

Appendix H: Traffic Report



FOCUSED TRAFFIC IMPACT ANALYSIS REPORT

TRACT 38683 GARBANI NORTH

Menifee, California
September 24, 2024

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FOCUSED TRAFFIC IMPACT ANALYSIS REPORT

TRACT 38683 GARBANI NORTH

Menifee, California

September 24, 2024

1.0 INTRODUCTION

This focused traffic impact analysis addresses the potential traffic impacts and circulation needs associated with the proposed Tract 38683 Garbani North Project (hereinafter referred to as Project). The proposed Project site is located on the southwest corner of the intersection of Tupelo Street and Linda Lee Drive in the City of Menifee, California. The proposed Project will consist of 39 single-family detached swelling units. The proposed Project is anticipated to be completed by the Year 2027.

This traffic report documents the findings and recommendations of a traffic impact analysis conducted by Linscott, Law & Greenspan Engineers (LLG) to determine the potential impacts associated with the proposed Project. The traffic analysis evaluates the operating conditions at two (2) key study intersections within the Project vicinity, estimates the trip generation potential of the proposed project, and forecasts future operating conditions without and with the proposed Project. Where necessary, intersection improvements are identified.

This traffic report satisfies the *City of Menifee LOS Traffic Study Guidelines*, dated October 2020 and the *City of Menifee Traffic Impact Analysis Guidelines for Vehicle Miles Traveled*, dated January 2022. The Scope of Work for this traffic study, which is included in **Appendix A**, was developed and approved in conjunction with City of Menifee staff.

The Project site has been visited and an inventory of adjacent area roadways and intersections was performed. Existing weekday traffic count information has been collected at two (2) key study intersections for use in the preparation of intersection level of service calculations. Information concerning cumulative projects (planned and/or approved) in the vicinity of the proposed Project has been researched at the City of Menifee and the City of Perris. Based on our research, there are nineteen (19) cumulative projects located in the City of Menifee within the vicinity of the Project site. These nineteen (19) planned and/or approved cumulative projects were considered in the cumulative traffic analysis for this project.

This traffic report analyzes existing and future weekday AM peak hour and PM peak hour traffic conditions for a near-term (Year 2027) traffic setting upon completion of the proposed Project. Peak hour traffic forecasts for the Year 2027 horizon year have been projected by increasing existing traffic volumes by an annual growth rate of 2.0% per year and adding traffic volumes generated by nineteen (19) cumulative projects, which provides a conservative forecast.

1.1 Study Area

Two (2) key study intersections were selected for evaluation based on coordination with City of Menifee staff. The intersections listed below provide local access to the study area and define the extent of the boundaries for this traffic impact investigation.

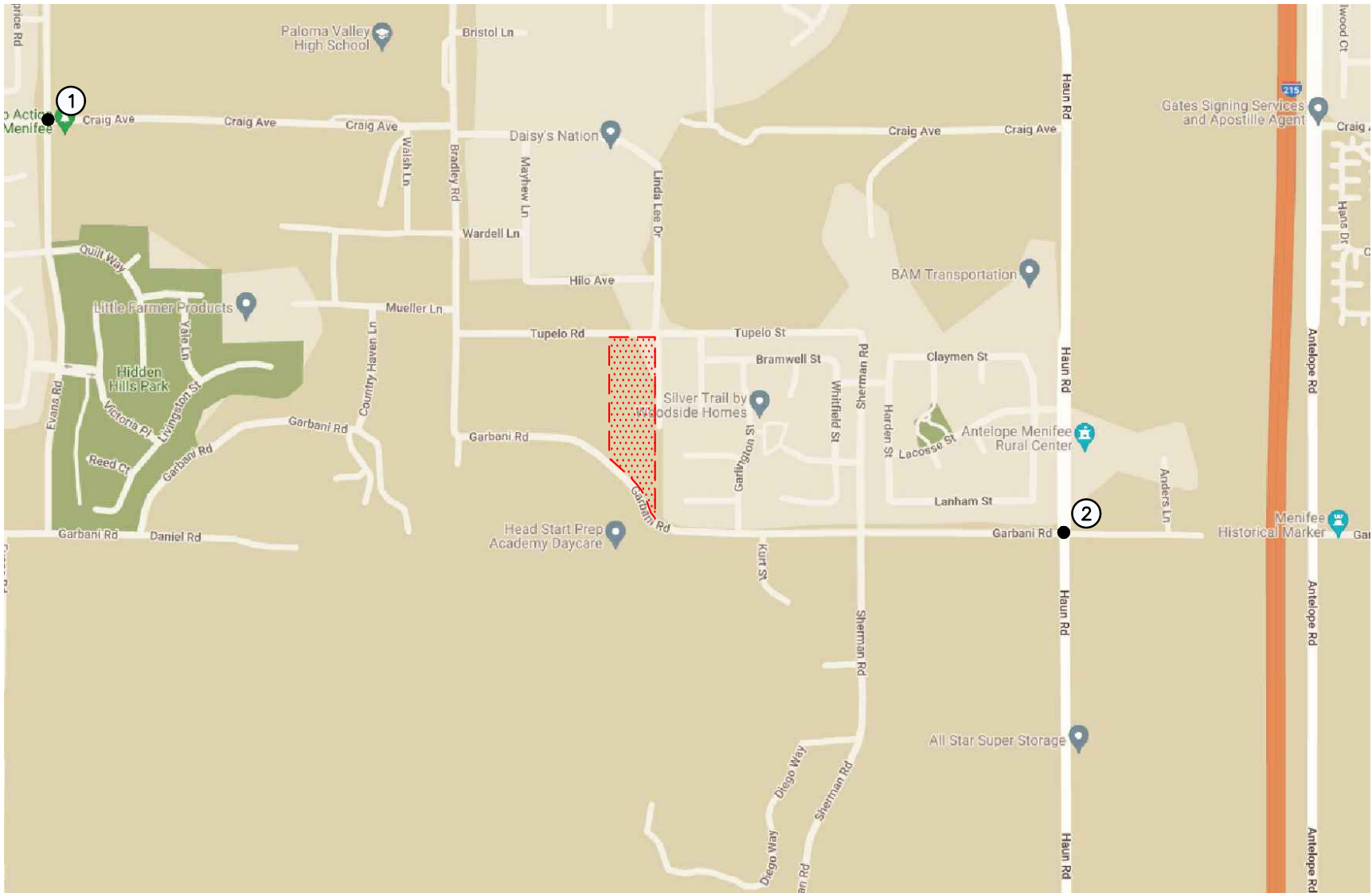
Key Study Intersections

1. Evans Road at Craig Avenue
2. Haun Road at Garbani Road

Figure 1-1 presents a Vicinity Map, which illustrates the general location of the project and depicts the study locations and surrounding street system. The Level of Service (LOS) investigations at these key locations were used to evaluate the potential traffic-related impacts associated with area growth, cumulative projects and the Project. When necessary, this report recommends intersection and/or roadway improvements that may be required to accommodate future traffic volumes and restore/maintain an acceptable Level of Service and/or improve the impact of the project.

Included in this Traffic Impact Analysis are:

- Existing traffic counts,
- Estimated Project traffic generation/distribution/assignment,
- Estimated cumulative project traffic generation/distribution/assignment,
- AM and PM peak hour capacity analyses for existing conditions,
- AM and PM peak hour capacity analyses for existing plus Project conditions,
- AM and PM peak hour capacity analyses for future (Year 2027) conditions without and with project traffic,
- Site Access and Internal Circulation Evaluation,
- Area-Wide Traffic Improvements, and
- Vehicle Miles Traveled (VMT) Analysis.



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SOURCE: GOOGLE

KEY

① = STUDY INTERSECTION

[Red hatched box] = PROJECT SITE

FIGURE 1-1

VICINITY MAP

TRACT 38683 GARBANI NORTH, MENIFEE

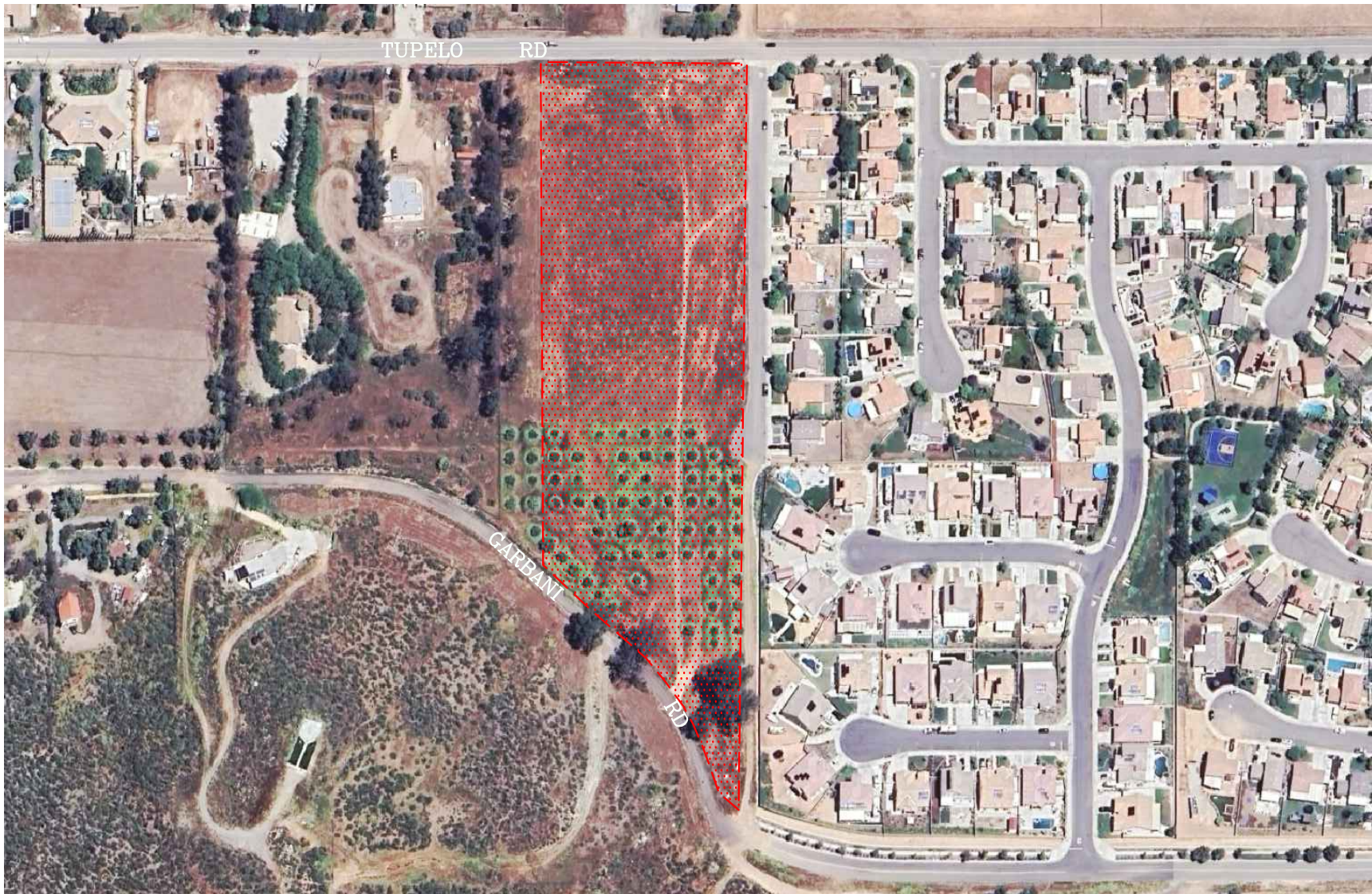
2.0 PROJECT DESCRIPTION AND LOCATION

The proposed Project site is located on the southwest quadrant of the intersection of Tupelo Street at and Linda Lee Drive in the City of Menifee, California. **Figure 2-1** presents an aerial depiction of the existing site, which is currently vacant.

Figure 2-2 presents the proposed site plan for the proposed Project, prepared by Blue Engineering & Consulting, Inc. Review of the proposed site plan indicates that the proposed Project will consist of 39 single-family detached dwelling units, of which nine (9) homes will be constructed along the west side of existing Linda Lee Drive. The proposed Project is anticipated to be completed by the Year 2027.

2.1 Site Access

Access to the proposed Project will be provided via one (1) full-movement unsignalized public local roadway intersection located along Tupelo Street [i.e. Project Driveway No. 1 (Brookside Road)] and via the existing full-movement public local roadway intersection of Linda Lee Drive at Tupelo Street [i.e. Project Driveway No. 2 (Linda Lee Drive)]. In addition, Street A will provide access to Brookside Road via Linda Lee Drive.



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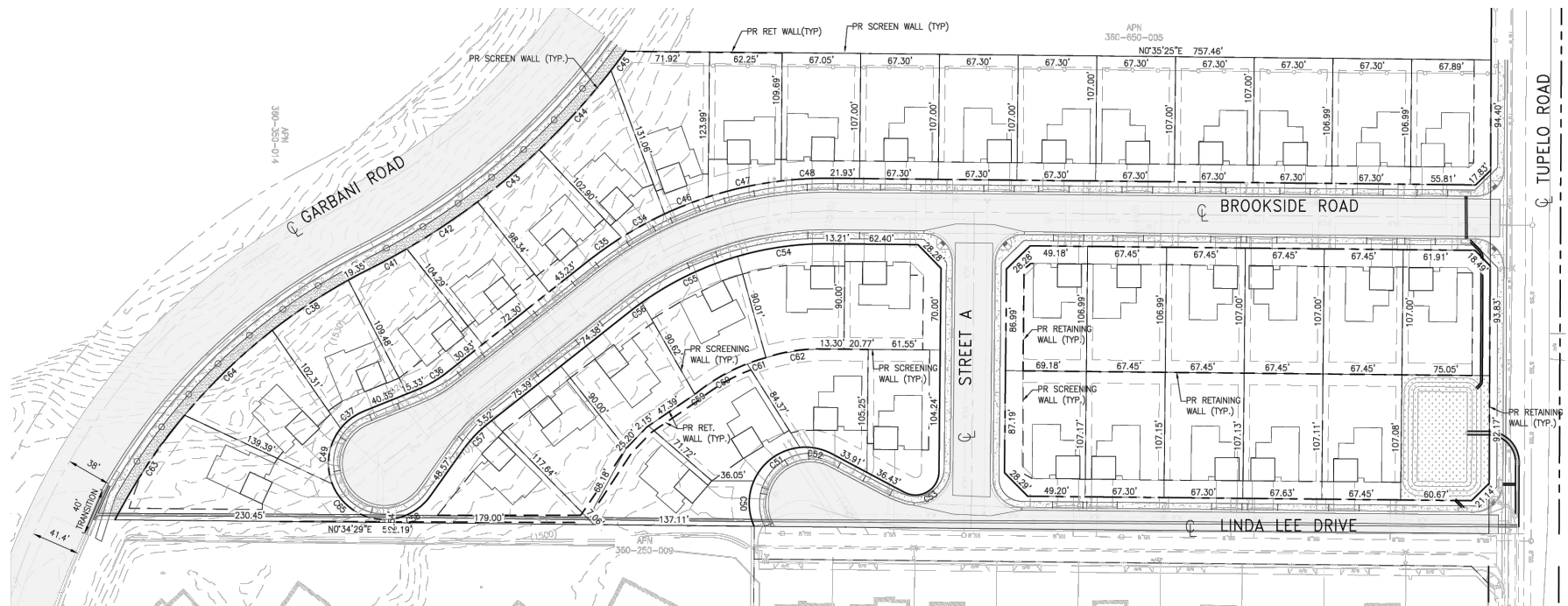
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FIGURE 2-1

EXISTING SITE AERIAL
TRACT 38683 GARBANI NORTH, MENIFEE



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SOURCE: BLUE ENGINEERING & CONSULTING, INC



FIGURE 2-2

PROPOSED SITE PLAN
TRACT 38683 GARBANI NORTH, MENIFEE

3.0 EXISTING CONDITIONS

3.1 Existing Street System

The principal local network of streets serving the proposed project site is Evans Road, Craig Avenue, Garbani Road and Haun Road. The following discussion provides a brief synopsis of these key area streets. The descriptions are based on an inventory of existing roadway conditions.

Evans Road is a two-lane, undivided roadway north of Craig Avenue and a four-lane, divided roadway south of Craig Avenue, oriented in the north-south direction. Evans Road is to the west of the Project site. On-street parking is permitted along Evans Road north of Craig Avenue on the east side of the street and is not permitted along the west side of the street and is not permitted along Evans Road south of Craig Avenue in the vicinity of the Project site. The posted speed limit on Evans Road is 40 miles per hour (mph) within the vicinity of the Project site. The study intersection of Evans Road at Craig Avenue is stop controlled.

Craig Avenue is generally a two lane-lane, divided roadway west of Evans Road, and generally a two-lane, undivided roadway east of Evans Road, oriented in the east-west direction. Craig Avenue is to the west of the Project site. On-street parking is not permitted along Craig Avenue west of Evans Road on the south side of the road and is permitted on the north side of the road, parking is permitted east of Evans Road on the south side of the road and is not permitted on the north side of the road in the vicinity of the Project site. The posted speed limit on Craig Avenue is 40 mph west of Evans Road and 25 mph east of Evans Road. The study intersection of Craig Avenue at Evans Road is stop controlled.

Garbani Road is generally a two-lane, undivided roadway east of Haun Road, a three-lane divided roadway in between Haun Road and Sherman Road, and a two-lane undivided roadway west of Sherman Road, oriented in the east-west direction. On-street parking is generally permitted along Garbani Road east of Haun road and is not permitted west of Haun Road in the vicinity of the Project site. The posted speed limit on Garbani Road is 25 mph west of Sherman Road, 35 mph in between Sherman Road and Haun Road, and 25 mph east of Haun Road.

Haun Road is generally a two-lane, undivided roadway, oriented in the north-south direction. On-street parking is generally not permitted along Haun Road in the vicinity of the Project site. The posted speed limit on Haun Road is 50 mph. The study intersection of Haun Road at Garbani Road is stop controlled.

Figure 3-1 presents an inventory of the existing roadway conditions for the arterials and intersections evaluated in this report. This figure identifies the number of travel lanes for key arterials, as well as intersection configurations and controls for the key area study intersections.

3.2 Bicycle and Pedestrian Facilities

The Federal and State transportation system recognizes three primary bikeway facilities: Bicycle Paths (Class I), Bicycle Lanes (Class II), and Bicycle Routes (Class III). Bicycle Paths (Class I) are

exclusive car free facilities that are typically not located within a roadway area. Bicycle Lanes (Class II) are part of the street design that is dedicated only for bicycles and identified by a striped lane separating vehicle lanes from bicycle lanes. Bicycle Routes (Class III) are preferably located on collector and lower volume arterial streets. The following bicycle facilities are located within the vicinity of the project site.

- A Class II Bike Lane currently exists along Craig Avenue, west of Evans Road.

Public sidewalks will be provided along all of the residential frontages and connect to Tupelo Street, which will also have public sidewalks along the Project frontage. It should be noted that sidewalks currently exist along the east of Linda Lee Lane and along the south side of Tupelo Street east of the Project site.

3.3 Existing Traffic Volumes

Two (2) key study intersections have been identified as the locations at which to evaluate existing and future traffic operating conditions. Some portion of project-related traffic will pass through these intersections, and their analysis will reveal the expected relative impacts of the project. These key study intersections were selected for evaluation based on discussions with City of Menifee staff.

Existing AM and PM peak hour traffic counts were conducted by *Counts Unlimited, Inc.* in August 2024. It should be noted that the traffic counts were conducted when local area schools were in session. **Figures 3-2** and **3-3** illustrate the existing AM and PM peak hour traffic volumes at the two (2) key study intersections evaluated in this report, respectively.

Appendix B contains the detailed peak hour count sheets for the key intersections evaluated in this report.

3.4 Level of Service (LOS) Analysis Methodologies

In conformance with City of Menifee requirements, existing AM and PM peak hour operating conditions for the unsignalized intersections were evaluated using the *Highway Capacity Manual 7th Edition* (HCM 7) methodology.

3.4.1 Highway Capacity Manual (HCM) Method of Analysis (Unsignalized Intersections)

The HCM unsignalized methodology for stop-controlled intersections was utilized for the analysis of the unsignalized intersections. LOS criteria for unsignalized intersections differ from LOS criteria for signalized intersections as signalized intersections are designed for heavier traffic and therefore a greater delay.

Two-way stop-controlled intersections are comprised of a major street, which is uncontrolled, and a minor street, which is controlled by stop signs. Level of service for a two-way stop-controlled intersection is determined by the computed or measured control delay. The control delay by movement, by approach, and for the intersection as a whole is estimated by the computed capacity for each movement. LOS is determined for each minor-street movement (or shared movement) as

well as major-street left turns. The worst side street approach delay is reported. LOS is not defined for the intersection as a whole or for major-street approaches, as it is assumed that major-street through vehicles experience zero delay. The HCM control delay value range for two-way stop-controlled intersections is shown in **Table 3-1**.

All-way stop-controlled intersections require every vehicle to stop at the intersection before proceeding. Because each driver must stop, the decision to proceed into the intersection is a function of traffic conditions on the other approaches. The time between subsequent vehicle departures depends on the degree of conflict that results between the vehicles and vehicles on the other approaches. This methodology determines the control delay for each lane on the approach, computes a weighted average for the whole approach, and computes a weighted average for the intersection as a whole. Level of service (LOS) at the approach and intersection levels is based solely on control delay. The HCM control delay value range for all-way stop-controlled intersections is shown in **Table 3-1**.

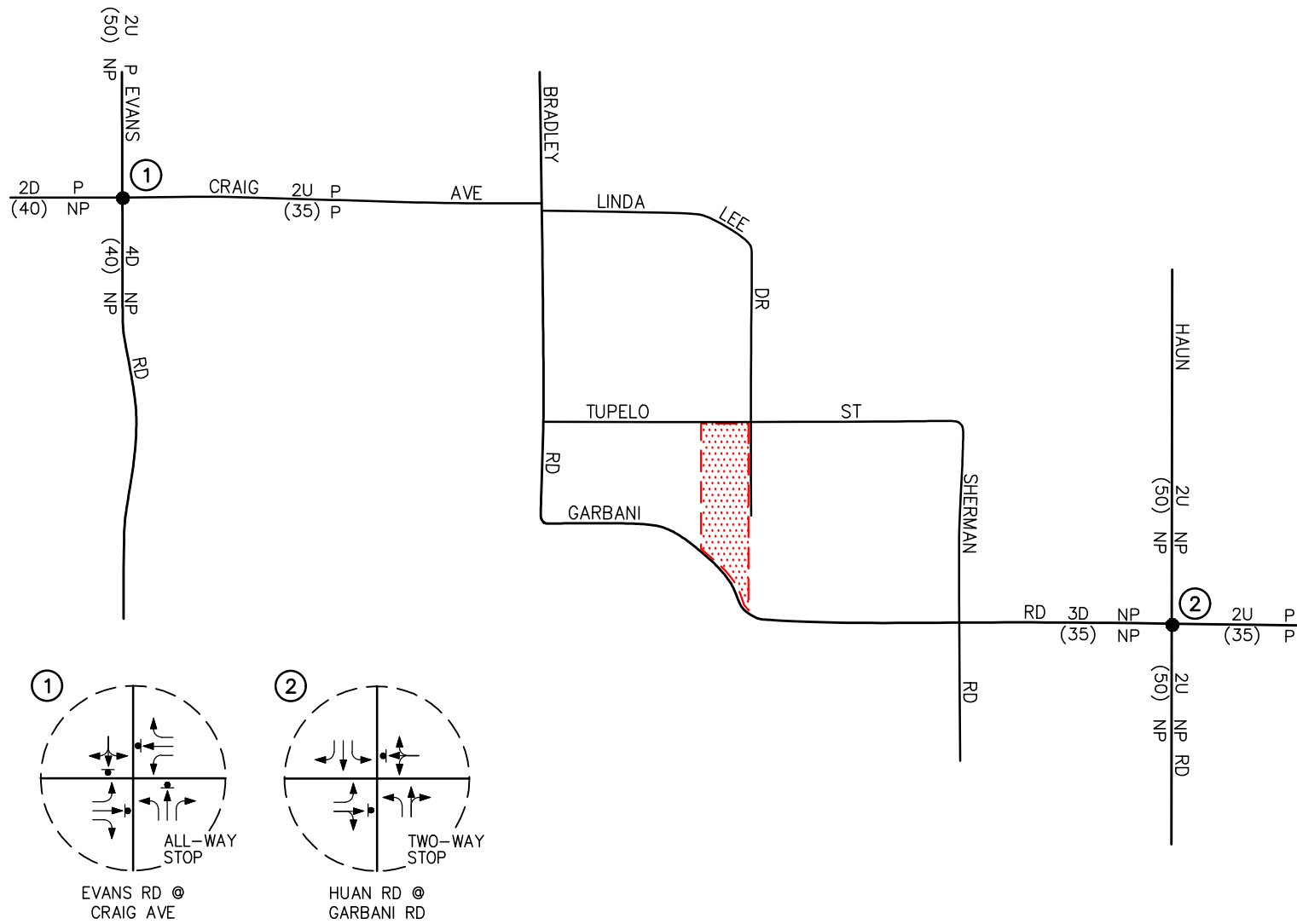
3.5 Level of Service Standards

According to the *City of Menifee LOS Traffic Study Guidelines*, dated October 2020, LOS D is the minimum acceptable condition that should be maintained at intersections and roadway segments during the peak commute hours. However, for constrained locations in close proximity to the I-215, LOS E is the allowed minimum acceptable condition. Based on the locations of the two (2) key study intersections analyzed in this report, LOS D is considered the minimum acceptable LOS for all locations.

3.6 Existing Level of Service Results

Table 3-2 summarizes the existing peak hour service level calculations for the two (2) key study intersections based on existing traffic volumes and current street geometry. Review of **Table 3-2** indicates the intersection of Haun Road at Garbani Road currently operates at an unacceptable LOS during the AM and PM peak hours. The remaining one (1) key study intersection currently operates at acceptable levels of service during the AM and PM peak hours.

Appendix C presents the Existing peak hour HCM/LOS calculation worksheets for the two (2) key study intersections.



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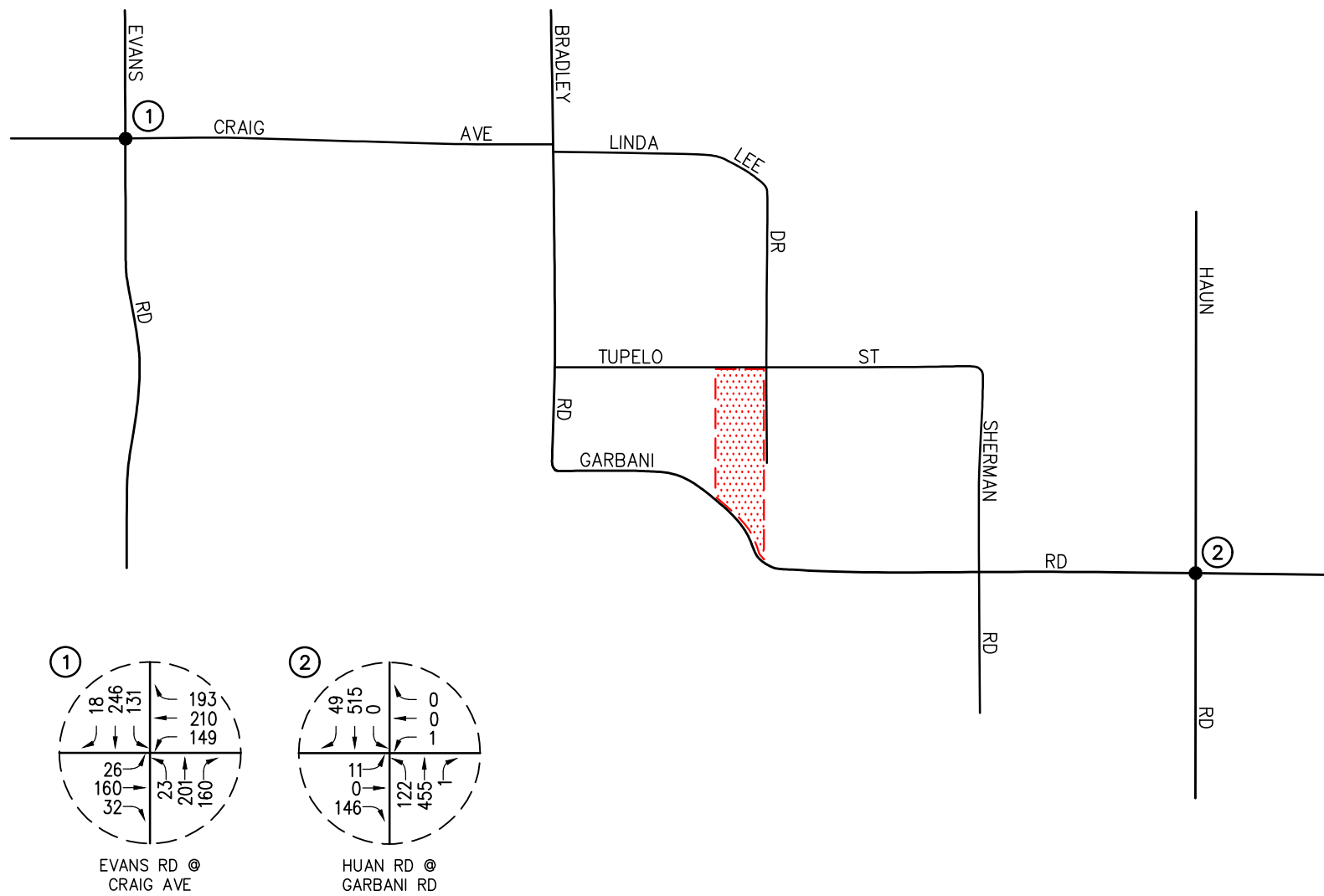


KEY	
①	= STUDY INTERSECTION
→	= APPROACH LANE ASSIGNMENT
▼	= STOP SIGN
P	= PARKING, NP = NO PARKING
U	= UNDIVIDED, D = DIVIDED
2	= NUMBER OF TRAVEL LANES
(XX)	= POSTED SPEED LIMIT (MPH)
[Red Hatched Box]	= PROJECT SITE

FIGURE 3-1

EXISTING ROADWAY CONDITIONS AND INTERSECTION CONTROLS

TRACT 38683 GARBANI NORTH, MENIFEE



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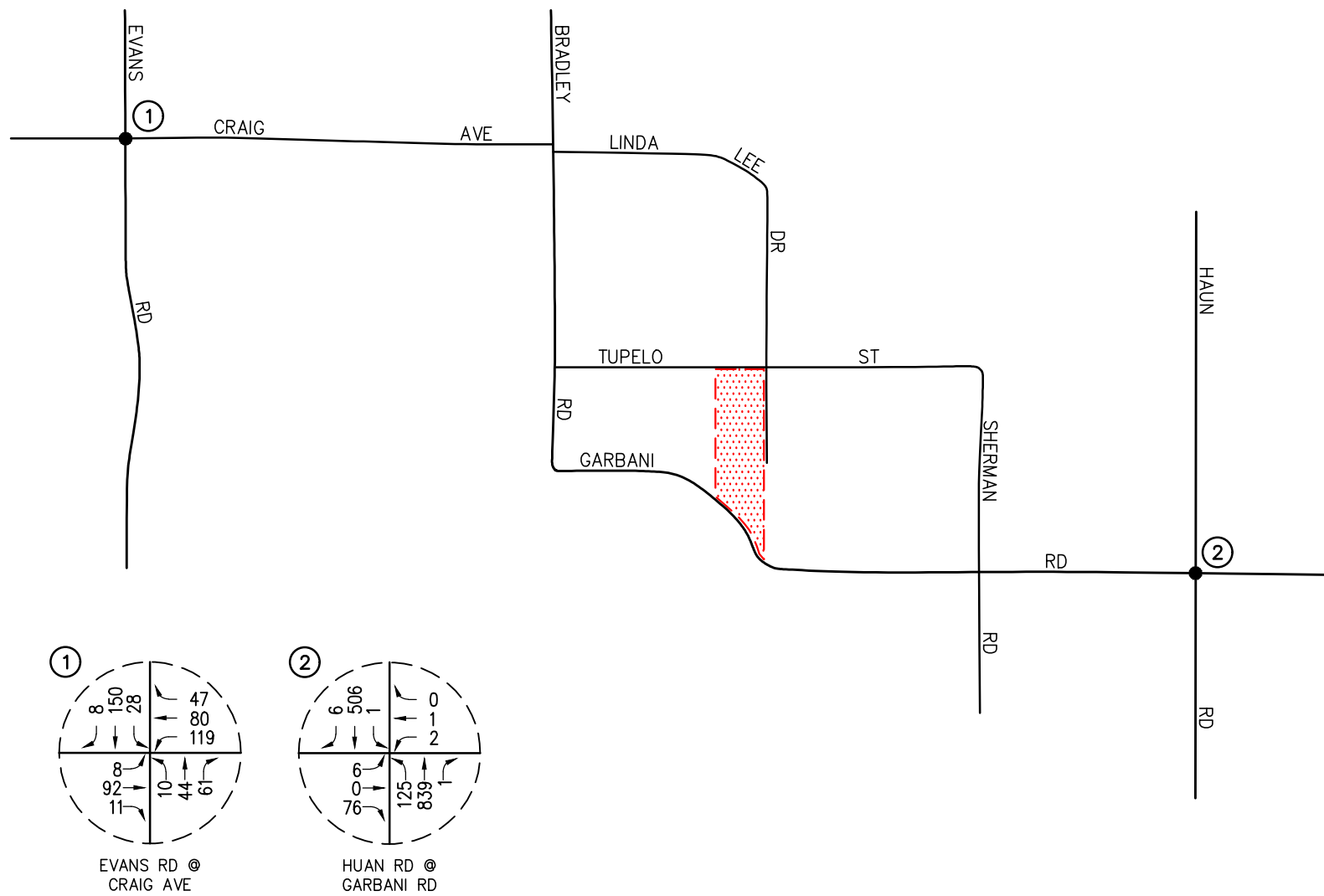
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[Red Hatched Box] = PROJECT SITE

FIGURE 3-2

**EXISTING AM PEAK
HOUR TRAFFIC VOLUMES**

TRACT 38683 GARBANI NORTH, MENIFEE



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① = STUDY INTERSECTION

[Red Dotted Box] = PROJECT SITE

FIGURE 3-3

**EXISTING PM PEAK
HOUR TRAFFIC VOLUMES**

TRACT 38683 GARBANI NORTH, MENIFEE

TABLE 3-1
LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS (HCM 7 METHODOLOGY)¹

Level of Service (LOS)	Highway Capacity Manual Delay Value (sec/veh)	Level of Service Description
A	≤ 10.0	Little or no delay
B	> 10.0 and ≤ 15.0	Short traffic delays
C	> 15.0 and ≤ 25.0	Average traffic delays
D	> 25.0 and ≤ 35.0	Long traffic delays
E	> 35.0 and ≤ 50.0	Very long traffic delays
F	> 50.0	Severe congestion

¹ Source: *Highway Capacity Manual 7*, Chapter 20: Two-Way Stop-Controlled Intersections. The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or for the intersection as a whole. Source: *Highway Capacity Manual 7*, Chapter 21: All-Way Stop-Controlled Intersections. For approaches and intersection-wide assessment, LOS is defined solely by control delay.

TABLE 3-2
EXISTING PEAK HOUR LEVELS OF SERVICE

Key Intersection		Time Period	Minimum Acceptable LOS	Control Type	HCM	LOS
1.	Evans Road at	AM	D	All-Way	26.0 s/v	D
	Craig Avenue	PM		Stop	10.2 s/v	B
2.	Haun Road at	AM	D	Two-Way	62.8 s/v	F
	Garbani Road	PM		Stop	74.8 s/v	F

Notes:

- LOS = Level of Service, please refer to *Table 3-1* and *Table 3-2* for the LOS definitions
- **Bold Delay/LOS** values indicate adverse service levels
- s/v = seconds per vehicle

4.0 TRAFFIC FORECASTING METHODOLOGY

In order to estimate the traffic impact characteristics of the proposed Project, a multi-step process has been utilized. The first step is traffic generation, which estimates the total arriving and departing traffic on a peak hour and daily basis. The traffic generation potential is forecast by applying the appropriate vehicle trip generation equations and/or rates to the Project development tabulation.

The second step of the forecasting process is traffic distribution, which identifies the origins and destinations of inbound and outbound Project traffic. These origins and destinations are typically based on demographics and existing/expected future travel patterns in the study area.

The third step is traffic assignment, which involves the allocation of Project traffic to study area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway segments and intersection turning movements throughout the study area.

With the forecasting process complete and project traffic assignments developed, the impact of the Project is isolated by comparing operational (LOS) conditions at the selected key intersection using expected future traffic volumes with and without forecast project traffic. If necessary, the need for site-specific and/or cumulative local area traffic improvements can then be evaluated, and the significance of the project's impacts identified.

5.0 PROJECT TRAFFIC CHARACTERISTICS

5.1 Project Traffic Generation

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the generating land use. Generation equations and/or rates used in the traffic forecasting procedure are found in the 11th Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE) [Washington D.C., 2021].

Table 5-1 summarizes the trip generation rates used in forecasting the vehicular trips generated by the proposed Project and also presents the forecast daily and peak hour project traffic volumes for a “typical” weekday. As shown in this table, the trip generation potential for the proposed Project was forecast using ITE Land Use Code 210: Single Family Detached Housing trip rates.

Review of the last row of *Table 5-1* indicates that the proposed Project is forecast to generate approximately 368 daily trips, with 27 trips (7 inbound, 20 outbound) forecast during the AM peak hour and 37 trips (23 inbound, 14 outbound) forecast during the PM peak hour.

5.2 Project Traffic Distribution and Assignment

The Project directional trip distribution pattern is presented in **Figure 5-1**. Project traffic volumes both entering and exiting the site have been distributed and assigned to the adjacent street system based on the following considerations:

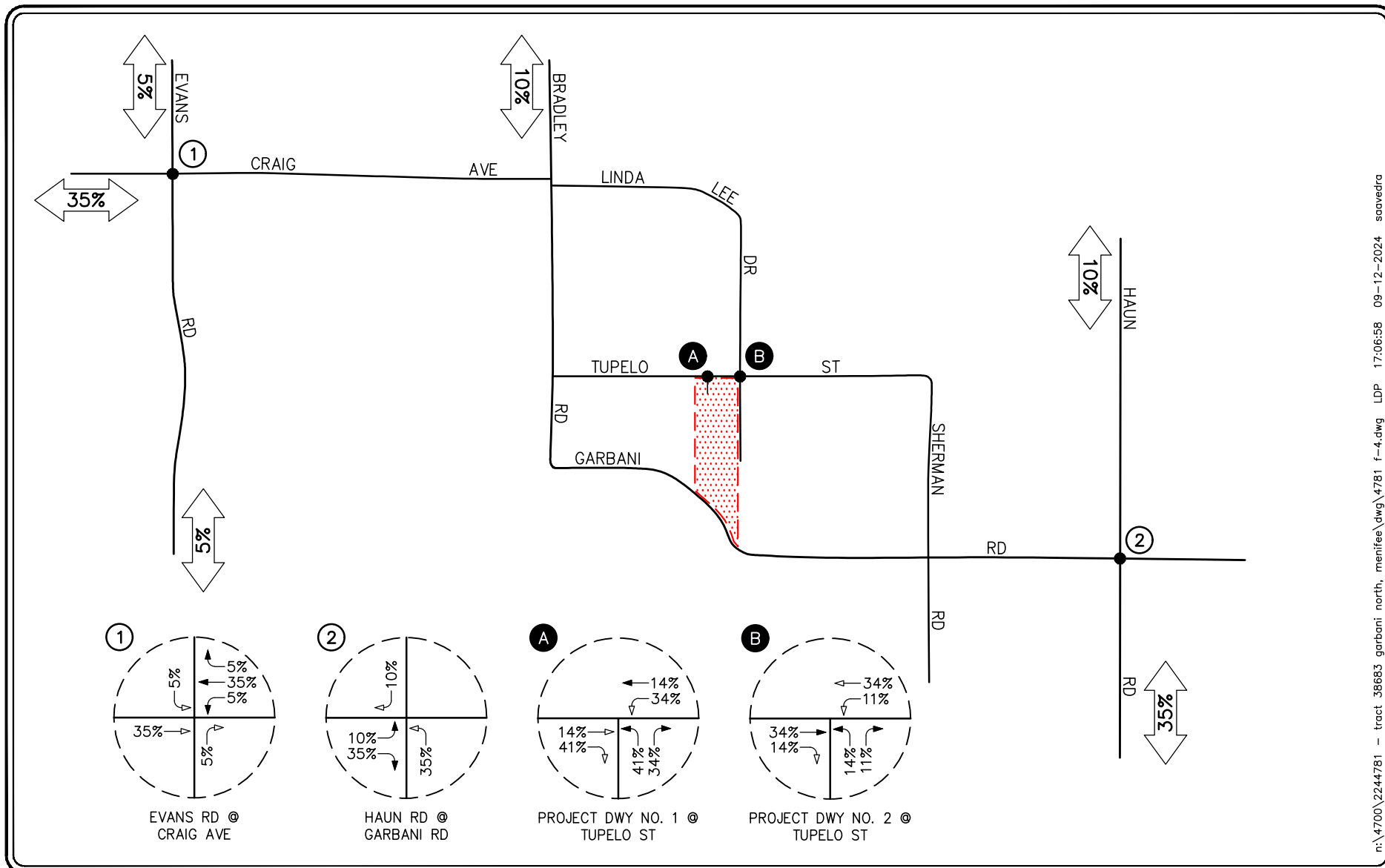
- the site's proximity to major traffic carriers (i.e. Evans Road, Haun Road, etc.),
- expected localized traffic flow patterns based on adjacent street channelization and presence of traffic signals,
- existing intersection traffic volumes, and
- ingress/egress availability at the Project site.

It should be noted that the Project trip distribution pattern was submitted to City staff for their review and approval prior to proceeding with further analyses. The anticipated AM and PM peak hour traffic volumes associated with the Project are presented in **Figures 5-2** and **5-3**, respectively. The traffic volume assignments presented in *Figures 5-2* and *5-3* reflect the traffic distribution characteristics shown in *Figure 5-1* and the traffic generation forecast presented in *Table 5-1*.

5.3 Existing Plus Project Traffic Conditions

The Existing Plus Project traffic conditions have been generated based upon existing conditions and estimated traffic generated from the proposed Project. These forecast traffic conditions have been prepared to assess if circulation enhancements would be necessary to offset the effect of added Project-related traffic upon the circulation system as it currently exists. This traffic volume scenario and the related intersection capacity analyses will identify the roadway improvements necessary to accommodate the Project, if any.

Figures 5-4 and **5-5** present projected AM and PM peak hour traffic volumes at the two (2) key study intersections with the addition of the trips generated by the proposed Project to existing traffic volumes, respectively.



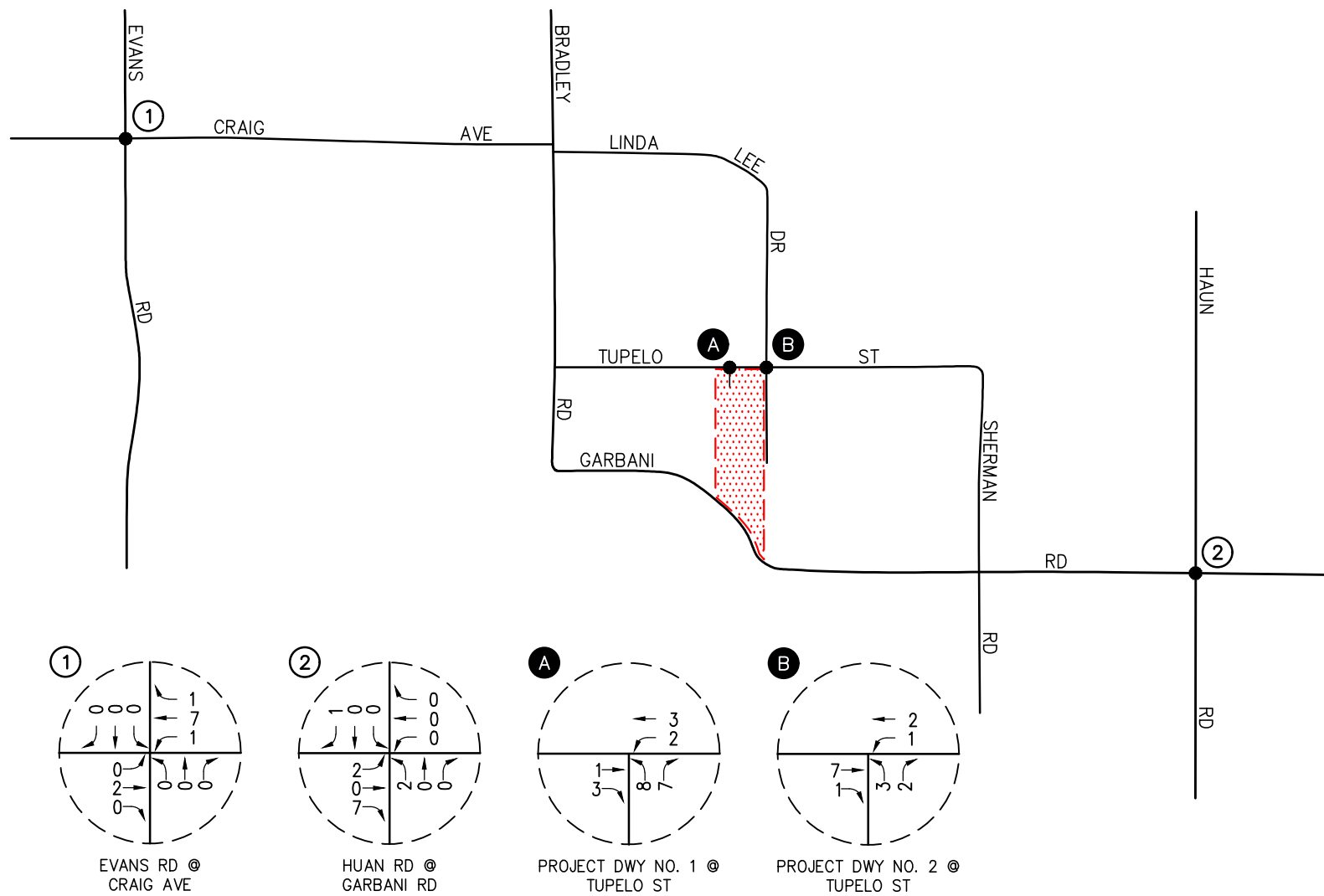
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[Red Hatched Box] = PROJECT SITE

FIGURE 5-1

PROJECT TRAFFIC DISTRIBUTION PATTERN
TRACT 38683 GARBANI NORTH, MENIFEE



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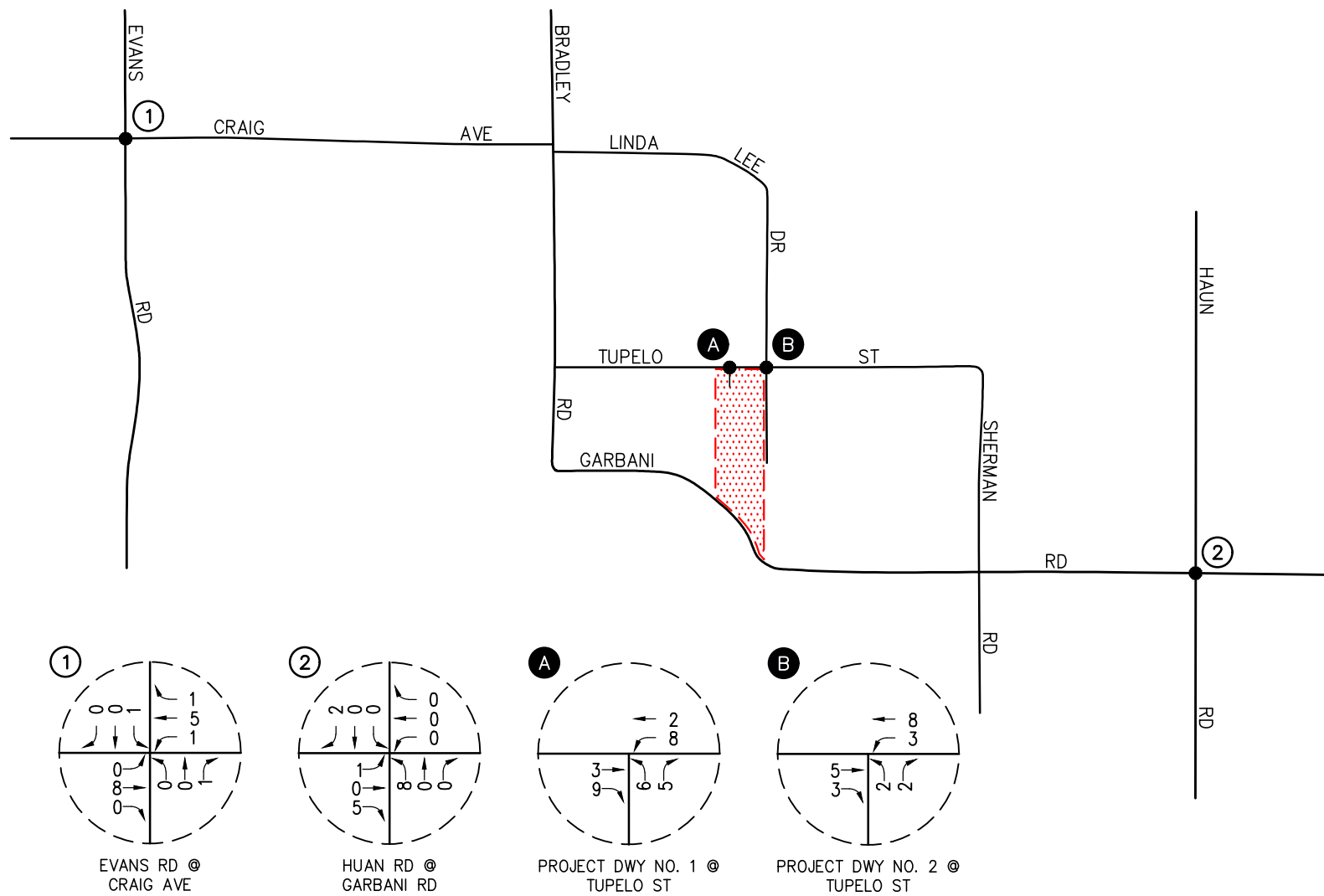
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▨ = PROJECT SITE

FIGURE 5-2

**AM PEAK HOUR
PROJECT TRAFFIC VOLUMES**

TRACT 38683 GARBANI NORTH, MENIFEE



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① = STUDY INTERSECTION

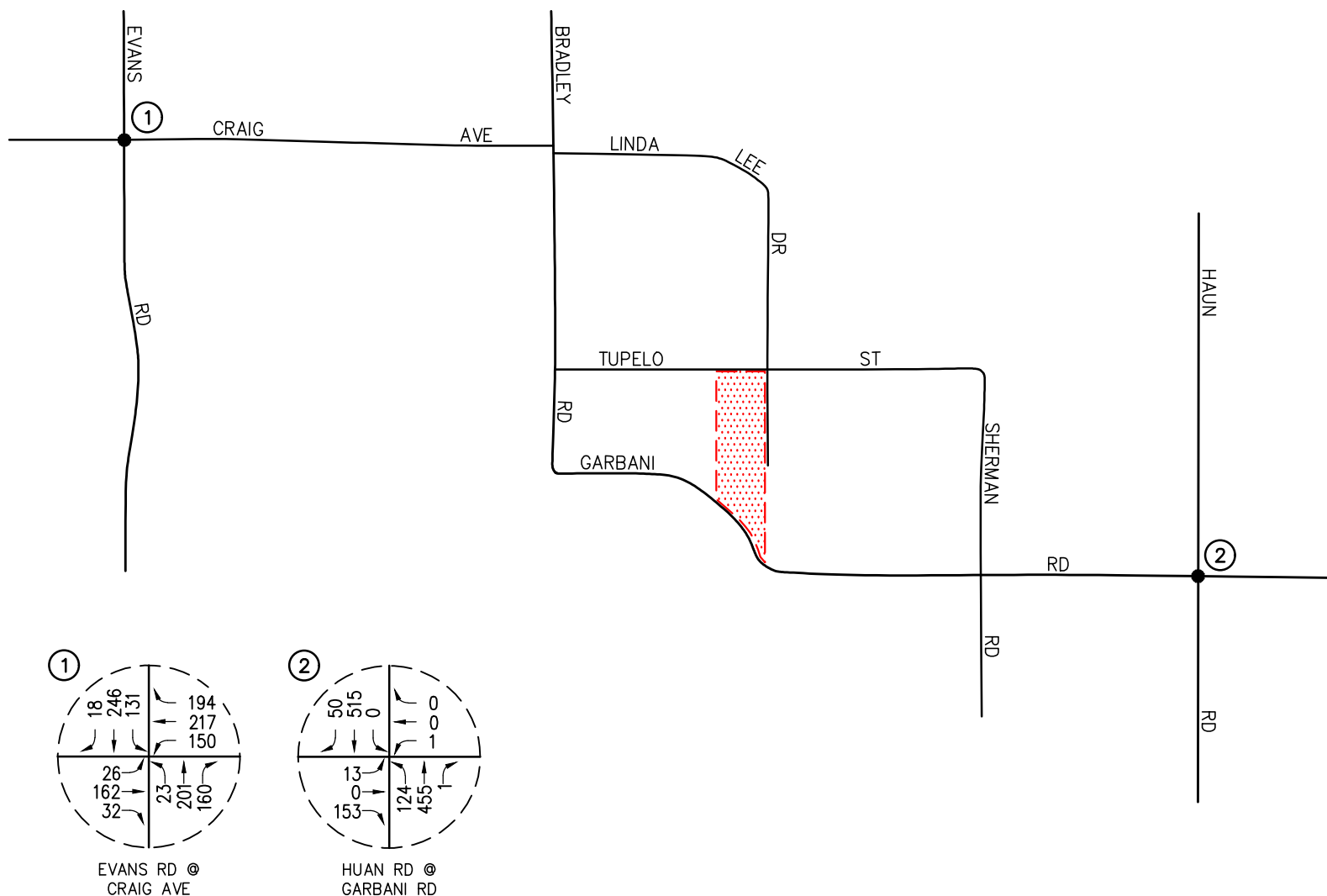
[Red Hatched Box] = PROJECT SITE

FIGURE 5-3

PM PEAK HOUR

PROJECT TRAFFIC VOLUMES

TRACT 38683 GARBANI NORTH, MENIFEE



KEY

① = STUDY INTERSECTION

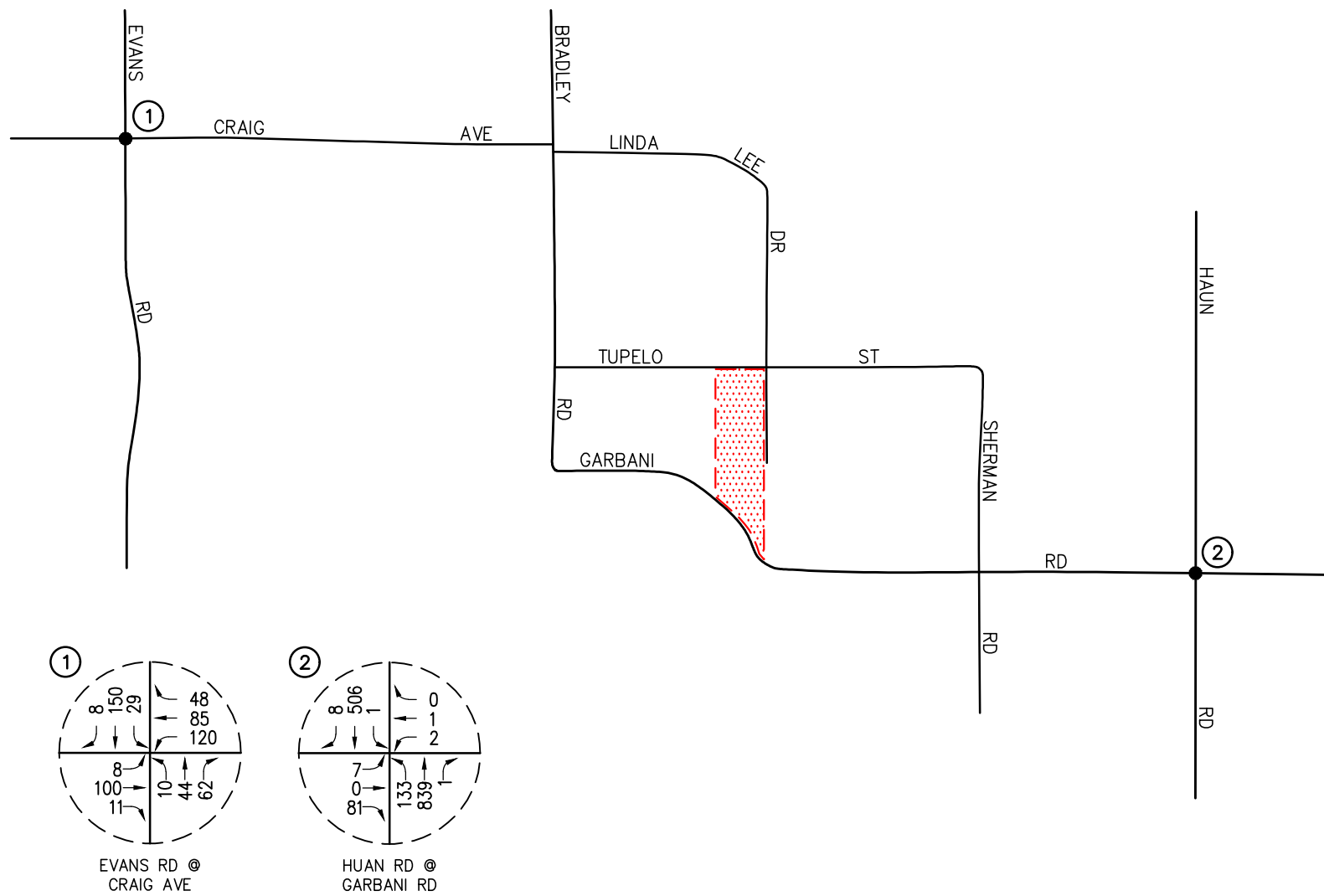
[Red Hatched Box] = PROJECT SITE

FIGURE 5-4

EXISTING PLUS PROJECT AM

PEAK HOUR TRAFFIC VOLUMES

TRACT 38683 GARBANI NORTH, MENIFEE



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KEY

① = STUDY INTERSECTION

▨ = PROJECT SITE

FIGURE 5-5

**EXISTING PLUS PROJECT PM
PEAK HOUR TRAFFIC VOLUMES**
TRACT 38683 GARBANI NORTH, MENIFEE

TABLE 5-1
PROJECT TRIP GENERATION RATES AND FORECAST²

ITE Land Use Code / Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
<u>Generation Factors:</u>							
▪ 210: Single Family Detached Housing (TE/DU)	9.43	26%	74%	0.70	63%	37%	0.94
<u>Proposed Project Generation Forecast:</u>							
▪ TTM 38683 Garbani North (39 DU)	368	7	20	27	23	14	37

Notes:

- TE/DU = Trip End per Dwelling Unit

² Source: *Trip Generation, 11th Edition*, Institute of Transportation Engineers, (ITE) [Washington, D.C. (2021)].

6.0 FUTURE TRAFFIC CONDITIONS

6.1 Ambient Traffic Growth

Horizon year, background traffic growth estimates have been calculated using an ambient growth factor. The ambient traffic growth factor is intended to include unknown and future cumulative projects in the study area, as well as account for regular growth in traffic volumes due to the development of projects outside the study area. The future growth in traffic volumes has been calculated at two percent (2.0%) per year. Applied to existing Year 2024 traffic volumes results in a six percent (6.0%) growth in existing volumes to horizon Year 2027.

6.2 Cumulative Projects Traffic Characteristics

In order to make a realistic estimate of future on-street conditions prior to implementation of the proposed Project, the status of other known development projects (cumulative projects) in the vicinity of the proposed Project has been researched at the City of Menifee. With this information, the service levels of key study intersections with the proposed Project can be evaluated within the context of the cumulative impact of all ongoing development and these cumulative projects' added traffic volumes. Based on our research, there are nineteen (19) cumulative projects located in the City of Menifee within the vicinity of the Project site. These nineteen (19) planned and/or approved cumulative projects have been included as part of the cumulative background setting.

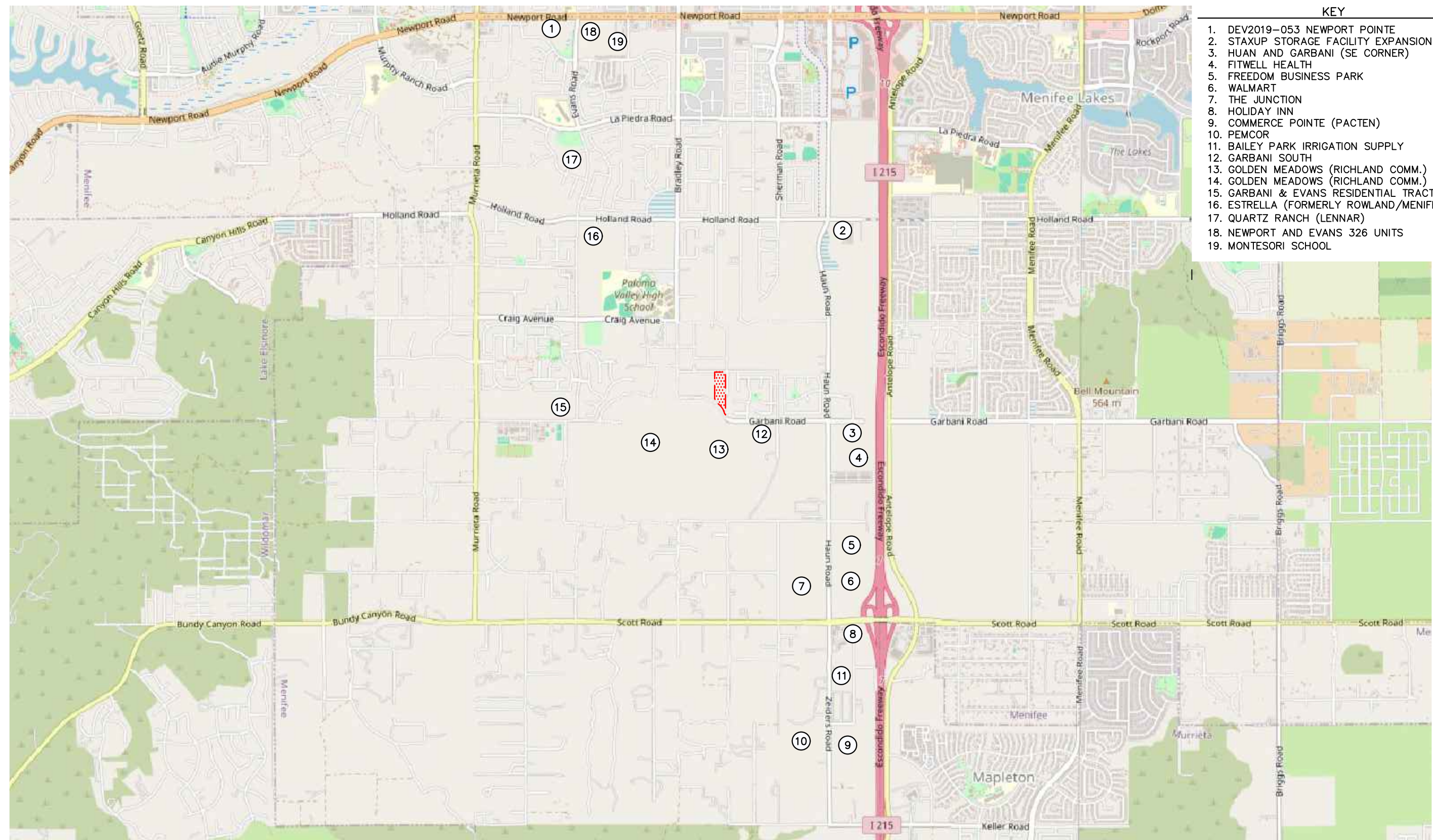
Table 6-1 provides the location and a brief description for each of the nineteen (19) cumulative projects. **Figure 6-1** graphically illustrates the location of the cumulative projects. These cumulative projects are expected to generate vehicular traffic, which may affect the operating conditions of the key study intersections.

Table 6-2 presents the development totals and resultant trip generation for the nineteen (19) cumulative projects. As shown in **Table 6-2**, the cumulative projects are forecast to generate a total of 43,778 daily trips, with 2,477 trips (1,485 inbound and 992 outbound) forecast during the AM peak hour and 3,753 trips (1,740 inbound and 2,013 outbound) forecast during the PM peak hour.

The AM and PM peak hour traffic volumes associated with the nineteen (19) cumulative projects are presented in **Figures 6-2** and **6-3**, respectively.

6.3 Year 2027 Traffic Volumes

Figures 6-4 and **6-5** present the AM and PM peak hour cumulative traffic volumes (existing + ambient growth + cumulative project traffic) at the two (2) key study intersections for the Year 2027, respectively. **Figures 6-6** and **6-7** illustrate the Year 2027 forecast AM and PM peak hour traffic volumes, with the inclusion of the trips generated by the proposed Project, respectively.



- KEY**
1. DEV2019-053 NEWPORT POINTE
 2. STAXUP STORAGE FACILITY EXPANSION
 3. HUAN AND GARBANI (SE CORNER)
 4. FITWELL HEALTH
 5. FREEDOM BUSINESS PARK
 6. WALMART
 7. THE JUNCTION
 8. HOLIDAY INN
 9. COMMERCE POINTE (PACTEN)
 10. PEMCOR
 11. BAILEY PARK IRRIGATION SUPPLY
 12. GARBANI SOUTH
 13. GOLDEN MEADOWS (RICHLAND COMM.)
 14. GOLDEN MEADOWS (RICHLAND COMM.)
 15. GARBANI & EVANS RESIDENTIAL TRACT
 16. ESTRELLA (FORMERLY ROWLAND/MENIFEE 80
 17. QUARTZ RANCH (LENNAR)
 18. NEWPORT AND EVANS 326 UNITS
 19. MONTESORI SCHOOL

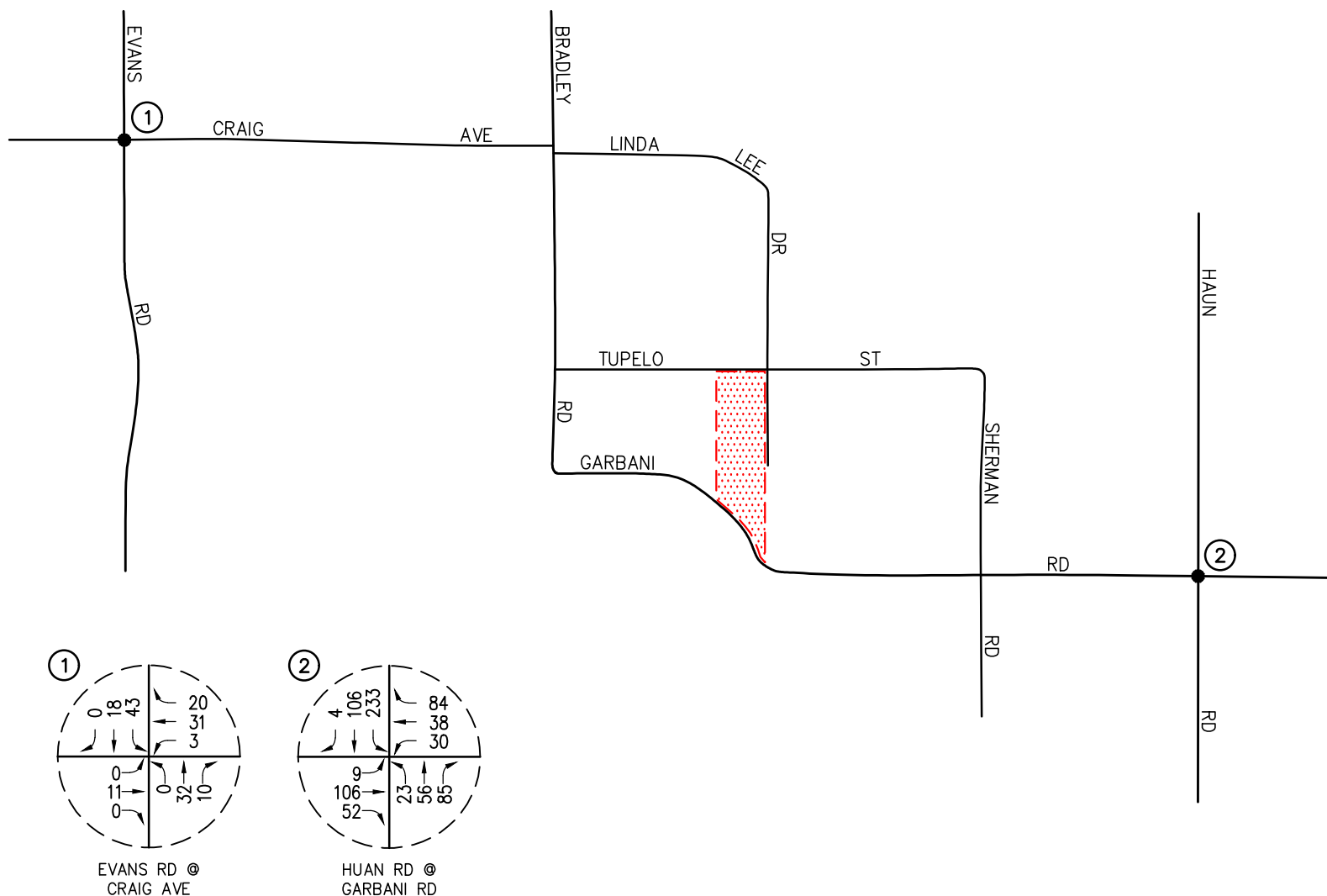
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- KEY**
- ① = LOCATION OF CUMULATIVE PROJECT
 - [Red Hatched Box] = PROJECT SITE

FIGURE 6-1

CUMULATIVE PROJECTS LOCATION MAP
TRACT 38683 GARBANI NORTH, MENIFEE



KEY

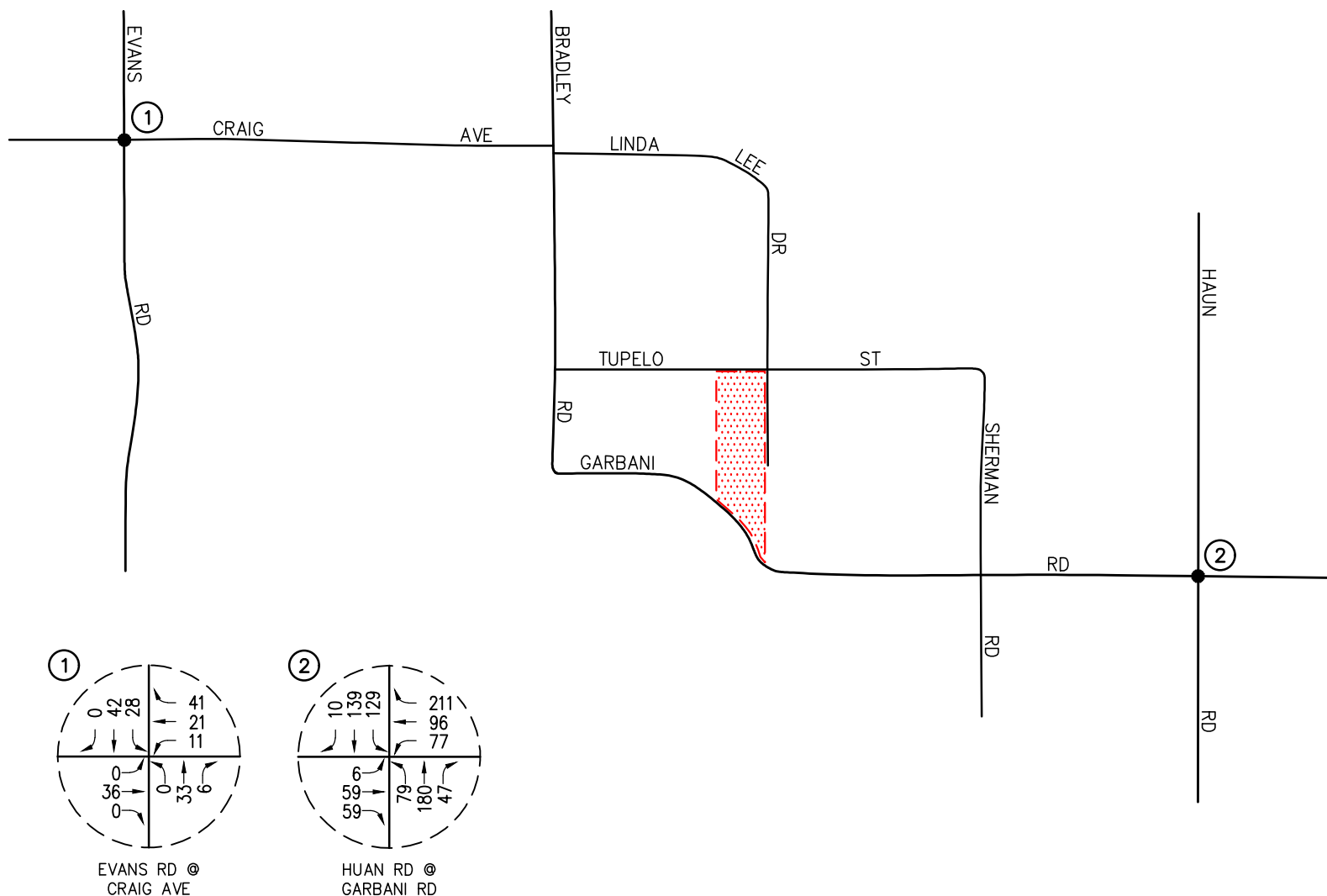
① = STUDY INTERSECTION

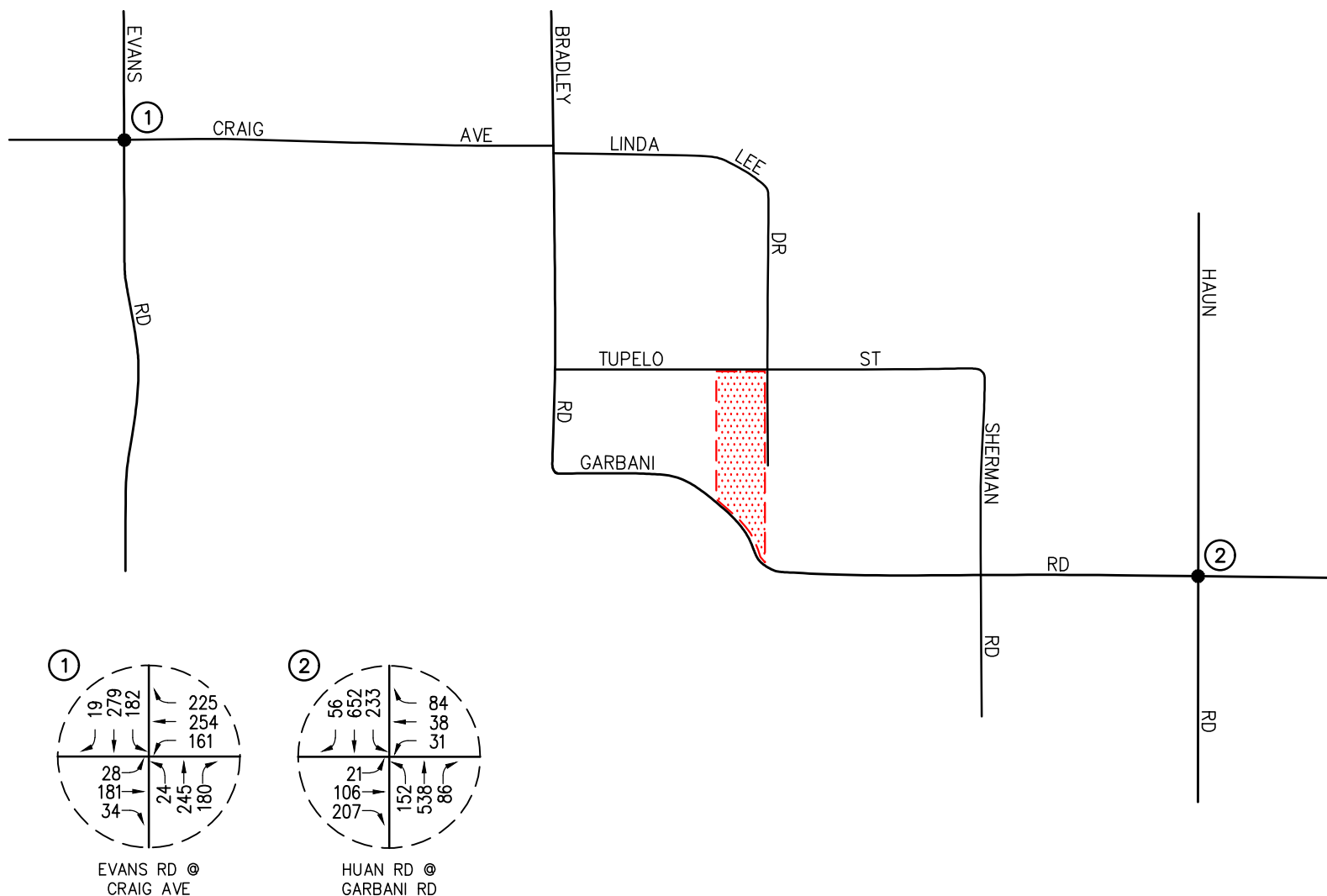
[Red Hatched Box] = PROJECT SITE

FIGURE 6-2

**AM PEAK HOUR CUMULATIVE
PROJECTS TRAFFIC VOLUMES**

TRACT 38683 GARBANI NORTH, MENIFEE





KEY

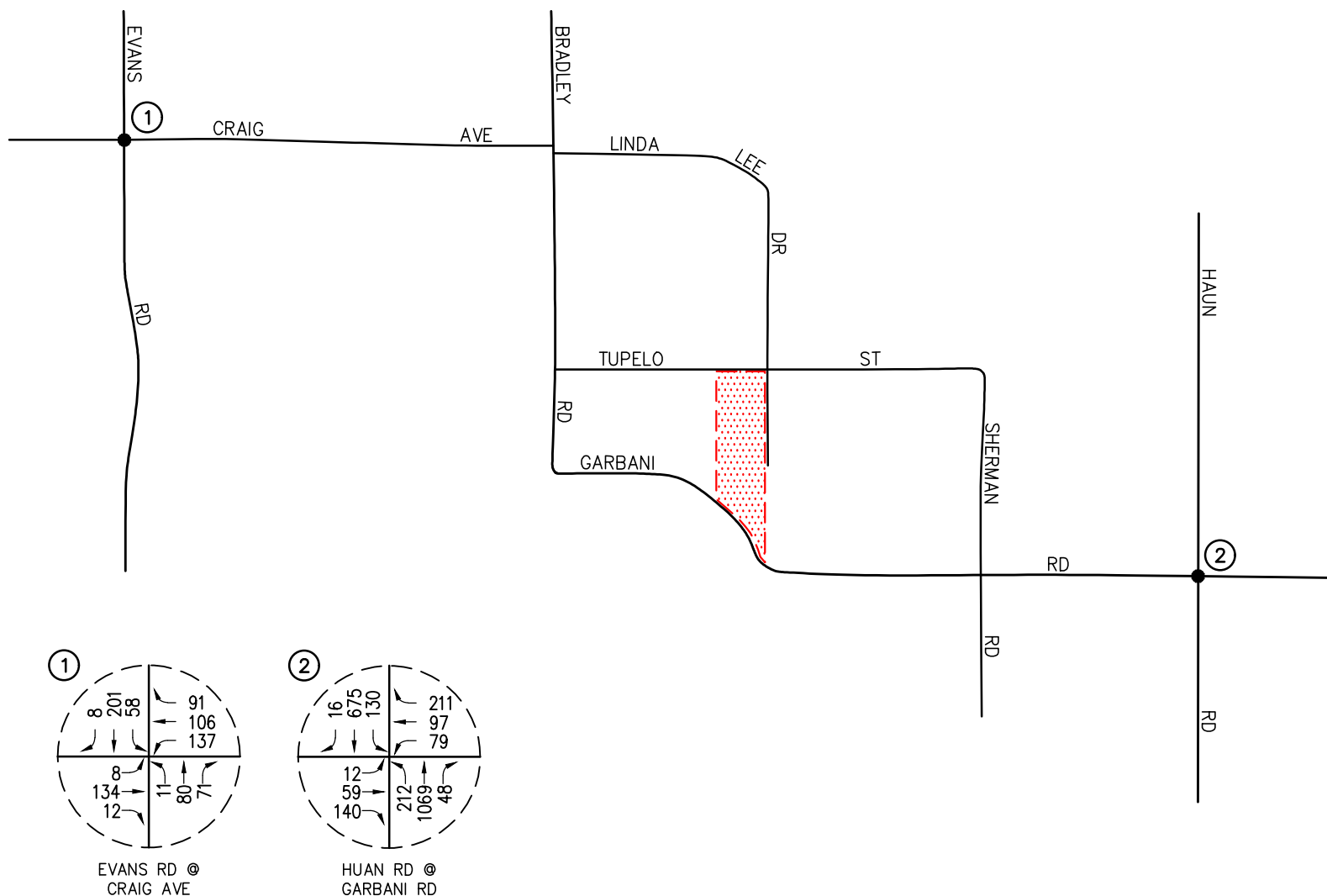
① = STUDY INTERSECTION

[Red Hatched Box] = PROJECT SITE

FIGURE 6-4

**YEAR 2027 CUMULATIVE AM
PEAK HOUR TRAFFIC VOLUMES**

TRACT 38683 GARBANI NORTH, MENIFEE



KEY

① = STUDY INTERSECTION

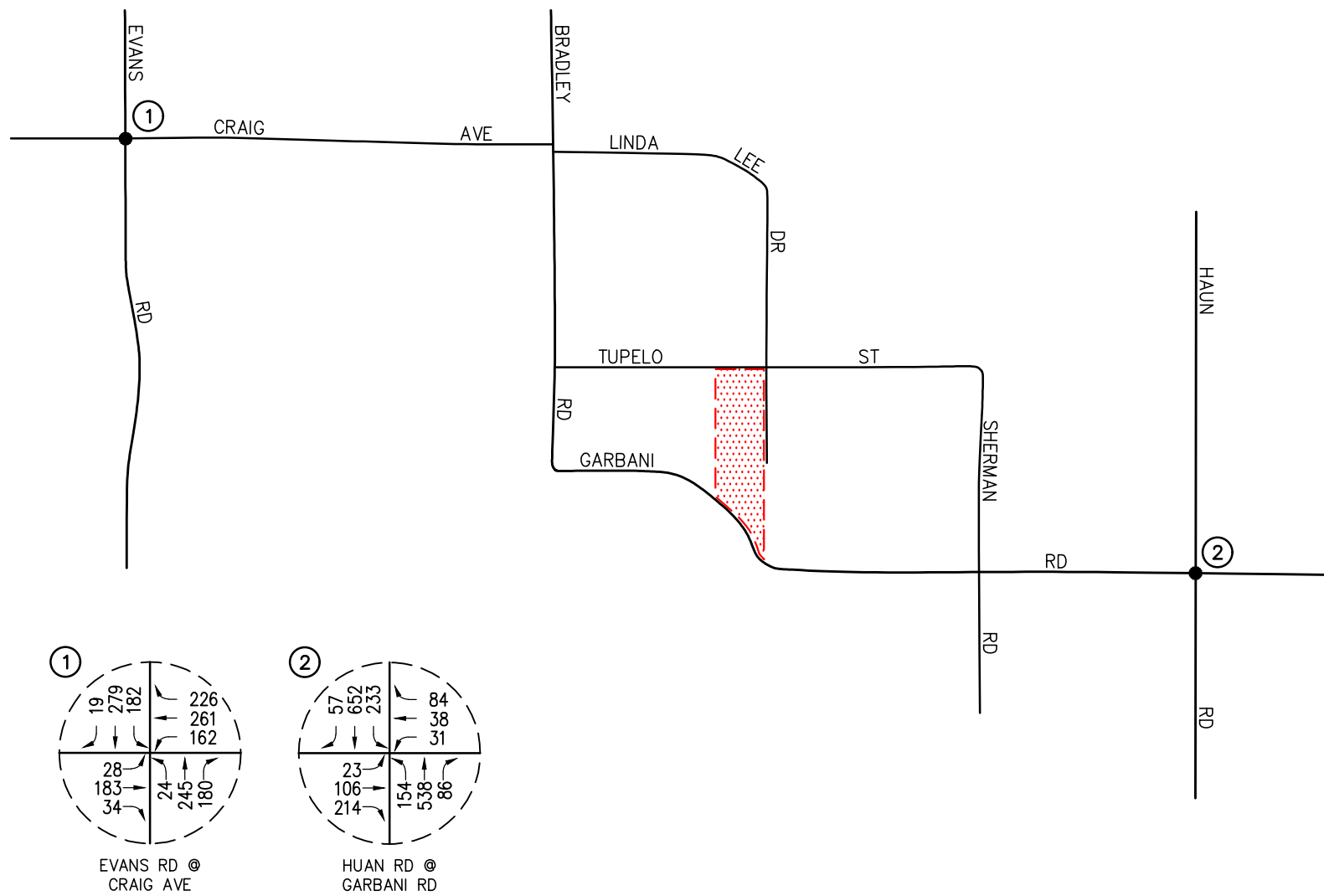
[Red Dotted Box] = PROJECT SITE

FIGURE 6-5

YEAR 2027 CUMULATIVE PM

PEAK HOUR TRAFFIC VOLUMES

TRACT 38683 GARBANI NORTH, MENIFEE



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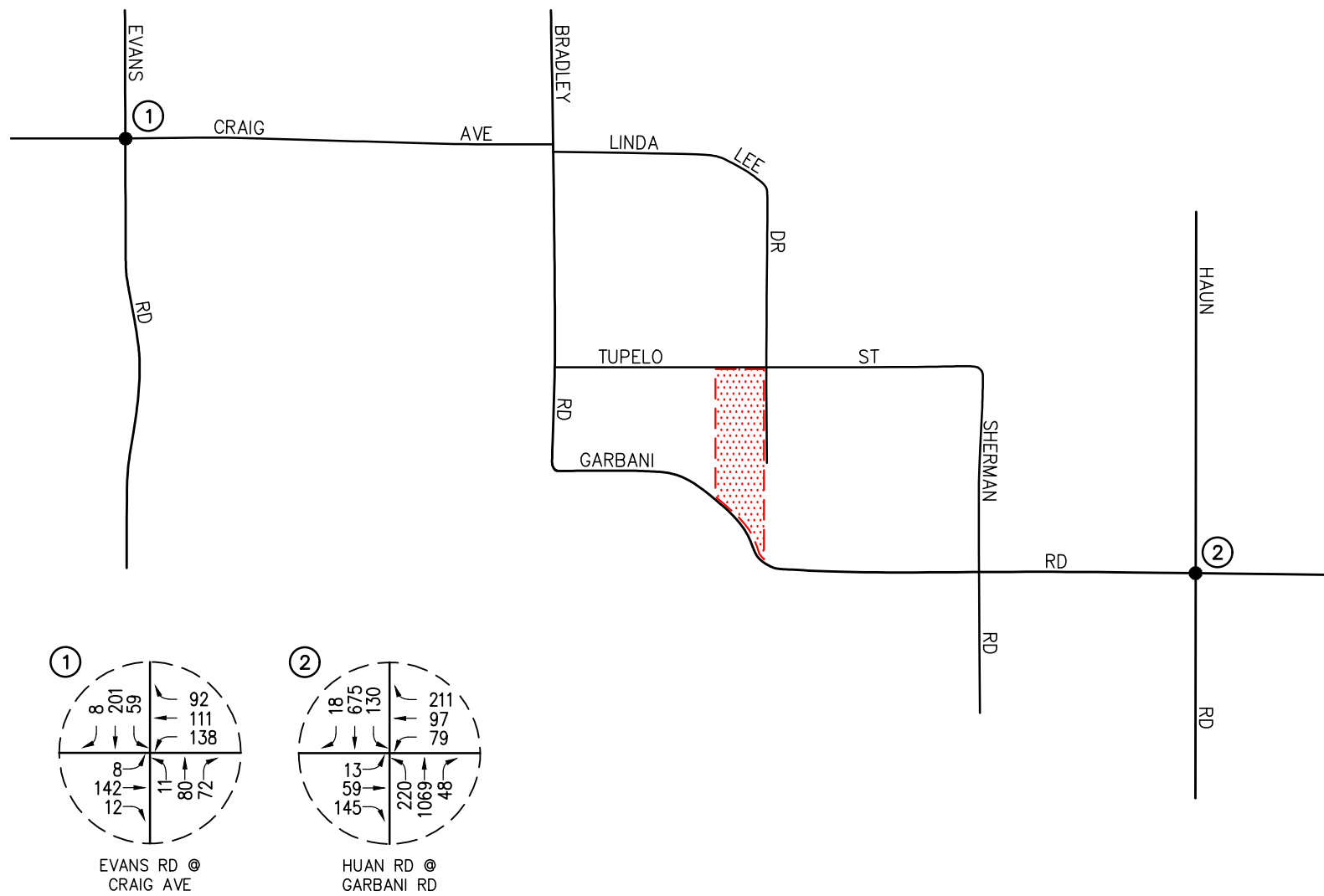
KEY

① = STUDY INTERSECTION

[Red hatched box] = PROJECT SITE

FIGURE 6-6
YEAR 2027 CUMULATIVE
PLUS PROJECT AM PEAK
HR TRAFFIC VOLUMES

TRACT 38683 GARBANI NORTH, MENIFEE



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KEY

① = STUDY INTERSECTION

[Red Hatched Box] = PROJECT SITE

FIGURE 6-7
YEAR 2027 CUMULATIVE
PLUS PROJECT PM PEAK
HOURLY TRAFFIC VOLUMES
 TRACT 38683 GARBANI NORTH, MENIFEE

**TABLE 6-1
LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS³**

No.	Cumulative Project	Location/Address	Description
<u>City of Menifee</u>			
1.	DEV2019-053 Newport Pointe	SWC of Evans Road at Newport Road	18,026 SF Wholesale Market 40,000 SF gym 160 student Day Care 110 LF car wash 11,170 SF Fast food restaurant with drive through window
2.	StaxUp Storage Facility Expansion	SEC of Haun Road at Holland Road	19,975 SF Self-Storage Warehouse
3.	Haun and Garbani (SE corner)	SEC of Haun Road at Garbani Road	291,020 SF Shopping Center
4.	Fitwell Health	East of Huan Road and to the North of All Star Super Storage	9,000 SF Small Office Building 35,000 SF Fitness Club/ Museum 34,200 SF Multipurpose Recreational Facility
5.	Freedom Business Park	East of Haun Road in between Wickerd Road and Scott Road	283,000 SF Light Industrial and Warehousing
6.	Walmart	NEC of Haun Road at Scott Road	240,980 SF Shopping Center 3,200 SF Fast-Food Restaurant w/ Drive-Through Window 3,000 SF Fast-Food Restaurant w/ Drive-Through Window 2,800 SF convenience store/gas station 6,500 SF high-turnover-Sit down restaurant 13,800 SF strip retail plaza 6,680 SF Auto Parts and Service Center
7.	The Junction	NWC of Haun Road at Scott Road	268,824 SF retail commercial building 150 rooms Hotel (85,282 SF) 304 DU Senior Adult Housing-Single Family
8.	Holiday Inn	East of Bailey Park Boulevard in between Scott Road and Bonnies Way	98 Rooms Hotel

Notes:

- SF = Square-feet
- DU = Dwelling Unit
- VFP = Vehicle Fueling Positions

³ Source: City of Menifee Planning Department.

TABLE 6-1 (CONTINUED)
LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS⁴

No.	Cumulative Project	Location/Address	Description
<u>City of Menifee</u>			
9.	Commerce Pointe (PacTen)	NEC of Zelders road at Annie Circle	157,147 SF Industrial
10.	PEMCOR	SWC of Zelders Road at Ciccotti Street	337,000 SF Commercial and Industrial Business Park
11.	Bailey Park Irrigation Supply	West of Bailey Park Boulevard in between Ciccotti Street and Bonnies Way	19,603 SF warehouse
12.	Garbani South	SWC of Haun Road at Garbani Road	33 DU - Single-Family Detached Housing
13.	Golden Meadows (Richland Comm.)	NWC of Wickerd Road at Ascot Way	552 DU Single-Family Detached Housing
14.	Golden Meadows (Richland Comm.)	SEC of Garbani Road at Daniel Road	474 DU Single-Family Detached Housing
15.	Garbani & Evans Residential Tract	NWC of Evans Road at Garbani Road	66 DU Single-Family Detached Housing
16.	Estrella (formerly Rowland/Menifee 80)	NEC of Evans Road at Corson Avenue	80 DU Single-Family Detached Housing
17.	Quartz Ranch (Lennar)	NEC of Evans Road at Holland Road	367 (293 built) DU Single-Family Detached Housing 74 DU left to build
18.	Newport and Evans 326 Units	SEC of Evans Road at Newport Road	326 DU multi-family
19.	Montesori School	West of Wingate Lane and in between Newport Road and Rim Creek Path	13,648 SF Day Care Center

Notes:

- SF = Square-feet
- DU = Dwelling Unit
- VFP = Vehicle Fueling Positions

⁴ Source: City of Menifee Planning Department.

TABLE 6-2
CUMULATIVE PROJECTS TRAFFIC GENERATION FORECAST^{5,6}

Cumulative Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
1. DEV2019-053 Newport Pointe	5,518	141	105	246	240	216	456
2. StaxUp Storage Facility Expansion	29	1	1	2	1	2	3
3. Haun and Garbani (SE corner)	3,620	334	59	393	92	263	355
4. Fitwell Health	2,562	90	93	183	142	120	262
5. Freedom Business Park	1,378	184	25	209	26	158	184
6. Walmart	9,225	130	80	210	321	348	669
7. The Junction	11,138	186	147	333	400	414	814
8. Holiday Inn	783	25	20	45	30	28	58
9. Commerce Pointe (PacTen)	765	102	14	116	14	88	102
10. PEMCOR	1,136	93	22	115	25	90	115
11. Bailey Park Irrigation Supply	34	2	1	3	1	3	4
12. Garbani South	311	6	17	23	20	11	31
13. Golden Meadows (Richland Comm.)	1,301	25	72	97	82	48	130
14. Golden Meadows (Richland Comm.)	1,122	22	61	83	71	41	112
15. Garbani & Evans Residential Tract	622	12	34	46	39	23	62
16. Estrella (formerly Rowland/Menifee 80)	754	15	41	56	47	28	75
17. Quartz Ranch (Lennar)	698	14	38	52	44	26	70
18. Newport and Evans 326 Units	2,197	31	99	130	105	61	166
19. Montessori School	585	72	63	135	40	45	85
Cumulative Projects Total Trip Generation Potential	43,778	1,485	992	2,477	1,740	2,013	3,753

⁵ Unless otherwise noted, Source: *Trip Generation*, 11th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2021).

⁶ Please note that the *City of Menifee LOS Traffic Study Guidelines*, dated October 2020 provides absorption rates for residential cumulative projects. The following assumptions from the guidelines are applied to all residential projects:

- ≤ 100 dwelling units (assume 100% complete)
- 101 to 249 dwelling units (assume 50% complete)
- ≥ 250 dwelling units (assume 25% complete)

7.0 TRAFFIC IMPACT ANALYSIS METHODOLOGY

The relative impact of the proposed Project during the AM peak hour/PM peak hour and daily was evaluated based on analysis of future operating conditions at the two (2) key study intersections, without, then with the proposed Project. The previously discussed capacity analysis procedures were utilized to investigate the future volume-to-capacity relationships and service level characteristics at each study intersection and roadway segment. The significance of the potential impacts of the Project at each key intersection was then evaluated using the following traffic impact criteria.

7.1 Impact Criteria and Thresholds

According to the *City of Menifee LOS Traffic Study Guidelines*, dated October 2020, the City of Menifee has identified LOS D as the standard 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. Intersections or roadway segments not meeting the required LOS may be conditioned for improvements toward meeting the LOS standard. Specifically, a project would not meet the LOS standard:

- If the pre-Project condition at an intersection or roadway segment is at or better than the minimum acceptable LOS (LOS D, or LOS E at constrained locations near I-215) and the addition of project trips results in an unacceptable LOS (LOS E or LOS F).
- If the pre-Project condition is LOS E or F and the Project adds 50 or more peak hour trips to the intersection or roadway segment. This type of impact would be considered a “cumulative” project impact in which the project would be required to contribute a fair share payment toward reducing the impact.

7.2 Traffic Impact Analysis Scenarios

The following scenarios are those for which volume/capacity calculations have been performed at the two (2) key study intersections for Existing and near-term (Year 2027) traffic conditions:

- A. Existing Traffic Conditions;
- B. Existing Plus Project Traffic Conditions;
- C. Scenario (B) with Improvements, if necessary.
- D. Year 2027 Cumulative Traffic Conditions;
- E. Year 2027 Cumulative Plus Project Traffic Conditions; and
- F. Scenario (E) with Improvements, if necessary.

8.0 EXISTING PLUS PROJECT ANALYSIS

Table 8-1 summarizes the peak hour Level of Service results at the two (2) key study intersections for Existing Plus Project traffic conditions. The first column (1) of HCM/LOS values in *Table 8-1* presents a summary of existing AM and PM peak hour traffic conditions (which were also presented in *Table 3-2*). The second column (2) presents forecast Existing traffic conditions with the addition of Project traffic. The third column (3) indicates whether the traffic associated with the Project will cause an operational deficiency based on the LOS criteria defined in this report. The fourth column (4) indicates the anticipated operating conditions with implementation of recommended improvements.

8.1 Existing Traffic Conditions

A review of column (1) of *Table 8-1* indicates that for Existing traffic conditions, the intersection of Haun Road at Garbani Road currently operates at an unacceptable LOS during the AM and PM peak hours. The remaining one (1) key study intersection currently operates at acceptable levels of service during the AM and PM peak hours.

8.2 Existing Plus Project Traffic Conditions

Review of columns (2) and (3) of *Table 8-1* indicates that traffic associated with the proposed Project **will not** adversely impact any of the two (2) key study intersections when compared to the LOS standards defined in this report. Although the intersection of Haun Road at Garbani Road is forecast to operate at unacceptable LOS F during the AM and PM peak hours without and with the Project, the Project will add fewer than 50 peak hour trips to this intersection. The one (1) remaining key study intersection is forecast to operate at acceptable levels of service during the AM and PM peak hours with the addition of the Project generated traffic to existing traffic.

Appendix C presents the Existing and Existing Plus Project HCM/LOS calculations for the two (2) key study intersections.

TABLE 8-1
EXISTING PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY

Key Intersection	Control Type	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Operational Deficiency		(4) Existing Plus Project With Improvements	
				HCM (s/v)	LOS	HCM (s/v)	LOS	Project Trips	Yes/No	HCM (s/v)	LOS
1. Evans Road at Craig Avenue	All-Way Stop	D	AM	26.0 s/v	D	26.5 s/v	D	--	No	--	--
			PM	10.2 s/v	B	10.4 s/v	B	--	No	--	--
2. Haun Road at Garbani Road	Two-Way Stop	D	AM	62.8 s/v	F	65.1 s/v	F	12	No	--	--
			PM	74.8 s/v	F	78.9 s/v	F	16	No	--	--

Notes:

- s/v = seconds per vehicle (delay)
- LOS = Level of Service
- **Bold HCM/LOS values** indicate adverse service levels based on the LOS standards defined in this report

9.0 YEAR 2027 CUMULATIVE PLUS PROJECT ANALYSIS

Table 9-1 summarizes the peak hour Level of Service results at the two (2) key study intersections for Year 2027 Cumulative Plus Project traffic conditions. The first column (1) of HCM/LOS values in *Table 9-1* presents a summary of existing AM and PM peak hour traffic conditions (which were also presented in *Table 3-2*). The second column (2) presents forecast Year 2027 Cumulative traffic conditions (existing plus ambient growth plus cumulative projects). The third column (3) presents forecast Year 2027 Cumulative traffic conditions with the addition of Project traffic. The fourth column (4) indicates whether the traffic associated with the Project will cause an operational deficiency based on the LOS criteria defined in this report. The fifth column (5) indicates the anticipated operating conditions with implementation of recommended improvements.

9.1 Year 2027 Cumulative Traffic Conditions

A review of column (2) indicates that for Year 2027 Cumulative traffic conditions, two (2) of the key study intersections are forecast to operate at an adverse level of service during the AM and/or PM peak hour when compared to the LOS criteria mentioned in this report. The locations projected to operate at an adverse LOS are as follows:

<u>Key Intersection</u>	<u>AM Peak Hour</u>		<u>PM Peak Hour</u>	
	<u>HCM (s/v)</u>	<u>LOS</u>	<u>HCM (s/v)</u>	<u>LOS</u>
1. Evans Road at Craig Avenue	49.0	E	--	--
2. Haun Road at Garbani Road	2,133.8	F	4,072.7	F

9.2 Year 2027 Cumulative Plus Project Traffic Conditions

Review of columns (3) and (4) of *Table 9-1* indicates that traffic associated with the Project ***will not*** adversely impact any of the key study intersections when compared to the LOS criteria defined in this report. Although the intersections of Evans Road at Craig Avenue and Haun Road at Garbani Road are forecast to operate at unacceptable LOS F during the AM and/or PM peak hours without and with the Project, the Project will add fewer than 50 peak hour trips to these intersections.

Appendix D presents the Year 2027 Cumulative and Year 2027 Cumulative Plus Project HCM/LOS calculations for the two (2) key study intersections.

TABLE 9-1
YEAR 2027 CUMULATIVE PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY

Key Intersection	Control Type	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2027 Cumulative Traffic Conditions		(3) Year 2027 Cumulative Plus Project Traffic Conditions		(4) Operational Deficiency		(5) Year 2027 Cumulative Plus Project With Improvements	
				HCM (s/v)	LOS	HCM (s/v)	LOS	HCM (s/v)	LOS	Project Trips	Yes/No	HCM (s/v)	LOS
1. Evans Road at Craig Avenue	All-Way Stop	D	AM	26.0 s/v	D	49.0 s/v	E	50.1 s/v	F	11	No	--	--
			PM	10.2 s/v	B	12.7 s/v	B	12.8 s/v	B	--	No	--	--
2. Haun Road at Garbani Road	Two-Way Stop	D	AM	62.8 s/v	F	2,133.8 s/v	F	2,151.0 s/v	F	12	No	--	--
			PM	74.8 s/v	F	4,072.7 s/v	F	4,315.0 s/v	F	16	No	--	--

Notes:

- s/v = seconds per vehicle (delay)
- LOS = Level of Service
- **Bold HCM/LOS values** indicate adverse service levels based on the LOS standards defined in this report

10.0 SITE ACCESS AND INTERNAL CIRCULATION EVALUATION

10.1 Site Access Evaluation

As shown previously in *Figure 2-2*, vehicular access for the proposed Project will be provided via one (1) full-movement unsignalized public local roadway intersection located along Tupelo Street [i.e. Project Driveway No. 1 (Brookside Road)] and via the existing full-movement public local roadway intersection of Linda Lee Drive at Tupelo Street [i.e. Project Driveway No. 2 (Linda Lee Drive)]. Given the relatively low existing and future street traffic volume along Tupelo Street, site access for the proposed Project will be adequate without undue congestion.

10.2 Internal Circulation Evaluation

The on-site circulation layout of the proposed Project as illustrated in *Figure 2-2* on an overall basis is adequate. Curb return radii have been confirmed and are generally adequate for emergency vehicles, service/delivery (FedEx, UPS, Amazon, etc.) trucks, trash trucks, and moving vans.

11.0 AREA-WIDE TRAFFIC IMPROVEMENTS

For those intersections and roadway segments where projected traffic volumes are expected to result in operational deficiencies, this report recommends traffic improvements that change the intersection and/or roadway segments geometry to increase capacity. These capacity improvements involve roadway widening and/or re-striping to reconfigure (add lanes) roadways to specific approaches of a key intersection. The identified improvements are expected to:

1. Address the impact of existing traffic, Project traffic and future non-project (ambient traffic growth and related projects) traffic, and
2. Improve Levels of Service to an acceptable range and/or to pre-project conditions.

11.1 Planned Improvements

The following planned improvements are associated with cumulative projects and have been included in the level of service calculations for Year 2027 Cumulative and Year 2027 Cumulative Plus Project traffic conditions.

- **Intersection No. 2 – Haun Road at Garbani Road:** Widen and restripe the east leg of the intersection to provide an exclusive westbound left-turn lane. This improvement will be implemented in conjunction with the development of Cumulative Project No. 3 (Haun & Garbani Shopping Center) proposed on the southeast quadrant of the intersection.

11.2 Recommended Improvements

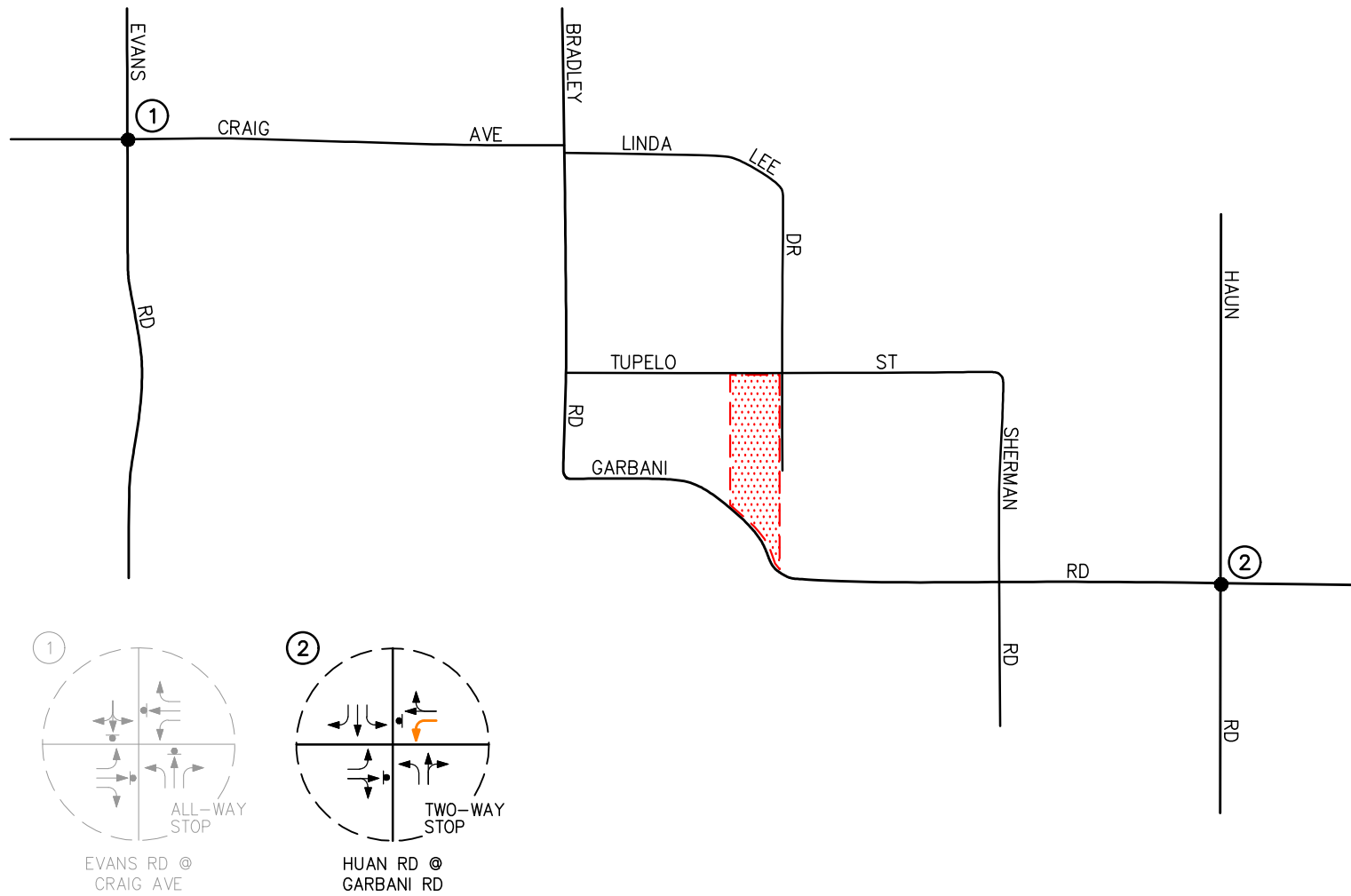
11.2.1 Existing Plus Project Recommended Improvements

The results of Existing Plus Project traffic conditions indicate that one (1) of the two (2) key study intersections is forecast to operate at an adverse level of service during the AM and PM peak hours when compared to the LOS criteria defined in this report. Although the intersection of Haun Road at Garbani Road is forecast to operate at unacceptable LOS F without and with the Project, the Project will add less than 50 peak hour trips to these intersections. Therefore, this intersection does not require improvements based on the LOS standards defined in this report.

11.2.2 Year 2027 Cumulative Plus Project Recommended Improvements

The results of Year 2027 Cumulative Plus Project traffic conditions indicate that the two (2) key study intersections are forecast to operate at an adverse level of service during the AM and PM peak hours when compared to the LOS criteria defined in this report. Although the intersections of Evans Road at Craig Avenue and Haun Road at Garbani Road are forecast to operate at unacceptable LOS F during the AM and/or PM peak hours without and with the Project, the Project will add less than 50 peak hour trips to these intersections. Therefore, these intersections do not require improvements based on the LOS standards defined in this report.

Figure 11-1 graphically illustrates the planned improvements for Year 2027 Cumulative Plus Project traffic conditions.



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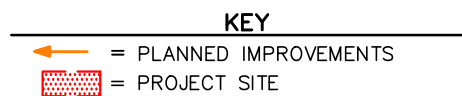


FIGURE 11-1

PLANNED IMPROVEMENTS
TRACT 38683 GARBANI NORTH, MENIFEE

12.0 VEHICLE MILES TRAVELED (VMT) ANALYSIS

On December 28, 2018, the California Natural Resources Agency adopted revised CEQA Guidelines. Among the changes to the guidelines was the removal of vehicle delay and LOS from consideration for transportation impacts under CEQA. With the adopted guidelines, transportation impacts are to be evaluated based on a project's effect on vehicle miles traveled. Lead agencies are allowed to continue using their current impact criteria, or to opt into the revised transportation guidelines. However, the new guidelines must be used starting July 1, 2020, as required in CEQA section 15064.3. The City of Menifee recently adopted new traffic impact criteria in June 2020 to be consistent with the CEQA revisions. These new guidelines are contained within the *City of Menifee Traffic Impact Analysis Guidelines for Vehicle Miles Traveled*, dated January 2022 and provide screening criteria and methodology for VMT analysis.

Per the *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled*, there are three types of screening to screen projects from project-level VMT assessments. The three screening steps are described below. The results of each screening step applied to the proposed Project is also discussed. It should be noted that the project only needs to satisfy one of the three screening steps.

Step 1: Transit Priority Area (TPA) Screening

Projects located within a transit priority area (TPA) may be presumed to have a less than significant impact absent substantial evidence to the contrary. This presumption may **NOT** be appropriate if the project:

1. Has a Floor Area Ratio (FAR) of less than 0.75;
2. Includes 5% or more parking for use by residents, customers, or employees of the project than required by the City;
3. Is inconsistent with the applicable Sustainable Communities Strategy; or
4. Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

➤ *Based on the WRCOG screening tool, the Project site is not located within a Transit Priority Area (TPA). Therefore, Project Screening Step 1: Transit Priority Area (TPA) Screening is not satisfied.*

Step 2: Low VMT Area Screening

Residential and office projects located within a low VMT-generating area may be presumed to have a less than significant impact absent substantial evidence to the contrary. In addition, other employment-related and mixed-use land use projects may qualify for the use of screening if there is a reasonable expectation that the project will generate VMT per service population that is similar to the existing land uses in the low VMT area. To identify if the project is in a low-VMT-generating area, the analyst may review the WRCOG screening tool and apply the appropriate threshold.

➤ *Based on the WRCOG screening tool, the Project site is located within Traffic Analysis Zone (TAZ) #1065. Per the WRCOG screening tool, the Project TAZ VMT/service population is 29.4*

VMT per service population and the jurisdiction average VMT/service population is 33.6 VMT per service population. Comparison of the two VMT values indicates that the Project TAZ VMT is lower than the jurisdiction VMT average. Therefore, Project Screening Step 2: Low VMT Area Screening is satisfied.

Appendix E contains the WRCOG VMT Screening Tool Data.

Step 3: Project Type Screening

In addition to local serving retail, the following uses can be presumed to have a less than significant impact absent substantial evidence to the contrary as their uses are local serving in nature:

- Local-serving K-12 schools
- Local parks
- Day care centers
- Local-serving retail uses less than 50,000 square feet
- Local-serving hotels (e.g. non-destination hotels)
- Student housing projects on or adjacent to college campuses
- Local-serving assembly uses (places of worship, community organizations)
- Community institutions (public libraries, fire stations, local government)
- Local-serving community colleges that are consistent with the assumptions noted in the RTP/SCS
- Affordable or supportive housing
- Assisted living facilities
- Senior housing as defined by the U.S. Department of Housing and Urban Development (HUD)
- Projects generation less than 110 daily vehicle trips
 - This generally corresponds to the following “typical” development potentials:
 - 11 single family housing units
 - 16 multi-family, condominiums, or townhouse housing units
 - 10,000 sq. ft. of office
 - 15,000 sq. ft. of light industrial
 - 63,000 sq. ft. of warehousing
 - 79,000 sq. ft. of high cube transload and short-term storage warehouse

➤ *As stated in Section 2.0 and Section 5.0, the proposed Project will consist of 39 single family housing units with a forecast trip generation of 368 daily trips. Therefore, based on the Step 3: Project Type Screening is not satisfied.*

12.1 VMT Analysis Conclusion

Based on the City's guidelines, the proposed Project satisfies *Step 2: Low VMT Area Screening*. Therefore, the proposed Project screens out from a VMT analysis, and could be presumed to have a less than significant impact on VMT per the City's guidelines.

13.0 SUMMARY OF FINDINGS AND CONCLUSIONS

- **Project Description** – The proposed Project site is located on the southwest corner of Tupelo Street and Linda Lee Drive in the City of Menifee, California. The proposed Project will consist of 39 single-family detached dwelling units. The proposed Project is anticipated to be completed by the Year 2027.

Access to the proposed Project will be provided via one (1) full-movement unsignalized public local roadway intersection located along Tupelo Street [i.e. Project Driveway No. 1 (Brookside Road)] and via the existing full-movement public local roadway intersection of Linda Lee Drive at Tupelo Street [i.e. Project Driveway No. 2 (Linda Lee Drive)]. In addition, Street A will provide access to Brookside Road via Linda Lee Drive.

- **Study Scope** – The following two (2) key study intersections were selected for detailed peak hour level of service analyses under Existing Traffic Conditions, Existing Plus Project Conditions, Year 2027 Cumulative Traffic Conditions, and Year 2027 Cumulative Plus Project Traffic Conditions.

Key Study Intersections

1. Evans Road at Craig Avenue
2. Haun Road at Garbani Road

- **Existing Traffic Conditions** – The intersection of Haun Road at Garbani Road currently operates at an unacceptable LOS during the AM and PM peak hours. The remaining one (1) key study intersection currently operates at acceptable levels of service during the AM and PM peak hours.
- **Project Trip Generation** – The proposed Project is forecast to generate approximately 368 daily trips, with 27 trips (7 inbound, 20 outbound) forecast during the AM peak hour and 37 trips (23 inbound, 14 outbound) forecast during the PM peak hour.
- **Cumulative Projects Trip Generation** – The nineteen (19) cumulative projects are forecast to generate a total of 43,778 daily trips, with 2,477 trips (1,485 inbound and 992 outbound) forecast during the AM peak hour and 3,753 trips (1,740 inbound and 2,013 outbound) forecast during the PM peak hour.
- **Existing Plus Project Traffic Conditions** – The proposed Project will not adversely impact any of the two (2) key study intersections when compared to the LOS standards defined in this report. Although the intersection of Haun Road at Garbani Road is forecast to operate at unacceptable LOS F during the AM and PM peak hours without and with the Project, the Project will add less than 50 peak hour trips to this intersection. The one (1) remaining key study intersection is forecast to operate at acceptable levels of service during the AM and PM peak hours with the addition of the Project generated traffic to existing traffic.

- ***Year 2027 Cumulative Plus Project Traffic Conditions*** – Traffic associated with the Project will adversely impact two (2) of the two (2) key study intersections when compared to the LOS criteria defined in this report. Although the intersections of Evans Road at Craig Avenue and Haun Road at Garbani Road are forecast to operate at unacceptable LOS F during the AM and/or PM peak hours without and with the Project, the Project will add less than 50 peak hour trips to these intersections.
- ***Site Access and Internal Circulation Evaluation*** – Given the relatively low existing and future street traffic volume along Tupelo Street, site access for the proposed Project will be adequate without undue congestion. The on-site circulation layout of the proposed Project on an overall basis is adequate. Curb return radii have been confirmed and are generally adequate for emergency vehicles, service/delivery (FedEx, UPS, Amazon, etc.) trucks, trash trucks, and moving vans.
- ***Planned Improvements*** – The following planned improvements are associated with cumulative projects and have been included in the level of service calculations for Year 2027 Cumulative and Year 2027 Cumulative Plus Project traffic conditions.
 - **Intersection No. 2 – Haun Road at Garbani Road:** Widen and restripe the east leg of the intersection to provide an exclusive westbound left-turn lane. This improvement will be implemented in conjunction with the development of Cumulative Project No. 3 (Haun & Garbani Shopping Center) proposed on the southeast quadrant of the intersection.
- ***Existing Plus Project Recommended Improvements*** – The results of Existing Plus Project traffic conditions indicate that one (1) of the two (2) key study intersections is forecast to operate at an adverse level of service during the AM and PM peak hours when compared to the LOS criteria defined in this report. Although the intersection of Haun Road at Garbani Road is forecast to operate at unacceptable LOS F without and with the Project, the Project will add less than 50 peak hour trips to these intersections. Therefore, this intersection does not require improvements based on the LOS standards defined in this report.
- ***Year 2027 Cumulative Plus Project Recommended Improvements*** – The results of Year 2027 Cumulative Plus Project traffic conditions indicate that the two (2) key study intersections are forecast to operate at an adverse level of service during the AM and PM peak hours when compared to the LOS criteria defined in this report. Although the intersections of Evans Road at Craig Avenue and Haun Road at Garbani Road are forecast to operate at unacceptable LOS F during the AM and/or PM peak hours without and with the Project, the Project will add less than 50 peak hour trips to these intersections. Therefore, these intersections do not require improvements based on the LOS standards defined in this report.
- ***Vehicle Miles Traveled (VMT) Analysis*** – Based on the City’s guidelines, the proposed Project satisfies *Step 2: Low VMT Area Screening*. Therefore, the proposed Project screens out from a VMT analysis, and could be presumed to have a less than significant impact on VMT per the City’s guidelines.

APPENDIX A

TRAFFIC STUDY AND VMT SCOPE OF WORK

Attachment A: Project Scoping Form Updated for Focused TIA

This scoping form shall be completed and submitted to the City of Meniffee to assist in identifying infrastructure improvements that may be required to support traffic from the proposed project.

Project Identification:

Case Number:	Tentative Tract Map 38683
Related Cases:	
SP No.	
EIR No.	
GPA No.	
CZ No.	
Project Name:	Tract 38683 Garbani North
Project Address:	SWC Linda Lee Drive & Tupelo Street (See Figure 1 - Vicinity Map & Figure 2 - Existing Site Aerial, attached)
Project Opening Year:	2027
Project Description:	39 single-family detached dwelling units (See Figure 3 - Proposed Site Plan, attached)

Type text here

	Consultant:	Developer:
Name:	LLG Engineers	168 Builders, Inc.
Address:	2 Executive Circle, Suite 250 Irvine, CA 92614	1211 Center Court Drive, #200 Covina, CA 91724
Telephone:	(949) 825-6175	(909) 702-8889
Fax/Email:	maberry@llgenineers.com	tonyzeng@SBCGLOBAL.net

Trip Generation Information:

Trip Generation Data Source: ITE Trip Generation 11th Edition (2021)

Current General Plan Land Use:	Proposed General Plan Land Use:
<u>Residential (2.1 - 5 DU/Acre)</u>	<u>Residential (2.1 - 5 DU/Acre)</u>
Current Zoning:	Proposed Zoning:
<u>SFR EDC-SG</u>	<u>SFR LDR-2</u>

	Existing Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Trips	0	0	0	7	20	27
PM Trips	0	0	0	23	14	37

(See Trip Generation Forecast - Table 1)

Trip Internalization: ☐ Yes ☒ No (_____% Trip Discount)

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

Type text here

Potential Screening Checks

Is your project screened from specific analyses (see Page 5 of the guidelines related to LOS assessment). **Focused TIA required by the City; See attached revised Figure 1 showing study intersections**

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

VMT screening justification (see Pages 10-12 of the guidelines): _____

The Project site is located within a Low VMT Area (See attached screen shots)

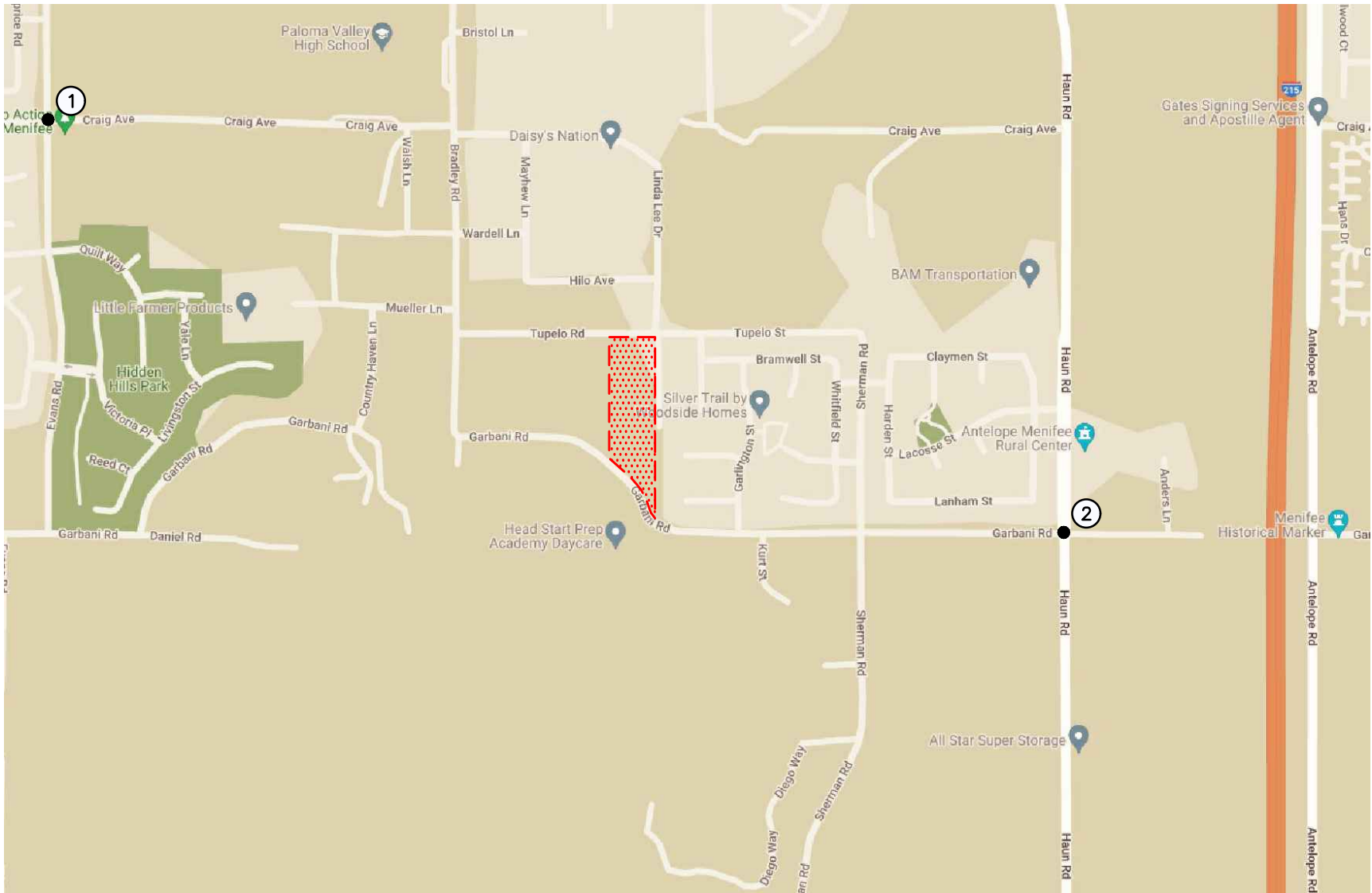
VMT Analysis Scoping

For projects that are not screened, identify the following:

- Travel Demand Forecasting Model Used _____
- Attach WRCOG Screening VMT Assessment output or describe why it is not appropriate for use
- Attach proposed Model Land Use Inputs and Assumed Conversion Factors (attach)

Signatures

TIA Preparer: Keil Maberry City (Approved by): _____



n:\4700\2244781 - tract 38683 garbani north, menifee.dwg\4781 f-1.dwg LDP 14:07:17 04-17-2024 agular



SOURCE: GOOGLE

KEY

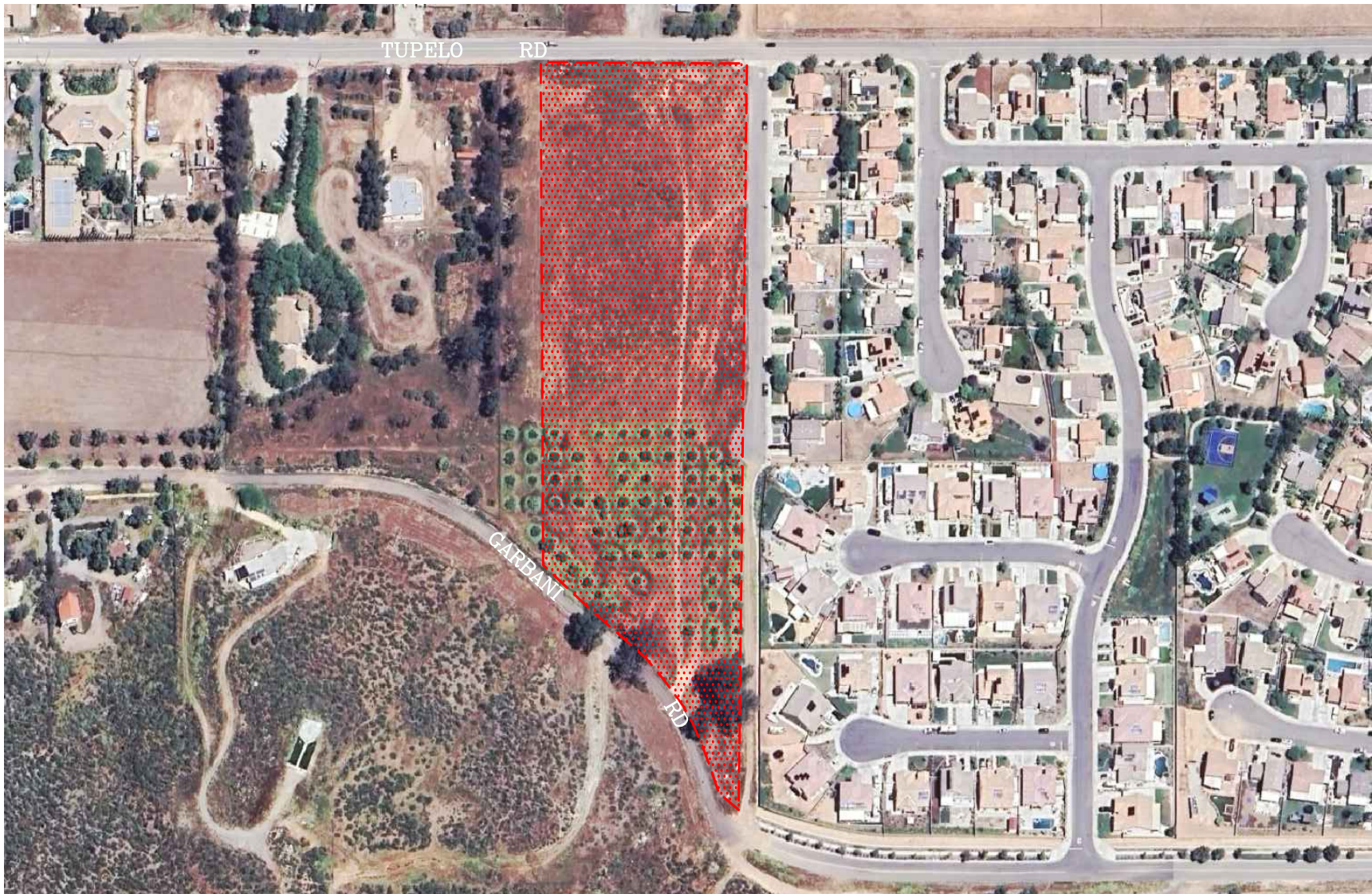
① = STUDY INTERSECTION

[Red hatched box] = PROJECT SITE

FIGURE 1

VICINITY MAP

TRACT 38683 GARBANI NORTH, MENIFEE



n:\4700\2244781 - tract 38683 garbani north, menifee.dwg\4781 f-2.dwg LDP 08:05:46 02-28-2024 agular



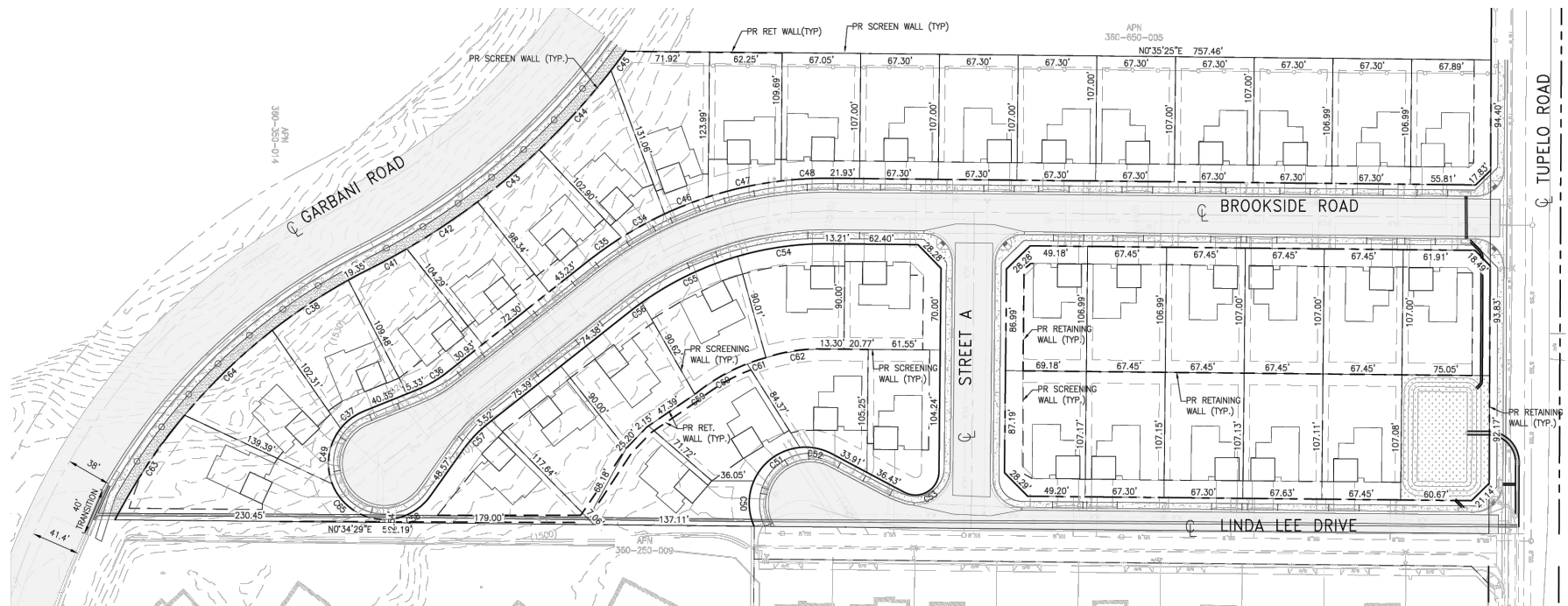
SOURCE: GOOGLE

KEY

 = PROJECT SITE

FIGURE 2

EXISTING SITE AERIAL
TRACT 38683 GARBANI NORTH, MENIFEE



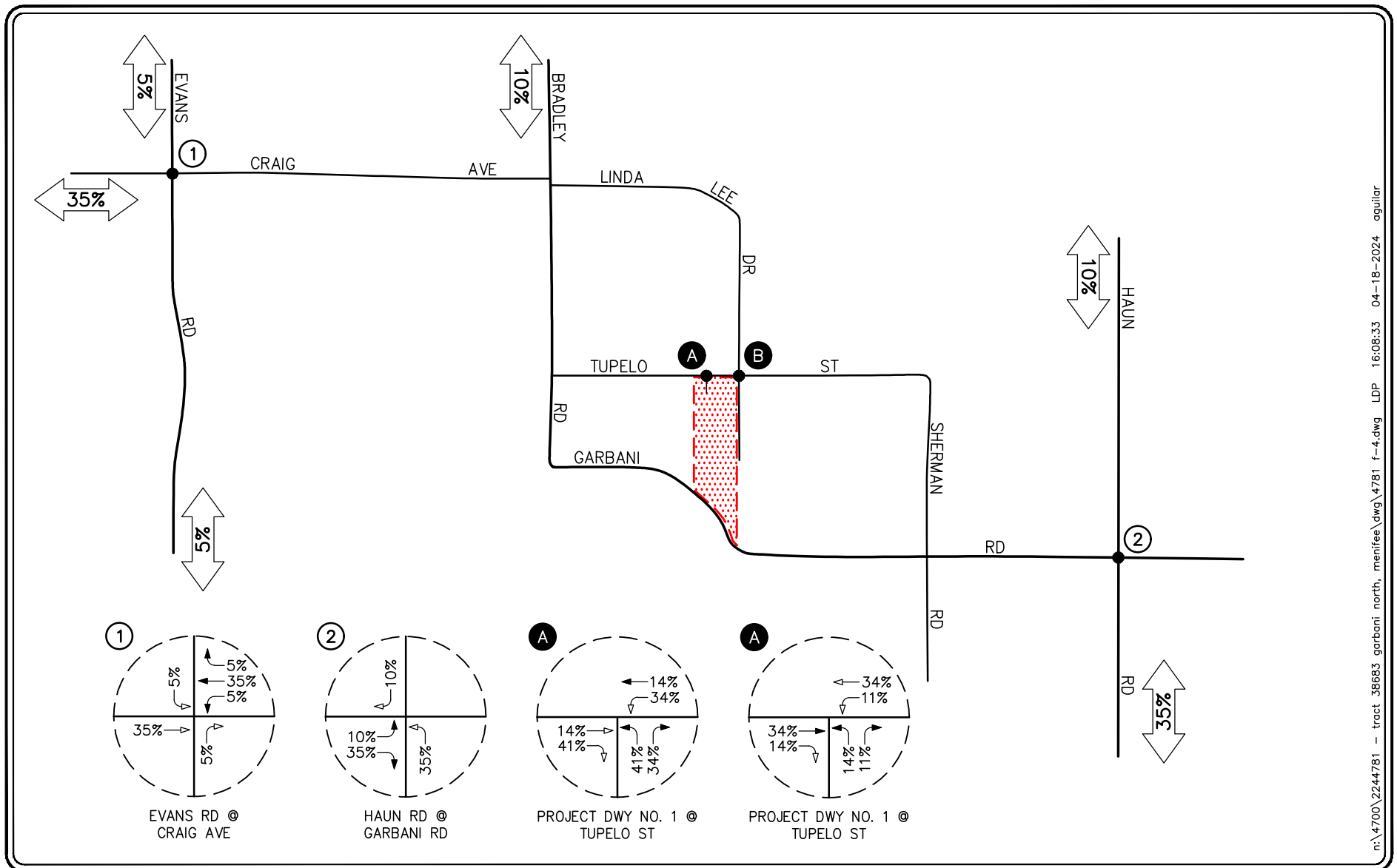
n:\4700\2244781 - tract 38683 garbani north, menifee.dwg\4781 f-3.dwg LDP 08:28:56 02-28-2024 agular

SOURCE: BLUE ENGINEERING & CONSULTING, INC



FIGURE 3

PROPOSED SITE PLAN
TRACT 38683 GARBANI NORTH, MENIFEE



n:\4700\2244781 - tract 38683 garbani north, meniffee.dwg\4781 f-4.dwg LDP 16:08:33 04-18-2024 agular



FIGURE 4

PROJECT DISTRIBUTION PATTERN
TRACT 38683 GARBANI NORTH, MENIFEE

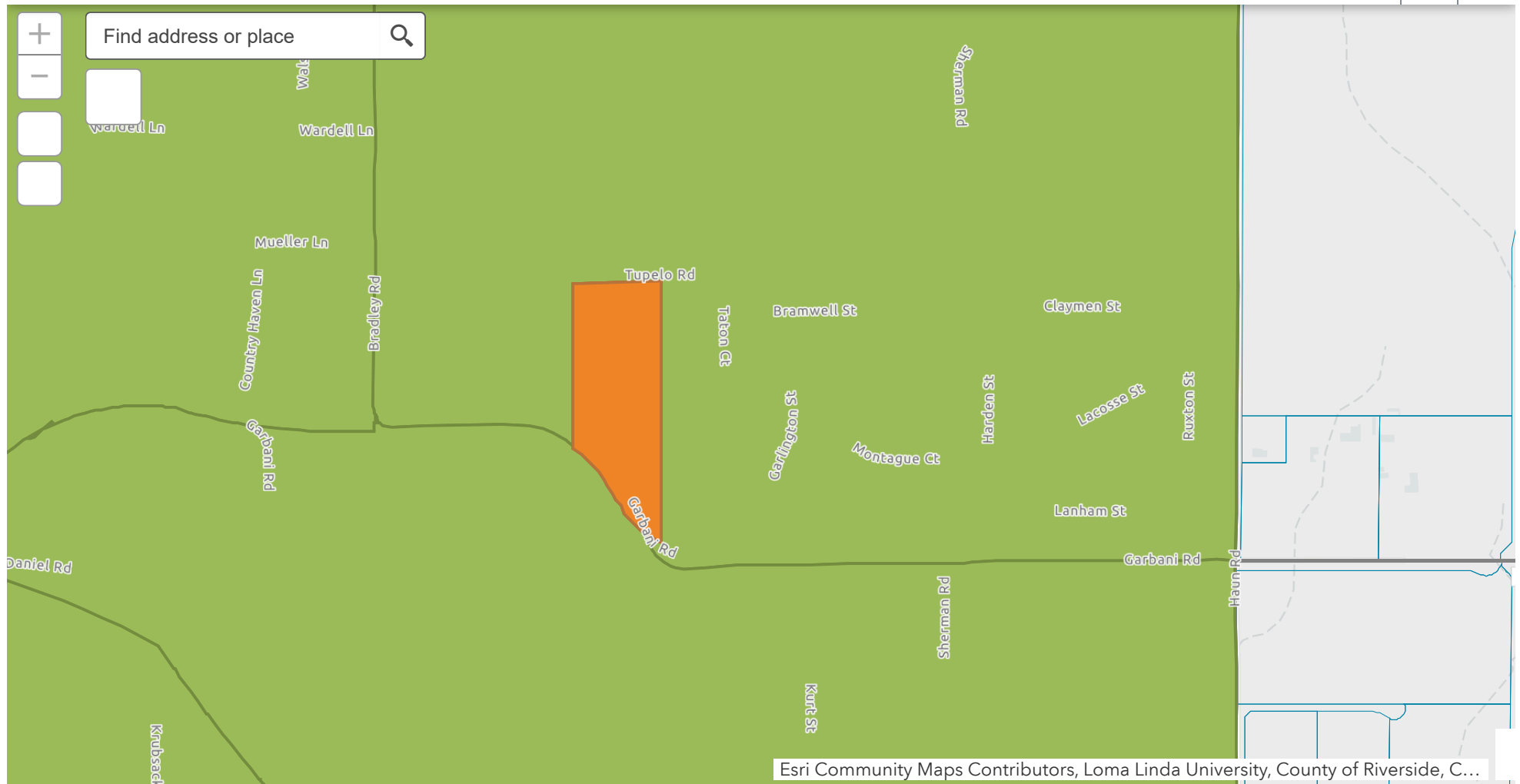
TABLE 1
PROJECT TRAFFIC GENERATION RATES AND FORECAST¹
TRACT 38683, MENIFEE

ITE Land Use Code / Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
<u>Generation Factors:</u>							
▪ 210: Single Family Detached Housing (TE/DU)	9.43	26%	74%	0.70	63%	37%	0.94
<u>Proposed Project Generation Forecast:</u>							
▪ TTM 38683 Garbani North (39 DU)	368	7	20	27	23	14	37

Notes:

- TE/DU = Trip ends per dwelling unit

¹ Source: *Trip Generation, 11th Edition*, Institute of Transportation Engineers, (ITE) [Washington, D.C. (2021)].



600ft

-117.182 33.658 Degrees

(1 of 4)

OBJECTID	2
Assessor Parcel Number (APN)	360250006
Traffic Analysis Zone (TAZ)	1065
Community Region	MENIFEE
Inside a Transit Priority Area (TPA)	No
TAZ VMT	29.4
Jurisdiction VMT	33.6
% Difference	-12.64%
VMT Metric	OD VMT Per Service Population
Threshold	33.6

Community Regions have different thresholds 0
(1=Yes, 0=No)

Note Screening results are based on location of parcel centroids. If results are desired considering the full parcel, please refer to the associated map layers to visually review parcel and TAZ boundary relationship.

SHAPE_Length	1086.0932860035832
SHAPE_Area	53770.376796895434

(2 of 4)

OBJECTID	329
TAZ	1065
VMT Metric	OD VMT Per Service Population
TAZ VMT	29.35206598
Community Region VMT	33.600665
Threshold	33.6
% Difference	-12.64%
Results	Yes (Pass)
Shape_Length	18162.237834503823
Shape_Area	19866724.979528237

(3 of 4)

OBJECTID	1
Completely within a TPA?	No (Fail)
Within a low VMT generating TAZ?	Yes (Pass)
Note	Screening results are based on location of parcel centroids. If results are desired considering the full parcel, please refer to the associated map layers to visually review parcel and TAZ boundary relationship.
Community Regions have different thresholds (1=Yes, 0=No)	0
SHAPE_Length	1086.0932860035832
SHAPE_Area	53770.376796895434

(4 of 4)

OBJECTID	1
Assessor Parcel Number (APN)	360250006
Traffic Analysis Zone (TAZ)	1065
Community Region	MENIFEE
Inside a Transit Priority Area (TPA)	No
TAZ VMT	29.4
Jurisdiction VMT	33.6
% Difference	-12.64%
VMT Metric	OD VMT Per Service Population
Threshold	33.6
Community Regions have different thresholds (1=Yes, 0=No)	0
Note	Screening results are based on location of parcel centroids. If results are desired considering the full parcel, please refer to the associated map layers to visually review parcel and TAZ boundary relationship.
SHAPE_Length	1086.0932860035832
SHAPE_Area	53770.376796895434

APPENDIX B

EXISTING TRAFFIC COUNT DATA

City of Menifee
N/S: Evans Road
E/W: Craig Drive
Weather: Clear

File Name : 01_MEN_Evans_Craig AM
Site Code : 05724711
Start Date : 8/22/2024
Page No : 1

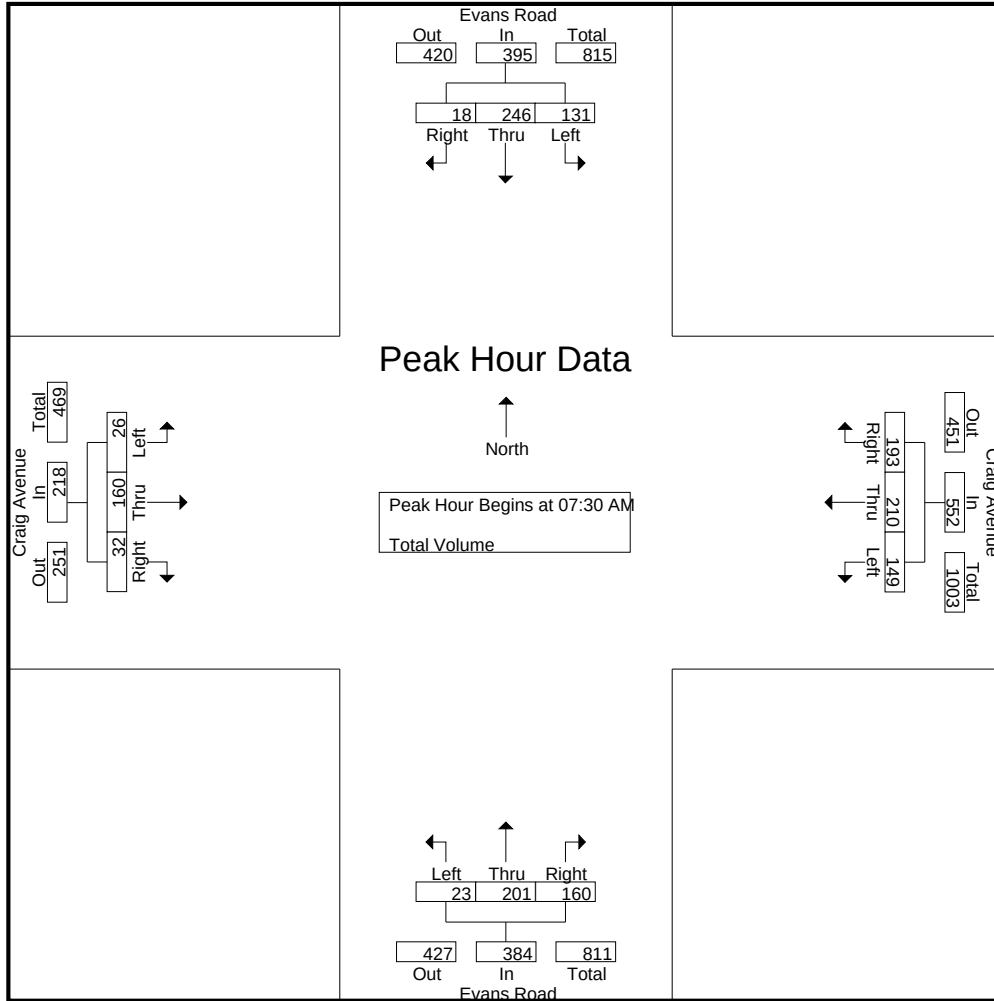
Groups Printed- Total Volume

	Evans Road Southbound				Craig Avenue Westbound				Evans Road Northbound				Craig Avenue 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	9	10	0	19	7	6	3	16	3	16	16	35	1	14	0	15	85
07:15 AM	9	19	0	28	12	4	5	21	2	37	20	59	6	18	1	25	133
07:30 AM	18	63	7	88	21	24	4	49	3	37	36	76	5	31	2	38	251
07:45 AM	54	75	2	131	41	48	38	127	3	49	51	103	8	55	7	70	431
Total	90	167	9	266	81	82	50	213	11	139	123	273	20	118	10	148	900
08:00 AM	41	49	5	95	50	57	55	162	9	50	47	106	9	46	12	67	430
08:15 AM	18	59	4	81	37	81	96	214	8	65	26	99	4	28	11	43	437
08:30 AM	5	16	5	26	7	32	21	60	3	22	10	35	2	6	1	9	130
08:45 AM	4	10	2	16	14	5	6	25	0	12	11	23	2	10	1	13	77
Total	68	134	16	218	108	175	178	461	20	149	94	263	17	90	25	132	1074
Grand Total	158	301	25	484	189	257	228	674	31	288	217	536	37	208	35	280	1974
Apprch %	32.6	62.2	5.2		28	38.1	33.8		5.8	53.7	40.5		13.2	74.3	12.5		
Total %	8	15.2	1.3	24.5	9.6	13	11.6	34.1	1.6	14.6	11	27.2	1.9	10.5	1.8	14.2	

	Evans Road Southbound				Craig Avenue Westbound				Evans Road Northbound				Craig Avenue 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	18	63	7	88	21	24	4	49	3	37	36	76	5	31	2	38	251
07:45 AM	54	75	2	131	41	48	38	127	3	49	51	103	8	55	7	70	431
08:00 AM	41	49	5	95	50	57	55	162	9	50	47	106	9	46	12	67	430
08:15 AM	18	59	4	81	37	81	96	214	8	65	26	99	4	28	11	43	437
Total Volume	131	246	18	395	149	210	193	552	23	201	160	384	26	160	32	218	1549
% App. Total	33.2	62.3	4.6		27	38	35		6	52.3	41.7		11.9	73.4	14.7		
PHF	.606	.820	.643	.754	.745	.648	.503	.645	.639	.773	.784	.906	.722	.727	.667	.779	.886

City of Menifee
N/S: Evans Road
E/W: Craig Drive
Weather: Clear

File Name : 01_MEN_Evans_Craig AM
Site Code : 05724711
Start Date : 8/22/2024
Page No : 2



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

	07:30 AM				07:45 AM				07:30 AM				07:30 AM			
+0 mins.	18	63	7	88	41	48	38	127	3	37	36	76	5	31	2	38
+15 mins.	54	75	2	131	50	57	55	162	3	49	51	103	8	55	7	70
+30 mins.	41	49	5	95	37	81	96	214	9	50	47	106	9	46	12	67
+45 mins.	18	59	4	81	7	32	21	60	8	65	26	99	4	28	11	43
Total Volume	131	246	18	395	135	218	210	563	23	201	160	384	26	160	32	218
% App. Total	33.2	62.3	4.6		24	38.7	37.3		6	52.3	41.7		11.9	73.4	14.7	
PHF	.606	.820	.643	.754	.675	.673	.547	.658	.639	.773	.784	.906	.722	.727	.667	.779

City of Menifee
N/S: Evans Road
E/W: Craig Drive
Weather: Clear

File Name : 01_MEN_Evans_Craig PM
Site Code : 05724711
Start Date : 8/22/2024
Page No : 1

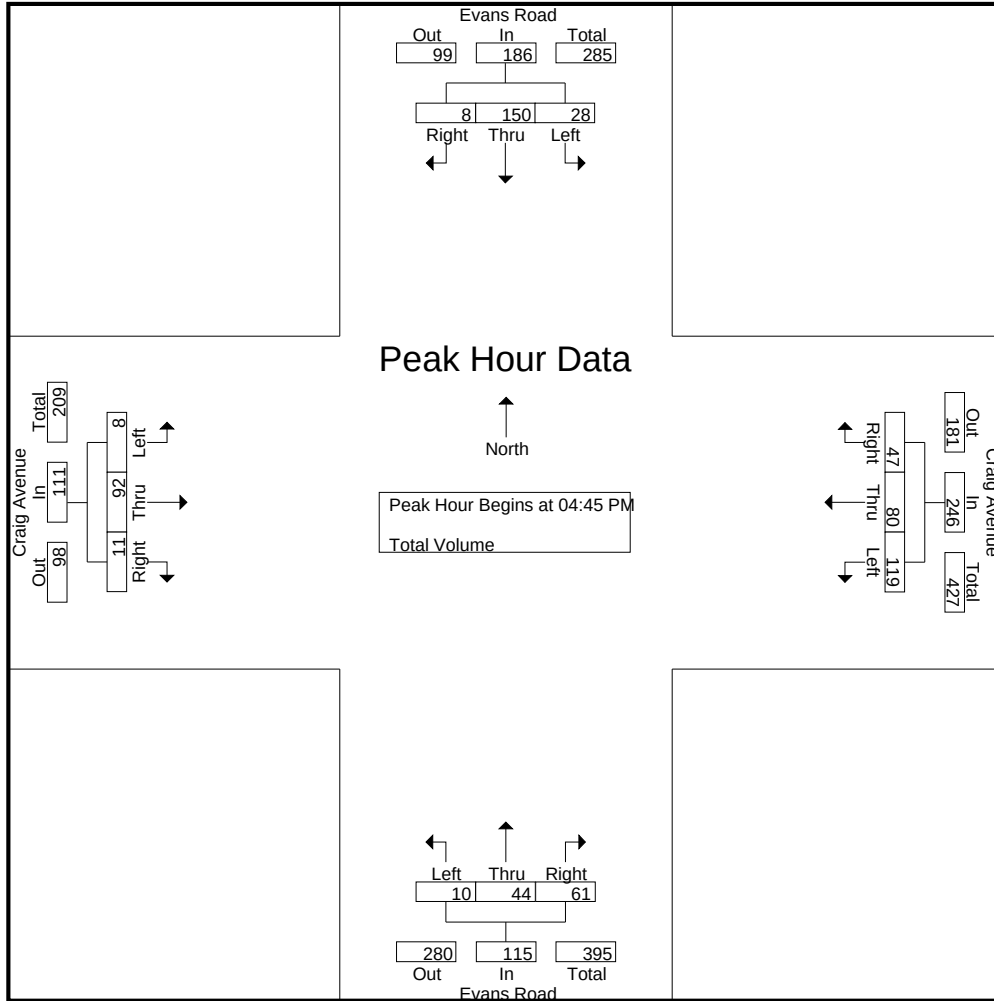
Groups Printed- Total Volume

	Evans Road Southbound				Craig Avenue Westbound				Evans Road Northbound				Craig Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	3	24	0	27	18	21	8	47	4	10	7	21	0	20	4	24	119
04:15 PM	2	24	5	31	16	17	4	37	4	12	18	34	2	16	2	20	122
04:30 PM	2	22	5	29	16	8	2	26	2	17	13	32	3	19	2	24	111
04:45 PM	11	35	1	47	31	22	13	66	1	9	12	22	2	18	4	24	159
Total	18	105	11	134	81	68	27	176	11	48	50	109	7	73	12	92	511
05:00 PM	6	48	4	58	33	20	13	66	1	9	17	27	3	20	5	28	179
05:15 PM	6	39	3	48	29	20	8	57	5	9	8	22	2	22	2	26	153
05:30 PM	5	28	0	33	26	18	13	57	3	17	24	44	1	32	0	33	167
05:45 PM	6	20	2	28	17	20	7	44	4	8	8	20	3	15	8	26	118
Total	23	135	9	167	105	78	41	224	13	43	57	113	9	89	15	113	617
Grand Total	41	240	20	301	186	146	68	400	24	91	107	222	16	162	27	205	1128
Apprch %	13.6	79.7	6.6		46.5	36.5	17		10.8	41	48.2		7.8	79	13.2		
Total %	3.6	21.3	1.8	26.7	16.5	12.9	6	35.5	2.1	8.1	9.5	19.7	1.4	14.4	2.4	18.2	

	Evans Road Southbound				Craig Avenue Westbound				Evans Road Northbound				Craig Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	11	35	1	47	31	22	13	66	1	9	12	22	2	18	4	24	159
05:00 PM	6	48	4	58	33	20	13	66	1	9	17	27	3	20	5	28	179
05:15 PM	6	39	3	48	29	20	8	57	5	9	8	22	2	22	2	26	153
05:30 PM	5	28	0	33	26	18	13	57	3	17	24	44	1	32	0	33	167
Total Volume	28	150	8	186	119	80	47	246	10	44	61	115	8	92	11	111	658
% App. Total	15.1	80.6	4.3		48.4	32.5	19.1		8.7	38.3	53		7.2	82.9	9.9		
PHF	.636	.781	.500	.802	.902	.909	.904	.932	.500	.647	.635	.653	.667	.719	.550	.841	.919

City of Menifee
N/S: Evans Road
E/W: Craig Drive
Weather: Clear

File Name : 01_MEN_Evans_Craig PM
Site Code : 05724711
Start Date : 8/22/2024
Page No : 2



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

	04:45 PM				04:45 PM				04:15 PM				05:00 PM			
+0 mins.	11	35	1	47	31	22	13	66	4	12	18	34	3	20	5	28
+15 mins.	6	48	4	58	33	20	13	66	2	17	13	32	2	22	2	26
+30 mins.	6	39	3	48	29	20	8	57	1	9	12	22	1	32	0	33
+45 mins.	5	28	0	33	26	18	13	57	1	9	17	27	3	15	8	26
Total Volume	28	150	8	186	119	80	47	246	8	47	60	115	9	89	15	113
% App. Total	15.1	80.6	4.3		48.4	32.5	19.1		7	40.9	52.2		8	78.8	13.3	
PHF	.636	.781	.500	.802	.902	.909	.904	.932	.500	.691	.833	.846	.750	.695	.469	.856

City of Menifee
N/S: Haun Road
E/W: Garbani Road
Weather: Clear

File Name : 02_MEN_Haun_Garbani AM
Site Code : 05724711
Start Date : 8/22/2024
Page No : 1

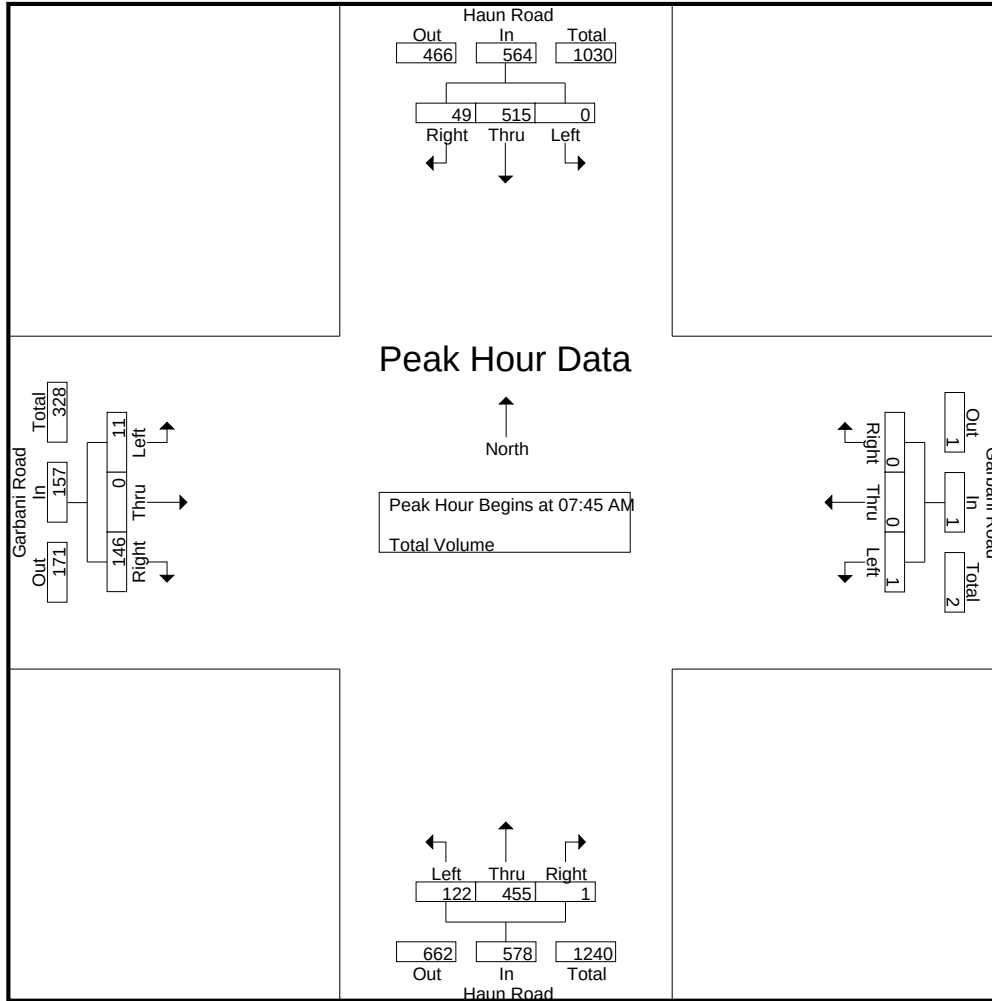
Groups Printed- Total Volume

	Haun Road Southbound				Garbani Road Westbound				Haun Road Northbound				Garbani 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	77	0	77	0	0	1	1	9	57	0	66	1	0	27	28	172
07:15 AM	0	122	0	122	0	0	0	0	15	75	0	90	0	0	36	36	248
07:30 AM	0	149	3	152	0	0	0	0	18	65	1	84	4	0	44	48	284
07:45 AM	0	138	5	143	0	0	0	0	34	106	0	140	0	0	39	39	322
Total	0	486	8	494	0	0	1	1	76	303	1	380	5	0	146	151	1026
08:00 AM	0	121	18	139	1	0	0	1	40	111	0	151	1	0	38	39	330
08:15 AM	0	129	21	150	0	0	0	0	36	135	1	172	3	0	36	39	361
08:30 AM	0	127	5	132	0	0	0	0	12	103	0	115	7	0	33	40	287
08:45 AM	1	119	1	121	0	0	0	0	11	99	0	110	1	0	8	9	240
Total	1	496	45	542	1	0	0	1	99	448	1	548	12	0	115	127	1218
Grand Total	1	982	53	1036	1	0	1	2	175	751	2	928	17	0	261	278	2244
Apprch %	0.1	94.8	5.1		50	0	50		18.9	80.9	0.2		6.1	0	93.9		
Total %	0	43.8	2.4	46.2	0	0	0	0.1	7.8	33.5	0.1	41.4	0.8	0	11.6	12.4	

	Haun Road Southbound				Garbani Road Westbound				Haun Road Northbound				Garbani 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 07:45 AM																	
07:45 AM	0	138	5	143	0	0	0	0	34	106	0	140	0	0	39	39	322
08:00 AM	0	121	18	139	1	0	0	1	40	111	0	151	1	0	38	39	330
08:15 AM	0	129	21	150	0	0	0	0	36	135	1	172	3	0	36	39	361
08:30 AM	0	127	5	132	0	0	0	0	12	103	0	115	7	0	33	40	287
Total Volume	0	515	49	564	1	0	0	1	122	455	1	578	11	0	146	157	1300
% App. Total	0	91.3	8.7		100	0	0		21.1	78.7	0.2		7	0	93		
PHF	.000	.933	.583	.940	.250	.000	.000	.250	.763	.843	.250	.840	.393	.000	.936	.981	.900

City of Menifee
N/S: Haun Road
E/W: Garbani Road
Weather: Clear

File Name : 02_MEN_Haun_Garbani AM
Site Code : 05724711
Start Date : 8/22/2024
Page No : 2



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

	07:30 AM				07:00 AM				07:45 AM				07:30 AM			
+0 mins.	0	149	3	152	0	0	1	1	34	106	0	140	4	0	44	48
+15 mins.	0	138	5	143	0	0	0	0	40	111	0	151	0	0	39	39
+30 mins.	0	121	18	139	0	0	0	0	36	135	1	172	1	0	38	39
+45 mins.	0	129	21	150	0	0	0	0	12	103	0	115	3	0	36	39
Total Volume	0	537	47	584	0	0	1	1	122	455	1	578	8	0	157	165
% App. Total	0	92	8		0	0	100		21.1	78.7	0.2		4.8	0	95.2	
PHF	.000	.901	.560	.961	.000	.000	.250	.250	.763	.843	.250	.840	.500	.000	.892	.859

City of Menifee
N/S: Haun Road
E/W: Garbani Road
Weather: Clear

File Name : 02_MEN_Haun_Garbani PM
Site Code : 05724711
Start Date : 8/22/2024
Page No : 1

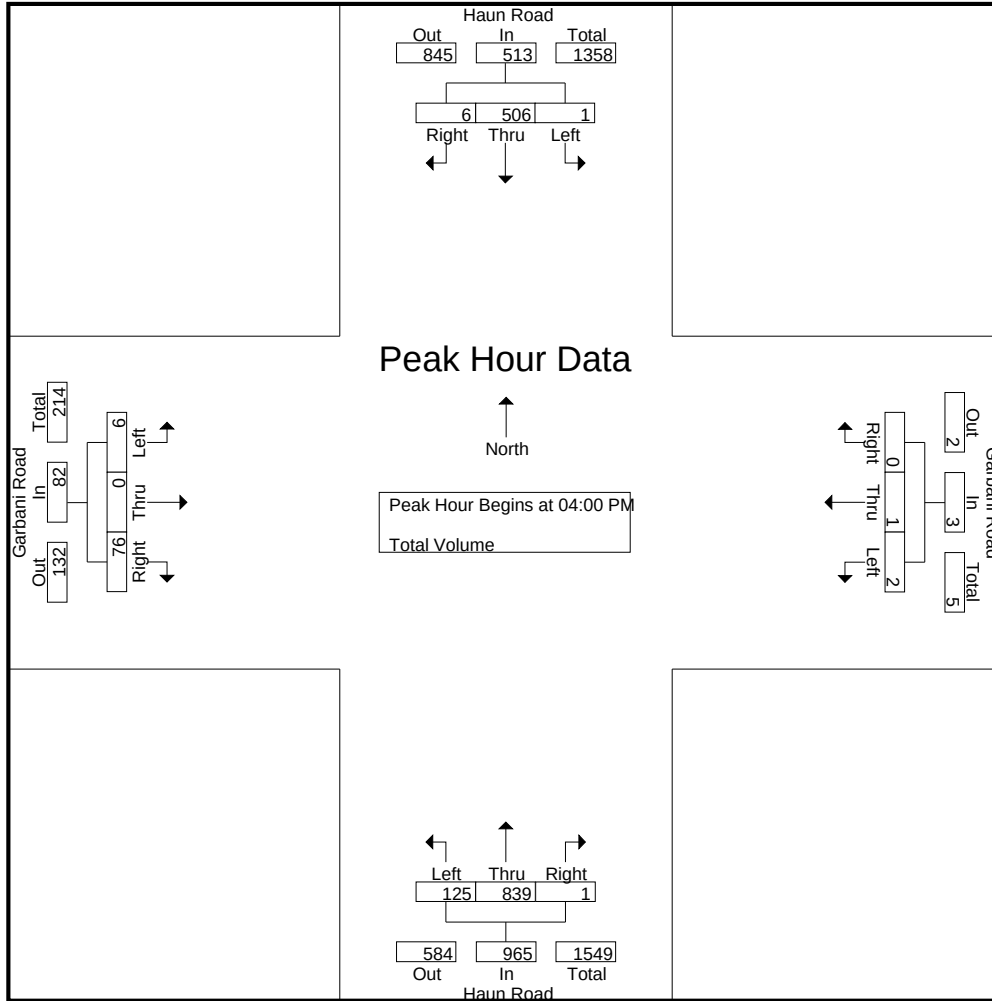
Groups Printed- Total Volume

	Haun Road Southbound				Garbani Road Westbound				Haun Road Northbound				Garbani 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	129	1	130	0	0	0	0	42	226	1	269	2	0	21	23	422
04:15 PM	0	109	1	110	1	1	0	2	34	189	0	223	0	0	19	19	354
04:30 PM	1	128	4	133	1	0	0	1	25	205	0	230	3	0	23	26	390
04:45 PM	0	140	0	140	0	0	0	0	24	219	0	243	1	0	13	14	397
Total	1	506	6	513	2	1	0	3	125	839	1	965	6	0	76	82	1563
05:00 PM	0	121	4	125	0	0	0	0	35	205	1	241	2	0	21	23	389
05:15 PM	0	123	1	124	0	0	0	0	35	203	0	238	1	0	11	12	374
05:30 PM	0	134	2	136	0	0	1	1	35	169	0	204	1	0	26	27	368
05:45 PM	0	86	4	90	0	0	0	0	39	215	0	254	1	1	15	17	361
Total	0	464	11	475	0	0	1	1	144	792	1	937	5	1	73	79	1492
Grand Total	1	970	17	988	2	1	1	4	269	1631	2	1902	11	1	149	161	3055
Apprch %	0.1	98.2	1.7		50	25	25		14.1	85.8	0.1		6.8	0.6	92.5		
Total %	0	31.8	0.6	32.3	0.1	0	0	0.1	8.8	53.4	0.1	62.3	0.4	0	4.9	5.3	

	Haun Road Southbound				Garbani Road Westbound				Haun Road Northbound				Garbani Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	129	1	130	0	0	0	0	42	226	1	269	2	0	21	23	422
04:15 PM	0	109	1	110	1	1	0	2	34	189	0	223	0	0	19	19	354
04:30 PM	1	128	4	133	1	0	0	1	25	205	0	230	3	0	23	26	390
04:45 PM	0	140	0	140	0	0	0	0	24	219	0	243	1	0	13	14	397
Total Volume	1	506	6	513	2	1	0	3	125	839	1	965	6	0	76	82	1563
% App. Total	0.2	98.6	1.2		66.7	33.3	0		13	86.9	0.1		7.3	0	92.7		
PHF	.250	.904	.375	.916	.500	.250	.000	.375	.744	.928	.250	.897	.500	.000	.826	.788	.926

City of Menifee
N/S: Haun Road
E/W: Garbani Road
Weather: Clear

File Name : 02_MEN_Haun_Garbani PM
Site Code : 05724711
Start Date : 8/22/2024
Page No : 2



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

	04:45 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	140	0	140	0	0	0	0	42	226	1	269	2	0	21	23
+15 mins.	0	121	4	125	1	1	0	2	34	189	0	223	0	0	19	19
+30 mins.	0	123	1	124	1	0	0	1	25	205	0	230	3	0	23	26
+45 mins.	0	134	2	136	0	0	0	0	24	219	0	243	1	0	13	14
Total Volume	0	518	7	525	2	1	0	3	125	839	1	965	6	0	76	82
% App. Total	0	98.7	1.3		66.7	33.3	0		13	86.9	0.1		7.3	0	92.7	
PHF	.000	.925	.438	.938	.500	.250	.000	.375	.744	.928	.250	.897	.500	.000	.826	.788

APPENDIX C
EXISTING LEVEL OF SERVICE CALCULATION
WORKSHEETS

APPENDIX C-1

EXISTING TRAFFIC CONDITIONS

Intersection Level Of Service Report

Intersection 1: Evans Road at Craig Avenue

Control Type:	All-way stop	Delay (sec / veh):	26.0
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.912

Intersection Setup

Name	Evans Road			Evans Road			Craig Avenue			Craig Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Evans Road			Evans Road			Craig Avenue			Craig Avenue		
Base Volume Input [veh/h]	23	201	160	131	246	18	26	160	32	149	210	193
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	201	160	131	246	18	26	160	32	149	210	193
Peak Hour Factor	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	57	45	37	69	5	7	45	9	42	59	54
Total Analysis Volume [veh/h]	26	227	181	148	278	20	29	181	36	168	237	218
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	423	448	490	489	372	391	424	394	417	455
Degree of Utilization, x	0.06	0.51	0.37	0.91	0.08	0.46	0.08	0.43	0.57	0.48

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.20	2.79	1.68	10.53	0.25	2.36	0.28	2.08	3.43	2.54
95th-Percentile Queue Length [ft]	4.90	69.81	42.05	263.18	6.31	59.10	6.92	52.04	85.76	63.62
Approach Delay [s/veh]	16.42			49.04	17.68			19.60		
Approach LOS	C			E	C			C		
Intersection Delay [s/veh]	26.05									
Intersection LOS	D									

Intersection Level Of Service Report

Intersection 2: Haun Road at Garbani Road

Control Type:	Two-way stop	Delay (sec / veh):	62.8
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.016

Intersection Setup

Name	Haun Road			Haun Road			Garbani Road			Garbani Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Haun Road			Haun Road			Garbani Road			Garbani Road		
Base Volume Input [veh/h]	122	455	1	0	515	49	11	0	146	1	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	122	455	1	0	515	49	11	0	146	1	0	0
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	126	0	0	143	14	3	0	41	0	0	0
Total Analysis Volume [veh/h]	136	506	1	0	572	54	12	0	162	1	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	No
Number of Storage Spaces in Median	0	0	2	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.01	0.00	0.00	0.01	0.00	0.04	0.00	0.31	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	9.39	0.00	0.00	8.40	0.00	0.00	18.41	20.37	15.04	62.75	36.01	12.27
Movement LOS	A	A	A	A	A	A	C	C	C	F	E	B
95th-Percentile Queue Length [veh/ln]	0.50	0.00	0.00	0.00	0.00	0.00	0.13	1.32	1.32	0.05	0.05	0.05
95th-Percentile Queue Length [ft/ln]	12.39	0.00	0.00	0.00	0.00	0.00	3.34	33.00	33.00	1.20	1.20	1.20
d_A, Approach Delay [s/veh]	1.99			0.00			15.27			62.75		
Approach LOS	A			A			C			F		
d_I, Intersection Delay [s/veh]	2.77											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 1: Evans Road at Craig Avenue

Control Type:	All-way stop	Delay (sec / veh):	10.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.330

Intersection Setup

Name	Evans Road			Evans Road			Craig Avenue			Craig Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Evans Road			Evans Road			Craig Avenue			Craig Avenue		
Base Volume Input [veh/h]	10	44	61	28	150	8	8	92	11	119	80	47
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	44	61	28	150	8	8	92	11	119	80	47
Peak Hour Factor	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	12	17	8	41	2	2	25	3	32	22	13
Total Analysis Volume [veh/h]	11	48	66	30	163	9	9	100	12	129	87	51
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	573	622	707	613	542	585	661	564	612	695
Degree of Utilization, x	0.02	0.08	0.09	0.33	0.02	0.17	0.02	0.23	0.14	0.07

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.06	0.25	0.31	1.44	0.05	0.61	0.06	0.88	0.49	0.24
95th-Percentile Queue Length [ft]	1.47	6.25	7.70	35.89	1.27	15.30	1.39	21.90	12.33	5.92
Approach Delay [s/veh]	8.64			11.74	9.88			10.00		
Approach LOS	A			B	A			A		
Intersection Delay [s/veh]	10.23									
Intersection LOS	B									

Intersection Level Of Service Report

Intersection 2: Haun Road at Garbani Road

Control Type:	Two-way stop	Delay (sec / veh):	84.2
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.042

Intersection Setup

Name	Haun Road			Haun Road			Garbani Road			Garbani Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Haun Road			Haun Road			Garbani Road			Garbani Road		
Base Volume Input [veh/h]	125	839	1	1	506	6	6	0	76	2	1	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	839	1	1	506	6	6	0	76	2	1	0
Peak Hour Factor	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	227	0	0	137	2	2	0	21	1	0	0
Total Analysis Volume [veh/h]	135	906	1	1	546	6	6	0	82	2	1	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	No
Number of Storage Spaces in Median	0	0	2	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.01	0.00	0.00	0.01	0.00	0.03	0.00	0.15	0.04	0.01	0.00
d_M, Delay for Movement [s/veh]	9.08	0.00	0.00	9.80	0.00	0.00	25.71	23.75	12.90	84.21	56.01	19.58
Movement LOS	A	A	A	A	A	A	D	C	B	F	F	C
95th-Percentile Queue Length [veh/ln]	0.46	0.00	0.00	0.00	0.00	0.00	0.10	0.53	0.53	0.17	0.17	0.17
95th-Percentile Queue Length [ft/ln]	11.42	0.00	0.00	0.10	0.00	0.00	2.58	13.37	13.37	4.25	4.25	4.25
d_A, Approach Delay [s/veh]	1.18			0.02			13.77			74.81		
Approach LOS	A			A			B			F		
d_I, Intersection Delay [s/veh]	1.58											
Intersection LOS	F											

APPENDIX C-II

EXISTING PLUS PROJECT TRAFFIC CONDITIONS

Intersection Level Of Service Report

Intersection 1: Evans Road at Craig Avenue

Control Type:	All-way stop	Delay (sec / veh):	26.5
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.917

Intersection Setup

Name	Evans Road			Evans Road			Craig Avenue			Craig Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Evans Road			Evans Road			Craig Avenue			Craig Avenue		
Base Volume Input [veh/h]	23	201	160	131	246	18	26	162	32	150	217	194
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	201	160	131	246	18	26	162	32	150	217	194
Peak Hour Factor	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	57	45	37	69	5	7	46	9	42	61	55
Total Analysis Volume [veh/h]	26	227	181	148	278	20	29	183	36	169	245	219
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	421	447	488	487	370	390	421	392	416	453
Degree of Utilization, x	0.06	0.51	0.37	0.92	0.08	0.47	0.09	0.43	0.59	0.48

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.20	2.81	1.69	10.65	0.25	2.42	0.28	2.11	3.68	2.58
95th-Percentile Queue Length [ft]	4.92	70.37	42.37	266.28	6.34	60.62	6.96	52.78	91.91	64.48
Approach Delay [s/veh]	16.54			50.05	17.93			20.08		
Approach LOS	C			F	C			C		
Intersection Delay [s/veh]	26.50									
Intersection LOS	D									

Intersection Level Of Service Report

Intersection 2: Haun Road at Garbani Road

Control Type:	Two-way stop	Delay (sec / veh):	65.1
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.016

Intersection Setup

Name	Haun Road			Haun Road			Garbani Road			Garbani Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Haun Road			Haun Road			Garbani Road			Garbani Road		
Base Volume Input [veh/h]	124	455	1	0	515	50	13	0	153	1	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	124	455	1	0	515	50	13	0	153	1	0	0
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	126	0	0	143	14	4	0	43	0	0	0
Total Analysis Volume [veh/h]	138	506	1	0	572	56	14	0	170	1	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	No
Number of Storage Spaces in Median	0	0	2	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.01	0.00	0.00	0.01	0.00	0.05	0.00	0.33	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	9.41	0.00	0.00	8.40	0.00	0.00	18.60	20.66	15.26	65.13	36.42	12.35
Movement LOS	A	A	A	A	A	A	C	C	C	F	E	B
95th-Percentile Queue Length [veh/ln]	0.50	0.00	0.00	0.00	0.00	0.00	0.16	1.41	1.41	0.05	0.05	0.05
95th-Percentile Queue Length [ft/ln]	12.62	0.00	0.00	0.00	0.00	0.00	3.95	35.33	35.33	1.24	1.24	1.24
d_A, Approach Delay [s/veh]	2.01			0.00			15.51			65.13		
Approach LOS	A			A			C			F		
d_I, Intersection Delay [s/veh]	2.89											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 1: Evans Road at Craig Avenue

Control Type:	All-way stop	Delay (sec / veh):	10.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.336

Intersection Setup

Name	Evans Road			Evans Road			Craig Avenue			Craig Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Evans Road			Evans Road			Craig Avenue			Craig Avenue		
Base Volume Input [veh/h]	10	44	62	29	150	8	8	100	11	120	85	48
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	44	62	29	150	8	8	100	11	120	85	48
Peak Hour Factor	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	12	17	8	41	2	2	27	3	33	23	13
Total Analysis Volume [veh/h]	11	48	67	32	163	9	9	109	12	131	92	52
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	568	616	699	607	538	582	656	560	608	690
Degree of Utilization, x	0.02	0.08	0.10	0.34	0.02	0.19	0.02	0.23	0.15	0.08

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.06	0.25	0.32	1.48	0.05	0.68	0.06	0.90	0.53	0.24
95th-Percentile Queue Length [ft]	1.48	6.32	7.93	36.88	1.27	17.09	1.40	22.52	13.27	6.10
Approach Delay [s/veh]	8.71			11.90	10.07			10.09		
Approach LOS	A			B	B			B		
Intersection Delay [s/veh]	10.35									
Intersection LOS	B									

Intersection Level Of Service Report

Intersection 2: Haun Road at Garbani Road

Control Type:	Two-way stop	Delay (sec / veh):	89.1
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.044

Intersection Setup

Name	Haun Road			Haun Road			Garbani Road			Garbani Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Haun Road			Haun Road			Garbani Road			Garbani Road		
Base Volume Input [veh/h]	133	839	1	1	506	8	7	0	81	2	1	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	133	839	1	1	506	8	7	0	81	2	1	0
Peak Hour Factor	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	227	0	0	137	2	2	0	22	1	0	0
Total Analysis Volume [veh/h]	144	906	1	1	546	9	8	0	87	2	1	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	No
Number of Storage Spaces in Median	0	0	2	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.01	0.00	0.00	0.01	0.00	0.05	0.00	0.16	0.04	0.01	0.00
d_M, Delay for Movement [s/veh]	9.13	0.00	0.00	9.80	0.00	0.00	26.66	24.33	12.99	89.11	58.41	20.02
Movement LOS	A	A	A	A	A	A	D	C	B	F	F	C
95th-Percentile Queue Length [veh/ln]	0.49	0.00	0.00	0.00	0.00	0.00	0.14	0.57	0.57	0.18	0.18	0.18
95th-Percentile Queue Length [ft/ln]	12.34	0.00	0.00	0.10	0.00	0.00	3.59	14.34	14.34	4.49	4.49	4.49
d_A, Approach Delay [s/veh]	1.25			0.02			14.14			78.88		
Approach LOS	A			A			B			F		
d_I, Intersection Delay [s/veh]	1.70											
Intersection LOS	F											

APPENDIX D

**YEAR 2027 CUMULATIVE LEVEL OF SERVICE
CALCULATION WORKSHEETS**

APPENDIX D-1

YEAR 2027 CUMULATIVE TRAFFIC CONDITIONS

Intersection Level Of Service Report

Intersection 1: Evans Road at Craig Avenue

Control Type:	All-way stop	Delay (sec / veh):	49.0
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.176

Intersection Setup

Name	Evans Road			Evans Road			Craig Avenue			Craig Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Evans Road			Evans Road			Craig Avenue			Craig Avenue		
Base Volume Input [veh/h]	24	245	180	182	279	19	28	181	34	161	254	225
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	245	180	182	279	19	28	181	34	161	254	225
Peak Hour Factor	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	69	51	51	79	5	8	51	10	45	72	63
Total Analysis Volume [veh/h]	27	277	203	205	315	21	32	204	38	182	287	254
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	420	444	482	541	374	392	420	396	417	451
Degree of Utilization, x	0.06	0.62	0.42	1.18	0.09	0.52	0.09	0.46	0.69	0.56

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.21	4.15	2.06	20.18	0.28	2.90	0.30	2.35	5.05	3.39
95th-Percentile Queue Length [ft]	5.13	103.78	51.48	504.61	6.98	72.57	7.41	58.79	126.37	84.87
Approach Delay [s/veh]	19.58			126.09	19.21			23.31		
Approach LOS	C			F	C			C		
Intersection Delay [s/veh]	49.02									
Intersection LOS	E									

Intersection Level Of Service Report

Intersection 2: Haun Road at Garbani Road

Control Type:	Two-way stop	Delay (sec / veh):	2,353.9
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	5.174

Intersection Setup

Name	Haun Road			Haun Road			Garbani Road			Garbani Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Haun Road			Haun Road			Garbani Road			Garbani Road		
Base Volume Input [veh/h]	152	538	86	233	652	56	21	106	207	31	38	84
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	152	538	86	233	652	56	21	106	207	31	38	84
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	149	24	65	181	16	6	29	58	9	11	23
Total Analysis Volume [veh/h]	169	598	96	259	724	62	23	118	230	34	42	93
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.20	0.01	0.00	0.29	0.01	0.00	0.79	5.17	0.54	2.57	1.88	0.20
d_M, Delay for Movement [s/veh]	10.42	0.00	0.00	10.60	0.00	0.00	298.29	2353.86	2204.46	1296.08	740.92	587.42
Movement LOS	B	A	A	B	A	A	F	F	F	F	F	F
95th-Percentile Queue Length [veh/ln]	0.76	0.00	0.00	1.19	0.00	0.00	2.59	39.22	39.22	5.10	12.73	12.73
95th-Percentile Queue Length [ft/ln]	18.92	0.00	0.00	29.79	0.00	0.00	64.65	980.39	980.39	127.48	318.21	318.21
d_A, Approach Delay [s/veh]	2.04			2.63			2133.80			768.14		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	378.25											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 1: Evans Road at Craig Avenue

Control Type:	All-way stop	Delay (sec / veh):	12.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.522

Intersection Setup

Name	Evans Road			Evans Road			Craig Avenue			Craig Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Evans Road			Evans Road			Craig Avenue			Craig Avenue		
Base Volume Input [veh/h]	11	80	71	58	201	8	8	134	12	137	106	91
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	80	71	58	201	8	8	134	12	137	106	91
Peak Hour Factor	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	22	19	16	55	2	2	36	3	37	29	25
Total Analysis Volume [veh/h]	12	87	77	63	219	9	9	146	13	149	115	99
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	517	557	623	558	484	519	577	505	543	608
Degree of Utilization, x	0.02	0.16	0.12	0.52	0.02	0.28	0.02	0.30	0.21	0.16

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.07	0.55	0.42	3.00	0.06	1.15	0.07	1.22	0.79	0.58
95th-Percentile Queue Length [ft]	1.78	13.76	10.50	75.06	1.42	28.69	1.73	30.60	19.86	14.46
Approach Delay [s/veh]	9.85			16.28	11.98			11.44		
Approach LOS	A			C	B			B		
Intersection Delay [s/veh]	12.66									
Intersection LOS	B									

Intersection Level Of Service Report

Intersection 2: Haun Road at Garbani Road

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	58.011

Intersection Setup

Name	Haun Road			Haun Road			Garbani Road			Garbani Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Haun Road			Haun Road			Garbani Road			Garbani Road		
Base Volume Input [veh/h]	212	1069	48	130	675	16	12	59	140	79	97	211
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	212	1069	48	130	675	16	12	59	140	79	97	211
Peak Hour Factor	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	289	13	35	182	4	3	16	38	21	26	57
Total Analysis Volume [veh/h]	229	1154	52	140	729	17	13	64	151	85	105	228
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.27	0.01	0.00	0.24	0.01	0.00	58.01	5.25	0.36	8.70	8.50	0.98
d_M, Delay for Movement [s/veh]	10.68	0.00	0.00	13.20	0.00	0.00	10000.0	2483.06	2196.16	4211.93	4226.10	3950.17
Movement LOS	B	A	A	B	A	A	F	F	F	F	F	F
95th-Percentile Queue Length [veh/ln]	1.07	0.00	0.00	0.94	0.00	0.00	3.15	25.27	25.27	12.05	40.33	40.33
95th-Percentile Queue Length [ft/ln]	26.77	0.00	0.00	23.54	0.00	0.00	78.66	631.84	631.84	301.22	1008.32	1008.32
d_A, Approach Delay [s/veh]	1.70			2.09			2721.65			4072.71		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	784.37											
Intersection LOS	F											

APPENDIX D-II

**YEAR 2027 CUMULATIVE PLUS PROJECT TRAFFIC
CONDITIONS**

Intersection Level Of Service Report

Intersection 1: Evans Road at Craig Avenue

Control Type:	All-way stop	Delay (sec / veh):	50.1
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.185

Intersection Setup

Name	Evans Road			Evans Road			Craig Avenue			Craig Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Evans Road			Evans Road			Craig Avenue			Craig Avenue		
Base Volume Input [veh/h]	24	245	180	182	279	19	28	183	34	162	261	226
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	245	180	182	279	19	28	183	34	162	261	226
Peak Hour Factor	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	69	51	51	79	5	8	52	10	46	74	64
Total Analysis Volume [veh/h]	27	277	203	205	315	21	32	207	38	183	295	255
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	419	443	481	541	372	390	419	395	416	451
Degree of Utilization, x	0.06	0.63	0.42	1.19	0.09	0.53	0.09	0.46	0.71	0.57

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.21	4.17	2.07	20.48	0.28	3.00	0.30	2.38	5.39	3.43
95th-Percentile Queue Length [ft]	5.14	104.37	51.75	511.99	7.01	74.93	7.44	59.50	134.73	85.83
Approach Delay [s/veh]	19.69			129.70	19.55			24.04		
Approach LOS	C			F	C			C		
Intersection Delay [s/veh]	50.14									
Intersection LOS	F									

Intersection Level Of Service Report

Intersection 2: Haun Road at Garbani Road

Control Type:	Two-way stop	Delay (sec / veh):	2,384.2
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	5.222

Intersection Setup

Name	Haun Road			Haun Road			Garbani Road			Garbani Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Haun Road			Haun Road			Garbani Road			Garbani Road		
Base Volume Input [veh/h]	154	538	86	233	652	57	23	106	214	31	38	84
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	154	538	86	233	652	57	23	106	214	31	38	84
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	149	24	65	181	16	6	29	59	9	11	23
Total Analysis Volume [veh/h]	171	598	96	259	724	63	26	118	238	34	42	93
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.21	0.01	0.00	0.29	0.01	0.00	0.91	5.22	0.56	2.74	1.90	0.20
d_M, Delay for Movement [s/veh]	10.44	0.00	0.00	10.60	0.00	0.00	338.53	2384.19	2233.35	1403.29	751.93	596.71
Movement LOS	B	A	A	B	A	A	F	F	F	F	F	F
95th-Percentile Queue Length [veh/ln]	0.77	0.00	0.00	1.19	0.00	0.00	2.97	40.13	40.13	5.17	12.79	12.79
95th-Percentile Queue Length [ft/ln]	19.22	0.00	0.00	29.79	0.00	0.00	74.13	1003.22	1003.22	129.19	319.68	319.68
d_A, Approach Delay [s/veh]	2.06			2.62			2150.98			797.55		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	390.33											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 1: Evans Road at Craig Avenue

Control Type:	All-way stop	Delay (sec / veh):	12.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.528

Intersection Setup

Name	Evans Road			Evans Road			Craig Avenue			Craig Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Evans Road			Evans Road			Craig Avenue			Craig Avenue		
Base Volume Input [veh/h]	11	80	72	59	201	8	8	142	12	138	111	92
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	80	72	59	201	8	8	142	12	138	111	92
Peak Hour Factor	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	22	20	16	55	2	2	39	3	38	30	25
Total Analysis Volume [veh/h]	12	87	78	64	219	9	9	155	13	150	121	100
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	513	551	617	553	481	516	573	501	539	604
Degree of Utilization, x	0.02	0.16	0.13	0.53	0.02	0.30	0.02	0.30	0.22	0.17

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.07	0.56	0.43	3.07	0.06	1.25	0.07	1.25	0.85	0.59
95th-Percentile Queue Length [ft]	1.80	13.92	10.79	76.70	1.43	31.36	1.74	31.16	21.36	14.77
Approach Delay [s/veh]	9.94			16.56	12.28			11.57		
Approach LOS	A			C	B			B		
Intersection Delay [s/veh]	12.84									
Intersection LOS	B									

Intersection Level Of Service Report

Intersection 2: Haun Road at Garbani Road

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	66.680

Intersection Setup

Name	Haun Road			Haun Road			Garbani Road			Garbani Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Haun Road			Haun Road			Garbani Road			Garbani Road		
Base Volume Input [veh/h]	220	1069	48	130	675	18	13	59	145	79	97	211
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	220	1069	48	130	675	18	13	59	145	79	97	211
Peak Hour Factor	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	289	13	35	182	5	4	16	39	21	26	57
Total Analysis Volume [veh/h]	238	1154	52	140	729	19	14	64	157	85	105	228
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

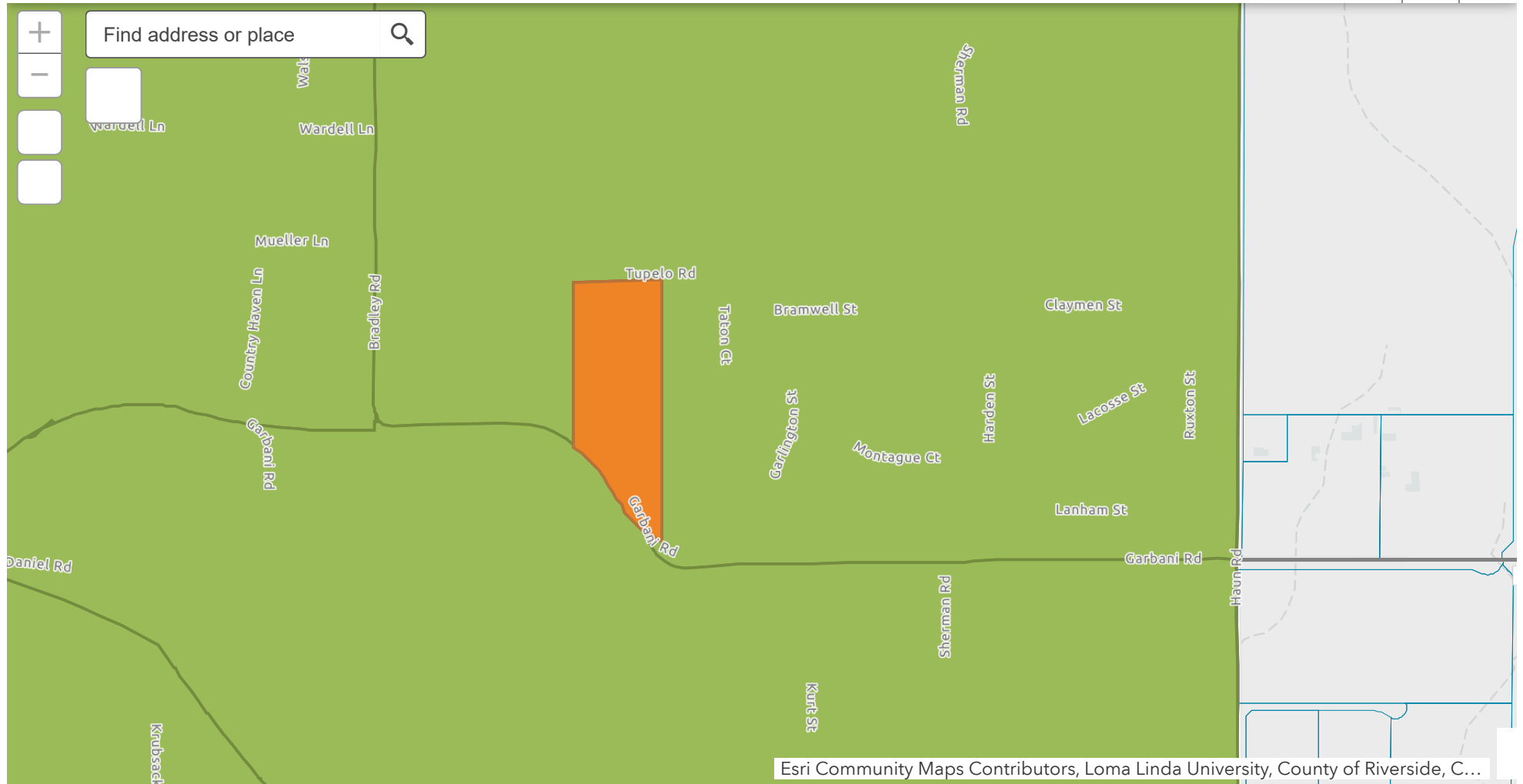
Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.28	0.01	0.00	0.24	0.01	0.00	66.68	5.48	0.37	9.55	8.90	0.98
d_M, Delay for Movement [s/veh]	10.77	0.00	0.00	13.20	0.00	0.00	10000.0	2606.60	2306.78	4667.86	4423.14	4133.55
Movement LOS	B	A	A	B	A	A	F	F	F	F	F	F
95th-Percentile Queue Length [veh/ln]	1.13	0.00	0.00	0.94	0.00	0.00	3.31	26.08	26.08	12.14	40.50	40.50
95th-Percentile Queue Length [ft/ln]	28.26	0.00	0.00	23.54	0.00	0.00	82.75	652.06	652.06	303.47	1012.42	1012.42
d_A, Approach Delay [s/veh]	1.78			2.08			2846.75			4314.95		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	829.83											
Intersection LOS	F											

APPENDIX E

WRCOG VMT SCREENING TOOL DATA



600ft

-117.182 33.658 Degrees

(1 of 4)

OBJECTID	2
Assessor Parcel Number (APN)	360250006
Traffic Analysis Zone (TAZ)	1065
Community Region	MENIFEE
Inside a Transit Priority Area (TPA)	No
TAZ VMT	29.4
Jurisdiction VMT	33.6
% Difference	-12.64%
VMT Metric	OD VMT Per Service Population
Threshold	33.6
Community Regions have different thresholds (1=Yes, 0=No)	0
Note	Screening results are based on location of parcel centroids. If results are desired considering the full parcel, please refer to the associated map layers to visually review parcel and TAZ boundary relationship.
SHAPE_Length	1086.0932860035832
SHAPE_Area	53770.376796895434

(2 of 4)

OBJECTID	329
TAZ	1065
VMT Metric	OD VMT Per Service Population
TAZ VMT	29.35206598
Community Region VMT	33.600665
Threshold	33.6
% Difference	-12.64%
Results	Yes (Pass)
Shape_Length	18162.237834503823
Shape_Area	19866724.979528237

(3 of 4)

OBJECTID	1
Completely within a TPA?	No (Fail)
Within a low VMT generating TAZ?	Yes (Pass)
Note	Screening results are based on location of parcel centroids. If results are desired considering the full parcel, please refer to the associated map layers to visually review parcel and TAZ boundary relationship.
Community Regions have different thresholds (1=Yes, 0=No)	0
SHAPE_Length	1086.0932860035832
SHAPE_Area	53770.376796895434

(4 of 4)

OBJECTID	1
Assessor Parcel Number (APN)	360250006
Traffic Analysis Zone (TAZ)	1065
Community Region	MENIFEE
Inside a Transit Priority Area (TPA)	No
TAZ VMT	29.4
Jurisdiction VMT	33.6
% Difference	-12.64%
VMT Metric	OD VMT Per Service Population
Threshold	33.6
Community Regions have different thresholds (1=Yes, 0=No)	0
Note	Screening results are based on location of parcel centroids. If results are desired considering the full parcel, please refer to the associated map layers to visually review parcel and TAZ boundary relationship.
SHAPE_Length	1086.0932860035832
SHAPE_Area	53770.376796895434