lane
= New Scenario Lane Improvement
= Previous Scenario Lane Improvement
RTO = New Scenario Right Turn Overlap Improvement
RTO = Previous Scenario Right Turn Overlap Improvement

1.7 TRUCK ACCESS

Due to the typical wide turning radius of large trucks, a truck turning template has been overlaid on the site plan at each applicable Project driveway anticipated to be utilized by heavy trucks in order to determine appropriate curb radii and to verify that trucks will have sufficient space to execute turning maneuvers (see Exhibit 1-5). A WB-67 truck (53-foot trailer) has been utilized for the purposes of this analysis. As shown on Exhibit 1-5, the curb radius on the southeast corner of both Driveway 1 and Driveway 2 on Trumble Road should be modified to accommodate a 45-foot radius in order to accommodate the ingress of heavy trucks (northbound right turn).

1.8 VEHICLE MILES TRAVELED (VMT) ANALYSIS

The City of Perris adopted Transportation Impact Analysis Guidelines for CEQA (City Guidelines). (5) The City Guidelines include Vehicle Miles Traveled (VMT) thresholds that were recently reviewed and adopted by City Council on May 12, 2020. Based on the VMT analysis, the Project was found to have a significant and unavoidable impact. The VMT analysis has been provided in Appendix 1.3 and also has been submitted under separate cover.

2 METHODOLOGIES

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report. The methodologies described are consistent with guidance from the City of Perris and other studies recently conducted in the area.

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 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 6th Edition Highway Capacity Manual (HCM) methodology expresses the LOS at an intersection in terms of delay time for the various intersection approaches. (6) The HCM uses different procedures depending on the type of intersection control.

2.2.1 SIGNALIZED INTERSECTIONS

The City of Perris, City of Menifee, and County of Riverside require signalized intersection operations analysis based on the methodology described in the HCM. (6) Intersection LOS operations are based on an intersection's average control delay. Control delay includes 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.

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
Operation 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, 6th Edition

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

Consistent with the Riverside County CMP, a saturation flow rate of 1900 vehicles per hour green per lane (vphgpl) has been utilized for all intersections for all scenarios.

The traffic modeling and signal timing optimization software package Synchro (Version 11) 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.

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. (6)

2.2.2 UNSIGNALIZED INTERSECTIONS

The City of Perris, City of Menifee, and County of Riverside require the operations of unsignalized intersections be evaluated using the methodology described in the HCM. (6) 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, 6th 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). (7)

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. (7) 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. Urban warrants have been used as posted speed limits on the major roadways with unsignalized intersections are 40 miles per hour or below and rural warrants have been used where speeds exceed 40 miles per hour.

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 intersection shown in Table 2-3:

TABLE 2-3: TRAFFIC SIGNAL WARRANT ANALYSIS LOCATIONS

#	Intersection
1	Trumble Rd. & Driveway 1
2	Trumble Rd. & Driveway 2
6	Sherman Rd. & Ethanac Rd.

Driveways 3 and 4 on Ethanac Road have not been evaluated for traffic signal warrants since these driveways are proposed for restricted access (right-in/right-out only) and signalization of these intersections are not feasible. A summary of the traffic signal warrant analysis is provided in Table 2-4.

TABLE 2-3: TRAFFIC SIGNAL WARRANT ANALYSIS SUMMARY

Intersection		Existing (2023)	E+P	EAC (2025)	EAPC (2025)	2045 Without Project	2045 With Project
1	Trumble Rd. & Driveway 1	DNE		DNE		DNE	
2	Trumble Rd. & Driveway 2	DNE		DNE		DNE	
6	Sherman Rd. & Ethanac Rd.	PH					

* DNE = Does not Exist; PH = Peak Hour

The Existing conditions traffic signal warrant analysis is presented in the subsequent section, Section 3 *Area Conditions* of this report. The traffic signal warrant analyses for future conditions are presented in Section 5 *E+P Traffic Conditions*, Section 6 *EAC & EAPC (2025) Conditions*, and Section 7 *Horizon Year (2045) Conditions* of this report. 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.

2.4 MINIMUM ACCEPTABLE LEVELS OF SERVICE (LOS)

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

2.4.1 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. (8) For the purposes of this traffic analysis, LOS D will be considered the acceptable threshold for all intersections within the study area.

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.

2.4.2 COUNTY OF RIVERSIDE

The definition of an intersection deficiency has been obtained from the County of Riverside General Plan. Riverside County General Plan Policy C 2.1 states that the County will maintain the following County-wide target LOS:

The following minimum target levels of service have been designated for the review of development proposals in the unincorporated areas of Riverside County with respect to transportation impacts on roadways designated in the Riverside County Circulation Plan which are currently County maintained, or are intended to be accepted into the County maintained roadway system:

- *LOS C shall apply to all development proposals in any area of the Riverside County not located within the boundaries of an Area Plan, as well as those areas located within the following Area Plans: REMAP, Eastern Coachella Valley, Desert Center, Palo Verde Valley, and those non-Community Development areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans.*
- *LOS D shall apply to all development proposals located within any of the following Area Plans: Eastvale, Jurupa, Highgrove, Reche Canyon/Badlands, Lakeview/Nuevo, Sun City/Menifee Valley, Harvest Valley/Winchester, Southwest Area, The Pass, San Jacinto Valley, Western Coachella Valley and those Community Development Areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans.*
- *LOS E may be allowed by the Board of Supervisors within designated areas where transit-oriented development and walkable communities are proposed.*

The applicable minimum LOS utilized for the purposes of this analysis is LOS D per the County-wide target LOS for projects located within the Lakeview Nuevo Area Plan. (3)

2.4.3 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.

Therefore, any intersection operating at LOS E or F will be considered deficient for the purposes of this analysis. (9)

2.5 DEFICIENCY CRITERIA

This section outlines the methodology used in this analysis related to identifying circulation system deficiencies. The following deficiency criteria has been utilized for the City of Perris (along with the City of Menifee and County of Riverside). To determine whether the addition of project-related traffic at a study intersection would result in a deficiency, the following will be utilized:

- A project-related traffic deficiency is considered direct when a study intersection operates at an acceptable LOS for existing conditions (without the project) and the addition of 50 or more AM or PM peak hour project trips causes the intersection delay to increase by 2 seconds or more and causes the intersection to operate at an unacceptable LOS for E+P conditions.
- A project-related traffic deficiency is considered direct when a study intersection operates at an unacceptable Level of Service for existing conditions (without the project) and the addition of 50 or more AM or PM peak hour project trips causes the intersection delay to increase by 2 seconds or more.
- A cumulative traffic deficiency is considered direct when a study intersection is forecast to operate at an acceptable LOS without the project and with the addition of 50 or more AM or PM peak hour project trips causes the intersection delay to increase by 2 seconds or more and causes the intersection to operate at an unacceptable LOS.
- A cumulative traffic deficiency is considered indirect when a study intersection is forecast to operate at an unacceptable Level of Service with the addition of cumulative/background traffic and the project contributes 50 or more AM or PM peak hour project trips and causes the intersection delay to increase by 2 seconds or more.

2.6 PROJECT FAIR SHARE CALCULATION METHODOLOGY

Improvements found to be included in the County TUMF and/or City DIF programs will be identified as such. 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 near-term 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 / (2025 Total Traffic – Existing (2022) Traffic)

The Project's long-range 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 Total Traffic – Existing (2022) Traffic)

3 AREA CONDITIONS

This section provides a summary of the existing circulation network, the City of Perris General Plan Circulation Network, and a review of existing peak hour intersection operations and traffic signal warrant analyses.

3.1 EXISTING CIRCULATION NETWORK

Pursuant to the agreement with City of Perris staff (Appendix 1.1), the study area includes a total of 6 existing and future intersections as shown previously on Exhibit 1-2. 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 PERRIS GENERAL PLAN AND PVCC SP CIRCULATION ELEMENT

As noted previously, the Project site is located within the City of Perris. Exhibit 3-2 shows the City of Perris General Plan Circulation Element and Exhibit 3-3 illustrates the City of Perris General Plan roadway cross-sections.

Expressways can accommodate six-to-eight travel lines with 184-foot right-of-way. 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 (northern portion of the roadway)

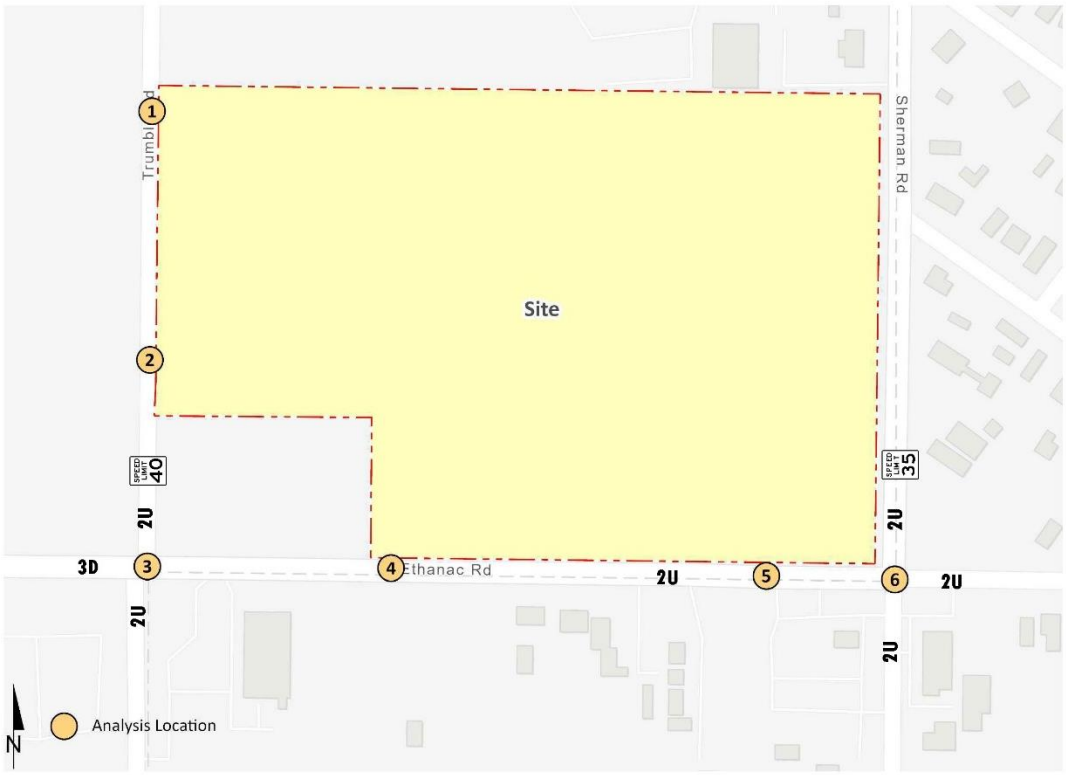
Major Collector can accommodate four travel lanes separated by a painted median with a 78-foot right-of-way. These facilities provide access to residential land use, or commercial and industrial land use. The following roadway is classified as a Major Collector within the study area:

- Trumble Road

Local Street can accommodate two travel laves with a 60-foot right-of-way. These facilities provide local access. The following roadway is classified as a Local Street within the study area:

- Sherman Road (western portion of the roadway)

EXHIBIT 3-1: EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS



1 Trumble Rd. & Driveway 1	2 Trumble Rd. & Driveway 2	3 Trumble Rd. & Ethanac Rd.	4 Driveway 3 & Ethanac Rd.	5 Driveway 4 & Ethanac Rd.
Future Intersection	Future Intersection		Future Intersection	Future Intersection

6 Sherman Rd. & Ethanac Rd.

= Traffic Signal
= Stop Sign
= Existing Lane
4 = Number of Lanes
D = Divided
U = Undivided
SPEED LIMIT 45 = Speed Limit (MPH)

EXHIBIT 3-2: CITY OF PERRIS GENERAL PLAN CIRCULATION ELEMENT

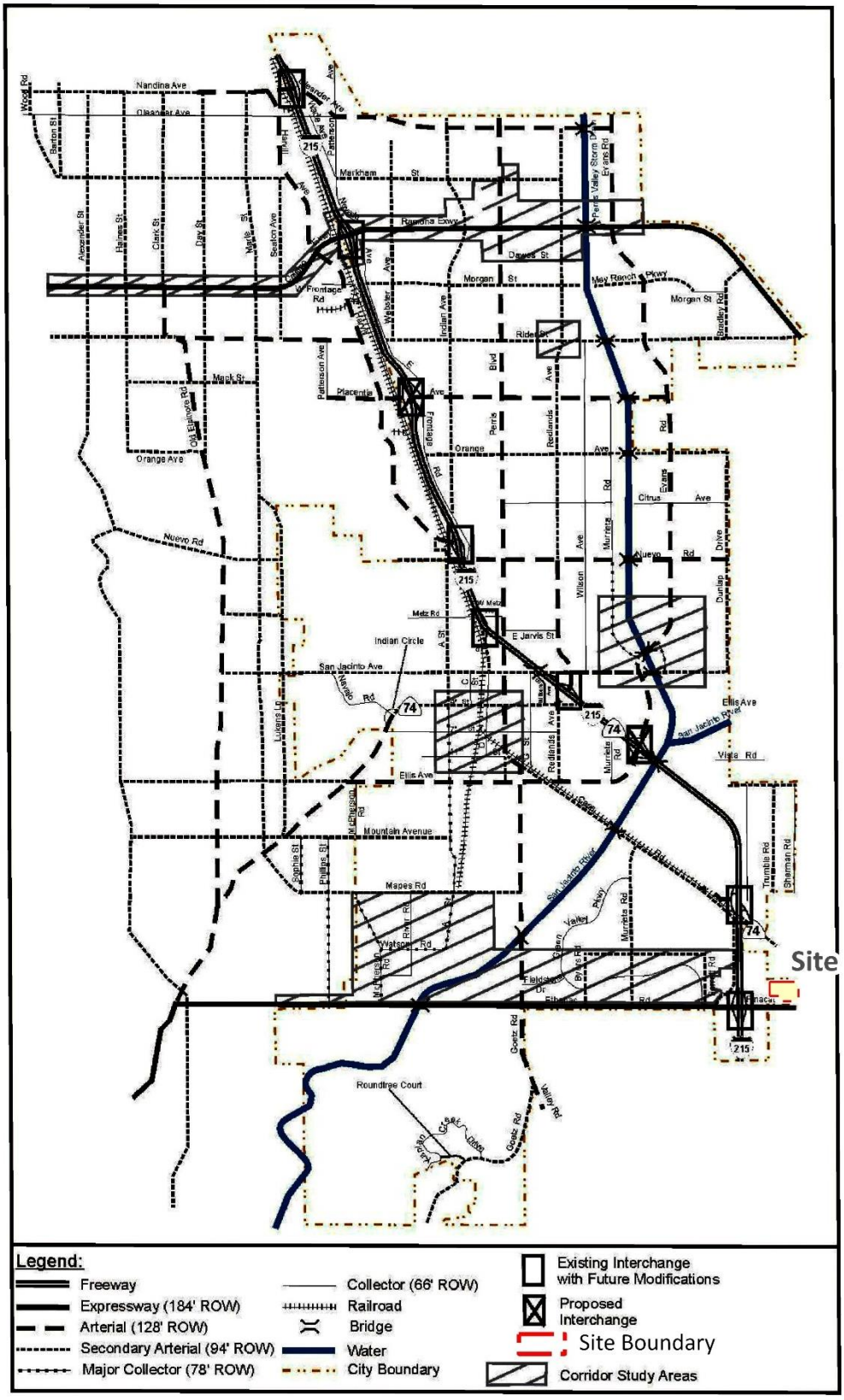
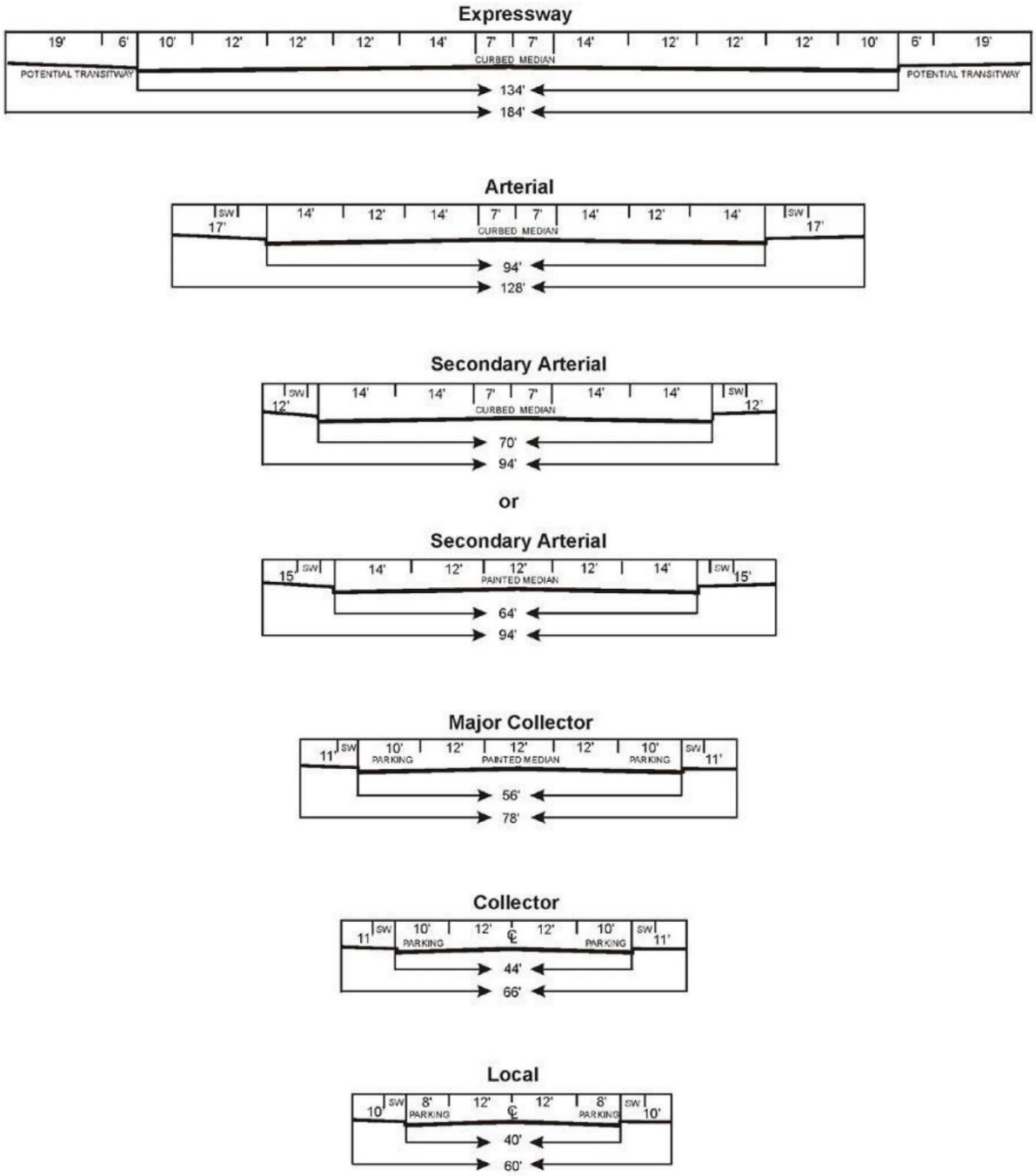


EXHIBIT 3-3: CITY OF PERRIS GENERAL PLAN ROADWAY CROSS-SECTIONS



Specific details for each cross-section follow in Figures 4.1 A - 4.1 F

Legend

SW	Sidewalk or Trail (at least 4 feet)
PARKING	Parking or Bike Lane
PAINTED MEDIAN	Center Median and/or Continuous Left Turning Lane
CURBED MEDIAN	Landscaped Center Median

3.2 CITY OF MENIFEE GENERAL PLAN CIRCULATION ELEMENT

The majority of the study area roadways shares a border with the City of Menifee. Exhibit 3-4 illustrates the City of Menifee Circulation Plan and Exhibit 3-5 shows the corresponding City of Menifee roadway cross-sections.

3.3 BICYCLE & PEDESTRIAN FACILITIES

In an effort to promote alternative modes of transportation, the City of Perris also includes a bikeway system. The City of Perris bicycle facilities are shown on Exhibit 3-6, which shows there is a recommended buffered Class IIB (on-street, striped) bike lane along Ethanac Road in the future.

Existing pedestrian facilities within the study area are shown on Exhibit 3-7. As shown on Exhibit 3-7, there are limited pedestrian facilities in the vicinity of the Project site. The only existing pedestrian facilities are the existing sidewalk on the east side of Sherman Road and the crosswalks provided at the signalized intersection of Trumble Road at Ethanac Road. In addition, there are sidewalks along Trumble Road and Ethanac Road on the southwest corner. Field observations and traffic counts conducted in November 2022 indicate light pedestrian and bicycle activity within the study area associated with the adjacent commercial uses.

3.4 TRANSIT SERVICE

The study area within the City of Perris is currently served by Riverside Transit Authority (RTA), a public transit agency serving various jurisdictions within Riverside County. 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 1,000 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. 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 applicant work in conjunction with RTA to potentially provide bus service to the site.

3.5 TRUCK ROUTES

The City of Perris designated truck route map is shown on Exhibit 3-8 and City of Menifee's map is shown on Exhibit 3-9. Ethanac Road is identified as designated truck route in both agencies. These designated 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 CIRCULATION ELEMENT

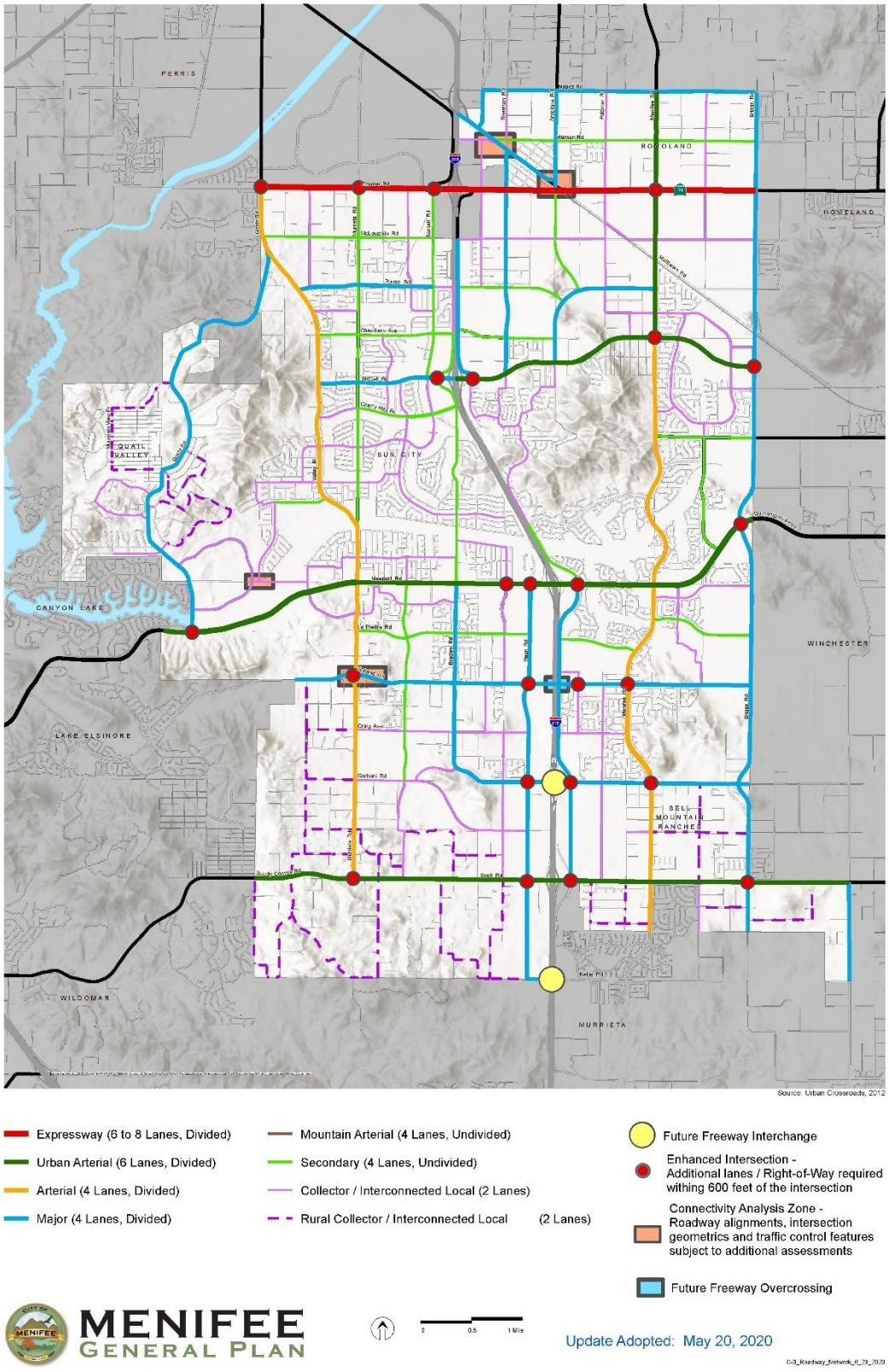
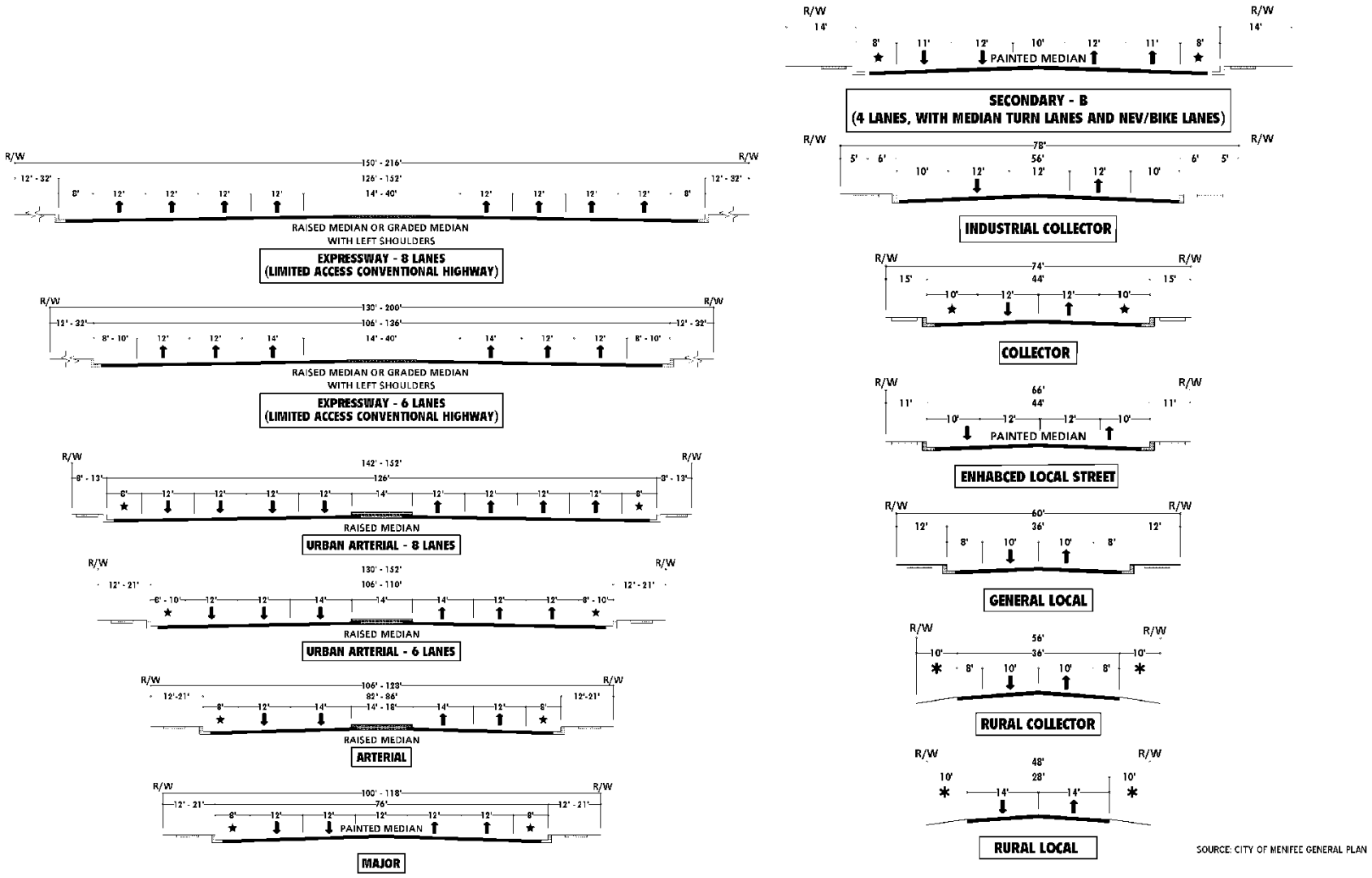


EXHIBIT 3-5: CITY OF MENIFEE ROADWAY CROSS-SECTIONS



SOURCE: CITY OF MENIFEE GENERAL PLAN

EXHIBIT 3-6: CITY OF PERRIS GENERAL PLAN BICYCLE FACILITIES

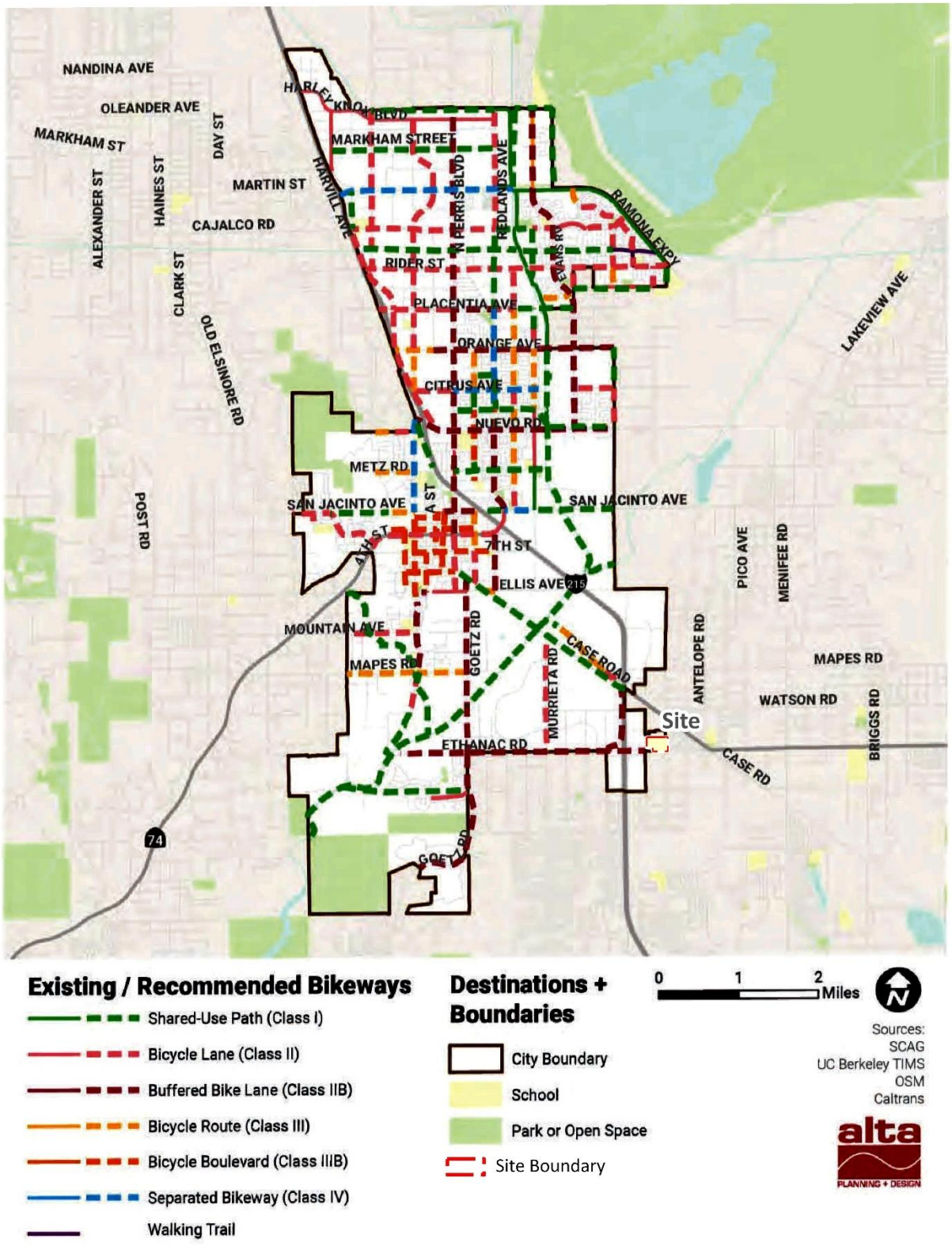


EXHIBIT 3-7: EXISTING PEDESTRIAN FACILITIES

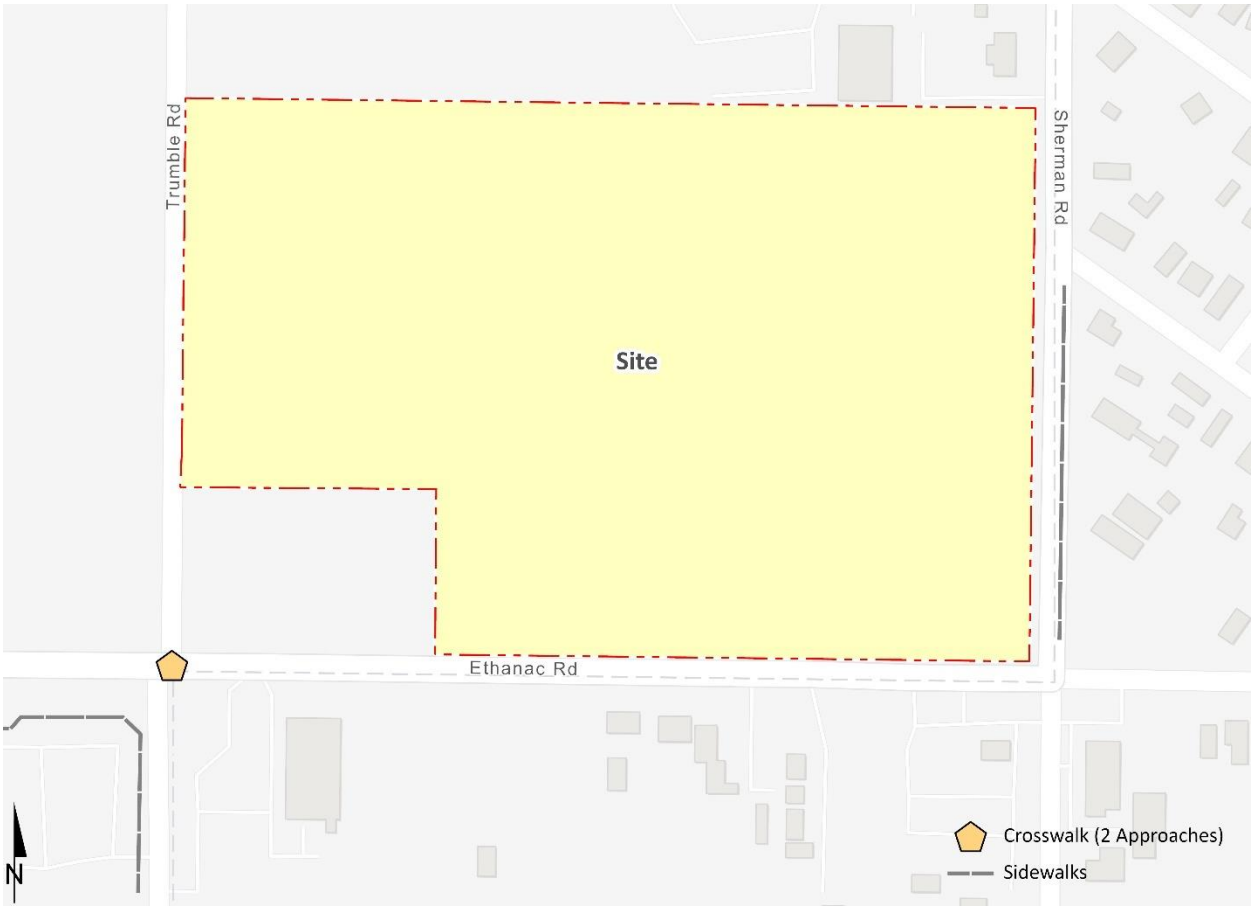


EXHIBIT 3-8: CITY OF PERRIS TRUCK ROUTES

GPA22-05068 & OA22-05069

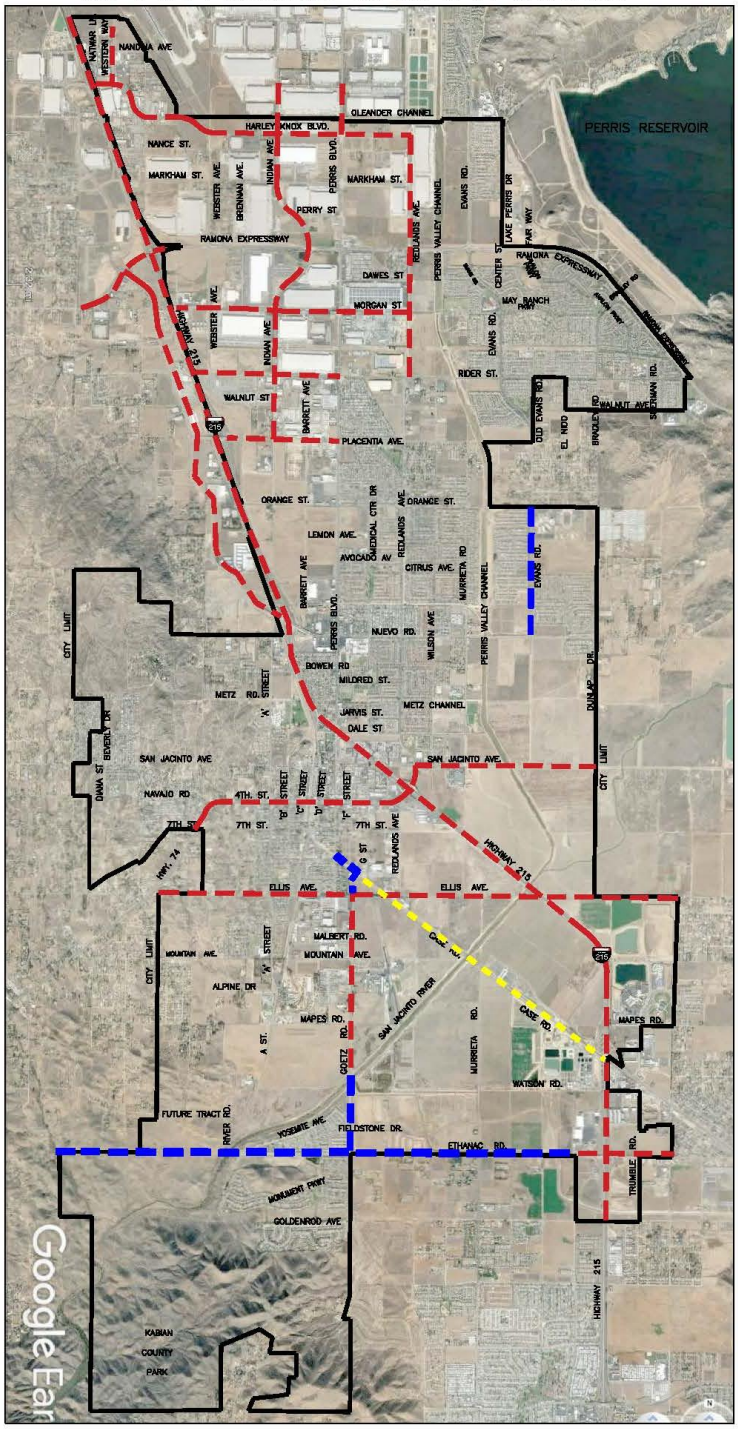
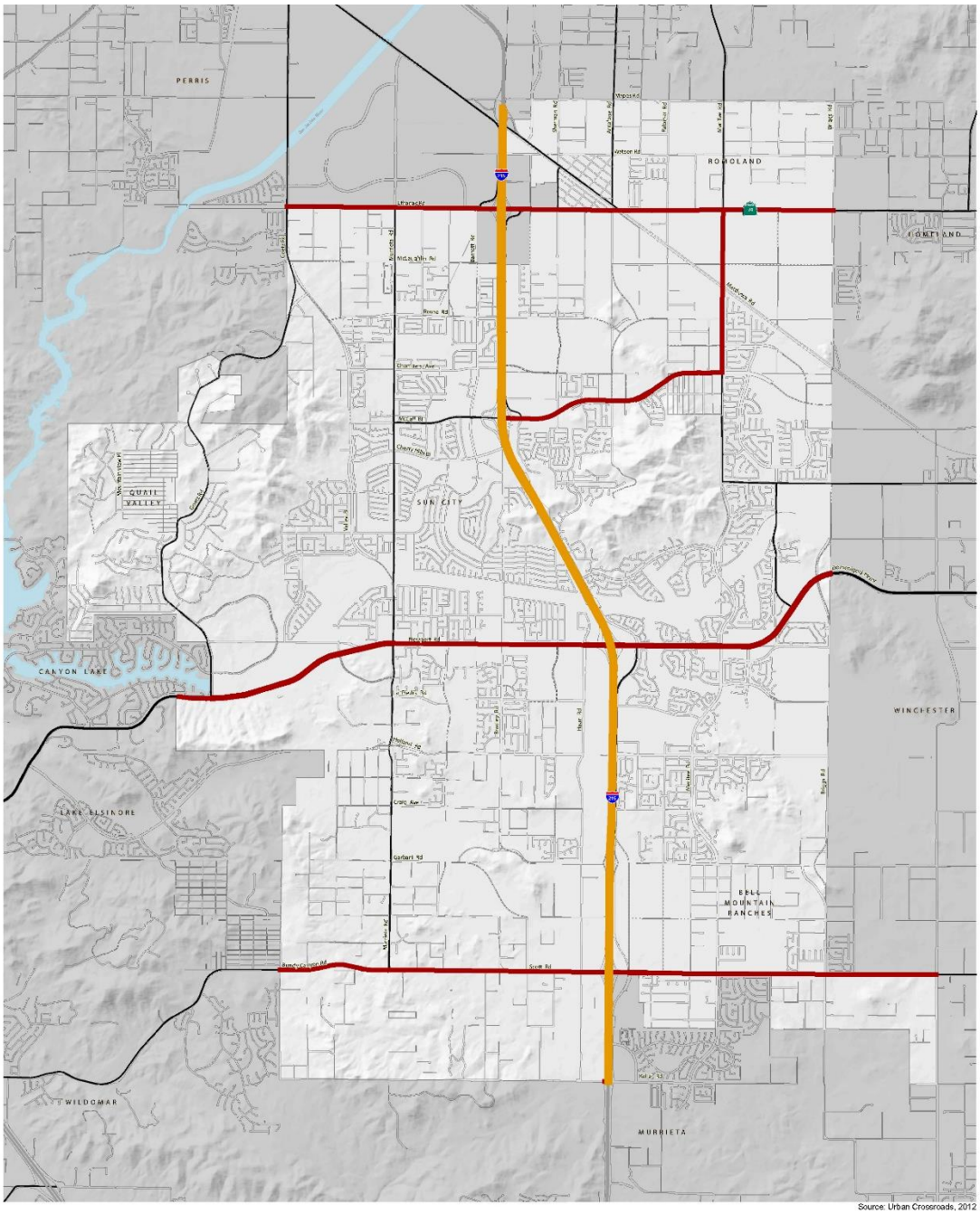


EXHIBIT 3-9: CITY OF MENIFEE POTENTIAL TRUCK ROUTES



Source: Urban Crossroads, 2012

Truck Route

I-215 Freeway Corridor

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 07.2013

3.6 EXISTING (2022) TRAFFIC COUNTS

The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected in November 2022. 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 2022 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 near-by schools were in session and operating on normal schedules. As such, the only adjustments made to the traffic counts to establish the baseline condition was to balance volumes between closely spaced intersections. The raw manual peak hour turning movement traffic count data sheets are included in Appendix 3.1.

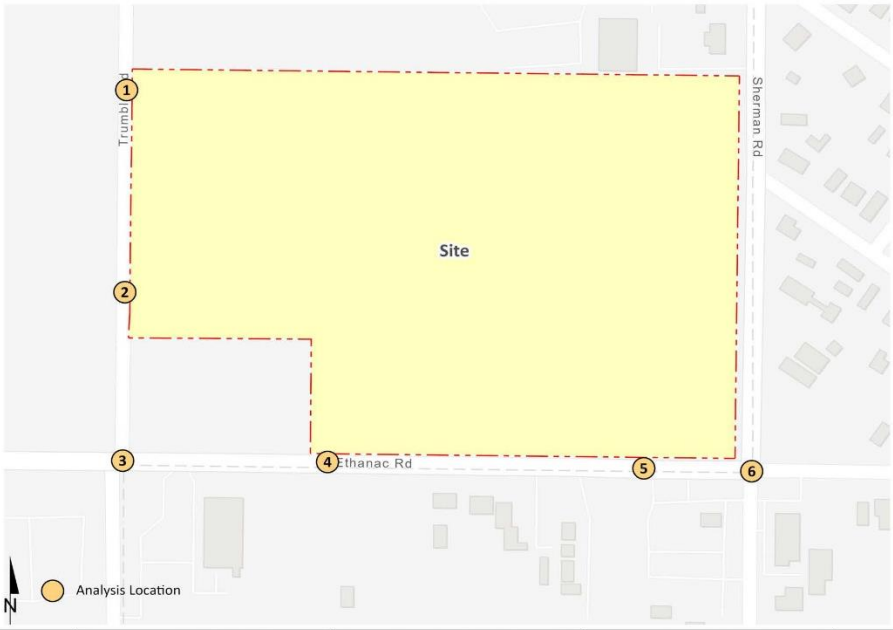
Existing weekday ADT volumes are shown on Exhibit 3-10. Where actual 24-hour tube count data was not available, Existing ADT volumes were based upon factored intersection peak hour counts collected by Urban Crossroads, Inc. using the following formula for each intersection leg:

Weekday PM Peak Hour (Approach Volume + Exit Volume) x 12.0 = 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 8.3 percent. As such, the above equation utilizing a factor of 12.0 estimates the ADT volumes on the study area roadway segments assuming a peak-to-daily relationship of approximately 8.3 percent (i.e., 1/0.083 = 12.0) and was assumed to sufficiently estimate ADT volumes for planning-level analyses. Existing weekday peak hour intersection volumes are shown on Exhibit 3-10 for actual vehicles and Exhibit 3-11 in PCE.

To represent the effect large trucks, buses, and recreational vehicles have on traffic flow, all trucks were converted into passenger car equivalent (PCE). By their size alone, these vehicles occupy the same space as two or more passenger cars. In addition, the time it takes for them to accelerate and slow-down is also much longer than for passenger cars and varies depending on the type of vehicle and number of axles. For this analysis, the following PCE factors have been used to estimate each turning movement: 1.5 for 2-axle trucks, 2.0 for 3-axle trucks, and 3.0 for 4+-axle trucks. These factors are consistent with the values recommended for use in the City of Perris. Consistent with the City's Guidelines, the peak hour intersection operations analysis utilizes the PCE volumes. PCE volumes for all applicable analysis scenarios are provided in Appendix 3.1.

EXHIBIT 3-10: EXISTING (2022) TRAFFIC VOLUMES (ACTUAL VEHICLES)



1 Trumble Rd. & Driveway 1

1,950
← 72(112)
→ 78(52)
1,950

2 Trumble Rd. & Driveway 2

1,950
← 72(112)
→ 78(52)
1,950

3 Trumble Rd. & Ethanac Rd.

1,950
54(92) ↲ 12(9) ↓ 6(11) ↳
67(40) ↴
509(536) →
9(24) ↵
12,400
↰ 7(8)
← 398(350)
↱ 48(28)
68(54) ↰ 4(4) ↑ 41(41) ↱
1,950
13,200

4 Driveway 3 & Ethanac Rd.

12,400
← 453(386)
556(588) →
12,400

5 Driveway 4 & Ethanac Rd.

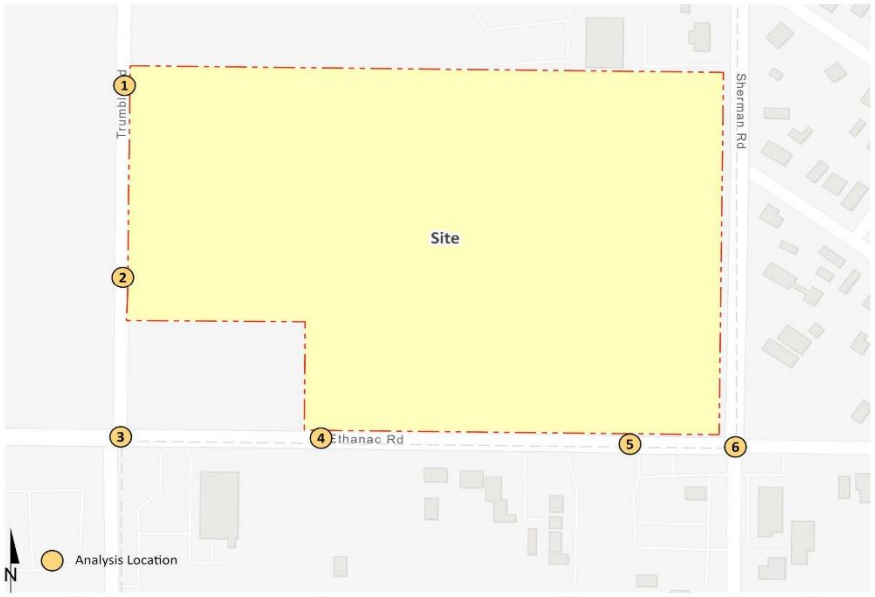
12,400
← 453(386)
556(588) →
12,400

6 Sherman Rd. & Ethanac Rd.

3,700
↲ 105(119) ↓ 3(1) ↳ 6(3)
103(197) ↴
434(377) →
19(14) ↵
7,650
↰ 1(2)
← 344(248)
↱ 2(1)
4(19) ↰ 1(3) ↑ 3(5) ↱
12,400
500

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

EXHIBIT 3-11: EXISTING (2022) TRAFFIC VOLUMES (PCE)



1 Trumble Rd. & Driveway 1

		91(57) →
	89(116) ↓	

2 Trumble Rd. & Driveway 2

		91(57) →
	89(116) ↓	

3 Trumble Rd. & Ethanac Rd.

			↱ 7(11)
			← 428(361)
			↰ 52(29)
80(42) ↳			
535(549) →		↰ 72(56)	↑ 4(4)
11(25) ↴		↱ 45(45)	
	↓ 12(9)		
	↳ 7(11)		
↲ 70(96)			

4 Driveway 3 & Ethanac Rd.

	← 487(400)
587(605) →	

5 Driveway 4 & Ethanac Rd.

	← 487(400)
587(605) →	

6 Sherman Rd. & Ethanac Rd.

		↱ 1(3)
		← 371(261)
		↰ 2(1)
105(204) ↳		
459(385) →	↰ 6(20)	↑ 1(3) ↱ 5(6)
23(16) ↴		
	↓ 3(1)	
	↳ 6(3)	
↲ 111(120)		

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

3.7 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* of this report. The intersection operations analysis results are summarized in Table 3-1, which indicates that the study area intersection is currently operating at an unacceptable LOS during the peak hours under Existing (2022) traffic conditions with the exception of the following intersection:

- Sherman Road & Ethanac Road (#6) – LOS E PM peak hour only

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

TABLE 3-1: INTERSECTION ANALYSIS FOR EXISTING (2022) CONDITIONS

#	Intersection	Traffic Control[2]	Delay[1] (secs.) AM	Delay[1] (secs.) PM	Level of Service AM	Level of Service PM
1	Trumble Rd. & Driveway 1		Future Intersection			
2	Trumble Rd. & Driveway 2		Future Intersection			
3	Trumble Rd. & Ethanac Rd.	TS	20.2	18.2	C	B
4	Driveway 3 & Ethanac Rd.		Future Intersection			
5	Driveway 4 & Ethanac Rd.		Future Intersection			
6	Sherman Rd. & Ethanac Rd.	CSS	26.7	**35.7**	D	**E**

1 Per the Highway Capacity Manual (6th 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

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

3.7 TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants for Existing traffic conditions are based on existing peak hour intersection turning volumes. The intersection of Sherman Road and Ethanac Road currently meets a peak hour volume-based traffic signal warrant under Existing (2022) traffic conditions. Existing conditions traffic signal warrant analysis worksheets are provided in Appendix 3.3.

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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 is to consist of a 412,348 square foot (sf) warehouse building. The Project is proposed to be developed in a single phase with an anticipated Opening Year of 2025. For the purposes of the trip generation, the Project will be evaluated assuming 50,000 SF of high-cube cold storage warehouse use and 362,348 SF of high-cube transload/short-term storage warehouse use. The following describes the access proposed for the site:

- Driveway 1 on Trumble Road – full access trucks only
- Driveway 2 on Trumble Road – full access trucks only
- Driveway 3 on Ethanac Road – right-in/right-out only for passenger cars
- Driveway 4 on Ethanac Road – right-in/right-out only for passenger cars

Regional access to the Project site is available from the I-215 Freeway via Ethanac Road interchange.

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. In order to develop the traffic characteristics of the proposed Project, trip-generation statistics published in the ITE Trip Generation Manual (11th Edition, 2021) was used to estimate the trip generation. (1) For purposes of this analysis, the following land use codes and vehicle mixes has been utilized:

- ITE land use code 154 (High-Cube Transload and Short-Term Storage Warehouse) has been used to derive site specific trip generation estimates for up to 362,348 SF. High-cube transload/short-term storage warehouse data regarding the truck percentage and vehicle mix has been obtained from the ITE's latest Trip Generation Manual. 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%.
- ITE land use code 157 (High-Cube Cold Storage Warehouse) has been used to derive site specific trip generation estimates for up to 50,000 SF. High-cube cold storage warehouses include warehouses characterized by the storage and/or consolidation of manufactured goods (and to a lesser extent, raw materials) prior to their distribution to retail locations or other warehouses. High-cube cold storage warehouses are facilities typified by temperature-controlled environments for frozen food or other perishable products. The High-Cube Cold Storage Warehouse vehicle mix (passenger cars versus trucks) has been obtained from the ITE's Trip Generation Manual. The truck percentages were further broken down by axle type per the following SCAQMD recommended truck mix: 2-Axle = 34.7%; 3-Axle = 11.0%; 4+-Axle = 54.3%.

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. 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.

The Project trip generation rates are provided in Table 4-1. Trip generation summary for the Project in actual vehicles is shown in Table 4-2. As shown in Table 4-2, the Project is anticipated to generate a total of 618 two-way trips per day with 34 AM peak hour trips and 39 PM peak hour trips (actual vehicles). The trip generation summary for the Project in PCE is also shown in Table 4-2. For the purposes of the peak hour intersection operations analyses, the PCE trip generation has been utilized.

TABLE 4-1: PROJECT TRIP GENERATION RATES

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicle Trip Generation Rates									
High-Cube Transload and Short-Term Storage Warehouse[3]	TSF	154	0.062	0.018	0.080	0.028	0.072	0.100	1.400
Passenger Cars (AM=75.0%, PM=90.0%, Daily=84.3%)			0.052	0.008	0.060	0.023	0.067	0.090	1.180
2-Axle Trucks (AM=4.2%, PM=1.7%, Daily=2.6%)			0.002	0.001	0.003	0.001	0.001	0.002	0.037
3-Axle Trucks (AM=5.2%, PM=2.1%, Daily=3.3%)			0.002	0.002	0.004	0.001	0.001	0.002	0.046
4+-Axle Trucks (AM=15.7%, PM=6.3%, Daily=9.8%)			0.006	0.007	0.013	0.003	0.003	0.006	0.138
High-Cube Cold Storage Warehouse[3]	TSF	157	0.085	0.025	0.110	0.034	0.086	0.120	2.120
Passenger Cars (AM-72.7%, PM-75.0%, Daily-64.6%)			0.076	0.004	0.080	0.019	0.071	0.090	1.370
2-Axle Trucks (AM-9.5%, PM-8.7%, Daily-12.3%)			0.003	0.007	0.010	0.005	0.005	0.010	0.260
3-Axle Trucks (AM-3.0%, PM-2.8%, Daily-3.9%)			0.001	0.002	0.003	0.002	0.001	0.003	0.083
4+-Axle Trucks (AM-14.8%, PM-13.6%, Daily-19.2%)			0.005	0.011	0.016	0.008	0.008	0.016	0.407
Passenger Car Equivalent (PCE) Trip Generation Rates[4]									
High-Cube Transload and Short-Term Storage Warehouse[3]	TSF	154	0.062	0.018	0.080	0.028	0.072	0.100	1.400
Passenger Cars			0.052	0.008	0.060	0.023	0.067	0.090	1.180
2-Axle Trucks (PCE = 1.5)			0.003	0.002	0.005	0.002	0.001	0.003	0.055
3-Axle Trucks (PCE = 2.0)			0.004	0.004	0.008	0.002	0.002	0.004	0.091
4+-Axle Trucks (PCE = 3.0)			0.018	0.020	0.038	0.009	0.010	0.019	0.413
High-Cube Cold Storage Warehouse[3]	TSF	157	0.085	0.025	0.110	0.034	0.086	0.120	2.120
Passenger Cars			0.076	0.004	0.080	0.019	0.071	0.090	1.370
2-Axle Trucks (PCE = 1.5)			0.005	0.011	0.016	0.008	0.008	0.016	0.390
3-Axle Trucks (PCE = 2.0)			0.002	0.005	0.007	0.004	0.003	0.007	0.165
4+-Axle Trucks (PCE = 3.0)			0.015	0.034	0.049	0.024	0.025	0.049	1.222

[1] Trip Generation & Vehicle Mix Source: Institute of Transportation Engineers (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.

Normalized % - With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks.

[4] PCE factors: 2-axle = 1.5; 3-axle = 2.0; 4+-axle = 3.0.

TABLE 4-2: PROJECT TRIP GENERATION SUMMARY

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicles:									
High-Cube Transload Warehouse	362.348	TSF							
Passenger Cars:			19	3	22	8	24	32	428
2-axle Trucks:			1	0	1	0	0	0	14
3-axle Trucks:			1	1	2	0	0	0	18
4+-axle Trucks:			2	2	4	1	1	2	50
Total Truck Trips (Actual Vehicles):			4	3	7	1	1	2	82
Total Trips (Actual Vehicles)[2]			23	6	29	9	25	34	510
High-Cube Cold Storage Warehouse	50.000	TSF							
Passenger Cars:			4	0	4	1	4	5	70
2-axle Trucks:			0	0	0	0	0	0	14
3-axle Trucks:			0	0	0	0	0	0	4
4+-axle Trucks:			0	1	1	0	0	0	20
Total Truck Trips (Actual Vehicles):			0	1	1	0	0	0	38
Total Trips (Actual Vehicles)[2]			4	1	5	1	4	5	108
Passenger Cars			23	3	26	9	28	37	498
Trucks (Actual Vehicles)			4	4	8	1	1	2	120
Total Project Trips (Actual Vehicles)[2]			**27**	**7**	**34**	**10**	**29**	**39**	**618**
Passenger Car Equivalent (PCE):									
High-Cube Transload Warehouse	362.348	TSF							
2-axle Trucks (PCE = 1.5):			1	1	2	1	0	1	20
3-axle Trucks (PCE = 2.0):			1	2	3	1	1	2	34
4+-axle Trucks (PCE = 3.0):			7	7	14	3	4	7	150
Total Truck Trips (PCE):			9	10	19	5	5	10	204
High-Cube Cold Storage Warehouse	50.000	TSF							
2-axle Trucks (PCE = 1.5):			0	1	1	0	0	0	20
3-axle Trucks (PCE = 2.0):			0	0	0	0	0	0	8
4+-axle Trucks (PCE = 3.0):			1	2	3	1	1	2	62
Total Truck Trips (PCE):			1	3	4	1	1	2	90
Passenger Cars			23	3	26	9	28	37	498
Trucks (PCE)			10	13	23	6	6	12	294
Total Project Trips (PCE)[2]			**33**	**16**	**49**	**15**	**34**	**49**	**792**

[1] TSF = thousand square feet

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

4.2 PROJECT TRIP DISTRIBUTION

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 uses, and the proximity to the regional freeway system.

Passenger car distribution patterns are based on existing and planned land uses and roadway infrastructure in the area. Truck distribution patterns are based on 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. As such, Project truck traffic is anticipated to access Trumble Road only then to Ethanac Road to head westbound to the Ethanac Road interchange. The passenger car and truck trip distributions are illustrated on Exhibits 4-1 and 4-2, respectively.

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.

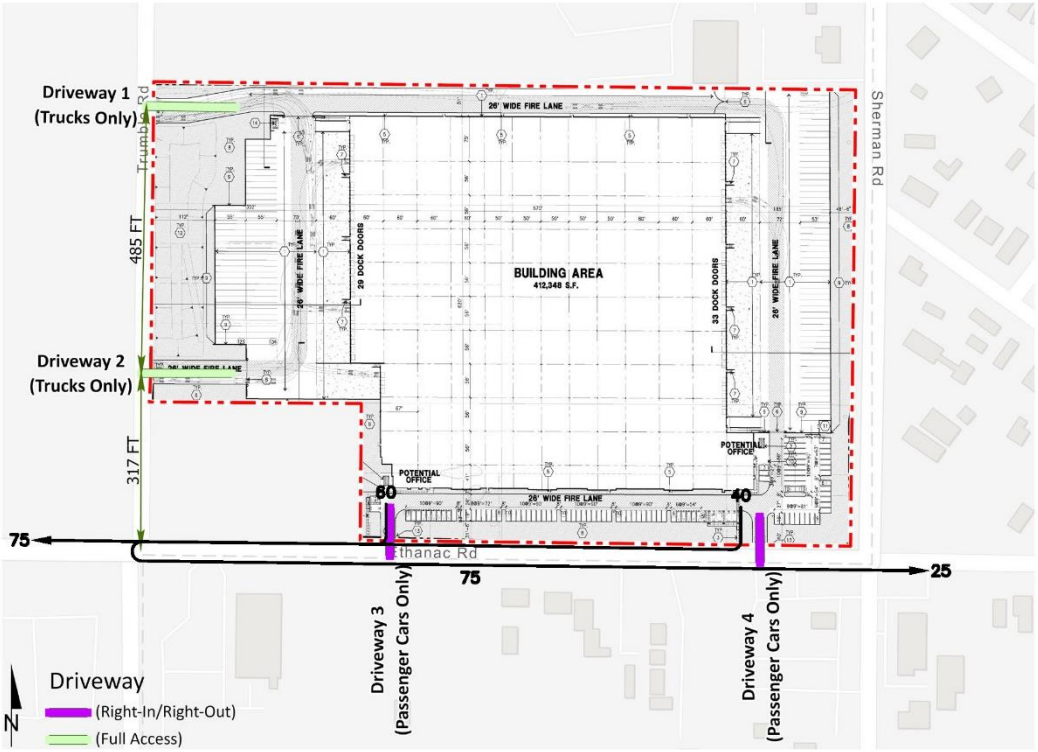
4.4 PROJECT TRIP ASSIGNMENT

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, Project weekday ADT and weekday peak hour intersection turning movement volumes are shown on Exhibit 4-3 for actual vehicles and Exhibit 4-4 for PCE.

4.5 BACKGROUND TRAFFIC

Future year traffic forecasts have been based upon background (ambient) growth at 3% per year, compounded annually, for 2025 traffic conditions. The total ambient growth is 9.27% for 2025 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. Ambient growth has been added to daily and peak hour traffic volumes on surrounding roadways, in conjunction with traffic generated by the development of future projects that have been approved but not yet built and/or for which development applications have been filed and are under consideration by governing agencies. 2025 traffic volumes are provided in Section 6 of this report. The traffic generated by the proposed Project was then manually added to the base volume to determine With Project forecasts.

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



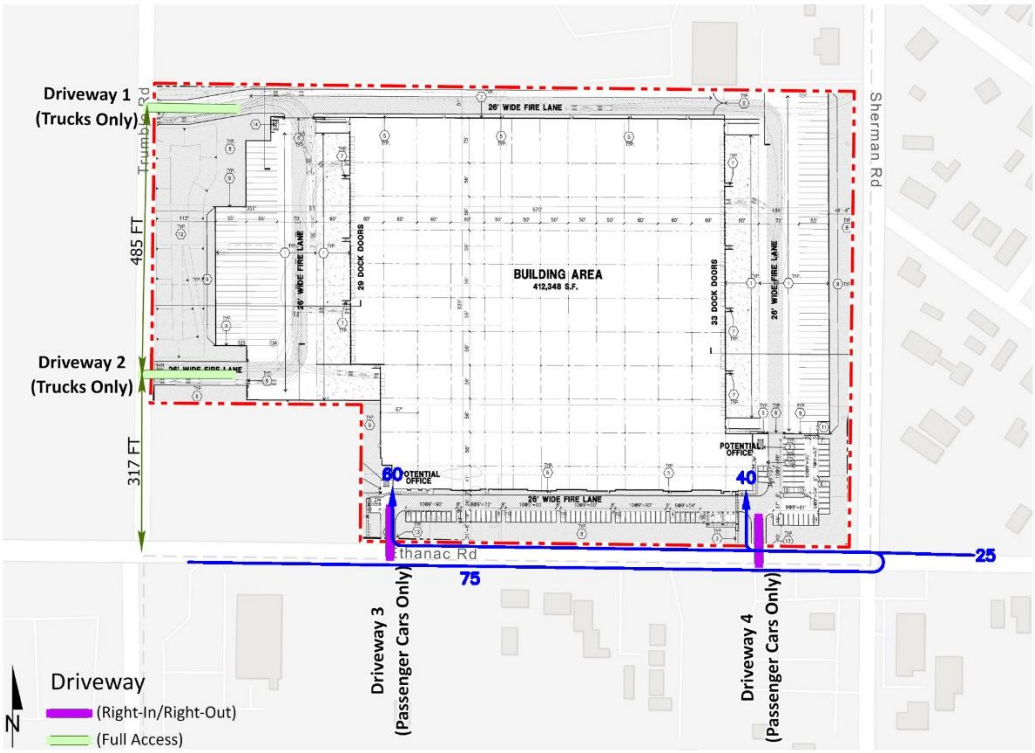
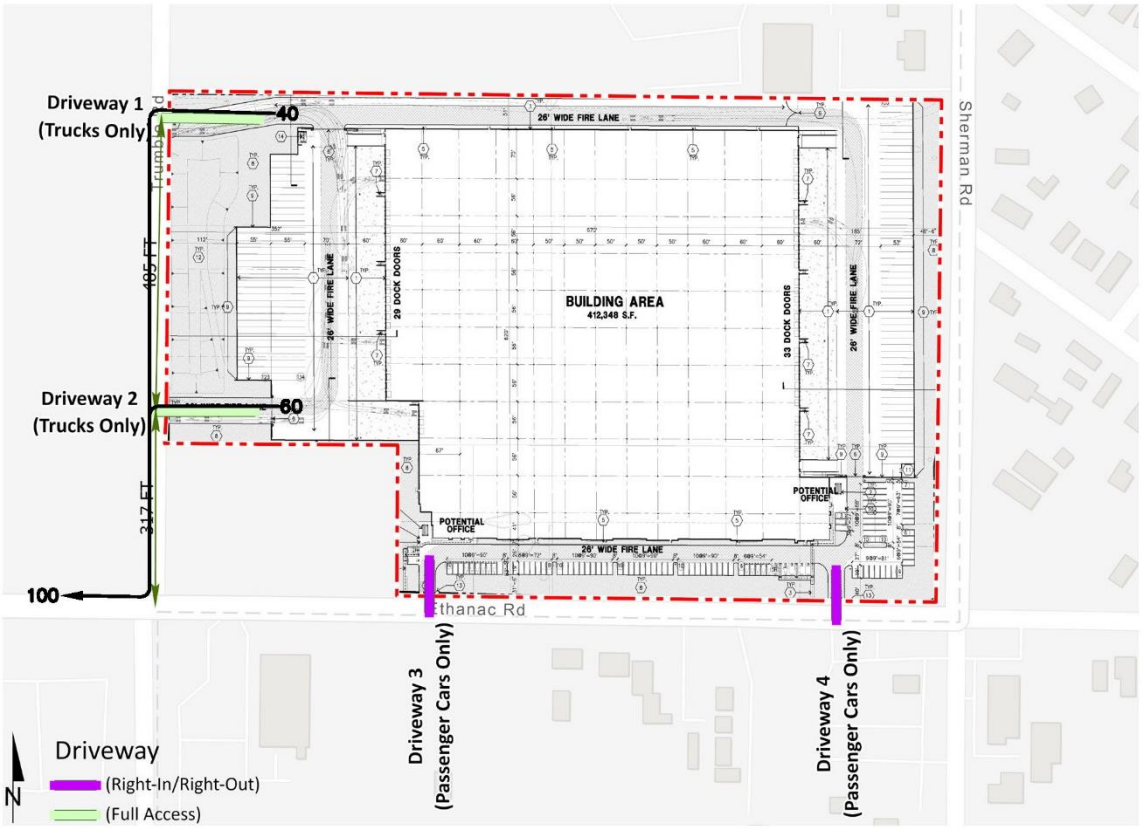
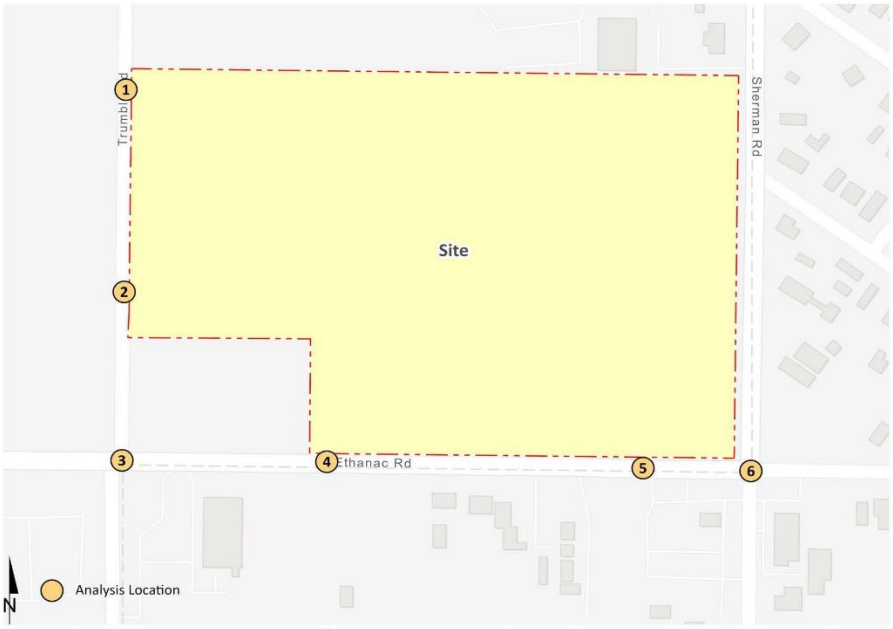


EXHIBIT 4-2: PROJECT (TRUCK) TRIP DISTRIBUTION



10 ***= Percent To/From Project***

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



1 Trumble Rd. & Driveway 1

		Nominal
	← 2(0)	
		↱ 2(0)
Nominal		

2 Trumble Rd. & Driveway 2

Nominal		*Nominal*
↓ 2(0)		← 2(1)
		↑ ↱ 2(0) 2(1)
		100

3 Trumble Rd. & Ethanac Rd.

100		*450*
↲ 4(1)		← 2(21)
		↷ 1(7)
4(1) ↳		
17(7) →		
500		*Nominal*

4 Driveway 3 & Ethanac Rd.

300		*500*
↲ 2(17)		↜ 14(5)
		← 1(11)
18(14) →		
500		

5 Driveway 4 & Ethanac Rd.

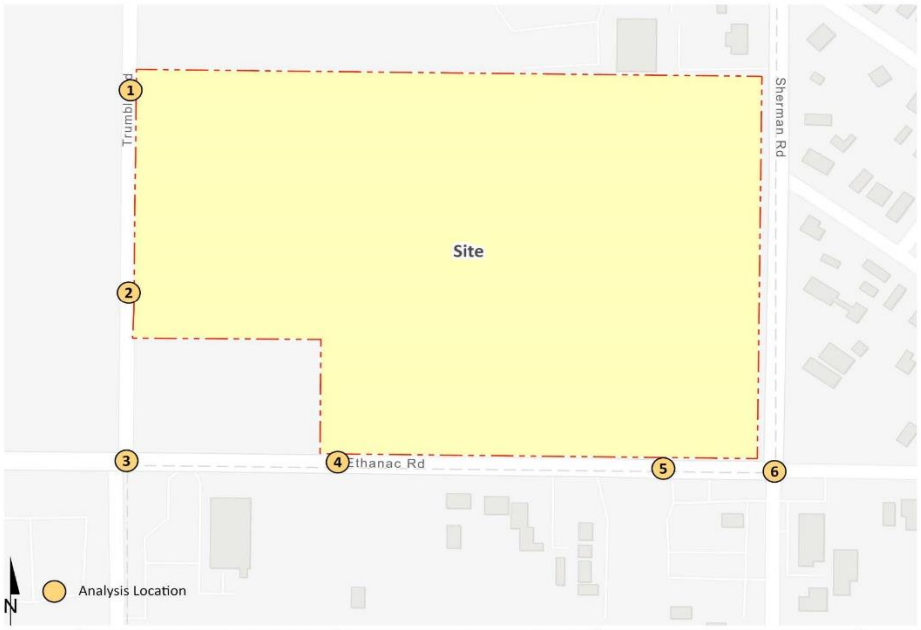
200		*500*
↲ 1(11)		↜ 9(4)
		← 14(5)
18(14) →		
500		

6 Sherman Rd. & Ethanac Rd.

200		*100*
	← 6(2)	
17(7) ↰		
1(7) →		
300		

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

EXHIBIT 4-4: PROJECT ONLY TRAFFIC VOLUMES (PCE)



1 Trumble Rd. & Driveway 1	2 Trumble Rd. & Driveway 2	3 Trumble Rd. & Ethanac Rd.	4 Driveway 3 & Ethanac Rd.	5 Driveway 4 & Ethanac Rd.
← 5(2) ↱ 4(2)	↓ 5(2) ← 8(4) ↑ 4(2) ↱ 6(4)	13(6) ↲ ← 2(21) ↺ 1(7) 10(6) → 17(7) →	2(17) ↲ ↱ 14(5) ← 1(11) 18(14) →	1(11) ↲ ↱ 9(4) ← 14(5) 18(14) →

6 Sherman Rd. & Ethanac Rd.
← 6(2) 17(7) ↰ 1(7) →

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

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 Perris and the nearby agency of the County of Riverside. 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 4-3. If applicable, the traffic generated by individual cumulative projects was manually added to the Without Project forecasts to ensure that traffic generated by the listed cumulative development projects in Table 4-3 are 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*. The Cumulative Only ADT and peak hour intersection turning movement volumes are shown on Exhibit 4-6 for actual vehicles and Exhibit 4-7 for PCE. A summary of the trip generation for each of the cumulative development projects identified in Table 4-3 has been provided in Appendix 4.1.

4.7 NEAR-TERM TRAFFIC CONDITIONS

The "buildup" approach combines existing traffic counts with a background ambient growth factor to forecast EAC (2025) and EAPC (2025) traffic conditions. An ambient growth factor accounts for background (area-wide) traffic increases that occur over time up to the year 2025 from the year 2022. Traffic volumes generated by the Project are then added to assess the near-term traffic conditions. The 2025 roadway networks are similar to the Existing conditions roadway network, with the exception of future driveways proposed to be developed by the Project.

The near-term traffic analysis includes the following traffic conditions, with the various traffic components:

- EAC (2025)
    - Existing 2022 counts
    - Ambient growth traffic (9.27%)
    - Cumulative Development traffic
- EAPC (2025)
    - Existing 2022 counts
    - Ambient growth traffic (9.27%)
    - Cumulative Development traffic
    - Project traffic

EXHIBIT 4-5: CUMULATIVE DEVELOPMENT LOCATION MAP

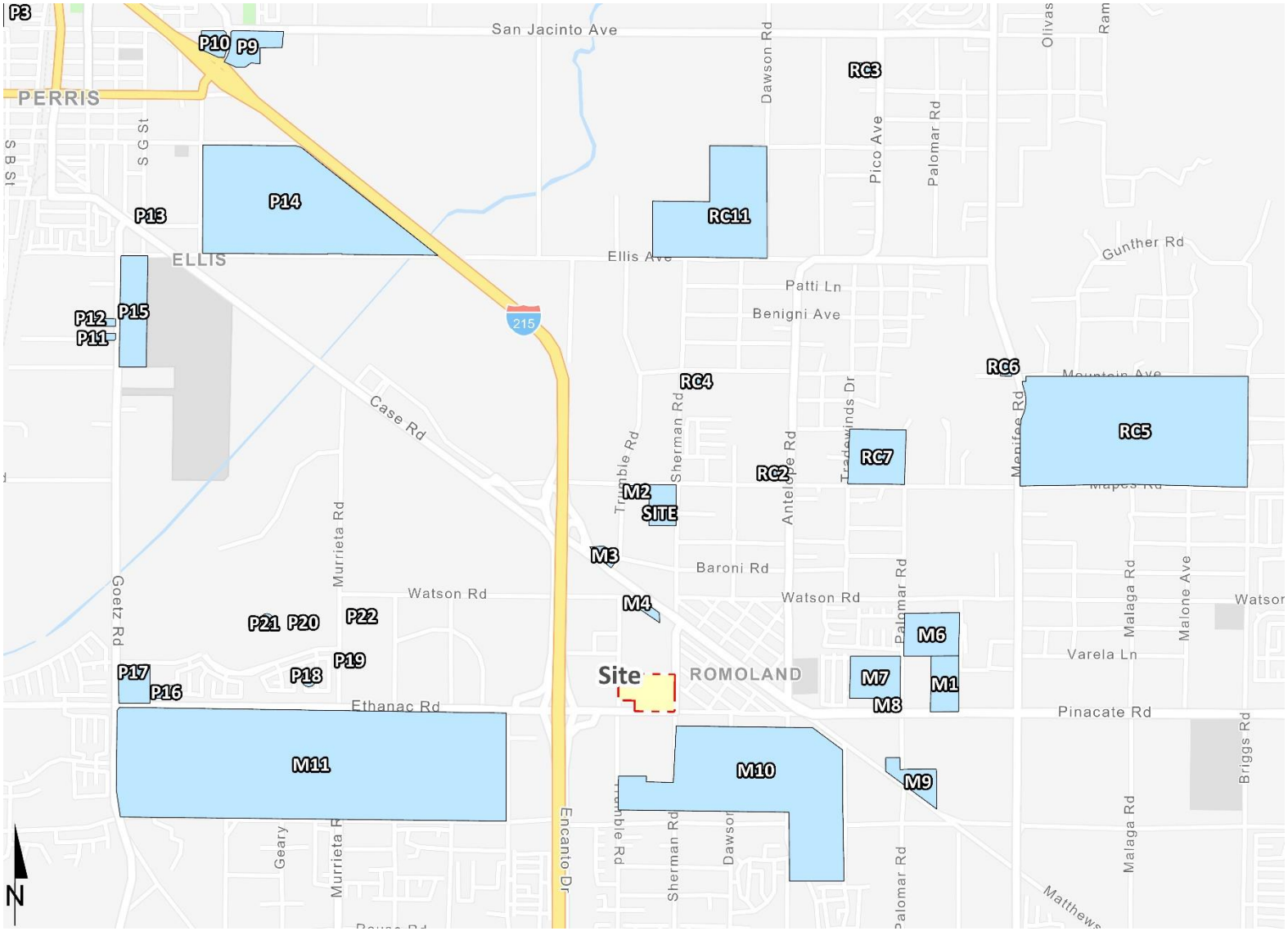
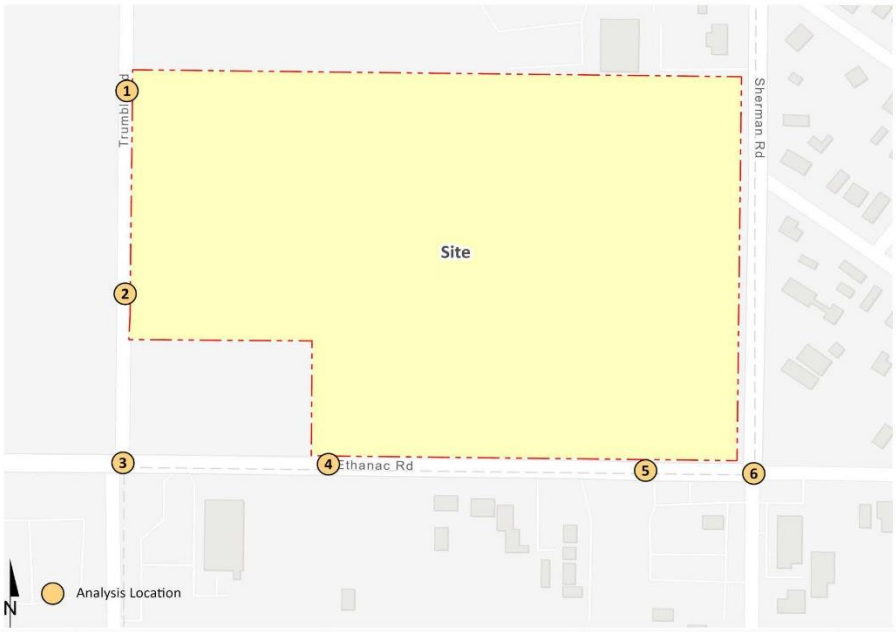


EXHIBIT 4-6: CUMULATIVE ONLY TRAFFIC VOLUMES (ACTUAL VEHICLES)



1 Trumble Rd. & Driveway 1

500
← 7(32)
→ 29(12)
500

2 Trumble Rd. & Driveway 2

500
← 7(32)
→ 29(12)
500

3 Trumble Rd. & Ethanac Rd.

500 — 21,650
↰ 4(18)
↳ 3(14)
← 13(5)
← 403(1583)
16(7) →
1437(1042) →
21,800

4 Driveway 3 & Ethanac Rd.

21,650
← 416(1588)
1440(1056) →
21,650

5 Driveway 4 & Ethanac Rd.

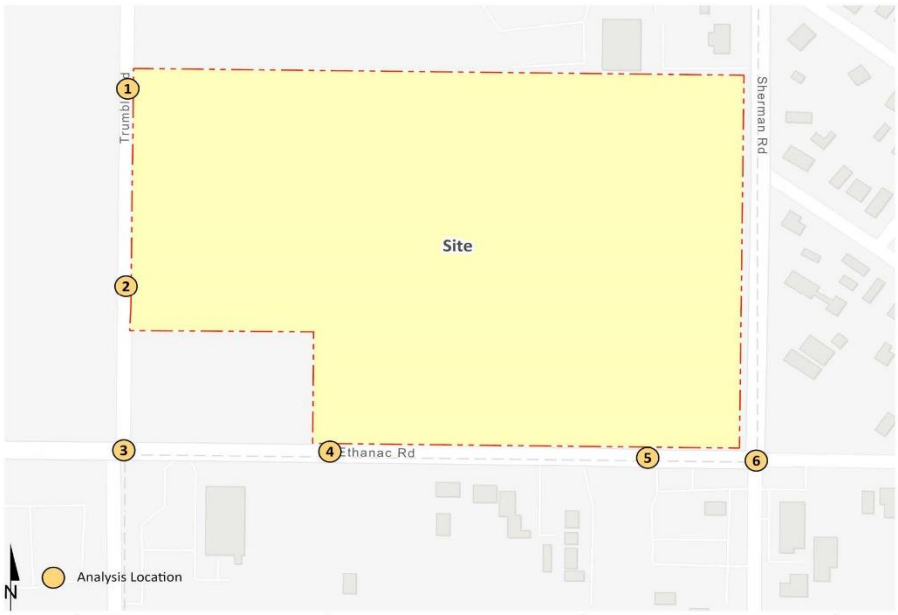
21,650
← 416(1588)
1440(1056) →
21,650

6 Sherman Rd. & Ethanac Rd.

850 — 15,000
↰ 13(5)
↓ 54(34)
↳ 20(13)
← 5(21)
← 277(1069)
↰ 80(52)
3(14) →
946(723) →
491(319) →
↰ 127(514)
→ 12(56)
↱ 18(83)
21,650 — 5,800

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

EXHIBIT 4-7: CUMULATIVE ONLY TRAFFIC VOLUMES (PCE)



1 Trumble Rd. & Driveway 1

		29(12) →
	7(32) ←	

2 Trumble Rd. & Driveway 2

		29(12) →
	7(32) ←	

3 Trumble Rd. & Ethanac Rd.

	4(18) ↲	3(14) ↳ 13(5) ↩ ← 457(1649)
16(7) ↪ 1506(1101) →		

4 Driveway 3 & Ethanac Rd.

	← 470(1654)
1509(1115) →	

5 Driveway 4 & Ethanac Rd.

	← 470(1654)
1509(1115) →	

6 Sherman Rd. & Ethanac Rd.

3(14) ↳ 1002(767) → 504(334) ↲	↰ ← ↱ 145(527) 12(56) 18(83)	↱ 5(21) ← 312(1122) ↰ 80(52)
	13(5) ↲ 54(34) ↓ 20(13) ↳	

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

TABLE 4-3: CUMULATIVE DEVELOPMENT LAND USE SUMMARY

No.	Project Name / Case Number	Jurisdiction	Land Use	Quantity	Units[1]
M1	SP260A2	Menifee	SP Proposal for APN329-110-003/026/028/014/019 (med and med-high density residential with commercial retails, light industrial and business park)	2,025	DU
M2	United Carports Warehouse (DEV2022-009)	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
M5	Trumble/Watson Warehouse (DEV2022-019)	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	1,461.650	TSF
	Menifee Commerce Center II (DEV2022-014)	Menifee	Warehouse	1,139.478	TSF
	Nova Battery Storage (DEV2022-015)	Menifee	Redevelopment of IEEC Plant		
	McLaughlin Warehouses (DEV2022-016)	Menifee	Warehouse	491.467	TSF
M10	Goetz/Ethanac Commercial (PLN21-0319)	Menifee	Gas Station + Retail	14.290	TSF
	Corsica Business Park (DEV2022-010)	Menifee	Business Park	276.682	TSF
	Capstone Industrial (PLN21-0370)	Menifee	Warehouse	700.037	TSF
	Warehouse on Murrieta (DEV2022-017)	Menifee	Warehouse	554.969	TSF
	Northern Gateway Commerce Center II (PLN21-0281)	Menifee	High-Cube Warehouse	1,312.601	TSF
	Ethanac/Evans Warehouse (DEV2022-018)	Menifee	Warehouse	137.896	TSF
	Ethanac Square (MJMOD PLN21-0104)	Menifee	Gas Station	3.800	TSF
	Ethanac/Barnett Warehouse (PP PLN21-0290)	Menifee	Warehouse	251.912	TSF
	Wheat Warehouse (DEV2022-012)	Menifee	Warehouse	87.676	TSF
M11	Sherman & Mapes Warehouse	Menifee	High-Cube Fulfillment	277.578	TSF
P1	Perez Indus	Perris	Warehousing	2.500	TSF
P2	South Perris Industrial Project (IDI)	Perris	High-Cube Warehouse	7,394.048	TSF
P3	Perris Airport Center	Perris	High-Cube Warehouse	704.480	TSF
P4	GVSP - Track 37262	Perris	Single Family Housing	191	DU
P5	GVSP - Track 37716	Perris	Multifamily Housing	97	DU
P6	GVSP - Track 37722	Perris	Single Family Housing	116	DU
P7	GVSP - Track 37817	Perris	Multifamily Housing	227	DU
P8	GVSP - Track 37818	Perris	Single Family Housing	138	DU
P9	GVSP - Track 37818	Perris	Multifamily Housing	236	DU
P10	GVSP - Track 37223	Perris	Single Family Housing	235	DU
P11	Malbert Cultivation	Perris	Cultivation	33.000	TSF
P12	Marijuana Manufacturing	Perris	Manufacturing	61.050	TSF
			Truck Trailer Yard	371	Spaces
RC1	Ellis/Sherman Warehouses	County	High-Cube Fulfillment	1,374.688	TSF
			High-Cube Cold Storage	242.592	TSF
RC2	TTM/TR37358	County	Residential lots	154	DU
RC3	TR36712	County	Single Family Lots	74	DU
RC4	TTM37728	County	228 Lot Schedule a Tentative	228	DU
RC5	SP00344/TR35045	County	Residential with Park/Open	796	DU
RC6	TR31687	County	Single Family Residential	65	DU

[1] DU = Dwelling Units; TSF = Thousand Square Feet; VFP = Vehicle Fueling Positions; RM = Rooms

4.8 HORIZON YEAR TRAFFIC FORECASTS

Traffic projections for Horizon Year conditions were derived from the RIVTAM regional model using accepted procedures for model forecast refinement and smoothing. Volumes from the latest RIVCOM model were reviewed but were deemed to be understated in the immediate vicinity of the Project. The traffic forecasts reflect the area-wide growth anticipated between Existing and Horizon Year traffic conditions. The base model year for the RIVTAM model is Year 2012 and the future year model is Year 2040.

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. Additional growth has also been included to adjust the 2040 volumes to reflect Horizon Year (2045) traffic forecasts.

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 EAC volumes in order to ensure a minimum growth as a part of the refinement process. The minimum growth includes any additional growth between EAC and Horizon Year traffic conditions that is not accounted for by the traffic generated by cumulative development projects and ambient growth rates assumed between Existing (2022) and Horizon Year traffic conditions. Future estimated peak hour traffic data was used for new intersections and intersections with an anticipated change in travel patterns to further refine the Horizon Year peak hour forecasts. The only instance when the EAC forecasts would not be used to manually adjust the Horizon Year forecasts is if there are new proposed roadway connections/facilities that would explain the change in travel patterns within the study area.

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 (volume balancing), 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 the development of traffic volumes which are suitable for peak hour intersection operations analysis. Post processing worksheets are provided in Appendix 4.2.

5 E+P TRAFFIC CONDITIONS

This section discusses the traffic forecasts for E+P conditions and the resulting intersection operations and traffic signal warrant analyses.

5.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for E+P conditions are consistent with those shown previously on 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 E+P conditions (e.g., intersection and roadway improvements at the Project's frontage and driveways).

5.2 E+P TRAFFIC VOLUME FORECASTS

This scenario includes Existing (2022) traffic volumes plus the addition of Project traffic. The weekday ADT volumes and peak hour volumes, in actual vehicles, which can be expected for E+P traffic conditions are shown on Exhibit 5-1 for actual vehicles and Exhibit 5-2 for PCE.

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 the study area intersections are anticipated to continue to operate at an acceptable LOS during the peak hours, with the exception of the following intersection (consistent with Existing traffic conditions):

- Sherman Road & Ethanac Road (#6) – LOS E PM peak hour only

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

TABLE 5-1: INTERSECTION ANALYSIS FOR E+P CONDITIONS

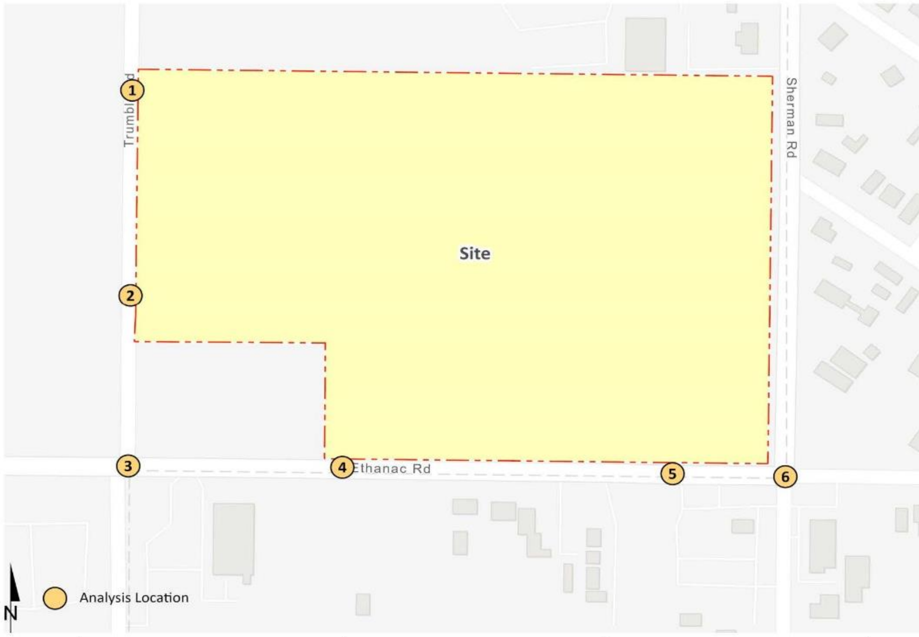
			Existing (2022)				E+P			
			Delay[1] (secs.)		Level of Service		Delay[1] (secs.)		Level of Service	
#	Intersection	Traffic Control[2]	AM	PM	AM	PM	AM	PM	AM	PM
1	Trumble Rd. & Driveway 1	**CSS**	Future Intersection				9.6	9.5	A	A
2	Trumble Rd. & Driveway 2	**CSS**	Future Intersection				9.6	9.5	A	A
3	Trumble Rd. & Ethanac Rd.	TS	20.2	18.2	C	B	21.6	19.1	C	B
4	Driveway 3 & Ethanac Rd.	**CSS**	Future Intersection				11.6	11.1	B	B
5	Driveway 4 & Ethanac Rd.	**CSS**	Future Intersection				11.7	10.9	B	B
6	Sherman Rd. & Ethanac Rd.	CSS	26.7	**35.7**	D	**E**	28.5	**37.4**	D	**E**

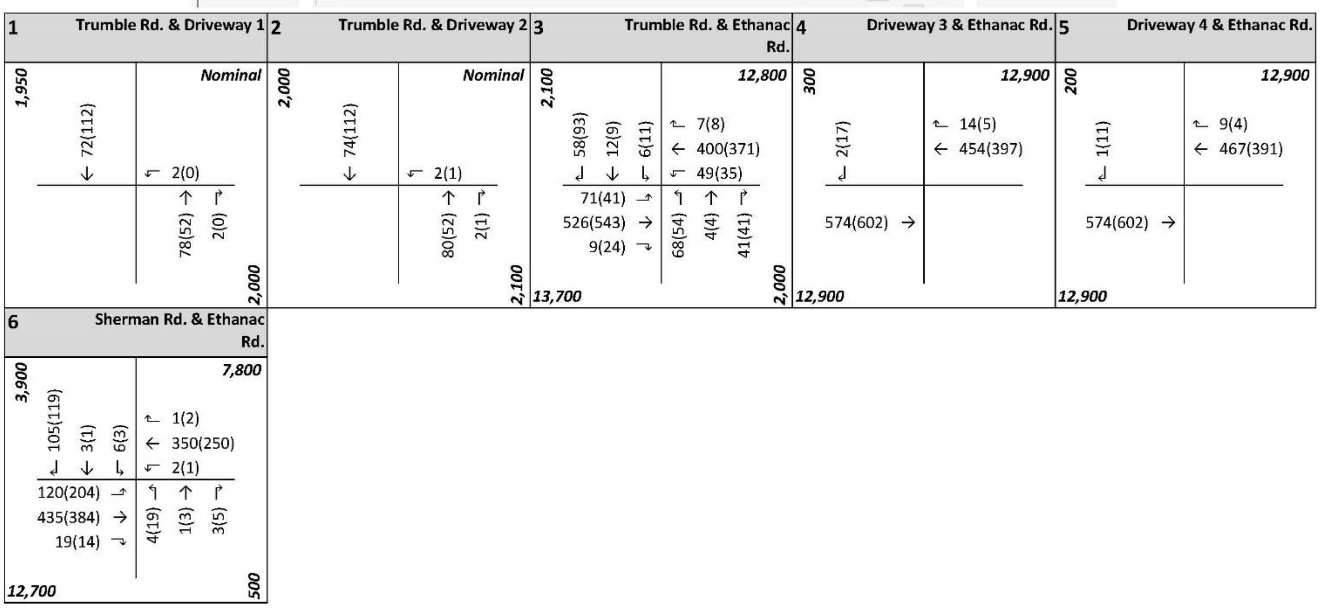
* **BOLD** = Level of Service (LOS) does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

1 Per the Highway Capacity Manual (6th 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

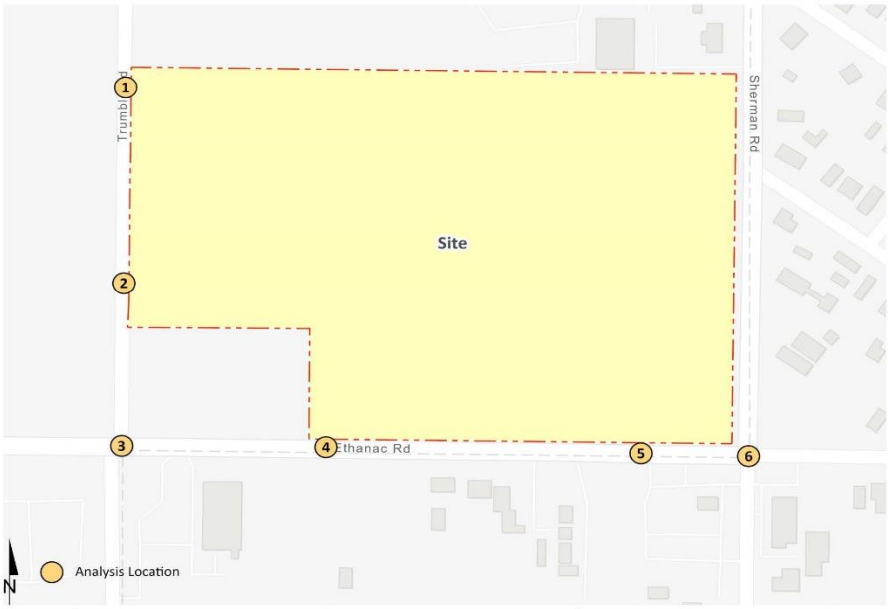
EXHIBIT 5-1: E+P TRAFFIC VOLUMES (ACTUAL VEHICLES)





##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

EXHIBIT 5-2: E+P TRAFFIC VOLUMES (PCE)



1 Trumble Rd. & Driveway 1

	5(2) ↰	
	91(57) ↑	4(2) ↱
89(116) ↓		

2 Trumble Rd. & Driveway 2

	8(4) ↰	
	95(59) ↑	6(4) ↱
94(118) ↓		

3 Trumble Rd. & Ethanac Rd.

	7(11) ↱	
	430(382) ←	
	53(36) ↰	
90(48) →	72(56) ↰	7(11) ↱
552(556) →	4(4) ↑	430(382) ←
11(25) ↲	45(45) ↱	53(36) ↰
83(102) ↲		
12(9) ↓		
7(11) ↳		

4 Driveway 3 & Ethanac Rd.

	14(5) ↱	
	488(411) ←	
2(17) ↲		
605(619) →		

5 Driveway 4 & Ethanac Rd.

	9(4) ↱	
	501(405) ←	
1(11) ↲		
605(619) →		

6 Sherman Rd. & Ethanac Rd.

	1(3) ↱	
	377(263) ←	
	2(1) ↰	
122(211) →	6(20) ↰	1(3) ↑	5(6) ↱
460(392) →			
23(16) ↲			
111(120) ↲			
3(1) ↓			
6(3) ↳			

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

5.4 TRAFFIC SIGNAL WARRANTS ANALYSIS

The traffic signal warrant analysis for E+P traffic conditions are based on the planning level ADT volume-based traffic signal warrants. There are no additional study area intersections anticipated to meet a traffic signal warrant under E+P traffic conditions in addition to the location warranted under Existing traffic conditions (see Appendix 5.2).

5.5 DEFICIENCIES AND IMPROVEMENTS

This section provides a summary of Project deficiencies and recommended improvements. Based on the City of Perris deficiency criteria discussed in Section 2.5 *Deficiency Criteria*, roadway segments were found to be deficient. Improvements necessary to improve project-related traffic deficiencies are also discussed below.

Table 5-2 indicates the improvements needed to address LOS deficiencies at the deficient study area intersection under EAPC (2025) traffic conditions. The improvements have been identified to improve the EAPC (2025) deficiencies back to acceptable levels. Intersection analysis worksheets for EAPC (2025) traffic conditions, with improvements, are provided in Appendix 5.3. The recommended improvement includes signalization of the intersection of Sherman Road and Ethanac Road along with dedicated left turn pockets for all approaches (traffic signal is currently warranted under Existing traffic conditions).

TABLE 5-2: INTERSECTION ANALYSIS FOR E+P CONDITIONS WITH IMPROVEMENTS

		Intersection Approach Lanes[1]												Delay[2] (secs.)		Level of Service	
	Traffic	Northbound			Southbound			Eastbound			Westbound						
	Control[3]	L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
6 Sherman Rd. & Ethanac Rd.																	
Without Improvements:	CSS	0	1	0	0	1	0	0	1	0	0	1	0	28.5	**37.4**	D	**E**
With Improvements:	**TS**	**1**	1	0	**1**	1	0	**1**	1	0	**1**	1	0	18.0	17.5	B	B

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

[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 (6th 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

6 EAC & EAPC (2025) TRAFFIC CONDITIONS

This section discusses the traffic forecasts for EAC and EAPC (2025) traffic conditions and the resulting intersection operations and traffic signal warrant analyses.

6.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for EAC and EAPC (2025) Projects conditions are consistent with those shown previously on 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 EAPC (2025) 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 both EAC and EAPC (2025) conditions only (e.g., intersection and roadway improvements along the cumulative development's frontages).

6.2 EAC AND EAPC (2025) TRAFFIC VOLUME FORECASTS

The EAC (2025) scenario includes Existing traffic volumes plus an ambient growth factor of 9.27% and the addition of traffic generated by cumulative development projects. The EAPC (2025) scenario includes Existing traffic volumes plus an ambient growth factor of 6.09%, 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 (2025) traffic conditions are shown on Exhibits 6-1 and 6-2, respectively. The weekday ADT and weekday peak hour intersection turning movement volumes, in PCE, which can be expected for EAC and EAPC (2025) traffic conditions are shown on Exhibits 6-3 and 6-4, respectively.

6.3 INTERSECTION OPERATIONS ANALYSIS

EAC and EAPC (2025) 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 6-1 for EAC (2025) traffic conditions, which indicates that the following study area intersections are anticipated to operate at an unacceptable LOS during the peak hours:

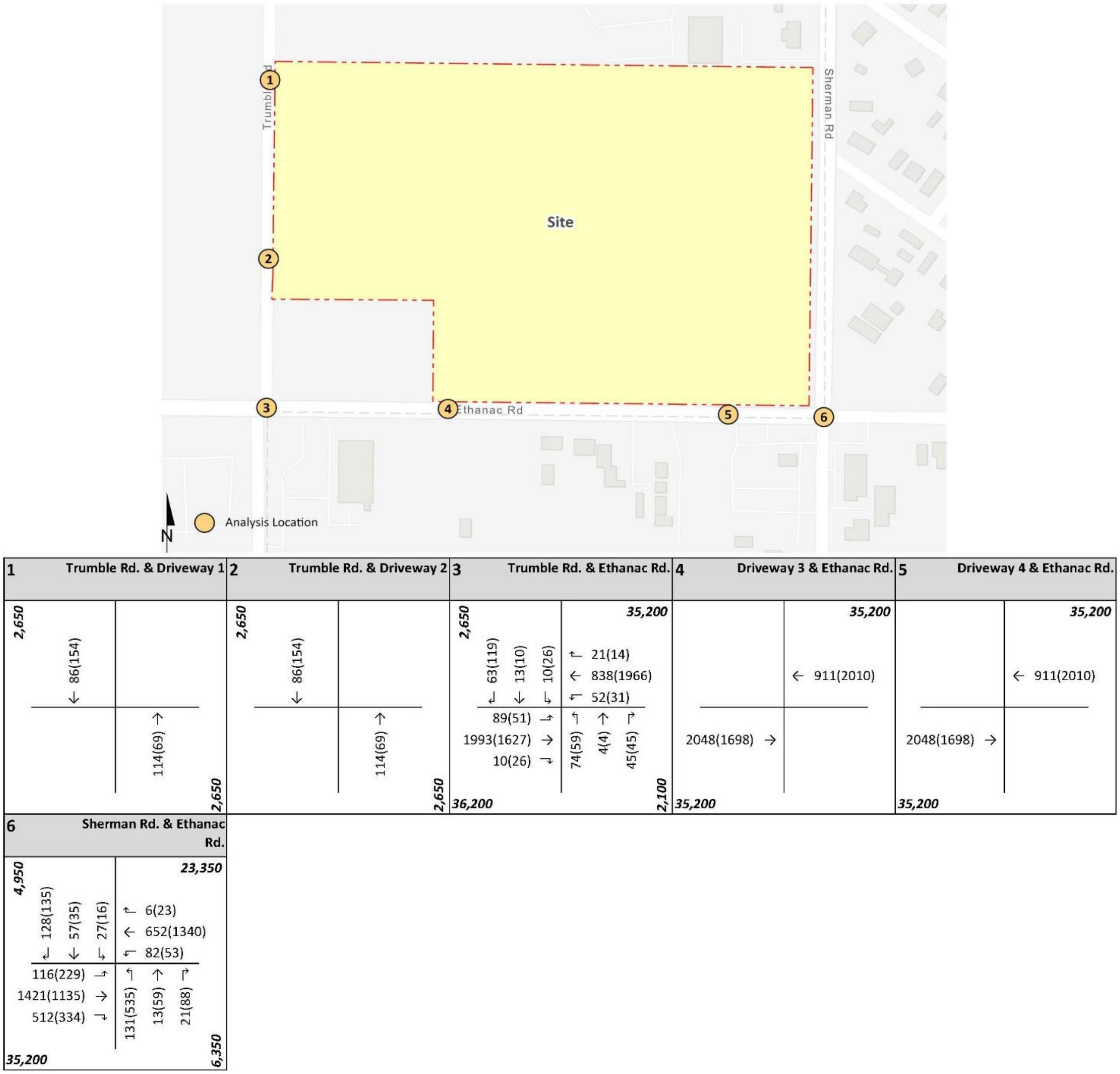
- Trumble Road & Ethanac Road (#3) – LOS F AM and PM peak hours
- Sherman Road & Ethanac Road (#6) – LOS F AM and PM peak hours

The intersection analysis results are summarized in Table 6-1 for EAPC (2025), which indicates the following additional study area intersections are anticipated to operate at an unacceptable LOS during the peak hours, in addition to the intersections identified under EAC (2025) traffic conditions:

- Driveway 3 & Ethanac Road (#4) – LOS F PM peak hour only
- Driveway 4 & Ethanac Road (#5) – LOS F PM peak hour only

The intersection operations analysis worksheets for EAC and EAPC (2025) traffic conditions are included in Appendices 6.1 and 6.2, respectively.

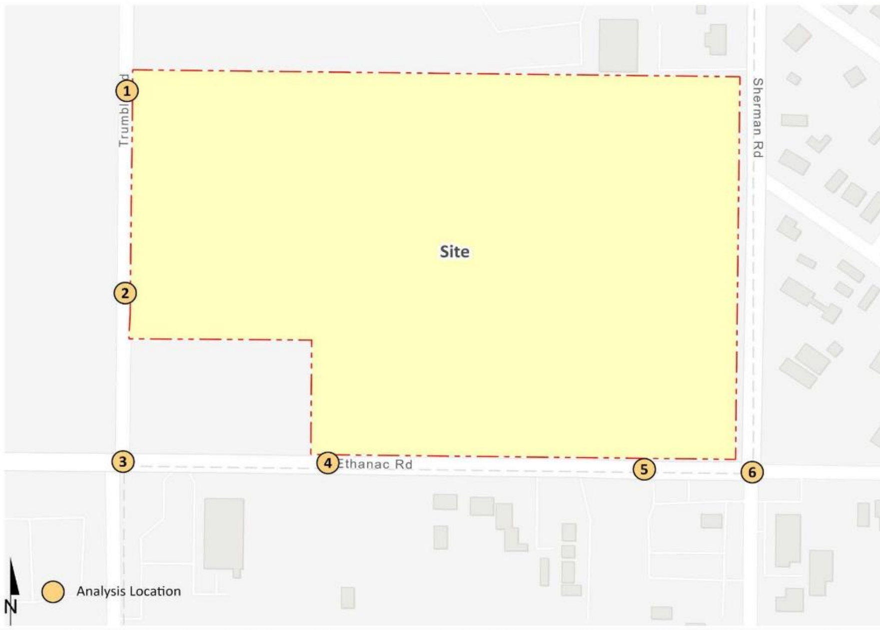
EXHIBIT 6-1: EAC (2025) TRAFFIC VOLUMES (ACTUAL VEHICLES)

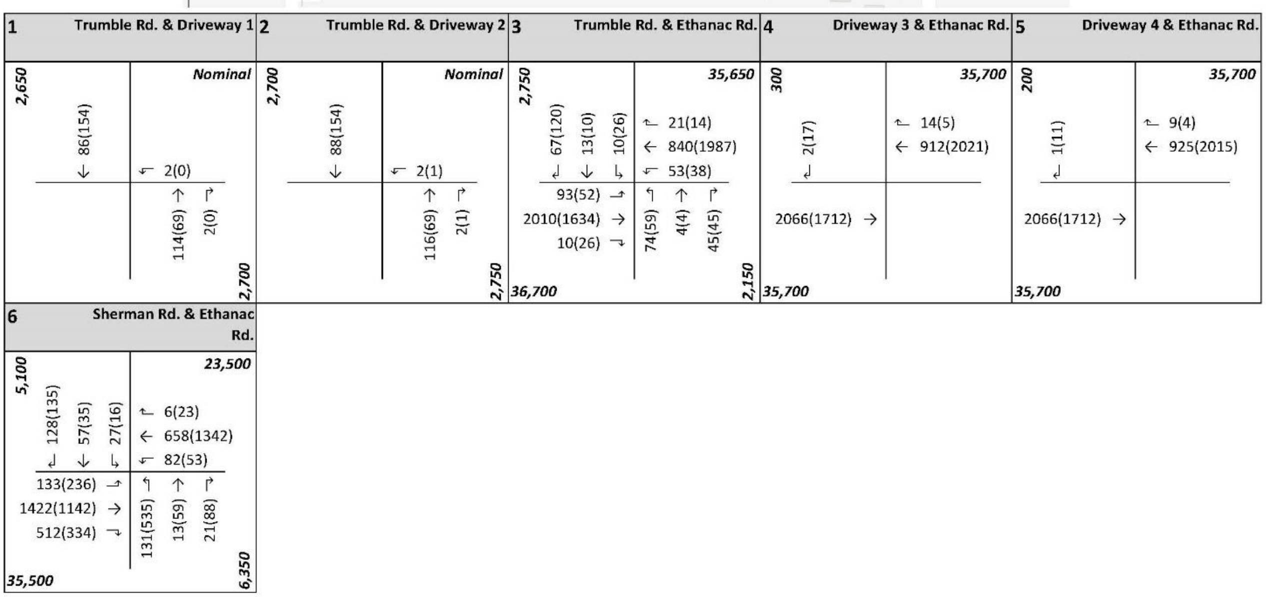


##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

EXHIBIT 6-2: EAPC (2025) TRAFFIC VOLUMES (ACTUAL VEHICLES)

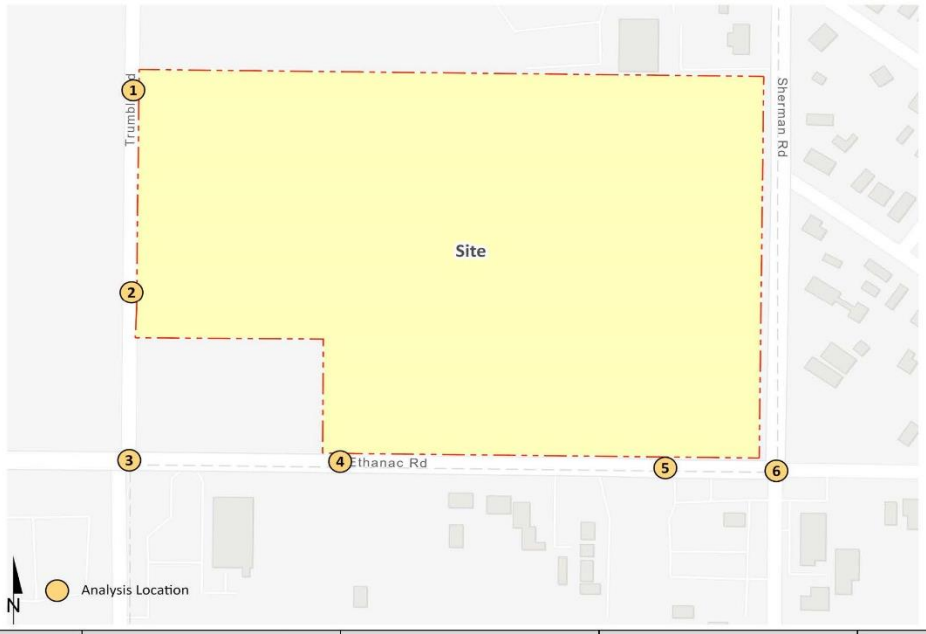




##(##) AM(PM) Peak Hour Intersection Volumes

***##* Average Daily Trips**

EXHIBIT 6-3: EAC (2025) TRAFFIC VOLUMES (PCE)



1 Trumble Rd. & Driveway 1

	← 104(158)	
		128(74) →

2 Trumble Rd. & Driveway 2

	← 104(158)	
		128(74) →

3 Trumble Rd. & Ethanac Rd.

↱ 21(17)		
← 925(2043)		
↰ 56(31)		
80(122) ↲	13(10) ↓	11(26) ↳
103(52) ↳		
2090(1701) →		
12(27) ↲		
↰ 78(61)	↑ 4(4)	↱ 49(49)

4 Driveway 3 & Ethanac Rd.

	← 1002(2091)
2150(1776) →	

5 Driveway 4 & Ethanac Rd.

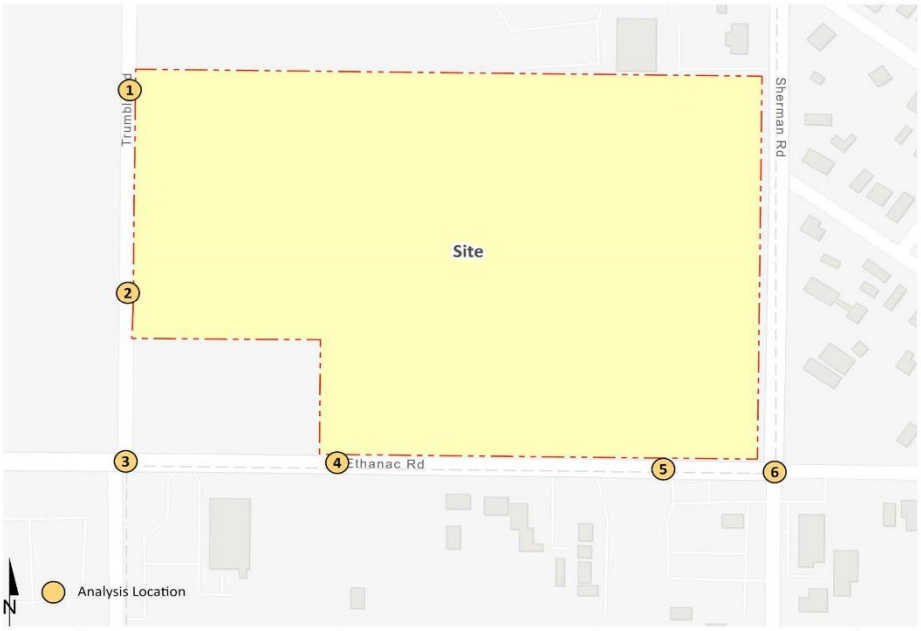
	← 1002(2091)
2150(1776) →	

6 Sherman Rd. & Ethanac Rd.

		↱ 6(24)
		← 717(1407)
		↰ 82(53)
134(136) ↲	57(35) ↓	27(16) ↳
118(237) ↳		
1504(1187) →		
529(351) ↲		
↰ 151(548)	↑ 13(59)	↱ 23(89)

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

EXHIBIT 6-4: EAPC (2025) TRAFFIC VOLUMES (PCE)



1 Trumble Rd. & Driveway 1

	↰ 5(2)	
↓ 104(158)		
	↑ 128(74)	↱ 4(2)

2 Trumble Rd. & Driveway 2

	↰ 8(4)	
↓ 109(160)		
	↑ 132(76)	↱ 6(4)

3 Trumble Rd. & Ethanac Rd.

		↱ 21(17)
		← 927(2064)
↲ 93(128)	↓ 13(10)	↳ 11(26) ↰ 57(38)
113(58) →		↰ 78(61)
2107(1708) →		↑ 4(4)
12(27) ↲		↱ 49(49)

4 Driveway 3 & Ethanac Rd.

		↱ 14(5)
		← 1003(2102)
↲ 2(17)		
2168(1790) →		

5 Driveway 4 & Ethanac Rd.

		↱ 9(4)
		← 1016(2096)
↲ 1(11)		
2168(1790) →		

6 Sherman Rd. & Ethanac Rd.

		↱ 6(24)
		← 723(1409)
↲ 134(136)	↓ 57(35)	↳ 27(16) ↰ 82(53)
135(244) →		↰ 151(548)
1505(1194) →		↑ 13(59)
529(351) ↲		↱ 23(89)

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

TABLE 6-1: INTERSECTION ANALYSIS FOR EAC AND EAPC (2025) CONDITIONS

#	Intersection	Traffic Control[2]	EAC (2025) Delay[1] (secs.) AM	EAC (2025) Delay[1] (secs.) PM	EAC (2025) Level of Service AM	EAC (2025) Level of Service PM	EAPC (2025) Delay[1] (secs.) AM	EAPC (2025) Delay[1] (secs.) PM	EAPC (2025) Level of Service AM	EAPC (2025) Level of Service PM
1	Trumble Rd. & Driveway 1	**CSS**	Future Intersection				9.9	9.9	A	A
2	Trumble Rd. & Driveway 2	**CSS**	Future Intersection				10.0	9.9	B	A
3	Trumble Rd. & Ethanac Rd.	TS	**>200.0**	**>200.0**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**
4	Driveway 3 & Ethanac Rd.	**CSS**	Future Intersection				18.9	**111.3**	C	**F**
5	Driveway 4 & Ethanac Rd.	**CSS**	Future Intersection				19.1	**96.0**	C	**F**
6	Sherman Rd. & Ethanac Rd.	CSS	**>200.0**	**>200.0**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**

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

1 Per the Highway Capacity Manual (6th 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

Traffic signal warrants have not been conducted for EAC (2025) traffic conditions as the only existing unsignalized intersection of Sherman Road and Ethanac Road currently warrants a traffic signal. The traffic signal warrant analysis for EAPC (2025) traffic conditions are based on planning level ADT volume-based traffic signal warrants. There are no additional unsignalized study area intersections anticipated to meet a traffic signal warrant under EAPC (2025) traffic conditions, in addition to the intersection identified under Existing traffic conditions (see Appendix 6.3).

6.5 DEFICIENCIES AND IMPROVEMENTS

Improvements needed to achieve acceptable LOS have been identified at intersections or off-ramps that are anticipated to operate at a deficient LOS under EAPC (2025) traffic conditions.

Improvement strategies have been recommended at intersections that have been identified as deficient under EAPC (2025) traffic conditions in an effort to achieve an acceptable LOS (i.e., LOS D or better). The effectiveness of the recommended improvement strategies to address EAPC (2025) traffic deficiencies are presented in Table 6-2. Worksheets for EAPC (2024), with improvements, intersection operations are provided in Appendix 6.4.

Although the Project's frontage improvements include widening Ethanac Road to its ultimate General Plan roadway classification as an Expressway, the additional through lanes in the westbound direction cannot be striped until such time additional widening has occurred west of Trumble Road and east of Sherman Road.

TABLE 6-2: INTERSECTION ANALYSIS FOR EAPC (2025) CONDITIONS WITH IMPROVEMENTS

	Traffic	Intersection Approach Lanes[1]												Delay[2] (secs.)		Level of Service	
		Northbound			Southbound			Eastbound			Westbound						
	Control[3]	L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
3 Trumble Rd. & Ethanac Rd.																	
Without Improvements:	TS	1	1	0	1	1	0	1	1	1	1	1	0	**>200.0**	**>200.0**	**F**	**F**
With Improvements:	TS	1	1	0	1	1	0	1	**2**	1	1	**2**	0	44.5	36.6	D	D
4 Driveway 3 & Ethanac Rd.																	
Without Improvements:	**CSS**	0	0	0	0	0	**1**	0	1	0	0	1	0	18.9	**111.3**	C	**F**
With Improvements:	**CSS**	0	0	0	0	0	**1**	0	**2**	0	0	**2**	0	12.5	25.3	B	D
5 Driveway 4 & Ethanac Rd.																	
Without Improvements:	**CSS**	0	0	0	0	0	**1**	0	1	0	0	1	0	19.1	**96.0**	C	**F**
With Improvements:	**CSS**	0	0	0	0	0	**1**	0	**2**	0	0	**2**	0	12.5	24.5	B	C
6 Sherman Rd. & Ethanac Rd.																	
Without Improvements:	CSS	0	1	0	0	1	0	0	1	0	0	1	0	**>200.0**	**>200.0**	**F**	**F**
With Improvements:	**TS**	**2**	1	0	**1**	1	**1**	**1**	**2**	**1>**	**1**	**2**	**1**	23.8	49.9	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 (6th 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

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7 HORIZON YEAR (2045) TRAFFIC CONDITIONS

This section discusses the traffic forecasts for Horizon Year (2045) conditions and the resulting intersection operations and traffic signal warrant 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 on 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 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 only (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-processed volumes obtained from RIVTAM (plus growth), plus the traffic generated by the proposed Project for With Project conditions. The weekday ADT and weekday AM and PM peak hour volumes, in actual vehicles, which can be expected for Horizon Year (2045) Without and With Project traffic conditions, in actual vehicles, are shown on Exhibits 7-1 and 7-2, respectively. The weekday ADT and weekday AM and PM peak hour volumes, in actual vehicles, which can be expected for Horizon Year (2045) Without and With Project traffic conditions, in PCE, are shown on Exhibits 7-3 and 7-4, respectively.

7.3 INTERSECTION OPERATIONS ANALYSIS

Horizon Year (2045) conditions 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 7-1 for Horizon Year (2045) conditions which indicates the following study area intersections are anticipated to operate at an unacceptable LOS under Horizon Year (2045) Without Project traffic conditions:

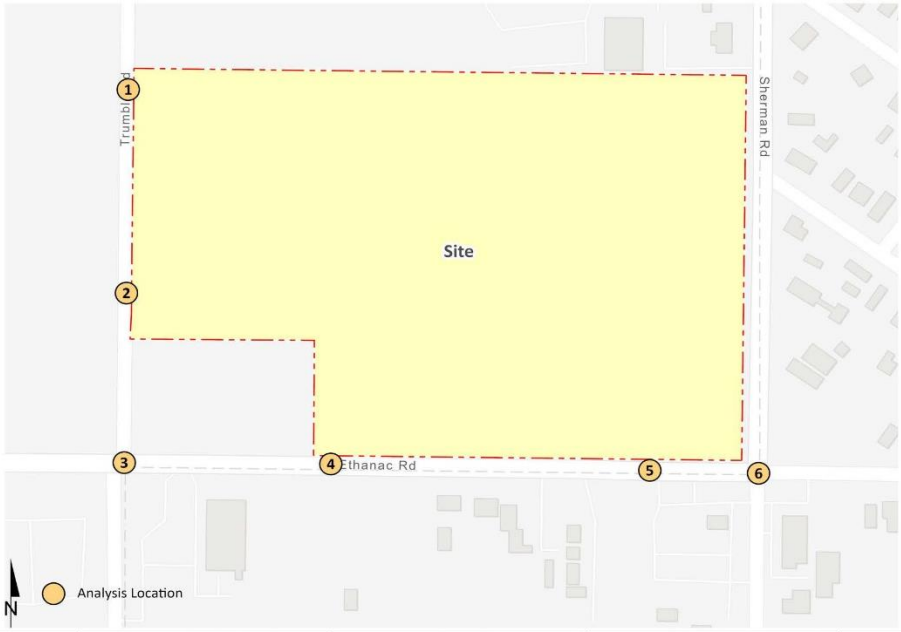
- Trumble Road & Ethanac Road (#3) – LOS F AM and PM peak hours
- Sherman Road & Ethanac Road (#6) – LOS F AM and PM peak hours

The intersection analysis results are summarized in Table 7-1 for Horizon Year (2045) With Project conditions, which indicates the following additional study area intersections are anticipated to operate at an unacceptable LOS during the peak hours, in addition to the intersections identified under Horizon Year (2045) Without Project traffic conditions:

- Driveway 3 & Ethanac Road (#4) – LOS F PM peak hour only
- Driveway 4 & Ethanac Road (#5) – LOS F PM peak hour only

The intersection operations analysis worksheets for Horizon Year (2045) Without and Without Project traffic conditions are included in Appendices 7.1 and 7.2, respectively.

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



1 Trumble Rd. & Driveway 1

3,400
105(236) ↓
183(154) → 3,400

2 Trumble Rd. & Driveway 2

3,400
105(236) ↓
183(154) → 3,400

3 Trumble Rd. & Ethanac Rd.

3,400 — 78,350
72(134) ↲ 15(11) ↓ 18(91) ↳
↰ 78(67)
← 2375(2296)
↶ 60(40)
100(81) ↳
2077(2404) →
11(30) ↲
85(68) ↰ 5(5) ↑ 52(56) ↱
85,400 — 2,400

4 Driveway 3 & Ethanac Rd.

78,350
← 2514(2404)
2146(2550) →
78,350

5 Driveway 4 & Ethanac Rd.

78,350
← 2514(2404)
2146(2550) →
78,350

6 Sherman Rd. & Ethanac Rd.

14,800 — 69,900
220(229) ↲ 84(306) ↓ 265(312) ↳
↰ 245(206)
← 2123(1637)
↶ 90(243)
132(262) ↰
1499(1952) →
515(337) ↲
171(538) ↰ 178(132) ↑ 207(158) ↱
78,350 — 6,450

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

EXHIBIT 7-2: HORIZON YEAR (2045) WITH PROJECT TRAFFIC VOLUMES (ACTUAL VEHICLES)

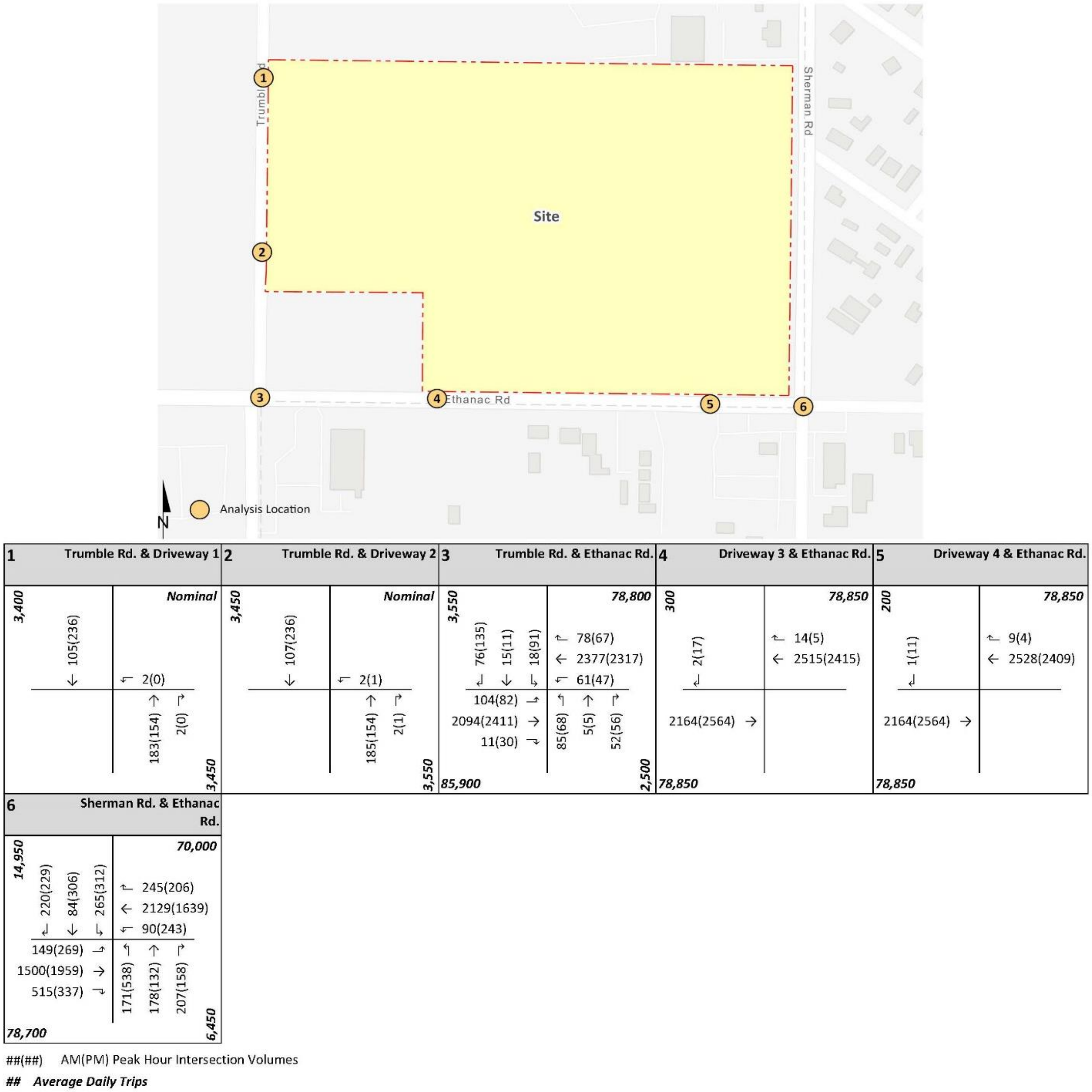
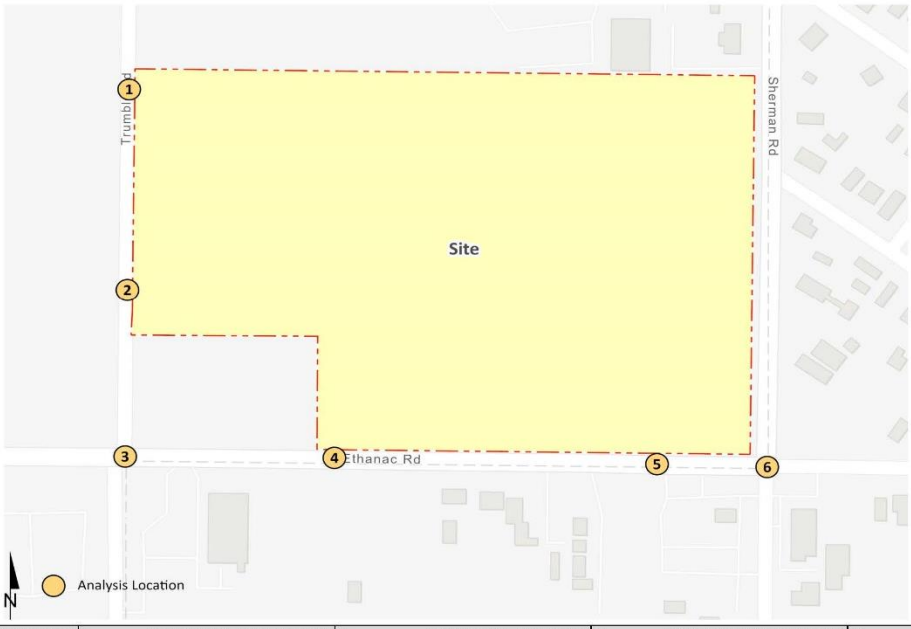


EXHIBIT 7-3: HORIZON YEAR (2045) WITHOUT PROJECT TRAFFIC VOLUMES (PCE)



1 Trumble Rd. & Driveway 1

	← 127(240)	
		199(172) →

2 Trumble Rd. & Driveway 2

	← 127(240)	
		199(172) →

3 Trumble Rd. & Ethanac Rd.

		↱ 78(83)
		← 2617(2385)
		↰ 65(41)
116(84) ⮑	↰	↑ ↱
2178(2515) →	90(70)	5(5) 57(60)
14(31) ⮐		

4 Driveway 3 & Ethanac Rd.

	← 2760(2510)
2254(2666) →	

5 Driveway 4 & Ethanac Rd.

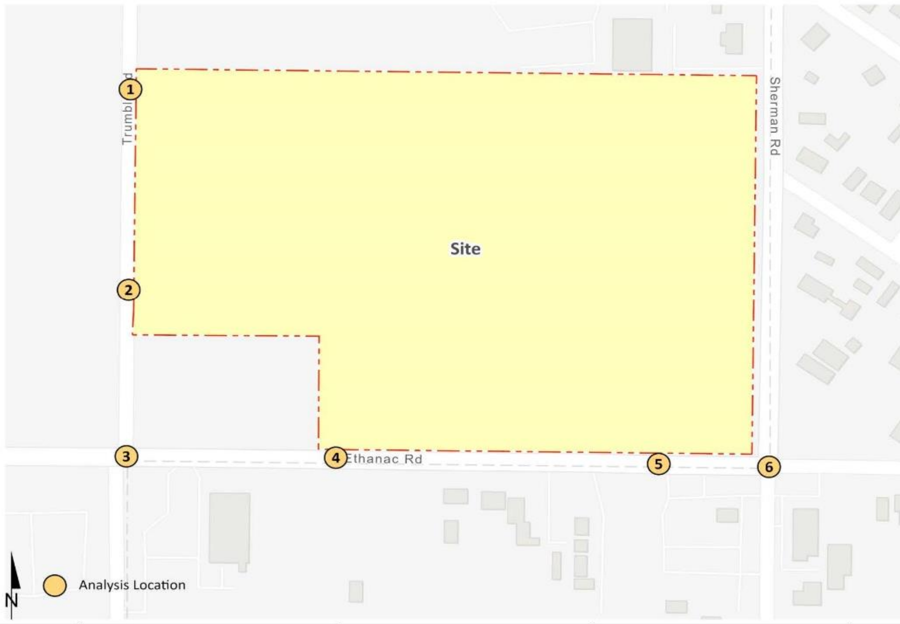
	← 2760(2510)
2254(2666) →	

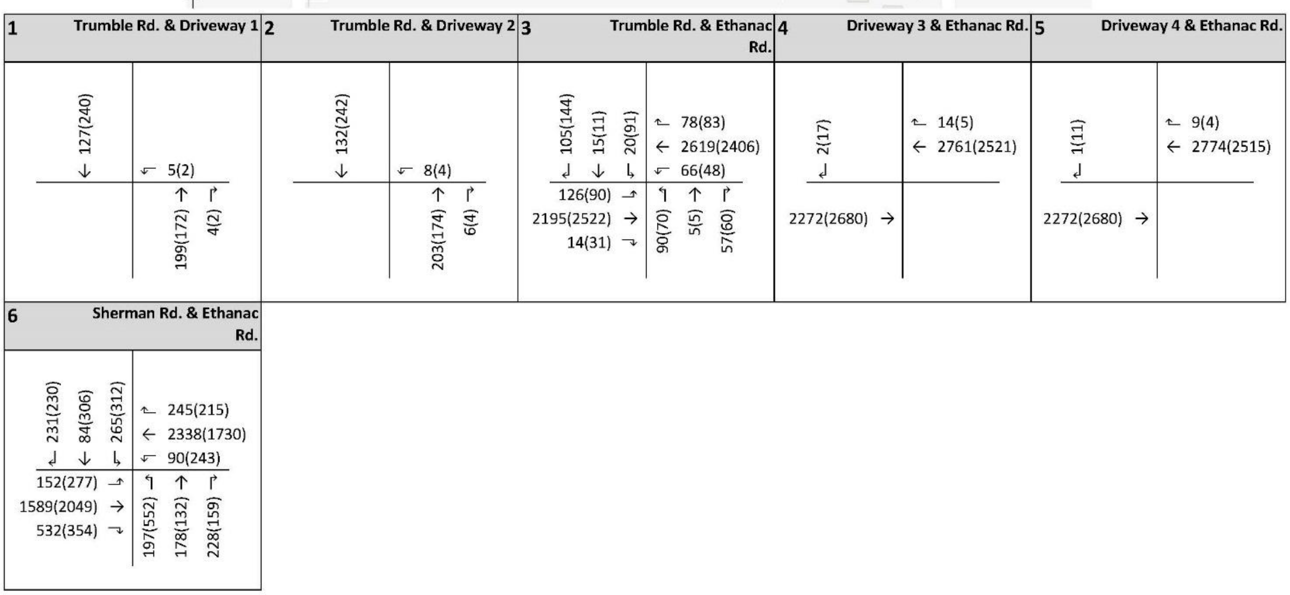
6 Sherman Rd. & Ethanac Rd.

		↱ 245(215)
		← 2332(1728)
↲ 231(230)	↓ 84(306)	↳ 265(312) ↰ 90(243)
135(270) ⮑	↰	↑ ↱
1588(2042) →	197(552)	178(132) 228(159)
532(354) ⮐		

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

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





##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

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

#	Intersection	Traffic Control[2]	2045 Without Project Delay[1] (secs.) AM	2045 Without Project Delay[1] (secs.) PM	2045 Without Project Level of Service AM	2045 Without Project Level of Service PM	2045 With Project Delay[1] (secs.) AM	2045 With Project Delay[1] (secs.) PM	2045 With Project Level of Service AM	2045 With Project Level of Service PM
1	Trumble Rd. & Driveway 1	**CSS**	Future Intersection				10.6	11.3	B	B
2	Trumble Rd. & Driveway 2	**CSS**	Future Intersection				10.7	11.4	B	B
3	Trumble Rd. & Ethanac Rd.	TS	**>200.0**	**>200.0**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**
4	Driveway 3 & Ethanac Rd.	**CSS**	Future Intersection				**>200.0**	**>200.0**	**F**	**F**
5	Driveway 4 & Ethanac Rd.	**CSS**	Future Intersection				**>200.0**	**>200.0**	**F**	**F**
6	Sherman Rd. & Ethanac Rd.	CSS	**>200.0**	**>200.0**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**

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

1 Per the Highway Capacity Manual (6th 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

Traffic signal warrants have not been conducted for Horizon Year (2045) Without Project traffic conditions as the only existing unsignalized intersection of Sherman Road and Ethanac Road currently warrants a traffic signal. The traffic signal warrant analysis for Horizon Year (2045) With Project traffic conditions are based on planning level ADT volume-based traffic signal warrants. There are no additional unsignalized study area intersections anticipated to meet a traffic signal warrant under Horizon Year (2045) With Project traffic conditions, in addition to the intersection identified under Existing traffic conditions (see Appendix 7.3).

7.5 DEFICIENCIES AND IMPROVEMENTS

Improvements needed to achieve acceptable LOS have been identified at intersections or off-ramps that are anticipated to operate at a deficient LOS under Horizon Year (2045) traffic conditions.

Improvement strategies have been recommended at intersections that have been identified as deficient under Horizon Year (2045) traffic conditions in an effort to achieve an acceptable LOS (i.e., LOS D or better). The effectiveness of the recommended improvement strategies to address Horizon Year (2045) traffic deficiencies are presented in Table 7-2. Worksheets for Horizon Year (2045), with improvements, intersection operations for With Project traffic conditions are provided in Appendix 7.4.

Although the Project's frontage improvements include widening Ethanac Road to its ultimate General Plan roadway classification as an Expressway, the additional through lanes in the westbound direction cannot be striped until such time additional widening has occurred west of Trumble Road and east of Sherman Road.

TABLE 7-2: INTERSECTION ANALYSIS FOR HORIZON YEAR (2045) CONDITIONS WITH IMPROVEMENTS

	Traffic	Intersection Approach Lanes[1]												Delay[2] (secs.)		Level of Service	
		Northbound			Southbound			Eastbound			Westbound						
	Control[3]	L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
3 Trumble Rd. & Ethanac Rd.																	
Without Improvements:	TS	1	1	0	1	1	0	1	1	1	1	1	0	**>200.0**	**>200.0**	**F**	**F**
With Improvements:	TS	1	1	0	1	1	0	1	**3**	1	1	**3**	0	34.6	33.3	C	C
4 Driveway 3 & Ethanac Rd.																	
Without Improvements:	**CSS**	0	0	0	0	0	**1**	0	1	0	0	1	0	**>200.0**	**>200.0**	**F**	**F**
With Improvements:	**CSS**	0	0	0	0	0	**1**	0	**3**	0	0	**3**	0	34.8	32.6	D	D
5 Driveway 4 & Ethanac Rd.																	
Without Improvements:	**CSS**	0	0	0	0	0	**1**	0	1	0	0	1	0	**>200.0**	**>200.0**	**F**	**F**
With Improvements:	**CSS**	0	0	0	0	0	**1**	0	**3**	0	0	**3**	0	34.8	31.1	D	D
6 Sherman Rd. & Ethanac Rd.																	
Without Improvements:	CSS	0	1	0	0	1	0	0	1	0	0	1	0	**>200.0**	**>200.0**	**F**	**F**
With Improvements:	**TS**	**2**	1	**1**	**1**	1	**1**	**2**	**3**	**1>**	**2**	**3**	**1**	50.7	54.8	D	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 (6th 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

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8 LOCAL AND REGIONAL FUNDING MECHANISMS

Transportation improvements throughout the City of Perris are funded through a combination of project mitigation, fair share contributions or development impact fee programs, such as TUMF program and the City's DIF program.

8.1 TRANSPORTATION UNIFORM MITIGATION FEE (TUMF) PROGRAM

The WRCOG is responsible for establishing and updating TUMF rates. The County may grant to developers a credit against the specific components of fees for the dedication of land, or the construction of facilities identified in the list of improvements funded by each of these fee programs. Fees are based upon projected land uses and a related transportation need to address growth based upon a 2016 Nexus study. (2)

TUMF is an ambitious regional program created to address cumulative impacts of growth throughout western Riverside County. Program guidelines are being handled on an iterative basis. Exemptions, credits, reimbursements, and local administration are being deferred to primary agencies. The County of Riverside serves this function for the proposed Project. Fees submitted to the County are passed on to the WRCOG as the ultimate program administrator.

TUMF guidelines empower a local zone committee to prioritize and arbitrate certain projects. The Project is located in the Central Zone. The zone has developed a 5-year capital improvement program to prioritize public construction of certain roads. TUMF is focused on improvements necessitated by regional growth.

8.2 CITY OF PERRIS DEVELOPMENT IMPACT FEE (DIF) PROGRAM

In 1991, the City of Perris created a DIF program to impose and collect fees from new residential, commercial, and industrial development for the purpose of funding roadways and intersections necessary to accommodate City growth as identified in the City's General Plan Circulation Element. This DIF program has been successfully implemented by the City since 1991 and was updated in 2014. The City updated the DIF program to add new roadway segments and intersections necessary to accommodate future growth and to ensure that the identified street improvements would operate at or above the City's LOS performance threshold. The City's DIF program includes facilities that are not part of, or which may exceed improvements identified and covered by the TUMF program. As a result, the pairing of the regional and local fee programs provides a more comprehensive funding and implementation plan to ensure an adequate and interconnected transportation system. Under the City's DIF program, the City may grant to developers a credit against specific components of fees when those developers construct certain facilities and landscaped medians identified in the list of improvements funded by the DIF program.

Similar to the TUMF Program, after the City's DIF fees are collected, they are placed in a separate interest-bearing account pursuant to the requirements of Government Code sections 66000 et seq. The timing to use the DIF fees is established through periodic capital improvement programs which are overseen by the City's Public Works Department. Periodic traffic counts, review of traffic accidents, and a review of traffic trends throughout the City are also periodically performed by City staff and consultants. The City uses this data to determine the timing of the improvements listed in its facilities list. The City also uses this data to ensure that the improvements listed on the facilities list are constructed before the LOS falls below the LOS performance standards adopted by the City. In this way, the improvements are constructed before the LOS falls below the City's LOS performance

thresholds. The City's DIF program establishes a timeline to fund, design, and build the improvements.

The City has an established, proven track record with respect to implementing the City's DIF Program. Many of the roadway segments and intersections included within the study area for this Traffic Impact Analysis are at various stages of widening and improvement based on the City's collection of DIF fees. Under this Program, as a result of the City's continual monitoring of the local circulation system, the City ensures that DIF improvements are constructed prior to when the LOS would otherwise fall below the City's established performance criteria.

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. Measure A is another source of funding for transportation improvements.

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 County'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 in Table 8-1 for near-term conditions and Table 8-2 for long-range 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: PROJECT FAIR SHARE CALCULATIONS (NEAR-TERM)

#	Intersection		Existing (2022)	Project	2025 With Project	Total New Traffic	Project % of New Traffic[1]
6	Sherman Rd. & Ethanac Rd.						
		AM:	1,091	24	3,384	2,293	**1.0%**
		PM:	1,021	16	4,160	3,139	0.5%

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

TABLE 8-2: PROJECT FAIR SHARE CALCULATIONS (LONG-RANGE)

#	Intersection		Existing (2022)	Project	2045 With Project	Total New Traffic	Project % of New Traffic[1]
3	Trumble Rd. & Ethanac Rd.						
		AM:	1,321	43	5,388	4,067	1.1%
		PM:	1,235	47	5,562	4,327	**1.1%**
4	Driveway 3 & Ethanac Rd.						
		AM:	1,073	35	5,049	3,976	0.9%
		PM:	1,005	47	5,223	4,218	**1.1%**
5	Driveway 4 & Ethanac Rd.						
		AM:	1,073	42	5,056	3,983	**1.1%**
		PM:	1,005	34	5,210	4,205	0.8%
6	Sherman Rd. & Ethanac Rd.						
		AM:	1,091	24	6,127	5,036	**0.5%**
		PM:	1,021	16	6,559	5,538	0.3%

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

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9 REFERENCES

1. **Institute of Transportation Engineers.** *Trip Generation Manual.* 11th Edition. 2021.
2. **Western Riverside Council of Governments.** *TUMF Nexus Study, 2016 Program Update.* July 2017.
3. **County of Riverside.** *Transportation Analysis Guidelines.* County of Riverside : s.n., December 2020.
4. **VRPA Technologies, Inc. for Riverside County Transportation Commission.** *Riverside County Long Range Transportation Study.* County of Riverside : VRPA Technologies, Inc., December 2019.
5. **City of Perris.** *Transportation Impact Analysis Guidelines for CEQA.* City of Perris : s.n., May 2020.
6. **Transportation Research Board.** *Highway Capacity Manual (HCM).* 6th Edition. s.l. : National Academy of Sciences, 2016.
7. **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).
8. **City of Perris.** *General Plan Circulation Element.* City of Perris : s.n., August 26, 2008.
9. **Circulation Element C-1: Roadway System. *The City of Menifee, California.* [Online] [Cited: 2014 йил 30-May.] https://www.cityofmenifee.us/215/C-1-Roadway-System.**

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APPENDIX 1.1: APPROVED TRAFFIC STUDY SCOPING AGREEMENT

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November 29, 2022

Mr. Nathan Perez
City of Perris
135 N. D Street
Perris, CA 92570

HILLWOOD ETHANAC (DPR22-05139, PLN22-00030) SCOPING AGREEMENT

Mr. Nathan Perez,

Urban Crossroads, Inc. is pleased to submit this scoping agreement to the City of Perris for the proposed Hillwood Ethanac development ("Project"), which is located on the northwest corner of Sherman Road and Ethanac Road in the City of Perris (see Exhibit 1).

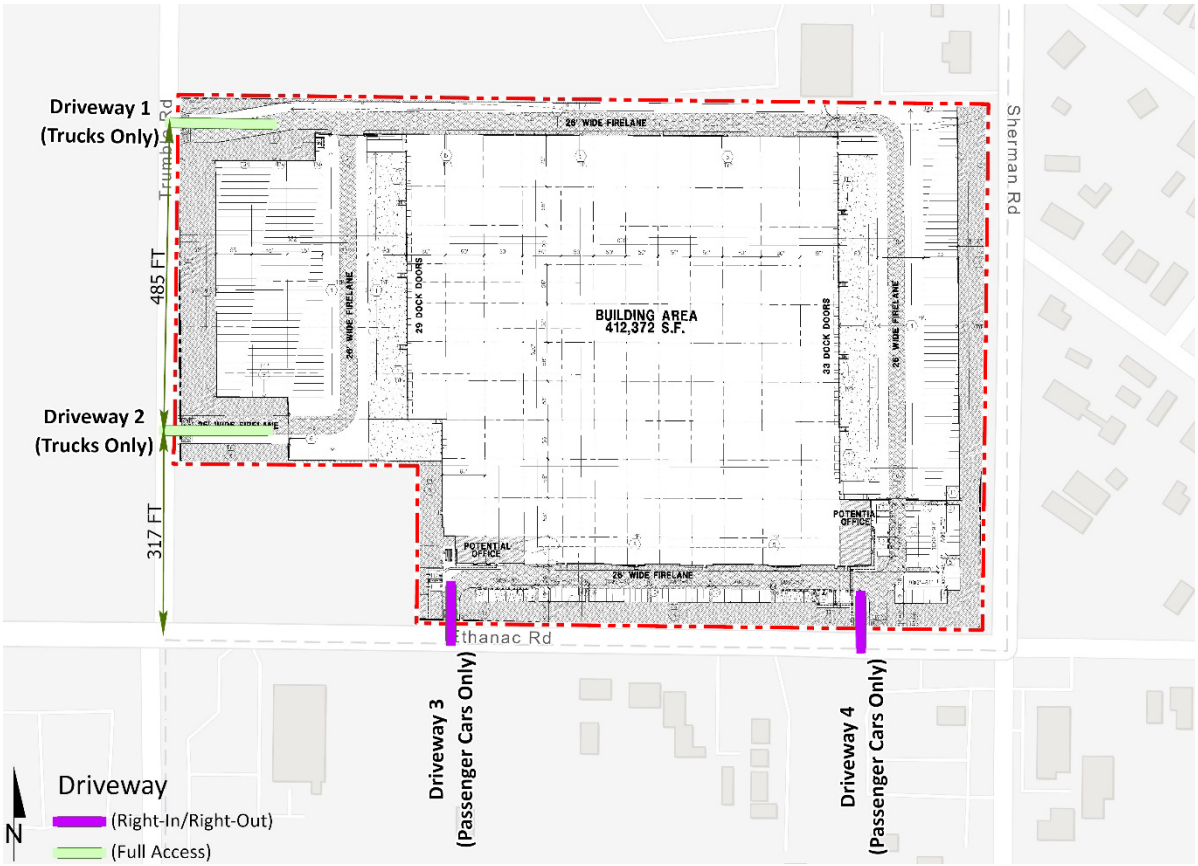
EXHIBIT 1: LOCATION MAP

It is our understanding that the Project is to consist of a 412,372 square foot (sf) warehouse building. The Project is proposed to be developed in a single phase with an anticipated Opening Year of 2025. A preliminary site plan of which the traffic study will be based on, is shown on Exhibit 2. For the purposes of the trip generation, the Project will be evaluated assuming 50,000 SF of high-cube cold storage warehouse use and 362,372 SF of high-cube transload/short-term storage warehouse use. The following describes the access proposed for the site:

- Driveway 1 on Trumble Road – full access trucks only
- Driveway 2 on Trumble Road – full access trucks only
- Driveway 3 on Ethanac Road – right-in/right-out only for passenger cars
- Driveway 4 on Ethanac Road – right-in/right-out only for passenger cars

The purpose of this agreement is to obtain comments from City of Perris on the proposed traffic study scope of work. The remainder of this agreement describes the proposed analysis methodology, trip generation, trip distribution, and traffic assignment/project trips on the surrounding roadway network, which have been used to establish the proposed project study area and analysis locations.

EXHIBIT 2: PRELIMINARY SITE PLAN



STUDY AREA

Consistent with County of Riverside traffic study guidelines, the study area limits are typically set based upon a threshold of 50 peak hour project trips. In other words, the study area includes any intersection of Collector roadway or higher classification street with another Collector roadway or higher classification street, at which the proposed Project will add 50 or more peak hour trips. This methodology is also utilized in other near-by agencies, such as the City of Perris. However, the Project is proposed to generate fewer than 50 peak hour trips. As such, the proposed intersection analysis locations shown on Exhibit 3 have been identified as they are either Project access points or site adjacent intersections (also listed on Table 1).

EXHIBIT 3: STUDY AREA

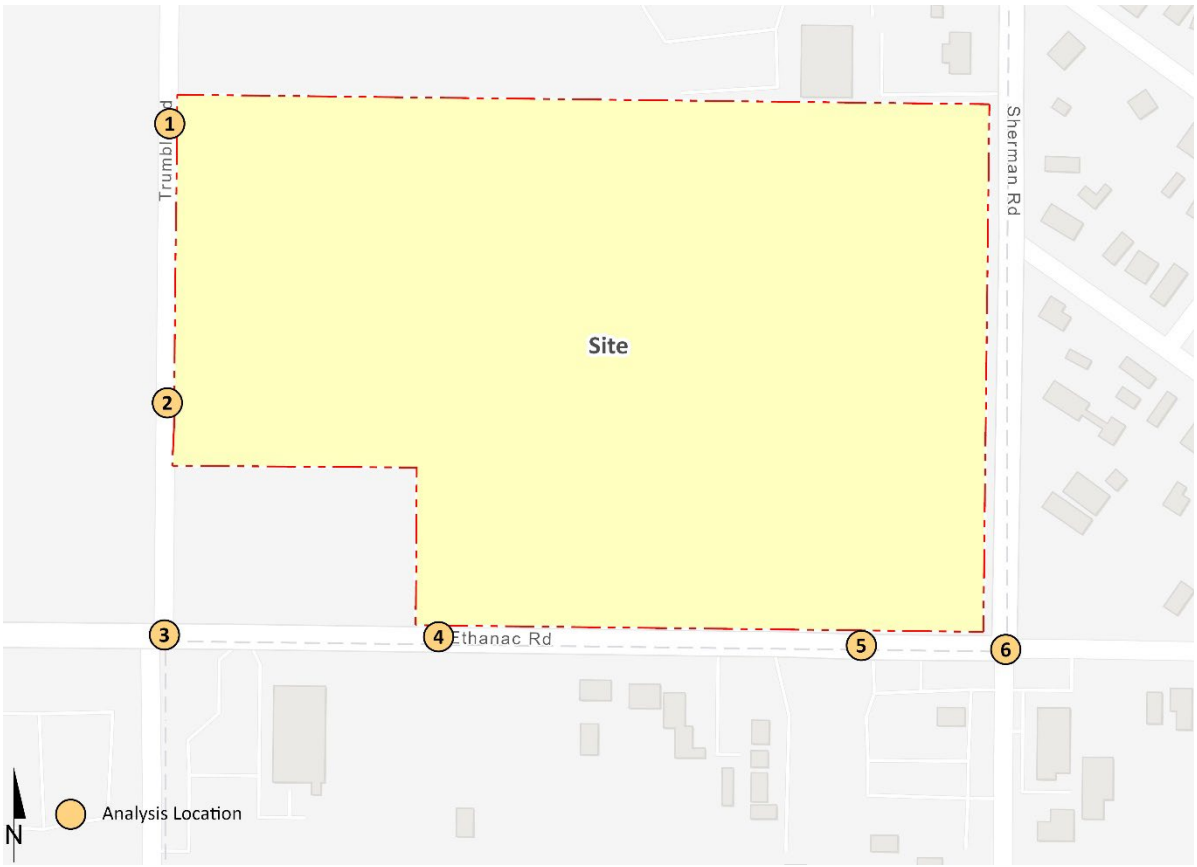


TABLE 1: LIST OF STUDY INTERSECTIONS

#	Intersection
1	Trumble Rd. & Driveway 1
2	Trumble Rd. & Driveway 2
3	Tumble Rd. & Ethanac Rd.
4	Driveway 3 & Ethanac Rd.
5	Driveway 4 & Ethanac Rd.
6	Sherman Rd. & Ethanac Rd.

ANALYSIS SCENARIOS

The following analysis scenarios will be analyzed for this traffic study:

- Existing (2022)
- Existing Plus Project (E+P)
- Existing Plus Ambient Growth Plus Cumulative (E+A+C) (2025)
- Existing Plus Ambient Growth Plus Project Plus Cumulative (E+A+P+C) (2025)
- Horizon Year (2045) Without Project – based on RIVCOM (zone change is proposed for the Project)
- Horizon Year (2045) With Project

METHODOLOGY

The methodology used to evaluate peak hour intersection performance is based on the Transportation Research Board's Highway Capacity Manual (HCM), 6th Edition. This methodology rates operations based on peak hour delay and associated level of service (LOS).

LEVEL OF SERVICE (LOS) CRITERIA

City of Perris: Required LOS for roadway segments and intersections within the City of Perris is LOS D. 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 the traffic analysis, LOS D will be considered the acceptable threshold for all intersections within the study area.

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: 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.

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 will be used as the target LOS for Caltrans facilities, consistent with the City.

PROJECT 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) was used to calculate the trip generation. For purposes of this analysis, the following land use codes and vehicle mixes have been utilized:

- ITE land use code 154 (High-Cube Transload and Short-Term Storage Warehouse) has been used to derive site specific trip generation estimates for up to 362,372 SF. High-cube transload/short-term storage warehouse data regarding the truck percentage and vehicle mix has been obtained from the ITE's latest Trip Generation Manual. 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%.
- ITE land use code 157 (High-Cube Cold Storage Warehouse) has been used to derive site specific trip generation estimates for up to 50,000 SF. High-cube cold storage warehouses include warehouses characterized by the storage and/or consolidation of manufactured goods (and to a lesser extent, raw materials) prior to their distribution to retail locations or other warehouses. High-cube cold storage warehouses are facilities typified by temperature-controlled environments for frozen food or other perishable products. The High-Cube Cold Storage Warehouse vehicle mix (passenger cars versus trucks) has been obtained from the ITE's Trip Generation Manual. The truck percentages were further broken down by axle type per the following SCAQMD recommended truck mix: 2-Axle = 34.7%; 3-Axle = 11.0%; 4+-Axle = 54.3%.

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. Passenger Car Equivalent (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 2: PROJECT TRIP GENERATION RATES

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicle Trip Generation Rates									
High-Cube Transload and Short-Term Storage Warehouse[3]	TSF	154	0.062	0.018	0.080	0.028	0.072	0.100	1.400
Passenger Cars (AM=75.0%, PM=90.0%, Daily=84.3%)			0.052	0.008	0.060	0.023	0.067	0.090	1.180
2-Axle Trucks (AM=4.2%, PM=1.7%, Daily=2.6%)			0.002	0.001	0.003	0.001	0.001	0.002	0.037
3-Axle Trucks (AM=5.2%, PM=2.1%, Daily=3.3%)			0.002	0.002	0.004	0.001	0.001	0.002	0.046
4+-Axle Trucks (AM=15.7%, PM=6.3%, Daily=9.8%)			0.006	0.007	0.013	0.003	0.003	0.006	0.138
High-Cube Cold Storage Warehouse[3]	TSF	157	0.085	0.025	0.110	0.034	0.086	0.120	2.120
Passenger Cars (AM-72.7%, PM-75.0%, Daily-64.6%)			0.076	0.004	0.080	0.019	0.071	0.090	1.370
2-Axle Trucks (AM-9.5%, PM-8.7%, Daily-12.3%)			0.003	0.007	0.010	0.005	0.005	0.010	0.260
3-Axle Trucks (AM-3.0%, PM-2.8%, Daily-3.9%)			0.001	0.002	0.003	0.002	0.001	0.003	0.083
4+-Axle Trucks (AM-14.8%, PM-13.6%, Daily-19.2%)			0.005	0.011	0.016	0.008	0.008	0.016	0.407
Passenger Car Equivalent (PCE) Trip Generation Rates[4]									
High-Cube Transload and Short-Term Storage Warehouse[3]	TSF	154	0.062	0.018	0.080	0.028	0.072	0.100	1.400
Passenger Cars			0.052	0.008	0.060	0.023	0.067	0.090	1.180
2-Axle Trucks (PCE = 1.5)			0.003	0.002	0.005	0.002	0.001	0.003	0.055
3-Axle Trucks (PCE = 2.0)			0.004	0.004	0.008	0.002	0.002	0.004	0.091
4+-Axle Trucks (PCE = 3.0)			0.018	0.020	0.038	0.009	0.010	0.019	0.413
High-Cube Cold Storage Warehouse[3]	TSF	157	0.085	0.025	0.110	0.034	0.086	0.120	2.120
Passenger Cars			0.076	0.004	0.080	0.019	0.071	0.090	1.370
2-Axle Trucks (PCE = 1.5)			0.005	0.011	0.016	0.008	0.008	0.016	0.390
3-Axle Trucks (PCE = 2.0)			0.002	0.005	0.007	0.004	0.003	0.007	0.165
4+-Axle Trucks (PCE = 3.0)			0.015	0.034	0.049	0.024	0.025	0.049	1.222

[1] Trip Generation & Vehicle Mix Source: Institute of Transportation Engineers (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.

Normalized % - With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks.

[4] PCE factors: 2-axle = 1.5; 3-axle = 2.0; 4+-axle = 3.0.

The Project is estimated to generate a total of 618 two-way trips per day on a typical weekday with approximately 34 AM peak hour trips and 39 PM peak hour trips as shown in Table 3 (actual vehicles). For the purposes of the operations analysis, the PCE values shown in Table 3 will be utilized. The Project is anticipated to generate a total of 792 two-way PCE trips per day on a typical weekday with approximately 49 PCE AM peak hour trips and 49 PCE PM peak hour trips.

TABLE 3: PROJECT TRIP GENERATION SUMMARY

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicles:									
High-Cube Transload Warehouse	362.372	TSF							
Passenger Cars:			19	3	22	8	24	32	428
2-axle Trucks:			1	0	1	0	0	0	14
3-axle Trucks:			1	1	2	0	0	0	18
4+-axle Trucks:			2	2	4	1	1	2	50
Total Truck Trips (Actual Vehicles):			4	3	7	1	1	2	82
Total Trips (Actual Vehicles)[2]			23	6	29	9	25	34	510
High-Cube Cold Storage Warehouse	50.000	TSF							
Passenger Cars:			4	0	4	1	4	5	70
2-axle Trucks:			0	0	0	0	0	0	14
3-axle Trucks:			0	0	0	0	0	0	4
4+-axle Trucks:			0	1	1	0	0	0	20
Total Truck Trips (Actual Vehicles):			0	1	1	0	0	0	38
Total Trips (Actual Vehicles)[2]			4	1	5	1	4	5	108
Passenger Cars			23	3	26	9	28	37	498
Trucks (Actual Vehicles)			4	4	8	1	1	2	120
Total Project Trips (Actual Vehicles)[2]			27	7	34	10	29	39	618
Passenger Car Equivalent (PCE):									
High-Cube Transload Warehouse	362.372	TSF							
2-axle Trucks (PCE = 1.5):			1	1	2	1	0	1	20
3-axle Trucks (PCE = 2.0):			1	2	3	1	1	2	34
4+-axle Trucks (PCE = 3.0):			7	7	14	3	4	7	150
Total Truck Trips (PCE):			9	10	19	5	5	10	204
High-Cube Cold Storage Warehouse	50.000	TSF							
2-axle Trucks (PCE = 1.5):			0	1	1	0	0	0	20
3-axle Trucks (PCE = 2.0):			0	0	0	0	0	0	8
4+-axle Trucks (PCE = 3.0):			1	2	3	1	1	2	62
Total Truck Trips (PCE):			1	3	4	1	1	2	90
Passenger Cars			23	3	26	9	28	37	498
Trucks (PCE)			10	13	23	6	6	12	294
Total Project Trips (PCE)[2]			33	16	49	15	34	49	792

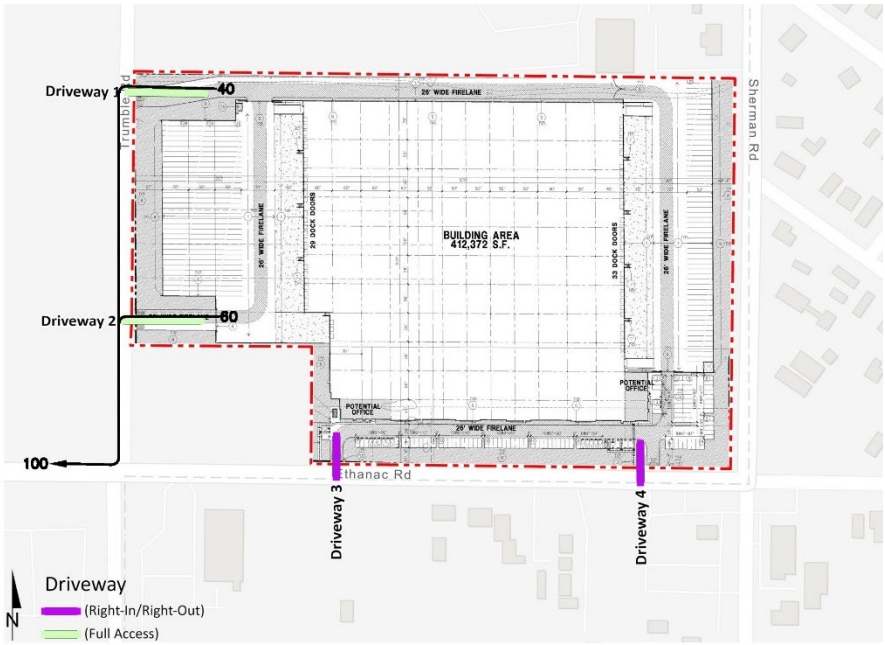
[1] TSF = thousand square feet

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

PROJECT TRIP DISTRIBUTIONS

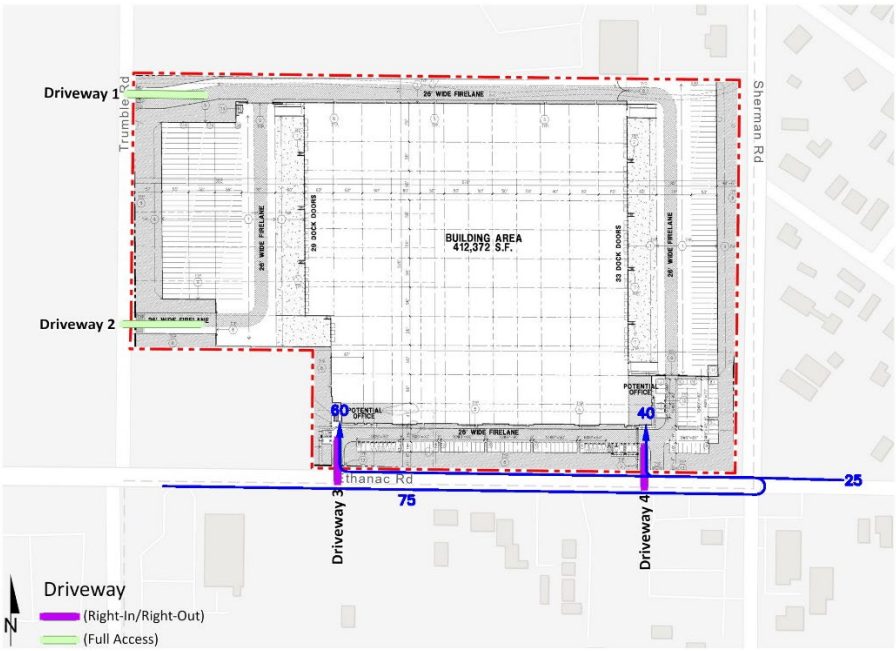
The project trip distribution patterns for both passenger cars and trucks have been developed based on recent experience on other studies for similar land uses in the vicinity and comments provided by City of Perris staff. Passenger car distribution patterns will be based on existing and planned land uses and roadway infrastructure in the area. Truck distribution patterns will be based on 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 4 and 5, respectively.

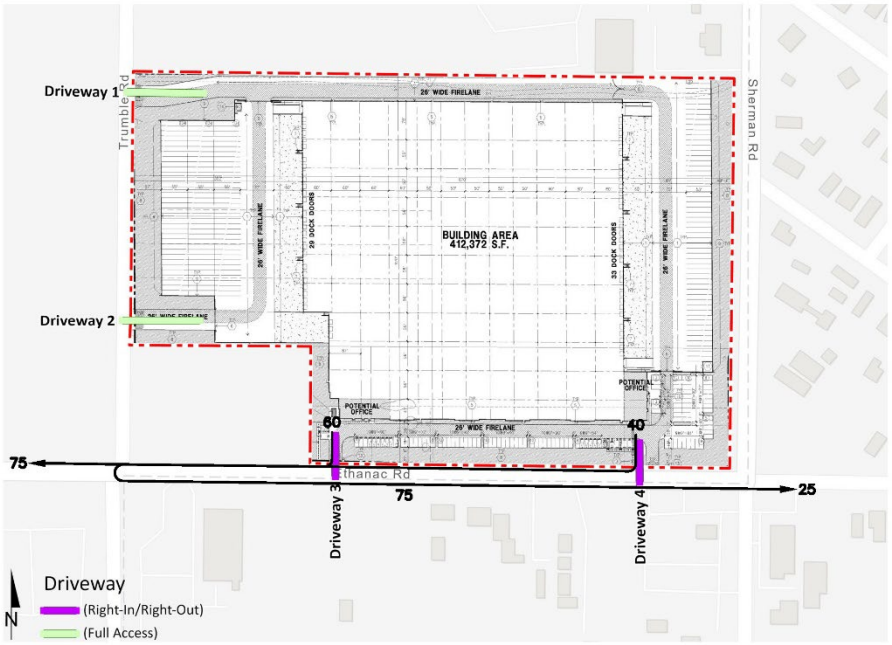
EXHIBIT 4: PROJECT (TRUCK) TRIP DISTRIBUTION



10 ***= Percent To/From Project***

EXHIBIT 5: PROJECT (PASSENGER CAR) TRIP DISTRIBUTION





10 ***= Percent To/From Project***

EXISTING COUNT DATA

Traffic counts (classified by vehicle type) will be conducted during a typical Tuesday, Wednesday, or Thursday when local schools are in session and operating on a typical bell schedule. Time periods to be counted will be from 7:00-9:00 AM and 4:00-6:00 PM and will include pedestrian and bicycle counts at each analysis location. No adjustments are proposed to the new traffic counts for the baseline traffic condition as traffic counts will be conducted while local schools are in session.

AMBIENT GROWTH RATE

Consistent with other City of Perris traffic studies performed by Urban Crossroads, an ambient growth rate of 3 percent per year, compounded annually, will be used for this analysis (3% per year over 3 years or 9.27% for 2025 conditions).

VEHICLE MILES TRAVELED

The City of Perris' Scoping Form was used to evaluate the Project's applicability to the screening criteria outlined in the City of Perris' Transportation Impact Analysis Guidelines for CEQA (May 2020). The Project did not meet any of the applicable screening criteria. The Scoping Form indicates a 23.85% mitigation is required. Urban Crossroads understands that projects in Perris should utilize the Perris Scoping form to perform VMT mitigation (see Attachment A). Based on our review of the feasible mitigation measures, the Project will not be able to effectively mitigate the VMT impact using the Perris Scoping Form. Thus, requiring the Project to assess the VMT impacts using a model-based approach. Therefore, it is recommended that the base year model be updated to include the project, and a project-level VMT analysis be prepared. The City Guidelines note the use of RIVCOM when available, however, it is our understanding that the City is currently still utilizing RIVTAM for screening and scoping form purposes. A full VMT analysis shall be analyzed using WRCOG's latest model, which is RIVCOM (based on service population for the project).

SPECIAL ISSUES

The following special issues will be addressed as part of the TA:

- A truck turning template will be overlaid on the site plan for Driveway 1 and Driveway 2 on Trumble Road which are anticipated to be utilized by heavy trucks in order to determine appropriate curb radii and to verify that trucks will have sufficient space to execute turn maneuvers.
- Full access driveway locations meet the design criteria (spacing) per the City's requirements.
- Traffic signal warrant analyses will be conducted for all unsignalized study area intersections for all applicable analysis scenarios.

- Evaluate the peak hour queuing at the Project driveways located along the Project frontages of Trumble Road and Ethanac Road.
- Evaluate the feasibility of accommodating U-turns at both Trumble Road at Ethanac Road and Sherman Road at Ethanac Road.

CUMULATIVE DEVELOPMENT PROJECTS

It is requested that the City provide a current list of cumulative projects for consideration in the traffic study. We will also reach out to the City of Menifee to obtain cumulative projects.

If you have any questions or comments, I can be reached at cso@urbanxroads.com.

Respectfully submitted,

URBAN CROSSROADS, INC.

Charlene So

Charlene So, PE
Principal

ATTACHMENT A: VMT SCOPING FORM

City of Perris

CITY OF PERRIS
VMT SCOPING FORM FOR LAND USE PROJECTS

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

I. Project Description

Tract/Case No. DPR22-05139; PLN22-00030

Project Name: Hillwood Ethanac

Project Location: Northwest corner of Sherman Road and Ethanac Road

Project Description: 412,372 square foot warehouse building (362,372 SF of high-cube short-term/transload & 50,000 SF of high-cube cold storage)
(Please attach a copy of the project Site Plan)

Current GP Land Use: Community Commercial **Proposed GP Land Use:** Light Industrial

Current Zoning: Community Commercial **Proposed Zoning:** Light Industrial

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

II. VMT Screening Criteria

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

Low VMT Area Evaluation:

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

WRCOG VMT MAP

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

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

Trip Generation Evaluation:

Source of Trip Generation: Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition, 2021

Project Trip Generation: **600** **Average Daily Trips (ADT)**

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

Net Project Daily Trips: **600** **Average Daily Trips (ADT)** Attachments:

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

III. VMT Screening Summary

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

Potentially Significant

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

Mitigation Required

C. Is additional VMT modeling required to evaluate Project impacts?	YES		NO	X

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

IV. MITIGATION

A. Citywide Average VMT Rate (Threshold of Significance) for Mitigation Purposes:	**11.62**	**VMT/Employee**
B. Unmitigated Project TAZ VMT Rate:	**15.26**	**VMT/Employee**
C. Percentage Reduction Required to Achieve the Citywide Average VMT:	**23.85%**	

D. VMT Reduction Mitigation Measures:

Source of VMT Reduction Estimates:	**CAPCOA**
Project Location Setting	**Suburban Center**

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

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

E. Mitigated Project TAZ VMT Rate:	**15.26**	**VMT/Employee**

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

Impact Not Mitigated

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

Prepared By		Developer/Applicant	
Company:	Urban Crossroads, Inc.	**Company:**	Hillwood
Contact:	Charlene So	**Contact:**	John Grace
Address:	1133 Camelback St. #8329, Newport Beach, CA	**Address:**	901 Via Piemonte, Suite 175, Ontario, CA
Phone:	949-861-0177	**Phone:**	909-256-5924
Email:	cso@urbanxroads.com	**Email:**	john.grace@hillwood.com
Date:	10/31/2022	**Date:**	10/31/2022

Approved by:

Perris Planning Division	Date	Perris City Engineer	Date

APPENDIX 1.2: SITE ADJACENT QUEUES

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Intersection: 1: Trumble Rd. & Driveway 1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	5
95th Queue (ft)	24
Link Distance (ft)	222
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Trumble Rd. & Driveway 2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	7
95th Queue (ft)	29
Link Distance (ft)	222
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 0

Intersection: 4: Ethanac Rd. & Driveway 3

Movement	WB	WB	WB	SB
Directions Served	T	T	TR	R
Maximum Queue (ft)	22	53	77	28
Average Queue (ft)	1	4	6	2
95th Queue (ft)	12	31	43	16
Link Distance (ft)	613	613	613	76
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Ethanac Rd. & Driveway 4

Movement	EB	EB	EB	WB	WB	WB	SB
Directions Served	T	T	T	T	T	TR	R
Maximum Queue (ft)	231	233	264	26	40	29	6
Average Queue (ft)	36	36	28	1	2	1	0
95th Queue (ft)	151	157	143	18	26	14	6
Link Distance (ft)	613	613	613	133	133	133	89
Upstream Blk Time (%)					0		
Queuing Penalty (veh)					0		
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 0

Intersection: 1: Trumble Rd. & Driveway 1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	24
Average Queue (ft)	1
95th Queue (ft)	12
Link Distance (ft)	222
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Trumble Rd. & Driveway 2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	19
Average Queue (ft)	2
95th Queue (ft)	16
Link Distance (ft)	222
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 0

Intersection: 4: Ethanac Rd. & Driveway 3

Movement	EB	EB	EB	WB	WB	SB
Directions Served	T	T	T	T	TR	R
Maximum Queue (ft)	445	466	436	6	24	41
Average Queue (ft)	404	414	406	0	1	15
95th Queue (ft)	427	446	425	4	11	40
Link Distance (ft)	396	396	396	613	613	76
Upstream Blk Time (%)	10	14	14			
Queuing Penalty (veh)	92	121	122			
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 5: Ethanac Rd. & Driveway 4

Movement	EB	EB	EB	WB	WB	SB
Directions Served	T	T	T	T	TR	R
Maximum Queue (ft)	684	683	683	15	11	34
Average Queue (ft)	683	683	683	1	0	9
95th Queue (ft)	686	683	683	15	8	32
Link Distance (ft)	613	613	613	133	133	89
Upstream Blk Time (%)	74	74	75			
Queuing Penalty (veh)	662	659	669			
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Zone Summary

Zone wide Queuing Penalty: 2325

APPENDIX 3.1: TRAFFIC COUNTS – NOVEMBER 2022

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Volume Development - AM Peak Hour

1: Trumble Rd. & Driveway 1

PHF: 0.920 Count Date:

	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
2022 PCE:	**0**	**91**	**0**	**0**	**89**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**180**
E+P (PCE):	0	91	4	0	89	0	0	0	0	5	0	0	189
EAC 2025 (PCE):	0	128	0	0	104	0	0	0	0	0	0	0	232
EAPC 2025 (PCE):	0	128	4	0	104	0	0	0	0	5	0	0	241
HY 2045 NP (PCE):		199			127								325
HY 2045 WP (PCE):	0	199	4	0	127	0	0	0	0	5	0	0	334

2: Trumble Rd. & Driveway 2

PHF: 0.920 Count Date:

	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
2022 PCE:	**0**	**91**	**0**	**0**	**89**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**180**
E+P (PCE):	0	95	6	0	94	0	0	0	0	8	0	0	203
EAC 2025 (PCE):	0	128	0	0	104	0	0	0	0	0	0	0	232
EAPC 2025 (PCE):	0	132	6	0	109	0	0	0	0	8	0	0	255
HY 2045 NP (PCE):		199			127								325
HY 2045 WP (PCE):	0	203	6	0	132	0	0	0	0	8	0	0	348

3: Trumble Rd. & Ethanac Rd.

PHF: 0.893 7:30 AM Count Date: 11/3/2022

	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
2022 PCE:	**72**	**4**	**45**	**7**	**12**	**70**	**80**	**535**	**11**	**52**	**428**	**7**	**1,321**
E+P (PCE):	72	4	45	7	12	83	90	552	11	53	430	7	1,364
EAC 2025 (PCE):	78	4	49	11	13	80	103	2,090	12	56	925	21	3,442
EAPC 2025 (PCE):	78	4	49	11	13	93	113	2,107	12	57	927	21	3,485
HY 2045 NP (PCE):	90	5	57	20	15	92	116	2,178	14	65	**2,617**	78	5,345
HY 2045 WP (PCE):	90	5	57	20	15	105	126	2,195	14	66	2,619	78	5,388

4: Driveway 3 & Ethanac Rd.

PHF: 0.920 Count Date:

	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
2022 PCE:	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**587**	**0**	**0**	**487**	**0**	**1,073**
E+P (PCE):	0	0	0	0	0	2	0	605	0	0	488	14	1,108
EAC 2025 (PCE):	0	0	0	0	0	0	0	2,150	0	0	1,002	0	3,151
EAPC 2025 (PCE):	0	0	0	0	0	2	0	2,168	0	0	1,003	14	3,186
HY 2045 NP (PCE):								2,254			2,760		5,014
HY 2045 WP (PCE):	0	0	0	0	0	2	0	2,272	0	0	2,761	14	5,049

5: Driveway 4 & Ethanac Rd.

PHF: 0.920 Count Date:

	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
2022 PCE:	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**587**	**0**	**0**	**487**	**0**	**1,073**
E+P (PCE):	0	0	0	0	0	1	0	605	0	0	501	9	1,115
EAC 2025 (PCE):	0	0	0	0	0	0	0	2,150	0	0	1,002	0	3,151
EAPC 2025 (PCE):	0	0	0	0	0	1	0	2,168	0	0	1,016	9	3,193
HY 2045 NP (PCE):								2,254			2,760		5,014
HY 2045 WP (PCE):	0	0	0	0	0	1	0	2,272	0	0	2,774	9	5,056

6: Sherman Rd. & Ethanac Rd.

PHF: 0.922 7:15 AM Count Date: 11/3/2022

	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
2022 PCE:	**6**	**1**	**5**	**6**	**3**	**111**	**105**	**459**	**23**	**2**	**371**	**1**	**1,091**
E+P (PCE):	6	1	5	6	3	111	122	460	23	2	377	1	1,115
EAC 2025 (PCE):	151	13	23	27	57	134	118	1,504	529	82	717	6	3,360
EAPC 2025 (PCE):	151	13	23	27	57	134	135	1,505	529	82	723	6	3,384
HY 2045 NP (PCE):	197	178	228	265	84	231	135	**1,588**	532	90	2,332	245	6,103
HY 2045 WP (PCE):	197	178	228	265	84	231	152	1,589	532	90	2,338	245	6,127

URBAN CROSSROADS

Volume Development - PM Peak Hour

1: Trumble Rd. & Driveway 1

PHF: 0.920 Count Date:

	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
2022 PCE:	**0**	**57**	**0**	**0**	**116**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**172**
E+P (PCE):	0	57	2	0	116	0	0	0	0	2	0	0	176
EAC 2025 (PCE):	0	74	0	0	158	0	0	0	0	0	0	0	232
EAPC 2025 (PCE):	0	74	2	0	158	0	0	0	0	2	0	0	236
HY 2045 NP (PCE):		172			240								412
HY 2045 WP (PCE):	0	172	2	0	240	0	0	0	0	2	0	0	416

2: Trumble Rd. & Driveway 2

PHF: 0.920 Count Date:

	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
2022 PCE:	**0**	**57**	**0**	**0**	**116**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**172**
E+P (PCE):	0	59	4	0	118	0	0	0	0	4	0	0	184
EAC 2025 (PCE):	0	74	0	0	158	0	0	0	0	0	0	0	232
EAPC 2025 (PCE):	0	76	4	0	160	0	0	0	0	4	0	0	244
HY 2045 NP (PCE):		172			240								412
HY 2045 WP (PCE):	0	174	4	0	242	0	0	0	0	4	0	0	424

3: Trumble Rd. & Ethanac Rd.

PHF: 0.887 4:15 PM Count Date: 11/3/2022

	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
2022 PCE:	**56**	**4**	**45**	**11**	**9**	**96**	**42**	**549**	**25**	**29**	**361**	**11**	**1,235**
E+P (PCE):	56	4	45	11	9	102	48	556	25	36	382	11	1,282
EAC 2025 (PCE):	61	4	49	26	10	122	52	1,701	27	31	2,043	17	4,144
EAPC 2025 (PCE):	61	4	49	26	10	128	58	1,708	27	38	2,064	17	4,191
HY 2045 NP (PCE):	70	5	60	91	11	138	84	**2,515**	31	41	**2,385**	83	5,515
HY 2045 WP (PCE):	70	5	60	91	11	144	90	2,522	31	48	2,406	83	5,562

4: Driveway 3 & Ethanac Rd.

PHF: 0.920 Count Date:

	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
2022 PCE:	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**605**	**0**	**0**	**400**	**0**	**1,005**
E+P (PCE):	0	0	0	0	0	17	0	619	0	0	411	5	1,052
EAC 2025 (PCE):	0	0	0	0	0	0	0	1,776	0	0	2,091	0	3,867
EAPC 2025 (PCE):	0	0	0	0	0	17	0	1,790	0	0	2,102	5	3,914
HY 2045 NP (PCE):								2,666			2,510		5,176
HY 2045 WP (PCE):	0	0	0	0	0	17	0	2,680	0	0	2,521	5	5,223

5: Driveway 4 & Ethanac Rd.

PHF: 0.920 Count Date:

	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
2022 PCE:	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**605**	**0**	**0**	**400**	**0**	**1,005**
E+P (PCE):	0	0	0	0	0	11	0	619	0	0	405	4	1,039
EAC 2025 (PCE):	0	0	0	0	0	0	0	1,776	0	0	2,091	0	3,867
EAPC 2025 (PCE):	0	0	0	0	0	11	0	1,790	0	0	2,096	4	3,901
HY 2045 NP (PCE):								2,666			2,510		5,176
HY 2045 WP (PCE):	0	0	0	0	0	11	0	2,680	0	0	2,515	4	5,210

6: Sherman Rd. & Ethanac Rd.

PHF: 0.963 5:00 PM Count Date: 11/3/2022

	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
2022 PCE:	**20**	**3**	**6**	**3**	**1**	**120**	**204**	**385**	**16**	**1**	**261**	**3**	**1,021**
E+P (PCE):	20	3	6	3	1	120	211	392	16	1	263	3	1,037
EAC 2025 (PCE):	548	59	89	16	35	136	237	1,187	351	53	1,407	24	4,144
EAPC 2025 (PCE):	548	59	89	16	35	136	244	1,194	351	53	1,409	24	4,160
HY 2045 NP (PCE):	552	132	159	312	306	230	270	2,042	354	243	1,728	215	6,543
HY 2045 WP (PCE):	552	132	159	312	306	230	277	2,049	354	243	1,730	215	6,559

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

File Name : 03_PER_Trum_Eth AM
Site Code : 221011
Start Date : 11/3/2022
Page No : 1

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

	Trumble Road Southbound					Ethanac Road Westbound					Trumble Road Northbound					Ethanac Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	2	1	5	2	8	4	58	2	0	64	14	1	0	0	15	16	77	0	0	93	2	180	182
07:15 AM	4	0	14	5	18	9	66	3	0	78	4	0	5	2	9	14	129	3	0	146	7	251	258
07:30 AM	1	2	11	1	14	9	118	1	0	128	17	1	7	3	25	15	154	1	0	170	4	337	341
07:45 AM	2	4	11	6	17	14	101	4	0	119	12	1	10	4	23	21	110	1	0	132	10	291	301
Total	9	7	41	14	57	36	343	10	0	389	47	3	22	9	72	66	470	5	0	541	23	1059	1082
08:00 AM	2	3	19	4	24	7	81	0	0	88	26	1	15	6	42	13	139	5	1	157	11	311	322
08:15 AM	1	3	13	3	17	18	95	2	1	115	13	1	8	5	22	18	91	2	0	111	9	265	274
08:30 AM	4	3	10	2	17	2	100	3	0	105	18	2	5	3	25	17	76	2	0	95	5	242	247
08:45 AM	2	1	10	5	13	5	53	3	0	61	9	2	3	1	14	12	94	5	1	111	7	199	206
Total	9	10	52	14	71	32	329	8	1	369	66	6	31	15	103	60	400	14	2	474	32	1017	1049
Grand Total	18	17	93	28	128	68	672	18	1	758	113	9	53	24	175	126	870	19	2	1015	55	2076	2131
Apprch %	14.1	13.3	72.7			9	88.7	2.4			64.6	5.1	30.3			12.4	85.7	1.9					
Total %	0.9	0.8	4.5		6.2	3.3	32.4	0.9		36.5	5.4	0.4	2.6		8.4	6.1	41.9	0.9		48.9	2.6	97.4	
Passenger Vehicles	15	17	63		119	62	628	18		709	104	9	48		184	95	816	17		930	0	0	1942
% Passenger Vehicles	83.3	100	67.7	85.7	76.3	91.2	93.5	100	100	93.4	92	100	90.6	95.8	92.5	75.4	93.8	89.5	100	91.4	0	0	91.1
Large 2 Axle Vehicles	2	0	5		9	4	29	0		33	7	0	5		13	4	34	1		39	0	0	94
% Large 2 Axle Vehicles	11.1	0	5.4	7.1	5.8	5.9	4.3	0	0	4.3	6.2	0	9.4	4.2	6.5	3.2	3.9	5.3	0	3.8	0	0	4.4
3 Axle Vehicles	1	0	20		23	2	5	0		7	2	0	0		2	26	6	0		32	0	0	64
% 3 Axle Vehicles	5.6	0	21.5	7.1	14.7	2.9	0.7	0	0	0.9	1.8	0	0	0	1	20.6	0.7	0	0	3.1	0	0	3
4+ Axle Trucks	0	0	5		5	0	10	0		10	0	0	0		0	1	14	1		16	0	0	31
% 4+ Axle Trucks	0	0	5.4	0	3.2	0	1.5	0	0	1.3	0	0	0	0	0	0.8	1.6	5.3	0	1.6	0	0	1.5

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	1	2	11	14	9	**118**	1	**128**	17	**1**	7	25	15	**154**	1	**170**	**337**
07:45 AM	**2**	**4**	11	17	14	101	**4**	119	12	1	10	23	**21**	110	1	132	291
08:00 AM	2	3	**19**	**24**	7	81	0	88	**26**	1	**15**	**42**	13	139	**5**	157	311
08:15 AM	1	3	13	17	**18**	95	2	115	13	1	8	22	18	91	2	111	265
Total Volume	6	12	54	72	48	395	7	450	68	4	40	112	67	494	9	570	1204
% App. Total	8.3	16.7	75		10.7	87.8	1.6		60.7	3.6	35.7		11.8	86.7	1.6		
PHF	.750	.750	.711	.750	.667	.837	.438	.879	.654	1.00	.667	.667	.798	.802	.450	.838	.893

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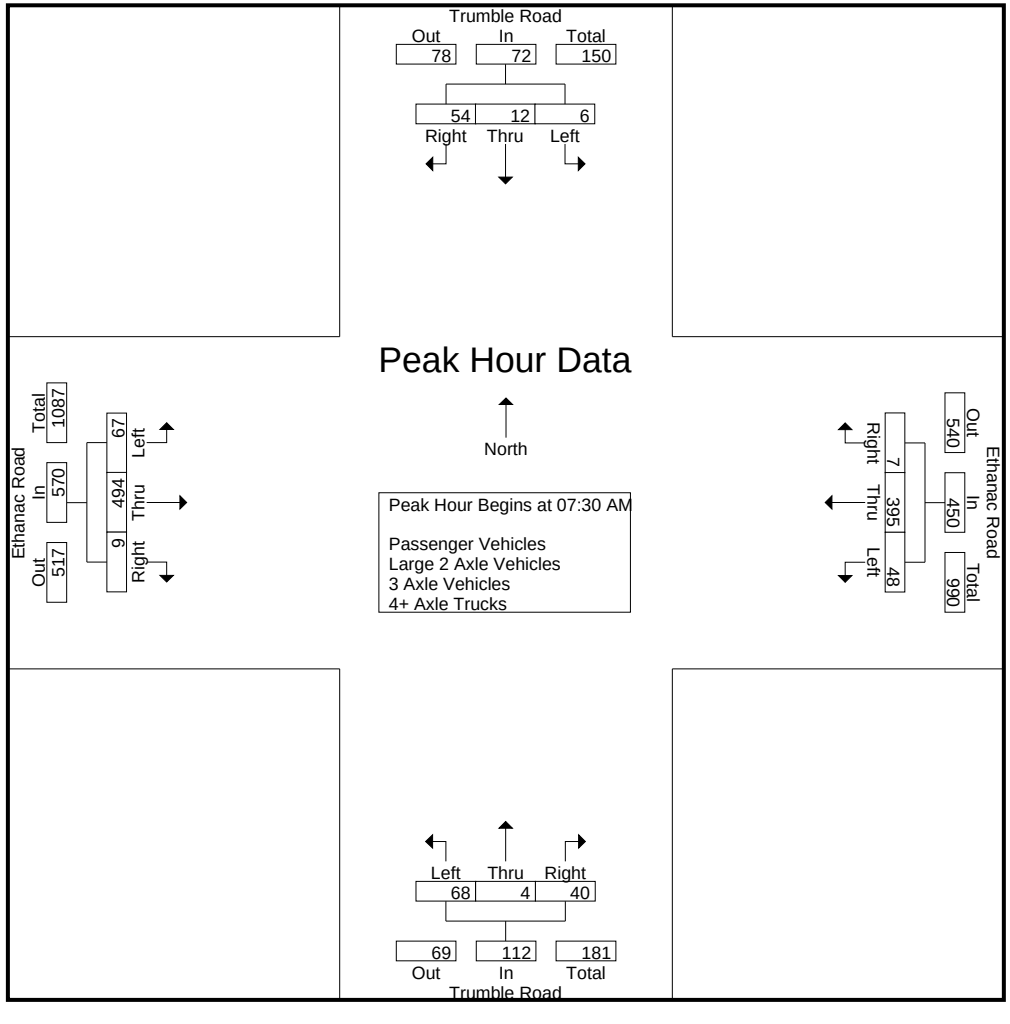
City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Trum_Eth AM
Site Code : 221011
Start Date : 11/3/2022
Page No : 2



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File Name : 03_PER_Trum_Eth AM
Site Code : 221011
Start Date : 11/3/2022

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:45 AM				07:30 AM				07:30 AM				07:15 AM				
+0 mins.	2	**4**	11	17	9	**118**	1	**128**	17	**1**	7	25	14	129	3	146	
+15 mins.	2	3	**19**	**24**	14	101	**4**	119	12	1	10	23	15	**154**	1	**170**	
+30 mins.	1	3	13	17	7	81	0	88	**26**	1	**15**	**42**	**21**	110	1	132	
+45 mins.	**4**	3	10	17	**18**	95	2	115	13	1	8	22	13	139	**5**	157	
Total Volume	9	13	53	75	48	395	7	450	68	4	40	112	63	532	10	605	
% App. Total	12	17.3	70.7		10.7	87.8	1.6		60.7	3.6	35.7		10.4	87.9	1.7		
PHF	.563	.813	.697	.781	.667	.837	.438	.879	.654	1.000	.667	.667	.750	.864	.500	.890	

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Site Code : 221011
Start Date : 11/3/2022
Page No : 1

Groups Printed- Large 2 Axle Vehicles

	Trumble Road Southbound					Ethanac Road Westbound					Trumble Road Northbound					Ethanac Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	5	0	0	5	2	0	0	0	2	0	5	0	0	5	0	12	12
07:15 AM	1	0	1	1	2	0	3	0	0	3	1	0	0	0	1	1	5	0	0	6	1	12	13
07:30 AM	0	0	0	0	0	2	6	0	0	8	0	0	0	0	0	0	2	0	0	2	0	10	10
07:45 AM	0	0	1	0	1	1	6	0	0	7	1	0	4	0	5	1	1	0	0	2	0	15	15
Total	1	0	2	1	3	3	20	0	0	23	4	0	4	0	8	2	13	0	0	15	1	49	50
08:00 AM	1	0	0	0	1	0	3	0	0	3	1	0	0	0	1	1	4	0	0	5	0	10	10
08:15 AM	0	0	1	0	1	1	5	0	0	6	1	0	0	0	1	1	2	0	0	3	0	11	11
08:30 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	9	0	0	9	1	11	12
08:45 AM	0	0	1	1	1	0	1	0	0	1	1	0	0	0	1	0	6	1	0	7	1	10	11
Total	1	0	3	1	4	1	9	0	0	10	3	0	1	1	4	2	21	1	0	24	2	42	44
Grand Total	2	0	5	2	7	4	29	0	0	33	7	0	5	1	12	4	34	1	0	39	3	91	94
Apprch %	28.6	0	71.4			12.1	87.9	0			58.3	0	41.7			10.3	87.2	2.6					
Total %	2.2	0	5.5		7.7	4.4	31.9	0		36.3	7.7	0	5.5		13.2	4.4	37.4	1.1		42.9	3.2	96.8	

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	**2**	**6**	0	**8**	0	0	0	0	0	2	0	2	10
07:45 AM	0	0	**1**	**1**	1	6	0	7	**1**	0	**4**	**5**	**1**	1	0	2	**15**
08:00 AM	**1**	0	0	1	0	3	0	3	1	0	0	1	1	**4**	0	**5**	10
08:15 AM	0	0	1	1	1	5	0	6	1	0	0	1	1	2	0	3	11
Total Volume	1	0	2	3	4	20	0	24	3	0	4	7	3	9	0	12	46
% App. Total	33.3	0	66.7		16.7	83.3	0		42.9	0	57.1		25	75	0		
PHF	.250	.000	.500	.750	.500	.833	.000	.750	.750	.000	.250	.350	.750	.563	.000	.600	.767

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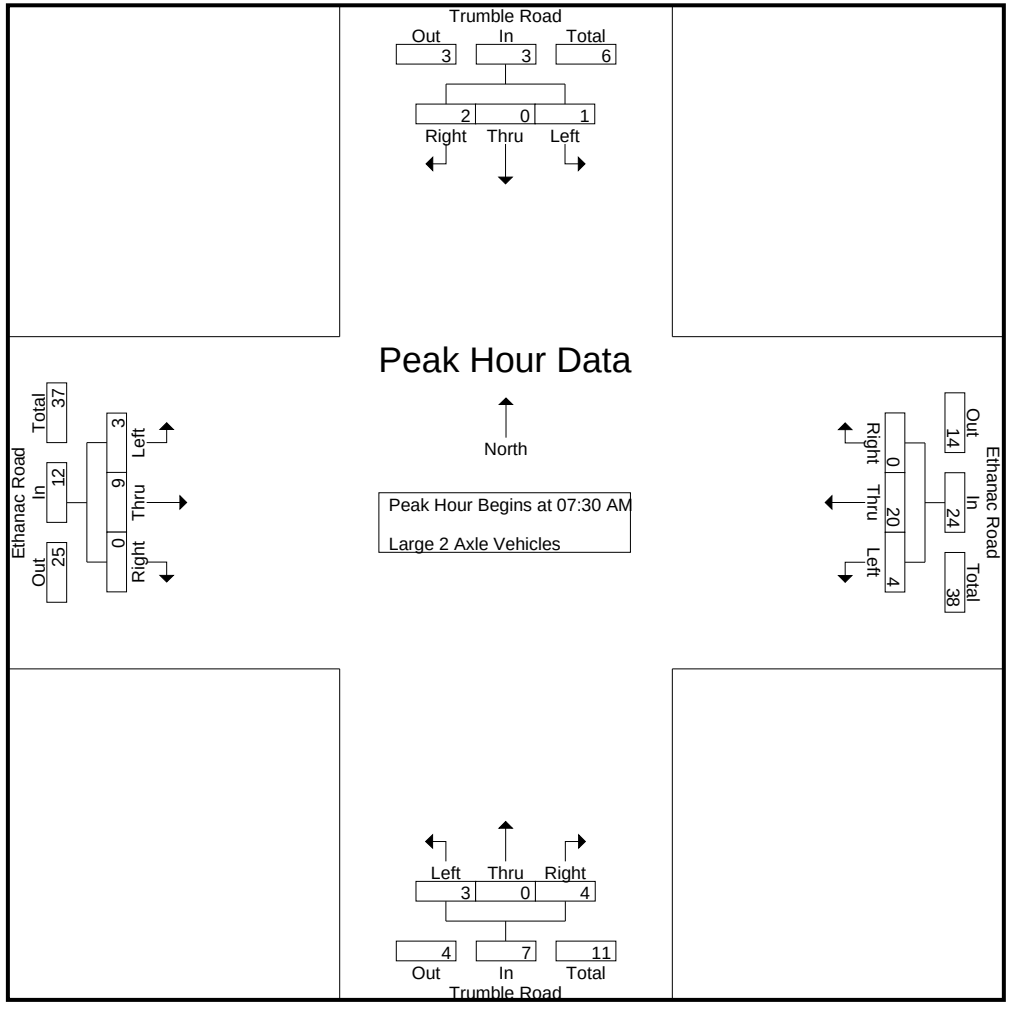
File Name : 03_PER_Trum_Eth AM
Site Code : 221011
Start Date : 11/3/2022
Page No : 2



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

File Name : 03_PER_Trum_Eth AM
Site Code : 221011
Start Date : 11/3/2022
Page No : 3

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:30 AM				07:30 AM				07:30 AM				07:30 AM				
+0 mins.	0	0	0	0	**2**	**6**	0	**8**	0	0	0	0	0	2	0	2	
+15 mins.	0	0	**1**	**1**	1	6	0	7	**1**	0	**4**	**5**	**1**	1	0	2	
+30 mins.	**1**	0	0	1	0	3	0	3	1	0	0	1	1	**4**	0	**5**	
+45 mins.	0	0	1	1	1	5	0	6	1	0	0	1	1	2	0	3	
Total Volume	1	0	2	3	4	20	0	24	3	0	4	7	3	9	0	12	
% App. Total	33.3	0	66.7		16.7	83.3	0		42.9	0	57.1		25	75	0		
PHF	.250	.000	.500	.750	.500	.833	.000	.750	.750	.000	.250	.350	.750	.563	.000	.600	

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N/S: Trumble Road
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File Name : 03_PER_Trum_Eth AM
Site Code : 221011
Start Date : 11/3/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

	Trumble Road Southbound					Ethanac Road Westbound					Trumble Road Northbound					Ethanac Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	2	1	2	0	0	0	0	0	0	0	0	0	0	4	3	0	0	7	1	9	10
07:15 AM	0	0	4	0	4	1	1	0	0	2	0	0	0	0	0	4	1	0	0	5	0	11	11
07:30 AM	0	0	5	0	5	1	1	0	0	2	1	0	0	0	1	3	0	0	0	3	0	11	11
07:45 AM	0	0	1	0	1	0	1	0	0	1	1	0	0	0	1	4	1	0	0	5	0	8	8
Total	0	0	12	1	12	2	3	0	0	5	2	0	0	0	2	15	5	0	0	20	1	39	40
08:00 AM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
08:15 AM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	4	0	0	0	4	0	6	6
08:30 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	6	6
08:45 AM	1	0	4	1	5	0	1	0	0	1	0	0	0	0	0	2	1	0	0	3	1	9	10
Total	1	0	8	1	9	0	2	0	0	2	0	0	0	0	0	11	1	0	0	12	1	23	24
Grand Total	1	0	20	2	21	2	5	0	0	7	2	0	0	0	2	26	6	0	0	32	2	62	64
Apprch %	4.8	0	95.2			28.6	71.4	0			100	0	0			81.2	18.8	0					
Total %	1.6	0	32.3		33.9	3.2	8.1	0		11.3	3.2	0	0		3.2	41.9	9.7	0		51.6	3.1	96.9	

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	**5**	**5**	**1**	**1**	0	**2**	**1**	0	0	**1**	3	0	0	3	**11**
07:45 AM	0	0	1	1	0	1	0	1	1	0	0	1	**4**	**1**	0	**5**	8
08:00 AM	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
08:15 AM	0	0	1	1	0	1	0	1	0	0	0	0	4	0	0	4	6
Total Volume	0	0	9	9	1	3	0	4	2	0	0	2	11	1	0	12	27
% App. Total	0	0	100		25	75	0		100	0	0		91.7	8.3	0		
PHF	.000	.000	.450	.450	.250	.750	.000	.500	.500	.000	.000	.500	.688	.250	.000	.600	.614

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E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Trum_Eth AM
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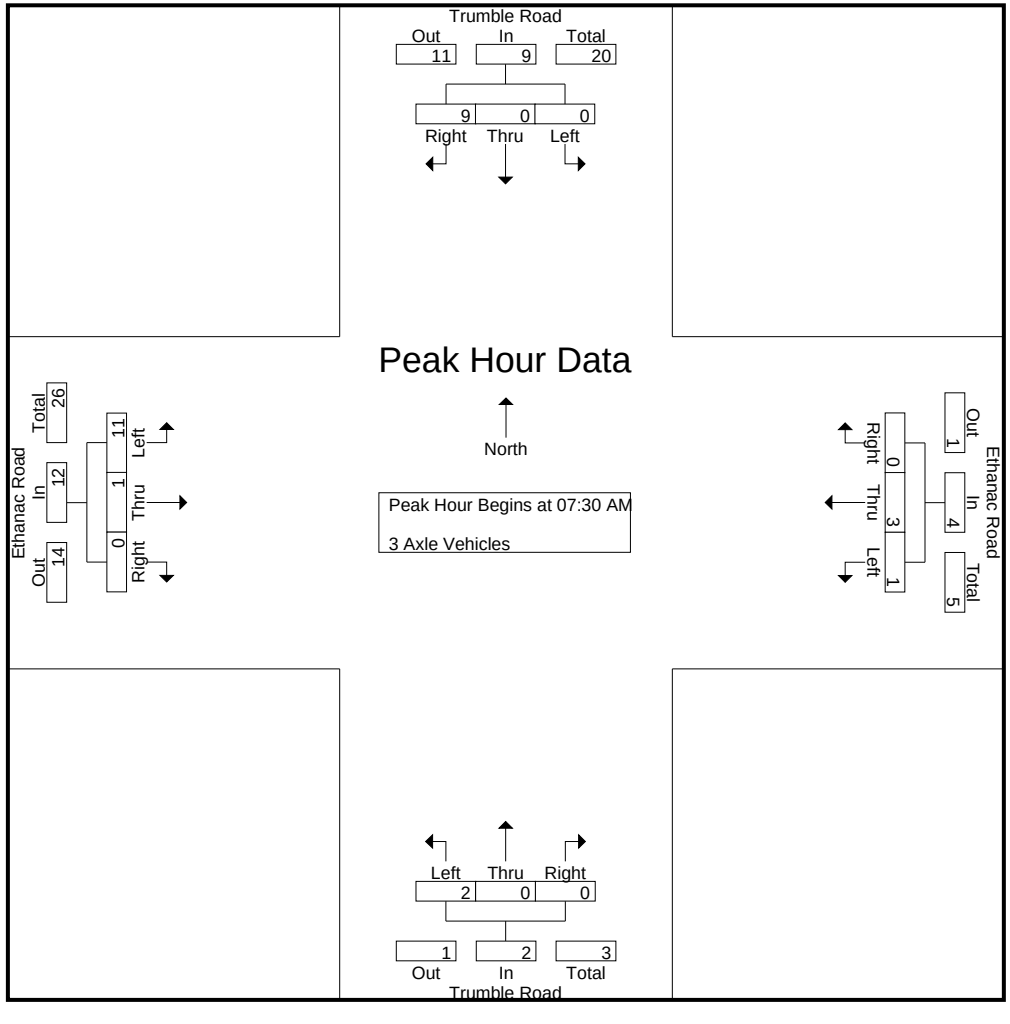

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	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:30 AM				07:30 AM				07:30 AM				07:30 AM				
+0 mins.	0	0	**5**	**5**	**1**	**1**	0	**2**	**1**	0	0	**1**	3	0	0	3	
+15 mins.	0	0	1	1	0	1	0	1	1	0	0	1	**4**	**1**	0	**5**	
+30 mins.	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	
+45 mins.	0	0	1	1	0	1	0	1	0	0	0	0	4	0	0	4	
Total Volume	0	0	9	9	1	3	0	4	2	0	0	2	11	1	0	12	
% App. Total	0	0	100		25	75	0		100	0	0		91.7	8.3	0		
PHF	.000	.000	.450	.450	.250	.750	.000	.500	.500	.000	.000	.500	.688	.250	.000	.600	

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Groups Printed- 4+ Axle Trucks

	Trumble Road Southbound					Ethanac Road Westbound					Trumble Road Northbound					Ethanac Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	3	3
07:15 AM	0	0	2	0	2	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	6	6
07:30 AM	0	0	2	0	2	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	0	9	9
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	4	0	4	0	5	0	0	5	0	0	0	0	0	0	9	0	0	9	0	18	18
08:00 AM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	2	1	0	3	0	5	5
08:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	2	2
08:30 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3	3
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	0	3	3
Total	0	0	1	0	1	0	5	0	0	5	0	0	0	0	0	1	5	1	0	7	0	13	13
Grand Total	0	0	5	0	5	0	10	0	0	10	0	0	0	0	0	1	14	1	0	16	0	31	31
Apprch %	0	0	100			0	100	0			0	0	0			6.2	87.5	6.2					
Total %	0	0	16.1		16.1	0	32.3	0		32.3	0	0	0		0	3.2	45.2	3.2		51.6	0	100	

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	**2**	**2**	0	**3**	0	**3**	0	0	0	0	0	**4**	0	**4**	**9**
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	1	1	0	1	0	1	0	0	0	0	0	2	**1**	3	5
08:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
Total Volume	0	0	3	3	0	5	0	5	0	0	0	0	0	7	1	8	16
% App. Total	0	0	100		0	100	0		0	0	0		0	87.5	12.5		
PHF	.000	.000	.375	.375	.000	.417	.000	.417	.000	.000	.000	.000	.000	.438	.250	.500	.444

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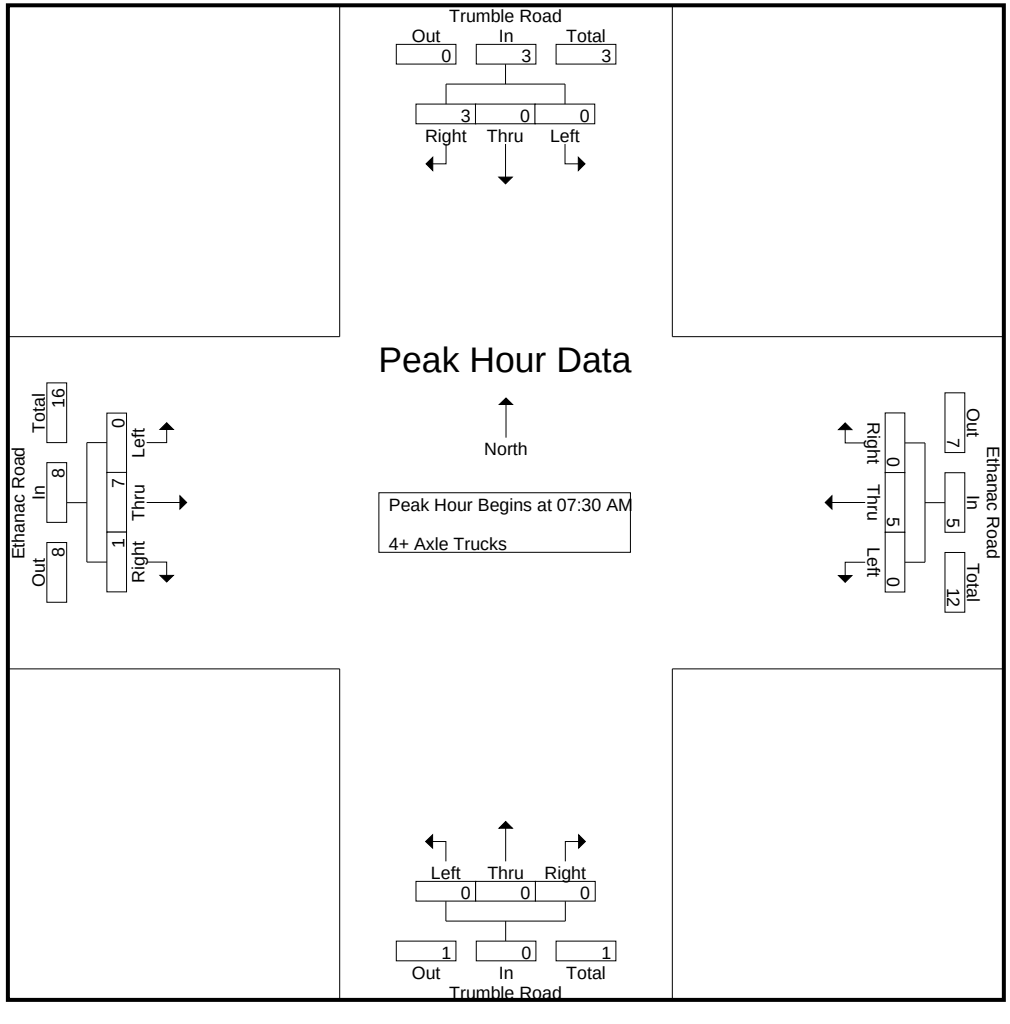

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	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:30 AM				07:30 AM				07:30 AM				07:30 AM				
+0 mins.	0	0	**2**	**2**	0	**3**	0	**3**	0	0	0	0	0	**4**	0	**4**	
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+30 mins.	0	0	1	1	0	1	0	1	0	0	0	0	0	2	**1**	3	
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	
Total Volume	0	0	3	3	0	5	0	5	0	0	0	0	0	7	1	8	
% App. Total	0	0	100		0	100	0		0	0	0		0	87.5	12.5		
PHF	.000	.000	.375	.375	.000	.417	.000	.417	.000	.000	.000	.000	.000	.438	.250	.500	

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

	Trumble Road Southbound					Ethanac Road Westbound					Trumble Road Northbound					Ethanac Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	5	27	13	32	10	105	6	0	121	22	3	6	2	31	12	113	3	2	128	17	312	329
04:15 PM	4	0	12	1	16	5	78	4	1	87	15	0	6	3	21	10	129	12	4	151	9	275	284
04:30 PM	3	5	22	13	30	8	80	0	0	88	10	1	9	5	20	12	132	2	1	146	19	284	303
04:45 PM	1	1	25	13	27	7	82	4	1	93	10	0	18	12	28	10	130	4	0	144	26	292	318
Total	8	11	86	40	105	30	345	14	2	389	57	4	39	22	100	44	504	21	7	569	71	1163	1234
05:00 PM	3	3	33	16	39	7	99	0	0	106	19	3	8	2	30	8	145	6	4	159	22	334	356
05:15 PM	1	1	9	4	11	13	76	2	0	91	15	1	5	4	21	13	107	5	0	125	8	248	256
05:30 PM	2	2	9	6	13	11	80	6	0	97	12	1	7	4	20	9	124	2	0	135	10	265	275
05:45 PM	4	1	15	13	20	4	76	1	0	81	9	1	8	5	18	10	138	3	0	151	18	270	288
Total	10	7	66	39	83	35	331	9	0	375	55	6	28	15	89	40	514	16	4	570	58	1117	1175
Grand Total	18	18	152	79	188	65	676	23	2	764	112	10	67	37	189	84	1018	37	11	1139	129	2280	2409
Apprch %	9.6	9.6	80.9			8.5	88.5	3			59.3	5.3	35.4			7.4	89.4	3.2					
Total %	0.8	0.8	6.7		8.2	2.9	29.6	1		33.5	4.9	0.4	2.9		8.3	3.7	44.6	1.6		50	5.4	94.6	
Passenger Vehicles	17	17	147		260	62	658	21		743	107	9	58		205	77	987	36		1111	0	0	2319
% Passenger Vehicles	94.4	94.4	96.7	100	97.4	95.4	97.3	91.3	100	97	95.5	90	86.6	83.8	90.7	91.7	97	97.3	100	96.6	0	0	96.3
Large 2 Axle Vehicles	1	0	1		2	3	15	0		18	2	0	8		15	5	27	1		33	0	0	68
% Large 2 Axle Vehicles	5.6	0	0.7	0	0.7	4.6	2.2	0	0	2.3	1.8	0	11.9	13.5	6.6	6	2.7	2.7	0	2.9	0	0	2.8
3 Axle Vehicles	0	1	2		3	0	0	1		1	3	1	1		6	1	3	0		4	0	0	14
% 3 Axle Vehicles	0	5.6	1.3	0	1.1	0	0	4.3	0	0.1	2.7	10	1.5	2.7	2.7	1.2	0.3	0	0	0.3	0	0	0.6
4+ Axle Trucks	0	0	2		2	0	3	1		4	0	0	0		0	1	1	0		2	0	0	8
% 4+ Axle Trucks	0	0	1.3	0	0.7	0	0.4	4.3	0	0.5	0	0	0	0	0	1.2	0.1	0	0	0.2	0	0	0.3

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	**4**	0	12	16	5	78	**4**	87	15	0	6	21	10	129	**12**	151	275
04:30 PM	3	**5**	22	30	**8**	80	0	88	10	1	9	20	**12**	132	2	146	284
04:45 PM	1	1	25	27	7	82	4	93	10	0	**18**	28	10	130	4	144	292
05:00 PM	3	3	**33**	**39**	7	**99**	0	**106**	**19**	**3**	8	**30**	8	**145**	6	**159**	**334**
Total Volume	11	9	92	112	27	339	8	374	54	4	41	99	40	536	24	600	1185
% App. Total	9.8	8	82.1		7.2	90.6	2.1		54.5	4	41.4		6.7	89.3	4		
PHF	.688	.450	.697	.718	.844	.856	.500	.882	.711	.333	.569	.825	.833	.924	.500	.943	.887

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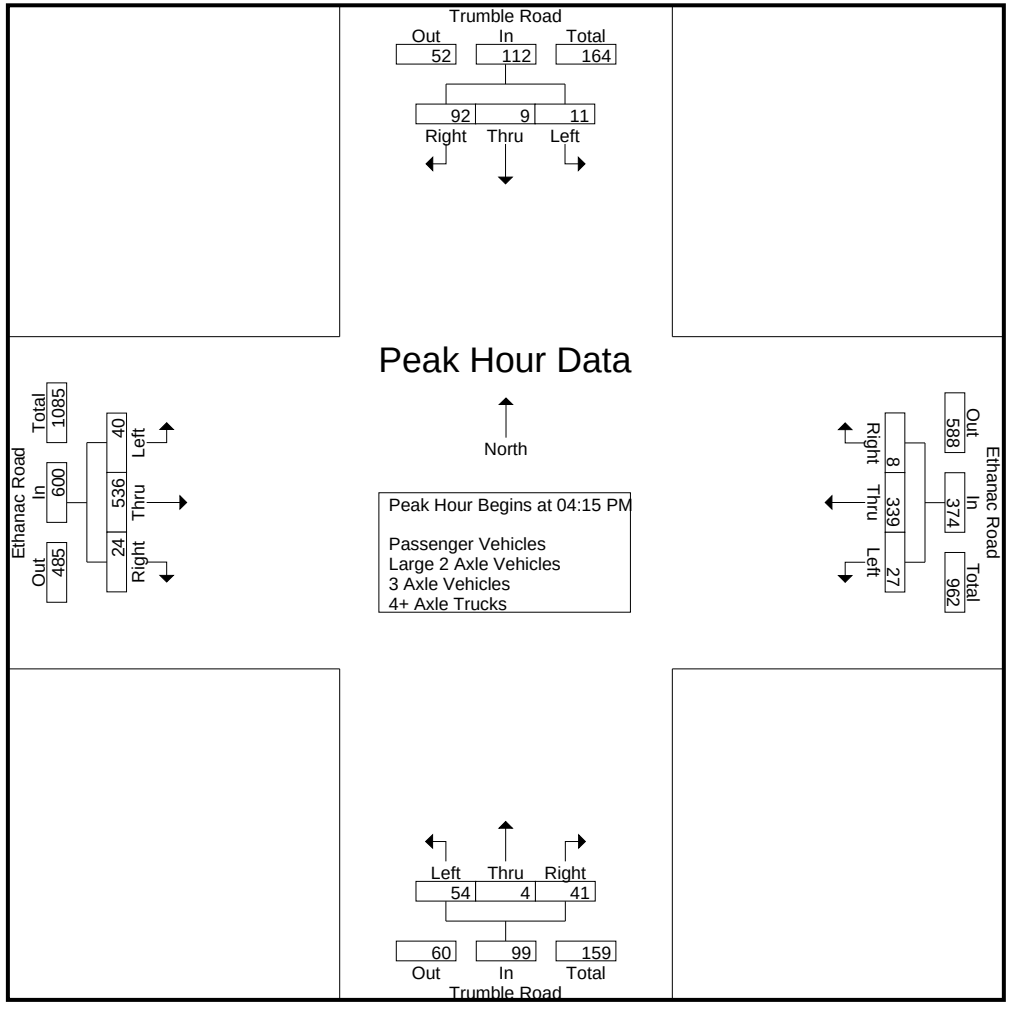

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	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:15 PM				04:00 PM				04:00 PM				04:15 PM				
+0 mins.	**4**	0	12	16	**10**	**105**	**6**	**121**	**22**	**3**	6	**31**	10	129	**12**	151	
+15 mins.	3	**5**	22	30	5	78	4	87	15	0	6	21	**12**	132	2	146	
+30 mins.	1	1	25	27	8	80	0	88	10	1	9	20	10	130	4	144	
+45 mins.	3	3	**33**	**39**	7	82	4	93	10	0	**18**	28	8	**145**	6	**159**	
Total Volume	11	9	92	112	30	345	14	389	57	4	39	100	40	536	24	600	
% App. Total	9.8	8	82.1		7.7	88.7	3.6		57	4	39		6.7	89.3	4		
PHF	.688	.450	.697	.718	.750	.821	.583	.804	.648	.333	.542	.806	.833	.924	.500	.943	

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Groups Printed- Large 2 Axle Vehicles

	Trumble Road Southbound					Ethanac Road Westbound					Trumble Road Northbound					Ethanac Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	1	1	1	2	5	0	0	7	1	9	10
04:15 PM	0	0	1	0	1	0	5	0	0	5	1	0	0	0	1	1	5	1	0	7	0	14	14
04:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	0	7	0	0	7	0	10	10
04:45 PM	0	0	0	0	0	1	2	0	0	3	1	0	2	1	3	0	0	0	0	0	1	6	7
Total	0	0	1	0	1	2	9	0	0	11	2	0	4	2	6	3	17	1	0	21	2	39	41
05:00 PM	0	0	0	0	0	0	4	0	0	4	0	0	2	1	2	0	4	0	0	4	1	10	11
05:15 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	0	4	4
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	4	4
05:45 PM	0	0	0	0	0	1	2	0	0	3	0	0	2	2	2	0	1	0	0	1	2	6	8
Total	1	0	0	0	1	1	6	0	0	7	0	0	4	3	4	2	10	0	0	12	3	24	27
Grand Total	1	0	1	0	2	3	15	0	0	18	2	0	8	5	10	5	27	1	0	33	5	63	68
Apprch %	50	0	50			16.7	83.3	0			20	0	80			15.2	81.8	3					
Total %	1.6	0	1.6		3.2	4.8	23.8	0		28.6	3.2	0	12.7		15.9	7.9	42.9	1.6		52.4	7.4	92.6	

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	**1**	**1**	0	**5**	0	**5**	**1**	0	0	1	**1**	5	**1**	**7**	**14**
04:30 PM	0	0	0	0	0	2	0	2	0	0	1	1	0	**7**	0	7	10
04:45 PM	0	0	0	0	**1**	2	0	3	1	0	**2**	**3**	0	0	0	0	6
05:00 PM	0	0	0	0	0	4	0	4	0	0	2	2	0	4	0	4	10
Total Volume	0	0	1	1	1	13	0	14	2	0	5	7	1	16	1	18	40
% App. Total	0	0	100		7.1	92.9	0		28.6	0	71.4		5.6	88.9	5.6		
PHF	.000	.000	.250	.250	.250	.650	.000	.700	.500	.000	.625	.583	.250	.571	.250	.643	.714

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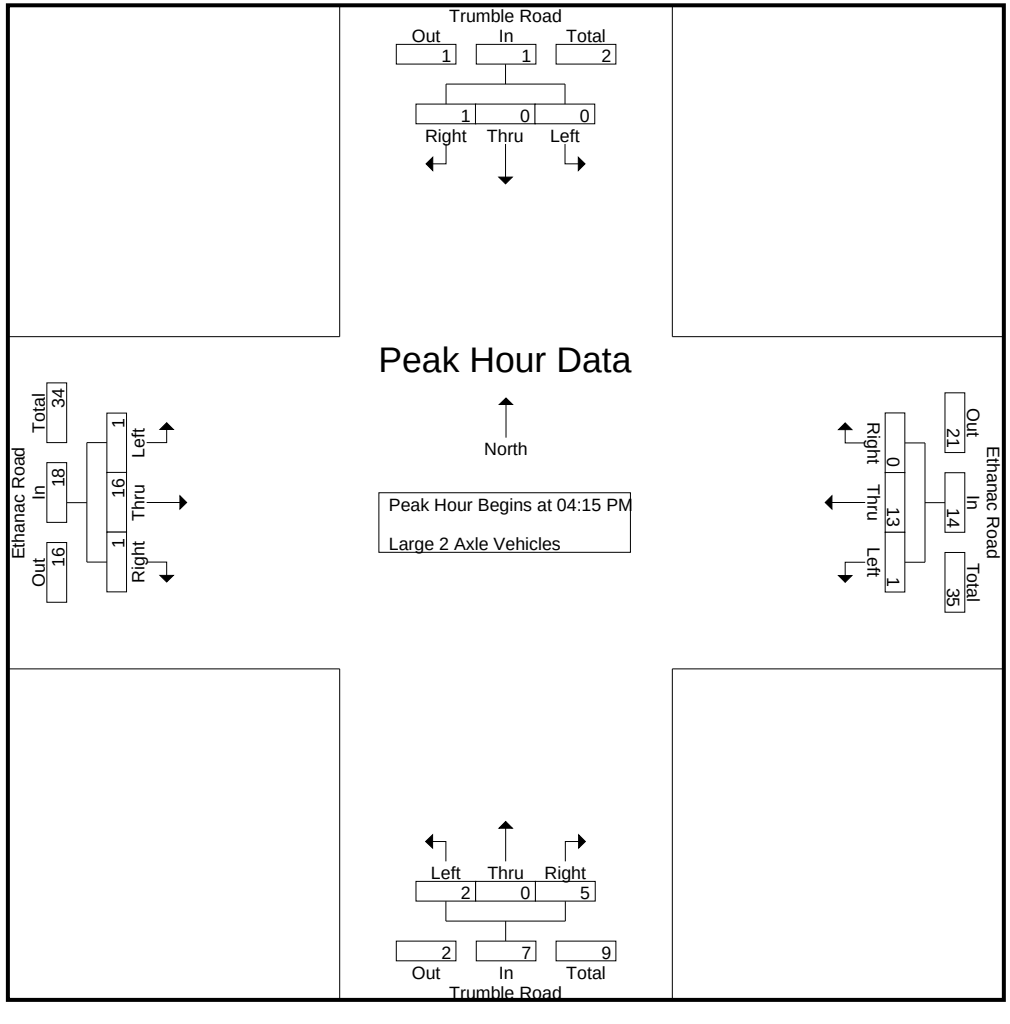

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City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Trum_Eth PM
Site Code : 221011
Start Date : 11/3/2022
Page No : 3

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:15 PM				04:15 PM				04:15 PM				04:15 PM				
+0 mins.	0	0	**1**	**1**	0	**5**	0	**5**	**1**	0	0	1	**1**	5	**1**	**7**	
+15 mins.	0	0	0	0	0	2	0	2	0	0	1	1	0	**7**	0	7	
+30 mins.	0	0	0	0	**1**	2	0	3	1	0	**2**	**3**	0	0	0	0	
+45 mins.	0	0	0	0	0	4	0	4	0	0	2	2	0	4	0	4	
Total Volume	0	0	1	1	1	13	0	14	2	0	5	7	1	16	1	18	
% App. Total	0	0	100		7.1	92.9	0		28.6	0	71.4		5.6	88.9	5.6		
PHF	.000	.000	.250	.250	.250	.650	.000	.700	.500	.000	.625	.583	.250	.571	.250	.643	

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

File Name : 03_PER_Trum_Eth PM
Site Code : 221011
Start Date : 11/3/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

	Trumble Road Southbound					Ethanac Road Westbound					Trumble Road Northbound					Ethanac Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	1	0	0	1	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	3	3
04:15 PM	0	0	1	0	1	0	0	1	0	1	1	0	0	0	1	1	0	0	0	1	0	4	4
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	2
Total	0	1	1	0	2	0	0	1	0	1	2	1	1	1	4	1	1	0	0	2	1	9	10
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	2	2
05:45 PM	0	0	0	0	0	0	0	0	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	1	0	0	0	1	0	2	0	0	2	0	4	4
Grand Total	0	1	2	0	3	0	0	1	0	1	3	1	1	1	5	1	3	0	0	4	1	13	14
Apprch %	0	33.3	66.7			0	0	100			60	20	20			25	75	0					
Total %	0	7.7	15.4		23.1	0	0	7.7		7.7	23.1	7.7	7.7		38.5	7.7	23.1	0		30.8	7.1	92.9	

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	**1**	**1**	0	0	**1**	**1**	**1**	0	0	**1**	**1**	0	0	**1**	**4**
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	**1**	1	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	0	1	1	1	0	1	2	1	1	0	2	6
% App. Total	0	0	100		0	0	100		50	0	50		50	50	0		
PHF	.000	.000	.250	.250	.000	.000	.250	.250	.250	.000	.250	.500	.250	.250	.000	.500	.375

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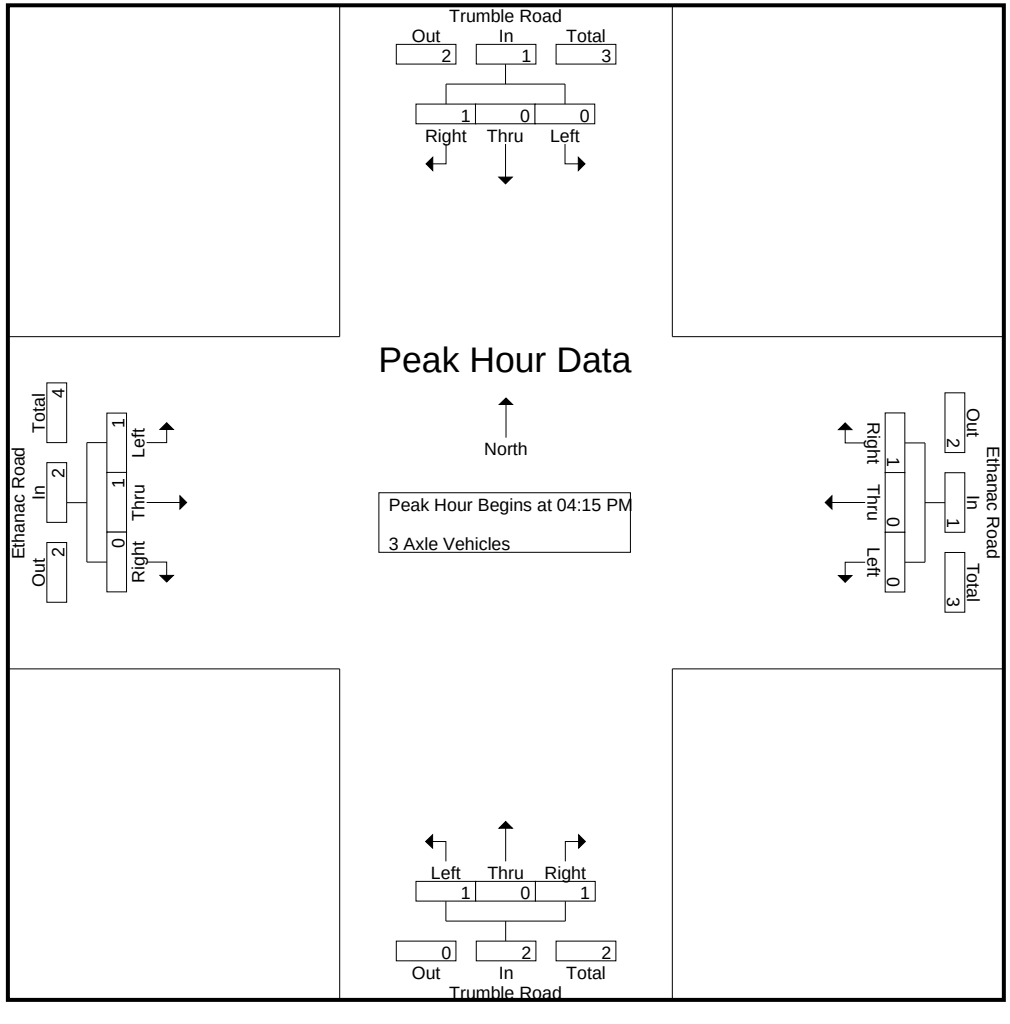
City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Trum_Eth PM
Site Code : 221011
Start Date : 11/3/2022
Page No : 2



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

File Name : 03_PER_Trum_Eth PM
Site Code : 221011
Start Date : 11/3/2022

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:15 PM				04:15 PM				04:15 PM				04:15 PM				
+0 mins.	0	0	**1**	**1**	0	0	**1**	**1**	**1**	0	0	**1**	**1**	0	0	**1**	
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	
+30 mins.	0	0	0	0	0	0	0	0	0	0	**1**	1	0	0	0	0	
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Volume	0	0	1	1	0	0	1	1	1	0	1	2	1	1	0	2	
% App. Total	0	0	100		0	0	100		50	0	50		50	50	0		
PHF	.000	.000	.250	.250	.000	.000	.250	.250	.250	.000	.250	.500	.250	.250	.000	.500	

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

File Name : 03_PER_Trum_Eth PM
Site Code : 221011
Start Date : 11/3/2022
Page No : 1

Groups Printed- 4+ Axle Trucks

	Trumble Road Southbound					Ethanac Road Westbound					Trumble Road Northbound					Ethanac Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	1
04:15 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	0	3	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1
05:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	2
05:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
05:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	5	5
Grand Total	0	0	2	0	2	0	3	1	0	4	0	0	0	0	0	1	1	0	0	2	0	8	8
Apprch %	0	0	100			0	75	25			0	0	0			50	50	0					
Total %	0	0	25		25	0	37.5	12.5		50	0	0	0		0	12.5	12.5	0		25	0	100	

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0	**1**
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	1
Total Volume	0	0	1	1	0	0	1	1	0	0	0	0	0	1	0	1	3
% App. Total	0	0	100		0	0	100		0	0	0		0	100	0		
PHF	.000	.000	.250	.250	.000	.000	.250	.250	.000	.000	.000	.000	.000	.250	.000	.250	.750

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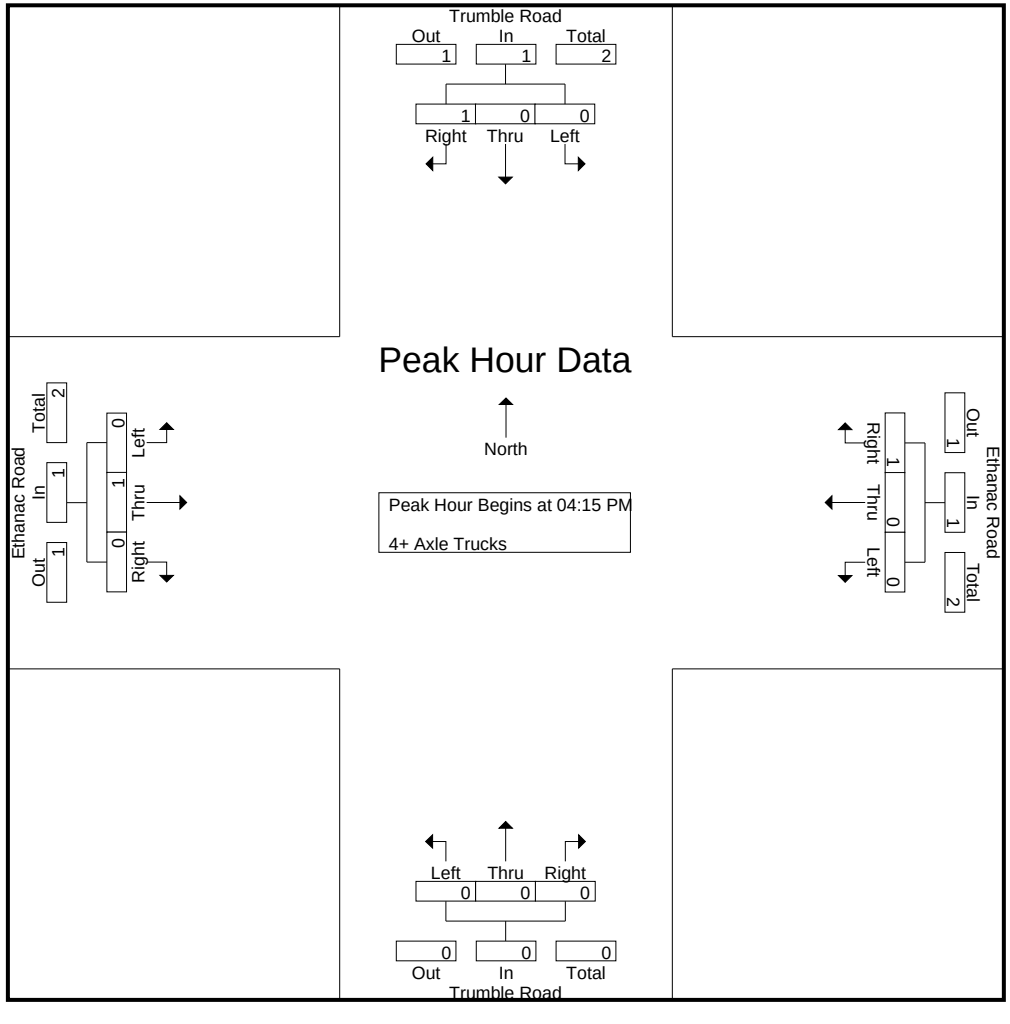
City of Perris
N/S: Trumble Road
E/W: Ethanac Road
Weather: Clear

File Name : 03_PER_Trum_Eth PM
Site Code : 221011
Start Date : 11/3/2022
Page No : 2



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

File Name : 03_PER_Trum_Eth PM
Site Code : 221011
Start Date : 11/3/2022

	Trumble Road Southbound				Ethanac Road Westbound				Trumble Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:15 PM				04:15 PM				04:15 PM				04:15 PM				
+0 mins.	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0	
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+30 mins.	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0	
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	
Total Volume	0	0	1	1	0	0	1	1	0	0	0	0	0	1	0	1	
% App. Total	0	0	100		0	0	100		0	0	0		0	100	0		
PHF	.000	.000	.250	.250	.000	.000	.250	.250	.000	.000	.000	.000	.000	.250	.000	.250	

Location: Perris
N/S: Trumble Road
E/W: Ethanac Road

Date: 11/3/2022
Day: Thursday

PEDESTRIANS

	North Leg Trumble Road	East Leg Ethanac Road	South Leg Trumble Road	West Leg Ethanac Road	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0

	North Leg Trumble Road	East Leg Ethanac Road	South Leg Trumble Road	West Leg Ethanac Road	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	1	0	1
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	0	1	0	1

Location: Perris
N/S: Trumble Road
E/W: Ethanac Road

Date: 11/3/2022
Day: Thursday

BICYCLES

	Southbound Trumble Road			Westbound Ethanac Road			Northbound Trumble Road			Eastbound Ethanac Road			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

	Southbound Trumble Road			Westbound Ethanac Road			Northbound Trumble Road			Eastbound Ethanac Road			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	1	0	0	0	0	0	1	0	2

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

File Name : 06_PER_Sher_Eth AM
Site Code : 221011
Start Date : 11/3/2022
Page No : 1

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

	Sherman Road Southbound				Ethanac Road Westbound				Sherman Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	1	22	24	1	38	0	39	0	0	0	0	16	63	0	79	142
07:15 AM	1	1	25	27	1	50	0	51	1	1	0	2	23	113	2	138	218
07:30 AM	0	2	28	30	0	98	0	98	1	0	0	1	26	116	7	149	278
07:45 AM	3	0	33	36	0	108	1	109	2	0	1	3	20	104	5	129	277
Total	5	4	108	117	2	294	1	297	4	1	1	6	85	396	14	495	915
08:00 AM	2	0	19	21	1	88	0	89	0	0	2	2	34	101	5	140	252
08:15 AM	2	0	16	18	0	69	3	72	6	1	0	7	28	75	1	104	201
08:30 AM	0	2	33	35	1	70	0	71	1	0	0	1	28	61	1	90	197
08:45 AM	2	1	26	29	1	31	2	34	0	1	0	1	30	57	4	91	155
Total	6	3	94	103	3	258	5	266	7	2	2	11	120	294	11	425	805
Grand Total	11	7	202	220	5	552	6	563	11	3	3	17	205	690	25	920	1720
Apprch %	5	3.2	91.8		0.9	98	1.1		64.7	17.6	17.6		22.3	75	2.7		
Total %	0.6	0.4	11.7	12.8	0.3	32.1	0.3	32.7	0.6	0.2	0.2	1	11.9	40.1	1.5	53.5	
Passenger Vehicles	10	7	189	206	5	509	6	520	6	3	2	11	197	628	20	845	1582
% Passenger Vehicles	90.9	100	93.6	93.6	100	92.2	100	92.4	54.5	100	66.7	64.7	96.1	91	80	91.8	92
Large 2 Axle Vehicles	1	0	9	10	0	28	0	28	4	0	0	4	6	45	3	54	96
% Large 2 Axle Vehicles	9.1	0	4.5	4.5	0	5.1	0	5	36.4	0	0	23.5	2.9	6.5	12	5.9	5.6
3 Axle Vehicles	0	0	2	2	0	7	0	7	0	0	0	0	0	7	0	7	16
% 3 Axle Vehicles	0	0	1	0.9	0	1.3	0	1.2	0	0	0	0	0	1	0	0.8	0.9
4+ Axle Trucks	0	0	2	2	0	8	0	8	1	0	1	2	2	10	2	14	26
% 4+ Axle Trucks	0	0	1	0.9	0	1.4	0	1.4	9.1	0	33.3	11.8	1	1.4	8	1.5	1.5

	Sherman Road Southbound				Ethanac Road Westbound				Sherman Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	1	1	25	27	**1**	50	0	51	1	**1**	0	2	23	113	2	138	218
07:30 AM	0	**2**	28	30	0	98	0	98	1	0	0	1	26	**116**	**7**	**149**	**278**
07:45 AM	**3**	0	**33**	**36**	0	**108**	**1**	**109**	**2**	0	1	**3**	20	104	5	129	277
08:00 AM	2	0	19	21	1	88	0	89	0	0	**2**	2	**34**	101	5	140	252
Total Volume	6	3	105	114	2	344	1	347	4	1	3	8	103	434	19	556	1025
% App. Total	5.3	2.6	92.1		0.6	99.1	0.3		50	12.5	37.5		18.5	78.1	3.4		
PHF	.500	.375	.795	.792	.500	.796	.250	.796	.500	.250	.375	.667	.757	.935	.679	.933	.922

Counts Unlimited, Inc.
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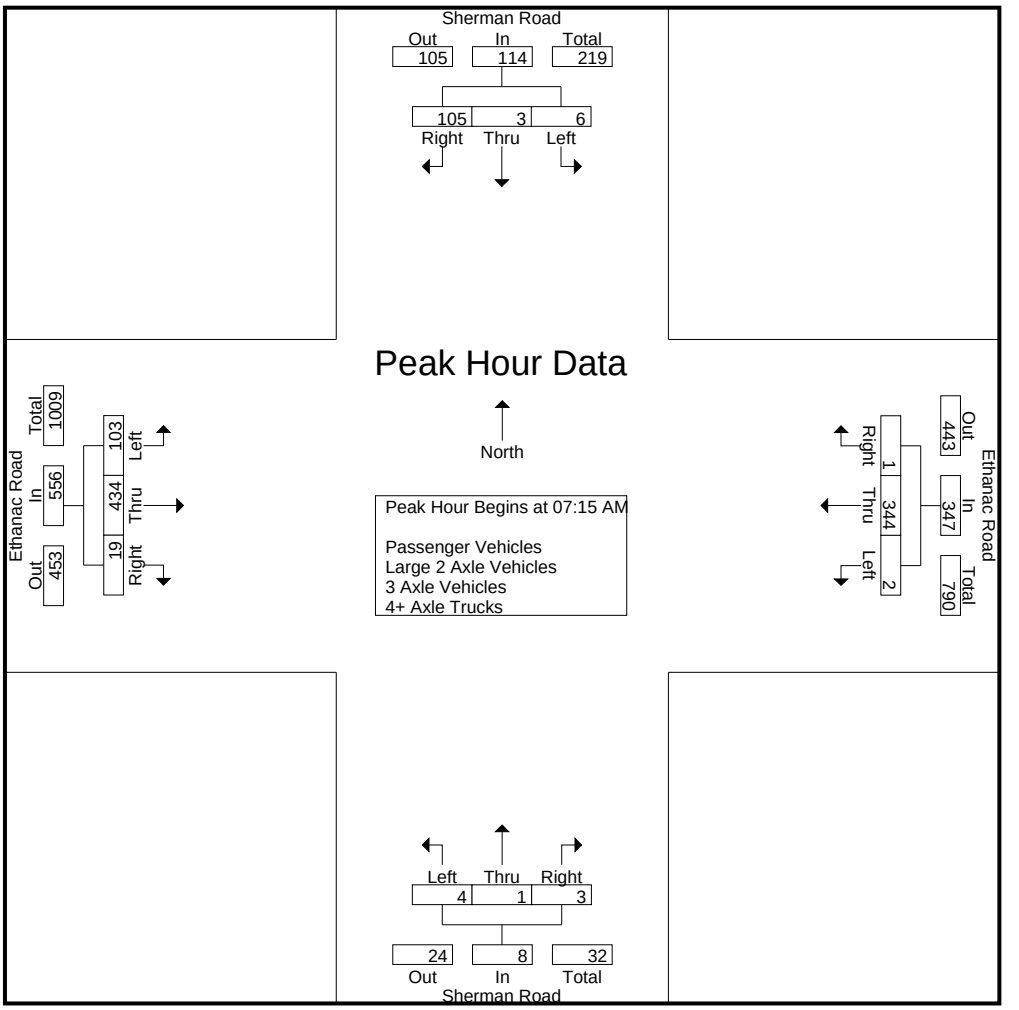
City of Perris
N/S: Sherman Road
E/W: Ethanac Road
Weather: Clear

File Name : 06_PER_Sher_Eth AM
Site Code : 221011
Start Date : 11/3/2022
Page No : 2



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

	07:00 AM				07:30 AM				07:30 AM				07:15 AM			
+0 mins.	1	1	22	24	0	98	0	98	1	0	0	1	23	113	2	138
+15 mins.	1	1	25	27	0	**108**	1	**109**	2	0	1	3	26	**116**	**7**	**149**
+30 mins.	0	**2**	28	30	**1**	88	0	89	0	0	**2**	2	20	104	5	129
+45 mins.	**3**	0	**33**	**36**	0	69	**3**	72	**6**	**1**	0	**7**	**34**	101	5	140
Total Volume	5	4	108	117	1	363	4	368	9	1	3	13	103	434	19	556
% App. Total	4.3	3.4	92.3		0.3	98.6	1.1		69.2	7.7	23.1		18.5	78.1	3.4	
PHF	.417	.500	.818	.813	.250	.840	.333	.844	.375	.250	.375	.464	.757	.935	.679	.933

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

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Groups Printed- Large 2 Axle Vehicles

	Sherman Road Southbound				Ethanac Road Westbound				Sherman Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	1	1	0	1	0	1	0	0	0	0	0	5	0	5	7
07:15 AM	0	0	2	2	0	3	0	3	0	0	0	0	2	5	0	7	12
07:30 AM	0	0	2	2	0	7	0	7	1	0	0	1	1	6	2	9	19
07:45 AM	0	0	1	1	0	6	0	6	2	0	0	2	1	5	0	6	15
Total	0	0	6	6	0	17	0	17	3	0	0	3	4	21	2	27	53
08:00 AM	0	0	0	0	0	7	0	7	0	0	0	0	0	6	1	7	14
08:15 AM	1	0	0	1	0	3	0	3	1	0	0	1	0	1	0	1	6
08:30 AM	0	0	2	2	0	1	0	1	0	0	0	0	2	10	0	12	15
08:45 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	7	0	7	8
Total	1	0	3	4	0	11	0	11	1	0	0	1	2	24	1	27	43
Grand Total	1	0	9	10	0	28	0	28	4	0	0	4	6	45	3	54	96
Apprch %	10	0	90		0	100	0		100	0	0		11.1	83.3	5.6		
Total %	1	0	9.4	10.4	0	29.2	0	29.2	4.2	0	0	4.2	6.2	46.9	3.1	56.2	

	Sherman Road Southbound				Ethanac Road Westbound				Sherman Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	**2**	**2**	0	3	0	3	0	0	0	0	**2**	5	0	7	12
07:30 AM	0	0	2	2	0	**7**	0	**7**	1	0	0	1	1	**6**	**2**	**9**	**19**
07:45 AM	0	0	1	1	0	6	0	6	**2**	0	0	**2**	1	5	0	6	15
08:00 AM	0	0	0	0	0	7	0	7	0	0	0	0	0	6	1	7	14
Total Volume	0	0	5	5	0	23	0	23	3	0	0	3	4	22	3	29	60
% App. Total	0	0	100		0	100	0		100	0	0		13.8	75.9	10.3		
PHF	.000	.000	.625	.625	.000	.821	.000	.821	.375	.000	.000	.375	.500	.917	.375	.806	.789

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City of Perris
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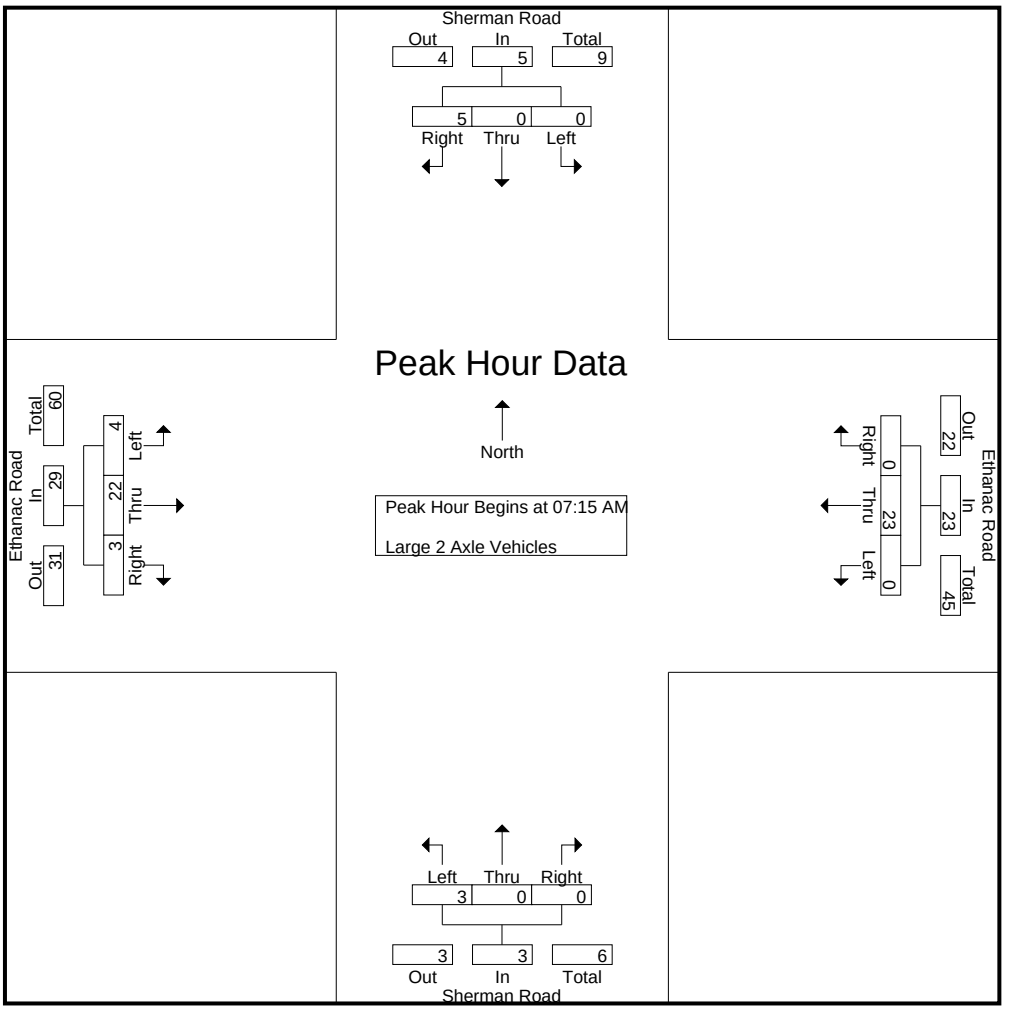

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	**2**	**2**	0	3	0	3	0	0	0	0	**2**	5	0	7
+15 mins.	0	0	2	2	0	**7**	0	**7**	1	0	0	1	1	**6**	**2**	**9**
+30 mins.	0	0	1	1	0	6	0	6	**2**	0	0	**2**	1	5	0	6
+45 mins.	0	0	0	0	0	7	0	7	0	0	0	0	0	6	1	7
Total Volume	0	0	5	5	0	23	0	23	3	0	0	3	4	22	3	29
% App. Total	0	0	100		0	100	0		100	0	0		13.8	75.9	10.3	
PHF	.000	.000	.625	.625	.000	.821	.000	.821	.375	.000	.000	.375	.500	.917	.375	.806

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Groups Printed- 3 Axle Vehicles

	Sherman Road Southbound				Ethanac Road Westbound				Sherman Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0	3	5
07:15 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
07:30 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	3
07:45 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1	2
Total	0	0	1	1	0	7	0	7	0	0	0	0	0	5	0	5	13
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	2	0	2	3
Total	0	0	1	1	0	0	0	0	0	0	0	0	0	2	0	2	3
Grand Total	0	0	2	2	0	7	0	7	0	0	0	0	0	7	0	7	16
Apprch %	0	0	100		0	100	0		0	0	0		0	100	0		
Total %	0	0	12.5	12.5	0	43.8	0	43.8	0	0	0	0	0	43.8	0	43.8	

	Sherman Road Southbound				Ethanac Road Westbound				Sherman Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	**1**	0	**1**	**3**
07:30 AM	0	0	0	0	0	**3**	0	**3**	0	0	0	0	0	0	0	0	3
07:45 AM	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	1	0	1	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	5	0	5	0	0	0	0	0	2	0	2	8
% App. Total	0	0	100		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.250	.250	.000	.417	.000	.417	.000	.000	.000	.000	.000	.500	.000	.500	.667

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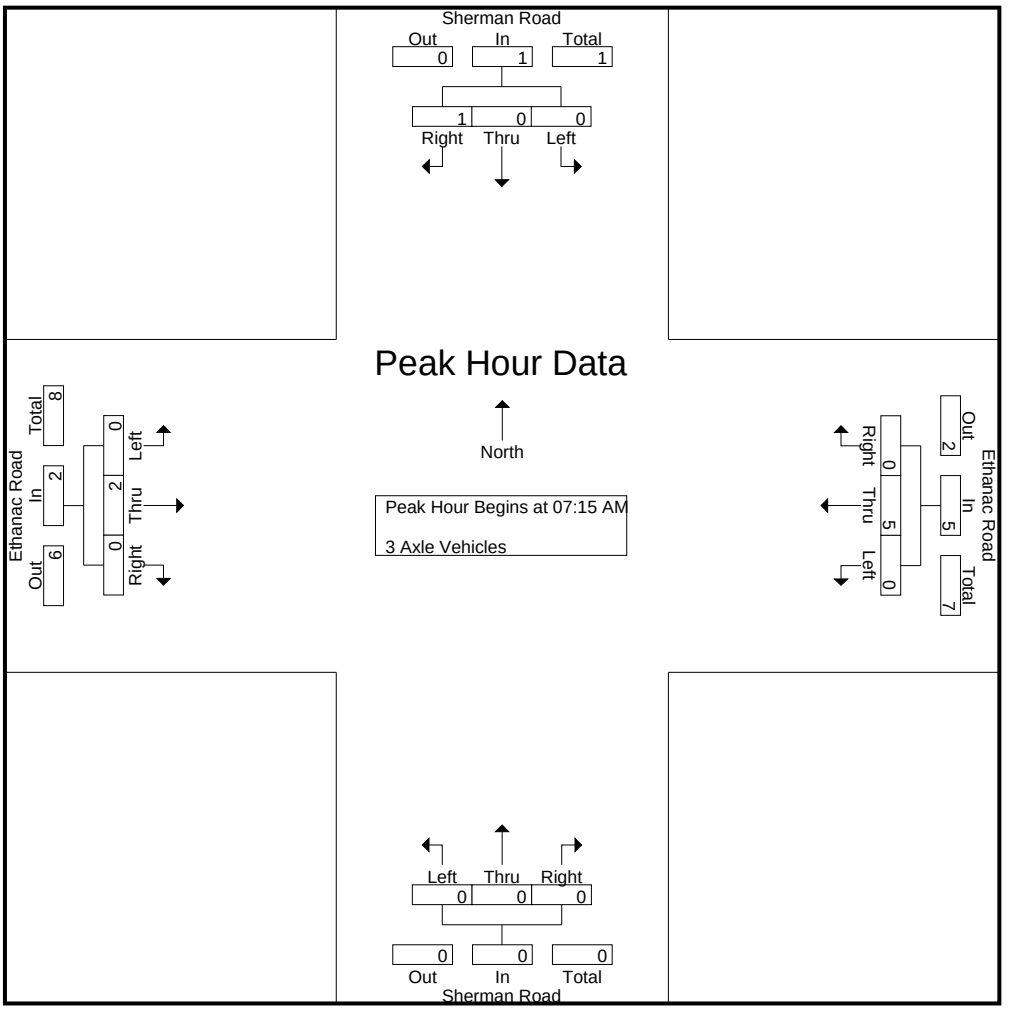

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	**1**	0	**1**
+15 mins.	0	0	0	0	0	**3**	0	**3**	0	0	0	0	0	0	0	0
+30 mins.	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	1	0	1
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	5	0	5	0	0	0	0	0	2	0	2
% App. Total	0	0	100		0	100	0		0	0	0		0	100	0	
PHF	.000	.000	.250	.250	.000	.417	.000	.417	.000	.000	.000	.000	.000	.500	.000	.500

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Groups Printed- 4+ Axle Trucks

	Sherman Road Southbound				Ethanac Road Westbound				Sherman Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	3
07:15 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
07:30 AM	0	0	1	1	0	2	0	2	0	0	0	0	0	3	1	4	7
07:45 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Total	0	0	1	1	0	4	0	4	0	0	1	1	1	7	1	9	15
08:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
08:15 AM	0	0	0	0	0	1	0	1	1	0	0	1	1	0	0	1	3
08:30 AM	0	0	1	1	0	2	0	2	0	0	0	0	0	1	0	1	4
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2
Total	0	0	1	1	0	4	0	4	1	0	0	1	1	3	1	5	11
Grand Total	0	0	2	2	0	8	0	8	1	0	1	2	2	10	2	14	26
Apprch %	0	0	100		0	100	0		50	0	50		14.3	71.4	14.3		
Total %	0	0	7.7	7.7	0	30.8	0	30.8	3.8	0	3.8	7.7	7.7	38.5	7.7	53.8	

	Sherman Road Southbound				Ethanac Road Westbound				Sherman Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	2	0	2	4
07:30 AM	0	0	**1**	**1**	0	2	0	2	0	0	0	0	0	**3**	**1**	**4**	**7**
07:45 AM	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0	1
08:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
Total Volume	0	0	1	1	0	5	0	5	0	0	1	1	0	6	1	7	14
% App. Total	0	0	100		0	100	0		0	0	100		0	85.7	14.3		
PHF	.000	.000	.250	.250	.000	.625	.000	.625	.000	.000	.250	.250	.000	.500	.250	.438	.500

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City of Perris
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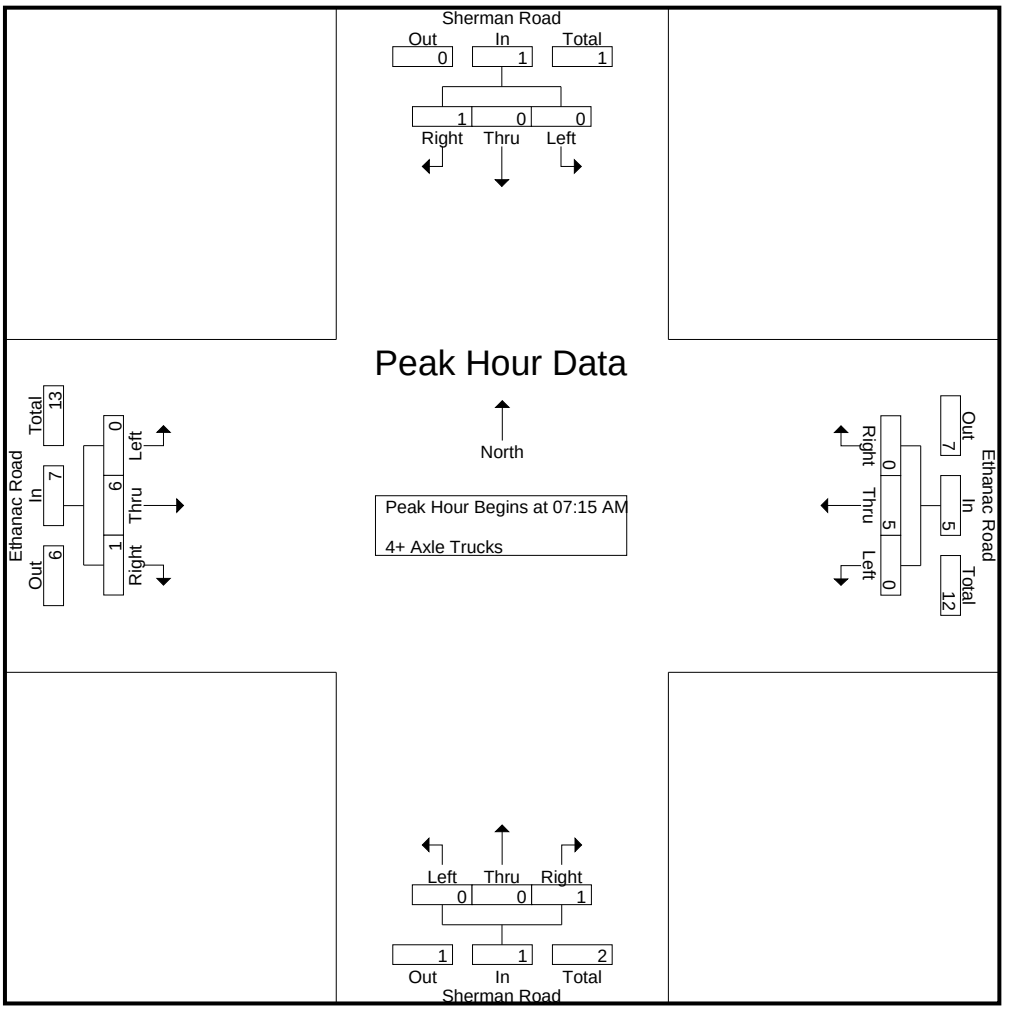

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	2	0	2
+15 mins.	0	0	**1**	**1**	0	2	0	2	0	0	0	0	0	**3**	**1**	**4**
+30 mins.	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
Total Volume	0	0	1	1	0	5	0	5	0	0	1	1	0	6	1	7
% App. Total	0	0	100		0	100	0		0	0	100		0	85.7	14.3	
PHF	.000	.000	.250	.250	.000	.625	.000	.625	.000	.000	.250	.250	.000	.500	.250	.438

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

	Sherman Road Southbound				Ethanac Road Westbound				Sherman Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	2	1	38	41	1	67	1	69	5	3	1	9	27	88	0	115	234
04:15 PM	1	0	28	29	0	58	0	58	2	0	1	3	37	103	1	141	231
04:30 PM	1	0	17	18	0	62	3	65	5	0	4	9	36	103	1	140	232
04:45 PM	1	2	24	27	1	59	1	61	4	2	2	8	54	87	5	146	242
Total	5	3	107	115	2	246	5	253	16	5	8	29	154	381	7	542	939
05:00 PM	1	0	26	27	0	70	2	72	7	1	3	11	50	90	6	146	256
05:15 PM	1	0	31	32	0	65	1	66	7	0	1	8	49	96	1	146	252
05:30 PM	1	0	37	38	0	55	0	55	3	1	0	4	46	76	4	126	223
05:45 PM	0	1	25	26	1	58	0	59	2	1	1	4	52	111	3	166	255
Total	3	1	119	123	1	248	3	252	19	3	5	27	197	373	14	584	986
Grand Total	8	4	226	238	3	494	8	505	35	8	13	56	351	754	21	1126	1925
Apprch %	3.4	1.7	95		0.6	97.8	1.6		62.5	14.3	23.2		31.2	67	1.9		
Total %	0.4	0.2	11.7	12.4	0.2	25.7	0.4	26.2	1.8	0.4	0.7	2.9	18.2	39.2	1.1	58.5	
Passenger Vehicles	7	3	221	231	3	473	7	483	34	8	11	53	330	736	19	1085	1852
% Passenger Vehicles	87.5	75	97.8	97.1	100	95.7	87.5	95.6	97.1	100	84.6	94.6	94	97.6	90.5	96.4	96.2
Large 2 Axle Vehicles	1	1	4	6	0	15	0	15	1	0	1	2	21	16	1	38	61
% Large 2 Axle Vehicles	12.5	25	1.8	2.5	0	3	0	3	2.9	0	7.7	3.6	6	2.1	4.8	3.4	3.2
3 Axle Vehicles	0	0	0	0	0	1	1	2	0	0	1	1	0	1	0	1	4
% 3 Axle Vehicles	0	0	0	0	0	0.2	12.5	0.4	0	0	7.7	1.8	0	0.1	0	0.1	0.2
4+ Axle Trucks	0	0	1	1	0	5	0	5	0	0	0	0	0	1	1	2	8
% 4+ Axle Trucks	0	0	0.4	0.4	0	1	0	1	0	0	0	0	0	0.1	4.8	0.2	0.4

	Sherman Road Southbound				Ethanac Road Westbound				Sherman Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**1**	0	26	27	0	**70**	**2**	**72**	**7**	**1**	**3**	**11**	50	90	**6**	146	**256**
05:15 PM	1	0	31	32	0	65	1	66	7	0	1	8	49	96	1	146	252
05:30 PM	1	0	**37**	**38**	0	55	0	55	3	1	0	4	46	76	4	126	223
05:45 PM	0	**1**	25	26	**1**	58	0	59	2	1	1	4	**52**	**111**	3	**166**	255
Total Volume	3	1	119	123	1	248	3	252	19	3	5	27	197	373	14	584	986
% App. Total	2.4	0.8	96.7		0.4	98.4	1.2		70.4	11.1	18.5		33.7	63.9	2.4		
PHF	.750	.250	.804	.809	.250	.886	.375	.875	.679	.750	.417	.614	.947	.840	.583	.880	.963

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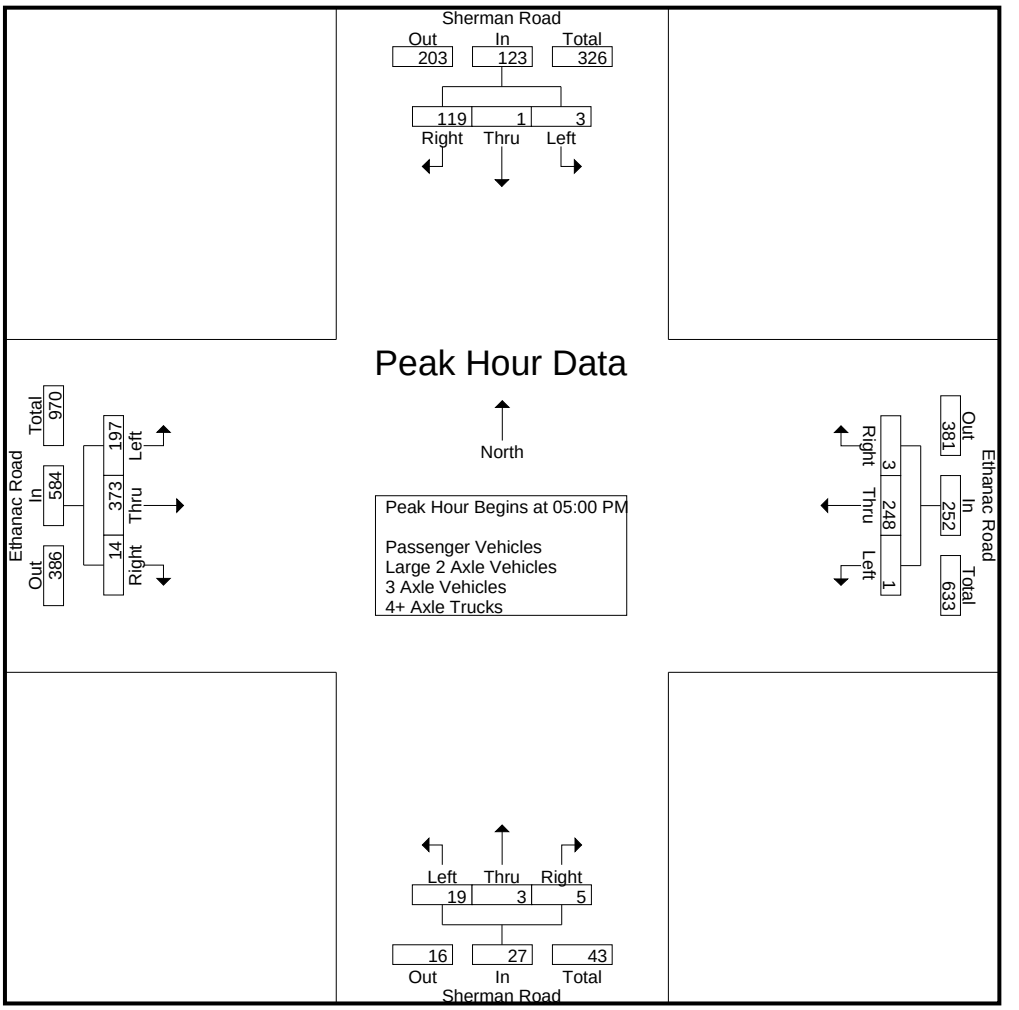

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:30 PM				04:30 PM				05:00 PM			
+0 mins.	**1**	**2**	24	27	0	62	**3**	65	5	0	**4**	9	50	90	**6**	146
+15 mins.	1	0	26	27	**1**	59	1	61	4	**2**	2	8	49	96	1	146
+30 mins.	1	0	31	32	0	**70**	2	**72**	**7**	1	3	**11**	46	76	4	126
+45 mins.	1	0	**37**	**38**	0	65	1	66	7	0	1	8	**52**	**111**	3	**166**
Total Volume	4	2	118	124	1	256	7	264	23	3	10	36	197	373	14	584
% App. Total	3.2	1.6	95.2		0.4	97	2.7		63.9	8.3	27.8		33.7	63.9	2.4	
PHF	1.000	.250	.797	.816	.250	.914	.583	.917	.821	.375	.625	.818	.947	.840	.583	.880

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Groups Printed- Large 2 Axle Vehicles

	Sherman Road Southbound				Ethanac Road Westbound				Sherman Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	1	1	3	0	3	0	3	0	0	0	0	1	5	0	6	12
04:15 PM	0	0	0	0	0	4	0	4	0	0	0	0	2	3	0	5	9
04:30 PM	0	0	0	0	0	3	0	3	0	0	0	0	5	3	0	8	11
04:45 PM	0	0	1	1	0	1	0	1	0	0	0	0	3	0	1	4	6
Total	1	1	2	4	0	11	0	11	0	0	0	0	11	11	1	23	38
05:00 PM	0	0	1	1	0	2	0	2	1	0	0	1	3	1	0	4	8
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	4	4
05:45 PM	0	0	1	1	0	2	0	2	0	0	1	1	3	1	0	4	8
Total	0	0	2	2	0	4	0	4	1	0	1	2	10	5	0	15	23
Grand Total	1	1	4	6	0	15	0	15	1	0	1	2	21	16	1	38	61
Apprch %	16.7	16.7	66.7		0	100	0		50	0	50		55.3	42.1	2.6		
Total %	1.6	1.6	6.6	9.8	0	24.6	0	24.6	1.6	0	1.6	3.3	34.4	26.2	1.6	62.3	

	Sherman Road Southbound				Ethanac Road Westbound				Sherman Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	**1**	**1**	0	**2**	0	**2**	**1**	0	0	**1**	**3**	1	0	**4**	**8**
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	**2**	0	4	4
05:45 PM	0	0	1	1	0	2	0	2	0	0	**1**	1	3	1	0	4	8
Total Volume	0	0	2	2	0	4	0	4	1	0	1	2	10	5	0	15	23
% App. Total	0	0	100		0	100	0		50	0	50		66.7	33.3	0		
PHF	.000	.000	.500	.500	.000	.500	.000	.500	.250	.000	.250	.500	.833	.625	.000	.938	.719

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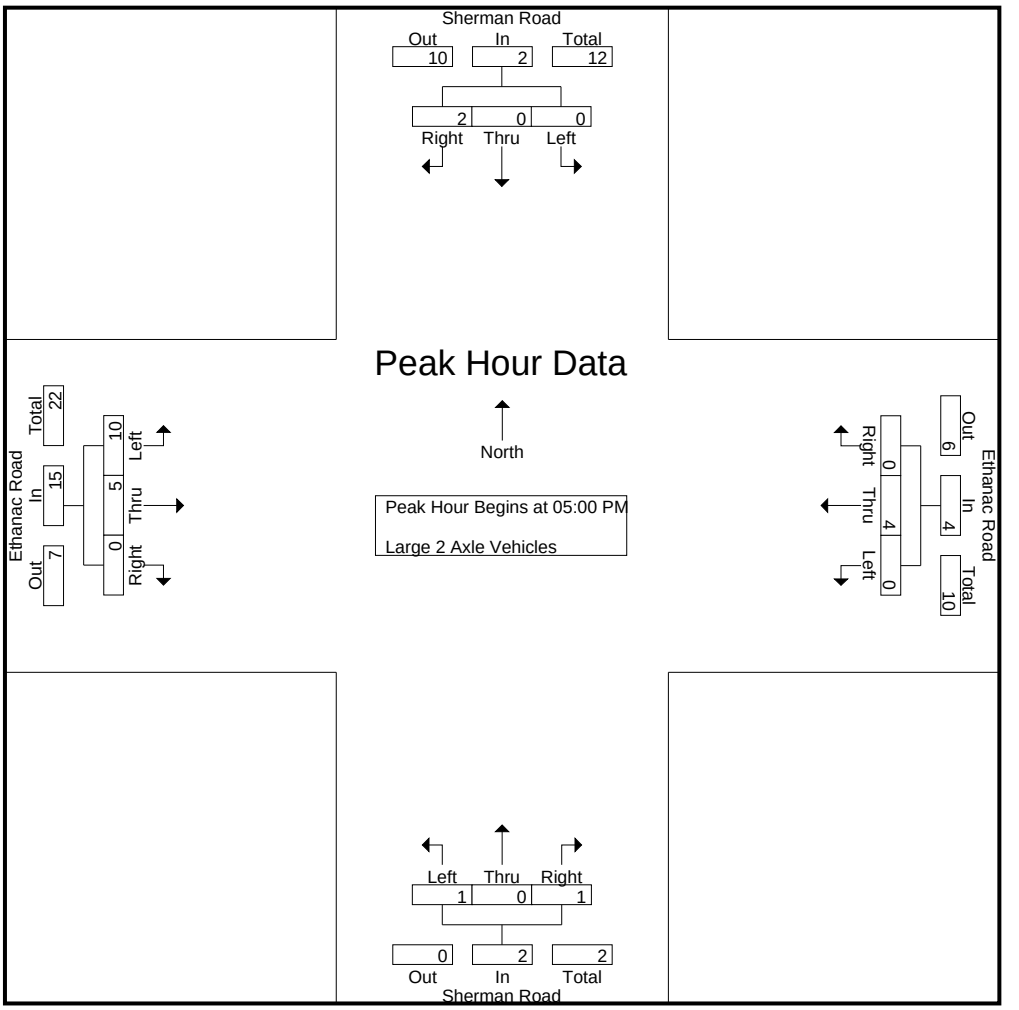
Corona, CA 92878
(951)268-6268

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

File Name : 06_PER_Sher_Eth PM
Site Code : 221011
Start Date : 11/3/2022
Page No : 2



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

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	0	**1**	**1**	0	**2**	0	**2**	**1**	0	0	**1**	**3**	1	0	**4**
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	2	**2**	0	4
+45 mins.	0	0	1	1	0	2	0	2	0	0	**1**	1	3	1	0	4
Total Volume	0	0	2	2	0	4	0	4	1	0	1	2	10	5	0	15
% App. Total	0	0	100		0	100	0		50	0	50		66.7	33.3	0	
PHF	.000	.000	.500	.500	.000	.500	.000	.500	.250	.000	.250	.500	.833	.625	.000	.938

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

File Name : 06_PER_Sher_Eth PM
Site Code : 221011
Start Date : 11/3/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

	Sherman Road Southbound				Ethanac Road Westbound				Sherman Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Total	0	0	0	0	0	1	0	1	0	0	1	1	0	1	0	1	3
05:00 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	1	1	2	0	0	1	1	0	1	0	1	4
Apprch %	0	0	0		0	50	50		0	0	100		0	100	0		
Total %	0	0	0	0	0	25	25	50	0	0	25	25	0	25	0	25	

	Sherman Road Southbound				Ethanac Road Westbound				Sherman Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0	**1**
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0		0	0	100		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

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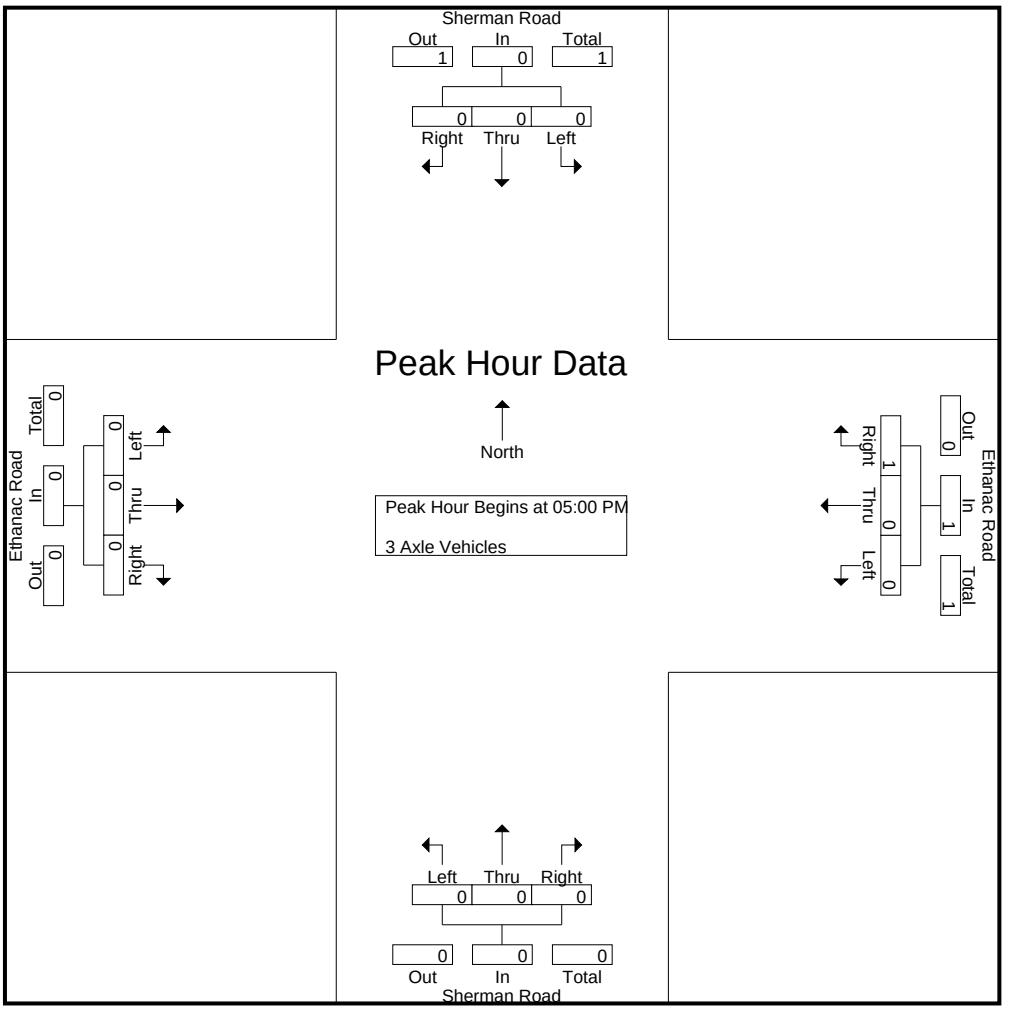
City of Perris
N/S: Sherman Road
E/W: Ethanac Road
Weather: Clear

File Name : 06_PER_Sher_Eth PM
Site Code : 221011
Start Date : 11/3/2022
Page No : 2



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

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	100		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000

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

File Name : 06_PER_Sher_Eth PM
Site Code : 221011
Start Date : 11/3/2022
Page No : 1

Groups Printed- 4+ Axle Trucks

	Sherman Road Southbound				Ethanac Road Westbound				Sherman Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	1	1	0	2	0	2	0	0	0	0	0	0	0	0	3
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	2	0	2	0	0	0	0	0	0	0	0	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
05:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	3	0	3	0	0	0	0	0	1	1	2	5
Grand Total	0	0	1	1	0	5	0	5	0	0	0	0	0	1	1	2	8
Apprch %	0	0	100		0	100	0		0	0	0		0	50	50		
Total %	0	0	12.5	12.5	0	62.5	0	62.5	0	0	0	0	0	12.5	12.5	25	

	Sherman Road Southbound				Ethanac Road Westbound				Sherman Road Northbound				Ethanac Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**	1
05:15 PM	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	0	0	0	**2**
05:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	**1**	0	1	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	3	0	3	0	0	0	0	0	1	1	2	5
% App. Total	0	0	0		0	100	0		0	0	0		0	50	50		
PHF	.000	.000	.000	.000	.000	.375	.000	.375	.000	.000	.000	.000	.000	.250	.250	.500	.625

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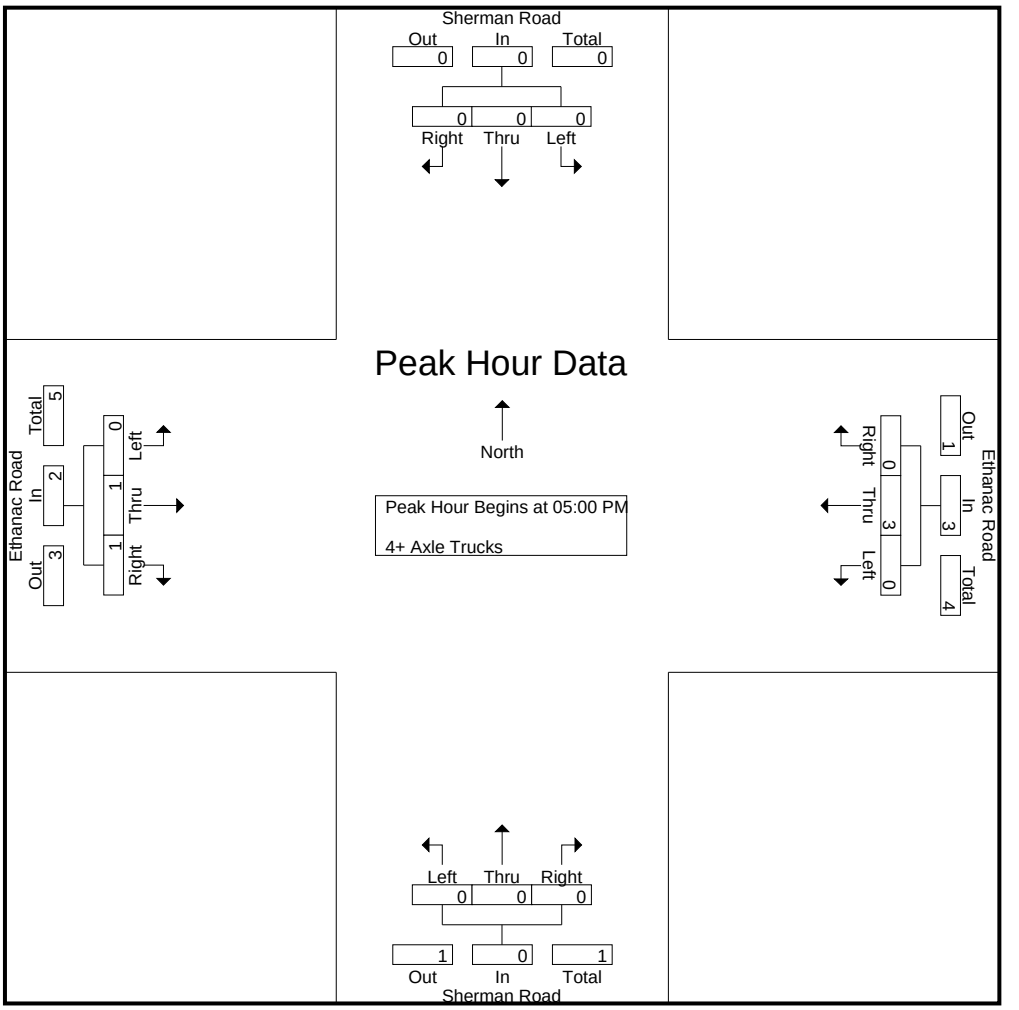
City of Perris
N/S: Sherman Road
E/W: Ethanac Road
Weather: Clear

File Name : 06_PER_Sher_Eth PM
Site Code : 221011
Start Date : 11/3/2022
Page No : 2



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

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**
+15 mins.	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	**1**	0	1
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	3	0	3	0	0	0	0	0	1	1	2
% App. Total	0	0	0		0	100	0		0	0	0		0	50	50	
PHF	.000	.000	.000	.000	.000	.375	.000	.375	.000	.000	.000	.000	.000	.250	.250	.500

Location: Perris
N/S: Sherman Road
E/W: Ethanac Road

Date: 11/3/2022
Day: Thursday

PEDESTRIANS

	North Leg Sherman Road Pedestrians	East Leg Ethanac Road Pedestrians	South Leg Sherman Road Pedestrians	West Leg Ethanac Road Pedestrians	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	1	0	0	1
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	1

	North Leg Sherman Road Pedestrians	East Leg Ethanac Road Pedestrians	South Leg Sherman Road Pedestrians	West Leg Ethanac Road Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0

Location: Perris
N/S: Sherman Road
E/W: Ethanac Road

Date: 11/3/2022
Day: Thursday

BICYCLES

	Southbound Sherman Road			Westbound Ethanac Road			Northbound Sherman Road			Eastbound Ethanac Road			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

	Southbound Sherman Road			Westbound Ethanac Road			Northbound Sherman Road			Eastbound Ethanac Road			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	2	0	2

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City of Perris
Ethanac Road
E/ Trumble Road
24 Hour Directional Classification Count

PER001
Site Code: 051-221011

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
11/03/22	0	47	2	0	1	0	0	0	0	0	0	0	0	50
01:00	0	30	1	0	0	0	0	1	0	0	0	0	0	32
02:00	0	22	0	0	5	0	0	0	1	0	0	0	0	28
03:00	0	44	2	0	1	0	0	0	1	0	1	0	0	49
04:00	0	70	10	0	1	0	0	0	1	0	0	0	0	82
05:00	0	114	12	0	5	1	0	0	1	0	1	0	0	134
06:00	0	237	41	1	7	2	0	1	5	0	**3**	0	0	297
07:00	0	**398**	**78**	**3**	10	**5**	1	0	3	**1**	3	0	0	**502**
08:00	0	356	63	1	**15**	2	1	0	3	0	0	0	0	441
09:00	1	198	51	0	13	1	0	0	3	0	3	0	0	270
10:00	**2**	228	52	0	13	3	**3**	0	**9**	0	1	0	0	311
11:00	1	235	61	0	9	3	2	**2**	6	0	2	0	0	321
12 PM	1	316	45	0	15	**7**	**1**	**1**	7	**1**	0	0	0	394
13:00	0	403	36	0	9	4	1	1	8	0	**2**	**1**	0	465
14:00	**3**	466	41	1	11	5	0	1	**10**	0	0	0	0	538
15:00	0	**549**	51	2	**17**	3	0	1	5	0	1	0	0	**629**
16:00	2	470	**60**	**6**	10	1	0	0	1	0	0	0	0	550
17:00	0	508	60	1	13	0	0	0	2	0	0	0	0	584
18:00	0	451	46	0	13	1	0	0	3	0	0	0	0	514
19:00	0	270	26	0	6	0	0	0	2	0	0	0	0	304
20:00	0	197	26	0	8	0	0	0	0	0	0	0	0	231
21:00	0	132	19	0	0	0	0	0	2	0	0	0	0	153
22:00	1	108	2	0	1	1	0	1	0	0	0	0	0	114
23:00	0	66	4	0	1	0	0	0	0	0	0	0	0	71
Total	11	5915	789	15	184	39	9	9	73	2	17	1	0	7064
Percent	0.2%	83.7%	11.2%	0.2%	2.6%	0.6%	0.1%	0.1%	1.0%	0.0%	0.2%	0.0%	0.0%	
AM Peak	10:00	07:00	07:00	07:00	08:00	07:00	10:00	11:00	10:00	07:00	06:00			07:00
Vol.	2	398	78	3	15	5	3	2	9	1	3			502
PM Peak	14:00	15:00	16:00	16:00	15:00	12:00	12:00	12:00	14:00	12:00	13:00	13:00		15:00
Vol.	3	549	60	6	17	7	1	1	10	1	2	1		629
Grand Total	11	5915	789	15	184	39	9	9	73	2	17	1	0	7064
Percent	0.2%	83.7%	11.2%	0.2%	2.6%	0.6%	0.1%	0.1%	1.0%	0.0%	0.2%	0.0%	0.0%	

Counts Unlimited, Inc.

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City of Perris
Ethanac Road
E/ Trumble Road
24 Hour Directional Classification Count

PER001
Site Code: 051-221011

Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
11/03/22	0	25	0	0	0	0	0	0	0	0	**2**	0	0	27
01:00	1	18	0	0	0	0	0	0	1	0	2	0	0	22
02:00	0	11	0	0	0	1	0	1	1	0	2	0	0	16
03:00	0	30	7	0	3	0	0	1	3	0	0	0	0	44
04:00	0	86	18	0	4	3	0	0	5	0	1	0	0	117
05:00	0	140	28	0	10	**12**	0	0	1	0	1	0	0	192
06:00	0	161	75	1	10	5	0	2	4	0	0	0	0	258
07:00	0	**308**	73	**4**	**19**	5	1	0	4	0	0	0	0	**414**
08:00	1	275	**81**	0	7	1	0	**3**	3	0	0	0	0	371
09:00	1	219	70	0	10	2	0	1	6	0	2	**2**	0	313
10:00	1	183	67	0	7	4	0	0	3	0	0	0	0	265
11:00	**2**	225	52	0	2	6	**2**	0	**10**	0	2	0	0	301
12 PM	1	204	52	0	12	3	**3**	0	**6**	0	1	0	0	282
13:00	0	220	51	**2**	5	**6**	1	0	2	0	0	0	0	287
14:00	**2**	304	81	1	**15**	5	0	**1**	3	0	**2**	**1**	0	415
15:00	1	**324**	85	2	5	5	3	0	4	0	0	0	0	**429**
16:00	0	290	**88**	0	8	0	0	1	2	0	0	0	0	389
17:00	1	322	65	1	6	0	0	0	3	0	0	0	0	398
18:00	1	240	50	0	2	0	0	1	1	0	0	0	0	295
19:00	1	162	19	0	2	0	0	1	0	0	0	0	0	185
20:00	0	86	16	0	1	0	0	0	0	0	0	0	0	103
21:00	0	93	10	0	0	0	0	0	0	0	0	0	0	103
22:00	0	50	4	0	1	1	0	1	1	0	0	0	0	58
23:00	0	31	2	0	1	1	0	0	0	0	0	0	0	35
Total	13	4007	994	11	130	60	10	13	63	0	15	3	0	5319
Percent	0.2%	75.3%	18.7%	0.2%	2.4%	1.1%	0.2%	0.2%	1.2%	0.0%	0.3%	0.1%	0.0%	
AM Peak	11:00	07:00	08:00	07:00	07:00	05:00	11:00	08:00	11:00		00:00	09:00		07:00
Vol.	2	308	81	4	19	12	2	3	10		2	2		414
PM Peak	14:00	15:00	16:00	13:00	14:00	13:00	12:00	14:00	12:00		14:00	14:00		15:00
Vol.	2	324	88	2	15	6	3	1	6		2	1		429
Grand Total	13	4007	994	11	130	60	10	13	63	0	15	3	0	5319
Percent	0.2%	75.3%	18.7%	0.2%	2.4%	1.1%	0.2%	0.2%	1.2%	0.0%	0.3%	0.1%	0.0%	

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City of Perris
Ethanac Road
E/ Trumble Road
24 Hour Directional Classification Count

PER001
Site Code: 051-221011

Eastbound, Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
11/03/22	0	72	2	0	1	0	0	0	0	0	2	0	0	77
01:00	1	48	1	0	0	0	0	1	1	0	2	0	0	54
02:00	0	33	0	0	5	1	0	1	2	0	2	0	0	44
03:00	0	74	9	0	4	0	0	1	4	0	1	0	0	93
04:00	0	156	28	0	5	3	0	0	6	0	1	0	0	199
05:00	0	254	40	0	15	**13**	0	0	2	0	2	0	0	326
06:00	0	398	116	2	17	7	0	**3**	9	0	3	0	0	555
07:00	0	**706**	**151**	**7**	**29**	10	2	0	7	**1**	3	0	0	**916**
08:00	1	631	144	1	22	3	1	3	6	0	0	0	0	812
09:00	2	417	121	0	23	3	0	1	9	0	**5**	**2**	0	583
10:00	**3**	411	119	0	20	7	3	0	12	0	1	0	0	576
11:00	3	460	113	0	11	9	**4**	2	**16**	0	4	0	0	622
12 PM	2	520	97	0	**27**	**10**	**4**	1	**13**	**1**	1	0	0	676
13:00	0	623	87	2	14	10	2	1	10	0	**2**	**1**	0	752
14:00	**5**	770	122	2	26	10	0	**2**	13	0	2	1	0	953
15:00	1	**873**	136	4	22	8	3	1	9	0	1	0	0	**1058**
16:00	2	760	**148**	**6**	18	1	0	1	3	0	0	0	0	939
17:00	1	830	125	2	19	0	0	0	5	0	0	0	0	982
18:00	1	691	96	0	15	1	0	1	4	0	0	0	0	809
19:00	1	432	45	0	8	0	0	1	2	0	0	0	0	489
20:00	0	283	42	0	9	0	0	0	0	0	0	0	0	334
21:00	0	225	29	0	0	0	0	0	2	0	0	0	0	256
22:00	1	158	6	0	2	2	0	2	1	0	0	0	0	172
23:00	0	97	6	0	2	1	0	0	0	0	0	0	0	106
Total	24	9922	1783	26	314	99	19	22	136	2	32	4	0	12383
Percent	0.2%	80.1%	14.4%	0.2%	2.5%	0.8%	0.2%	0.2%	1.1%	0.0%	0.3%	0.0%	0.0%	
AM Peak	10:00	07:00	07:00	07:00	07:00	05:00	11:00	06:00	11:00	07:00	09:00	09:00		07:00
Vol.	3	706	151	7	29	13	4	3	16	1	5	2		916
PM Peak	14:00	15:00	16:00	16:00	12:00	12:00	12:00	14:00	12:00	12:00	13:00	13:00		15:00
Vol.	5	873	148	6	27	10	4	2	13	1	2	1		1058
Grand Total	24	9922	1783	26	314	99	19	22	136	2	32	4	0	12383
Percent	0.2%	80.1%	14.4%	0.2%	2.5%	0.8%	0.2%	0.2%	1.1%	0.0%	0.3%	0.0%	0.0%	

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City of Perris
Sherman Road
N/ Ethanac Road
24 Hour Directional Classification Count

PER002
Site Code: 051-221011

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
11/03/22	0	17	1	0	0	0	0	0	0	0	0	0	0	18
01:00	**1**	9	0	0	0	0	0	0	0	0	0	0	0	10
02:00	0	6	0	0	0	0	0	0	**1**	0	0	0	0	7
03:00	0	14	0	0	0	0	0	0	0	0	0	0	0	14
04:00	0	29	0	0	0	0	0	0	0	0	0	0	0	29
05:00	0	28	0	0	0	0	**1**	0	0	0	0	0	0	29
06:00	0	64	2	**1**	3	0	0	0	0	0	**1**	0	0	71
07:00	0	66	15	1	1	0	0	0	1	0	0	0	0	84
08:00	0	**102**	**19**	0	2	0	0	0	1	0	0	0	0	**124**
09:00	0	55	14	0	**6**	0	0	0	0	0	0	0	0	75
10:00	0	69	12	0	2	0	0	0	0	0	0	0	0	83
11:00	1	91	14	0	4	**1**	0	0	0	0	0	0	0	111
12 PM	0	90	26	0	2	0	0	0	0	0	0	0	0	118
13:00	0	118	15	0	4	0	0	0	0	0	**1**	0	0	138
14:00	**1**	117	25	1	5	**1**	0	0	**1**	0	0	0	0	151
15:00	0	147	**33**	**2**	4	0	0	0	1	0	1	0	0	188
16:00	1	121	30	1	**11**	0	0	0	0	0	0	0	0	164
17:00	0	**167**	24	0	11	0	0	0	0	0	0	0	0	**202**
18:00	0	131	21	0	9	0	**1**	0	0	0	0	0	0	162
19:00	0	98	7	0	3	0	0	0	0	0	0	0	0	108
20:00	0	84	2	0	2	0	0	0	0	0	0	0	0	88
21:00	0	54	2	0	0	0	0	0	0	0	0	0	0	56
22:00	0	37	0	0	0	0	0	0	0	0	0	0	0	37
23:00	0	33	0	0	0	0	0	0	0	0	0	0	0	33
Total	4	1747	262	6	69	2	2	0	5	0	3	0	0	2100
Percent	0.2%	83.2%	12.5%	0.3%	3.3%	0.1%	0.1%	0.0%	0.2%	0.0%	0.1%	0.0%	0.0%	
AM Peak	01:00	08:00	08:00	06:00	09:00	11:00	05:00		02:00		06:00			08:00
Vol.	1	102	19	1	6	1	1		1		1			124
PM Peak	14:00	17:00	15:00	15:00	16:00	14:00	18:00		14:00		13:00			17:00
Vol.	1	167	33	2	11	1	1		1		1			202
Grand Total	4	1747	262	6	69	2	2	0	5	0	3	0	0	2100
Percent	0.2%	83.2%	12.5%	0.3%	3.3%	0.1%	0.1%	0.0%	0.2%	0.0%	0.1%	0.0%	0.0%	

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City of Perris
Sherman Road
N/ Ethanac Road
24 Hour Directional Classification Count

PER002
Site Code: 051-221011

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
11/03/22	0	9	0	0	0	0	0	0	0	0	0	0	0	9
01:00	**1**	10	0	0	0	0	0	0	0	0	0	0	0	11
02:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
03:00	0	9	0	0	2	0	0	**1**	0	0	0	0	0	12
04:00	0	27	0	0	1	0	0	0	0	0	0	0	0	28
05:00	0	51	4	0	2	0	0	0	0	0	0	0	0	57
06:00	0	52	10	1	**4**	0	0	1	0	0	0	0	0	68
07:00	0	**85**	**25**	**3**	1	**1**	0	0	**1**	0	0	0	0	**116**
08:00	0	85	15	0	1	1	0	0	1	0	0	0	0	103
09:00	0	68	24	0	3	1	0	0	0	0	0	0	0	96
10:00	0	46	15	0	1	0	0	0	0	0	0	0	0	62
11:00	0	73	20	0	0	0	**1**	0	1	0	0	0	0	95
12 PM	0	66	16	0	**5**	0	0	0	0	0	0	0	0	87
13:00	0	69	10	0	2	**1**	0	0	0	0	0	0	0	82
14:00	0	92	**25**	0	2	0	0	0	**1**	0	0	0	0	120
15:00	0	90	18	**1**	2	0	0	**1**	1	0	0	0	0	113
16:00	0	93	21	0	1	0	0	0	1	0	0	0	0	116
17:00	**1**	**109**	16	1	0	0	0	0	0	0	0	0	0	**127**
18:00	1	91	24	0	1	0	0	0	0	0	0	0	0	117
19:00	0	61	4	0	0	0	0	0	0	0	0	0	0	65
20:00	0	44	2	0	1	0	0	0	0	0	0	0	0	47
21:00	0	35	1	0	0	0	0	0	0	0	0	0	0	36
22:00	0	21	0	0	0	0	0	1	0	0	0	0	0	22
23:00	0	18	0	0	0	1	0	0	0	0	0	0	0	19
Total	3	1310	250	6	29	5	1	4	6	0	0	0	0	1614
Percent	0.2%	81.2%	15.5%	0.4%	1.8%	0.3%	0.1%	0.2%	0.4%	0.0%	0.0%	0.0%	0.0%	
AM Peak	01:00	07:00	07:00	07:00	06:00	07:00	11:00	03:00	07:00					07:00
Vol.	1	85	25	3	4	1	1	1	1					116
PM Peak	17:00	17:00	14:00	15:00	12:00	13:00		15:00	14:00					17:00
Vol.	1	109	25	1	5	1		1	1					127
Grand Total	3	1310	250	6	29	5	1	4	6	0	0	0	0	1614
Percent	0.2%	81.2%	15.5%	0.4%	1.8%	0.3%	0.1%	0.2%	0.4%	0.0%	0.0%	0.0%	0.0%	

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City of Perris
Sherman Road
N/ Ethanac Road
24 Hour Directional Classification Count
Northbound, Southbound

PER002
Site Code: 051-221011

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
11/03/22	0	26	1	0	0	0	0	0	0	0	0	0	0	27
01:00	**2**	19	0	0	0	0	0	0	0	0	0	0	0	21
02:00	0	12	0	0	0	0	0	0	1	0	0	0	0	13
03:00	0	23	0	0	2	0	0	**1**	0	0	0	0	0	26
04:00	0	56	0	0	1	0	0	0	0	0	0	0	0	57
05:00	0	79	4	0	2	0	**1**	0	0	0	0	0	0	86
06:00	0	116	12	2	7	0	0	1	0	0	**1**	0	0	139
07:00	0	151	**40**	**4**	2	**1**	0	0	**2**	0	0	0	0	200
08:00	0	**187**	34	0	3	1	0	0	2	0	0	0	0	**227**
09:00	0	123	38	0	**9**	1	0	0	0	0	0	0	0	171
10:00	0	115	27	0	3	0	0	0	0	0	0	0	0	145
11:00	1	164	34	0	4	1	1	0	1	0	0	0	0	206
12 PM	0	156	42	0	7	0	0	0	0	0	0	0	0	205
13:00	0	187	25	0	6	**1**	0	0	0	0	**1**	0	0	220
14:00	**1**	209	50	1	7	1	0	0	**2**	0	0	0	0	271
15:00	0	237	**51**	**3**	6	0	0	**1**	2	0	1	0	0	301
16:00	1	214	51	1	**12**	0	0	0	1	0	0	0	0	280
17:00	1	**276**	40	1	11	0	0	0	0	0	0	0	0	**329**
18:00	1	222	45	0	10	0	**1**	0	0	0	0	0	0	279
19:00	0	159	11	0	3	0	0	0	0	0	0	0	0	173
20:00	0	128	4	0	3	0	0	0	0	0	0	0	0	135
21:00	0	89	3	0	0	0	0	0	0	0	0	0	0	92
22:00	0	58	0	0	0	0	0	1	0	0	0	0	0	59
23:00	0	51	0	0	0	1	0	0	0	0	0	0	0	52
Total	7	3057	512	12	98	7	3	4	11	0	3	0	0	3714
Percent	0.2%	82.3%	13.8%	0.3%	2.6%	0.2%	0.1%	0.1%	0.3%	0.0%	0.1%	0.0%	0.0%	
AM Peak	01:00	08:00	07:00	07:00	09:00	07:00	05:00	03:00	07:00		06:00			08:00
Vol.	2	187	40	4	9	1	1	1	2		1			227
PM Peak	14:00	17:00	15:00	15:00	16:00	13:00	18:00	15:00	14:00		13:00			17:00
Vol.	1	276	51	3	12	1	1	1	2		1			329
Grand Total	7	3057	512	12	98	7	3	4	11	0	3	0	0	3714
Percent	0.2%	82.3%	13.8%	0.3%	2.6%	0.2%	0.1%	0.1%	0.3%	0.0%	0.1%	0.0%	0.0%	

APPENDIX 3.2: EXISTING (2022) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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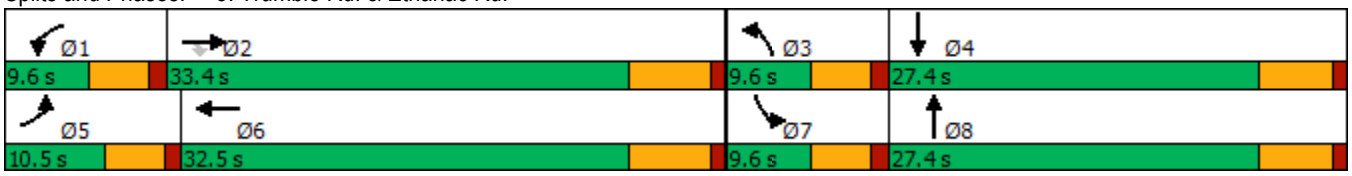
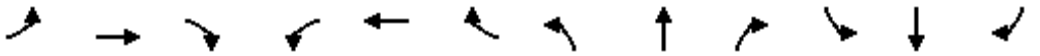
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	80	535	11	52	428	72	4	7	12
Future Volume (vph)	80	535	11	52	428	72	4	7	12
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	5	2	2	1	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	27.4	9.6	27.4
Total Split (s)	10.5	33.4	33.4	9.6	32.5	9.6	27.4	9.6	27.4
Total Split (%)	13.1%	41.8%	41.8%	12.0%	40.6%	12.0%	34.3%	12.0%	34.3%
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)	7.0	31.3	31.3	6.3	28.8	6.3	19.7	6.3	14.4
Actuated g/C Ratio	0.12	0.53	0.53	0.11	0.49	0.11	0.33	0.11	0.24
v/c Ratio	0.42	0.60	0.01	0.30	0.53	0.42	0.28	0.04	0.20
Control Delay	40.4	21.8	0.0	37.8	21.4	42.2	5.5	33.3	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.4	21.8	0.0	37.8	21.4	42.2	5.5	33.3	9.3
LOS	D	C	A	D	C	D	A	C	A
Approach Delay		23.8			23.1		16.7		11.2
Approach LOS		C			C		B		B

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 59.3	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 21.6	Intersection LOS: C
Intersection Capacity Utilization 56.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Trumble Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	535	11	52	428	7	72	4	45	7	12	70
Future Volume (veh/h)	80	535	11	52	428	7	72	4	45	7	12	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	90	601	11	58	481	7	81	4	108	8	13	63
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.25	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	124	712	603	98	672	10	118	10	283	19	36	173
Arrive On Green	0.07	0.37	0.37	0.05	0.36	0.36	0.07	0.18	0.18	0.01	0.13	0.13
Sat Flow, veh/h	1810	1900	1610	1810	1868	27	1810	58	1561	1810	283	1371
Grp Volume(v), veh/h	90	601	11	58	0	488	81	0	112	8	0	76
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1810	0	1895	1810	0	1619	1810	0	1653
Q Serve(g_s), s	2.6	15.5	0.2	1.7	0.0	11.9	2.4	0.0	3.3	0.2	0.0	2.3
Cycle Q Clear(g_c), s	2.6	15.5	0.2	1.7	0.0	11.9	2.4	0.0	3.3	0.2	0.0	2.3
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.96	1.00		0.83
Lane Grp Cap(c), veh/h	124	712	603	98	0	682	118	0	293	19	0	209
V/C Ratio(X)	0.72	0.84	0.02	0.59	0.00	0.72	0.69	0.00	0.38	0.42	0.00	0.36
Avail Cap(c_a), veh/h	199	976	827	168	0	942	168	0	663	168	0	677
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	24.5	15.4	10.6	24.8	0.0	14.8	24.6	0.0	19.3	26.4	0.0	21.5
Incr Delay (d2), s/veh	3.0	5.1	0.0	2.1	0.0	1.6	2.6	0.0	0.8	5.5	0.0	1.1
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	1.1	6.1	0.1	0.7	0.0	4.2	1.0	0.0	1.1	0.1	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.5	20.4	10.6	27.0	0.0	16.4	27.2	0.0	20.2	31.9	0.0	22.6
LnGrp LOS	C	C	B	C	A	B	C	A	C	C	A	C
Approach Vol, veh/h		702			546			193			84	
Approach Delay, s/veh		21.2			17.5			23.1			23.4	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	25.9	8.1	12.2	8.3	25.1	5.2	15.1
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	5.0	27.6	5.0	22.0	5.9	26.7	5.0	22.0
Max Q Clear Time (g_c+I1), s	3.7	17.5	4.4	4.3	4.6	13.9	2.2	5.3
Green Ext Time (p_c), s	0.0	2.6	0.0	0.3	0.0	2.2	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	20.2
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	105	459	23	2	371	1	6	1	5	6	3	111
Future Vol, veh/h	105	459	23	2	371	1	6	1	5	6	3	111
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	114	499	25	2	403	1	7	1	5	7	3	121

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	404	0	0	524	0	0	1210	1148	513	1152	1160	404
Stage 1	-	-	-	-	-	-	740	740	-	408	408	-
Stage 2	-	-	-	-	-	-	470	408	-	744	752	-
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	1166	-	-	1053	-	-	161	200	565	176	197	651
Stage 1	-	-	-	-	-	-	412	426	-	624	600	-
Stage 2	-	-	-	-	-	-	578	600	-	410	421	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1166	-	-	1053	-	-	115	172	564	155	169	651
Mov Cap-2 Maneuver	-	-	-	-	-	-	115	172	-	155	169	-
Stage 1	-	-	-	-	-	-	355	367	-	538	599	-
Stage 2	-	-	-	-	-	-	467	599	-	349	363	-

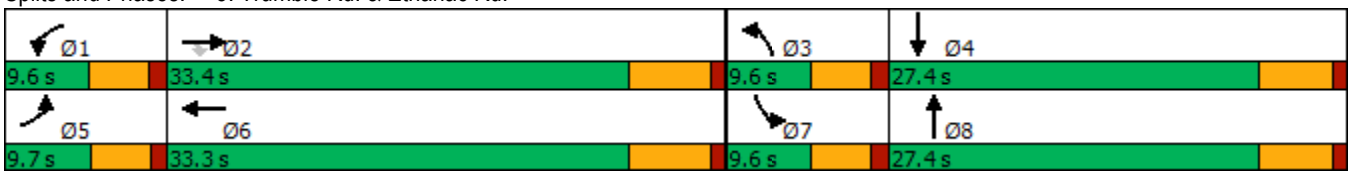
Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0	26.7	14
HCM LOS			D	B

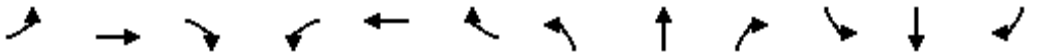
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	179	1166	-	-	1053	-	-	529
HCM Lane V/C Ratio	0.073	0.098	-	-	0.002	-	-	0.247
HCM Control Delay (s)	26.7	8.4	0	-	8.4	0	-	14
HCM Lane LOS	D	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0.3	-	-	0	-	-	1

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	42	549	25	29	361	56	4	11	9
Future Volume (vph)	42	549	25	29	361	56	4	11	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	10.0	5.0	10.0
Minimum Split (s)	9.6	27.8	27.8	9.6	27.8	9.6	27.4	9.6	27.4
Total Split (s)	9.7	33.4	33.4	9.6	33.3	9.6	27.4	9.6	27.4
Total Split (%)	12.1%	41.8%	41.8%	12.0%	41.6%	12.0%	34.3%	12.0%	34.3%
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)	5.5	25.4	25.4	5.4	23.5	5.4	16.0	5.4	12.5
Actuated g/C Ratio	0.09	0.44	0.44	0.09	0.41	0.09	0.28	0.09	0.22
v/c Ratio	0.28	0.74	0.04	0.20	0.54	0.38	0.32	0.07	0.27
Control Delay	35.5	24.1	0.1	34.4	19.5	39.2	5.9	33.0	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	24.1	0.1	34.4	19.5	39.2	5.9	33.0	8.4
LOS	D	C	A	C	B	D	A	C	A
Approach Delay		23.9			20.6		14.4		10.7
Approach LOS		C			C		B		B

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 57.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 20.3	Intersection LOS: C
Intersection Capacity Utilization 54.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Trumble Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	549	25	29	361	11	56	4	45	11	9	96
Future Volume (veh/h)	42	549	25	29	361	11	56	4	45	11	9	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	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	47	617	18	33	406	10	63	4	92	12	10	60
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.25	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	86	735	623	66	694	17	104	11	257	28	29	173
Arrive On Green	0.05	0.39	0.39	0.04	0.38	0.38	0.06	0.17	0.17	0.02	0.12	0.12
Sat Flow, veh/h	1810	1900	1610	1810	1845	45	1810	68	1553	1810	235	1411
Grp Volume(v), veh/h	47	617	18	33	0	416	63	0	96	12	0	70
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1810	0	1891	1810	0	1620	1810	0	1646
Q Serve(g_s), s	1.3	15.2	0.4	0.9	0.0	9.1	1.8	0.0	2.7	0.3	0.0	2.0
Cycle Q Clear(g_c), s	1.3	15.2	0.4	0.9	0.0	9.1	1.8	0.0	2.7	0.3	0.0	2.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.96	1.00		0.86
Lane Grp Cap(c), veh/h	86	735	623	66	0	711	104	0	268	28	0	202
V/C Ratio(X)	0.55	0.84	0.03	0.50	0.00	0.59	0.60	0.00	0.36	0.43	0.00	0.35
Avail Cap(c_a), veh/h	179	1018	863	176	0	1009	176	0	692	176	0	703
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	24.0	14.3	9.8	24.4	0.0	12.9	23.7	0.0	19.1	25.1	0.0	20.7
Incr Delay (d2), s/veh	2.0	4.6	0.0	2.2	0.0	0.8	2.1	0.0	0.8	3.9	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	5.7	0.1	0.4	0.0	3.0	0.7	0.0	0.9	0.2	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.0	18.9	9.8	26.5	0.0	13.6	25.8	0.0	19.9	29.1	0.0	21.7
LnGrp LOS	C	B	A	C	A	B	C	A	B	C	A	C
Approach Vol, veh/h		682			449			159			82	
Approach Delay, s/veh		19.2			14.6			22.2			22.8	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	25.7	7.6	11.7	7.0	25.2	5.4	13.9
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	5.0	27.6	5.0	22.0	5.1	27.5	5.0	22.0
Max Q Clear Time (g_c+I1), s	2.9	17.2	3.8	4.0	3.3	11.1	2.3	4.7
Green Ext Time (p_c), s	0.0	2.8	0.0	0.2	0.0	2.0	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	18.2
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	204	385	16	1	261	3	20	3	6	3	1	120
Future Vol, veh/h	204	385	16	1	261	3	20	3	6	3	1	120
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	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	213	401	17	1	272	3	21	3	6	3	1	125

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	275	0	0	418	0	0	1175	1113	410	1116	1120	274
Stage 1	-	-	-	-	-	-	836	836	-	276	276	-
Stage 2	-	-	-	-	-	-	339	277	-	840	844	-
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	1300	-	-	1152	-	-	170	210	646	187	208	770
Stage 1	-	-	-	-	-	-	364	385	-	735	685	-
Stage 2	-	-	-	-	-	-	680	685	-	363	382	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1300	-	-	1152	-	-	118	165	646	152	163	770
Mov Cap-2 Maneuver	-	-	-	-	-	-	118	165	-	152	163	-
Stage 1	-	-	-	-	-	-	286	303	-	578	684	-
Stage 2	-	-	-	-	-	-	568	684	-	280	300	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.8	0	35.7	11.5
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	147	1300	-	-	1152	-	-	682
HCM Lane V/C Ratio	0.205	0.163	-	-	0.001	-	-	0.189
HCM Control Delay (s)	35.7	8.3	0	-	8.1	0	-	11.5
HCM Lane LOS	E	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0.6	-	-	0	-	-	0.7

APPENDIX 3.3: EXISTING (2022) CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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

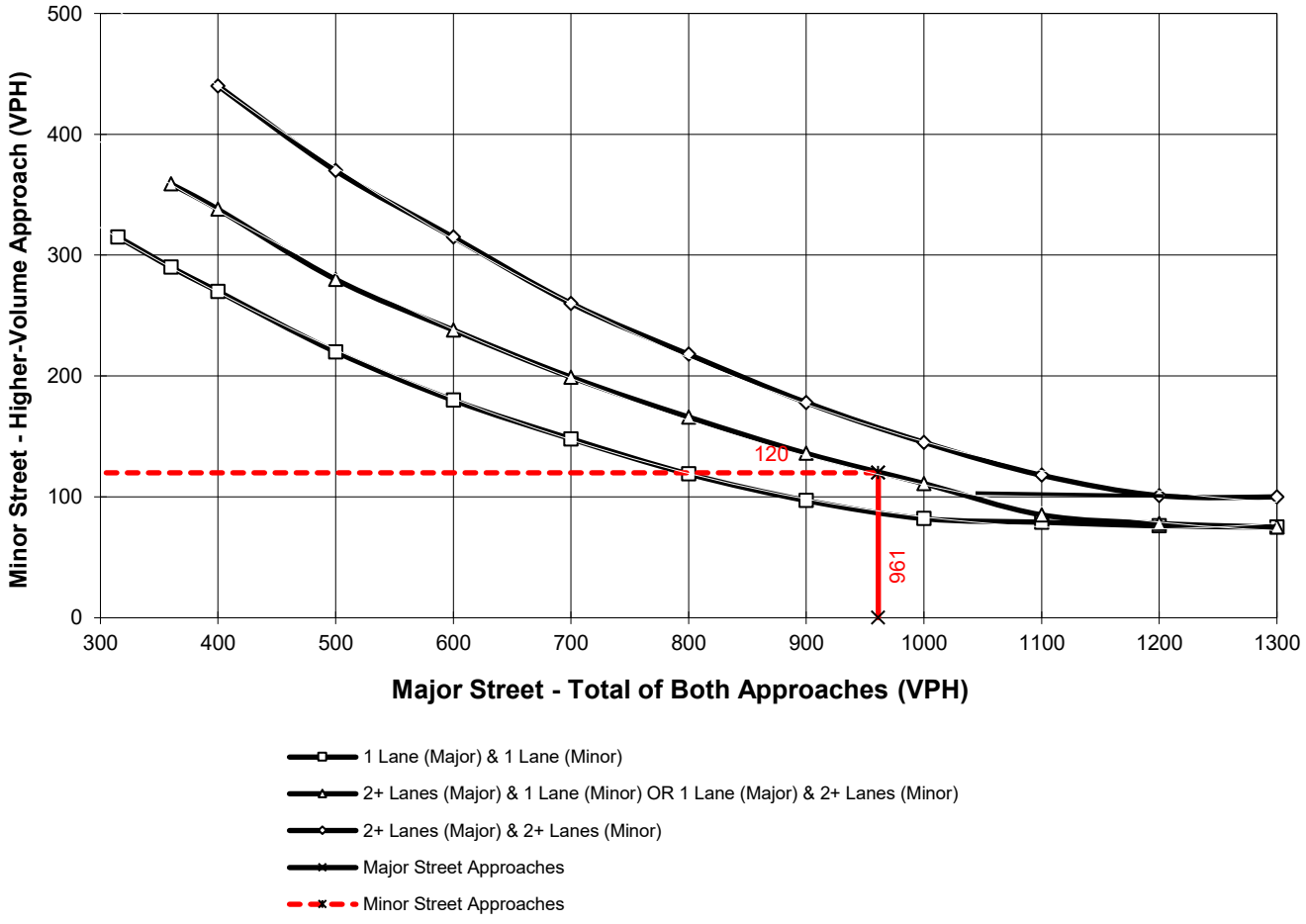
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2022) Conditions - Weekday AM Peak Hour**

Major Street Name = **Ethanac Road** — Total of Both Approaches (VPH) = **961**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Sherman Road** — High Volume Approach (VPH) = **120**
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

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APPENDIX 4.1: CUMULATIVE DEVELOPMENT TRIP GENERATION

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Table Cumulative Trip Generation

Land Use[1]	ITE LU Code	Units[2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Project Trip Generation Rates									
Single Family Residential Detached	210	DU	0.18	0.52	0.70	0.59	0.35	0.94	9.43
Mutlifamily Housing (Low-Rise)	220	DU	0.10	0.30	0.40	0.32	0.19	0.51	6.74
Fine Dining Restaurant	931	TSF	0.49	0.24	0.73	5.23	2.57	7.80	83.84
General Office	710	TSF	1.34	0.18	1.52	0.24	1.20	1.44	10.84
Fast-Food w/ Drive-Thru	934	TSF	22.75	21.86	44.61	17.18	15.85	33.03	467.48
Gas Station with Convenience Market	945	TSF	28.26	28.26	56.52	27.26	27.26	54.52	700.43
Gas Station with Convenience Market	945	VFP	13.52	13.52	27.04	11.38	11.38	22.76	257.13
Cannabis Dispensary	882	TSF	5.48	5.06	10.54	9.46	9.46	18.92	211.12
Hotel	310	RM	0.26	0.20	0.46	0.30	0.29	0.59	7.99
Business Park	770	TSF	1.148	0.202	1.350	0.317	0.903	1.220	12.440
Passenger Cars			1.141	0.193	1.334	0.311	0.893	1.204	10.338
2-axle			0.001	0.001	0.003	0.001	0.002	0.003	0.351
3-axle			0.001	0.002	0.003	0.001	0.002	0.003	0.435
4+-axle			0.004	0.005	0.010	0.004	0.006	0.010	1.316
High-Cube Transload	154	TSF	0.062	0.018	0.080	0.028	0.072	0.100	1.400
Passenger Cars			0.052	0.008	0.060	0.023	0.067	0.090	1.180
2-axle			0.002	0.001	0.003	0.001	0.001	0.002	0.037
3-axle			0.002	0.002	0.004	0.001	0.001	0.002	0.046
4+-axle			0.006	0.007	0.013	0.003	0.003	0.006	0.138
Manufacturing	140	TSF	0.517	0.163	0.680	0.229	0.511	0.740	4.750
Passenger Cars			0.500	0.150	0.650	0.217	0.493	0.710	4.300
2-axle			0.003	0.002	0.005	0.002	0.003	0.005	0.075
3-axle			0.003	0.003	0.006	0.003	0.004	0.006	0.093
4+-axle			0.011	0.008	0.019	0.008	0.011	0.019	0.282
High-Cube Cold Storage	157	TSF	0.085	0.025	0.110	0.034	0.086	0.120	2.120
Passenger Cars			0.076	0.004	0.080	0.019	0.071	0.090	1.370
2-axle			0.003	0.007	0.010	0.005	0.005	0.010	0.260
3-axle			0.001	0.002	0.003	0.002	0.001	0.003	0.083
4+-axle			0.005	0.011	0.016	0.008	0.008	0.016	0.407
High-Cube Fulfillment	155	TSF	0.122	0.028	0.150	0.062	0.098	0.160	1.810
Passenger Cars			0.112	0.018	0.130	0.057	0.093	0.150	1.580
2-axle			0.002	0.001	0.003	0.001	0.001	0.002	0.038
3-axle			0.002	0.002	0.004	0.001	0.001	0.002	0.048
4+-axle			0.006	0.007	0.013	0.003	0.003	0.006	0.144
Truck Trailer Yard	--	Spaces	0.077	0.065	0.142	0.072	0.086	0.157	2.107
Passenger Cars			0.026	0.017	0.043	0.021	0.049	0.070	0.834
2-axle			0.007	0.008	0.015	0.005	0.000	0.005	0.108
3-axle			0.014	0.025	0.039	0.033	0.020	0.053	0.620
4+-axle			0.030	0.015	0.045	0.012	0.017	0.029	0.545
Warehouse	150	TSF	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			0.002	0.001	0.003	0.003	0.002	0.005	0.100
3-axle			0.002	0.002	0.004	0.003	0.003	0.006	0.124
4+-axle			0.007	0.006	0.013	0.010	0.009	0.019	0.376

Table Cumulative Trip Generation

Land Use[1]	Quantity	Units[2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
M1	2,025	DU	194	616	810	651	382	1,033	13,649
M2	58.643	TSF							
Passenger Cars			7	2	9	2	7	9	65
2-axle			0	0	0	0	0	0	6
3-axle			0	0	0	0	0	0	7
4+-axle			0	0	1	1	1	1	22
Trucks			8	2	10	3	8	11	100
M3 - Hotel	108	RM	28	22	50	32	31	64	863
Quality Restaurant	5.500	TSF	3	1	4	29	14	43	461
Fast-Food w/ Drive-Thru	3.000	TSF	68	66	134	52	48	99	1,402
Pass-By (50% AM; 55% PM/Daily)			*-33*	*-33*	*-66*	*-26*	*-26*	*-52*	*-771*
Gas Station	12	VFP	162	162	324	137	137	273	3,086
Pass-By (76% AM; 75% PM/Daily)			*-123*	*-123*	*-247*	*-102*	*-102*	*-205*	*-2,314*
Internal Capture (10%)			*-10*	*-9*	*-20*	*-12*	*-10*	*-22*	*-273*
Total M3			94	85	180	109	91	200	2,454
M4	10.454	TSF	14	2	16	3	12	15	113
M5	327.631	TSF							
Passenger Cars			39	10	49	11	38	49	364
2-axle			1	0	1	1	1	2	33
3-axle			1	1	1	1	1	2	41
4+-axle			2	2	4	3	3	6	123
Trucks			43	13	56	17	42	59	560
M6	322	DU	59	167	225	191	112	303	3,036
M7	85	DU	8	26	34	27	16	43	573
M8	12	VFP	162	162	324	137	137	273	3,086
Pass-By (76% AM; 75% PM/Daily)			*-123*	*-123*	*-247*	*-102*	*-102*	*-205*	*-2,314*
Total M8			39	39	78	34	34	68	771
M9	3,092.595	TSF							
Passenger Cars			371	93	464	106	358	464	3,433
2-axle			6	4	10	9	6	15	310
3-axle			6	7	13	9	10	19	384
4+-axle			22	17	39	31	27	58	1,162
Trucks			34	28	62	49	43	93	1,856
M10 - Warehouse	1,732.490	TSF							
Passenger Cars			194	31	225	99	161	260	2,737
2-axle			3	2	6	2	1	3	67
3-axle			3	4	7	2	2	4	82
4+-axle			10	11	22	5	6	11	249
Trucks			17	17	35	9	9	17	398
Business Park	276.682	TSF							
Passenger Cars			316	53	369	86	247	333	2,860
2-axle			0	0	1	0	0	1	97
3-axle			0	1	1	0	1	1	120
4+-axle			1	2	3	1	2	3	364
Trucks			2	2	4	2	3	4	582

Table Cumulative Trip Generation

Land Use[1]	Quantity	Units[2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
High-Cube Warehouse	1,312.601	TSF							
Passenger Cars			68	11	79	30	88	118	1,549
2-axle			3	2	4	1	1	2	48
3-axle			3	3	5	1	1	3	60
4+-axle			8	9	16	4	4	8	181
Trucks			13	13	26	7	7	13	289
Gas Station	18.090	TSF	511	511	1,022	493	493	986	12,671
Pass-By (76% AM; 75% PM/Daily)			*-389*	*-389*	*-777*	*-370*	*-370*	*-740*	*-9,503*
Total M10			733	251	984	355	637	993	11,583
M11	277.578	TSF							
Passenger Cars			31	5	36	16	26	42	439
2-axle			1	0	1	0	0	0	11
3-axle			1	1	1	0	0	1	13
4+-axle			2	2	3	1	1	2	40
Trucks			3	3	6	1	1	3	64
P1	2.500	TSF							
Passenger Cars			0	0	0	0	0	0	3
2-axle			0	0	0	0	0	0	0
3-axle			0	0	0	0	0	0	0
4+-axle			0	0	0	0	0	0	1
Trucks			0	0	0	0	0	0	2
P2	--[3]	--	176	54	230	74	211	285	3,977
P3	--[3]	--	146	49	195	66	161	227	2,728
P4	191	DU	35	99	134	113	66	180	1,801
P5	97	DU	9	29	39	31	18	49	654
P6	116	DU	21	60	81	69	40	109	1,094
P7	227	DU	22	69	91	73	43	116	1,530
P8	138	DU	25	71	97	82	48	130	1,301
P9	236	DU	23	72	94	76	45	120	1,591
P10	235	DU	43	122	165	139	82	221	2,216
P11	33.000	TSF	181	167	348	312	312	624	6,967
P12 - Manufacturing	61.050	TSF							
Passenger Cars			31	9	40	13	30	43	263
2-axle			0	0	0	0	0	0	5
3-axle			0	0	0	0	0	0	6
4+-axle			1	0	1	0	1	1	17
Trucks			1	1	2	1	1	2	27
Truck Trailer Yard	371	Spaces							
Passenger Cars			10	6	16	8	18	26	309
2-axle			3	3	6	2	0	2	40
3-axle			5	9	15	12	7	20	230
4+-axle			11	6	17	5	6	11	202
Trucks			19	18	37	19	14	32	472
Total M10			60	34	94	41	63	104	1,072

Table Cumulative Trip Generation

Land Use[1]	Quantity	Units[2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
RC1	--[3]	--	146	49	195	72	183	255	3,444
RC2	154	DU	28	80	108	91	54	145	1,452
RC3	74	DU	13	38	52	44	26	70	698
RC4	228	DU	41	118	160	135	79	214	2,150
RC5	796	DU	145	412	557	471	277	748	7,506
RC6	65	DU	12	34	46	38	23	61	613

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Tenth Edition (2017).

[2] DU = Dwelling Units

APPENDIX 4.2: POST PROCESSING WORKSHEETS

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Project:	Hillwood Ethanac	Job #:	15109
Scenario:	Horizon Year Without Project	Analyst:	CS
		Date:	01/16/23

LOCATION: Trumble Rd. & Ethanac Rd.

FORECAST YEAR: 2040

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	6	5	500%	1	5	4	400%
	Through	1	2	1	100%	1	1	0	0%
	Right	1	3	2	200%	1	4	3	300%
	NB Total	3	11	8	267%	3	10	7	233%
SOUTH BOUND	Left	1	16	15	1500%	1	77	76	7600%
	Through	1	1	0	0%	1	3	2	200%
	Right	1	33	32	3200%	1	91	90	9000%
	SB Total	3	50	47	1567%	3	171	168	5600%
EAST BOUND	Left	1	88	87	8700%	1	74	73	7300%
	Through	2	1,331	1,329	66450%	2	2,049	2,047	102350%
	Right	1	5	4	400%	1	10	9	900%
	EB Total	4	1,424	1,420	35500%	4	2,133	2,129	53225%
WEST BOUND	Left	1	4	3	300%	1	7	6	600%
	Through	2	2,161	2,159	107950%	2	1,774	1,772	88600%
	Right	1	71	70	7000%	1	54	53	5300%
	WB Total	4	2,236	2,232	55800%	4	1,835	1,831	45775%
TOTAL ENTERING VOLUME		14	3,721	3707	26479%	14	4,149	4135	29536%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	50	171			
North Leg	Outbound	161	129			
North Leg	**TOTAL**	**211**	**300**	**1%**	**2%**	**15,124**
South Leg	Inbound	11	10			
South Leg	Outbound	10	20			
South Leg	**TOTAL**	**21**	**30**	**1%**	**2%**	**1,617**
East Leg	Inbound	2,236	1,835			
East Leg	Outbound	1,350	2,130			
East Leg	**TOTAL**	**3,586**	**3,965**	**5%**	**6%**	**71,298**
West Leg	Inbound	1,424	2,133			
West Leg	Outbound	2,200	1,870			
West Leg	**TOTAL**	**3,624**	**4,003**	**5%**	**5%**	**77,675**
OVERALL TOTAL		***7,442***	***8,298***	**4%**	***5%***	***165,714***

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Project:	Hillwood Ethanac	Job #:	15109
Scenario:	Horizon Year Without Project	Analyst:	CS
		Date:	01/16/23

LOCATION: Sherman Rd. & Ethanac Rd.

FORECAST YEAR: 2040

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	151	150	15000%	1	106	105	10500%
	Through	1	162	161	16100%	1	120	119	11900%
	Right	1	188	187	18700%	1	144	143	14300%
	NB Total	3	501	498	16600%	3	370	367	12233%
SOUTH BOUND	Left	1	241	240	24000%	1	284	283	28300%
	Through	1	76	75	7500%	1	278	277	27700%
	Right	1	194	193	19300%	1	208	207	20700%
	SB Total	3	511	508	16933%	3	770	767	25567%
EAST BOUND	Left	1	116	115	11500%	1	164	163	16300%
	Through	2	1,205	1,203	60150%	2	1,776	1,774	88700%
	Right	1	42	41	4100%	1	193	192	19200%
	EB Total	4	1,363	1,359	33975%	4	2,133	2,129	53225%
WEST BOUND	Left	1	82	81	8100%	1	221	220	22000%
	Through	2	1,870	1,868	93400%	2	1,489	1,487	74350%
	Right	1	223	222	22200%	1	187	186	18600%
	WB Total	4	2,175	2,171	54275%	4	1,897	1,893	47325%
TOTAL ENTERING VOLUME		14	4,550	4536	32400%	14	5,170	5156	36829%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	511	770			
North Leg	Outbound	501	471			
North Leg	**TOTAL**	**1,012**	**1,241**	**8%**	**9%**	**13,447**
South Leg	Inbound	501	370			
South Leg	Outbound	200	692			
South Leg	**TOTAL**	**701**	**1,062**	**31%**	**46%**	**2,289**
East Leg	Inbound	2,175	1,897			
East Leg	Outbound	1,634	2,204			
East Leg	**TOTAL**	**3,809**	**4,101**	**6%**	**6%**	**63,575**
West Leg	Inbound	1,363	2,133			
West Leg	Outbound	2,215	1,803			
West Leg	**TOTAL**	**3,578**	**3,936**	**5%**	**5%**	**73,825**
OVERALL TOTAL		***9,100***	***10,340***	**6%**	***7%***	***153,136***

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APPENDIX 5.1: E+P CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	0	91	4	0	89
Future Vol, veh/h	5	0	91	4	0	89
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	5	0	99	4	0	97

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	198	101	0	0	103	0
Stage 1	101	-	-	-	-	-
Stage 2	97	-	-	-	-	-
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	795	960	-	-	1502	-
Stage 1	928	-	-	-	-	-
Stage 2	932	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	795	960	-	-	1502	-
Mov Cap-2 Maneuver	795	-	-	-	-	-
Stage 1	928	-	-	-	-	-
Stage 2	932	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	795	1502	-
HCM Lane V/C Ratio	-	-	0.007	-	-
HCM Control Delay (s)	-	-	9.6	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	0	95	6	0	94
Future Vol, veh/h	8	0	95	6	0	94
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	9	0	103	7	0	102

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	209	107	0	0	110	0
Stage 1	107	-	-	-	-	-
Stage 2	102	-	-	-	-	-
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	784	953	-	-	1493	-
Stage 1	922	-	-	-	-	-
Stage 2	927	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	784	953	-	-	1493	-
Mov Cap-2 Maneuver	784	-	-	-	-	-
Stage 1	922	-	-	-	-	-
Stage 2	927	-	-	-	-	-

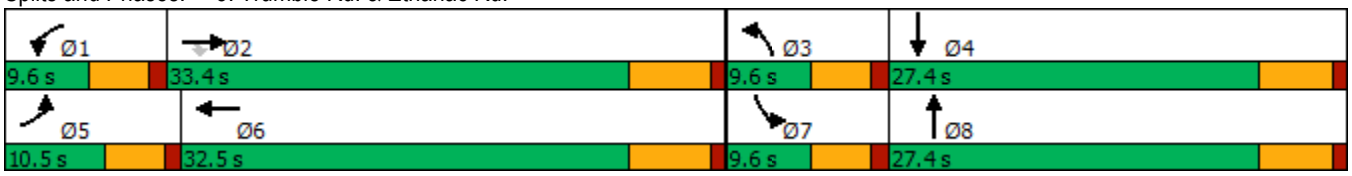
Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0
HCM LOS	A		

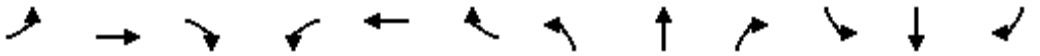
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	784	1493	-
HCM Lane V/C Ratio	-	-	0.011	-	-
HCM Control Delay (s)	-	-	9.6	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	90	552	11	53	430	72	4	7	12
Future Volume (vph)	90	552	11	53	430	72	4	7	12
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	27.4	9.6	27.4
Total Split (s)	10.5	33.4	33.4	9.6	32.5	9.6	27.4	9.6	27.4
Total Split (%)	13.1%	41.8%	41.8%	12.0%	40.6%	12.0%	34.3%	12.0%	34.3%
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)	6.2	26.2	26.2	5.3	23.5	5.3	18.1	5.3	12.5
Actuated g/C Ratio	0.10	0.42	0.42	0.08	0.37	0.08	0.29	0.08	0.20
v/c Ratio	0.57	0.78	0.02	0.39	0.69	0.53	0.31	0.05	0.26
Control Delay	47.3	27.7	0.0	41.5	25.3	48.2	5.8	33.6	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.3	27.7	0.0	41.5	25.3	48.2	5.8	33.6	9.3
LOS	D	C	A	D	C	D	A	C	A
Approach Delay		29.9			27.1		18.7		11.0
Approach LOS		C			C		B		B

Intersection Summary		
Cycle Length: 80		
Actuated Cycle Length: 62.8		
Natural Cycle: 80		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.78		
Intersection Signal Delay: 25.9	Intersection LOS: C	
Intersection Capacity Utilization 57.0%	ICU Level of Service B	
Analysis Period (min) 15		

Splits and Phases: 3: Trumble Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	552	11	53	430	7	72	4	45	7	12	83
Future Volume (veh/h)	90	552	11	53	430	7	72	4	45	7	12	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	101	620	11	60	483	7	81	4	108	8	13	77
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.25	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	130	723	613	98	678	10	116	11	294	19	32	190
Arrive On Green	0.07	0.38	0.38	0.05	0.36	0.36	0.06	0.19	0.19	0.01	0.13	0.13
Sat Flow, veh/h	1810	1900	1610	1810	1868	27	1810	58	1561	1810	238	1409
Grp Volume(v), veh/h	101	620	11	60	0	490	81	0	112	8	0	90
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1810	0	1895	1810	0	1619	1810	0	1646
Q Serve(g_s), s	3.1	16.7	0.2	1.8	0.0	12.4	2.4	0.0	3.4	0.2	0.0	2.8
Cycle Q Clear(g_c), s	3.1	16.7	0.2	1.8	0.0	12.4	2.4	0.0	3.4	0.2	0.0	2.8
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.96	1.00		0.86
Lane Grp Cap(c), veh/h	130	723	613	98	0	688	116	0	305	19	0	222
V/C Ratio(X)	0.78	0.86	0.02	0.61	0.00	0.71	0.70	0.00	0.37	0.42	0.00	0.41
Avail Cap(c_a), veh/h	192	941	797	162	0	908	162	0	639	162	0	650
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	25.4	15.9	10.8	25.8	0.0	15.2	25.6	0.0	19.7	27.4	0.0	22.1
Incr Delay (d2), s/veh	5.9	6.3	0.0	2.3	0.0	1.8	2.8	0.0	0.7	5.5	0.0	1.2
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	1.4	6.8	0.1	0.7	0.0	4.5	1.0	0.0	1.2	0.1	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	22.2	10.8	28.1	0.0	17.0	28.4	0.0	20.4	32.9	0.0	23.2
LnGrp LOS	C	C	B	C	A	B	C	A	C	C	A	C
Approach Vol, veh/h		732			550			193			98	
Approach Delay, s/veh		23.3			18.2			23.8			24.0	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	27.0	8.2	12.9	8.6	26.0	5.2	15.9
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	5.0	27.6	5.0	22.0	5.9	26.7	5.0	22.0
Max Q Clear Time (g_c+I1), s	3.8	18.7	4.4	4.8	5.1	14.4	2.2	5.4
Green Ext Time (p_c), s	0.0	2.5	0.0	0.3	0.0	2.2	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	21.6
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	605	488	14	0	2
Future Vol, veh/h	0	605	488	14	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	658	530	15	0	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	538
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	547
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	547
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	547
HCM Lane V/C Ratio	-	-	-	0.004
HCM Control Delay (s)	-	-	-	11.6
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↱			↗
Traffic Vol, veh/h	0	605	501	9	0	1
Future Vol, veh/h	0	605	501	9	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	658	545	10	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	550
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	539
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	539
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	539
HCM Lane V/C Ratio	-	-	-	0.002
HCM Control Delay (s)	-	-	-	11.7
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0

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	122	460	23	2	377	1	6	1	5	6	3	111
Future Vol, veh/h	122	460	23	2	377	1	6	1	5	6	3	111
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	133	500	25	2	410	1	7	1	5	7	3	121

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	411	0	0	525	0	0	1256	1194	514	1198	1206	411
Stage 1	-	-	-	-	-	-	779	779	-	415	415	-
Stage 2	-	-	-	-	-	-	477	415	-	783	791	-
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	1159	-	-	1052	-	-	150	188	564	164	185	645
Stage 1	-	-	-	-	-	-	392	409	-	619	596	-
Stage 2	-	-	-	-	-	-	573	596	-	390	404	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1159	-	-	1052	-	-	105	157	563	141	154	645
Mov Cap-2 Maneuver	-	-	-	-	-	-	105	157	-	141	154	-
Stage 1	-	-	-	-	-	-	328	342	-	518	595	-
Stage 2	-	-	-	-	-	-	462	595	-	322	338	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.7	0	28.5	14.4
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	166	1159	-	-	1052	-	-	513
HCM Lane V/C Ratio	0.079	0.114	-	-	0.002	-	-	0.254
HCM Control Delay (s)	28.5	8.5	0	-	8.4	0	-	14.4
HCM Lane LOS	D	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0.4	-	-	0	-	-	1

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	0	57	2	0	116
Future Vol, veh/h	2	0	57	2	0	116
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	2	0	62	2	0	126

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	189	63	0	0	64	0
Stage 1	63	-	-	-	-	-
Stage 2	126	-	-	-	-	-
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	805	1007	-	-	1551	-
Stage 1	965	-	-	-	-	-
Stage 2	905	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	805	1007	-	-	1551	-
Mov Cap-2 Maneuver	805	-	-	-	-	-
Stage 1	965	-	-	-	-	-
Stage 2	905	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	805	1551	-
HCM Lane V/C Ratio	-	-	0.003	-	-
HCM Control Delay (s)	-	-	9.5	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	0	59	4	0	118
Future Vol, veh/h	4	0	59	4	0	118
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	4	0	64	4	0	128

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	194	66	0	0	68	0
Stage 1	66	-	-	-	-	-
Stage 2	128	-	-	-	-	-
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	799	1003	-	-	1546	-
Stage 1	962	-	-	-	-	-
Stage 2	903	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	799	1003	-	-	1546	-
Mov Cap-2 Maneuver	799	-	-	-	-	-
Stage 1	962	-	-	-	-	-
Stage 2	903	-	-	-	-	-

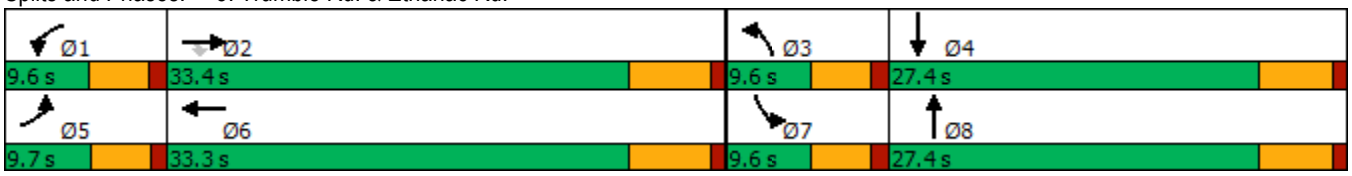
Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0
HCM LOS	A		

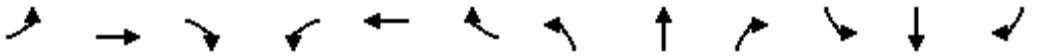
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	799	1546	-
HCM Lane V/C Ratio	-	-	0.005	-	-
HCM Control Delay (s)	-	-	9.5	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	48	556	25	36	382	56	4	11	9
Future Volume (vph)	48	556	25	36	382	56	4	11	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	10.0	5.0	10.0
Minimum Split (s)	9.6	27.8	27.8	9.6	27.8	9.6	27.4	9.6	27.4
Total Split (s)	9.7	33.4	33.4	9.6	33.3	9.6	27.4	9.6	27.4
Total Split (%)	12.1%	41.8%	41.8%	12.0%	41.6%	12.0%	34.3%	12.0%	34.3%
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)	5.5	25.9	25.9	5.4	25.8	5.4	16.0	5.4	12.6
Actuated g/C Ratio	0.09	0.43	0.43	0.09	0.43	0.09	0.27	0.09	0.21
v/c Ratio	0.33	0.76	0.04	0.25	0.54	0.39	0.33	0.07	0.29
Control Delay	37.9	26.3	0.1	36.3	19.0	40.8	6.0	33.8	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.9	26.3	0.1	36.3	19.0	40.8	6.0	33.8	8.5
LOS	D	C	A	D	B	D	A	C	A
Approach Delay		26.1			20.4		14.9		10.7
Approach LOS		C			C		B		B

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 60.2	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 21.3	Intersection LOS: C
Intersection Capacity Utilization 56.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Trumble Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	556	25	36	382	11	56	4	45	11	9	102
Future Volume (veh/h)	48	556	25	36	382	11	56	4	45	11	9	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	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	54	625	18	40	429	10	63	4	92	12	10	67
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.25	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	94	738	625	76	699	16	103	11	264	28	27	183
Arrive On Green	0.05	0.39	0.39	0.04	0.38	0.38	0.06	0.17	0.17	0.02	0.13	0.13
Sat Flow, veh/h	1810	1900	1610	1810	1848	43	1810	68	1553	1810	213	1429
Grp Volume(v), veh/h	54	625	18	40	0	439	63	0	96	12	0	77
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1810	0	1891	1810	0	1620	1810	0	1643
Q Serve(g_s), s	1.5	15.9	0.4	1.1	0.0	10.0	1.8	0.0	2.8	0.3	0.0	2.3
Cycle Q Clear(g_c), s	1.5	15.9	0.4	1.1	0.0	10.0	1.8	0.0	2.8	0.3	0.0	2.3
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.96	1.00		0.87
Lane Grp Cap(c), veh/h	94	738	625	76	0	716	103	0	275	28	0	210
V/C Ratio(X)	0.58	0.85	0.03	0.53	0.00	0.61	0.61	0.00	0.35	0.43	0.00	0.37
Avail Cap(c_a), veh/h	174	989	838	171	0	981	171	0	673	171	0	682
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	24.6	14.8	10.0	24.9	0.0	13.3	24.4	0.0	19.4	25.9	0.0	21.1
Incr Delay (d2), s/veh	2.1	5.3	0.0	2.1	0.0	0.9	2.2	0.0	0.8	3.9	0.0	1.1
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	6.2	0.1	0.5	0.0	3.4	0.7	0.0	1.0	0.2	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.6	20.1	10.1	27.0	0.0	14.2	26.6	0.0	20.2	29.8	0.0	22.2
LnGrp LOS	C	C	B	C	A	B	C	A	C	C	A	C
Approach Vol, veh/h		697			479			159			89	
Approach Delay, s/veh		20.3			15.3			22.7			23.2	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	26.4	7.6	12.2	7.3	25.9	5.4	14.4
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	5.0	27.6	5.0	22.0	5.1	27.5	5.0	22.0
Max Q Clear Time (g_c+I1), s	3.1	17.9	3.8	4.3	3.5	12.0	2.3	4.8
Green Ext Time (p_c), s	0.0	2.7	0.0	0.3	0.0	2.1	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	619	411	5	0	17
Future Vol, veh/h	0	619	411	5	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	673	447	5	0	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	450
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	613
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	613
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	613
HCM Lane V/C Ratio	-	-	-	0.03
HCM Control Delay (s)	-	-	-	11.1
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↱			↗
Traffic Vol, veh/h	0	619	405	4	0	11
Future Vol, veh/h	0	619	405	4	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	673	440	4	0	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	442
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	620
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	620
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	620
HCM Lane V/C Ratio	-	-	-	0.019
HCM Control Delay (s)	-	-	-	10.9
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	211	392	16	1	263	3	20	3	6	3	1	120
Future Vol, veh/h	211	392	16	1	263	3	20	3	6	3	1	120
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	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	220	408	17	1	274	3	21	3	6	3	1	125

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	277	0	0	425	0	0	1198	1136	417	1139	1143	276
Stage 1	-	-	-	-	-	-	857	857	-	278	278	-
Stage 2	-	-	-	-	-	-	341	279	-	861	865	-
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	1298	-	-	1145	-	-	164	204	640	180	202	768
Stage 1	-	-	-	-	-	-	355	377	-	733	684	-
Stage 2	-	-	-	-	-	-	678	683	-	353	374	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1298	-	-	1145	-	-	113	159	640	145	157	768
Mov Cap-2 Maneuver	-	-	-	-	-	-	113	159	-	145	157	-
Stage 1	-	-	-	-	-	-	276	293	-	570	683	-
Stage 2	-	-	-	-	-	-	566	682	-	269	291	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.8	0	37.4	11.6
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	141	1298	-	-	1145	-	-	676
HCM Lane V/C Ratio	0.214	0.169	-	-	0.001	-	-	0.191
HCM Control Delay (s)	37.4	8.3	0	-	8.1	0	-	11.6
HCM Lane LOS	E	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.8	0.6	-	-	0	-	-	0.7

APPENDIX 5.2: E+P CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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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	01/18/23
Jurisdiction: City of Perris				CHK CS	DATE	01/18/23
Major Street: Trumble Rd.				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 = **1,998** vpd

Minor Street Future ADT = **24** 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			
	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
XX Satisfied / XX Not Satisfied				
Number of lanes for moving traffic on each approach				
Major Street: *1* **1,998** / Minor Street: *1* **24**	8,000	5,600	2,400	1,680
Major Street: *2* + / Minor Street: *1*	9,600	6,720	2,400	1,680
Major Street: *2* + / Minor Street: *2* +	9,600	6,720	3,200	2,240
Major Street: *1* / Minor Street: *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 / XX Not Satisfied				
Number of lanes for moving traffic on each approach	Urban	Rural	Urban	Rural
Major Street: *1* **1,998** / Minor Street: *1* **24**	12,000	8,400	1,200	850
Major Street: *2* + / Minor Street: *1*	14,400	10,080	1,200	850
Major Street: *2* + / Minor Street: *2* +	14,400	10,080	1,600	1,120
Major Street: *1* / Minor Street: *2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B				
Satisfied / XX Not Satisfied	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more ….. A: 1% B: 2%				

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	01/18/23
Jurisdiction:	City of Perris			CHK	CS	DATE	01/18/23
Major Street:	Trumble Rd.			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 = **2,058** vpd Minor Street Future ADT = **36** 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 **2,058**	*1* **36**	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 **2,058**	*1* **36**	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** 3%				

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 CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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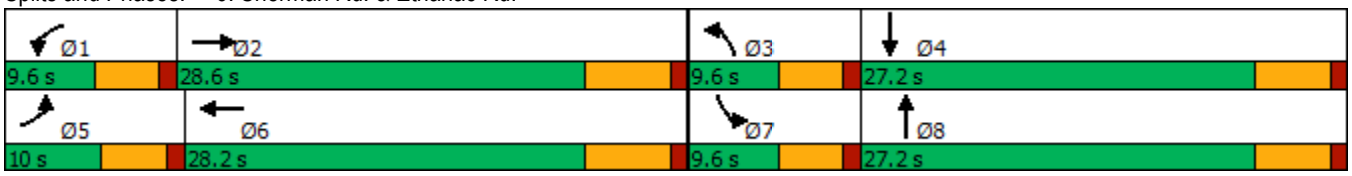
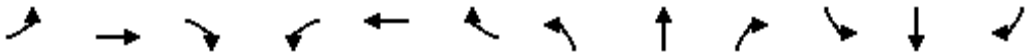
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	122	460	2	377	6	1	6	3
Future Volume (vph)	122	460	2	377	6	1	6	3
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	3	8	7	4
Permitted Phases								
Detector Phase	5	2	1	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.8	9.6	27.8	9.6	27.2	9.6	27.2
Total Split (s)	10.0	28.6	9.6	28.2	9.6	27.2	9.6	27.2
Total Split (%)	13.3%	38.1%	12.8%	37.6%	12.8%	36.3%	12.8%	36.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.2	3.6	4.2
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	4.6	5.2	4.6	5.2
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)	6.1	28.1	5.6	15.9	5.6	12.7	5.6	12.7
Actuated g/C Ratio	0.13	0.59	0.12	0.33	0.12	0.27	0.12	0.27
v/c Ratio	0.58	0.47	0.01	0.65	0.03	0.01	0.03	0.24
Control Delay	40.2	15.0	27.5	22.0	27.0	12.5	27.0	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.2	15.0	27.5	22.0	27.0	12.5	27.0	6.0
LOS	D	B	C	C	C	B	C	A
Approach Delay		20.1		22.1		20.3		7.1
Approach LOS		C		C		C		A

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 47.8	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 19.4	Intersection LOS: B
Intersection Capacity Utilization 51.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: Sherman Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	460	23	2	377	1	6	1	5	6	3	111
Future Volume (veh/h)	122	460	23	2	377	1	6	1	5	6	3	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	133	500	25	2	410	1	7	1	5	7	3	121
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	171	664	33	5	528	1	17	48	239	17	7	274
Arrive On Green	0.09	0.37	0.37	0.00	0.28	0.28	0.01	0.17	0.17	0.01	0.17	0.17
Sat Flow, veh/h	1810	1794	90	1810	1895	5	1810	275	1374	1810	39	1577
Grp Volume(v), veh/h	133	0	525	2	0	411	7	0	6	7	0	124
Grp Sat Flow(s),veh/h/ln	1810	0	1884	1810	0	1899	1810	0	1649	1810	0	1616
Q Serve(g_s), s	3.3	0.0	11.1	0.1	0.0	9.1	0.2	0.0	0.1	0.2	0.0	3.1
Cycle Q Clear(g_c), s	3.3	0.0	11.1	0.1	0.0	9.1	0.2	0.0	0.1	0.2	0.0	3.1
Prop In Lane	1.00		0.05	1.00		0.00	1.00		0.83	1.00		0.98
Lane Grp Cap(c), veh/h	171	0	698	5	0	529	17	0	287	17	0	281
V/C Ratio(X)	0.78	0.00	0.75	0.40	0.00	0.78	0.42	0.00	0.02	0.42	0.00	0.44
Avail Cap(c_a), veh/h	215	0	944	199	0	935	199	0	797	199	0	781
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	20.2	0.0	12.5	22.7	0.0	15.1	22.4	0.0	15.6	22.4	0.0	16.8
Incr Delay (d2), s/veh	10.2	0.0	2.3	18.4	0.0	2.5	6.0	0.0	0.0	6.0	0.0	1.1
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	1.6	0.0	3.6	0.0	0.0	3.3	0.1	0.0	0.0	0.1	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.3	0.0	14.9	41.0	0.0	17.6	28.4	0.0	15.6	28.4	0.0	17.9
LnGrp LOS	C	A	B	D	A	B	C	A	B	C	A	B
Approach Vol, veh/h		658			413			13			131	
Approach Delay, s/veh		18.0			17.7			22.5			18.5	
Approach LOS		B			B			C			B	

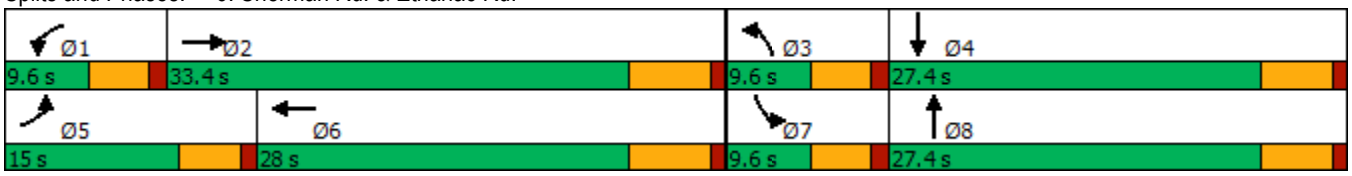
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.7	22.7	5.0	13.1	8.9	18.5	5.0	13.1
Change Period (Y+Rc), s	4.6	5.8	4.6	5.2	4.6	5.8	4.6	5.2
Max Green Setting (Gmax), s	5.0	22.8	5.0	22.0	5.4	22.4	5.0	22.0
Max Q Clear Time (g_c+I1), s	2.1	13.1	2.2	5.1	5.3	11.1	2.2	2.1
Green Ext Time (p_c), s	0.0	2.1	0.0	0.6	0.0	1.7	0.0	0.0

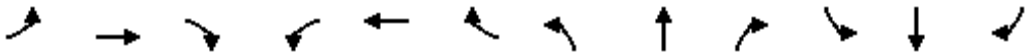
Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	211	392	1	263	20	3	3	1
Future Volume (vph)	211	392	1	263	20	3	3	1
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	10.0	5.0	10.0
Minimum Split (s)	9.6	27.8	9.6	27.8	9.6	27.2	9.6	27.4
Total Split (s)	15.0	33.4	9.6	28.0	9.6	27.4	9.6	27.4
Total Split (%)	18.8%	41.8%	12.0%	35.0%	12.0%	34.3%	12.0%	34.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.2	3.6	4.2
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	4.6	5.2	4.6	5.2
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)	11.0	24.4	5.5	14.3	5.5	12.6	5.5	12.6
Actuated g/C Ratio	0.22	0.48	0.11	0.28	0.11	0.25	0.11	0.25
v/c Ratio	0.57	0.47	0.01	0.52	0.11	0.02	0.02	0.26
Control Delay	31.5	13.3	30.0	22.2	29.6	14.2	29.3	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	13.3	30.0	22.2	29.6	14.2	29.3	6.4
LOS	C	B	C	C	C	B	C	A
Approach Delay		19.5		22.2		25.0		6.9
Approach LOS		B		C		C		A

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 51.1	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 18.8	Intersection LOS: B
Intersection Capacity Utilization 55.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: Sherman Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	392	16	1	263	3	20	3	6	3	1	120
Future Volume (veh/h)	211	392	16	1	263	3	20	3	6	3	1	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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	220	408	17	1	274	3	21	3	6	3	1	125
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	277	655	27	4	395	4	46	110	221	7	2	278
Arrive On Green	0.15	0.36	0.36	0.00	0.21	0.21	0.03	0.20	0.20	0.00	0.17	0.17
Sat Flow, veh/h	1810	1809	75	1810	1876	21	1810	565	1131	1810	13	1599
Grp Volume(v), veh/h	220	0	425	1	0	277	21	0	9	3	0	126
Grp Sat Flow(s),veh/h/ln	1810	0	1885	1810	0	1896	1810	0	1696	1810	0	1612
Q Serve(g_s), s	5.4	0.0	8.6	0.0	0.0	6.2	0.5	0.0	0.2	0.1	0.0	3.2
Cycle Q Clear(g_c), s	5.4	0.0	8.6	0.0	0.0	6.2	0.5	0.0	0.2	0.1	0.0	3.2
Prop In Lane	1.00		0.04	1.00		0.01	1.00		0.67	1.00		0.99
Lane Grp Cap(c), veh/h	277	0	682	4	0	399	46	0	331	7	0	280
V/C Ratio(X)	0.80	0.00	0.62	0.26	0.00	0.69	0.45	0.00	0.03	0.41	0.00	0.45
Avail Cap(c_a), veh/h	408	0	1127	196	0	912	196	0	816	196	0	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	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	18.9	0.0	12.1	23.0	0.0	16.9	22.2	0.0	15.0	22.9	0.0	17.1
Incr Delay (d2), s/veh	3.7	0.0	0.9	12.2	0.0	2.2	2.6	0.0	0.0	12.7	0.0	1.1
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	2.1	0.0	2.7	0.0	0.0	2.4	0.2	0.0	0.1	0.1	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.6	0.0	13.1	35.2	0.0	19.0	24.7	0.0	15.1	35.6	0.0	18.2
LnGrp LOS	C	A	B	D	A	B	C	A	B	D	A	B
Approach Vol, veh/h		645			278			30			129	
Approach Delay, s/veh		16.3			19.1			21.8			18.6	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.7	22.5	5.8	13.2	11.7	15.5	4.8	14.2
Change Period (Y+Rc), s	4.6	5.8	4.6	5.2	4.6	5.8	4.6	5.2
Max Green Setting (Gmax), s	5.0	27.6	5.0	22.2	10.4	22.2	5.0	22.2
Max Q Clear Time (g_c+I1), s	2.0	10.6	2.5	5.2	7.4	8.2	2.1	2.2
Green Ext Time (p_c), s	0.0	2.1	0.0	0.6	0.1	1.1	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	17.5
HCM 6th LOS	B

APPENDIX 6.1: EAC (2025) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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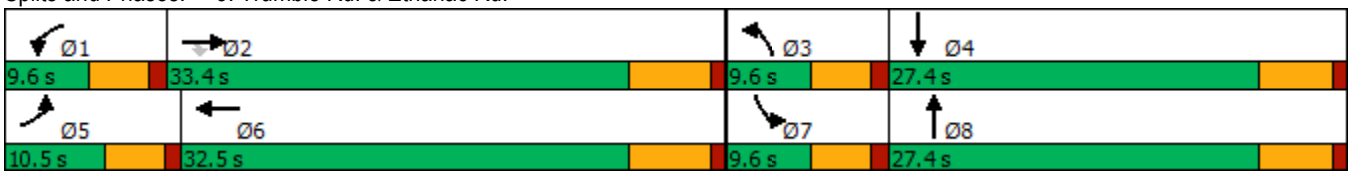
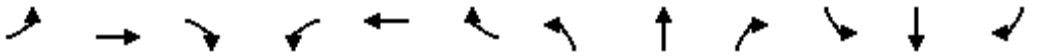
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	103	2090	12	56	925	78	4	11	13
Future Volume (vph)	103	2090	12	56	925	78	4	11	13
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	5	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	27.4	9.6	27.4
Total Split (s)	10.5	33.4	33.4	9.6	32.5	9.6	27.4	9.6	27.4
Total Split (%)	13.1%	41.8%	41.8%	12.0%	40.6%	12.0%	34.3%	12.0%	34.3%
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)	6.0	30.1	30.1	5.1	27.0	5.1	18.0	5.1	12.2
Actuated g/C Ratio	0.09	0.44	0.44	0.07	0.39	0.07	0.26	0.07	0.18
v/c Ratio	0.74	2.81	0.02	0.48	1.42	0.67	0.35	0.09	0.29
Control Delay	62.6	833.9	0.0	46.4	221.7	59.7	5.8	34.3	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	833.9	0.0	46.4	221.7	59.7	5.8	34.3	9.9
LOS	E	F	A	D	F	E	A	C	A
Approach Delay		793.4			211.9		22.3		12.4
Approach LOS		F			F		C		B

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 68.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.81	
Intersection Signal Delay: 551.8	Intersection LOS: F
Intersection Capacity Utilization 130.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 3: Trumble Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	2090	12	56	925	21	78	4	49	11	13	80
Future Volume (veh/h)	103	2090	12	56	925	21	78	4	49	11	13	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	116	2348	12	63	1039	23	88	4	124	12	15	74
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.25	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	149	844	715	95	768	17	113	9	269	27	34	170
Arrive On Green	0.08	0.44	0.44	0.05	0.41	0.41	0.06	0.17	0.17	0.01	0.12	0.12
Sat Flow, veh/h	1810	1900	1610	1810	1852	41	1810	51	1567	1810	279	1374
Grp Volume(v), veh/h	116	2348	12	63	0	1062	88	0	128	12	0	89
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1810	0	1893	1810	0	1618	1810	0	1653
Q Serve(g_s), s	4.0	28.6	0.3	2.2	0.0	26.7	3.1	0.0	4.6	0.4	0.0	3.2
Cycle Q Clear(g_c), s	4.0	28.6	0.3	2.2	0.0	26.7	3.1	0.0	4.6	0.4	0.0	3.2
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.97	1.00		0.83
Lane Grp Cap(c), veh/h	149	844	715	95	0	785	113	0	277	27	0	204
V/C Ratio(X)	0.78	2.78	0.02	0.66	0.00	1.35	0.78	0.00	0.46	0.44	0.00	0.44
Avail Cap(c_a), veh/h	166	844	715	141	0	785	141	0	553	141	0	565
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	29.0	17.9	10.0	29.9	0.0	18.8	29.7	0.0	24.0	31.4	0.0	26.1
Incr Delay (d2), s/veh	16.5	804.8	0.0	2.9	0.0	167.2	15.0	0.0	1.2	4.1	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	198.4	0.1	1.0	0.0	45.7	1.7	0.0	1.7	0.2	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.5	822.7	10.0	32.9	0.0	186.1	44.8	0.0	25.2	35.6	0.0	27.6
LnGrp LOS	D	F	B	C	A	F	D	A	C	D	A	C
Approach Vol, veh/h		2476			1125			216			101	
Approach Delay, s/veh		782.4			177.5			33.2			28.5	
Approach LOS		F			F			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	34.4	8.6	13.4	9.9	32.5	5.6	16.4
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	5.0	27.6	5.0	22.0	5.9	26.7	5.0	22.0
Max Q Clear Time (g_c+I1), s	4.2	30.6	5.1	5.2	6.0	28.7	2.4	6.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	547.9
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	118	1504	529	82	717	6	151	13	23	27	57	134
Future Vol, veh/h	118	1504	529	82	717	6	151	13	23	27	57	134
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	128	1635	575	89	779	7	164	14	25	29	62	146

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	786	0	0	2210	0	0	3244	3143	1924	3160	3427	783
Stage 1	-	-	-	-	-	-	2179	2179	-	961	961	-
Stage 2	-	-	-	-	-	-	1065	964	-	2199	2466	-
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	842	-	-	241	-	-	~ 6	~ 11	84	~ 7	~ 7	397
Stage 1	-	-	-	-	-	-	~ 62	86	-	311	337	-
Stage 2	-	-	-	-	-	-	272	336	-	60	~ 61	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	842	-	-	241	-	-	-	~ 4	84	-	~ 2	397
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 4	-	-	~ 2	-
Stage 1	-	-	-	-	-	-	~ 62	86	-	311	116	-
Stage 2	-	-	-	-	-	-	~ 28	116	-	35	~ 61	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	2.9		
HCM LOS			-	-

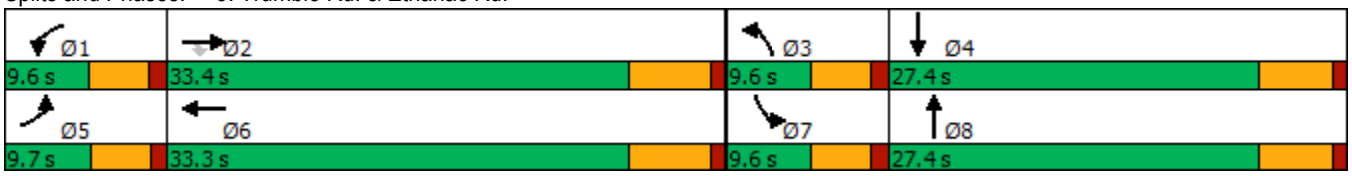
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	842	-	-	241	-	-	-
HCM Lane V/C Ratio	-	0.152	-	-	0.37	-	-	-
HCM Control Delay (s)	-	10	0	-	28.4	0	-	-
HCM Lane LOS	-	B	A	-	D	A	-	-
HCM 95th %tile Q(veh)	-	0.5	-	-	1.6	-	-	-

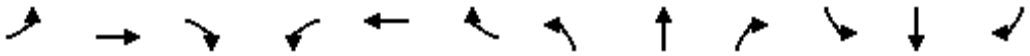
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	52	1701	27	31	2043	61	4	26	10
Future Volume (vph)	52	1701	27	31	2043	61	4	26	10
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	27.4	9.6	27.4
Total Split (s)	9.7	33.4	33.4	9.6	33.3	9.6	27.4	9.6	27.4
Total Split (%)	12.1%	41.8%	41.8%	12.0%	41.6%	12.0%	34.3%	12.0%	34.3%
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)	5.2	30.2	30.2	5.1	28.3	5.1	16.2	5.1	12.2
Actuated g/C Ratio	0.08	0.47	0.47	0.08	0.44	0.08	0.25	0.08	0.19
v/c Ratio	0.40	2.15	0.04	0.24	2.78	0.48	0.36	0.20	0.35
Control Delay	41.4	541.4	0.1	36.8	821.8	45.9	6.5	36.0	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.4	541.4	0.1	36.8	821.8	45.9	6.5	36.0	8.5
LOS	D	F	A	D	F	D	A	D	A
Approach Delay		518.8			810.1		16.6		13.0
Approach LOS		F			F		B		B

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 64.6	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.78	
Intersection Signal Delay: 614.7	Intersection LOS: F
Intersection Capacity Utilization 134.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 3: Trumble Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	1701	27	31	2043	17	61	4	49	26	10	122
Future Volume (veh/h)	52	1701	27	31	2043	17	61	4	49	26	10	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	58	1911	20	35	2296	17	69	4	108	29	11	89
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.25	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	92	859	728	66	824	6	101	9	243	57	24	191
Arrive On Green	0.05	0.45	0.45	0.04	0.44	0.44	0.06	0.16	0.16	0.03	0.13	0.13
Sat Flow, veh/h	1810	1900	1610	1810	1883	14	1810	58	1561	1810	180	1458
Grp Volume(v), veh/h	58	1911	20	35	0	2313	69	0	112	29	0	100
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1810	0	1897	1810	0	1619	1810	0	1638
Q Serve(g_s), s	2.0	28.4	0.4	1.2	0.0	27.5	2.4	0.0	3.9	1.0	0.0	3.5
Cycle Q Clear(g_c), s	2.0	28.4	0.4	1.2	0.0	27.5	2.4	0.0	3.9	1.0	0.0	3.5
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.96	1.00		0.89
Lane Grp Cap(c), veh/h	92	859	728	66	0	830	101	0	252	57	0	215
V/C Ratio(X)	0.63	2.23	0.03	0.53	0.00	2.79	0.68	0.00	0.44	0.51	0.00	0.46
Avail Cap(c_a), veh/h	147	859	728	144	0	830	144	0	567	144	0	573
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	29.3	17.2	9.6	29.8	0.0	17.7	29.1	0.0	24.1	29.9	0.0	25.2
Incr Delay (d2), s/veh	2.7	555.3	0.0	2.5	0.0	807.0	3.0	0.0	1.2	2.6	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	0.8	141.8	0.1	0.5	0.0	195.3	1.0	0.0	1.5	0.4	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.9	572.5	9.6	32.2	0.0	824.7	32.2	0.0	25.3	32.5	0.0	26.8
LnGrp LOS	C	F	A	C	A	F	C	A	C	C	A	C
Approach Vol, veh/h		1989			2348			181			129	
Approach Delay, s/veh		551.1			812.9			27.9			28.1	
Approach LOS		F			F			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	34.2	8.1	13.7	7.8	33.3	6.6	15.2
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	5.0	27.6	5.0	22.0	5.1	27.5	5.0	22.0
Max Q Clear Time (g_c+I1), s	3.2	30.4	4.4	5.5	4.0	29.5	3.0	5.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	648.5
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	237	1187	351	53	1407	24	548	59	89	16	35	136
Future Vol, veh/h	237	1187	351	53	1407	24	548	59	89	16	35	136
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	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	247	1236	366	55	1466	25	571	61	93	17	36	142

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1491	0	0	1602	0	0	3591	3514	1419	3579	3685	1479
Stage 1	-	-	-	-	-	-	1913	1913	-	1589	1589	-
Stage 2	-	-	-	-	-	-	1678	1601	-	1990	2096	-
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	456	-	-	414	-	-	~ 3	~ 6	169	~ 3	~ 5	156
Stage 1	-	-	-	-	-	-	~ 89	117	-	137	169	-
Stage 2	-	-	-	-	-	-	~ 121	167	-	80	94	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	456	-	-	414	-	-	-	0	169	-	0	156
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	~ 89	0	-	137	~ 36	-
Stage 2	-	-	-	-	-	-	-	~ 36	-	-	0	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.9	0.5		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	456	-	-	414	-	-	-
HCM Lane V/C Ratio	-	0.541	-	-	0.133	-	-	-
HCM Control Delay (s)	-	21.8	0	-	15	0	-	-
HCM Lane LOS	-	C	A	-	C	A	-	-
HCM 95th %tile Q(veh)	-	3.2	-	-	0.5	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

APPENDIX 6.2: EAPC (2025) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	0	128	4	0	104
Future Vol, veh/h	5	0	128	4	0	104
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	5	0	139	4	0	113

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	254	141	0	0	143	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	-	-	1452	-
Stage 1	891	-	-	-	-	-
Stage 2	917	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	739	912	-	-	1452	-
Mov Cap-2 Maneuver	739	-	-	-	-	-
Stage 1	891	-	-	-	-	-
Stage 2	917	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	739	1452	-
HCM Lane V/C Ratio	-	-	0.007	-	-
HCM Control Delay (s)	-	-	9.9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	0	132	6	0	109
Future Vol, veh/h	8	0	132	6	0	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	9	0	143	7	0	118

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	265	147	0	0	150	0
Stage 1	147	-	-	-	-	-
Stage 2	118	-	-	-	-	-
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	728	905	-	-	1444	-
Stage 1	885	-	-	-	-	-
Stage 2	912	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	728	905	-	-	1444	-
Mov Cap-2 Maneuver	728	-	-	-	-	-
Stage 1	885	-	-	-	-	-
Stage 2	912	-	-	-	-	-

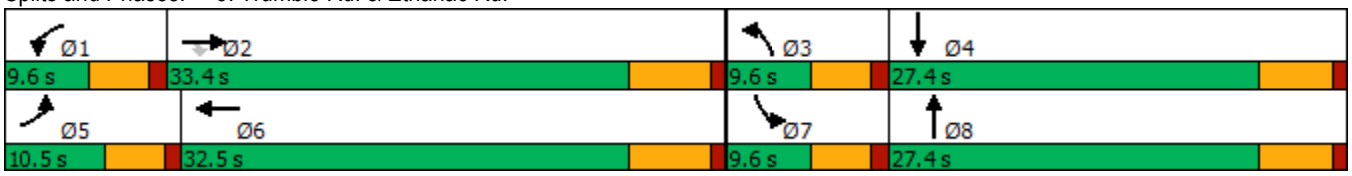
Approach	WB	NB	SB
HCM Control Delay, s	10	0	0
HCM LOS	B		

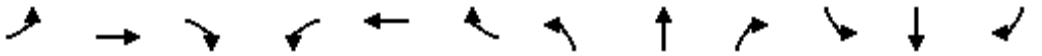
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	728	1444	-
HCM Lane V/C Ratio	-	-	0.012	-	-
HCM Control Delay (s)	-	-	10	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	113	2107	12	57	927	78	4	11	13
Future Volume (vph)	113	2107	12	57	927	78	4	11	13
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	27.4	9.6	27.4
Total Split (s)	10.5	33.4	33.4	9.6	32.5	9.6	27.4	9.6	27.4
Total Split (%)	13.1%	41.8%	41.8%	12.0%	40.6%	12.0%	34.3%	12.0%	34.3%
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)	6.0	30.1	30.1	5.1	27.0	5.1	18.0	5.1	12.2
Actuated g/C Ratio	0.09	0.44	0.44	0.07	0.39	0.07	0.26	0.07	0.18
v/c Ratio	0.81	2.83	0.02	0.48	1.43	0.67	0.35	0.09	0.31
Control Delay	71.7	844.0	0.0	46.9	223.5	59.7	5.8	34.3	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.7	844.0	0.0	46.9	223.5	59.7	5.8	34.3	9.6
LOS	E	F	A	D	F	E	A	C	A
Approach Delay		800.5			213.5		22.3		11.9
Approach LOS		F			F		C		B

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 68.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.83	
Intersection Signal Delay: 556.2	Intersection LOS: F
Intersection Capacity Utilization 131.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 3: Trumble Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	2107	12	57	927	21	78	4	49	11	13	93
Future Volume (veh/h)	113	2107	12	57	927	21	78	4	49	11	13	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	127	2367	12	64	1042	23	88	4	124	12	15	88
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.25	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	162	844	716	95	754	17	113	9	277	27	31	182
Arrive On Green	0.09	0.44	0.44	0.05	0.41	0.41	0.06	0.18	0.18	0.01	0.13	0.13
Sat Flow, veh/h	1810	1900	1610	1810	1852	41	1810	51	1567	1810	240	1407
Grp Volume(v), veh/h	127	2367	12	64	0	1065	88	0	128	12	0	103
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1810	0	1893	1810	0	1618	1810	0	1647
Q Serve(g_s), s	4.5	29.1	0.3	2.3	0.0	26.7	3.1	0.0	4.6	0.4	0.0	3.8
Cycle Q Clear(g_c), s	4.5	29.1	0.3	2.3	0.0	26.7	3.1	0.0	4.6	0.4	0.0	3.8
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.97	1.00		0.85
Lane Grp Cap(c), veh/h	162	844	716	95	0	771	113	0	286	27	0	213
V/C Ratio(X)	0.78	2.80	0.02	0.67	0.00	1.38	0.78	0.00	0.45	0.44	0.00	0.48
Avail Cap(c_a), veh/h	163	844	716	138	0	771	138	0	543	138	0	553
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	29.2	18.2	10.2	30.5	0.0	19.4	30.3	0.0	24.1	32.0	0.0	26.5
Incr Delay (d2), s/veh	20.0	814.9	0.0	3.1	0.0	179.6	15.9	0.0	1.1	4.2	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	201.1	0.1	1.0	0.0	47.9	1.8	0.0	1.7	0.2	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.2	833.1	10.2	33.6	0.0	199.0	46.1	0.0	25.2	36.2	0.0	28.2
LnGrp LOS	D	F	B	C	A	F	D	A	C	D	A	C
Approach Vol, veh/h		2506			1129			216			115	
Approach Delay, s/veh		789.4			189.6			33.7			29.0	
Approach LOS		F			F			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	34.9	8.7	13.9	10.5	32.5	5.6	17.0
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	5.0	27.6	5.0	22.0	5.9	26.7	5.0	22.0
Max Q Clear Time (g_c+I1), s	4.3	31.1	5.1	5.8	6.5	28.7	2.4	6.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	555.5
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↱			↗
Traffic Vol, veh/h	0	2168	1003	14	0	2
Future Vol, veh/h	0	2168	1003	14	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	2357	1090	15	0	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1098
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	261
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	261
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	18.9
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	261
HCM Lane V/C Ratio	-	-	-	0.008
HCM Control Delay (s)	-	-	-	18.9
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	2168	1016	9	0	1
Future Vol, veh/h	0	2168	1016	9	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	2357	1104	10	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1109
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	257
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	257
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	19.1
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	257
HCM Lane V/C Ratio	-	-	-	0.004
HCM Control Delay (s)	-	-	-	19.1
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	135	1505	529	82	723	6	151	13	23	27	57	134
Future Vol, veh/h	135	1505	529	82	723	6	151	13	23	27	57	134
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	147	1636	575	89	786	7	164	14	25	29	62	146

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	793	0	0	2211	0	0	3290	3189	1925	3206	3473	790
Stage 1	-	-	-	-	-	-	2218	2218	-	968	968	-
Stage 2	-	-	-	-	-	-	1072	971	-	2238	2505	-
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	837	-	-	241	-	-	~ 5	~ 10	84	~ 6	~ 7	393
Stage 1	-	-	-	-	-	-	~ 59	82	-	308	335	-
Stage 2	-	-	-	-	-	-	269	334	-	57	~ 58	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	837	-	-	241	-	-	-	~ 3	84	-	~ 2	393
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 3	-	-	~ 2	-
Stage 1	-	-	-	-	-	-	~ 59	82	-	308	114	-
Stage 2	-	-	-	-	-	-	~ 26	113	-	33	~ 58	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	2.9		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	837	-	-	241	-	-	-
HCM Lane V/C Ratio	-	0.175	-	-	0.37	-	-	-
HCM Control Delay (s)	-	10.2	0	-	28.4	0	-	-
HCM Lane LOS	-	B	A	-	D	A	-	-
HCM 95th %tile Q(veh)	-	0.6	-	-	1.6	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	0	74	2	0	158
Future Vol, veh/h	2	0	74	2	0	158
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	2	0	80	2	0	172

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	253	81	0	0	82	0
Stage 1	81	-	-	-	-	-
Stage 2	172	-	-	-	-	-
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	740	985	-	-	1528	-
Stage 1	947	-	-	-	-	-
Stage 2	863	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	740	985	-	-	1528	-
Mov Cap-2 Maneuver	740	-	-	-	-	-
Stage 1	947	-	-	-	-	-
Stage 2	863	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	740	1528	-
HCM Lane V/C Ratio	-	-	0.003	-	-
HCM Control Delay (s)	-	-	9.9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	0	76	4	0	160
Future Vol, veh/h	4	0	76	4	0	160
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	4	0	83	4	0	174

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	259	85	0	0	87	0
Stage 1	85	-	-	-	-	-
Stage 2	174	-	-	-	-	-
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	734	980	-	-	1522	-
Stage 1	943	-	-	-	-	-
Stage 2	861	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	734	980	-	-	1522	-
Mov Cap-2 Maneuver	734	-	-	-	-	-
Stage 1	943	-	-	-	-	-
Stage 2	861	-	-	-	-	-

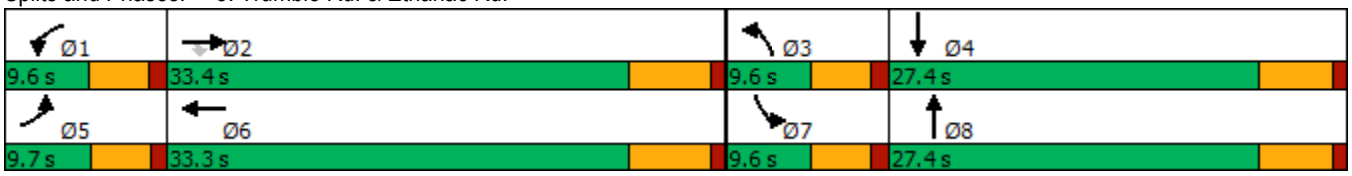
Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0
HCM LOS	A		

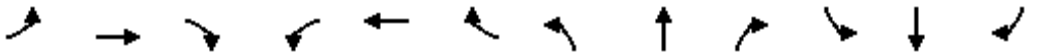
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	734	1522	-
HCM Lane V/C Ratio	-	-	0.006	-	-
HCM Control Delay (s)	-	-	9.9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	58	1708	27	38	2064	61	4	26	10
Future Volume (vph)	58	1708	27	38	2064	61	4	26	10
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	27.4	9.6	27.4
Total Split (s)	9.7	33.4	33.4	9.6	33.3	9.6	27.4	9.6	27.4
Total Split (%)	12.1%	41.8%	41.8%	12.0%	41.6%	12.0%	34.3%	12.0%	34.3%
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)	5.2	30.2	30.2	5.1	28.3	5.1	16.0	5.1	12.3
Actuated g/C Ratio	0.08	0.45	0.45	0.08	0.42	0.08	0.24	0.08	0.18
v/c Ratio	0.46	2.23	0.04	0.31	2.90	0.50	0.37	0.21	0.37
Control Delay	45.0	573.9	0.1	38.9	874.4	47.4	6.6	36.4	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.0	573.9	0.1	38.9	874.4	47.4	6.6	36.4	8.5
LOS	D	F	A	D	F	D	A	D	A
Approach Delay		548.2			859.4		17.1		12.9
Approach LOS		F			F		B		B

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 66.6	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.90	
Intersection Signal Delay: 651.2	Intersection LOS: F
Intersection Capacity Utilization 135.4%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 3: Trumble Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	1708	27	38	2064	17	61	4	49	26	10	128
Future Volume (veh/h)	58	1708	27	38	2064	17	61	4	49	26	10	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	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	65	1919	20	43	2319	17	69	4	108	29	11	96
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.25	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	97	848	719	76	818	6	100	9	246	57	23	197
Arrive On Green	0.05	0.45	0.45	0.04	0.43	0.43	0.06	0.16	0.16	0.03	0.13	0.13
Sat Flow, veh/h	1810	1900	1610	1810	1883	14	1810	58	1561	1810	168	1468
Grp Volume(v), veh/h	65	1919	20	43	0	2336	69	0	112	29	0	107
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1810	0	1897	1810	0	1619	1810	0	1636
Q Serve(g_s), s	2.2	28.3	0.4	1.5	0.0	27.5	2.4	0.0	4.0	1.0	0.0	3.8
Cycle Q Clear(g_c), s	2.2	28.3	0.4	1.5	0.0	27.5	2.4	0.0	4.0	1.0	0.0	3.8
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.96	1.00		0.90
Lane Grp Cap(c), veh/h	97	848	719	76	0	824	100	0	256	57	0	219
V/C Ratio(X)	0.67	2.26	0.03	0.57	0.00	2.83	0.69	0.00	0.44	0.51	0.00	0.49
Avail Cap(c_a), veh/h	146	848	719	143	0	824	143	0	563	143	0	569
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	29.4	17.5	9.8	29.8	0.0	17.9	29.4	0.0	24.1	30.2	0.0	25.4
Incr Delay (d2), s/veh	2.9	572.0	0.0	2.5	0.0	828.7	3.1	0.0	1.2	2.6	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	144.2	0.1	0.6	0.0	199.0	1.0	0.0	1.5	0.4	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.3	589.5	9.8	32.2	0.0	846.6	32.4	0.0	25.3	32.7	0.0	27.1
LnGrp LOS	C	F	A	C	A	F	C	A	C	C	A	C
Approach Vol, veh/h		2004			2379			181			136	
Approach Delay, s/veh		565.7			831.9			28.0			28.3	
Approach LOS		F			F			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	34.1	8.1	13.9	8.0	33.3	6.6	15.4
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	5.0	27.6	5.0	22.0	5.1	27.5	5.0	22.0
Max Q Clear Time (g_c+I1), s	3.5	30.3	4.4	5.8	4.2	29.5	3.0	6.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	664.1
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↱			↗
Traffic Vol, veh/h	0	1790	2102	5	0	17
Future Vol, veh/h	0	1790	2102	5	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1946	2285	5	0	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	2288
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	51
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	51
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	111.3
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	51
HCM Lane V/C Ratio	-	-	-	0.362
HCM Control Delay (s)	-	-	-	111.3
HCM Lane LOS	-	-	-	F
HCM 95th %tile Q(veh)	-	-	-	1.3

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↱			↱
Traffic Vol, veh/h	0	1790	2096	4	0	11
Future Vol, veh/h	0	1790	2096	4	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1946	2278	4	0	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	2280
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	51
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	51
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	96
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	51
HCM Lane V/C Ratio	-	-	-	0.234
HCM Control Delay (s)	-	-	-	96
HCM Lane LOS	-	-	-	F
HCM 95th %tile Q(veh)	-	-	-	0.8

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	244	1194	351	53	1409	24	548	59	89	16	35	136
Future Vol, veh/h	244	1194	351	53	1409	24	548	59	89	16	35	136
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	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	254	1244	366	55	1468	25	571	61	93	17	36	142

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1493	0	0	1610	0	0	3615	3538	1427	3603	3709	1481
Stage 1	-	-	-	-	-	-	1935	1935	-	1591	1591	-
Stage 2	-	-	-	-	-	-	1680	1603	-	2012	2118	-
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	456	-	-	411	-	-	~ 3	~ 6	167	~ 3	~ 5	156
Stage 1	-	-	-	-	-	-	~ 86	114	-	136	169	-
Stage 2	-	-	-	-	-	-	~ 121	167	-	77	92	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	456	-	-	411	-	-	-	0	167	-	0	156
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	~ 86	0	-	136	~ 34	-
Stage 2	-	-	-	-	-	-	-	~ 34	-	-	0	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.1	0.5		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	456	-	-	411	-	-	-
HCM Lane V/C Ratio	-	0.557	-	-	0.134	-	-	-
HCM Control Delay (s)	-	22.4	0	-	15.1	0	-	-
HCM Lane LOS	-	C	A	-	C	A	-	-
HCM 95th %tile Q(veh)	-	3.3	-	-	0.5	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

APPENDIX 6.3: EAPC (2025) CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS		2025 WP
				CALC CS	DATE	01/18/23
Jurisdiction: City of Perris				CHK CS	DATE	01/18/23
Major Street: Trumble Rd.				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 = **2,665** vpd Minor Street Future ADT = **24** 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			
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: XX / Not Satisfied: XX	Urban	Rural	Urban	Rural
Number of lanes for moving traffic on each approach: Major Street / Minor Street				
1 **2,665** / 1 **24**	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 **2,665** / 1 **24**	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: 1% B: 2%				

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		2025 WP
				CALC CS	DATE	01/18/23
Jurisdiction: City of Perris				CHK CS	DATE	01/18/23
Major Street: Trumble Rd.				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 = **2,725** vpd Minor Street Future ADT = **36** 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					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **2,725**	*1* **36**	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 **2,725**	*1* **36**	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** 3%				

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: EAPC (2025) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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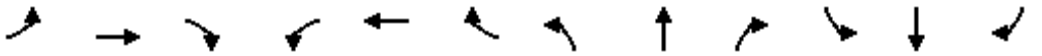
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	113	2107	12	57	927	78	4	11	13
Future Volume (vph)	113	2107	12	57	927	78	4	11	13
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	5	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	27.4	9.6	27.4
Total Split (s)	20.4	73.0	73.0	9.6	62.2	10.0	27.8	9.6	27.4
Total Split (%)	17.0%	60.8%	60.8%	8.0%	51.8%	8.3%	23.2%	8.0%	22.8%
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)	11.7	67.3	67.3	5.0	60.6	5.4	20.4	5.0	12.2
Actuated g/C Ratio	0.11	0.61	0.61	0.05	0.55	0.05	0.18	0.05	0.11
v/c Ratio	0.66	1.07	0.01	0.79	0.54	1.00	0.49	0.15	0.43
Control Delay	64.2	65.5	0.0	106.5	18.2	149.3	19.9	56.5	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.2	65.5	0.0	106.5	18.2	149.3	19.9	56.5	16.4
LOS	E	E	A	F	B	F	B	E	B
Approach Delay		65.1			23.2		59.5		20.1
Approach LOS		E			C		E		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 51.6	Intersection LOS: D
Intersection Capacity Utilization 86.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Trumble Rd. & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	2107	12	57	927	21	78	4	49	11	13	93
Future Volume (veh/h)	113	2107	12	57	927	21	78	4	49	11	13	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	127	2367	12	64	1042	23	88	4	124	12	15	88
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.25	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	156	2258	1007	83	2112	47	91	6	196	25	21	125
Arrive On Green	0.09	0.63	0.63	0.05	0.58	0.58	0.05	0.13	0.13	0.01	0.09	0.09
Sat Flow, veh/h	1810	3610	1610	1810	3611	80	1810	51	1567	1810	240	1407
Grp Volume(v), veh/h	127	2367	12	64	521	544	88	0	128	12	0	103
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1886	1810	0	1618	1810	0	1647
Q Serve(g_s), s	7.4	67.2	0.3	3.8	18.1	18.1	5.2	0.0	8.1	0.7	0.0	6.5
Cycle Q Clear(g_c), s	7.4	67.2	0.3	3.8	18.1	18.1	5.2	0.0	8.1	0.7	0.0	6.5
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.97	1.00		0.85
Lane Grp Cap(c), veh/h	156	2258	1007	83	1056	1103	91	0	202	25	0	146
V/C Ratio(X)	0.81	1.05	0.01	0.77	0.49	0.49	0.97	0.00	0.63	0.47	0.00	0.70
Avail Cap(c_a), veh/h	266	2258	1007	84	1056	1103	91	0	337	84	0	337
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	48.2	20.1	7.6	50.7	13.0	13.0	50.9	0.0	44.7	52.6	0.0	47.6
Incr Delay (d2), s/veh	3.9	33.1	0.0	31.8	0.4	0.3	83.0	0.0	3.3	5.0	0.0	6.1
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	3.4	33.4	0.1	2.4	6.6	6.9	4.4	0.0	3.3	0.4	0.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.1	53.2	7.6	82.5	13.4	13.4	134.0	0.0	47.9	57.6	0.0	53.7
LnGrp LOS	D	F	A	F	B	B	F	A	D	E	A	D
Approach Vol, veh/h		2506			1129			216			115	
Approach Delay, s/veh		53.0			17.3			83.0			54.1	
Approach LOS		D			B			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	73.0	10.0	14.9	13.9	68.6	6.1	18.8
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	5.0	67.2	5.4	22.0	15.8	56.4	5.0	22.4
Max Q Clear Time (g_c+I1), s	5.8	69.2	7.2	8.5	9.4	20.1	2.7	10.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.4	0.1	7.4	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	44.5
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↱			↱
Traffic Vol, veh/h	0	2168	1003	14	0	2
Future Vol, veh/h	0	2168	1003	14	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	2357	1090	15	0	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	553
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	482
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	482
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	482
HCM Lane V/C Ratio	-	-	-	0.005
HCM Control Delay (s)	-	-	-	12.5
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↱			↱
Traffic Vol, veh/h	0	2168	1016	9	0	1
Future Vol, veh/h	0	2168	1016	9	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	2357	1104	10	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	557
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	479
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	479
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

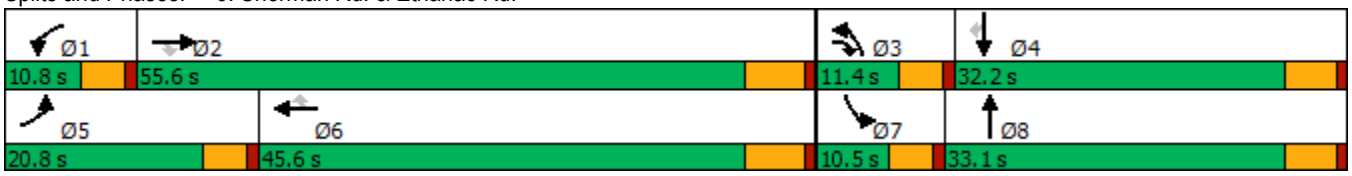
Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.5
HCM LOS			B

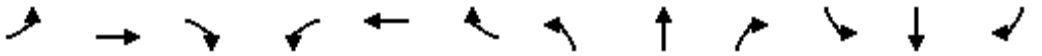
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	479
HCM Lane V/C Ratio	-	-	-	0.002
HCM Control Delay (s)	-	-	-	12.5
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	135	1505	529	82	723	6	151	13	27	57	134
Future Volume (vph)	135	1505	529	82	723	6	151	13	27	57	134
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8	7	4	
Permitted Phases			2			6					4
Detector Phase	5	2	3	1	6	6	3	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	27.8	9.6	32.2	9.6	32.2	32.2
Total Split (s)	20.8	55.6	11.4	10.8	45.6	45.6	11.4	33.1	10.5	32.2	32.2
Total Split (%)	18.9%	50.5%	10.4%	9.8%	41.5%	41.5%	10.4%	30.1%	9.5%	29.3%	29.3%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.2	3.6	4.2	4.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	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	4.6	4.6	5.8	5.8	4.6	5.2	4.6	5.2	5.2
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	11.7	50.0	62.7	6.2	44.6	44.6	6.8	13.6	5.6	13.0	13.0
Actuated g/C Ratio	0.12	0.52	0.65	0.06	0.46	0.46	0.07	0.14	0.06	0.13	0.13
v/c Ratio	0.67	0.87	0.46	0.77	0.47	0.01	0.66	0.15	0.28	0.24	0.41
Control Delay	56.4	27.8	2.1	84.4	20.5	0.0	58.7	19.4	52.4	38.7	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.4	27.8	2.1	84.4	20.5	0.0	58.7	19.4	52.4	38.7	7.6
LOS	E	C	A	F	C	A	E	B	D	D	A
Approach Delay		23.3			26.8			51.1		21.2	
Approach LOS		C			C			D		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 96.4	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 25.6	Intersection LOS: C
Intersection Capacity Utilization 70.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: Sherman Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	1505	529	82	723	6	151	13	23	27	57	134
Future Volume (veh/h)	135	1505	529	82	723	6	151	13	23	27	57	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	147	1636	358	89	786	7	164	14	25	29	62	146
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	182	1890	951	114	1755	783	236	95	170	52	223	189
Arrive On Green	0.10	0.52	0.52	0.06	0.49	0.49	0.07	0.16	0.16	0.03	0.12	0.12
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	3510	611	1091	1810	1900	1610
Grp Volume(v), veh/h	147	1636	358	89	786	7	164	0	39	29	62	146
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1755	0	1701	1810	1900	1610
Q Serve(g_s), s	7.0	34.9	10.3	4.3	12.6	0.2	4.0	0.0	1.8	1.4	2.6	7.8
Cycle Q Clear(g_c), s	7.0	34.9	10.3	4.3	12.6	0.2	4.0	0.0	1.8	1.4	2.6	7.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.64	1.00		1.00
Lane Grp Cap(c), veh/h	182	1890	951	114	1755	783	236	0	265	52	223	189
V/C Ratio(X)	0.81	0.87	0.38	0.78	0.45	0.01	0.69	0.00	0.15	0.56	0.28	0.77
Avail Cap(c_a), veh/h	332	2034	1016	127	1755	783	270	0	537	121	580	492
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	1.00	1.00
Uniform Delay (d), s/veh	38.9	18.3	9.5	40.8	14.9	11.7	40.3	0.0	32.2	42.4	35.6	37.9
Incr Delay (d2), s/veh	3.2	4.0	0.2	20.8	0.2	0.0	4.6	0.0	0.3	3.4	0.7	6.5
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	3.1	13.2	3.3	2.5	4.6	0.1	1.9	0.0	0.7	0.7	1.2	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.2	22.3	9.8	61.6	15.1	11.7	45.0	0.0	32.5	45.8	36.3	44.4
LnGrp LOS	D	C	A	E	B	B	D	A	C	D	D	D
Approach Vol, veh/h		2141			882			203			237	
Approach Delay, s/veh		21.6			19.8			42.6			42.4	
Approach LOS		C			B			D			D	

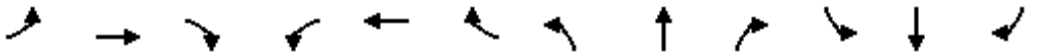
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	52.1	10.6	15.6	13.5	48.8	7.1	19.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.2	4.6	5.8	4.6	5.2
Max Green Setting (Gmax), s	6.2	49.8	6.8	27.0	16.2	39.8	5.9	27.9
Max Q Clear Time (g_c+I1), s	6.3	36.9	6.0	9.8	9.0	14.6	3.4	3.8
Green Ext Time (p_c), s	0.0	9.4	0.0	0.7	0.1	5.3	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	23.8
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	58	1708	27	38	2064	61	4	26	10
Future Volume (vph)	58	1708	27	38	2064	61	4	26	10
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	27.4	9.6	27.4
Total Split (s)	9.6	73.4	73.4	9.6	73.4	9.6	27.4	9.6	27.4
Total Split (%)	8.0%	61.2%	61.2%	8.0%	61.2%	8.0%	22.8%	8.0%	22.8%
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)	5.0	69.7	69.7	5.0	67.7	5.0	17.6	5.0	13.7
Actuated g/C Ratio	0.04	0.62	0.62	0.04	0.61	0.04	0.16	0.04	0.12
v/c Ratio	0.81	0.85	0.03	0.54	1.07	0.86	0.58	0.36	0.57
Control Delay	111.8	23.3	0.0	77.6	64.7	121.4	28.1	66.3	31.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	111.8	23.3	0.0	77.6	64.7	121.4	28.1	66.3	31.0
LOS	F	C	A	E	E	F	C	E	C
Approach Delay		25.8			64.9		52.0		36.6
Approach LOS		C			E		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 46.9	Intersection LOS: D
Intersection Capacity Utilization 83.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Trumble Rd. & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	1708	27	38	2064	17	61	4	49	26	10	128
Future Volume (veh/h)	58	1708	27	38	2064	17	61	4	49	26	10	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	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	65	1919	20	43	2319	17	69	4	108	29	11	96
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.25	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	84	2314	1032	61	2308	17	84	6	170	49	15	131
Arrive On Green	0.05	0.64	0.64	0.03	0.63	0.63	0.05	0.11	0.11	0.03	0.09	0.09
Sat Flow, veh/h	1810	3610	1610	1810	3673	27	1810	58	1561	1810	168	1468
Grp Volume(v), veh/h	65	1919	20	43	1138	1198	69	0	112	29	0	107
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1894	1810	0	1619	1810	0	1636
Q Serve(g_s), s	3.8	43.8	0.5	2.5	67.6	67.6	4.1	0.0	7.1	1.7	0.0	6.9
Cycle Q Clear(g_c), s	3.8	43.8	0.5	2.5	67.6	67.6	4.1	0.0	7.1	1.7	0.0	6.9
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.96	1.00		0.90
Lane Grp Cap(c), veh/h	84	2314	1032	61	1134	1190	84	0	176	49	0	146
V/C Ratio(X)	0.77	0.83	0.02	0.71	1.00	1.01	0.82	0.00	0.64	0.59	0.00	0.73
Avail Cap(c_a), veh/h	84	2314	1032	84	1134	1190	84	0	331	84	0	335
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	50.7	14.8	7.0	51.5	20.0	20.0	50.8	0.0	45.9	51.8	0.0	47.7
Incr Delay (d2), s/veh	32.5	2.7	0.0	6.8	27.5	27.6	42.8	0.0	3.8	4.3	0.0	6.9
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	2.4	15.6	0.2	1.2	31.7	33.3	2.8	0.0	3.0	0.8	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.3	17.5	7.0	58.3	47.5	47.6	93.7	0.0	49.7	56.0	0.0	54.7
LnGrp LOS	F	B	A	E	F	F	F	A	D	E	A	D
Approach Vol, veh/h		2004			2379			181			136	
Approach Delay, s/veh		19.5			47.8			66.4			55.0	
Approach LOS		B			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	74.8	9.6	15.0	9.6	73.4	7.5	17.1
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	5.0	67.6	5.0	22.0	5.0	67.6	5.0	22.0
Max Q Clear Time (g_c+I1), s	4.5	45.8	6.1	8.9	5.8	69.6	3.7	9.1
Green Ext Time (p_c), s	0.0	14.9	0.0	0.4	0.0	0.0	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	36.6
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↱			↱
Traffic Vol, veh/h	0	1790	2102	5	0	17
Future Vol, veh/h	0	1790	2102	5	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1946	2285	5	0	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1145
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	196
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	196
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	25.3
HCM LOS			D

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	196
HCM Lane V/C Ratio	-	-	-	0.094
HCM Control Delay (s)	-	-	-	25.3
HCM Lane LOS	-	-	-	D
HCM 95th %tile Q(veh)	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↱
Traffic Vol, veh/h	0	1790	2096	4	0	11
Future Vol, veh/h	0	1790	2096	4	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1946	2278	4	0	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1141
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	197
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	197
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

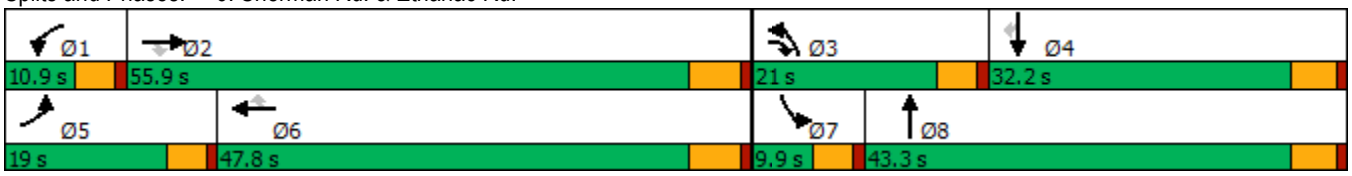
Approach	EB	WB	SB
HCM Control Delay, s	0	0	24.5
HCM LOS			C

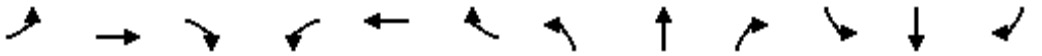
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	197
HCM Lane V/C Ratio	-	-	-	0.061
HCM Control Delay (s)	-	-	-	24.5
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	244	1194	351	53	1409	24	548	59	16	35	136
Future Volume (vph)	244	1194	351	53	1409	24	548	59	16	35	136
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8	7	4	
Permitted Phases			2			6					4
Detector Phase	5	2	3	1	6	6	3	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	27.8	9.6	32.2	9.6	32.2	32.2
Total Split (s)	19.0	55.9	21.0	10.9	47.8	47.8	21.0	43.3	9.9	32.2	32.2
Total Split (%)	15.8%	46.6%	17.5%	9.1%	39.8%	39.8%	17.5%	36.1%	8.3%	26.8%	26.8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.2	3.6	4.2	4.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	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	4.6	4.6	5.8	5.8	4.6	5.2	4.6	5.2	5.2
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	14.5	52.5	70.2	6.1	42.2	42.2	16.5	30.3	5.2	13.1	13.1
Actuated g/C Ratio	0.14	0.49	0.66	0.06	0.40	0.40	0.16	0.28	0.05	0.12	0.12
v/c Ratio	1.04	0.70	0.31	0.54	1.03	0.03	1.06	0.29	0.20	0.15	0.39
Control Delay	113.6	25.0	1.6	69.8	63.3	0.1	98.0	18.9	56.2	42.1	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	113.6	25.0	1.6	69.8	63.3	0.1	98.0	18.9	56.2	42.1	4.8
LOS	F	C	A	E	E	A	F	B	E	D	A
Approach Delay		32.5			62.5			81.2		16.2	
Approach LOS		C			E			F		B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 106.4	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 50.6	Intersection LOS: D
Intersection Capacity Utilization 87.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: Sherman Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	244	1194	351	53	1409	24	548	59	89	16	35	136
Future Volume (veh/h)	244	1194	351	53	1409	24	548	59	89	16	35	136
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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	254	1244	262	55	1468	25	571	61	93	17	36	142
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	249	1808	1042	71	1452	648	551	168	257	34	208	176
Arrive On Green	0.14	0.50	0.50	0.04	0.40	0.40	0.16	0.25	0.25	0.02	0.11	0.11
Sat Flow, veh/h	1810	3610	1577	1810	3610	1610	3510	679	1035	1810	1900	1610
Grp Volume(v), veh/h	254	1244	262	55	1468	25	571	0	154	17	36	142
Grp Sat Flow(s),veh/h/ln	1810	1805	1577	1810	1805	1610	1755	0	1714	1810	1900	1610
Q Serve(g_s), s	14.4	27.4	7.1	3.1	42.0	1.0	16.4	0.0	7.8	1.0	1.8	9.0
Cycle Q Clear(g_c), s	14.4	27.4	7.1	3.1	42.0	1.0	16.4	0.0	7.8	1.0	1.8	9.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	249	1808	1042	71	1452	648	551	0	425	34	208	176
V/C Ratio(X)	1.02	0.69	0.25	0.77	1.01	0.04	1.04	0.00	0.36	0.50	0.17	0.81
Avail Cap(c_a), veh/h	249	1808	1042	109	1452	648	551	0	625	92	491	416
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	1.00	1.00
Uniform Delay (d), s/veh	45.0	19.9	7.3	49.7	31.2	19.0	44.0	0.0	32.5	50.8	42.2	45.4
Incr Delay (d2), s/veh	61.7	1.1	0.1	7.1	26.4	0.0	47.9	0.0	0.5	4.3	0.4	8.3
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	10.5	10.6	2.2	1.5	22.1	0.4	10.6	0.0	3.2	0.5	0.9	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	106.7	21.0	7.5	56.8	57.6	19.0	91.9	0.0	33.0	55.0	42.6	53.7
LnGrp LOS	F	C	A	E	F	B	F	A	C	E	D	D
Approach Vol, veh/h		1760			1548			725			195	
Approach Delay, s/veh		31.3			57.0			79.4			51.8	
Approach LOS		C			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	58.1	21.0	16.6	19.0	47.8	6.5	31.1
Change Period (Y+Rc), s	4.6	5.8	4.6	5.2	4.6	5.8	4.6	5.2
Max Green Setting (Gmax), s	6.3	50.1	16.4	27.0	14.4	42.0	5.3	38.1
Max Q Clear Time (g_c+I1), s	5.1	29.4	18.4	11.0	16.4	44.0	3.0	9.8
Green Ext Time (p_c), s	0.0	9.6	0.0	0.5	0.0	0.0	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	49.9
HCM 6th LOS	D

APPENDIX 7.1: HORIZON YEAR (2045) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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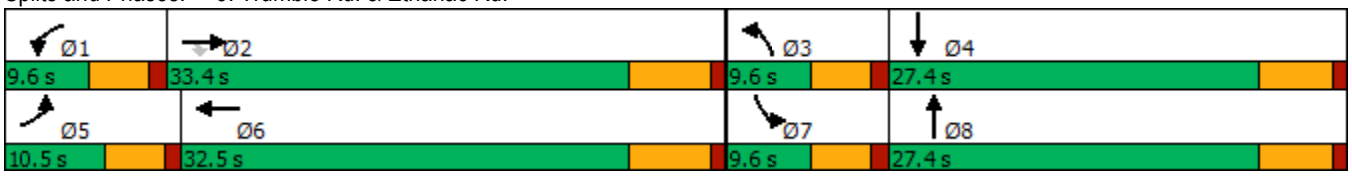
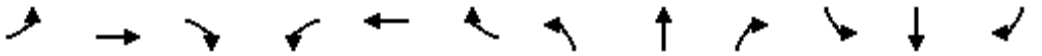
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	116	2178	14	65	2617	90	5	20	15
Future Volume (vph)	116	2178	14	65	2617	90	5	20	15
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	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	27.4	9.6	27.4
Total Split (s)	10.5	33.4	33.4	9.6	32.5	9.6	27.4	9.6	27.4
Total Split (%)	13.1%	41.8%	41.8%	12.0%	40.6%	12.0%	34.3%	12.0%	34.3%
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)	6.0	30.1	30.1	5.1	27.0	6.4	18.0	5.1	12.2
Actuated g/C Ratio	0.09	0.44	0.44	0.07	0.39	0.09	0.26	0.07	0.18
v/c Ratio	0.83	2.93	0.02	0.55	4.06	0.60	0.39	0.17	0.32
Control Delay	74.6	886.7	0.1	50.9	1392.1	52.2	5.9	35.6	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.6	886.7	0.1	50.9	1392.1	52.2	5.9	35.6	9.8
LOS	E	F	A	D	F	D	A	D	A
Approach Delay		840.5			1360.5		19.8		13.8
Approach LOS		F			F		B		B

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 68.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 4.06	
Intersection Signal Delay: 1038.2	Intersection LOS: F
Intersection Capacity Utilization 163.4%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 3: Trumble Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	2178	14	65	2617	78	90	5	57	20	15	92
Future Volume (veh/h)	116	2178	14	65	2617	78	90	5	57	20	15	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	130	2447	15	73	2940	87	101	6	156	22	17	87
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.25	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	161	828	702	101	740	22	130	11	273	45	35	178
Arrive On Green	0.09	0.44	0.44	0.06	0.40	0.40	0.07	0.18	0.18	0.03	0.13	0.13
Sat Flow, veh/h	1810	1900	1610	1810	1836	54	1810	60	1559	1810	270	1381
Grp Volume(v), veh/h	130	2447	15	73	0	3027	101	0	162	22	0	104
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1810	0	1890	1810	0	1619	1810	0	1651
Q Serve(g_s), s	4.7	28.9	0.4	2.6	0.0	26.7	3.6	0.0	6.1	0.8	0.0	3.9
Cycle Q Clear(g_c), s	4.7	28.9	0.4	2.6	0.0	26.7	3.6	0.0	6.1	0.8	0.0	3.9
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.96	1.00		0.84
Lane Grp Cap(c), veh/h	161	828	702	101	0	761	130	0	284	45	0	212
V/C Ratio(X)	0.81	2.95	0.02	0.72	0.00	3.98	0.78	0.00	0.57	0.48	0.00	0.49
Avail Cap(c_a), veh/h	161	828	702	136	0	761	136	0	537	136	0	548
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	29.6	18.7	10.6	30.8	0.0	19.8	30.2	0.0	25.0	31.9	0.0	26.9
Incr Delay (d2), s/veh	23.7	882.4	0.0	6.4	0.0	1342.2	20.9	0.0	1.8	2.9	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	213.1	0.1	1.2	0.0	293.3	2.2	0.0	2.3	0.4	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.3	901.1	10.7	37.2	0.0	1362.0	51.1	0.0	26.9	34.8	0.0	28.6
LnGrp LOS	D	F	B	D	A	F	D	A	C	C	A	C
Approach Vol, veh/h		2592			3100			263			126	
Approach Delay, s/veh		853.4			1330.8			36.2			29.7	
Approach LOS		F			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	34.7	9.4	13.9	10.5	32.5	6.3	17.0
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	5.0	27.6	5.0	22.0	5.9	26.7	5.0	22.0
Max Q Clear Time (g_c+I1), s	4.6	30.9	5.6	5.9	6.7	28.7	2.8	8.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.7

Intersection Summary		
HCM 6th Ctrl Delay		1044.4
HCM 6th LOS		F

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	135	1588	532	90	2332	245	197	178	228	265	84	231
Future Vol, veh/h	135	1588	532	90	2332	245	197	178	228	265	84	231
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	147	1726	578	98	2535	266	214	193	248	288	91	251

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2801	0	0	2304	0	0	5344	5306	2016	5395	5462	2668
Stage 1	-	-	-	-	-	-	2309	2309	-	2864	2864	-
Stage 2	-	-	-	-	-	-	3035	2997	-	2531	2598	-
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	~ 141	-	-	221	-	-	0	0	~ 74	0	0	~ 30
Stage 1	-	-	-	-	-	-	~ 52	~ 73	-	~ 24	~ 38	-
Stage 2	-	-	-	-	-	-	~ 19	~ 32	-	~ 38	~ 52	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	~ 141	-	-	221	-	-	-	0	~ 74	-	0	~ 30
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	~ 52	0	-	~ 24	~ 38	-
Stage 2	-	-	-	-	-	-	~ 196	~ 32	-	-	0	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.9	1.1		
HCM LOS			-	-

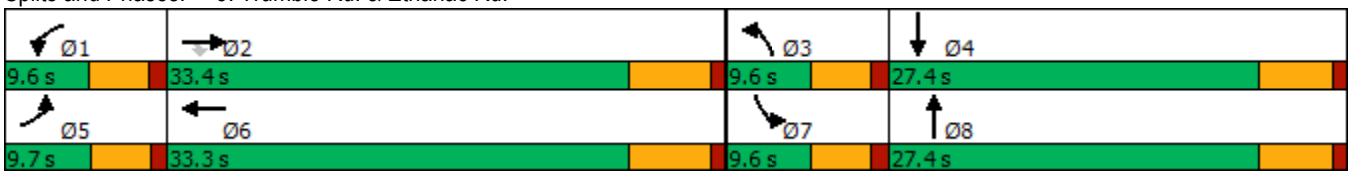
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	~ 141	-	-	221	-	-	-
HCM Lane V/C Ratio	-	1.041	-	-	0.443	-	-	-
HCM Control Delay (s)	-	149.4	0	-	33.6	0	-	-
HCM Lane LOS	-	F	A	-	D	A	-	-
HCM 95th %tile Q(veh)	-	7.8	-	-	2.1	-	-	-

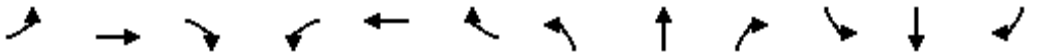
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	84	2515	31	41	2385	70	5	91	11
Future Volume (vph)	84	2515	31	41	2385	70	5	91	11
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	27.4	9.6	27.4
Total Split (s)	9.7	33.4	33.4	9.6	33.3	9.6	27.4	9.6	27.4
Total Split (%)	12.1%	41.8%	41.8%	12.0%	41.6%	12.0%	34.3%	12.0%	34.3%
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)	5.1	31.7	31.7	5.0	27.6	5.0	12.5	5.0	14.5
Actuated g/C Ratio	0.07	0.45	0.45	0.07	0.39	0.07	0.18	0.07	0.20
v/c Ratio	0.72	3.32	0.04	0.36	3.76	0.62	0.59	0.80	0.36
Control Delay	65.8	1061.7	0.1	41.2	1257.4	56.7	15.8	77.1	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.8	1061.7	0.1	41.2	1257.4	56.7	15.8	77.1	7.9
LOS	E	F	A	D	F	E	B	E	A
Approach Delay		1017.5			1237.5		25.7		34.1
Approach LOS		F			F		C		C

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 70.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 3.76	
Intersection Signal Delay: 1022.7	Intersection LOS: F
Intersection Capacity Utilization 158.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 3: Trumble Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	2515	31	41	2385	83	70	5	60	91	11	138
Future Volume (veh/h)	84	2515	31	41	2385	83	70	5	60	91	11	138
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	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	94	2826	25	46	2680	91	79	6	152	102	12	107
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.25	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	121	829	703	78	753	26	104	9	221	131	26	231
Arrive On Green	0.07	0.44	0.44	0.04	0.41	0.41	0.06	0.14	0.14	0.07	0.16	0.16
Sat Flow, veh/h	1810	1900	1610	1810	1825	62	1810	62	1558	1810	165	1470
Grp Volume(v), veh/h	94	2826	25	46	0	2771	79	0	158	102	0	119
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1810	0	1887	1810	0	1620	1810	0	1635
Q Serve(g_s), s	3.4	29.1	0.6	1.7	0.0	27.5	2.9	0.0	6.2	3.7	0.0	4.4
Cycle Q Clear(g_c), s	3.4	29.1	0.6	1.7	0.0	27.5	2.9	0.0	6.2	3.7	0.0	4.4
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.96	1.00		0.90
Lane Grp Cap(c), veh/h	121	829	703	78	0	779	104	0	230	131	0	256
V/C Ratio(X)	0.78	3.41	0.04	0.59	0.00	3.56	0.76	0.00	0.69	0.78	0.00	0.46
Avail Cap(c_a), veh/h	138	829	703	136	0	779	136	0	535	136	0	540
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	30.6	18.8	10.8	31.3	0.0	19.6	30.9	0.0	27.2	30.4	0.0	25.6
Incr Delay (d2), s/veh	17.9	1086.5	0.0	2.6	0.0	1154.6	11.3	0.0	3.6	21.4	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	260.4	0.2	0.7	0.0	259.4	1.5	0.0	2.4	2.3	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.6	1105.3	10.8	34.0	0.0	1174.2	42.2	0.0	30.8	51.8	0.0	26.9
LnGrp LOS	D	F	B	C	A	F	D	A	C	D	A	C
Approach Vol, veh/h		2945			2817			237			221	
Approach Delay, s/veh		1062.3			1155.6			34.6			38.4	
Approach LOS		F			F			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	34.9	8.4	15.9	9.1	33.3	9.4	14.9
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	5.0	27.6	5.0	22.0	5.1	27.5	5.0	22.0
Max Q Clear Time (g_c+I1), s	3.7	31.1	4.9	6.4	5.4	29.5	5.7	8.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.7

Intersection Summary		
HCM 6th Ctrl Delay		1029.0
HCM 6th LOS		F

Intersection	
Int Delay, s/veh	12.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	270	2042	354	243	1728	215	552	132	159	312	306	230
Future Vol, veh/h	270	2042	354	243	1728	215	552	132	159	312	306	230
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	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	281	2127	369	253	1800	224	575	138	166	325	319	240

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2024	0	0	2496	0	0	5572	5404	2312	5444	5476	1912
Stage 1	-	-	-	-	-	-	2874	2874	-	2418	2418	-
Stage 2	-	-	-	-	-	-	2698	2530	-	3026	3058	-
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	284	-	-	~ 186	-	-	0	0	~ 49	0	0	~ 86
Stage 1	-	-	-	-	-	-	~ 23	~ 37	-	~ 44	~ 65	-
Stage 2	-	-	-	-	-	-	~ 30	~ 56	-	~ 19	~ 30	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	284	-	-	~ 186	-	-	-	0	~ 49	-	0	~ 86
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	~ 23	~ 37	-	~ 44	0	-
Stage 2	-	-	-	-	-	-	-	0	-	~ 123	~ 30	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	26.8		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	284	-	-	~ 186	-	-	-
HCM Lane V/C Ratio	-	0.99	-	-	1.361	-	-	-
HCM Control Delay (s)	-	90.7	0	-	241.4	0	-	-
HCM Lane LOS	-	F	A	-	F	A	-	-
HCM 95th %tile Q(veh)	-	10.1	-	-	14.8	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

APPENDIX 7.2: HORIZON YEAR (2045) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	0	199	4	0	127
Future Vol, veh/h	5	0	199	4	0	127
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	5	0	216	4	0	138

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	356	218	0	0	220	0
Stage 1	218	-	-	-	-	-
Stage 2	138	-	-	-	-	-
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	646	827	-	-	1361	-
Stage 1	823	-	-	-	-	-
Stage 2	894	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	646	827	-	-	1361	-
Mov Cap-2 Maneuver	646	-	-	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	894	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	646	1361	-
HCM Lane V/C Ratio	-	-	0.008	-	-
HCM Control Delay (s)	-	-	10.6	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	0	203	6	0	132
Future Vol, veh/h	8	0	203	6	0	132
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	9	0	221	7	0	143

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	368	225	0	0	228	0
Stage 1	225	-	-	-	-	-
Stage 2	143	-	-	-	-	-
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	636	819	-	-	1352	-
Stage 1	817	-	-	-	-	-
Stage 2	889	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	636	819	-	-	1352	-
Mov Cap-2 Maneuver	636	-	-	-	-	-
Stage 1	817	-	-	-	-	-
Stage 2	889	-	-	-	-	-

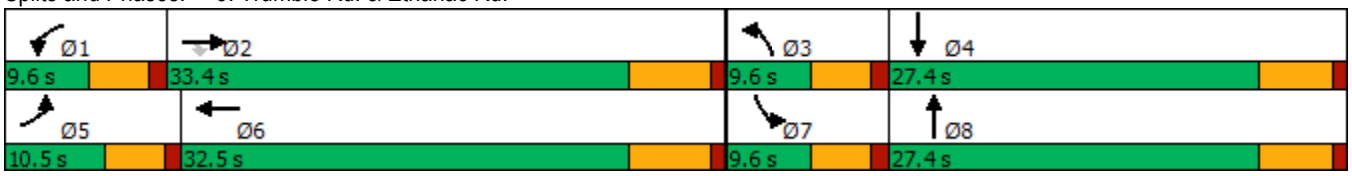
Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	0
HCM LOS	B		

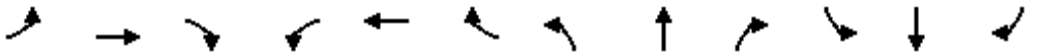
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	636	1352	-
HCM Lane V/C Ratio	-	-	0.014	-	-
HCM Control Delay (s)	-	-	10.7	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	126	2195	14	66	2619	90	5	20	15
Future Volume (vph)	126	2195	14	66	2619	90	5	20	15
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	27.4	9.6	27.4
Total Split (s)	10.5	33.4	33.4	9.6	32.5	9.6	27.4	9.6	27.4
Total Split (%)	13.1%	41.8%	41.8%	12.0%	40.6%	12.0%	34.3%	12.0%	34.3%
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)	6.0	30.1	30.1	5.1	27.0	6.4	18.0	5.1	12.2
Actuated g/C Ratio	0.09	0.44	0.44	0.07	0.39	0.09	0.26	0.07	0.18
v/c Ratio	0.90	2.95	0.02	0.56	4.06	0.60	0.39	0.17	0.35
Control Delay	88.4	896.8	0.1	51.5	1393.9	52.2	5.9	35.6	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.4	896.8	0.1	51.5	1393.9	52.2	5.9	35.6	9.5
LOS	F	F	A	D	F	D	A	D	A
Approach Delay		847.6			1361.9		19.8		13.2
Approach LOS		F			F		B		B

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 68.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 4.06	
Intersection Signal Delay: 1038.7	Intersection LOS: F
Intersection Capacity Utilization 163.6%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 3: Trumble Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	2195	14	66	2619	78	90	5	57	20	15	105
Future Volume (veh/h)	126	2195	14	66	2619	78	90	5	57	20	15	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	142	2466	15	74	2943	87	101	6	156	22	17	102
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.25	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	160	823	697	101	735	22	130	11	281	45	31	188
Arrive On Green	0.09	0.43	0.43	0.06	0.40	0.40	0.07	0.18	0.18	0.03	0.13	0.13
Sat Flow, veh/h	1810	1900	1610	1810	1836	54	1810	60	1559	1810	235	1411
Grp Volume(v), veh/h	142	2466	15	74	0	3030	101	0	162	22	0	119
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1810	0	1890	1810	0	1619	1810	0	1646
Q Serve(g_s), s	5.2	28.9	0.4	2.7	0.0	26.7	3.7	0.0	6.1	0.8	0.0	4.5
Cycle Q Clear(g_c), s	5.2	28.9	0.4	2.7	0.0	26.7	3.7	0.0	6.1	0.8	0.0	4.5
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.96	1.00		0.86
Lane Grp Cap(c), veh/h	160	823	697	101	0	757	130	0	292	45	0	220
V/C Ratio(X)	0.89	3.00	0.02	0.73	0.00	4.00	0.78	0.00	0.56	0.48	0.00	0.54
Avail Cap(c_a), veh/h	160	823	697	136	0	757	136	0	534	136	0	543
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	30.1	18.9	10.8	31.0	0.0	20.0	30.4	0.0	24.9	32.1	0.0	27.0
Incr Delay (d2), s/veh	39.4	902.3	0.0	7.5	0.0	1354.7	21.2	0.0	1.7	3.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	216.3	0.1	1.3	0.0	294.3	2.2	0.0	2.3	0.4	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.4	921.3	10.8	38.4	0.0	1374.7	51.6	0.0	26.6	35.0	0.0	29.1
LnGrp LOS	E	F	B	D	A	F	D	A	C	D	A	C
Approach Vol, veh/h		2623			3104			263			141	
Approach Delay, s/veh		869.9			1342.9			36.2			30.0	
Approach LOS		F			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	34.7	9.4	14.3	10.5	32.5	6.3	17.4
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	5.0	27.6	5.0	22.0	5.9	26.7	5.0	22.0
Max Q Clear Time (g_c+I1), s	4.7	30.9	5.7	6.5	7.2	28.7	2.8	8.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	1054.3
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↱			↗
Traffic Vol, veh/h	0	2272	2761	14	0	2
Future Vol, veh/h	0	2272	2761	14	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	2470	3001	15	0	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	3009
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	18
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	18
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	230.8
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	18
HCM Lane V/C Ratio	-	-	-	0.121
HCM Control Delay (s)	-	-	-	230.8
HCM Lane LOS	-	-	-	F
HCM 95th %tile Q(veh)	-	-	-	0.3

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑↱			↱
Traffic Vol, veh/h	0	2272	2774	9	0	1
Future Vol, veh/h	0	2272	2774	9	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	2470	3015	10	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	3020
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	18
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	18
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	217.5
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	18
HCM Lane V/C Ratio	-	-	-	0.06
HCM Control Delay (s)	-	-	-	217.5
HCM Lane LOS	-	-	-	F
HCM 95th %tile Q(veh)	-	-	-	0.2

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	152	1589	532	90	2338	245	197	178	228	265	84	231
Future Vol, veh/h	152	1589	532	90	2338	245	197	178	228	265	84	231
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	165	1727	578	98	2541	266	214	193	248	288	91	251

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2807	0	0	2305	0	0	5387	5349	2017	5438	5505	2674
Stage 1	-	-	-	-	-	-	2346	2346	-	2870	2870	-
Stage 2	-	-	-	-	-	-	3041	3003	-	2568	2635	-
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	~ 140	-	-	221	-	-	0	0	~ 74	0	0	~ 29
Stage 1	-	-	-	-	-	-	~ 49	~ 70	-	~ 24	~ 37	-
Stage 2	-	-	-	-	-	-	~ 19	~ 32	-	~ 36	~ 50	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	~ 140	-	-	221	-	-	-	0	~ 74	-	0	~ 29
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	~ 49	0	-	~ 24	~ 37	-
Stage 2	-	-	-	-	-	-	~ 214	~ 32	-	-	0	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13	1.1		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	~ 140	-	-	221	-	-	-
HCM Lane V/C Ratio	-	1.18	-	-	0.443	-	-	-
HCM Control Delay (s)	-	194.9	0	-	33.6	0	-	-
HCM Lane LOS	-	F	A	-	D	A	-	-
HCM 95th %tile Q(veh)	-	9.6	-	-	2.1	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	0	172	2	0	240
Future Vol, veh/h	2	0	172	2	0	240
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	2	0	187	2	0	261

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	449	188	0	0	189	0
Stage 1	188	-	-	-	-	-
Stage 2	261	-	-	-	-	-
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	571	859	-	-	1397	-
Stage 1	849	-	-	-	-	-
Stage 2	787	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	571	859	-	-	1397	-
Mov Cap-2 Maneuver	571	-	-	-	-	-
Stage 1	849	-	-	-	-	-
Stage 2	787	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	571	1397	-
HCM Lane V/C Ratio	-	-	0.004	-	-
HCM Control Delay (s)	-	-	11.3	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	0	174	4	0	242
Future Vol, veh/h	4	0	174	4	0	242
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	4	0	189	4	0	263

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	454	191	0	0	193	0
Stage 1	191	-	-	-	-	-
Stage 2	263	-	-	-	-	-
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	568	856	-	-	1392	-
Stage 1	846	-	-	-	-	-
Stage 2	786	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	568	856	-	-	1392	-
Mov Cap-2 Maneuver	568	-	-	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	786	-	-	-	-	-

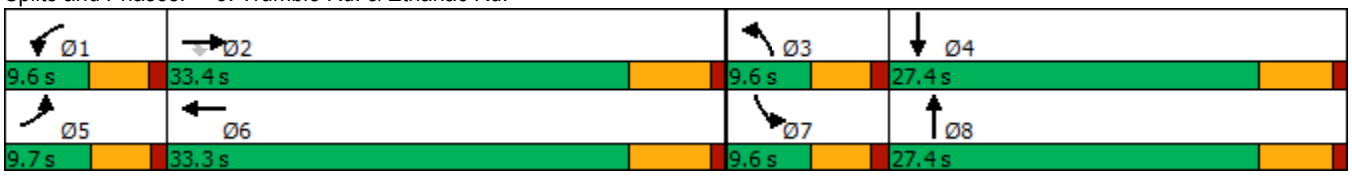
Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	0
HCM LOS	B		

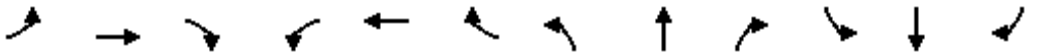
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	568	1392	-
HCM Lane V/C Ratio	-	-	0.008	-	-
HCM Control Delay (s)	-	-	11.4	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	90	2522	31	48	2406	70	5	91	11
Future Volume (vph)	90	2522	31	48	2406	70	5	91	11
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	27.4	9.6	27.4
Total Split (s)	9.7	33.4	33.4	9.6	33.3	9.6	27.4	9.6	27.4
Total Split (%)	12.1%	41.8%	41.8%	12.0%	41.6%	12.0%	34.3%	12.0%	34.3%
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)	5.1	31.7	31.7	5.0	27.6	5.0	12.5	5.0	14.5
Actuated g/C Ratio	0.07	0.45	0.45	0.07	0.39	0.07	0.18	0.07	0.20
v/c Ratio	0.78	3.33	0.04	0.43	3.79	0.62	0.59	0.80	0.38
Control Delay	72.7	1065.9	0.1	43.9	1271.3	56.7	15.8	77.1	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.7	1065.9	0.1	43.9	1271.3	56.7	15.8	77.1	7.8
LOS	E	F	A	D	F	E	B	E	A
Approach Delay		1019.6			1248.1		25.7		33.4
Approach LOS		F			F		C		C

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 70.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 3.79	
Intersection Signal Delay: 1028.3	Intersection LOS: F
Intersection Capacity Utilization 159.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 3: Trumble Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	2522	31	48	2406	83	70	5	60	91	11	144
Future Volume (veh/h)	90	2522	31	48	2406	83	70	5	60	91	11	144
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	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	101	2834	25	54	2703	91	79	6	152	102	12	114
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.25	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	130	826	700	86	749	25	104	9	220	131	24	231
Arrive On Green	0.07	0.43	0.43	0.05	0.41	0.41	0.06	0.14	0.14	0.07	0.16	0.16
Sat Flow, veh/h	1810	1900	1610	1810	1826	61	1810	62	1558	1810	156	1478
Grp Volume(v), veh/h	101	2834	25	54	0	2794	79	0	158	102	0	126
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1810	0	1887	1810	0	1620	1810	0	1634
Q Serve(g_s), s	3.7	29.1	0.6	2.0	0.0	27.5	2.9	0.0	6.2	3.7	0.0	4.7
Cycle Q Clear(g_c), s	3.7	29.1	0.6	2.0	0.0	27.5	2.9	0.0	6.2	3.7	0.0	4.7
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.96	1.00		0.90
Lane Grp Cap(c), veh/h	130	826	700	86	0	774	104	0	229	131	0	255
V/C Ratio(X)	0.78	3.43	0.04	0.63	0.00	3.61	0.76	0.00	0.69	0.78	0.00	0.49
Avail Cap(c_a), veh/h	138	826	700	135	0	774	135	0	531	135	0	536
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	30.6	19.0	10.9	31.4	0.0	19.8	31.1	0.0	27.4	30.6	0.0	25.9
Incr Delay (d2), s/veh	20.5	1097.3	0.0	2.8	0.0	1177.3	11.7	0.0	3.7	21.7	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	261.9	0.2	0.9	0.0	262.9	1.5	0.0	2.4	2.3	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.1	1116.2	10.9	34.2	0.0	1197.1	42.9	0.0	31.1	52.3	0.0	27.3
LnGrp LOS	D	F	B	C	A	F	D	A	C	D	A	C
Approach Vol, veh/h		2960			2848			237			228	
Approach Delay, s/veh		1070.6			1175.0			35.0			38.5	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	34.9	8.5	15.9	9.4	33.3	9.5	14.9
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	5.0	27.6	5.0	22.0	5.1	27.5	5.0	22.0
Max Q Clear Time (g_c+I1), s	4.0	31.1	4.9	6.7	5.7	29.5	5.7	8.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	1041.4
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	2680	2521	5	0	17
Future Vol, veh/h	0	2680	2521	5	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	2913	2740	5	0	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	2743
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	26
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	26
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	298.6
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	26
HCM Lane V/C Ratio	-	-	-	0.711
HCM Control Delay (s)	-	-	-	298.6
HCM Lane LOS	-	-	-	F
HCM 95th %tile Q(veh)	-	-	-	2.2

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑↱			↱
Traffic Vol, veh/h	0	2680	2515	4	0	11
Future Vol, veh/h	0	2680	2515	4	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	2913	2734	4	0	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	2736
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	27
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	27
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	218.6
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	27
HCM Lane V/C Ratio	-	-	-	0.443
HCM Control Delay (s)	-	-	-	218.6
HCM Lane LOS	-	-	-	F
HCM 95th %tile Q(veh)	-	-	-	1.4

Intersection	
Int Delay, s/veh	13.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	277	2049	354	243	1730	215	552	132	159	312	306	230
Future Vol, veh/h	277	2049	354	243	1730	215	552	132	159	312	306	230
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	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	289	2134	369	253	1802	224	575	138	166	325	319	240

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2026	0	0	2503	0	0	5597	5429	2319	5469	5501	1914
Stage 1	-	-	-	-	-	-	2897	2897	-	2420	2420	-
Stage 2	-	-	-	-	-	-	2700	2532	-	3049	3081	-
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	~ 284	-	-	~ 185	-	-	0	0	~ 49	0	0	~ 86
Stage 1	-	-	-	-	-	-	~ 23	~ 36	-	~ 44	~ 64	-
Stage 2	-	-	-	-	-	-	~ 30	~ 56	-	~ 18	~ 29	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	~ 284	-	-	~ 185	-	-	-	0	~ 49	-	0	~ 86
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	~ 23	0	-	~ 44	0	-
Stage 2	-	-	-	-	-	-	-	0	-	-	0	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.1	27.2		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	~ 284	-	-	~ 185	-	-	-
HCM Lane V/C Ratio	-	1.016	-	-	1.368	-	-	-
HCM Control Delay (s)	-	97.5	0	-	244.6	0	-	-
HCM Lane LOS	-	F	A	-	F	A	-	-
HCM 95th %tile Q(veh)	-	10.7	-	-	14.9	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

APPENDIX 7.3: HORIZON YEAR (2045) WITH PROJECT CONDITIONS

TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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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	01/18/23
Jurisdiction: City of Perris				CHK CS	DATE	01/18/23
Major Street: Trumble Rd.				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 = **3,435** vpd Minor Street Future ADT = **24** 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 **3,435**	*1* **24**	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 **3,435**	*1* **24**	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** 1% **B** 2%				

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	01/18/23
Jurisdiction: City of Perris				CHK CS	DATE	01/18/23
Major Street: Trumble Rd.				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 = **3,495** vpd Minor Street Future ADT = **36** 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			
	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: XX / Not Satisfied: XX				
Number of lanes for moving traffic on each approach				
Major Street: *1* **3,495** / Minor Street: *1* **36**	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: *1* **3,495** / Minor Street: *1* **36**	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: 3%				

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: HORIZON YEAR (2045) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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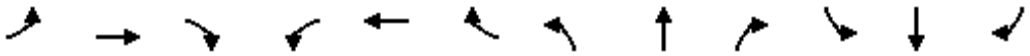
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	126	2195	14	66	2619	90	5	20	15
Future Volume (vph)	126	2195	14	66	2619	90	5	20	15
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6	3	8	7	4
Permitted Phases			2						
Detector Phase	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	27.4	9.6	27.4
Total Split (s)	13.0	71.0	71.0	10.6	68.6	11.0	28.2	10.2	27.4
Total Split (%)	10.8%	59.2%	59.2%	8.8%	57.2%	9.2%	23.5%	8.5%	22.8%
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)	8.4	65.3	65.3	6.0	62.9	6.4	20.3	5.4	13.1
Actuated g/C Ratio	0.08	0.59	0.59	0.05	0.57	0.06	0.18	0.05	0.12
v/c Ratio	1.04	0.81	0.02	0.76	1.04	0.98	0.58	0.26	0.48
Control Delay	140.2	21.5	0.0	96.5	52.2	137.6	24.8	60.0	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	140.2	21.5	0.0	96.5	52.2	137.6	24.8	60.0	21.8
LOS	F	C	A	F	D	F	C	E	C
Approach Delay		27.8			53.3		58.8		27.2
Approach LOS		C			D		E		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 42.2	Intersection LOS: D
Intersection Capacity Utilization 84.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Trumble Rd. & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	2195	14	66	2619	78	90	5	57	20	15	105
Future Volume (veh/h)	126	2195	14	66	2619	78	90	5	57	20	15	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	142	2466	15	74	2943	87	101	6	156	22	17	102
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.25	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	141	3155	979	95	3018	88	107	8	199	41	21	128
Arrive On Green	0.08	0.61	0.61	0.05	0.58	0.58	0.06	0.13	0.13	0.02	0.09	0.09
Sat Flow, veh/h	1810	5187	1610	1810	5179	152	1810	60	1559	1810	235	1411
Grp Volume(v), veh/h	142	2466	15	74	1956	1074	101	0	162	22	0	119
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1873	1810	0	1619	1810	0	1646
Q Serve(g_s), s	8.4	38.3	0.4	4.4	58.5	60.5	6.0	0.0	10.5	1.3	0.0	7.6
Cycle Q Clear(g_c), s	8.4	38.3	0.4	4.4	58.5	60.5	6.0	0.0	10.5	1.3	0.0	7.6
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.96	1.00		0.86
Lane Grp Cap(c), veh/h	141	3155	979	95	2015	1091	107	0	207	41	0	149
V/C Ratio(X)	1.01	0.78	0.02	0.78	0.97	0.98	0.94	0.00	0.78	0.54	0.00	0.80
Avail Cap(c_a), veh/h	141	3155	979	101	2015	1091	107	0	343	94	0	336
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	49.7	15.8	8.3	50.4	21.6	22.0	50.5	0.0	45.6	52.1	0.0	48.0
Incr Delay (d2), s/veh	77.5	1.3	0.0	26.8	13.7	23.5	67.0	0.0	6.4	4.2	0.0	9.3
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	6.7	13.2	0.1	2.6	23.9	29.6	4.7	0.0	4.5	0.6	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	127.2	17.1	8.4	77.3	35.3	45.5	117.4	0.0	52.0	56.3	0.0	57.4
LnGrp LOS	F	B	A	E	D	D	F	A	D	E	A	E
Approach Vol, veh/h		2623			3104			263			141	
Approach Delay, s/veh		23.0			39.8			77.1			57.2	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	71.3	11.0	15.2	13.0	68.6	7.0	19.2
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	6.0	65.2	6.4	22.0	8.4	62.8	5.6	22.8
Max Q Clear Time (g_c+I1), s	6.4	40.3	8.0	9.6	10.4	62.5	3.3	12.5
Green Ext Time (p_c), s	0.0	19.8	0.0	0.4	0.0	0.3	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	34.6
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↱			↱
Traffic Vol, veh/h	0	2272	2761	14	0	2
Future Vol, veh/h	0	2272	2761	14	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	2470	3001	15	0	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1508
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	123
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	123
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	34.8
HCM LOS			D

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	123
HCM Lane V/C Ratio	-	-	-	0.018
HCM Control Delay (s)	-	-	-	34.8
HCM Lane LOS	-	-	-	D
HCM 95th %tile Q(veh)	-	-	-	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↱			↱
Traffic Vol, veh/h	0	2272	2774	9	0	1
Future Vol, veh/h	0	2272	2774	9	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	2470	3015	10	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1513
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	122
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	122
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

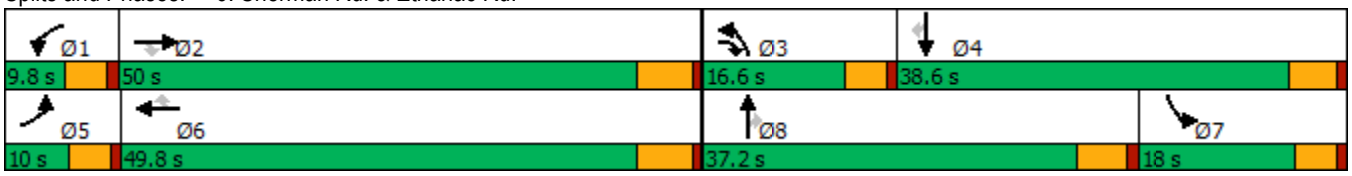
Approach	EB	WB	SB
HCM Control Delay, s	0	0	34.8
HCM LOS			D

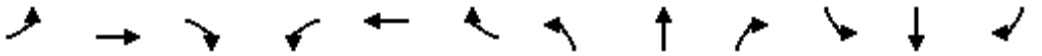
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	122
HCM Lane V/C Ratio	-	-	-	0.009
HCM Control Delay (s)	-	-	-	34.8
HCM Lane LOS	-	-	-	D
HCM 95th %tile Q(veh)	-	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	1589	532	90	2338	245	197	178	228	265	84	231
Future Volume (vph)	152	1589	532	90	2338	245	197	178	228	265	84	231
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	3	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	27.8	9.6	37.2	37.2	9.6	37.2	37.2
Total Split (s)	10.0	50.0	16.6	9.8	49.8	49.8	16.6	37.2	37.2	18.0	38.6	38.6
Total Split (%)	8.7%	43.5%	14.4%	8.5%	43.3%	43.3%	14.4%	32.3%	32.3%	15.7%	33.6%	33.6%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.2	4.2	3.6	4.2	4.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	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	4.6	4.6	5.8	5.8	4.6	5.2	5.2	4.6	5.2	5.2
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.4	44.4	60.2	5.2	44.2	44.2	9.9	17.2	17.2	13.5	20.8	20.8
Actuated g/C Ratio	0.05	0.44	0.60	0.05	0.44	0.44	0.10	0.17	0.17	0.13	0.21	0.21
v/c Ratio	0.88	0.75	0.48	0.54	1.12	0.33	0.60	0.59	0.67	1.20	0.23	0.59
Control Delay	89.0	27.3	2.5	60.1	87.1	7.8	52.0	45.6	28.2	160.2	34.5	25.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.0	27.3	2.5	60.1	87.1	7.8	52.0	45.6	28.2	160.2	34.5	25.1
LOS	F	C	A	E	F	A	D	D	C	F	C	C
Approach Delay		25.6			78.9			41.1			88.2	
Approach LOS		C			E			D			F	

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 100.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 56.3	Intersection LOS: E
Intersection Capacity Utilization 91.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: Sherman Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	1589	532	90	2338	245	197	178	228	265	84	231
Future Volume (veh/h)	152	1589	532	90	2338	245	197	178	228	265	84	231
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	165	1727	361	98	2541	212	214	193	194	288	91	197
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	195	2394	872	168	2353	731	289	262	222	250	385	326
Arrive On Green	0.06	0.46	0.46	0.05	0.45	0.45	0.08	0.14	0.14	0.14	0.20	0.20
Sat Flow, veh/h	3510	5187	1610	3510	5187	1610	3619	1900	1607	1810	1900	1610
Grp Volume(v), veh/h	165	1727	361	98	2541	212	214	193	194	288	91	197
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1755	1729	1610	1810	1900	1607	1810	1900	1610
Q Serve(g_s), s	4.5	26.1	12.9	2.7	44.0	4.3	5.6	9.5	9.5	13.4	3.9	10.8
Cycle Q Clear(g_c), s	4.5	26.1	12.9	2.7	44.0	4.3	5.6	9.5	9.5	13.4	3.9	10.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	195	2394	872	168	2353	731	289	262	222	250	385	326
V/C Ratio(X)	0.84	0.72	0.41	0.58	1.08	0.29	0.74	0.74	0.88	1.15	0.24	0.60
Avail Cap(c_a), veh/h	195	2394	872	188	2353	731	448	627	530	250	654	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.4	21.1	13.2	45.2	26.5	4.8	43.6	40.1	28.0	41.8	32.4	35.1
Incr Delay (d2), s/veh	26.0	1.1	0.3	1.8	44.3	0.2	1.4	4.0	10.4	104.2	0.3	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	9.7	4.4	1.2	25.7	2.7	2.5	4.6	4.2	13.1	1.8	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.3	22.2	13.5	47.0	70.8	5.1	45.1	44.1	38.4	146.0	32.7	36.9
LnGrp LOS	E	C	B	D	F	A	D	D	D	F	C	D
Approach Vol, veh/h		2253			2851			601			576	
Approach Delay, s/veh		24.4			65.1			42.6			90.8	
Approach LOS		C			E			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	50.6	12.3	24.8	10.0	49.8	18.6	18.6
Change Period (Y+Rc), s	4.6	5.8	4.6	5.2	4.6	5.8	5.2	* 5.2
Max Green Setting (Gmax), s	5.2	44.2	12.0	33.4	5.4	44.0	13.4	* 32
Max Q Clear Time (g_c+I1), s	4.7	28.1	7.6	12.8	6.5	46.0	15.4	11.5
Green Ext Time (p_c), s	0.0	11.2	0.2	1.1	0.0	0.0	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	50.7
HCM 6th LOS	D

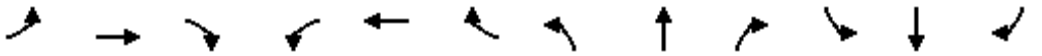
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	90	2522	31	48	2406	70	5	91	11
Future Volume (vph)	90	2522	31	48	2406	70	5	91	11
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	27.4	9.6	27.4
Total Split (s)	12.4	71.0	71.0	9.6	68.2	10.9	27.4	12.0	28.5
Total Split (%)	10.3%	59.2%	59.2%	8.0%	56.8%	9.1%	22.8%	10.0%	23.8%
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)	7.8	67.4	67.4	5.0	62.5	6.3	16.6	7.4	17.7
Actuated g/C Ratio	0.07	0.59	0.59	0.04	0.54	0.05	0.14	0.06	0.15
v/c Ratio	0.82	0.93	0.04	0.69	0.99	0.80	0.80	0.88	0.54
Control Delay	98.7	30.0	0.1	96.2	42.4	103.4	50.2	110.7	28.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	98.7	30.0	0.1	96.2	42.4	103.4	50.2	110.7	28.4
LOS	F	C	A	F	D	F	D	F	C
Approach Delay		31.9			43.4		63.1		58.8
Approach LOS		C			D		E		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 39.8	Intersection LOS: D
Intersection Capacity Utilization 84.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Trumble Rd. & Ethanac Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	2522	31	48	2406	83	70	5	60	91	11	144
Future Volume (veh/h)	90	2522	31	48	2406	83	70	5	60	91	11	144
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	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	101	2834	25	54	2703	91	79	6	152	102	12	114
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.25	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	126	3075	954	70	2893	96	101	7	183	121	20	190
Arrive On Green	0.07	0.59	0.59	0.04	0.56	0.56	0.06	0.12	0.12	0.07	0.13	0.13
Sat Flow, veh/h	1810	5187	1610	1810	5151	172	1810	62	1558	1810	156	1478
Grp Volume(v), veh/h	101	2834	25	54	1805	989	79	0	158	102	0	126
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1865	1810	0	1620	1810	0	1634
Q Serve(g_s), s	6.1	54.2	0.7	3.3	52.9	54.7	4.8	0.0	10.6	6.2	0.0	8.1
Cycle Q Clear(g_c), s	6.1	54.2	0.7	3.3	52.9	54.7	4.8	0.0	10.6	6.2	0.0	8.1
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.96	1.00		0.90
Lane Grp Cap(c), veh/h	126	3075	954	70	1942	1047	101	0	190	121	0	210
V/C Ratio(X)	0.80	0.92	0.03	0.77	0.93	0.94	0.78	0.00	0.83	0.84	0.00	0.60
Avail Cap(c_a), veh/h	128	3075	954	82	1951	1052	103	0	322	121	0	341
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	50.7	20.2	9.3	52.7	22.2	22.6	51.5	0.0	47.7	51.0	0.0	45.5
Incr Delay (d2), s/veh	27.0	5.3	0.0	26.2	8.5	16.1	28.4	0.0	9.1	37.0	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	20.2	0.2	2.0	21.0	25.5	2.9	0.0	4.6	4.0	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.7	25.5	9.3	78.9	30.7	38.7	79.9	0.0	56.8	88.0	0.0	48.3
LnGrp LOS	E	C	A	E	C	D	E	A	E	F	A	D
Approach Vol, veh/h		2960			2848			237			228	
Approach Delay, s/veh		27.1			34.4			64.5			66.1	
Approach LOS		C			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	71.3	10.8	19.6	12.3	67.9	12.0	18.4
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	5.0	65.2	6.3	23.1	7.8	62.4	7.4	22.0
Max Q Clear Time (g_c+I1), s	5.3	56.2	6.8	10.1	8.1	56.7	8.2	12.6
Green Ext Time (p_c), s	0.0	8.5	0.0	0.5	0.0	5.4	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	33.3
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2680	2521	5	0	17
Future Vol, veh/h	0	2680	2521	5	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	2913	2740	5	0	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1373
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	149
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	149
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	32.6
HCM LOS			D

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	149
HCM Lane V/C Ratio	-	-	-	0.124
HCM Control Delay (s)	-	-	-	32.6
HCM Lane LOS	-	-	-	D
HCM 95th %tile Q(veh)	-	-	-	0.4

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2680	2515	4	0	11
Future Vol, veh/h	0	2680	2515	4	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	2913	2734	4	0	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1369
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	150
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	150
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

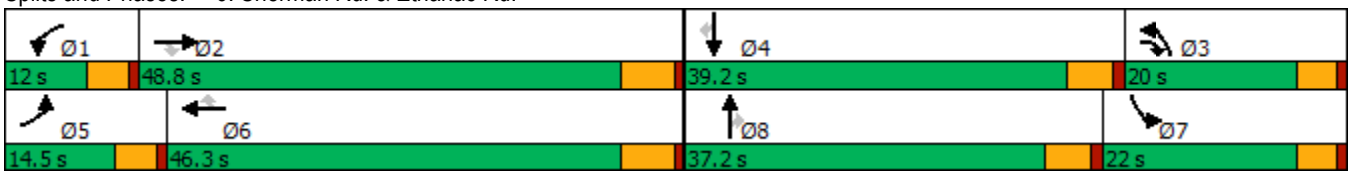
Approach	EB	WB	SB
HCM Control Delay, s	0	0	31.1
HCM LOS			D

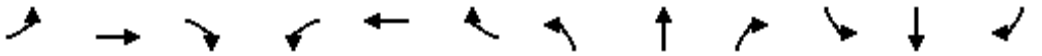
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	150
HCM Lane V/C Ratio	-	-	-	0.08
HCM Control Delay (s)	-	-	-	31.1
HCM Lane LOS	-	-	-	D
HCM 95th %tile Q(veh)	-	-	-	0.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	277	2049	354	243	1730	215	552	132	159	312	306	230
Future Volume (vph)	277	2049	354	243	1730	215	552	132	159	312	306	230
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	3	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	27.8	9.6	37.2	37.2	9.6	37.2	37.2
Total Split (s)	14.5	48.8	20.0	12.0	46.3	46.3	20.0	37.2	37.2	22.0	39.2	39.2
Total Split (%)	12.1%	40.7%	16.7%	10.0%	38.6%	38.6%	16.7%	31.0%	31.0%	18.3%	32.7%	32.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.2	4.2	3.6	4.2	4.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	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	4.6	4.6	5.8	5.8	4.6	5.2	5.2	4.6	5.2	5.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	9.9	43.1	59.8	7.4	40.6	40.6	15.4	16.0	16.0	23.4	24.0	24.0
Actuated g/C Ratio	0.09	0.39	0.54	0.07	0.37	0.37	0.14	0.15	0.15	0.21	0.22	0.22
v/c Ratio	0.92	1.05	0.38	1.08	0.94	0.31	1.14	0.50	0.47	0.85	0.77	0.53
Control Delay	84.7	69.1	5.2	129.9	45.7	6.5	127.3	49.0	14.0	63.6	53.3	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.7	69.1	5.2	129.9	45.7	6.5	127.3	49.0	14.0	63.6	53.3	21.4
LOS	F	E	A	F	D	A	F	D	B	E	D	C
Approach Delay		62.2			51.2			93.6			48.4	
Approach LOS		E			D			F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.14	
Intersection Signal Delay: 60.8	Intersection LOS: E
Intersection Capacity Utilization 95.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Sherman Rd. & Ethanac Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	277	2049	354	243	1730	215	552	132	159	312	306	230
Future Volume (veh/h)	277	2049	354	243	1730	215	552	132	159	312	306	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	289	2134	369	253	1802	203	575	138	114	325	319	188
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	323	2075	867	242	1954	607	518	188	159	442	380	322
Arrive On Green	0.09	0.40	0.40	0.07	0.38	0.38	0.14	0.10	0.10	0.24	0.20	0.20
Sat Flow, veh/h	3510	5187	1590	3510	5187	1610	3619	1900	1610	1810	1900	1610
Grp Volume(v), veh/h	289	2134	369	253	1802	203	575	138	114	325	319	188
Grp Sat Flow(s),veh/h/ln	1755	1729	1590	1755	1729	1610	1810	1900	1610	1810	1900	1610
Q Serve(g_s), s	8.8	43.0	3.6	7.4	35.7	4.4	15.4	7.6	6.1	17.8	17.4	8.8
Cycle Q Clear(g_c), s	8.8	43.0	3.6	7.4	35.7	4.4	15.4	7.6	6.1	17.8	17.4	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	323	2075	867	242	1954	607	518	188	159	442	380	322
V/C Ratio(X)	0.89	1.03	0.43	1.05	0.92	0.33	1.11	0.73	0.72	0.73	0.84	0.58
Avail Cap(c_a), veh/h	323	2075	867	242	1954	607	518	566	479	442	601	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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	32.2	5.2	50.0	32.0	4.9	46.0	47.1	31.8	37.4	41.3	23.1
Incr Delay (d2), s/veh	24.8	27.4	0.3	70.7	7.8	0.3	72.8	5.5	5.9	5.5	6.1	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	21.8	2.1	5.5	15.3	3.4	12.0	3.8	3.1	8.4	8.6	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.1	59.7	5.5	120.8	39.8	5.2	118.9	52.6	37.7	42.9	47.4	24.8
LnGrp LOS	E	F	A	F	D	A	F	D	D	D	D	C
Approach Vol, veh/h		2792			2258			827			832	
Approach Delay, s/veh		53.9			45.8			96.6			40.6	
Approach LOS		D			D			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	48.8	20.0	26.7	14.5	46.3	30.9	15.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.2	4.6	5.8	4.6	5.2
Max Green Setting (Gmax), s	7.4	43.0	15.4	34.0	9.9	40.5	17.4	32.0
Max Q Clear Time (g_c+I1), s	9.4	45.0	17.4	19.4	10.8	37.7	19.8	9.6
Green Ext Time (p_c), s	0.0	0.0	0.0	2.1	0.0	2.5	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	54.8
HCM 6th LOS	D

APPENDIX G.2

URBAN-G

Vehicular Miles Traveled Analysis

MEMORANDUM

URBAN | CROSSROADS

DATE: December 15, 2023
TO: John Grace, Hillwood
FROM: Alex So, Urban Crossroads, Inc.
Charlene So, Urban Crossroads, Inc.
JOB NO: 15109-01 VMT

HILLWOOD ETHANAC VEHICLE MILES TRAVELED (VMT) SCREENING EVALUATION

Urban Crossroads, Inc. is pleased to provide the following Vehicle Miles Traveled (VMT) Screening Evaluation for the Hillwood Ethanac (**Project**), which is located on the northwest corner of Sherman Road and Ethanac Road, in the City of Perris.

PROJECT OVERVIEW

The proposed Project consists of a 412,372 square foot (SF) warehouse building of which 362,372 square feet used for high-cube short-term/transload use and 50,000 square feet used for high-cube cold storage use. A preliminary site plan for the proposed Project is found in Attachment A.

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 Perris. developed and adopted their Transportation Impact Analysis Guidelines for CEQA (May 2020) (**City Guidelines**) (1). This VMT screening evaluation has been developed based on the adopted City Guidelines.

VMT SCREENING

The first step in evaluating a land use project's VMT impact is to perform an initial screening assessment utilizing the City of Perris VMT Scoping Form for Land Use Projects (**Scoping Form**). The Scoping Form provides an easy-to-use tool for streamlining the VMT analysis process (see Attachment B). City Guidelines state that a project may be determined to have a less than significant impact and screen out of requiring a project level VMT analysis if it meets at least one of the City's VMT screening criteria.

The City's Guidelines list standardized screening criteria for project level VMT analysis that can be used to identify when a proposed land use development

project is anticipated to result in a less than significant impact thereby eliminating the need to conduct additional VMT analysis. The City of Perris VMT screening

criteria are listed below, and a land use project need only to meet one of the screening criteria to result in a less than significant impact.:

- Affordable Housing
- High Quality Transit Areas (HQTA) Screening
- Local-Serving Land Use
- Low VMT Area
- Net Daily Trips Less than 500 ADT

AFFORDABLE HOUSING

The City Guidelines state, if a project consists of 100% affordable housing, then the presumption can be made that it will have a less than significant impact on VMT. The Project does not intend to develop any residential uses.

Affordable Housing screening criteria not met.

HIGH QUALITY TRANSIT AREAS (HQTA) SCREENING

Consistent with guidance identified in the City Guidelines, projects located within a Transit Priority Area (TPA) (i.e., within ½ mile of an existing "major transit stop"1 or an existing stop along a "high-quality transit corridor"2) may be presumed to have a less than significant impact absent substantial evidence to the contrary. However, the presumption may not be appropriate if a project:

- Has a Floor Area Ratio (FAR) of less than 0.75;
- Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking);
- Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization); or
- Replaces affordable residential units with a smaller number of moderate or high-income residential units.

The City Guidelines provide a map of Transit Priority Areas (TPAs) within the City of Perris. The Project site was located on the map, and it was determined that the Project is not located within a TPA (see Attachment C).

HQTA screening criteria is not met.

---

[1] Pub. Resources Code, § 21064.3 ("'Major transit stop' means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.").
[2] Pub. Resources Code, § 21155 ("For purposes of this section, a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.").

LOCAL-SERVING LAND USE

As identified in the City Guidelines, local serving land uses such as retail under 50,000 square feet, restaurants, public schools and other civic facilities provide more opportunities for residents and employees to shop, dine, and obtain services closer to home and work. The proposed Project consists of a 412,372 square foot (SF) warehouse building and, therefore, does not fit the description nor is it consistent with the examples provided in the City Guidelines

Local-Serving Land Use screening criteria is not met.

LOW VMT AREA SCREENING

The City Guidelines state, "Projects that locate in areas with low VMT, and that incorporate similar features (i.e., land use type, access to the circulation network, etc.), will tend to exhibit similarly low VMT." Using the Western Riverside Council of Governments (WRCOG) web-based screening tool, which is based on the Riverside County Transportation Model (RIVCOM), the Project's physical location was used to find the Project's traffic analysis zone (TAZ). The proposed Project is located in TAZ 1861 and the VMT per Employee is 17.6. As the Project's TAZ VMT per employee is more than the baseline citywide Average VMT per Employee of 17.1, the Project does not reside within a low VMT generating zone (see Attachment C).

Low VMT Area screening criteria is not met.

NET DAILY TRIPS LESS THAN 500 ADT

The City Guidelines state, projects that generate less than 500 average daily trips (ADT) would not cause a substantial increase in the total citywide or regional VMT and are therefore presumed to have a less than significant impact on VMT. The proposed Project is anticipated to generate 618 two-way trips per day, exceeding the 500 ADT threshold (see Attachment D).

Net Daily Trips Less Than 500 ADT screening criteria is not met.

MITIGATION

City Guidelines state projects that do not meet at least one of the above screening criteria and generate fewer than 2,500 daily vehicle trips should utilize the "Project TAZ Rate" and VMT Scoping Form to mitigate VMT impacts to the extent feasible. The Project TAZ Rate of 17.6 VMT per Employee when compared to the Baseline Citywide Average VMT per Employee of 17.1 would require a 3.12% reduction in VMT to meet the Baseline Citywide Average.

Mitigation may be provided in the form of transportation demand management (TDM) measures or participation in a VMT fee program, which is not yet available. Therefore, VMT reduction measures focused on reducing commute VMT and the anticipated reduction in VMT associated with these measures have been estimated based on the research contained in the Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity (California Air Pollution Control Officers Association (CAPCOA), December 2021) (**2021 Handbook**) The Project determined the following measure to have the potential to reduce VMT.

- T-7 Commute Trip Reduction (CTR) Marketing

T-7 COMMUTE TRIP REDUCTION MARKETING

The Project will include a marketing strategy to promote the project site employer's CTR program. Information sharing and marketing promote and educate employees about their travel choices to the employment location beyond 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.

- Onsite or online commuter information services.
- Employee transportation coordinators.
- Onsite or online transit pass sales.

TABLE 6: 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

$$A = B \times C \times D$$

$$4\% = 100\% \times -4\% \times 1$$

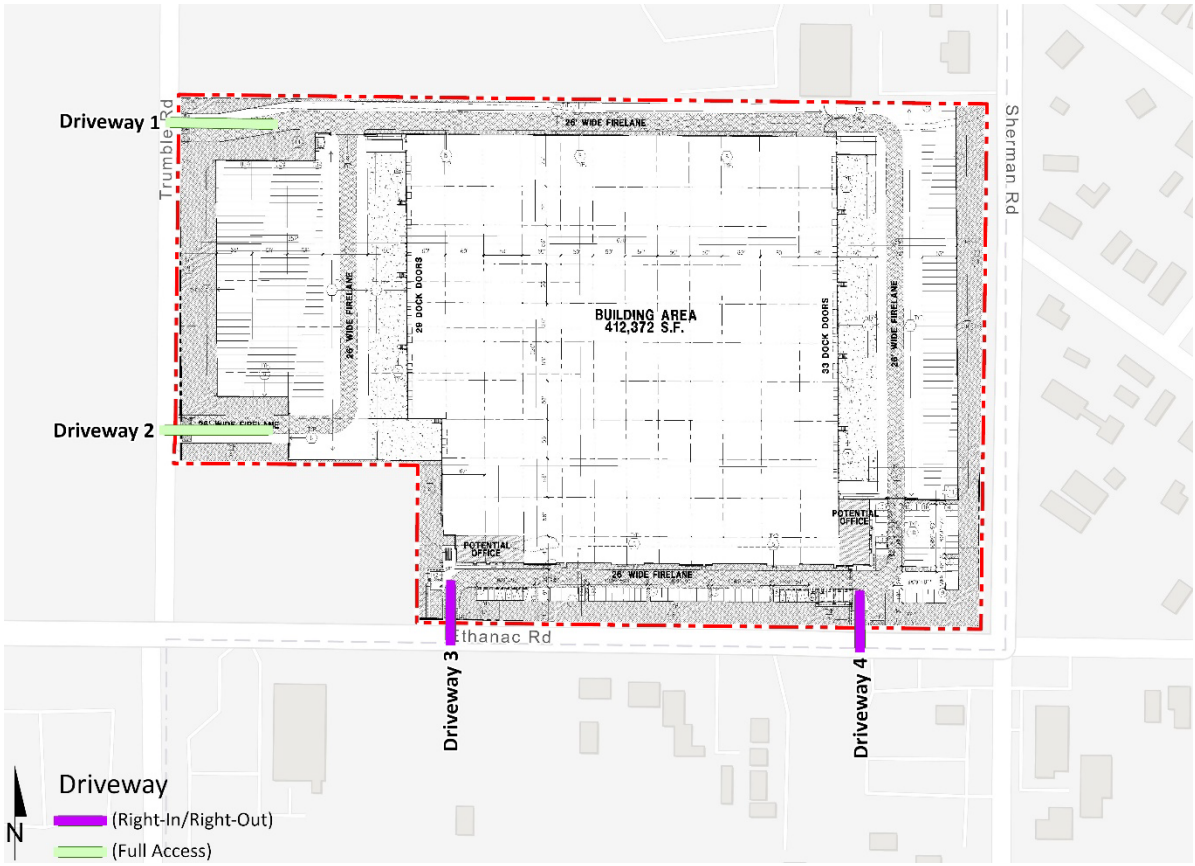
As calculated for the Project, with proper implementation and 100% of the Project's employees eligible, this design feature is expected to reduce VMT per Employee by 4% bringing it to 16.9 VMT per employee. This reduction in VMT is beyond the required 3.12% reduction to meet the baseline citywide average VMT per employee of 17.1. However, any VMT reduction is largely dependent on employer/tenant participation. As the Project is speculative with an as yet unknown tenant any VMT reduction effectiveness cannot be guaranteed. As such, the Project results in a significant VMT impact.

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

REFERENCES

1. **City of Perris.** *Transportation Analysis Guidelines for CEQA.* City of Perris : s.n., May 2020.

ATTACHMENT A
PRELIMINARY SITE PLAN


Driveway 1
Driveway 2
Trumble Rd
Sherman Rd
Ethanac Rd
Driveway 3
Driveway 4
BUILDING AREA
412,372 S.F.
26' WIDE FIRELANE
26' WIDE FIRELANE
26' WIDE FIRELANE
26' WIDE FIRELANE
28 DOCK DOORS
33 DOCK DOORS
POTENTIAL OFFICE
POTENTIAL OFFICE
N
Driveway
(Right-In/Right-Out)
(Full Access)

ATTACHMENT B
CITY OF PERRIS SCOPING FORM

City of Perris
www.cityofperris.org

CITY OF PERRIS
VMT SCOPING FORM FOR LAND USE PROJECTS

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

I. Project Description

Tract/Case No. DPR22-05139; PLN22-00030

Project Name: Hillwood Ethanac

Project Location: Northwest corner of Sherman Road and Ethanac Road

Project Description: 412,372 square foot warehouse building (362,372 SF of high-cube short-term/transload & 50,000 SF of high-cube cold storage)
(Please attach a copy of the project Site Plan)

Current GP Land Use: Community Commercial **Proposed GP Land Use:** Light Industrial

Current Zoning: Community Commercial **Proposed Zoning:** Light Industrial

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

II. VMT Screening Criteria

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

Low VMT Area Evaluation:

Citywide VMT Averages[1]		
Citywide Home-Based VMT =		VMT/Capita
Citywide Employment-Based VMT =	17.1	VMT/Employee

WRCOG VMT MAP

Project TAZ	**VMT Rate for Project TAZ[1]**		**Type of Project**	
1861	VMT/Capita		Residential:	
	17.6	VMT/Employee	Non-Residential:	**X**

[1] Base year (2018) projections from RIVCOM.

Trip Generation Evaluation:

Source of Trip Generation: Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition, 2021

Project Trip Generation:	**618**	**Average Daily Trips (ADT)**			
Internal Trip Credit:	YES		NO	**X**	% Trip Credit:
Pass-By Trip Credit:	YES		NO	**X**	% Trip Credit:
Affordable Housing Credit:	YES		NO	**X**	% Trip Credit:
Existing Land Use Trip Credit:	YES		NO	**X**	Trip Credit:
Net Project Daily Trips:	**618**	**Average Daily Trips (ADT)**			Attachments:

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

III. VMT Screening Summary

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

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

Potentially Significant

B. Is mitigation required?

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

Mitigation Required

C. Is additional VMT modeling required to evaluate Project impacts?	**YES**		**NO**	**X**

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

IV. MITIGATION

A. Citywide Average VMT Rate (Threshold of Significance) for Mitigation Purposes:	**17.6**	**VMT/Employee**
B. Unmitigated Project TAZ VMT Rate:	**17.1**	**VMT/Employee**

C. Percentage Reduction Required to Achieve the Citywide Average VMT: **3.12%**

D. VMT Reduction Mitigation Measures:

Source of VMT Reduction Estimates:	**CAPCOA 2021 Handbook**

Project Location Setting	**Suburban**

VMT Reduction Mitigation Measure:		**Estimated VMT Reduction (%)**
1.	T-7 Implement Commute Trip Reduction Marketing	4.00%
2.		
3.		
4.		0.00%
5.		0.00%
6.		0.00%
7.		0.00%
8.		0.00%
9.		0.00%
10.		0.00%
Total VMT Reduction (%)		**4.00%**

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

E. Mitigated Project TAZ VMT Rate:	**16.9**	**VMT/Employee**	

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

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

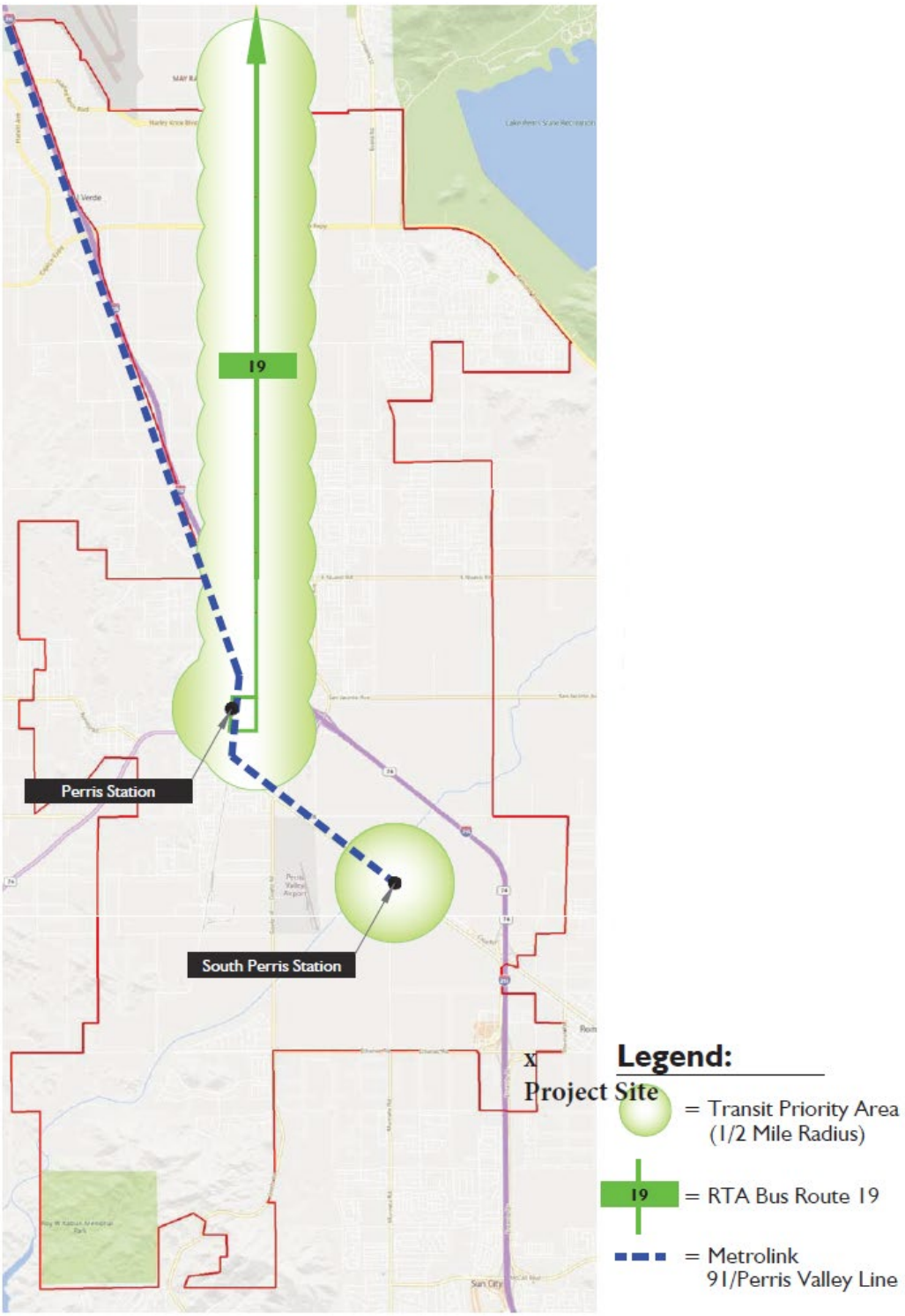
Prepared By		**Developer/Applicant**	
Company:	Urban Crossroads, Inc.	**Company:**	Hillwood
Contact:	Charlene So	**Contact:**	John Grace
Address:	1133 Camelback St. #8329, Newport Beach, CA 92	**Address:**	901 Via Piemonte, Suite 175, Ontario, CA
Phone:	949-861-0177	**Phone:**	909-256-5924
Email:	cso@urbanxroads.com	**Email:**	john.grace@hillwood.com
Date:	10/31/2022	**Date:**	10/31/2022

Approved by:

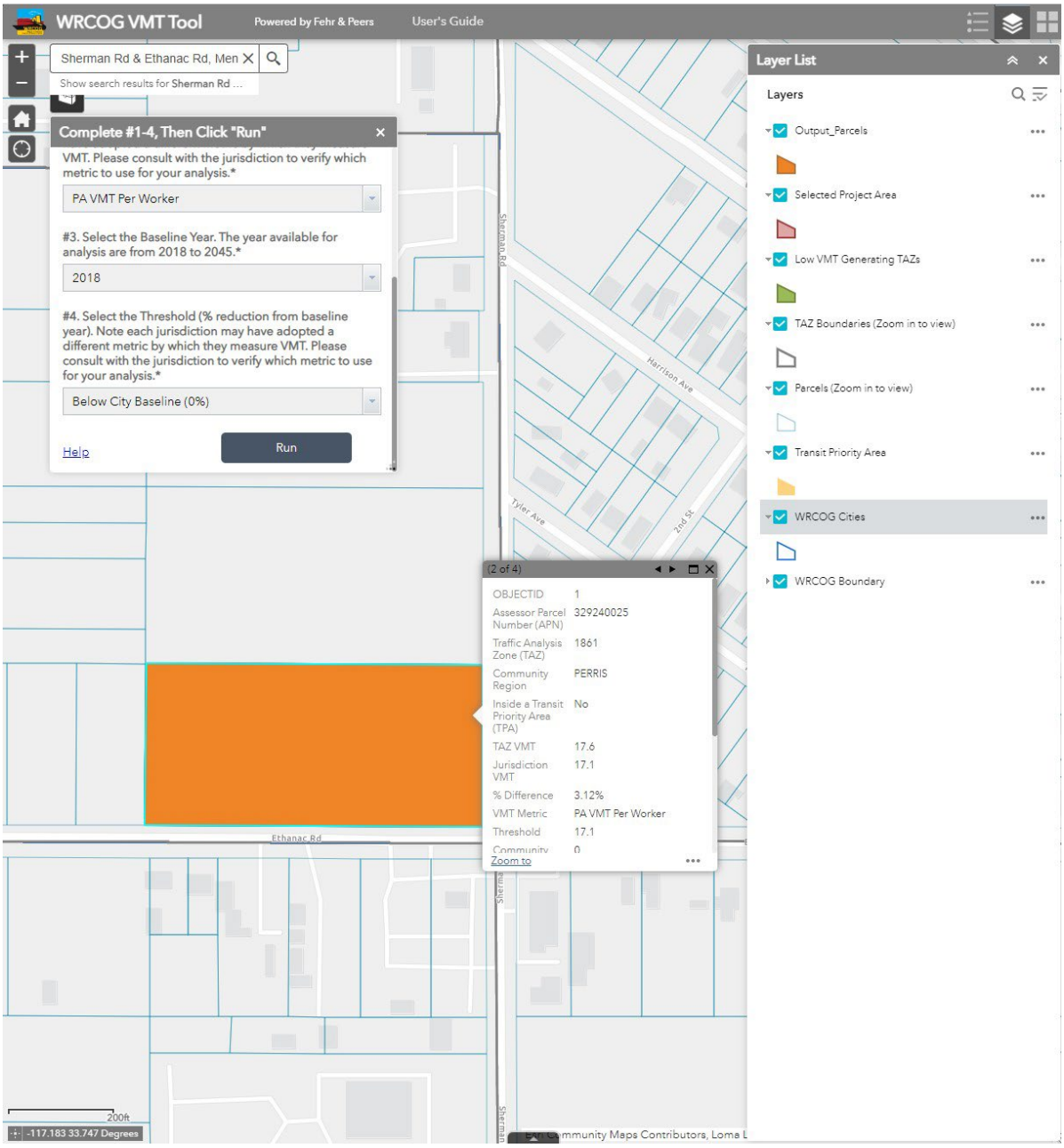
Perris Planning Division	**Date**	**Perris City Engineer**	**Date**

ATTACHMENT C
CITY GUIDELINES TPA MAP

Perris Transit Priority Areas



ATTACHMENT C
LOW AREA VMT SCREENING RESULTS


WRCOG VMT Tool
Powered by Fehr & Peers
User's Guide
Sherman Rd & Ethanac Rd, Men
Show search results for Sherman Rd ...
Complete #1-4, Then Click "Run"
VMT. Please consult with the jurisdiction to verify which metric to use for your analysis.*
PA VMT Per Worker
#3. Select the Baseline Year. The year available for analysis are from 2018 to 2045.*
2018
#4. Select the Threshold (% reduction from baseline year). Note each jurisdiction may have adopted a different metric by which they measure VMT. Please consult with the jurisdiction to verify which metric to use for your analysis.*
Below City Baseline (0%)
Help
Run
Layer List
Layers
Output_Parcels
Selected Project Area
Low VMT Generating TAZs
TAZ Boundaries (Zoom in to view)
Parcels (Zoom in to view)
Transit Priority Area
WRCOG Cities
WRCOG Boundary
(2 of 4)
OBJECTID 1
Assessor Parcel Number (APN) 329240025
Traffic Analysis Zone (TAZ) 1861
Community Region PERRIS
Inside a Transit Priority Area (TPA) No
TAZ VMT 17.6
Jurisdiction VMT 17.1
% Difference 3.12%
VMT Metric PA VMT Per Worker
Threshold 17.1
Community 0
Zoom to
Sherman Rd
Harrison Ave
Tyler Ave
2nd St
Ethanac Rd
200ft
-117.183 33.747 Degrees

ATTACHMENT D
PROJECT TRIP GENERATION DATA

TABLE C-1: PROJECT TRIP GENERATION RATES

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicle Trip Generation Rates									
High-Cube Transload and Short-Term Storage Warehouse[3]	TSF	154	0.062	0.018	0.080	0.028	0.072	0.100	1.400
Passenger Cars (AM=75.0%, PM=90.0%, Daily=84.3%)			0.052	0.008	0.060	0.023	0.067	0.090	1.180
2-Axle Trucks (AM=4.2%, PM=1.7%, Daily=2.6%)			0.002	0.001	0.003	0.001	0.001	0.002	0.037
3-Axle Trucks (AM=5.2%, PM=2.1%, Daily=3.3%)			0.002	0.002	0.004	0.001	0.001	0.002	0.046
4+-Axle Trucks (AM=15.7%, PM=6.3%, Daily=9.8%)			0.006	0.007	0.013	0.003	0.003	0.006	0.138
High-Cube Cold Storage Warehouse[3]	TSF	157	0.085	0.025	0.110	0.034	0.086	0.120	2.120
Passenger Cars (AM-72.7%, PM-75.0%, Daily-64.6%)			0.076	0.004	0.080	0.019	0.071	0.090	1.370
2-Axle Trucks (AM-9.5%, PM-8.7%, Daily-12.3%)			0.003	0.007	0.010	0.005	0.005	0.010	0.260
3-Axle Trucks (AM-3.0%, PM-2.8%, Daily-3.9%)			0.001	0.002	0.003	0.002	0.001	0.003	0.083
4+-Axle Trucks (AM-14.8%, PM-13.6%, Daily-19.2%)			0.005	0.011	0.016	0.008	0.008	0.016	0.407

[1] Trip Generation & Vehicle Mix Source: Institute of Transportation Engineers (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.

Normalized % - With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks.

TABLE C-2: PROJECT TRIP GENERATION

Land Use	Quantity Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicles:								
High-Cube Transload Warehouse	362.372 TSF							
Passenger Cars:		19	3	22	8	24	32	428
2-axle Trucks:		1	0	1	0	0	0	14
3-axle Trucks:		1	1	2	0	0	0	18
4+-axle Trucks:		2	2	4	1	1	2	50
Total Truck Trips (Actual Vehicles):		4	3	7	1	1	2	82
Total Trips (Actual Vehicles)[2]		23	6	29	9	25	34	510
High-Cube Cold Storage Warehouse	50.000 TSF							
Passenger Cars:		4	0	4	1	4	5	70
2-axle Trucks:		0	0	0	0	0	0	14
3-axle Trucks:		0	0	0	0	0	0	4
4+-axle Trucks:		0	1	1	0	0	0	20
Total Truck Trips (Actual Vehicles):		0	1	1	0	0	0	38
Total Trips (Actual Vehicles)[2]		4	1	5	1	4	5	108
Passenger Cars		23	3	26	9	28	37	498
Trucks (Actual Vehicles)		4	4	8	1	1	2	120
Total Project Trips (Actual Vehicles) [2]		**27**	**7**	**34**	**10**	**29**	**39**	**618**

[1] TSF = thousand square feet

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

APPENDIX G.3
URBAN-H

Trip Generation and VMT for Alternatives

Trip Generation and VMT for Alternatives

Alternative 1: Development of Existing Land Use and Zoning

Trip Generation:

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Alternative 1: Shopping Center (>150k)	653.400	TSF							
Passenger Cars:			337	205	542	1,061	1,154	2,215	24,124
Pass-by Reductions:			0	0	0	-202	-202	-404	-4,584
Trucks (Actual Vehicles):			3	3	6	6	1	7	60
Alternative 1 Net External Trips (Actual Vehicles)			**340**	**208**	**548**	**865**	**953**	**1,818**	**19,600**
Alternative 1 Net External Trips (PCE)[2]			**343**	**211**	**554**	**871**	**954**	**1,825**	**19,660**
Proposed Project Trips (PCE)			33	16	49	15	34	49	792
Net Change in Trips (PCE)			**310**	**195**	**505**	**856**	**920**	**1,776**	**18,868**

* Note: Positive value in net change in trips reflects a net increase over the proposed Project.

[1] TSF = thousand square feet

[1] Assumes a PCE factor of 2.0 on Trucks.

* Note: Positive value in net change in trips reflects a net increase over the proposed Project.

[1] TSF = thousand square feet

Vehicle Miles Traveled:

Alternative 1 Employees	1,307
Proposed Project Employees	400
Net Change in Employees	**907**
Alternative 1 HBW VMT[1]	23,018
Proposed Project HBW VMT	7,043
Net Change in HBW VMT	**15,975**
Alternative 1 HBW VMT per Employee	17.6
Proposed Project HBW VMT per Employee	17.6
Net Change in HBW VMT per Employee	**0.0**

*Note: Positive value in net change reflects a net increase over the proposed Project.

[1]HBW refers to Home-Based Work

Alternative 2: Reduced Density and Relocated Truck Parking

Trip Generation:

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicles:									
High-Cube Transload Warehouse	271.761	TSF							
Passenger Cars:			14	2	16	6	18	24	322
Total Truck Trips (Actual Vehicles):			4	3	7	1	1	2	60
Total Trips (Actual Vehicles)[2]			18	5	23	7	19	26	382
High-Cube Cold Storage Warehouse	37.500	TSF							
Passenger Cars:			3	0	3	1	3	4	52
Total Truck Trips (Actual Vehicles):			0	0	0	0	0	0	30
Total Trips (Actual Vehicles)[2]			3	0	3	1	3	4	82
Passenger Cars			17	2	19	7	21	28	374
Trucks (Actual Vehicles)			4	3	7	1	1	2	90
Total Project Trips (Actual Vehicles)[2]			**21**	**5**	**26**	**8**	**22**	**30**	**464**
Proposed Project Trips (Actual Vehicles)			27	7	34	10	29	39	618
Net Change in Trips			**-6**	**-2**	**-8**	**-2**	**-7**	**-9**	**-154**
Passenger Car Equivalent (PCE):									
High-Cube Transload Warehouse	271.761	TSF							
Total Truck Trips (PCE):			7	7	14	3	4	7	154
High-Cube Cold Storage Warehouse	37.500	TSF							
Total Truck Trips (PCE):			1	1	2	1	1	2	68
Passenger Cars			17	2	19	7	21	28	374
Trucks (PCE)			8	8	16	4	5	9	222
Total Project Trips (PCE)[2]			**25**	**10**	**35**	**11**	**26**	**37**	**596**
Proposed Project Trips (PCE)			33	16	49	15	34	49	792
Net Change in Trips			**-8**	**-6**	**-14**	**-4**	**-8**	**-12**	**-196**

* Note: Negative value in net change in trips reflects a net reduction from the proposed Project.

[1] TSF = thousand square feet

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

Vehicle Miles Traveled:

Alternative 2 Employees	301
Proposed Project Employees	400
Net Change in Employees	**-99**
Alternative 2 HBW VMT[1]	5,300
Proposed Project HBW VMT	7,043
Net Change in HBW VMT	**-1,743**
Alternative 2 HBW VMT per Employee	17.6
Proposed Project HBW VMT per Employee	17.6
Net Change in HBW VMT per Employee	**0.0**

*****Note: Negative value in net change reflects a net reduction from the proposed Project.

[1]HBW refers to Home-Based Work

Alternative 3: Business Park

Trip Generation:

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicles:									
Business Park	653.400	TSF							
Passenger Cars:			745	126	871	203	584	787	6,756
Total Truck Trips (Actual Vehicles):			5	6	11	4	6	10	1,374
Total Trips (Actual Vehicles)[2]			**750**	**132**	**882**	**207**	**590**	**797**	**8,130**
Proposed Project Trips (Actual Vehicles)			27	7	34	10	29	39	618
Net Change in Trips			**723**	**125**	**848**	**197**	**561**	**758**	**7,512**
Passenger Car Equivalent (PCE):									
Business Park	653.400	TSF							
Total Truck Trips (PCE):			12	14	26	10	17	27	3,494
Total Project Trips (PCE)[2]			**757**	**140**	**897**	**213**	**601**	**814**	**10,250**
Proposed Project Trips (PCE)			33	16	49	15	34	49	792
Net Change in Trips			**724**	**124**	**848**	**198**	**567**	**765**	**9,458**

* Note: Positive value in net change in trips reflects a net increase over the proposed Project.

[1] TSF = thousand square feet

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

Vehicle Miles Traveled:

Alternative 3 Employees	2,178
Proposed Project Employees	400
Net Change in Employees	**1,778**
Alternative 3 HBW VMT[1]	38,516
Proposed Project HBW VMT	7,043
Net Change in HBW VMT	**31,473**
Alternative 3 HBW VMT per Employee	17.6
Proposed Project HBW VMT per Employee	17.7
Net Change in HBW VMT per Employee	**0.1**

*Note: Positive value in net change reflects a net increase over the proposed Project.

[1]HBW refers to Home-Based Work