Appendix M

Traffic Impact Analysis (April 15, 2022)

ADDENDUM TO THE GREEN VALLEY SPECIFIC PLAN (PHASE 2)

TRAFFIC IMPACT ANALYSIS

APRIL 15, 2022

PREPARED FOR:

Ascent Environmental, Inc.
455 Capitol Mall, Suite 300
Sacramento, California 95814

PREPARED BY:

translutions, inc.
17632 Irvine Boulevard, Suite 200
Tustin, California 92780
(949) 656-3131

TABLE OF CONTENTS

FIGURES AND TABLES

FIGURES

TABLES

1.0 INTRODUCTION

This report presents the methodology, findings and conclusions of the traffic impact analysis (TIA) prepared for the proposed addendum to the Green Valley Specific Plan. The Specific Plan was approved in 1990. The addendum evaluates proposed amendments to the GVSP land use designations and zoning located within 253.6 acres of the northeast portion of the GVSP area (herein referred to as Phase 2) that would change land use designations to be consistent with the Perris Valley Airport Land Use Compatibility Plan. The proposed changes would not result in an increase in number of dwelling units approved under the 1990 GVSP. The proposed project site is generally located south of Case Road between Goetz Road to the west and Interstate 215 to the east in the City of Perris (City).

1.1 Purpose of the Traffic Study and Study Objectives

The City of Perris does not have TIA guidelines but generally follows the Riverside County *Transportation Analysis Guidelines for Level of Service and Vehicle Miles Traveled* (December 2020). The study area, analysis scenarios, and analysis methodologies are based on discussion with City staff.

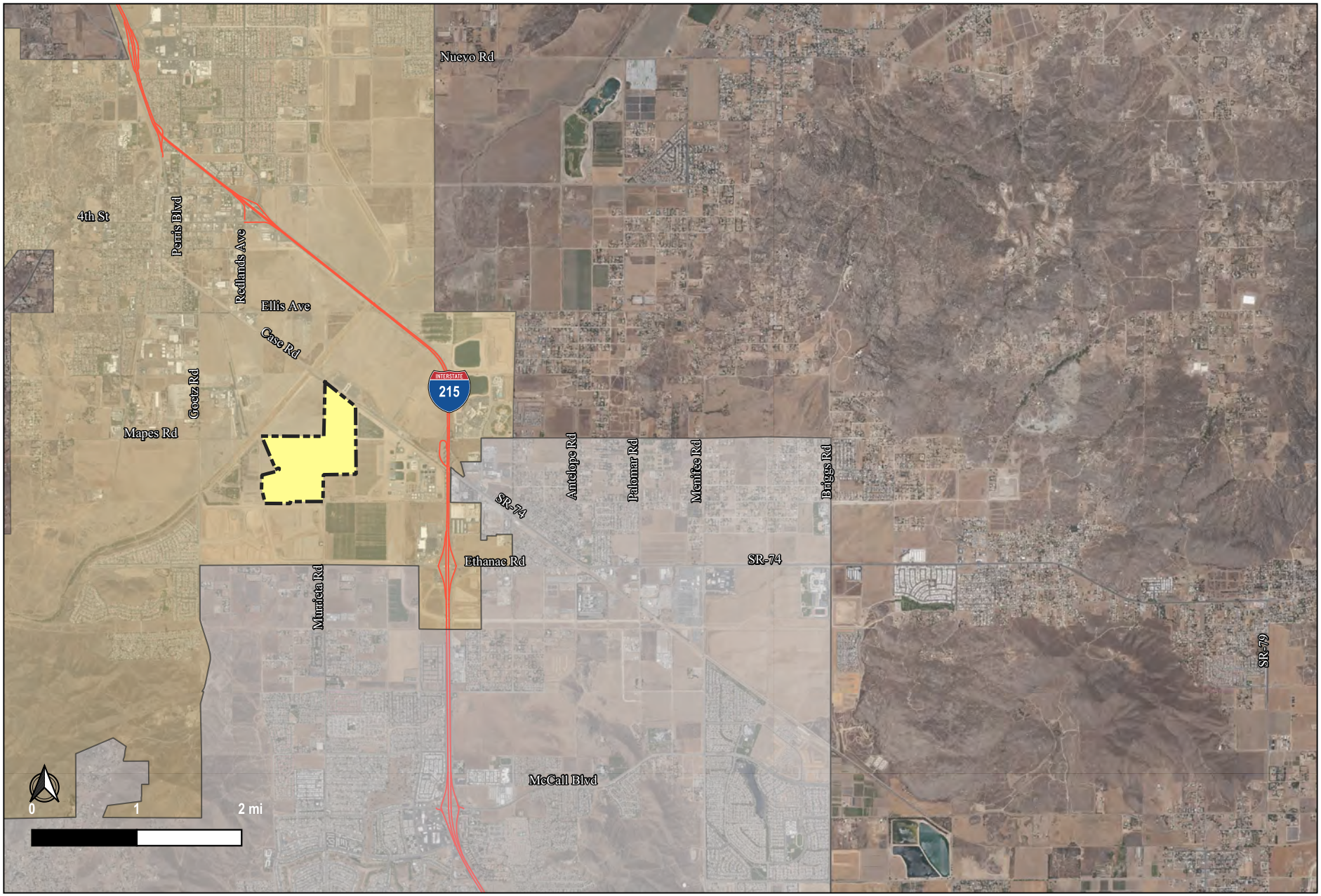
1.2 Project Location & Study Area

The project is generally located south of Case Road between Goetz Road to the west and Interstate 215 to the east in the City of Perris (City).

Figure 1 shows the regional location of the project. The project opening year is anticipated to be 2025.

Consistent with City Guidelines, this report analyzes intersections of "Collector" or higher classification, at which the project will add 50 or more peak hour trips. The following intersections were evaluated for traffic operations:

1. Navajo Road and State Route 74.
2. A Street and State Route 74.
3. A Street and 11th Street.
4. Perris Boulevard and 4th Street.
5. Perris Boulevard and 11th Street.
6. Perris Boulevard and Ellis Avenue.
7. Goetz Road and Mapes Road.
8. Redlands Avenue and Interstate 215 Northbound Ramps.
9. Redlands Avenue and Interstate 215 Southbound Ramps.
10. Redlands Avenue and 4th Street.
11. Case Road and Ellis Avenue.
12. Redlands Avenue and Ellis Avenue.
13. Murrieta Road and Case Road.
14. Mapes Road and Bonnie Drive.
15. Interstate 215 Southbound Ramps and Ethanac Road.
16. Interstate 215 Northbound Ramps and Ethanac Road.
17. Case Road and Ethanac Road.
18. Interstate 215 Southbound Ramps and Ethanac Road.
19. Interstate 215 Northbound Ramps and Ethanac Road.
20. Trumble Road and State Route 74.
21. Encanto Drive and Ethanac Road.
22. Sherman Road and Ethanac Road.
23. Palomar Road and State Route 74.
24. Palomar Road and Case Road



Legend

GVSP Phase 2 | City of Perris | City of Menifee

translutions
the transportation solutions company...

FIGURE 1

Green Valley Specific Plan Phase 2
Regional Project Location

D:\GIS\Ascent - GVSP\Reports\Regional Project Location.qgz (04-15-2022)

25. Menifee Road and State Route 74.
26. Briggs Road and State Route 74.
27. State Route 74 and State Route 79.
28. Goetz Road and Fieldstone Drive.
29. Goetz Road and Ethanac Road.
30. Murrieta Road and Green Valley Loop Road.
31. Murrieta Road and Watson Road.
32. Murrieta Road and Green Valley Parkway.
33. Murrieta Road and Ethanac Road. And
34. Green Valley Loop Road and Ethanac Road

The study area intersections are shown in Figure 2.

This report analyzes weekday a.m. and p.m. peak hour conditions. The a.m. peak hour is defined as the one hour of highest traffic volumes occurring between 7:00 a.m. and 9:00 a.m. The p.m. peak hour is defined as the one hour of highest traffic volumes occurring between 4:00 and 6:00 p.m.

1.3 Analysis Scenarios

This report analyzes traffic conditions for the following scenarios:

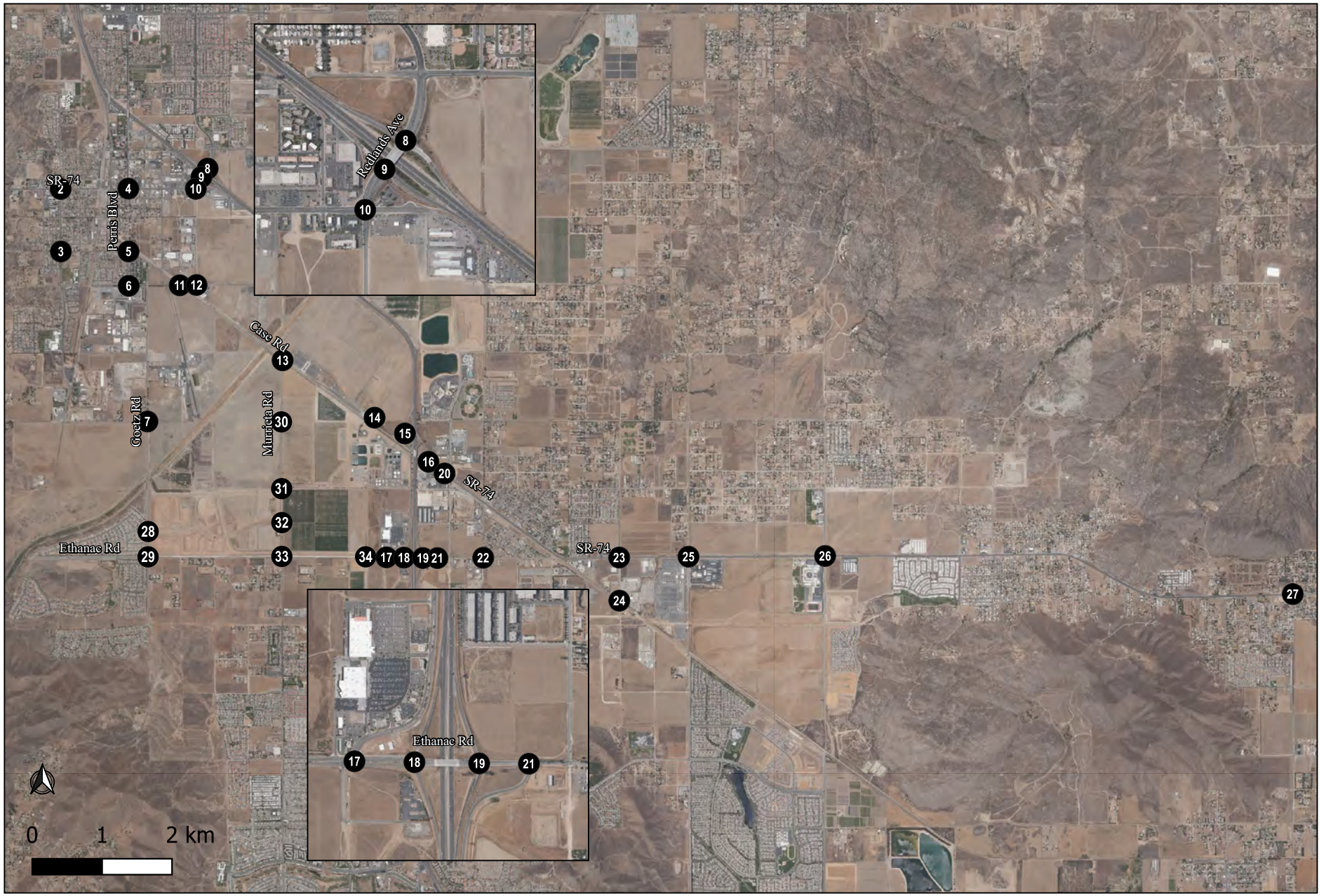
1. Existing Conditions.
2. Existing With Project Conditions.
3. Opening Year Without Project Conditions.
4. Opening Year With Project Conditions.
5. Year 2040 Without Project Conditions. and
6. Year 2040 With Project Conditions.

This report analyzes weekday daily, a.m., and p.m. peak hour conditions. The a.m. peak hour is defined as the one hour of highest traffic volumes occurring between 7:00 a.m. and 9:00 a.m. The p.m. peak hour is defined as the one hour of highest traffic volumes occurring between 4:00 and 6:00 p.m.

2.0 PROJECT DESCRIPTION

Access to the project will be provided at Murrieta Road/Case Road to the north, Murrieta Road/Ethanac Road to the south, and Goetz Road/Fieldstone Drive to the east. The land use plan for the proposed project is illustrated in Figure 3. The project proposes a mix of uses in multiple Planning Areas. The Planning Areas included are shown below:

- PA 6a: 77 single-family dwelling units.
- PA 19a: 110 single-family dwelling units.
- PA 20: 130 single-family dwelling units.
- PA 21: 145 single-family dwelling units.
- PA 30: 1,159 multi-family dwelling units.
- PA 3: 1.4 acres of retail.
- PA 29: 5.9 acres of retail.
- PA 33: 6.6 acres of park.
- PA 57a: 3.4 acres of open space.
- PA 32a: 750 student Elementary School and 250 student Middle School.



Legend

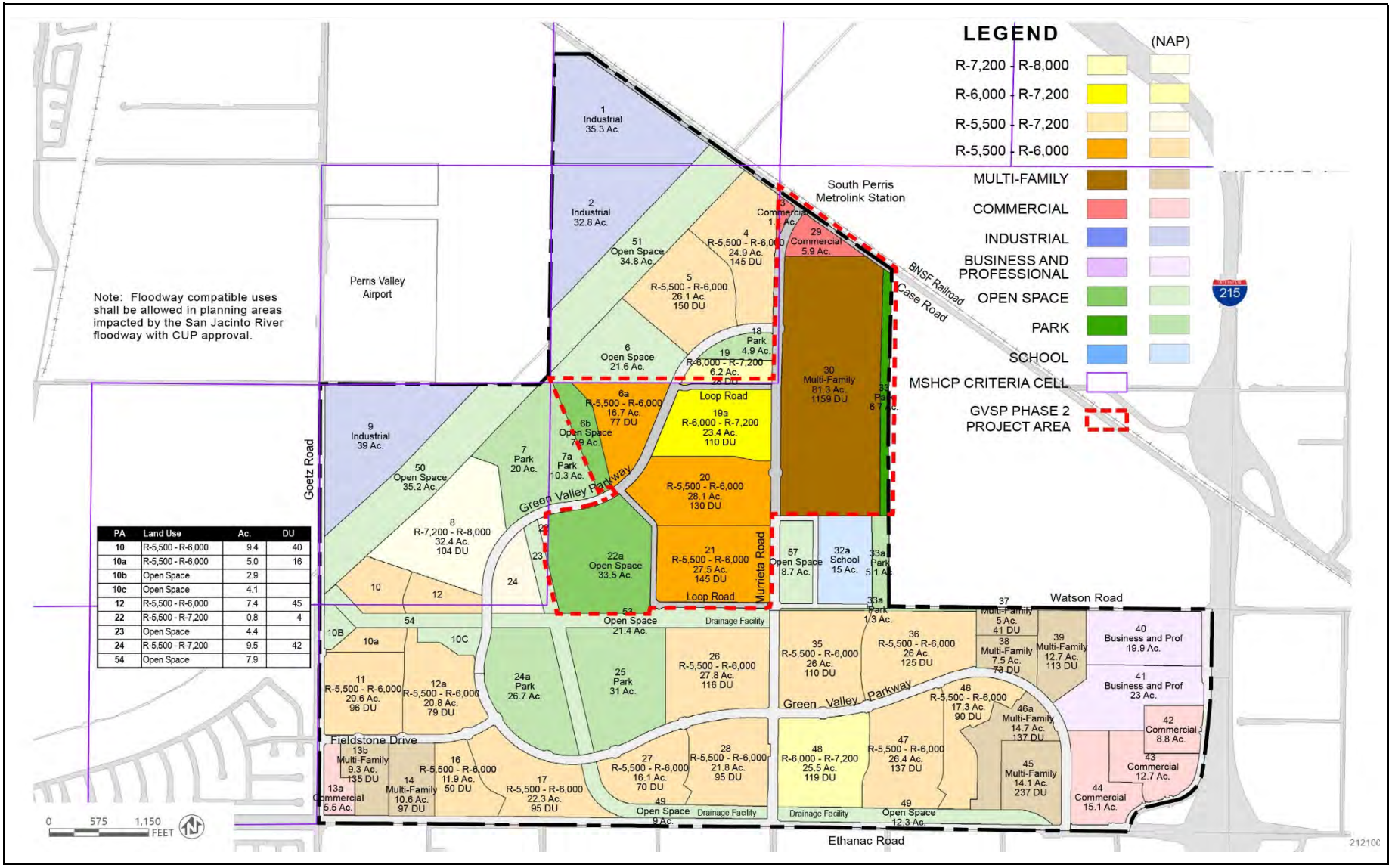
Revised Study Area Intersections

translutions
the transportation solutions company...

FIGURE 2

Green Valley Specific Plan Phase 2
Study Area Intersections

D:\GIS\Ascent - GVSP\Reports\Study Area Intersections.qgz (04-15-2022)



PA	Land Use	Ac.	DU
10	R-5,500 - R-6,000	9.4	40
10a	R-5,500 - R-6,000	5.0	16
10b	Open Space	2.9	
10c	Open Space	4.1	
12	R-5,500 - R-6,000	7.4	45
22	R-5,500 - R-7,200	0.8	4
23	Open Space	4.4	
24	R-5,500 - R-7,200	9.5	42
54	Open Space	7.9	

FIGURE 3

Green Valley Specific Plan Phase 2
Land Use Plan

translutions
the transportation solutions company...

2.1 Project Trip Generation

Trip generation for the project is based on trip generation rates from the Institute of Transportation Engineers' (ITE) Trip Generation (11th Edition) and are based on Land Use 210 "Single-Family Detached Housing", Land Use 220 "Multifamily Housing (Low-Rise) Not Close to Rail", Land Use 822 "Strip Retail Plaza", Land Use 821 Shopping Plaza (40-150K), Land Use 411 "Public Park", Land Use 520 "Elementary School", and Land Use 522 "Middle School".

Retail uses typically draw some of its trips from the adjacent street traffic. Such trips are not actually "new" trips from the project on the adjacent circulation system. These trips are referred to as "pass-by" trips. By definition, pass-by trips are trips that are on the roadway immediately adjacent to the retail center which make intermediate stops on the way from an origin to a primary trip destination without route diversion. In addition, due to the mixed-use character of the project, some trips will be internal to the project (e.g. a trip from residential to retail). Internal trip capture is based on RivTAM. After accounting for pass-by and internal trips, the project is forecast to generate 952 net new external trips during the a.m. peak hour, 1,406 net new external trips during the p.m. peak hour, and 19,548 net new external daily trips. Table A shows the project trip generation.

The trip generation for the elementary school and middle school are based on rates for Land Use 520 "Elementary School" and Land Use 522 "Middle School" and are shown in Table B. To determine the number of trips that would be external to the project area, a student generation was developed based on the number of dwelling units for the Green Valley Specific Plan using rates from the Special District Financing and Administration "*School Facilities Needs Analysis*". Table C shows the total student trip generation of 1,464 students for the Green Valley Specific Plan area. Since the number of students for the schools (1,000 students) is less than those forecast, it is estimated that most of the students would be coming from within the specific plan. To provide a conservative estimate of school trips external to the specific plan, the difference between the inbound and outbound trips shown in Table B, was assumed to be faculty and staff who live outside of the specific plan area.

2.2 Project Trip Distribution & Assignment

Trip distribution patterns for the proposed project were developed based on a select zone model run from RivTAM and with discussion with City staff. Figure 4 illustrates the trip distribution for the external project trips at the study area intersections. The project trip generation was applied to the trip distribution patterns for the project to develop trip assignments for new external project trips. Figure 5 illustrates the project trip assignment for the external trips at the study intersections. Pass-by trips are shown in Figure 6. The school trips external to the project area are shown in Figure 7 and the internal trips are shown in Figure 8. The total net trips are included in Figure 9.

3.0 LOS DEFINITIONS, PROCEDURES, AND THRESHOLDS

Level of service (LOS) is a measure of the quality of operational conditions within a traffic stream, and is generally expressed in terms of such measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Levels range from A to F, with LOS A representing excellent (free-flow) conditions and LOS F representing extreme congestion. Consistent with City guidelines, the Highway Capacity Manual (HCM) procedures have been used to evaluate levels of service. This section discusses the LOS definitions, procedures, and thresholds used in this report.

3.1 Intersection Levels of Service

The analysis of traffic operations at intersections was conducted according to the Highway Capacity Manual 6th Edition (HCM) delay methodologies using Synchro 11 software, which is described in the Highway Capacity Manual (Transportation Research Board, Washington, D.C., November 2016). Under the HCM methodology, LOS for signalized intersections is based on the average delay experienced by vehicles traveling through an intersection, whereas for un-signalized intersections, the LOS is based on the worst approach where the minor leg has a shared lane and on the worst movement where the minor leg has dedicated turn lanes. Table D presents a brief description of each level of service letter grade, as well as the range of delays associated with each grade.

translutions
the transportation solutions company...

Table A: Project Trip Generation

PA	Land Use		Units[1]	Peak Hours						Daily
				AM Peak Hour			PM Peak Hour			
				In	Out	Total	In	Out	Total	
6a	Single Family Detached Housing	77	DU							
	Trip Generation Rates[1]			0.18	0.52	0.70	0.59	0.35	0.94	9.43
	Total Planning Area Trip Generation			14	40	54	46	26	72	726
19a	Single Family Detached Housing	110	DU							
	Trip Generation Rates[1]			0.18	0.52	0.70	0.59	0.35	0.94	9.43
	Total Planning Area Trip Generation			20	57	77	65	38	103	1,037
20	Single Family Detached Housing	130	DU							
	Trip Generation Rates[1]			0.18	0.52	0.70	0.59	0.35	0.94	9.43
	Total Planning Area Trip Generation			24	67	91	77	45	122	1,226
21	Single Family Detached Housing	145	DU							
	Trip Generation Rates[1]			0.18	0.52	0.70	0.59	0.35	0.94	9.43
	Total Planning Area Trip Generation			26	76	102	86	50	136	1,367
30	Multifamily Housing (Low-Rise)	1,159	DU							
	Trip Generation Rates[2]			0.10	0.30	0.40	0.32	0.19	0.51	6.74
	Total Planning Area Trip Generation			111	353	464	372	219	591	7,812
3	Commercial	30.5	TSF							
	Trip Generation Rates[3]			1.42	0.94	2.36	3.30	3.30	6.59	54.45
	Total Planning Area Trip Generation			43	29	72	100	101	201	1,660
	Pass-By Trips			0	0	0	(34)	(34)	(68)	(68)
	Total Planning Area Net Trip Generation			43	29	72	66	67	133	1,592
29	Commercial	128.5	TSF							
	Trip Generation Rates[4]			1.07	0.66	1.73	2.54	2.65	5.19	67.52
	Total Planning Area Trip Generation			138	84	222	327	340	667	8,676
	Pass-By Trips			0	0	0	(111)	(116)	(227)	(227)
	Total Planning Area Net Trip Generation			138	84	222	216	224	440	8,449
33	Park	6.7	AC							
	Trip Generation Rates[5]			0.01	0.01	0.02	0.06	0.05	0.11	0.78
	Total Planning Area Trip Generation			0	0	0	0	1	1	5
	Total Trip Generation			**376**	**706**	**1,082**	**928**	**670**	**1,598**	**22,214**
	Internal Trip Capture (12% from RivTAM Select Zone)			**(45)**	**(85)**	**(130)**	**(111)**	**(80)**	**(192)**	**(2,666)**
	Total External Trip Generation			**331**	**621**	**952**	**817**	**590**	**1,406**	**19,548**

Notes: DU=Dwelling Units, TSF=Thousand Square Feet, ST=Students,

[1] Trip generation based on rates for Land Use 210 - "Single-Family Detached Housing" from Institute of Transportation Engineers' (ITE) Trip Generation (11th Edition).

[2] Trip generation based on rates for Land Use 220 - "Multifamily Housing (Low-Rise) Not Close to Rail Transit" from Institute of Transportation Engineers' (ITE) Trip Generation (11th

[3] Trip generation based on rates for Land Use 822 - "Strip Retail Plaza" from Institute of Transportation Engineers' (ITE) Trip Generation (11th Edition).

[4] Trip generation based on rates for Land Use 821 - "Shopping Plaza (40-150K) - Supermarket - No" from Institute of Transportation Engineers' (ITE) Trip Generation (11th Edition).

[5] Trip generation based on rates for Land Use 411 - "Public Park" from Institute of Transportation Engineers' (ITE) Trip Generation (11th Edition).

translutions
the transportation solutions company...

Table B: School Project Trip Generation

PA	Land Use		Units[1]	Peak Hours						Daily
				AM Peak Hour			PM Peak Hour			
				In	Out	Total	In	Out	Total	
32a	Elementary School	750.0	ST							
	Trip Generation Rates[1]			0.40	0.34	0.74	0.07	0.09	0.16	2.27
	Total Planning Area Trip Generation			300	255	555	55	65	120	1,703
	Middle School	250.0	ST							
	Trip Generation Rates[2]			0.36	0.31	0.67	0.07	0.08	0.15	2.10
	Total Planning Area Trip Generation			90	78	168	18	20	38	525
	Total Trip Generation			**390**	**333**	**723**	**73**	**85**	**158**	**2,228**

Notes: DU=Dwelling Units, TSF=Thousand Square Feet, ST=Students,

[1] Trip generation based on rates for Land Use 520 - "Elementary School" from Institute of Transportation Engineers' (ITE) Trip Generation (11th Edition).

[2] Trip generation based on rates for Land Use 522 - "Middle School" from Institute of Transportation Engineers' (ITE) Trip Generation (11th Edition).

translutions
the transportation solutions company...

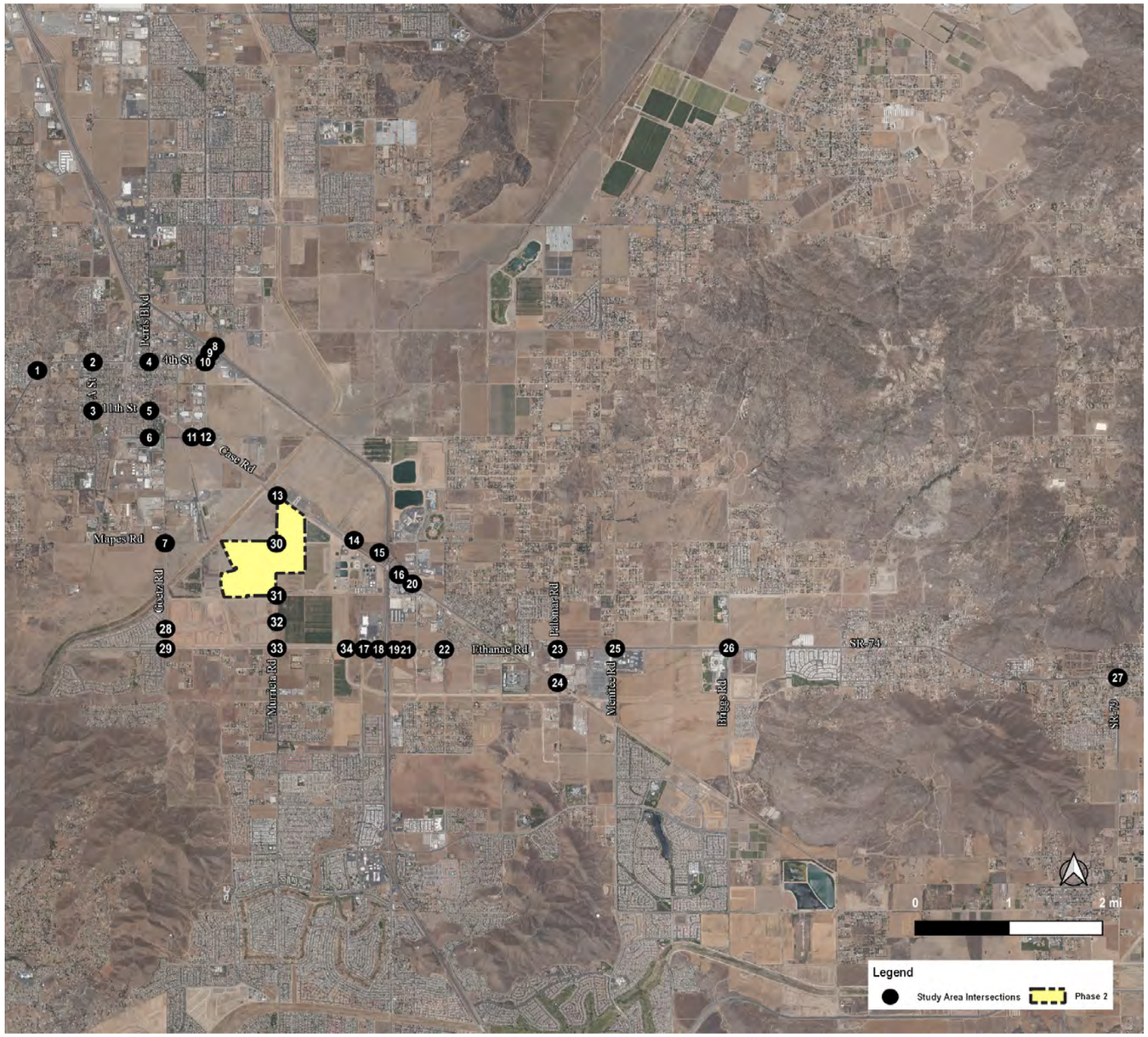
Table C: Student Trip Generation

Land Use		Units[1]	Total
Student Generation	1,306.0	DU	
Single-Family Detached Rates[1]			0.41
Student Generation			534
Student Generation	1,860.0	DU	
Multi-Family Attached Rates[2]			0.50
Student Generation			930
Total Student Trip Generation			**1,464**

Notes: DU=Dwelling Units, TSF=Thousand Square Feet, ST=Students,

[1] Trip generation based on rates for "Single-Family Detached " from Perris Elementary School District District School Facilities Needs Analysis (May 2020).

[2] Trip generation based on rates for "Multi-Family Attached " from Perris Elementary School District School District School Facilities Needs Analysis (May 2020).



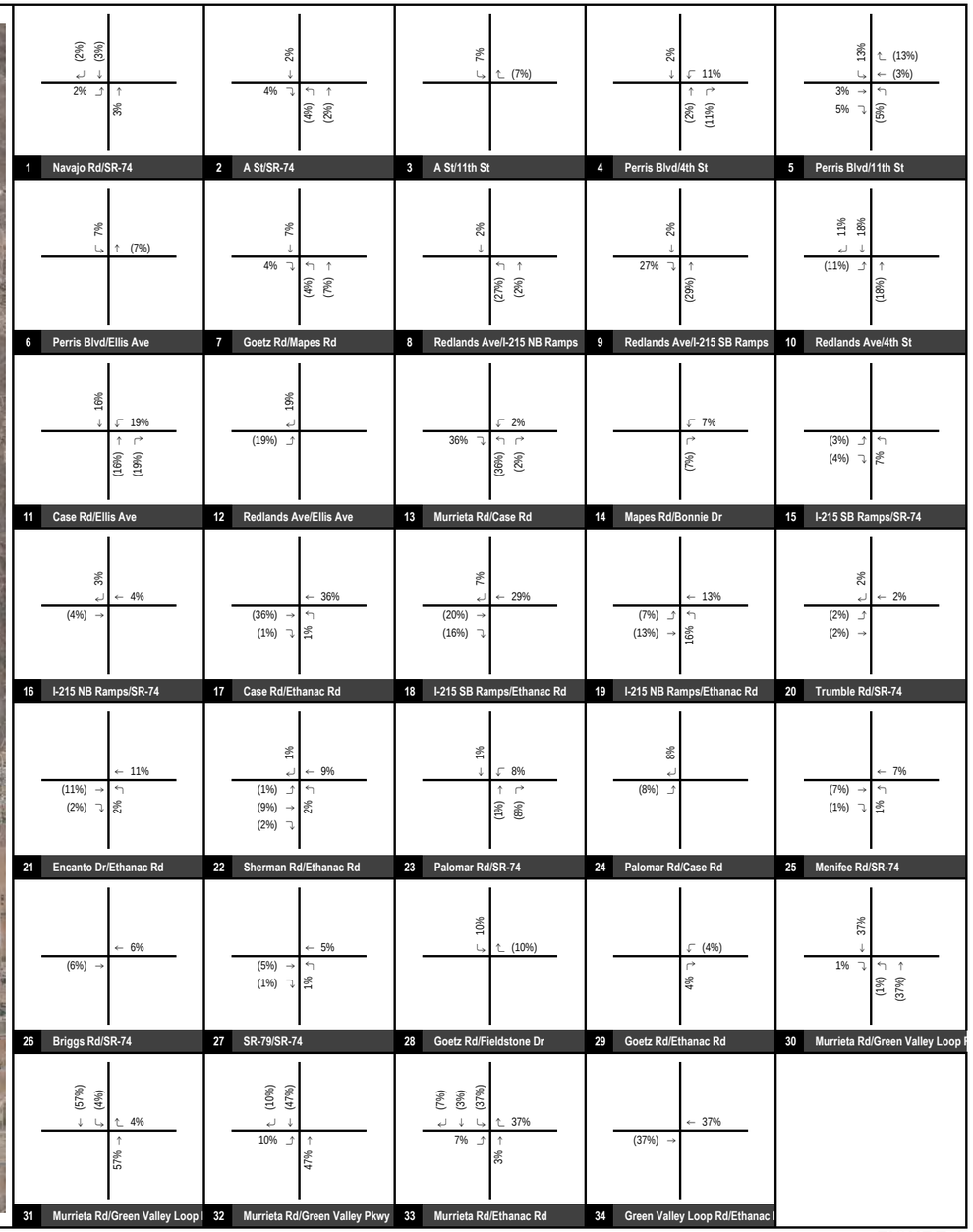
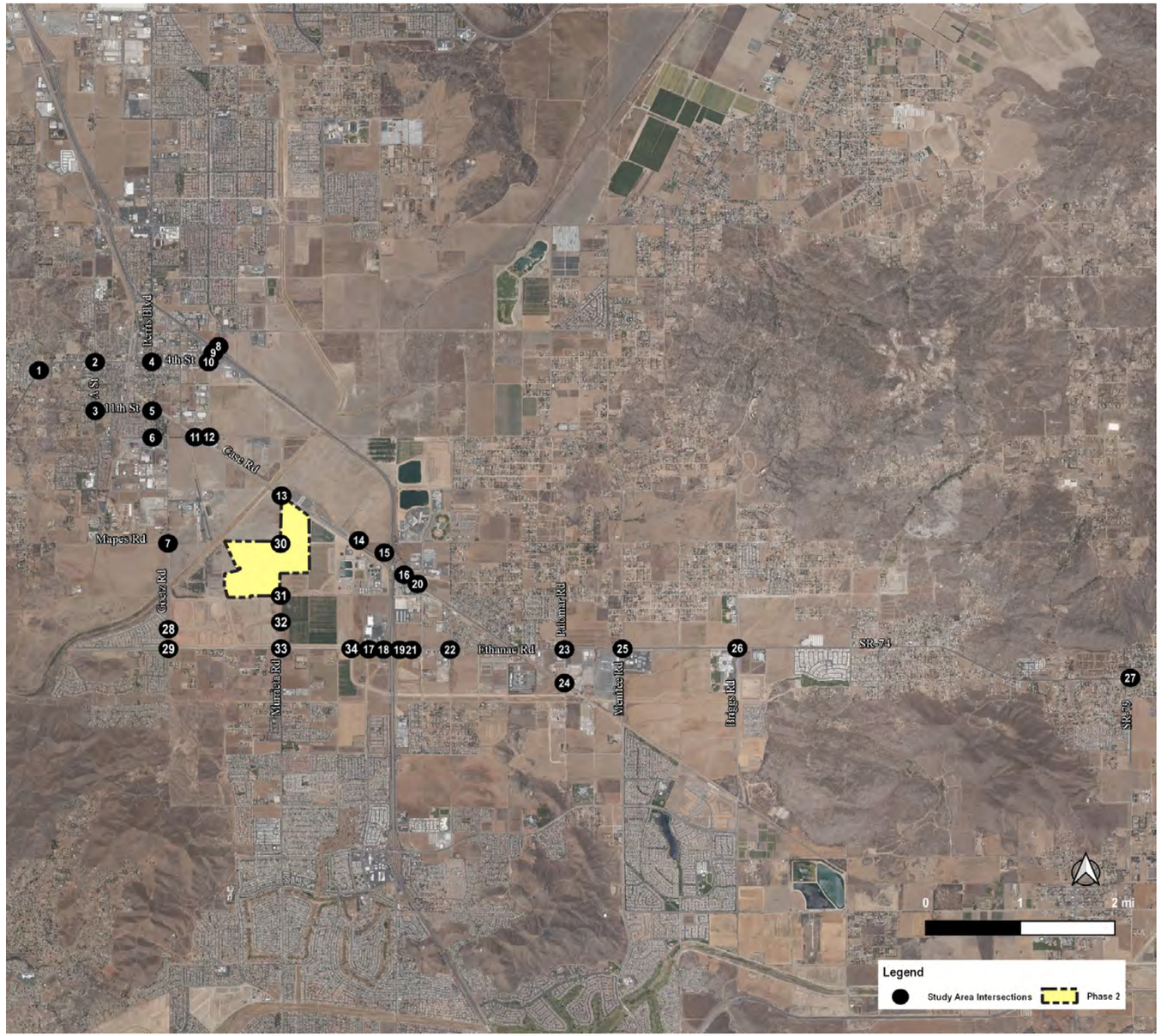


FIGURE 4

XX%(YY%) Inbound%(Outbound%) Distribution

Green Valley Specific Plan Phase 2
Project Trip Distribution (External Trips)

translutions
the transportation solutions company...



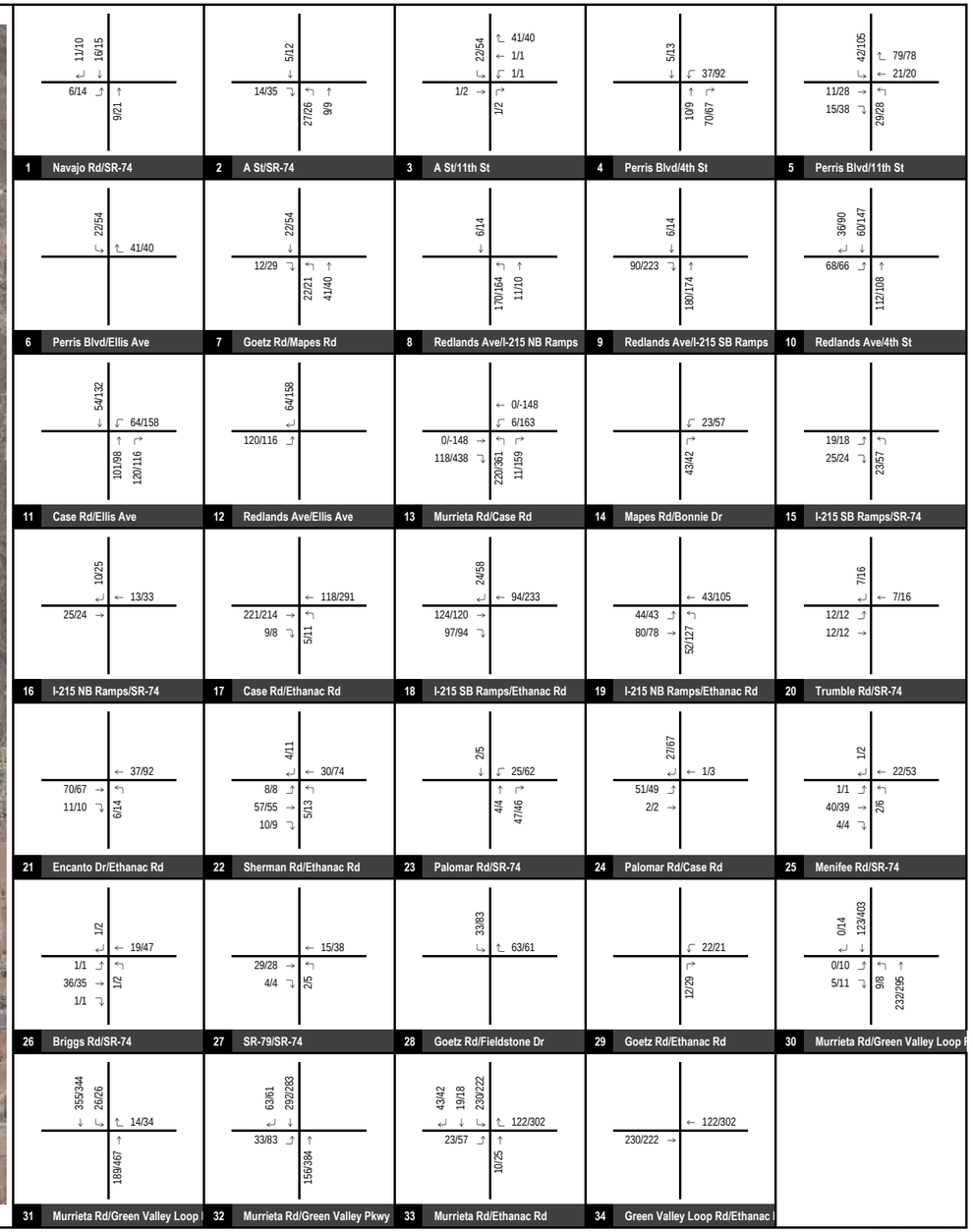
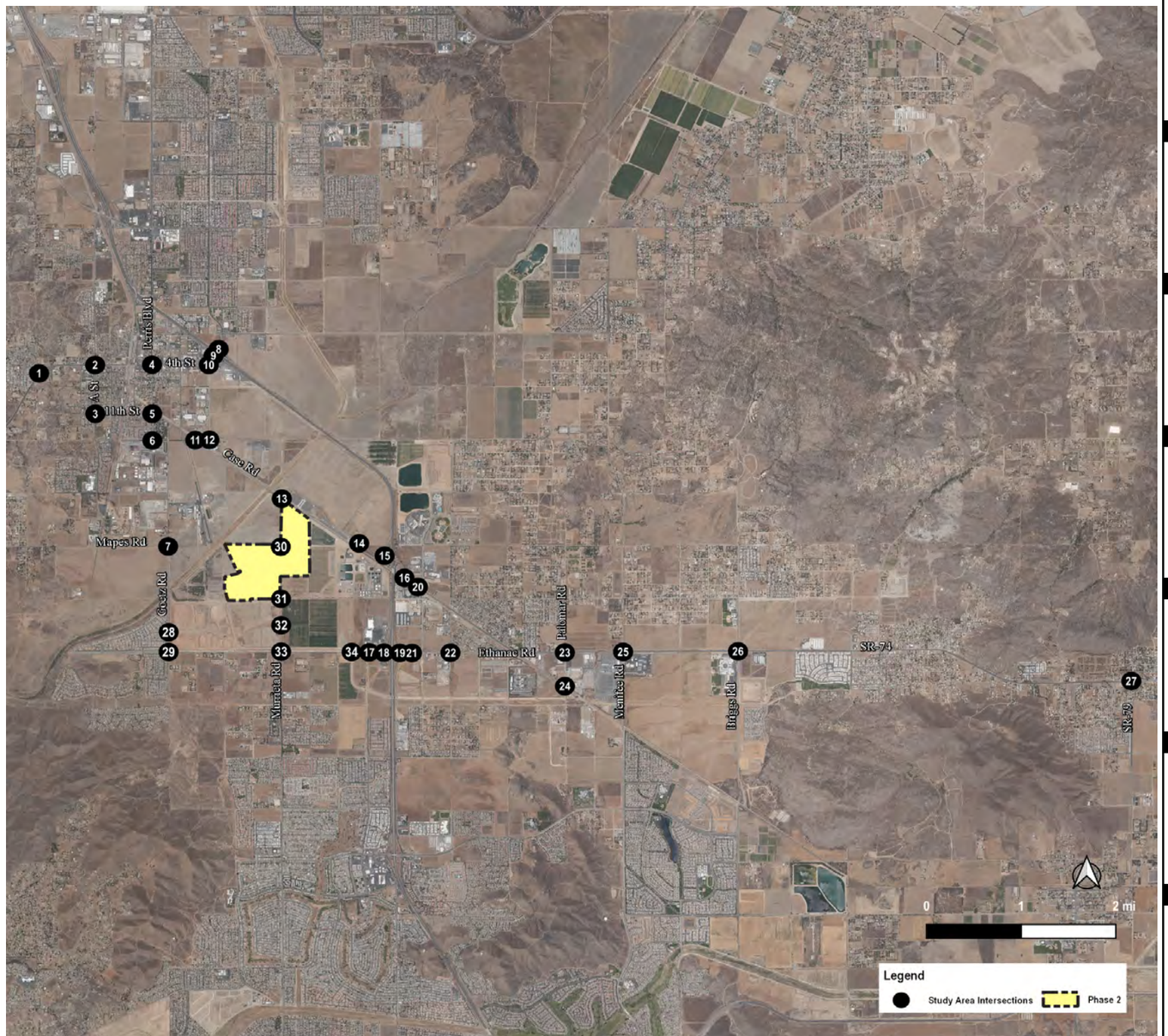


FIGURE 5

XXX/YYY AM/PM Peak Hour Traffic Volumes

Green Valley Specific Plan Phase 2
Project Trip Assignment (External Trips)

translutions
the transportation solutions company...



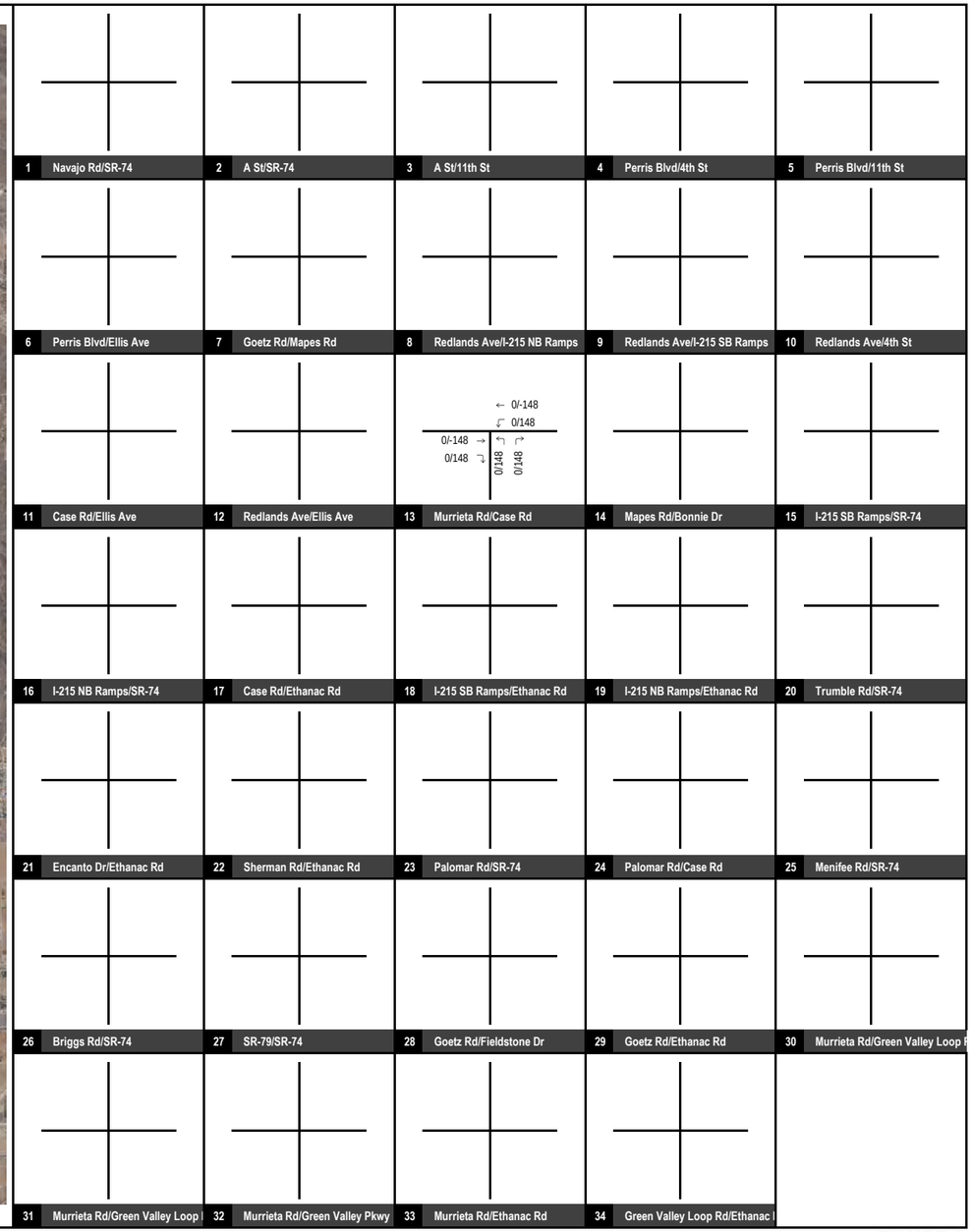


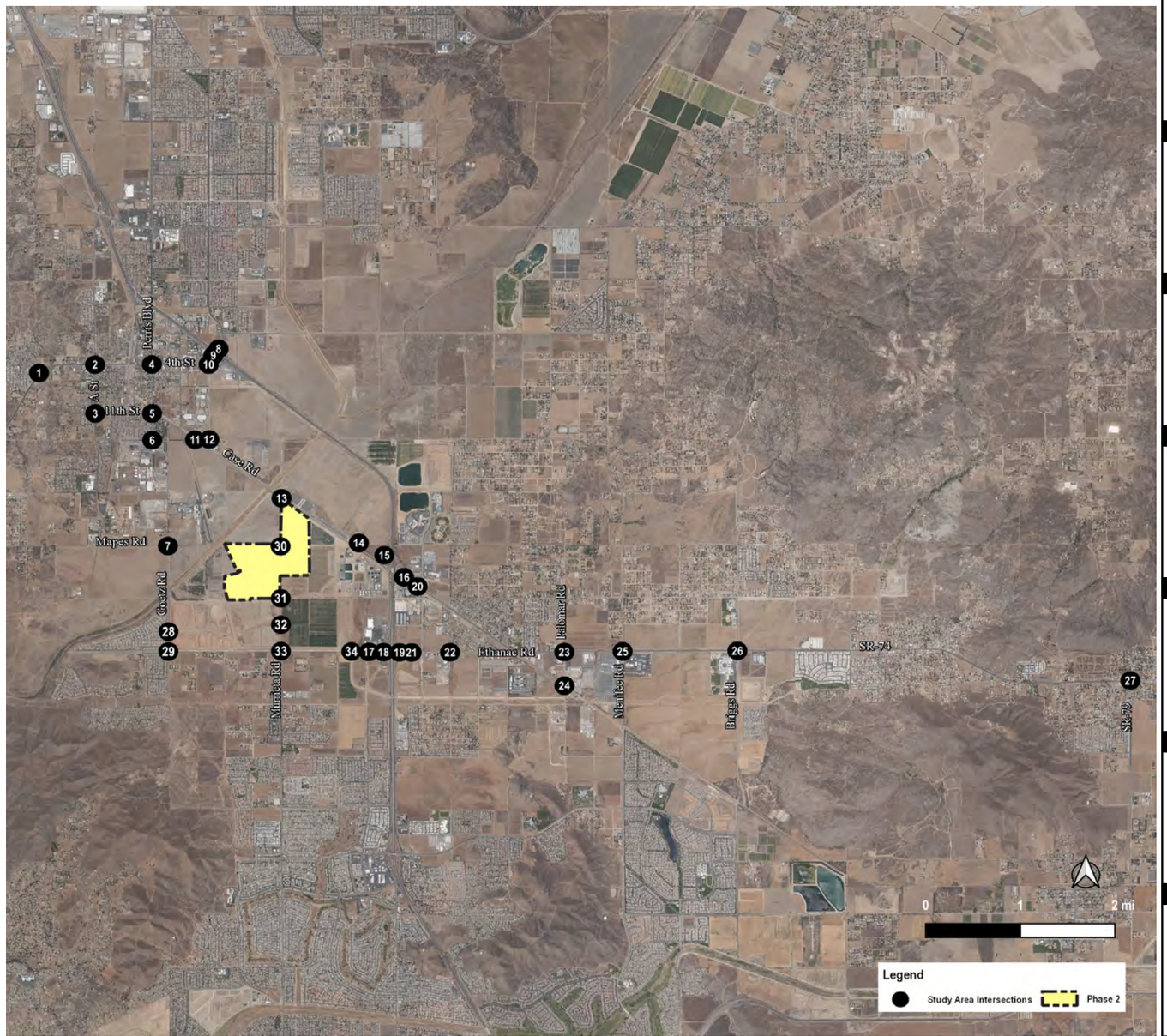
FIGURE 6

XXX/YYY AM/PM Peak Hour Traffic Volumes

Green Valley Specific Plan Phase 2
Pass-By Trips

translutions
the transportation solutions company...

D:\Projects\Ascent - GVSP\Analysis\Z84 PassyBy Trips (4/15/2022)



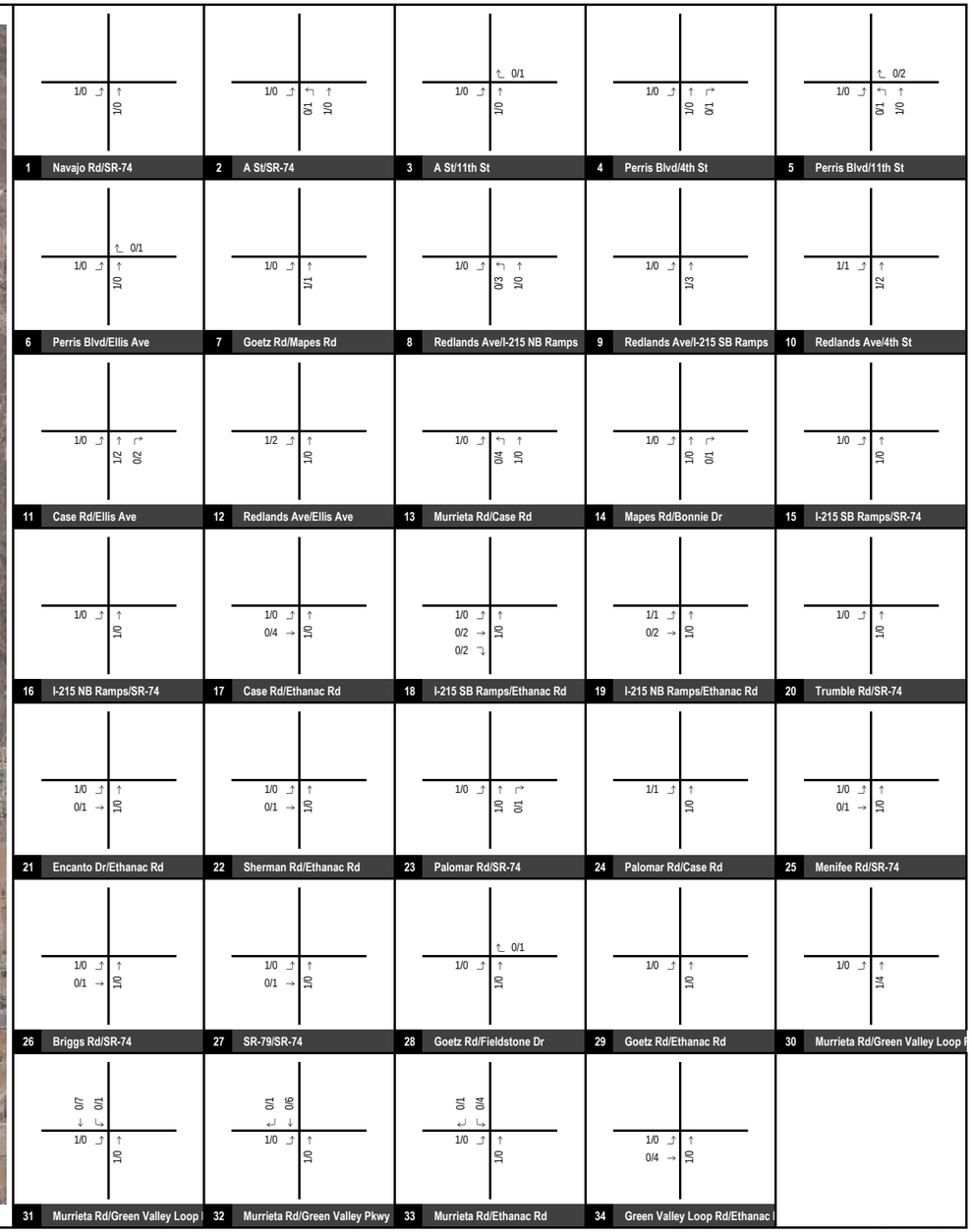
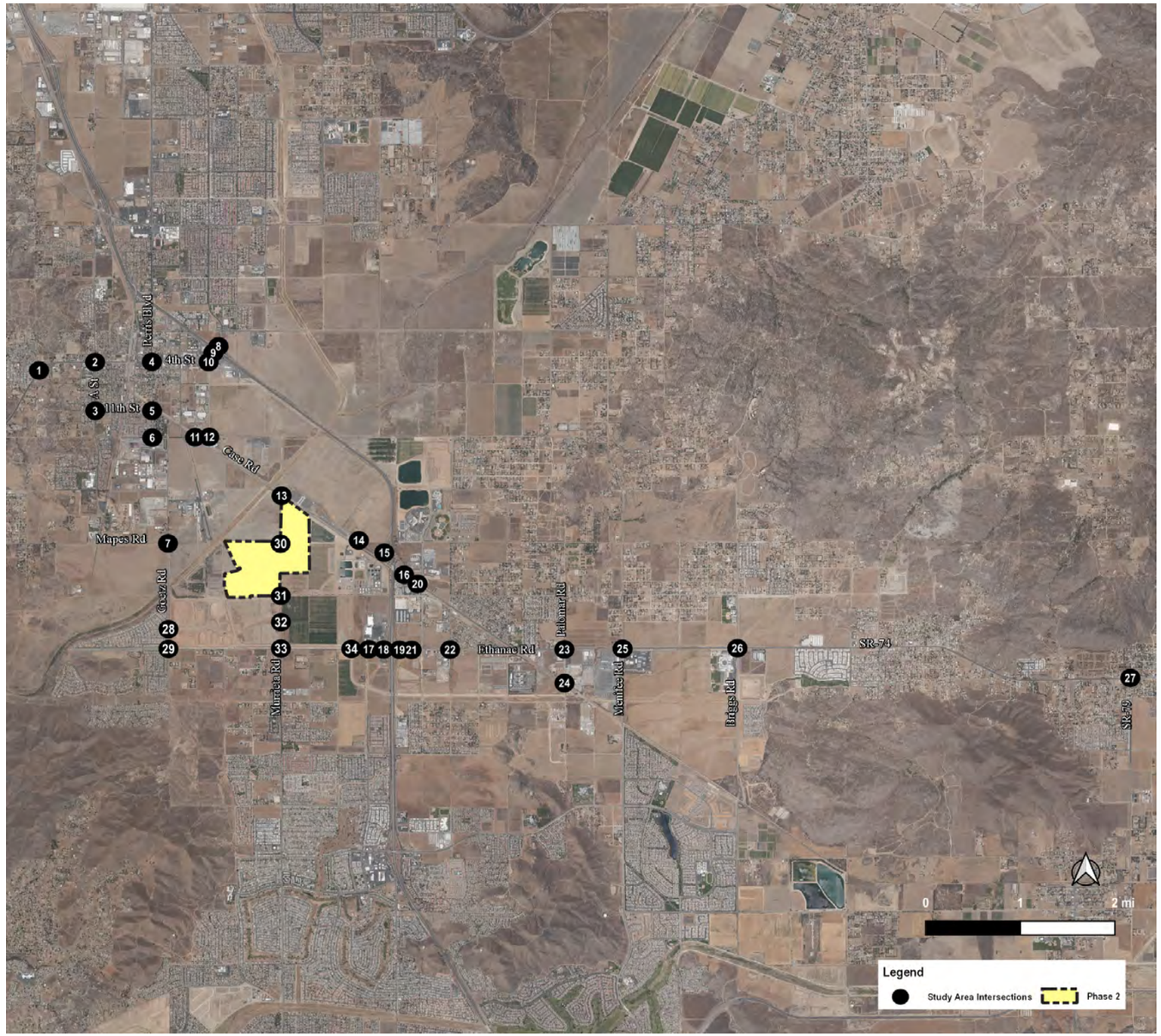


FIGURE 7

XXX/YYY AM/PM Peak Hour Traffic Volumes

Green Valley Specific Plan Phase 2
School Trips (External Trips)

translutions
the transportation solutions company...



1 Navajo Rd/SR-74	2 A St/SR-74	3 A St/11th St	4 Perris Blvd/4th St	5 Perris Blvd/11th St
6 Perris Blvd/Ellis Ave	7 Goetz Rd/Mapes Rd	8 Redlands Ave/I-215 NB Ramps	9 Redlands Ave/I-215 SB Ramps	10 Redlands Ave/4th St
11 Case Rd/Ellis Ave	12 Redlands Ave/Ellis Ave	13 Murrieta Rd/Case Rd	14 Mapes Rd/Bonnie Dr	15 I-215 SB Ramps/SR-74
16 I-215 NB Ramps/SR-74	17 Case Rd/Ethanac Rd	18 I-215 SB Ramps/Ethanac Rd	19 I-215 NB Ramps/Ethanac Rd	20 Trumble Rd/SR-74
21 Encanto Dr/Ethanac Rd	22 Sherman Rd/Ethanac Rd	23 Palomar Rd/SR-74	24 Palomar Rd/Case Rd	25 Menifee Rd/SR-74
26 Briggs Rd/SR-74	27 SR-79/SR-74	28 Goetz Rd/Fieldstone Dr	29 Goetz Rd/Ethanac Rd	30 Murrieta Rd/Green Valley Loop F
31 Murrieta Rd/Green Valley Loop	32 Murrieta Rd/Green Valley Pkwy	33 Murrieta Rd/Ethanac Rd	34 Green Valley Loop Rd/Ethanac	

6/14 ← 41/98
10/10 → 76/71

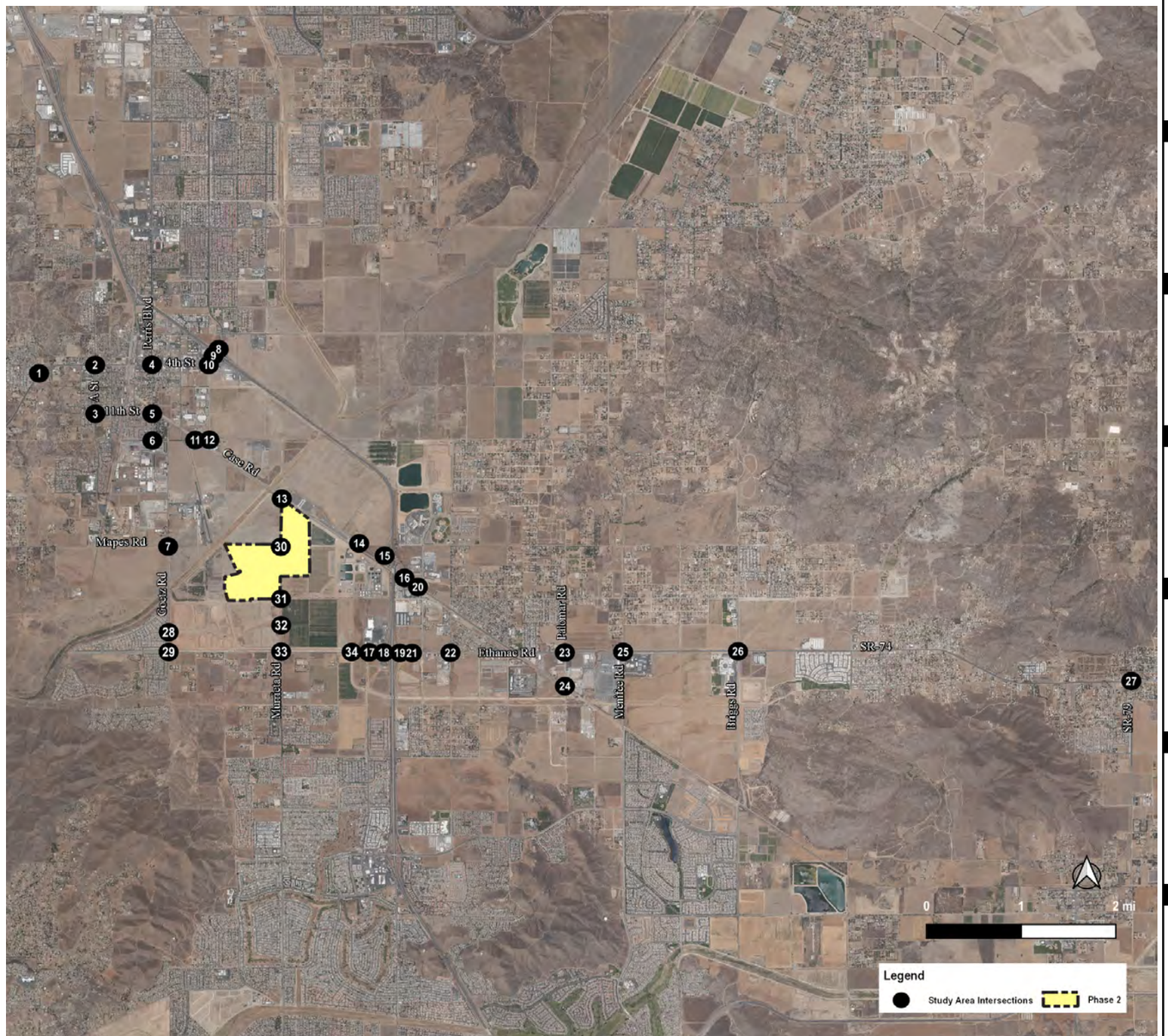
FIGURE 8

XXX/YYY AM/PM Peak Hour Traffic Volumes

Green Valley Specific Plan Phase 2
Internal Trips

translutions
the transportation solutions company...

D:\Projects\Ascent - GVSP\Analysis\Z84 Internal Trips (4/15/2022)



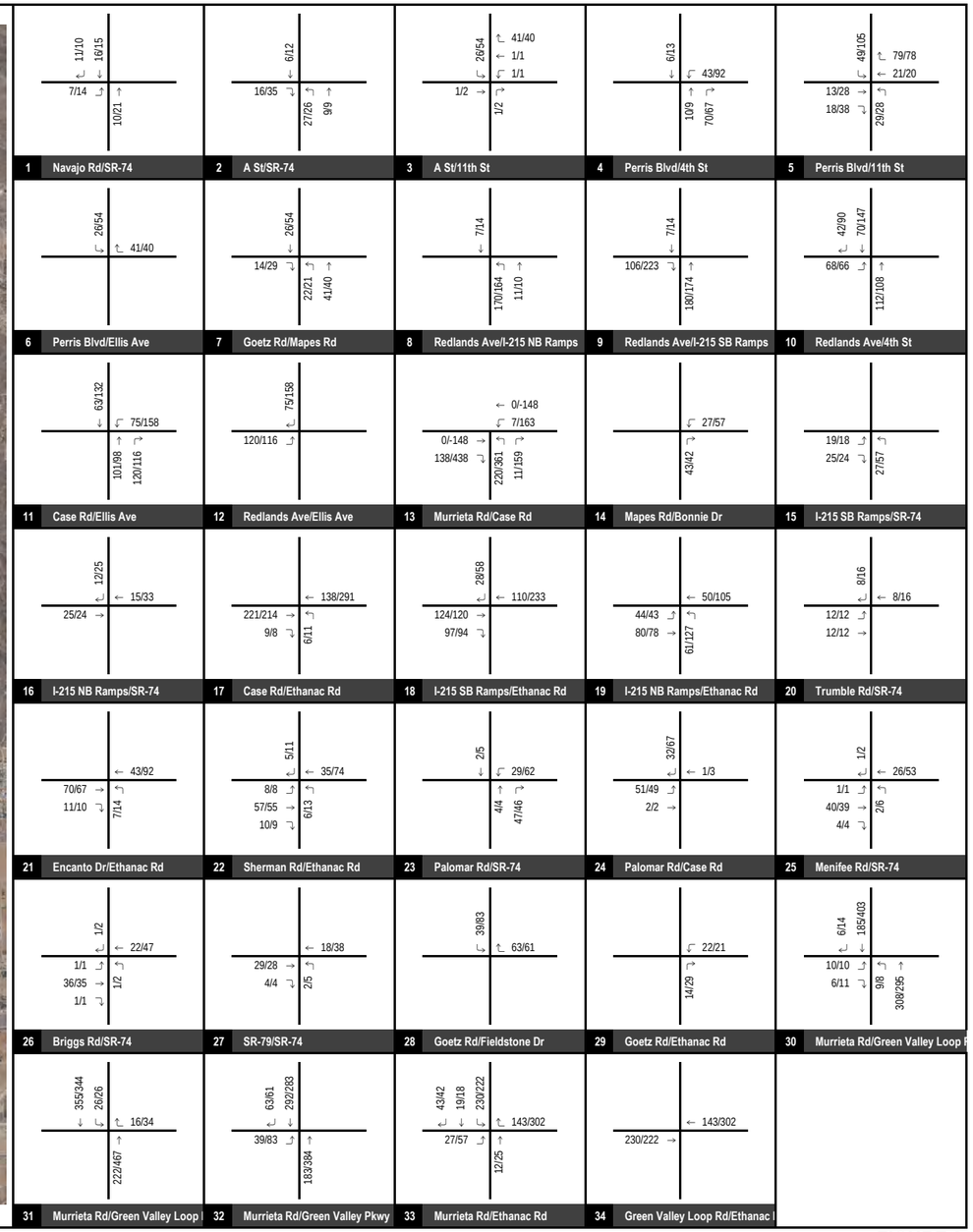


FIGURE 9

XXX/YYY AM/PM Peak Hour Traffic Volumes

Green Valley Specific Plan Phase 2
Total Net Trips

translutions
the transportation solutions company...

Table D: Intersection LOS Criteria

LOS	Description of Drivers' Perception and Traffic Operation	Delay in Seconds	
		Unsignalized	Signalized
A	This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable, or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.	≤ 10	≤ 10
B	This level is assigned when the volume-to-capacity ratio is low and either progression is highly favorable, or the cycle length is short. More vehicles stop than with LOS A.	> 10 and ≤ 15	> 10 and ≤ 20
C	This level is typically assigned when progression is favorable, or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	> 15 and ≤ 25	> 20 and ≤ 35
D	This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective, or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	> 25 and ≤ 35	> 35 and ≤ 55
E	This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.	> 35 and ≤ 50	> 55 and ≤ 80
F	This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	> 50	> 80

Source: *Highway Capacity Manual, 6th Edition*

3.2 Levels of Service Standards

The City of Perris General Plan has established minimum Level of Service standards for its roadway network. The minimum LOS standard at intersections is LOS D. However, per the Downtown Specific Plan, the minimum acceptable LOS within the Downtown area is LOS E. In addition, per the City's General Plan, the minimum acceptable LOS standard at the I-215 freeway ramps is LOS E. Further, the City identifies the following intersection operating requirements:

- At intersections with a pre-project LOS at or above the minimum acceptable standard, the addition of project traffic results in an LOS below the minimum standard.
- At intersections with a pre-project LOS below the minimum acceptable standard, the addition of project traffic further degrades to lower LOS.

4.0 VOLUME DEVELOPMENT METHODOLOGY

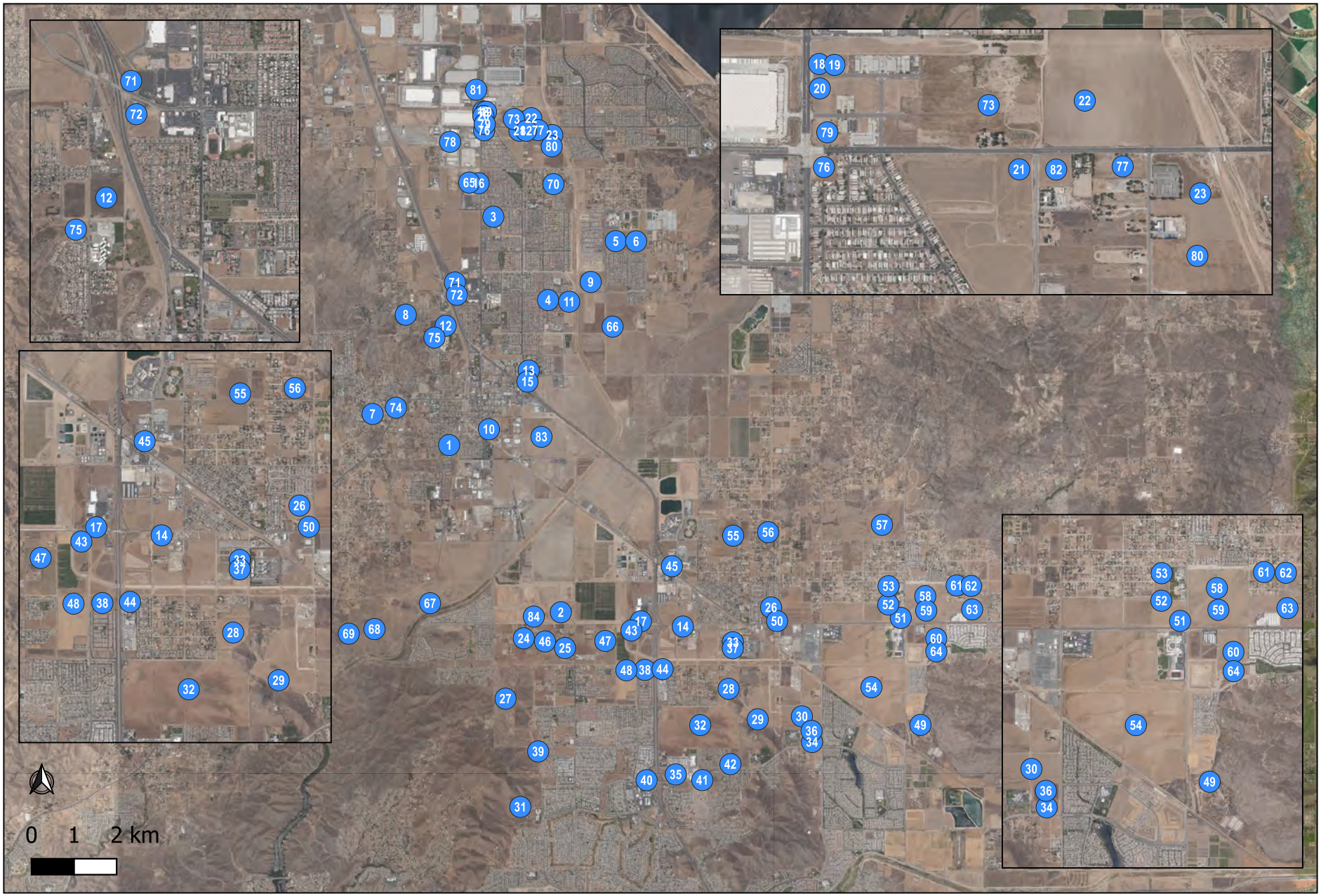
This section discusses the volume development methodology used to forecast future traffic volumes.

4.1 Existing Without Project Traffic Volumes

Existing traffic volumes are based on peak hour intersection turn movement counts collected by Counts Unlimited Inc. in September 2021. Count sheets are contained in Appendix A. Vehicle classification counts (e.g., passenger vehicle, 2-axle truck, 3-axle truck, and 4 or more axle truck), were conducted at study intersections. Consistent to the Guidelines, PCE volumes at this intersection was computed using a PCE factor of 1.5 for 2-axle trucks, 2.0 for 3-axle trucks, and 3.0 for trucks with 4 or more axles. Detailed volume development worksheets are included in Appendix B.

4.2 Opening Year Without Project Traffic Volumes

Opening year without project peak hour traffic volumes were developed by applying an annual growth rate of 3 percent per year for 4 years to the existing volumes and adding cumulative project trips. The cumulative projects included in the analysis are illustrated in Figure 10. The cumulative projects trip generation is in Appendix B. The cumulative



Legend

Cumulative Projects

FIGURE 10

Green Valley Specific Plan Phase 2
Cumulative Project Locations

translutions
the transportation solutions company...

D:\GIS\Ascent - GVSP\Reports\Cumul Project Locations.qgz (04-15-2022)

projects are anticipated to generate 13,352 a.m. peak hour PCE trips, 18,100 p.m. peak hour PCE trips, and 235,187 daily PCE trips.

4.3 Year 2040 Traffic Volumes

Traffic volumes for year 2040 conditions were developed based on the RivTAM. The base year for the traffic model is 2012 and the forecast year is 2040. The difference between the modeled 2012 and 2040 peak period directional arterial traffic volumes (for each intersection approach and departure) was identified from loaded network model plots. This difference defines the growth in traffic over the 28-year period. This incremental growth in peak period approach and departure volumes was factored to develop the incremental change in peak hour volumes. The RivTAM uses a three-hour a.m. peak period and a four-hour p.m. peak period. Southern California Association of Governments (SCAG), the regional Metropolitan Transportation Organization (MPO) has established that the a.m. peak hour comprises 38 percent of the a.m. peak period and that the p.m. peak hour comprises 28 percent of the p.m. peak period. Therefore, the incremental changes in peak period volumes were multiplied by the appropriate factor to develop incremental changes in peak hour volumes. The incremental growth in approach and departure volumes between 2012 and 2040 was factored to reflect the forecast growth between the year of the ground counts (2021) and 2040. For this purpose, linear growth between 2012 and year 2040 was assumed. Since the increment between 2021 and 2040 is 19 years of the 28-year time span, a factor of 0.67 (i.e., 19/28) was used. This forecast growth in approach and departure volumes were added to the 2021 ground counts, resulting in post-processed forecast year 2040 link volumes.

Year 2040 turn volumes were developed using existing turn volumes and the future approach and departure volumes, based on the methodologies contained in National Cooperative Highway Research Program Report (NCHRP) 765: *Analytical Travel Forecasting Approaches for Project-Level Planning and Design* (Transportation Research Board, December 2014). Detailed volume development worksheets are included in Appendix B.

4.4 With Project Traffic Volumes

Traffic volumes for existing, opening year and year 2040 were developed by adding the trip assignment to the corresponding without project peak hour traffic volumes.

5.0 EXISTING CONDITIONS

This section discusses the existing transportation conditions in the study area.

5.1 Existing Roadway Conditions

Regional access to the project site is provided by Interstate 215 to the east. Local access to the project will be provided by the following roadways:

- **Ethanac Road** is oriented in the east-west direction and is a 4-lane roadway within the project study area. The City's circulation plan designates Ethanac Road as a "Primary Arterial".
- **Case Road** is oriented in the northwest-southeast direction and is a 2-lane roadway within the project study area. The City's circulation plan designates Case Road as a "Primary Arterial".
- **Goetz Road** is oriented in the north-south direction and is a 2-lane roadway within the project study area. The City's circulation plan designates Goetz Road as a "Primary Arterial".
- **Murrieta Road** is oriented in the north-south direction and is a 2-lane roadway within the project study area. The City's circulation plan designates Murrieta Road as a "Secondary Arterial".
- **Ellis Avenue** is oriented in the east-west direction and is a 2-lane roadway within the project study area. The City's circulation plan designates Ellis Avenue as a "Primary Arterial".
- **Redlands Boulevard** is oriented in the north-south direction and is a 2-lane roadway within the project study area. The City's circulation plan designates Redlands Boulevard as a "Secondary Arterial".
- **Perris Boulevard** is oriented in the north-south direction and is a 2-lane roadway within the project study area. The City's circulation plan designates Perris Boulevard as a "Primary Arterial".
- **State Route 74** is oriented in the east-west direction and is a 4-lane roadway within the project study area. The City's circulation plan designates State Route 74 as a "Primary Arterial".

5.2 Existing Transit Service

Public transportation services within the City includes bus transit service provided by the Riverside Transit Agency (RTA) and commuter rail transportation (Metrolink). These services are further described below.

Bus Service. Public transportation in the City is provided by RTA, which is the regional transit operator in Riverside County.

- **Route 74** provides service on Case Road and Ethanac Road. Route 74 has major stops at the Perris Station Transit Center. Route 74 operates at 60-90 minutes headways on weekdays.
- **Route 61** provides service on Case Road and Ethanac Road. Route 61 has major stops at the Perris Station Transit Center. Route 61 operates at 60-90 minutes headways on weekdays.

Commuter Rail Service. Commuter rail service is provided by Metrolink, which is operated by the Southern California Regional Rail Authority (SCRRA). Metrolink train service is available between the counties of Ventura, Los Angeles, San Bernardino, Orange, Riverside, and north San Diego. The area is served by the Perris South Metrolink Station. The Perris South station is the nearest Metrolink station to the project site and is approximately 0.5 miles north of the project site.

Figure 11 illustrates the existing transit services. As shown in Figure 11, the closest transit routes to the project are located on Case Road.

5.3 Existing Pedestrian & Bicycle Facilities

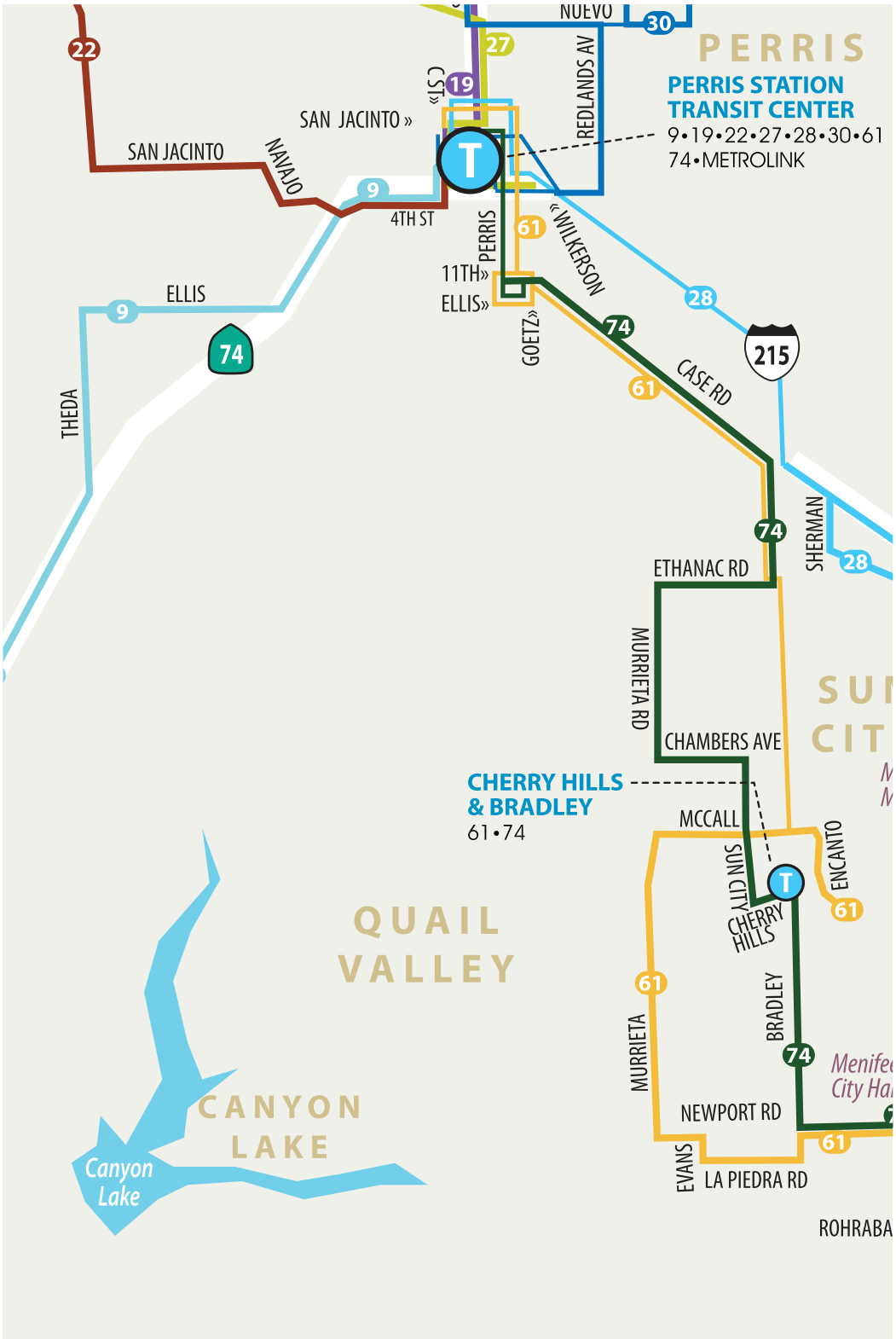
The City's Bicycle Master Plan includes three types of facilities and are discussed below:

- **Class I Shared-Use Paths -** Class I facilities provide paths completely separated from motor vehicle traffic used by people walking and biking. They are comfortable for people of all ages and abilities. They are typically located immediately adjacent and parallel to roadway or in its own independent right-of-way, such as within a park or along a body of water.
- **Class II Bicycle Lanes -** Class II facilities provide a dedicated lane for bicycle travel adjacent to traffic. A painted white line separates the bicycle lane from motor vehicle traffic.
- **Class IIB Buffered Bicycle Lanes -** Class IIB facilities provide a dedicated lane for bicycle travel separated from vehicle traffic by a painted buffer.
- **Class III Bicycle Route - Class III** facilities provide a signed bike route that people biking share with motor vehicles. They can include pavement markings and are comfortable facility for more confident bicyclists. They are recommended when space for a bike lane may not be feasible.
- **Class IIIB Bicycle Boulevard – Class IIIB** facilities provide calm local streets where bicyclists have priority but share roadway space with motor vehicles. Shared roadway bicycle markings on the pavement as well as traffic calming features such as speed humps and traffic diverters to keep these streets more comfortable for bicyclists.

Figure 12 illustrates the existing bicycle facilities within the City. As shown in Figure 12, there are existing bike lanes on Green Valley Parkway, Goetz Road, and Ethanac Road within the project area. Pedestrian circulation in Perris is primarily provided via sidewalks. The existing pedestrian sidewalks adjacent to the project are illustrated in Figure 13. As illustrated in Figure 13, there are sidewalks on Murrieta Road to the south, Green Valley Parkway to the south, and Ethanac Road to the south adjacent to the project area.

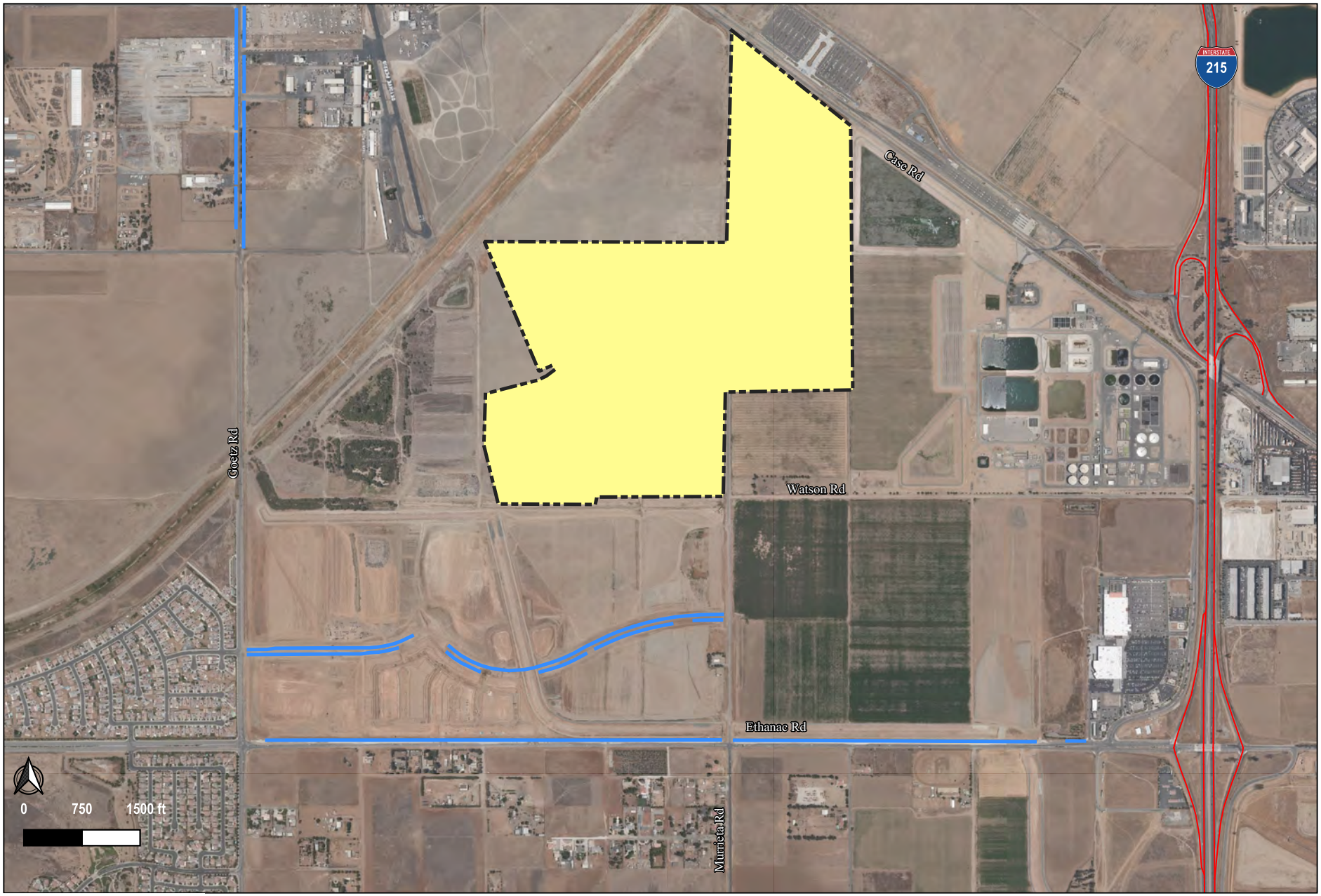
5.4 Existing Levels of Service

An intersection level of service analysis was conducted for existing conditions to determine current circulation system performance. Figure 14 shows the existing lane geometrics and stop controls at the study intersections. The existing traffic volumes at study intersections are illustrated in Figure 15. Detailed volume development worksheets are included



Source: RTA (January 2022)

FIGURE 11



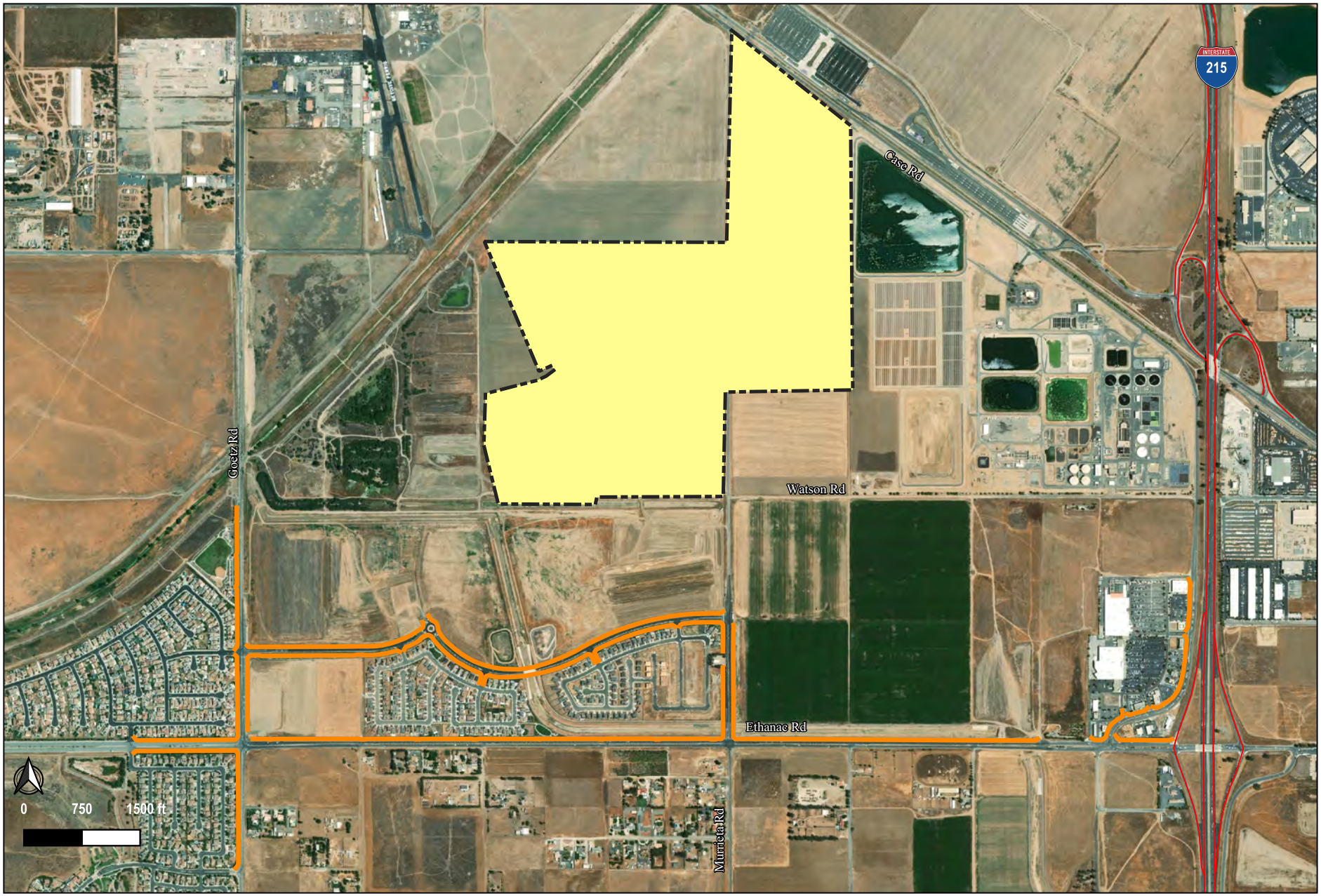
Legend

Phase 2 — Bike Lanes

translutions
the transportation solutions company...

FIGURE 12
Green Valley Specific Plan Phase 2
Bike Lanes

D:\GIS\Ascent - GVSP\Reports\Bike Lanes.qgz (04-15-2022)



Legend

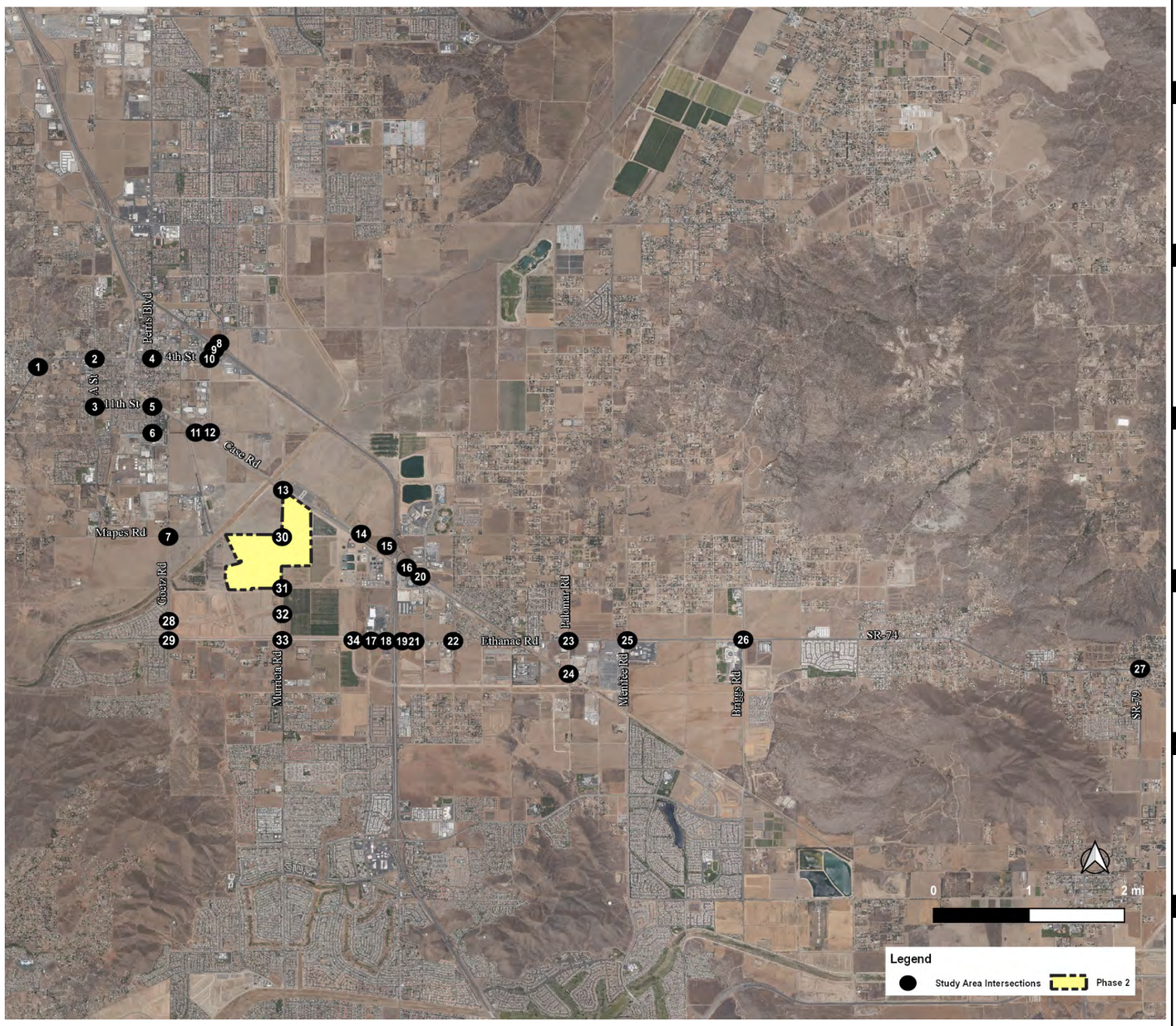
Phase 2 — Pedestrian Sidewalks

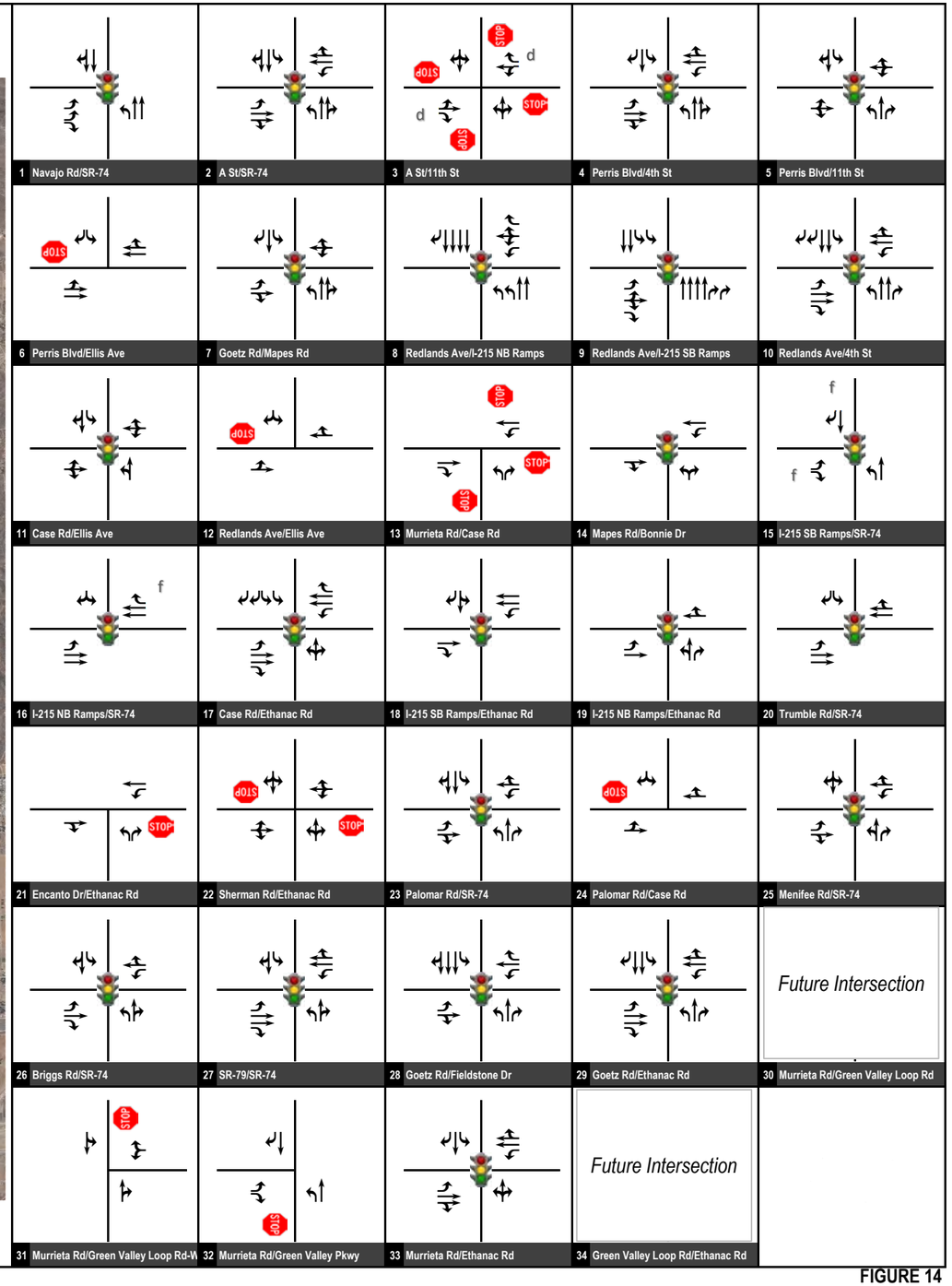
translutions
the transportation solutions company...

FIGURE 13

Green Valley Specific Plan Phase 2
Pedestrian Sidewalks

D:\GIS\Ascent - GVSP\Reports\Pedestrian Sidewalks.qgz (04-15-2022)





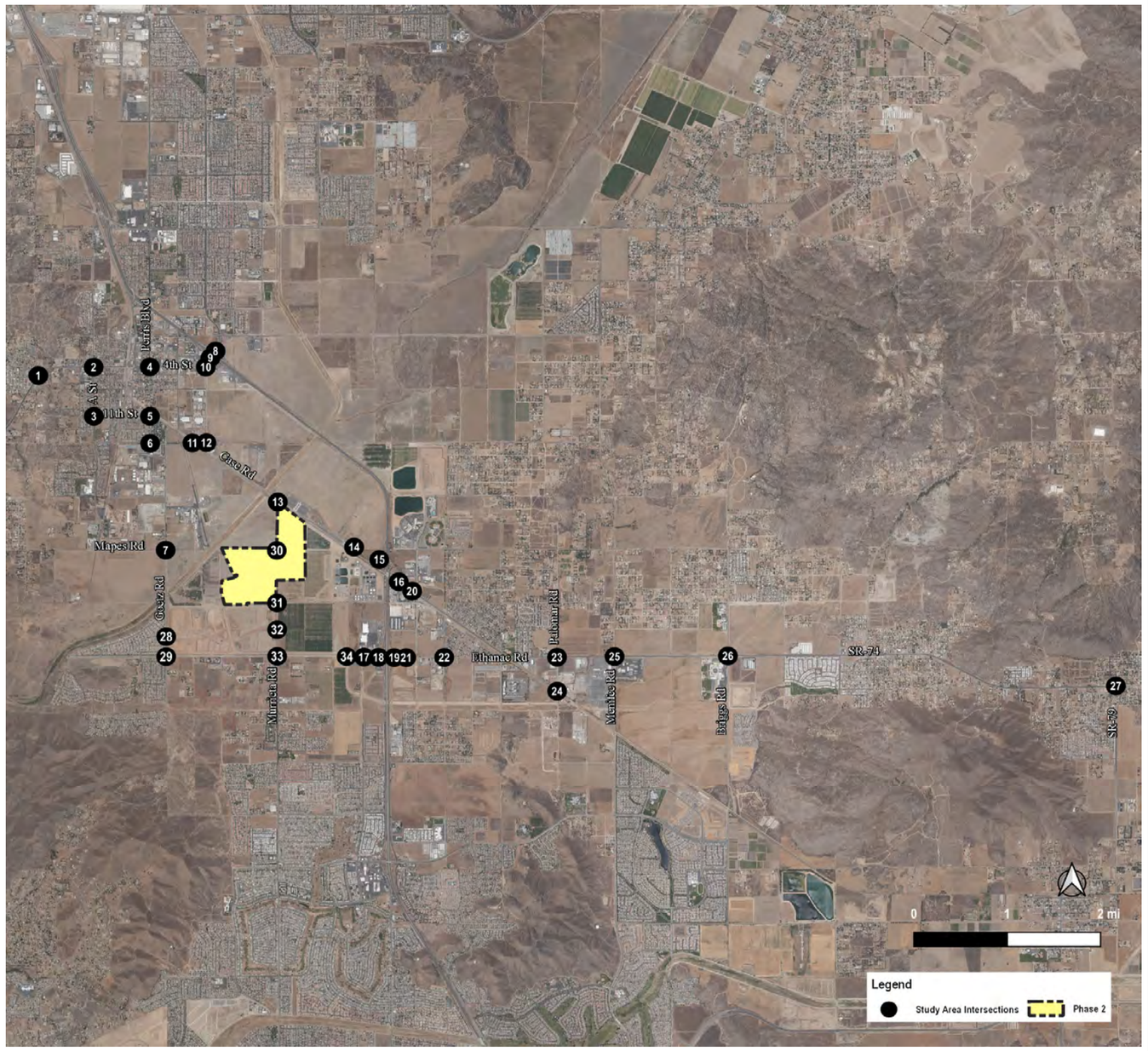
Legend

Signal
Stop Sign
f Free-right turn
d De-facto right

FIGURE 14

Green Valley Specific Plan Phase 2
Existing Intersection Geometrics and Stop Control

translutions
the transportation solutions company



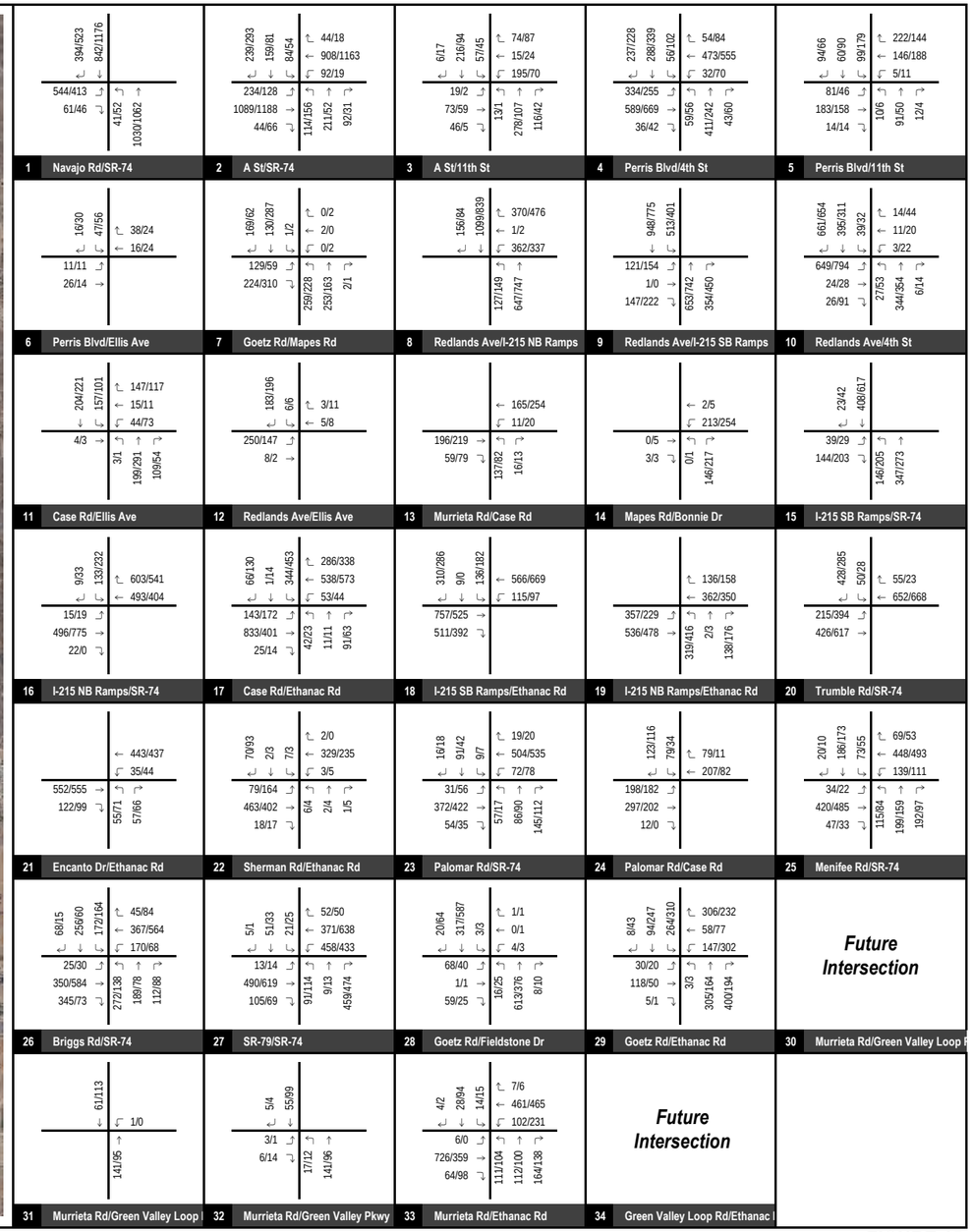


FIGURE 15

XXX/YYY AM/PM Peak Hour Traffic Volumes

Green Valley Specific Plan Phase 2
Existing Peak Hour Traffic Volumes

translutions
the transportation solutions company...

D:\Projects\Ascent - GVSP\Analysis\Z84 Vol Exist (4/15/2022)

in Appendix B. The existing levels of service for the study area intersections are summarized in Table E. Level of service calculation worksheets are contained in Appendix C. As shown in Table E, all study area intersections are currently operating at satisfactory levels of service with the exception of the following:

- Menifee Road and State Route 74 (a.m. peak hour).

5.5 Existing With Project Levels of Service

An intersection level of service analysis was conducted for existing with project conditions to determine the forecast circulation system performance. The existing with project traffic volumes at the study intersections are illustrated in Figure 16. Detailed volume development worksheets are included in Appendix B. The existing with project levels of service for the study area intersections are summarized in Table E. Level of service calculation worksheets are contained in Appendix C. As shown in Table E, all study area intersections are forecast to operate at satisfactory levels of service with the exception of the following:

- Murrieta Road and Case Road (p.m. peak hour).
- Sherman Road and Ethanac Road (a.m. and p.m. peak hours).
- Palomar Road and Case Road (a.m. peak hour).
- Menifee Road and State Route 74 (a.m. peak hour).

6.0 OPENING YEAR CONDITIONS

This section discusses opening year transportation conditions in the study area.

6.1 Opening Year Roadway Conditions

The opening year roadway conditions are assumed to be the same as those under existing conditions.

6.2 Opening Year Transit Service

Transit service under opening year conditions are anticipated to remain the same as under existing conditions.

6.3 Opening Year Pedestrian & Bicycle Facilities

Pedestrian and bicycle facilities under project completion conditions are anticipated to remain the same as under existing conditions, however, the City of Perris bicycle master plan is proposing a Class I Shared-Use Path on Case Road, a Class IIB Buffered Bike Lane on Goetz Road, and a Class II Bicycle Lane on Murrieta Road. Figure 17 shows the City's bikeway system.

6.4 Opening Year Without Project Levels of Service

An intersection level of service analysis was conducted for opening year without project conditions to determine circulation system performance. Opening year without project traffic volumes at study intersections are shown in Figure 18. Opening year without project levels of service for the study area intersections are summarized in Table F. Detailed volume development worksheets are included in Appendix B. Level of service calculation worksheets are contained in Appendix C. As shown in Table F, all study area intersections are forecast to operate at satisfactory levels of service with the exception of the following:

- Redlands Boulevard and 4th Street (a.m. and p.m. peak hours).
- Case Road and Ethanac Road (p.m. peak hour).
- I-215 Southbound Ramps and Ethanac Road (a.m. and p.m. peak hours).
- I-215 Northbound Ramps and Ethanac Road (a.m. and p.m. peak hours).
- Trumble Road and SR-74 (a.m. and p.m. peak hours).
- Encanto Drive and Ethanac Road (a.m. and p.m. peak hours).
- Sherman Road and Ethanac Road (a.m. peak hour).
- Palomar Road and Case Road (a.m. peak hour).

translutions
the transportation solutions company...

Table E: Existing Without and With Project Levels of Service

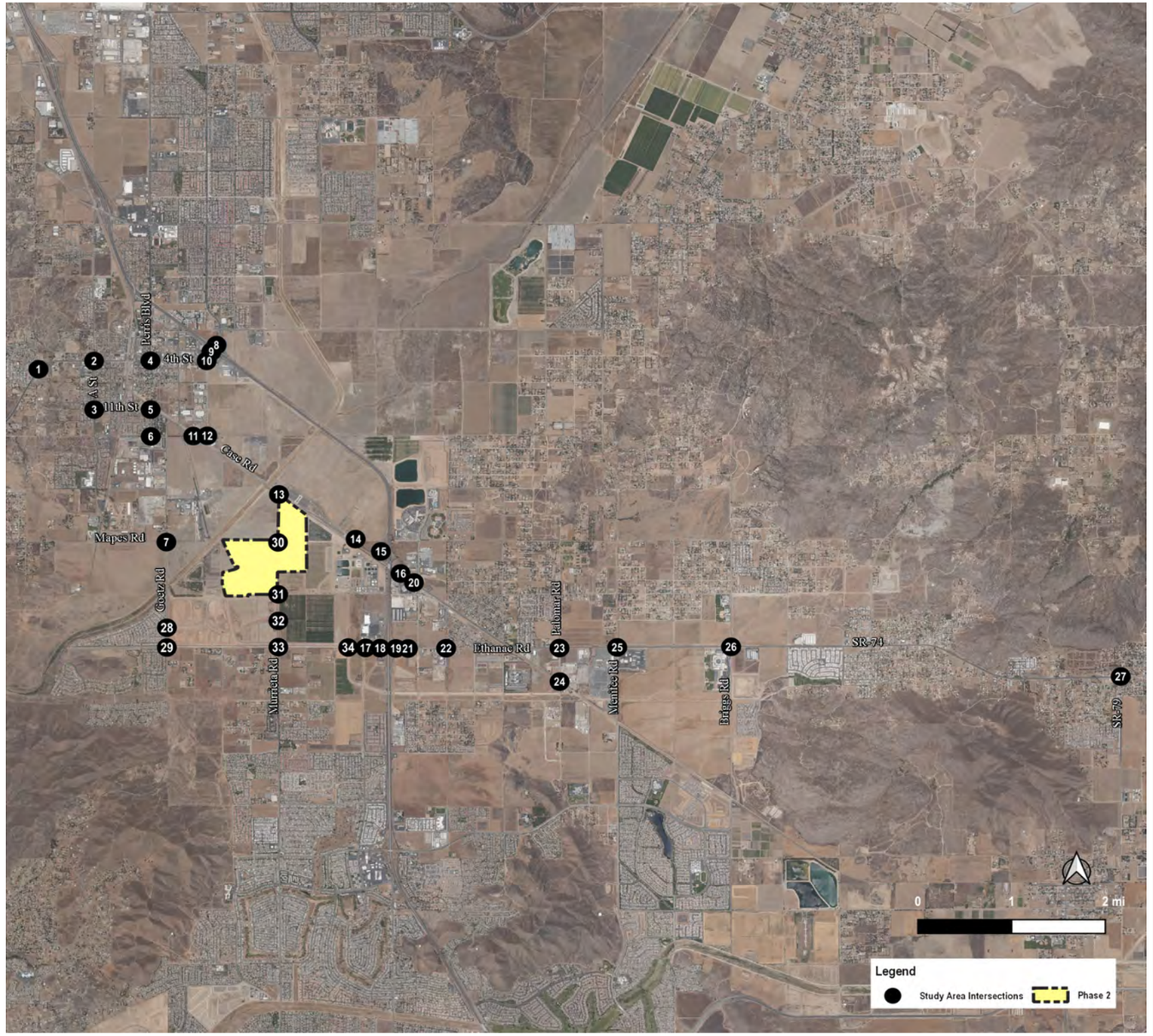
Intersection	LOS Standard	Control	Without Project				With Project				Exceed City Operational Requirement?
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
1 . Navajo Rd/SR-74	E	Signal	20	B	18.3	B	20.2	C	18.6	B	NO
2 . A St/SR-74	E	Signal	35.6	D	39.4	D	37.4	D	41.6	D	NO
3 . A St/11th St	E	AWSC	23.8	C	9.2	A	28.9	D	10.0	A	NO
4 . Perris Blvd/4th St	E	Signal	26	C	32.8	C	26	C	34.6	C	NO
5 . Perris Blvd/11th St	E	Signal	22	C	23.2	C	25.3	C	27.8	C	NO
6 . Perris Blvd/Ellis Ave	E	TWSC	9.4	A	9.3	A	9.9	A	9.8	A	NO
7 . Goetz Rd/Mapes Rd	D	Signal	24.7	C	29.2	C	27.5	C	30.9	C	NO
8 . Redlands Ave/I-215 NB Ramps	E	Signal	22.1	C	21.7	C	23	C	22.1	C	NO
9 . Redlands Ave/I-215 SB Ramps	E	Signal	18.3	B	11.7	B	20.1	C	12.6	B	NO
10 . Redlands Ave/4th St	E	Signal	46	D	55.3	E	56.5	E	65.5	E	NO
11 . Case Rd/Ellis Ave	E	Signal	17.6	B	16	B	19.1	B	20	B	NO
12 . Redlands Ave/Ellis Ave	E	TWSC	9.7	A	9.5	A	10.6	B	10.8	B	NO
13 . Murrieta Rd/Case Rd	D	AWSC	9.9	A	10.2	B	16.5	C	55.2	F *	YES
14 . Mapes Rd/Bonnie Dr	D	Signal	21.8	C	22.1	C	21.5	C	22.3	C	NO
15 . I-215 SB Ramps/SR-74	E	Signal	13.1	B	18.8	B	14.3	B	21.0	C	NO
16 . I-215 NB Ramps/SR-74	E	Signal	8.4	A	16.3	B	8.7	A	16.9	B	NO
17 . Case Rd/Ethanac Rd	D	Signal	27.5	C	41	D	25.6	C	38.8	D	NO
18 . I-215 SB Ramps/Ethanac Rd	E	Signal	21.9	C	25.2	C	28	C	25.5	C	NO
19 . I-215 NB Ramps/Ethanac Rd	E	Signal	28	C	31.7	C	31.5	C	48.3	D	NO
20 . Trumble Rd/SR-74	D	Signal	25.4	C	22.2	C	26.5	C	23.4	C	NO
21 . Encanto Dr/Ethanac Rd	D	TWSC	17.4	C	20.1	C	19.3	C	24.9	C	NO
22 . Sherman Rd/Ethanac Rd	D	TWSC	25.7	D	23.8	C	38.2	E *	56.7	F *	YES
23 . Palomar Rd/SR-74	D	Signal	20.5	C	19	B	22.2	C	22	C	NO
24 . Palomar Rd/Case Rd	D	TWSC	27	D	12.7	B	39.4	E *	14.1	B	YES
25 . Menifee Rd/SR-74	D	Signal	56.5	E *	47.7	D	58.8	E *	48.8	D	NO
26 . Briggs Rd/SR-74	D	Signal	53.7	D	43.5	D	54.2	D	44	D	NO
27 . SR-79/SR-74	D	Signal	39.7	D	45.9	D	40.7	D	47.8	D	NO
28 . Goetz Rd/Fieldstone Dr	D	Signal	10.4	B	18.1	B	15.6	B	26.6	C	NO
29 . Goetz Rd/Ethanac Rd	D	Signal	43.3	D	38.7	D	42.7	D	40.5	D	NO
30 . Murrieta Rd/Green Valley Loop Rd	D	TWSC	*Future Intersection*				13.6	B	15.7	C	NO
31 . Murrieta Rd/Green Valley Loop Rd-V	D	TWSC	9.6	A	0.0	A	11	B	13.9	B	NO
32 . Murrieta Rd/Green Valley Pkwy	D	TWSC	10.1	B	10.1	B	17.6	C	33.6	D	NO
33 . Murrieta Rd/Ethanac Rd	D	Signal	46.1	D	45.6	D	53.2	D	53.8	D	NO

Notes:

* Exceeds LOS Standard

LOS = Level of Service

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case movement.



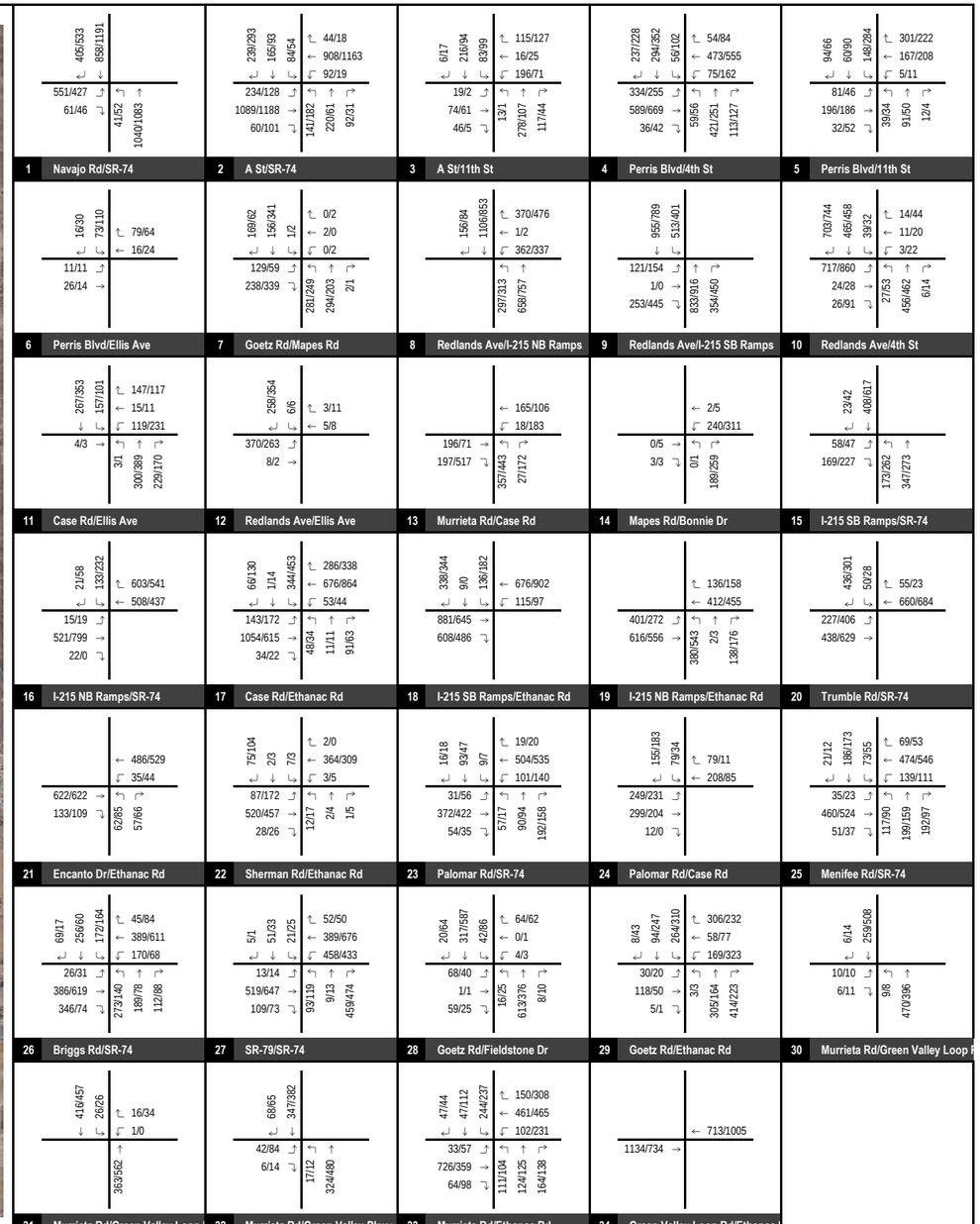


FIGURE 16

XXX/YYY AM/PM Peak Hour Traffic Volumes

Green Valley Specific Plan Phase 2
Existing With Project Peak Hour Traffic Volumes

translutions
the transportation solutions company...

D:\Projects\Ascent - GVSP\Analysis\Z84 Vol Exist P (4/15/2022)

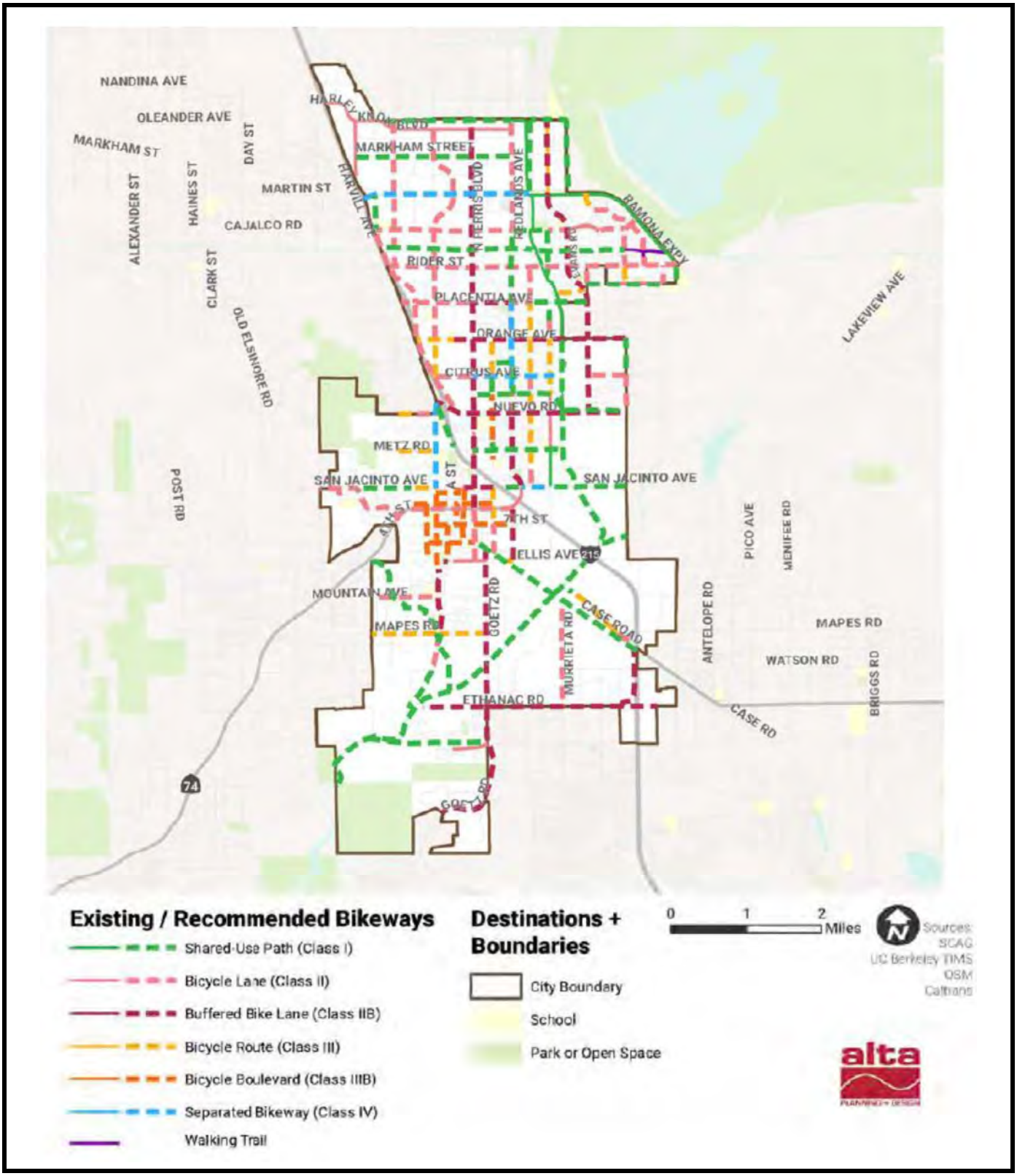
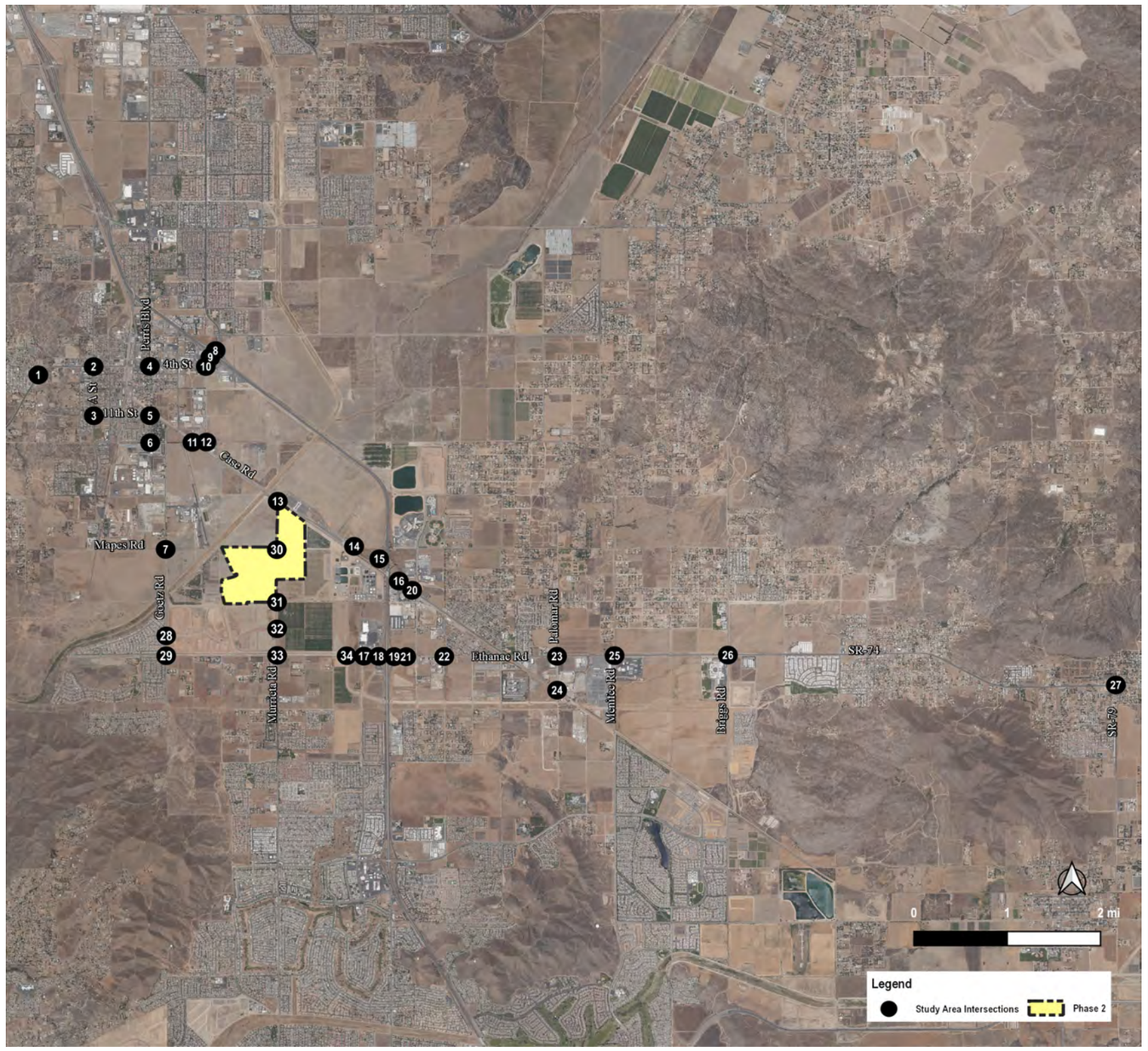


FIGURE 17

Green Valley Specific Plan Phase 2
City of Perris Bikeway System

translutions
the transportation solutions company...

D:\Projects\Ascent - GVSP\Analysis\Bike Plan (4/15/2022)



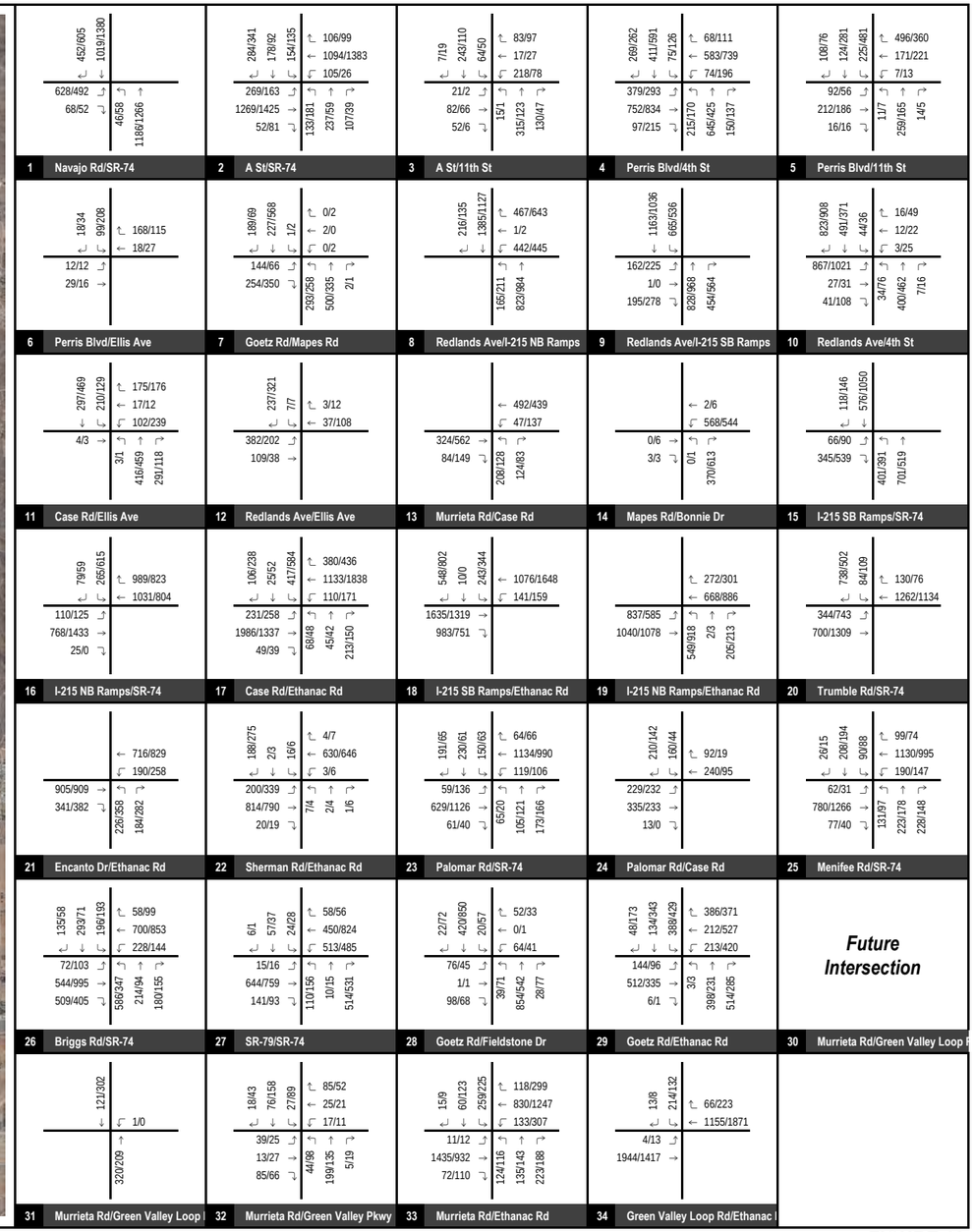


FIGURE 18

XXX/YYY AM/PM Peak Hour Traffic Volumes

Green Valley Specific Plan Phase 2
Opening Year Without Project Peak Hour Traffic Volumes

translutions
the transportation solutions company...

D:\Projects\Ascent - GVSP\Analysis\Z84 Vol OY (4/15/2022)

translutions
the transportation solutions company...

Table F: Opening Year Without and With Project Levels of Service

Intersection	LOS Standard	Control	Without Project				With Project				Exceed City Operational Requirement?
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
1 . Navajo Rd/SR-74	E	Signal	20.5	C	20.4	C	20.7	C	20.6	C	NO
2 . A St/SR-74	E	Signal	39.3	D	47.6	D	40.8	D	50.7	D	NO
3 . A St/11th St	E	AWSC	40.7	E	9.6	A	48.8	E	10.6	B	NO
4 . Perris Blvd/4th St	E	Signal	35.8	D	53.2	D	36.7	D	59.9	E	NO
5 . Perris Blvd/11th St	E	Signal	29.9	C	32.3	C	35.4	D	49.3	D	NO
6 . Perris Blvd/Ellis Ave	E	TWSC	9.9	A	10.5	B	10.2	B	11.2	B	NO
7 . Goetz Rd/Mapes Rd	D	Signal	21.7	C	32.6	C	22.2	C	37.6	D	NO
8 . Redlands Ave/I-215 NB Ramps	E	Signal	21.8	C	22.1	C	22.7	C	22.8	C	NO
9 . Redlands Ave/I-215 SB Ramps	E	Signal	19.1	B	11.2	B	20.9	C	12.6	B	NO
10 . Redlands Ave/4th St	E	Signal	>100	F *	>100	F *	>100	F *	>100	F *	NO
11 . Case Rd/Ellis Ave	E	Signal	19.8	B	20.7	C	23.4	C	30	C	NO
12 . Redlands Ave/Ellis Ave	E	TWSC	10.2	B	11.1	B	11	B	13.3	B	NO
13 . Murrieta Rd/Case Rd	D	AWSC	22.7	C	30.1	D	48.6	E *	79.3	F *	YES
14 . Mapes Rd/Bonnie Dr	D	Signal	26.3	C	25.2	C	28.2	C	24.9	C	NO
15 . I-215 SB Ramps/SR-74	E	Signal	17.8	B	60.0	E	19.3	B	65.7	E	NO
16 . I-215 NB Ramps/SR-74	E	Signal	17.4	B	28.7	C	17.7	B	30.2	C	NO
17 . Case Rd/Ethanac Rd	D	Signal	52.4	D	72.3	E *	67.7	E *	>100	F *	NO
18 . I-215 SB Ramps/Ethanac Rd	E	Signal	>100	F *	>100	F *	>100	F *	>100	F *	NO
19 . I-215 NB Ramps/Ethanac Rd	E	Signal	>100	F *	>100	F *	>100	F *	>100	F *	NO
20 . Trumble Rd/SR-74	D	Signal	>100	F *	84.2	F *	>100	F *	89.4	F *	NO
21 . Encanto Dr/Ethanac Rd	D	TWSC	>100	F *	>100	F *	>100	F *	>100	F *	NO
22 . Sherman Rd/Ethanac Rd	D	TWSC	>100	F *	30.4	D	>100	F *	43.3	E *	NO
23 . Palomar Rd/SR-74	D	Signal	27.4	C	25.9	C	29.7	C	31.9	C	NO
24 . Palomar Rd/Case Rd	D	TWSC	>100	F *	13.3	B	>100	F *	14.5	B	NO
25 . Menifee Rd/SR-74	D	Signal	>100	F *	>100	F *	>100	F *	>100	F *	NO
26 . Briggs Rd/SR-74	D	Signal	>100	F *	74.6	E *	>100	F *	84.8	F *	NO
27 . SR-79/SR-74	D	Signal	57.2	E *	64.1	E *	60.9	E *	65.4	E *	NO
28 . Goetz Rd/Fieldstone Dr	D	Signal	15	B	23.1	C	16.7	B	26.7	C	NO
29 . Goetz Rd/Ethanac Rd	D	Signal	50.7	D	48.3	D	45.7	D	47	D	NO
30 . Murrieta Rd/Green Valley Loop Rd	D	TWSC	*Future Intersection*				15.7	C	19.1	C	NO
31 . Murrieta Rd/Green Valley Loop Rd-V	D	TWSC	11.3	B	0.0	A	12.4	B	13.5	B	NO
32 . Murrieta Rd/Green Valley Pkwy	D	TWSC	14.5	B	19.1	C	38.2	E *	>100	F *	YES
33 . Murrieta Rd/Ethanac Rd	D	Signal	71.9	E *	64.2	E *	>100	F *	>100	F *	NO
34 . Green Valley Loop Rd/Ethanac Rd	D	TWSC	>100	F *	>100	F *	>100	F *	>100	F *	NO

Notes:

* Exceeds LOS Standard

LOS = Level of Service

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case movement.

- Menifee Road and SR-74 (a.m. and p.m. peak hours).
- Briggs Road and SR-74 (a.m. and p.m. peak hours).
- SR-79 and SR-74 (a.m. and p.m. peak hours).
- Murrieta Road and Ethanac Road (a.m. and p.m. peak hours).
- Green Valley Loop Road and Ethanac Road (a.m. and p.m. peak hours).

6.5 Opening Year With Project Levels of Service

An intersection level of service analysis was conducted for opening year with project conditions to determine circulation system performance. Opening year with project traffic volumes at study intersections are shown in Figure 19. The opening year with project levels of service for the study area intersections are summarized in Table F. Detailed volume development worksheets are included in Appendix B. Level of service calculation worksheets are contained in Appendix C. As shown in Table F, all study intersections are forecast to operate at satisfactory levels of service with the exception of the following:

- Redlands Boulevard and 4th Street (a.m. and p.m. peak hours).
- Murrieta Road and Case Road (a.m. and p.m. peak hours).
- Case Road and Ethanac Road (a.m. and p.m. peak hours).
- I-215 Southbound Ramps and Ethanac Road (a.m. and p.m. peak hours).
- I-215 Northbound Ramps and Ethanac Road (a.m. and p.m. peak hours).
- Trumble Road and SR-74 (a.m. and p.m. peak hours).
- Encanto Drive and Ethanac Road (a.m. and p.m. peak hours).
- Sherman Road and Ethanac Road (a.m. and p.m. peak hours).
- Palomar Road and Case Road (a.m. peak hour).
- Menifee Road and SR-74 (a.m. and p.m. peak hours).
- Briggs Road and SR-74 (a.m. and p.m. peak hours).
- SR-79 and SR-74 (a.m. and p.m. peak hours).
- Murrieta Road and Green Valley Parkway (a.m. and p.m. peak hours).
- Murrieta Road and Ethanac Road (a.m. and p.m. peak hours).
- Green Valley Loop Road and Ethanac Road (a.m. and p.m. peak hours).

7.0 YEAR 2040 CONDITIONS

This section discusses year 2040 transportation conditions in the study area.

7.1 Year 2040 Roadway Conditions

The year 2040 roadway conditions are assumed to be the same as those under existing conditions.

7.2 Year 2040 Transit Service

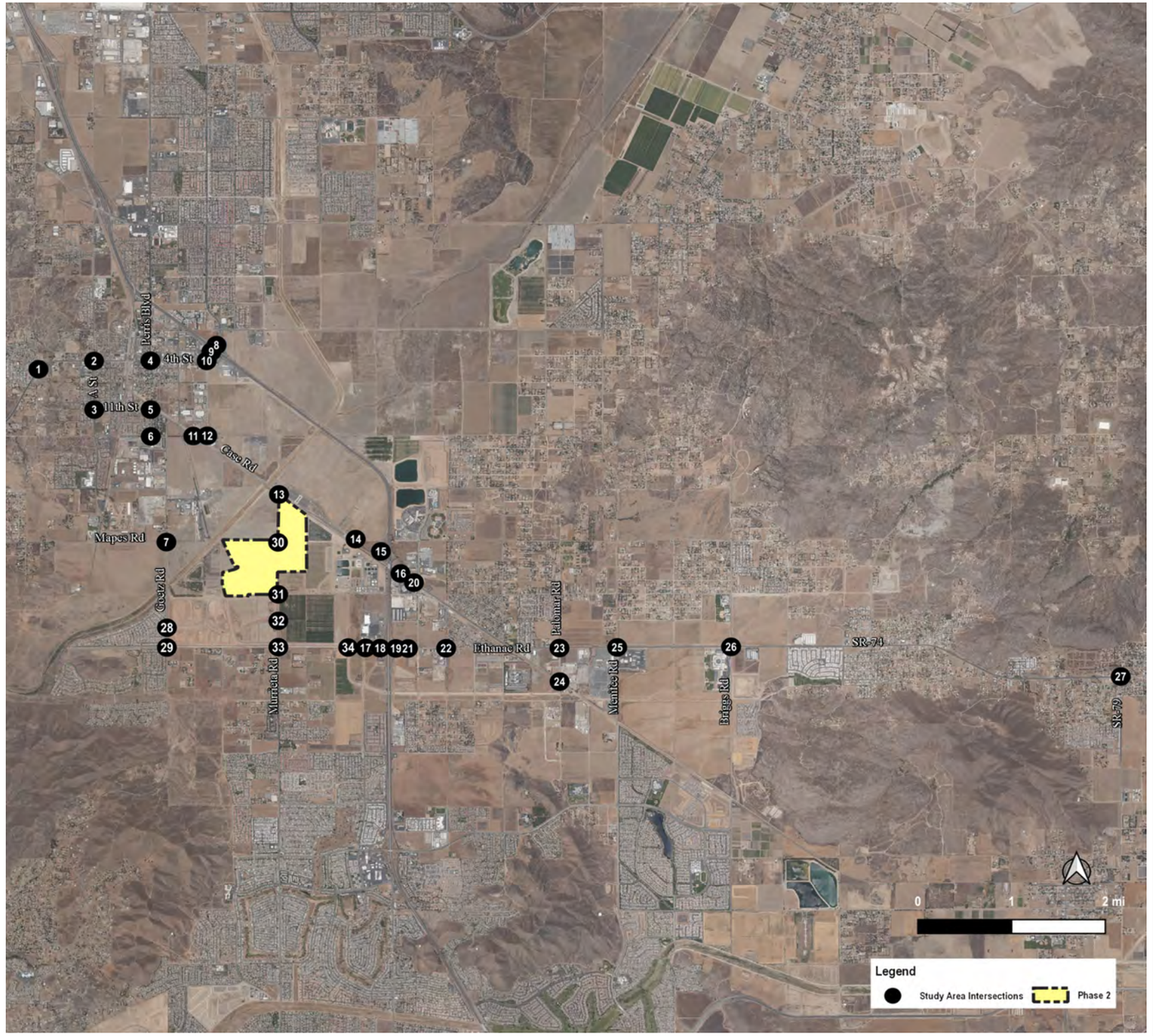
Transit service under year 2040 conditions is anticipated to remain the same as under existing conditions.

7.3 Year 2040 Pedestrian & Bicycle Facilities

Pedestrian and bicycle facilities under year 2040 conditions are anticipated to remain the same as under opening year conditions.

7.4 Year 2040 Without Project Levels of Service

An intersection level of service analysis was conducted for year 2040 without project conditions to determine circulation system performance. Year 2040 without project traffic volumes at study intersections are shown in Figure 20. Year 2040 without project levels of service for the study area intersections are summarized in Table G. Detailed volume development worksheets are included in Appendix B. Level of service calculation worksheets are contained in Appendix



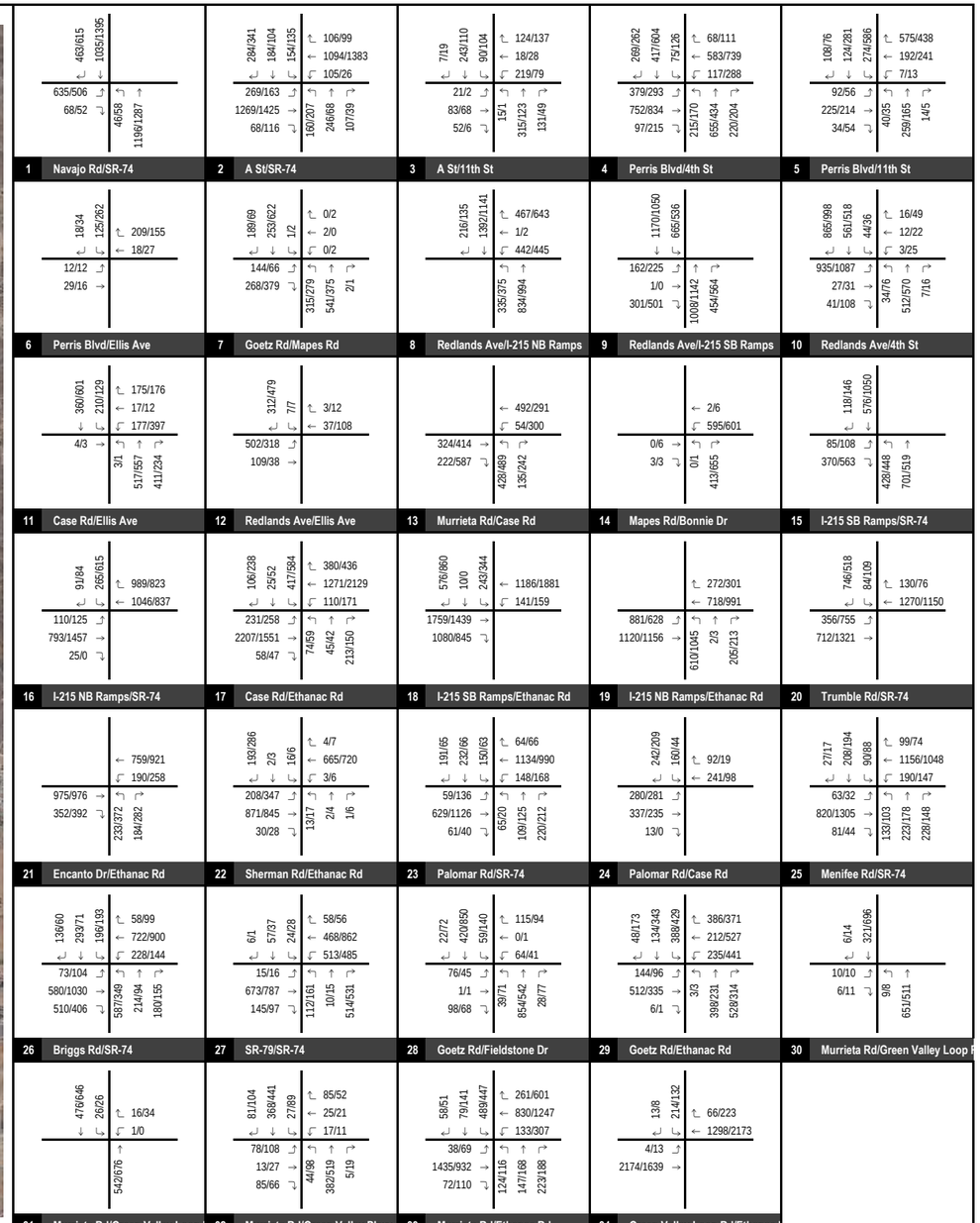
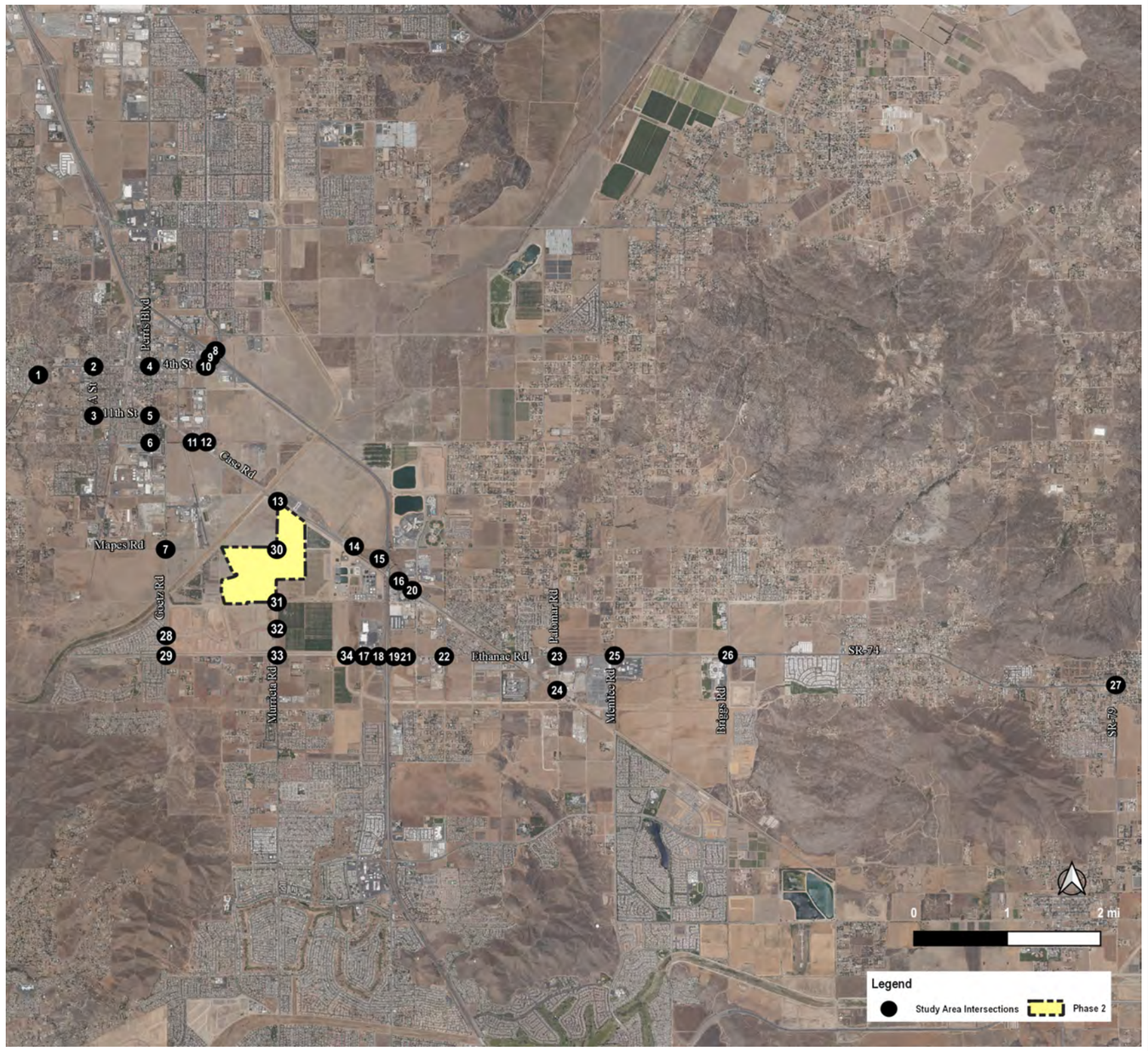


FIGURE 19

XXX/YYY AM/PM Peak Hour Traffic Volumes

Green Valley Specific Plan Phase 2
Opening Year With Project Peak Hour Traffic Volumes

translutions
the transportation solutions company...



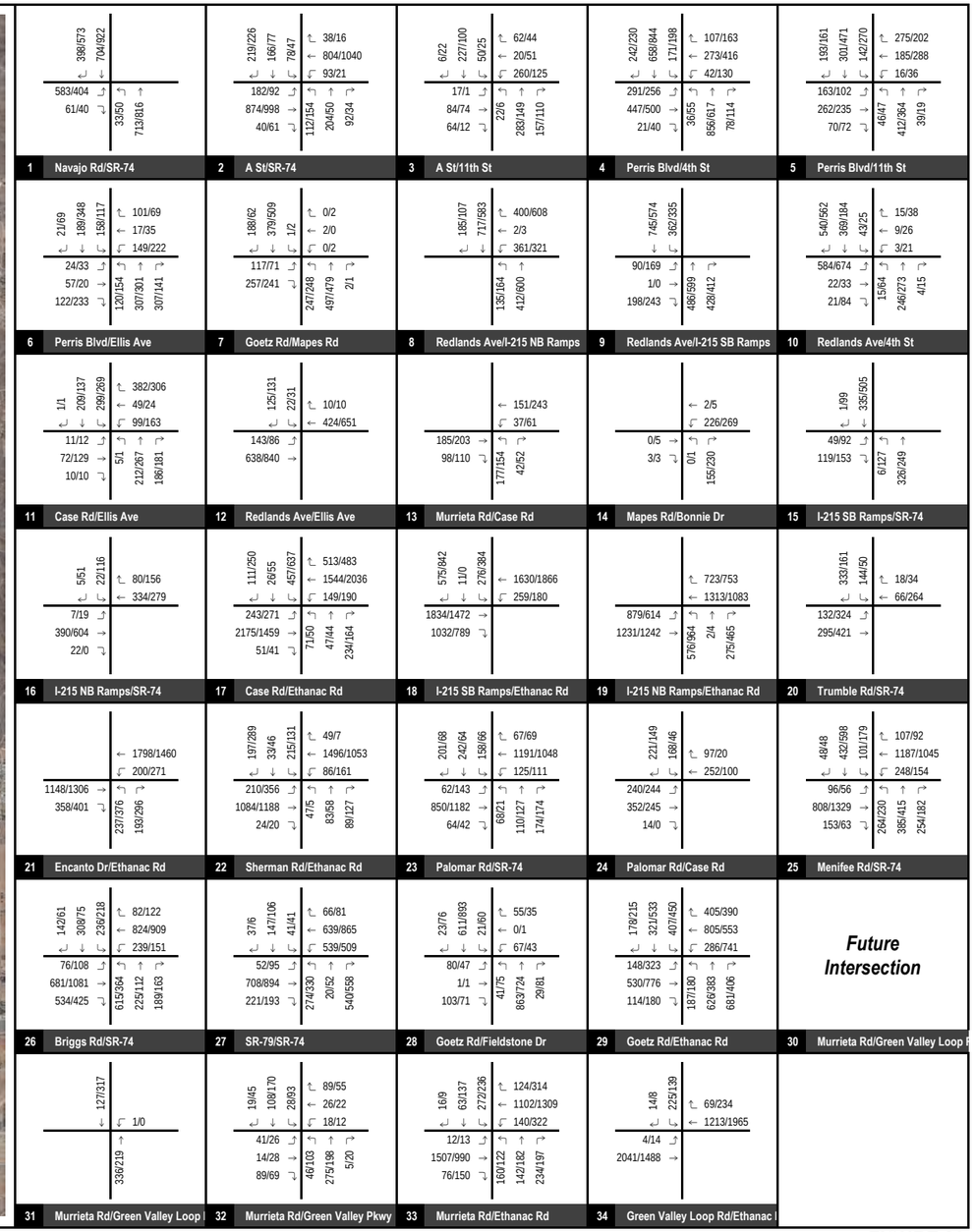


FIGURE 20

XXX/YYY AM/PM Peak Hour Traffic Volumes

Green Valley Specific Plan Phase 2
Year 2040 Without Project Peak Hour Traffic Volumes

translutions
the transportation solutions company...

D:\Projects\Ascent - GVSP\Analysis\Z84 Vol 2040 (4/15/2022)

translutions
the transportation solutions company...

Table G: Year 2040 Without and With Project Levels of Service

Intersection	LOS Standard	Control	Without Project				With Project				Exceed City Operational Requirement?
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
1 . Navajo Rd/SR-74	E	Signal	21.1	C	17.6	B	21.3	C	17.9	B	NO
2 . A St/SR-74	E	Signal	34.1	C	28.6	C	34.4	C	29.4	C	NO
3 . A St/11th St	E	AWSC	17.2	C	9.8	A	18.4	C	10.4	B	NO
4 . Perris Blvd/4th St	E	Signal	34.3	C	45.6	D	33.8	C	49	D	NO
5 . Perris Blvd/11th St	E	Signal	38.9	D	35.9	D	41.5	D	40.8	D	NO
6 . Perris Blvd/Ellis Ave	E	TWSC	10.4	B	10.1	B	10.8	B	10.8	B	NO
7 . Goetz Rd/Mapes Rd	D	Signal	22.8	C	27.8	C	23.4	C	31.6	C	NO
8 . Redlands Ave/I-215 NB Ramps	E	Signal	26.3	C	23.6	C	24.8	C	22.8	C	NO
9 . Redlands Ave/I-215 SB Ramps	E	Signal	18.8	B	17.9	B	20.3	C	18.7	B	NO
10 . Redlands Ave/4th St	E	Signal	46.5	D	55.9	E	48.2	D	58.3	E	NO
11 . Case Rd/Ellis Ave	E	Signal	28.2	C	25.9	C	33.6	C	35.4	D	NO
12 . Redlands Ave/Ellis Ave	E	TWSC	18.9	C	39.9	E	28.9	D	>100	F *	YES
13 . Murrieta Rd/Case Rd	D	AWSC	10	A	10.6	B	17	C	60.1	F *	YES
14 . Mapes Rd/Bonnie Dr	D	Signal	21.1	C	21.5	C	21.6	C	22.4	C	NO
15 . I-215 SB Ramps/SR-74	E	Signal	11	B	18.6	B	12.1	B	19.6	B	NO
16 . I-215 NB Ramps/SR-74	E	Signal	3.3	A	14.1	B	3.9	A	14.9	B	NO
17 . Case Rd/Ethanac Rd	D	Signal	74.8	E *	97.1	F *	95.7	F *	>100	F *	NO
18 . I-215 SB Ramps/Ethanac Rd	E	Signal	>100	F *	>100	F *	>100	F *	>100	F *	NO
19 . I-215 NB Ramps/Ethanac Rd	E	Signal	>100	F *	>100	F *	>100	F *	>100	F *	NO
20 . Trumble Rd/SR-74	D	Signal	22.6	C	14.4	B	22.6	C	14.8	B	NO
21 . Encanto Dr/Ethanac Rd	D	TWSC	>100	F *	>100	F *	>100	F *	>100	F *	NO
22 . Sherman Rd/Ethanac Rd	D	TWSC	27.2	D	>100	F *	47	E *	>100	F *	NO
23 . Palomar Rd/SR-74	D	Signal	30.4	C	35.3	D	32.3	C	38.1	D	NO
24 . Palomar Rd/Case Rd	D	TWSC	>100	F *	13.9	B	>100	F *	15.4	C	NO
25 . Menifee Rd/SR-74	D	Signal	>100	F *	>100	F *	>100	F *	>100	F *	NO
26 . Briggs Rd/SR-74	D	Signal	>100	F *	>100	F *	>100	F *	>100	F *	NO
27 . SR-79/SR-74	D	Signal	67.3	E *	78.6	E *	68.8	E *	80.3	F *	NO
28 . Goetz Rd/Fieldstone Dr	D	Signal	14.4	B	16.3	B	16	B	20.4	C	NO
29 . Goetz Rd/Ethanac Rd	D	Signal	>100	F *	>100	F *	>100	F *	>100	F *	NO
30 . Murrieta Rd/Green Valley Loop Rd	D	TWSC	*Future Intersection*				15.9	C	19.6	C	NO
31 . Murrieta Rd/Green Valley Loop Rd-Watson Rd	D	TWSC	11.4	B	0.0	A	12.5	B	13.6	B	NO
32 . Murrieta Rd/Green Valley Pkwy	D	TWSC	17	C	22.3	C	56.1	F *	>100	F *	YES
33 . Murrieta Rd/Ethanac Rd	D	Signal	89.7	F *	81.5	F *	>100	F *	>100	F *	NO
34 . Green Valley Loop Rd/Ethanac Rd	D	TWSC	>100	F *	>100	F *	>100	F *	60.9	F *	NO

Notes:

* Exceeds LOS Standard

LOS = Level of Service

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case movement.

C. As shown in Table G, all study area intersections are forecast to operate at satisfactory levels of service with the exception of the following:

- Case Road and Ethanac Road (a.m. and p.m. peak hours).
- I-215 Southbound Ramps and Ethanac Road (a.m. and p.m. peak hours).
- I-215 Northbound Ramps and Ethanac Road (a.m. and p.m. peak hours).
- Encanto Drive and Ethanac Road (a.m. and p.m. peak hours).
- Sherman Road and Ethanac Road (p.m. peak hour).
- Palomar Road and Case Road (a.m. peak hour).
- Menifee Road and SR-74 (a.m. and p.m. peak hours).
- Briggs Road and SR-74 (a.m. and p.m. peak hours).
- SR-79 and SR-74 (a.m. and p.m. peak hours).
- Goetz Road and Ethanac Road (a.m. and p.m. peak hours).
- Murrieta Road and Ethanac Road (a.m. and p.m. peak hours).
- Green Valley Loop Road and Ethanac Road (a.m. and p.m. peak hours).

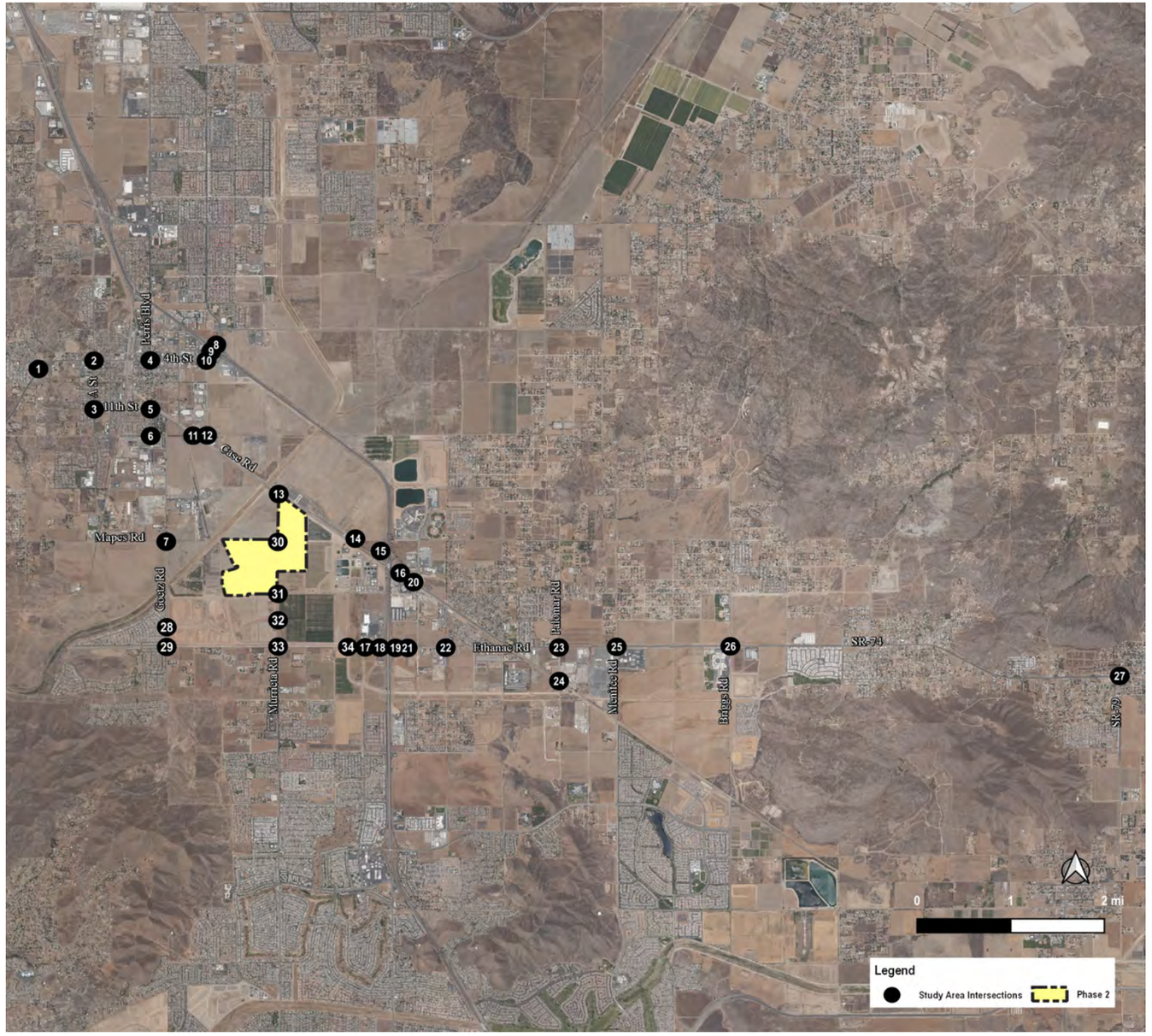
7.5 Year 2040 With Project Levels of Service

An intersection level of service analysis was conducted for year 2040 with project conditions to determine circulation system performance. Year 2040 with project traffic volumes at study intersections are shown in Figure 21. The year 2040 with project levels of service for the study area intersections are summarized in Table G. Detailed volume development worksheets are included in Appendix B. Level of service calculation worksheets are contained in Appendix C. As shown in Table G, all study intersections are forecast to operate at satisfactory levels of service with the exception of the following:

- Redlands Boulevard and Ellis Avenue (p.m. peak hour).
- Murrieta Road and Case Road (p.m. peak hour).
- Case Road and Ethanac Road (a.m. and p.m. peak hours).
- I-215 Southbound Ramps and Ethanac Road (a.m. and p.m. peak hours).
- I-215 Northbound Ramps and Ethanac Road (a.m. and p.m. peak hours).
- Encanto Drive and Ethanac Road (a.m. and p.m. peak hours).
- Sherman Road and Ethanac Road (a.m. and p.m. peak hours).
- Palomar Road and Case Road (a.m. peak hour).
- Menifee Road and SR-74 (a.m. and p.m. peak hours).
- Briggs Road and SR-74 (a.m. and p.m. peak hours).
- SR-79 and SR-74 (a.m. and p.m. peak hours).
- Goetz Road and Ethanac Road (a.m. and p.m. peak hours).
- Murrieta Road and Green Valley Parkway (a.m. and p.m. peak hours).
- Murrieta Road and Ethanac Road (a.m. and p.m. peak hours).
- Green Valley Loop Road and Ethanac Road (a.m. and p.m. peak hours).

8.0 CIRCULATION IMPROVEMENTS

Circulation improvements have been recommended at intersection where the project exceeds the appropriate jurisdictions operational requirements. These improvements can include conversion of stop control, signalization, changes to signal phasing, and/or addition of lanes as appropriate. The following improvements have been recommended:



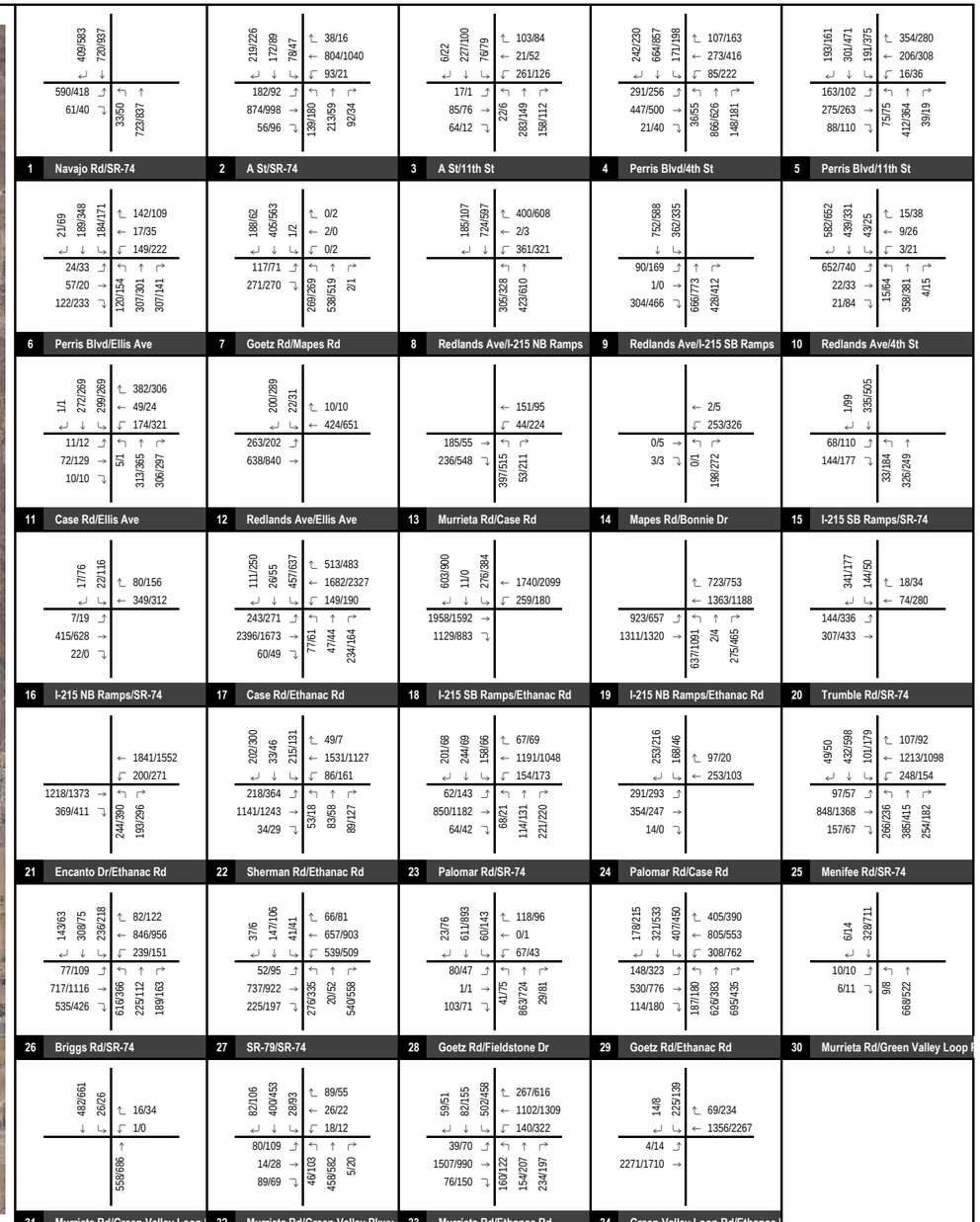


FIGURE 21

XXX/YYY AM/PM Peak Hour Traffic Volumes

Green Valley Specific Plan Phase 2
Year 2040 With Project Peak Hour Traffic Volumes

translutions
the transportation solutions company...

D:\Projects\Ascent - GVSP\Analysis\Z84 Vol 2040 P (4/15/2022)

8.1 Existing With Project Intersection Circulation Improvements

Under existing with project conditions, the following modifications to intersection configurations are recommended as circulation improvements as follows:

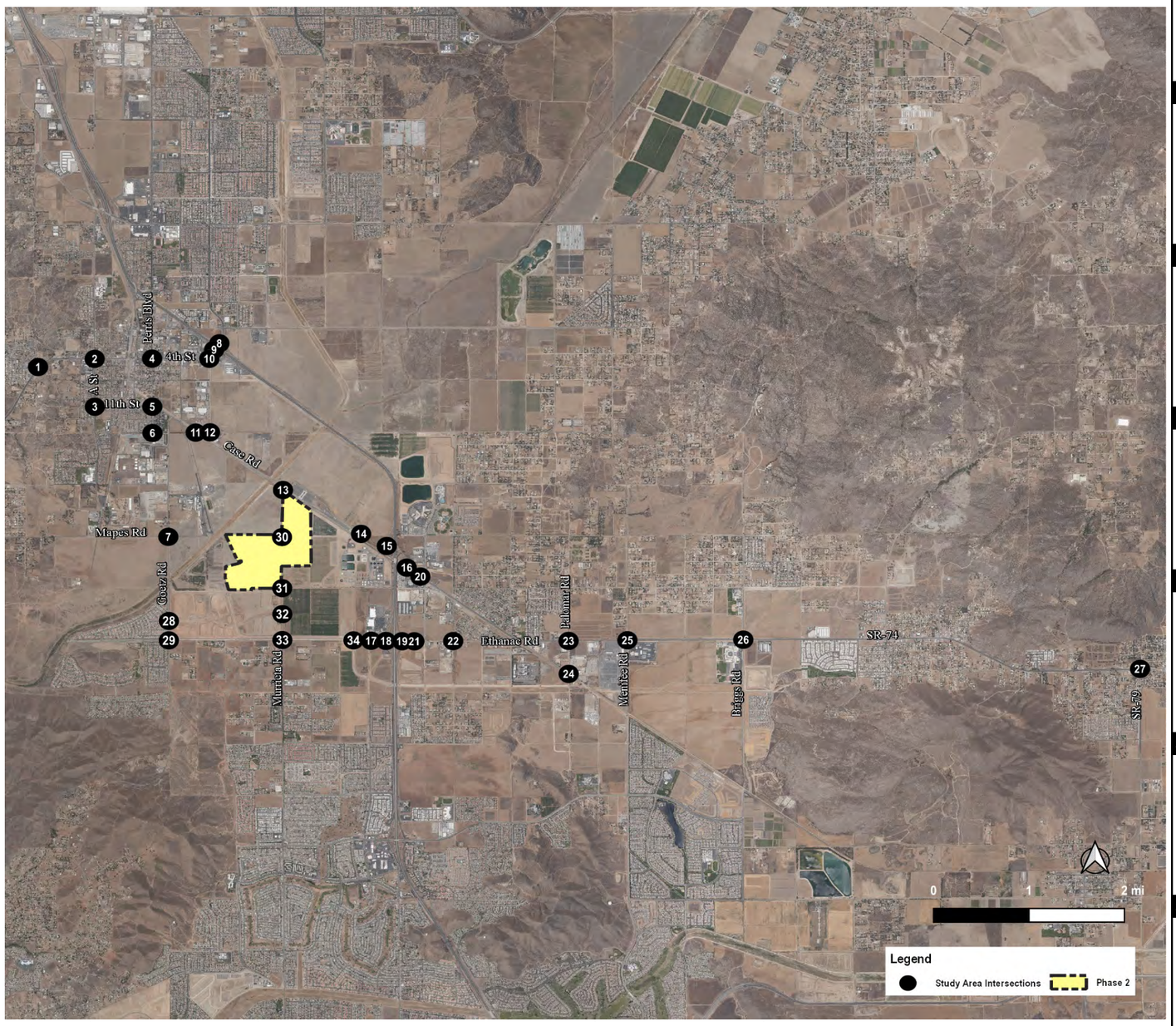
- Murrieta Road and Case Road: Install a traffic signal. Add overlap phasing to the eastbound right-turn lane.
- Sherman Road and Ethanac Road: Convert to all-way stop control.
- Palomar Road and Case Road: Add a westbound right-turn lane.
- Menifee Road and SR-74: Add an eastbound through lane and westbound through lane. These improvements are included in the TUMF program. The project will pay fees for these planned improvements.

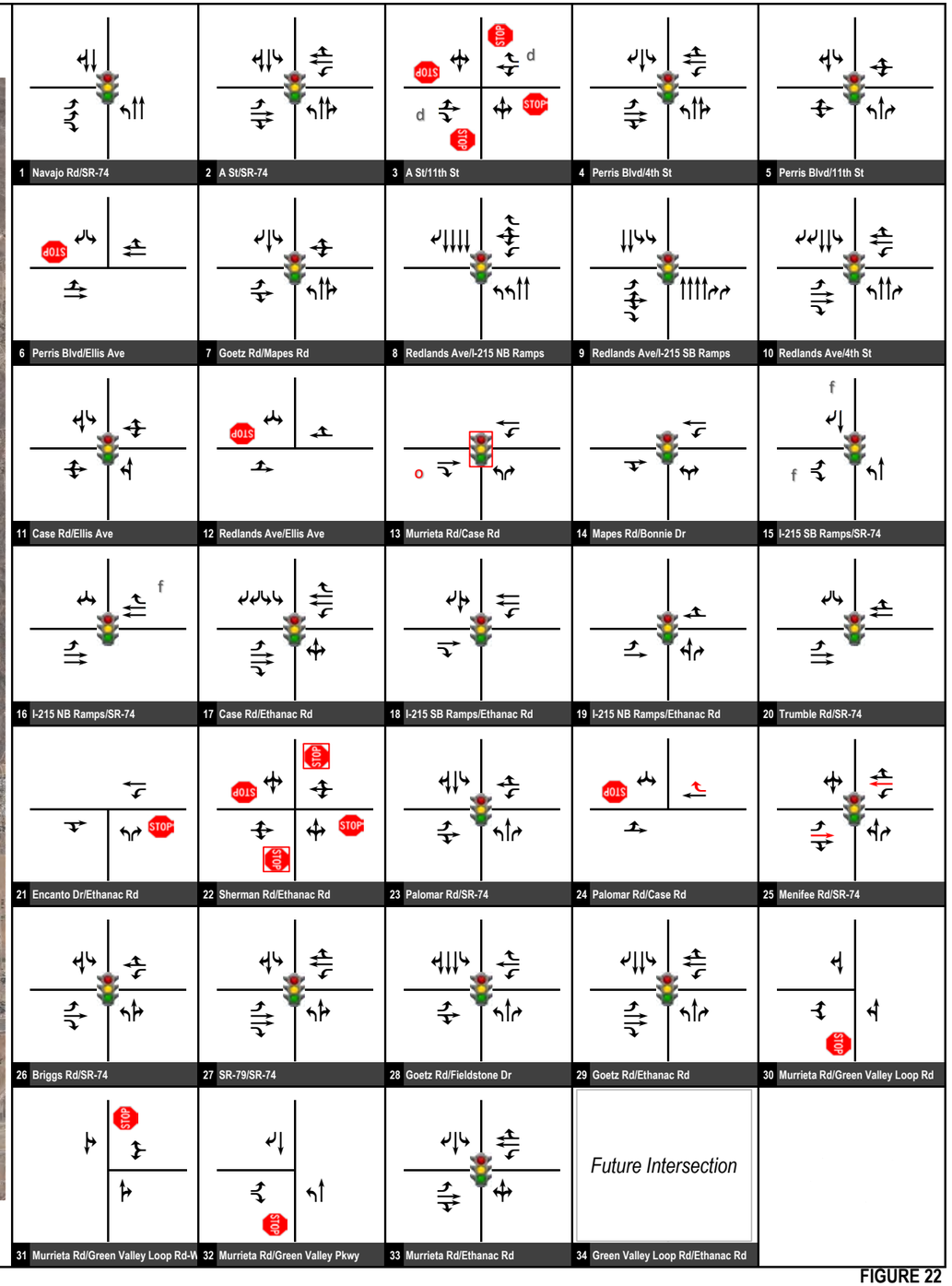
Figure 22 illustrates the existing with project with recommended improvements and Table H shows the resulting levels of service.

8.2 Opening Year With Project Intersection Circulation Improvements

Under opening year with project conditions, the following modifications to intersection configurations are recommended as circulation improvements as follows:

- Redlands Avenue and 4th Street: Add overlap phasing to the southbound right turn lane.
- Murrieta Road and Case Road: Install a traffic signal. Add overlap phasing to the eastbound right-turn lane.
- Case Road and Ethanac Road: Add a northbound left-turn lane, a second eastbound left-turn, an eastbound through lane, and a westbound through lane. These improvements are included in the City's General Plan. The project will pay DIF fees for these planned improvements.
- I-215 Southbound Ramps and Ethanac Road: Add an eastbound through lane and a second southbound right turn lane. These improvements are included in the TUMF program. The project will pay fees for these planned improvements.
- I-215 Northbound Ramps and Ethanac Road: Add an eastbound through lane, a westbound through lane, a westbound right-turn lane, and a northbound left-turn lane. These improvements are included in the TUMF program. The project will pay fees for these planned improvements.
- Trumble Road/SR-74: Add overlap phasing to the southbound right-turn lane.
- Encanto Drive and Ethanac Road: Install a traffic signal, add an eastbound through and westbound through lane. These improvements are not included in any fee program and a fair share has been calculated. The project fair share is shown in Table I. As shown in Table I, the project fair share at this intersection is 6.06%.
- Sherman Road and Ethanac Road: Install a traffic signal. Add an eastbound left-turn lane. These improvements are not included in any fee program and a fair share has been calculated. The project fair share is shown in Table I. As shown in Table I, the project fair share at this intersection is 6.35%.
- Palomar Road and Case Road: Install a traffic signal. Add a westbound right-turn lane. These improvements are not included in any fee program and a fair share has been calculated. The project fair share is shown in Table I. As shown in Table I, the project fair share at this intersection is 19.82%.
- Menifee Road and SR-74: Add an eastbound through lane and westbound through lane. These improvements are included in the TUMF program. The project will pay fees for these planned improvements.
- Briggs Road and SR-74: Add a second northbound left-turn lane, add an eastbound through lane, a westbound through lane, and overlap phasing to the eastbound right-turn lane. These improvements are included in the TUMF program. The project will pay fees for these planned improvements.
- SR-79 and SR-74: Add a northbound right-turn lane with overlap phasing. These improvements are included in the TUMF program. The project will pay fees for these planned improvements.
- Murrieta Road and Green Valley Parkway: Install a traffic signal.





Legend

Signal
Stop Sign
Free-right turn
De-facto right
Improvements
Overlap

FIGURE 22

Green Valley Specific Plan Phase 2
Existing With Project With Improvements Intersection Geometrics and Stop Control

translutions
the transportation solutions company

Table H: Existing With Project With Improvements Levels of Service

Intersection	LOS Standard	Control	With Project					Control	With Project With Improvements			
			AM Peak Hour			PM Peak Hour			AM Peak Hour		PM Peak Hour	
			Delay	LOS		Delay	LOS		Delay	LOS	Delay	LOS
13 . Murrieta Rd/Case Rd	D	AWSC	16.5	B		55.2	E *	Signal	15.5	B	16.4	B
22 . Sherman Rd/Ethanac Rd	D	TWSC	38.2	E	*	56.7	F *	AWSC	22.4	C	32.9	D
24 . Palomar Rd/Case Rd	D	TWSC	39.4	E	*	14.1	B	TWSC	34.2	D	13.9	B
25 . Menifee Rd/SR-74	D	Signal	58.8	E	*	48.8	D	Signal	47.9	D	44.1	D

Notes:

* Exceeds LOS Standard

LOS = Level of Service

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case movement.

translutions
the transportation solutions company...

Table I: Fair Share Calculations

Intersection	AM Peak Hour					PM Peak Hour					Project Fair Share %
	Total Volume		Total Growth	Project Trips	Project %	Total Volume		Total Growth	Project Trips	Project %	
	2021	2040 With Project				2021	2040 With Project				
21 . Encanto Dr/Ethanac Rd	1,264	4,065	2,801	131	4.68%	1,272	4,293	3,021	183	6.06%	6.06%
22 . Sherman Rd/Ethanac Rd	982	3,734	2,752	121	4.40%	935	3,611	2,676	170	6.35%	6.35%
24 . Palomar Rd/Case Rd	995	1,429	434	86	19.82%	627	924	297	121	40.71%	19.82%

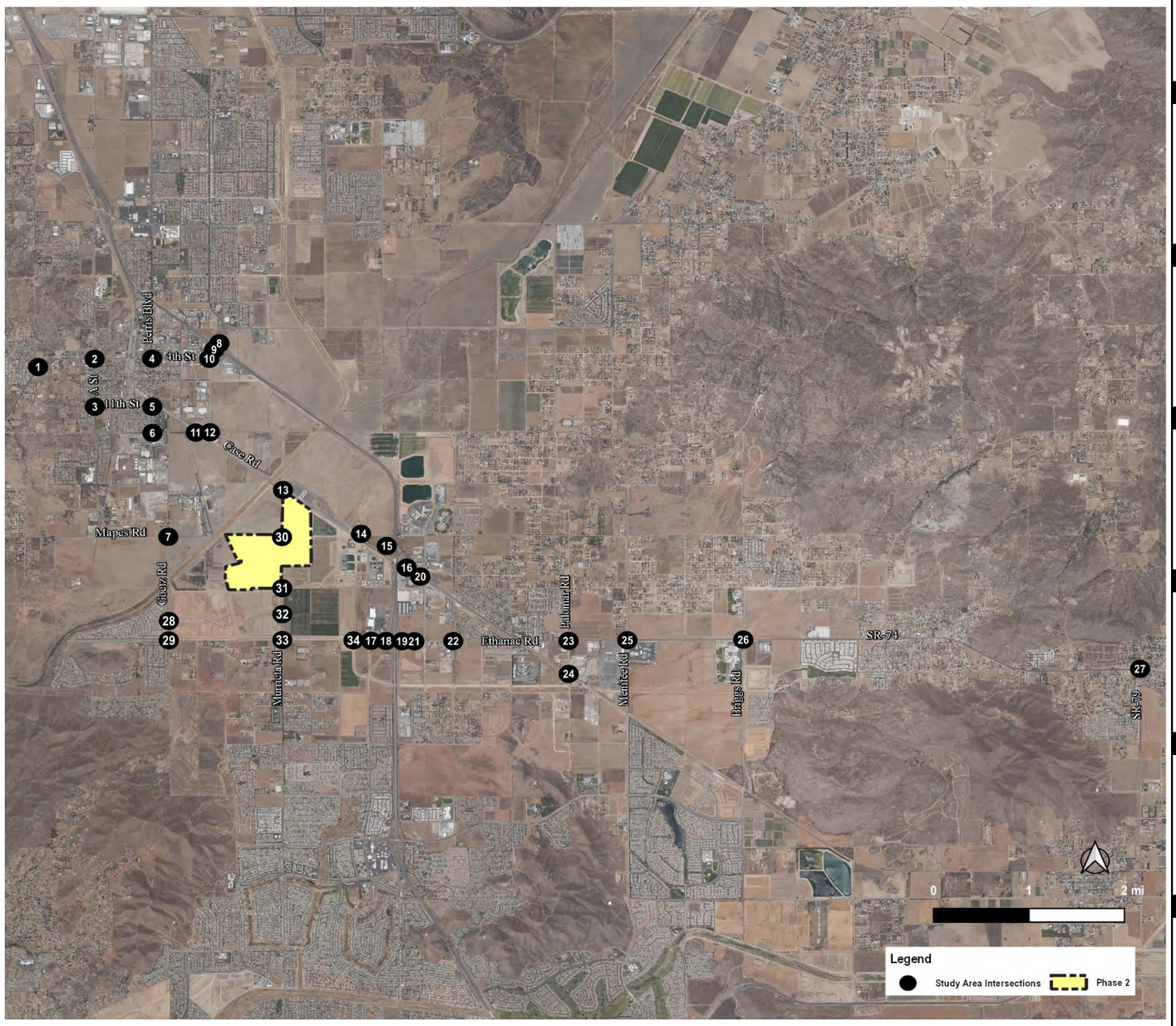
- Murrieta Road and Ethanac Road: Add a northbound left-turn lane, a second southbound left-turn lane, and a westbound right-turn lane with overlap phasing. These improvements are included in the City's General Plan. The project will pay DIF fees for these planned improvements.
- Green Valley Loop Road and Ethanac Road: Install a traffic signal and an eastbound left-turn lane. These improvements are included in the City's General Plan. The project will pay DIF fees for these planned improvements.

Figure 23 illustrates the opening with project with recommended improvements and Table J shows the resulting levels of service.

8.3 Year 2040 With Project Intersection Circulation Improvements

Under year 2040 with project conditions, the following modifications to intersection configurations are recommended as circulation improvements as follows:

- Redlands Avenue and Ellis Avenue: Install a traffic signal and an eastbound left-turn lane. These improvements are part of the conditions of approval for the South Perris Industrial project.
- Murrieta Road and Case Road: Install a traffic signal. Add overlap phasing to the eastbound right-turn lane.
- Case Road and Ethanac Road: Add a northbound left-turn lane, a second eastbound left-turn, an eastbound through lane, and a westbound through lane. These improvements are included in the City's General Plan. The project will pay DIF fees for these planned improvements.
- I-215 Southbound Ramps and Ethanac Road: Add two eastbound through lanes, a westbound through lane, and a second southbound right turn lane. These improvements area included in the TUMF program. The project will pay fees for these planned improvements.
- I-215 Northbound Ramps and Ethanac Road: Add two eastbound through lanes, two westbound through lanes, two westbound right-turn lanes, and a northbound left-turn lane. These improvements area included in the TUMF program. The project will pay fees for these planned improvements.
- Encanto Drive and Ethanac Road: Install a traffic signal, add an eastbound through and westbound through lane. These improvements are not included in any fee program and a fair share has been calculated. The project fair share is shown in Table I. As shown in Table I, the project fair share at this intersection is 6.06%.
- Sherman Road and Ethanac Road: Install a traffic signal. Add an eastbound left-turn lane, an eastbound through lane, a westbound left-turn lane, and a westbound through lane. These improvements are not included in any fee program and a fair share has been calculated. The project fair share is shown in Table I. As shown in Table I, the project fair share at this intersection is 6.35%.
- Palomar Road and Case Road: Install a traffic signal. Add a westbound right-turn lane. These improvements are not included in any fee program and a fair share has been calculated. The project fair share is shown in Table I. As shown in Table I, the project fair share at this intersection is 19.82%.
- Menifee Road and SR-74: Add two eastbound through lanes, two westbound through lanes, a northbound left-turn lane, overlap phasing to the northbound right-turn lane, and a southbound left-turn lane. These improvements area included in the TUMF program. The project will pay fees for these planned improvements.
- Briggs Road and SR-74: Add a second northbound left-turn lane, add an eastbound through lane, a westbound through lane, and overlap phasing to the eastbound right-turn lane. These improvements area included in the TUMF program. The project will pay fees for these planned improvements.
- SR-79 and SR-74: Add a northbound right-turn lane with overlap phasing. These improvements area included in the TUMF program. The project will pay fees for these planned improvements.
- Goetz Road and Ethanac Road: Add a northbound through lane, overlap phasing to the northbound right-turn lane, a second westbound left-turn lane, and a westbound right-turn lane with overlap phasing. These



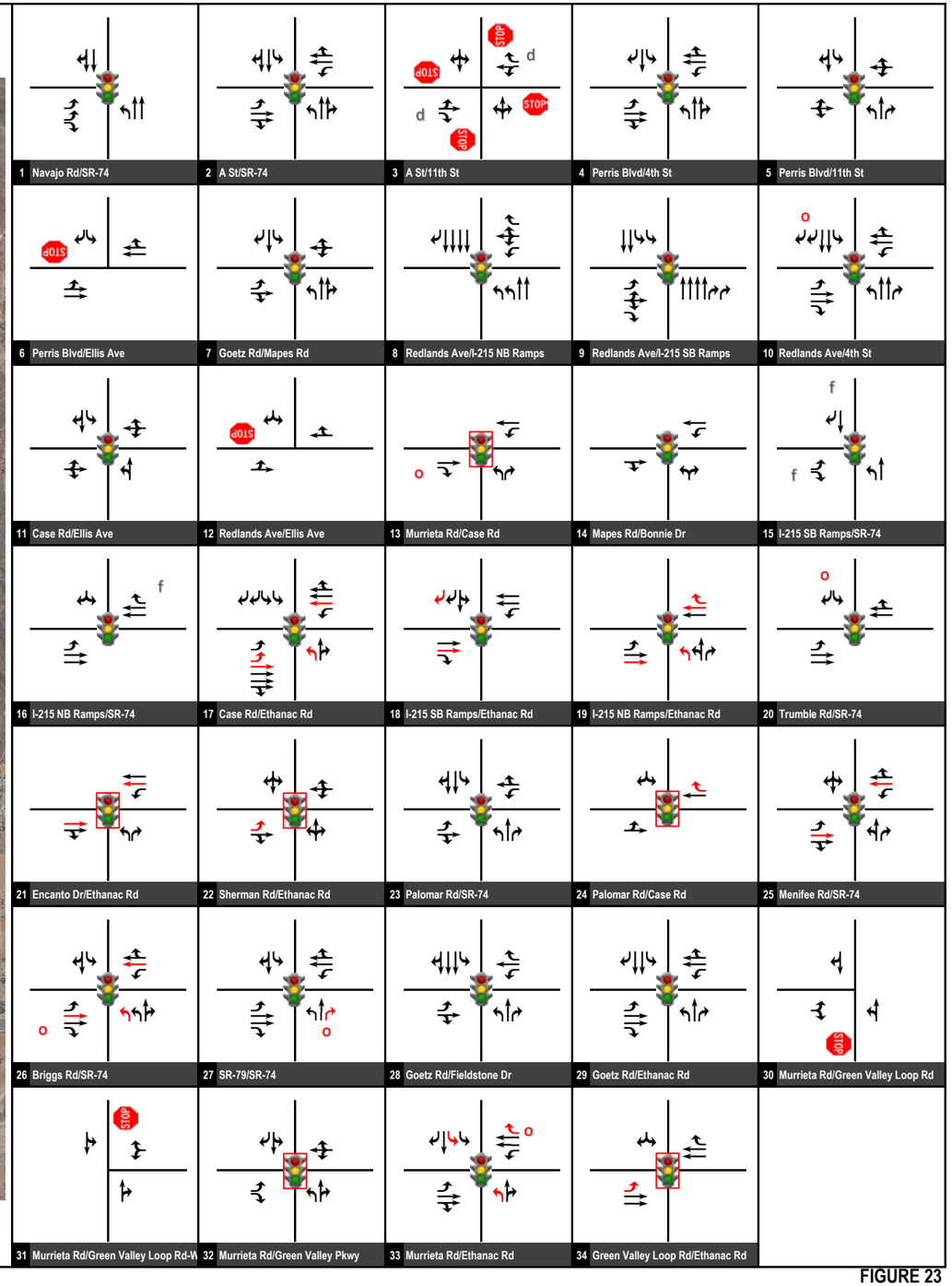


FIGURE 23

Legend

Signal
Stop Sign
Free-right turn
De-facto right
Improvements
Overlap

Green Valley Specific Plan Phase 2
Opening Year With Project With Improvements Intersection Geometrics and Stop Control

translutions
the transportation solutions company

Table J: Opening Year With Project With Improvements Levels of Service

Intersection	LOS Standard	Control	With Project AM Peak Hour Delay	LOS		With Project PM Peak Hour Delay	LOS		Control	With Project With Improvements AM Peak Hour Delay	LOS	With Project With Improvements PM Peak Hour Delay	LOS
10 . Redlands Ave/4th St	E	Signal	>100	F	*	>100	F	*	Signal	43.4	D	52.6	D
13 . Murrieta Rd/Case Rd	D	AWSC	48.6	D		79.3	E	*	Signal	20.6	C	23.4	C
17 . Case Rd/Ethanac Rd	D	Signal	67.7	E	*	>100	F	*	Signal	31.2	C	53.7	D
18 . I-215 SB Ramps/Ethanac Rd	E	Signal	>100	F	*	>100	F	*	Signal	42.2	D	31.2	C
19 . I-215 NB Ramps/Ethanac Rd	E	Signal	>100	F	*	>100	F	*	Signal	31.6	C	47.9	D
20 . Trumble Rd/SR-74	D	Signal	>100	F	*	89.4	F	*	Signal	40.4	D	31.5	C
21 . Encanto Dr/Ethanac Rd	D	TWSC	>100	F	*	>100	F	*	Signal	18.3	B	27.5	C
22 . Sherman Rd/Ethanac Rd	D	TWSC	>100	F	*	43.3	D		Signal	26.2	C	37.3	D
24 . Palomar Rd/Case Rd	D	TWSC	>100	F	*	14.5	B		Signal	37.3	D	30.4	C
25 . Menifee Rd/SR-74	D	Signal	>100	F	*	>100	F	*	Signal	53.7	D	46.9	D
26 . Briggs Rd/SR-74	D	Signal	>100	F	*	84.8	F	*	Signal	52.3	D	41	D
27 . SR-79/SR-74	D	Signal	60.9	E	*	65.4	E	*	Signal	28.2	C	31.5	C
32 . Murrieta Rd/Green Valley Pkwy	D	TWSC	38.2	D		>100	F	*	Signal	10.8	B	8.8	A
33 . Murrieta Rd/Ethanac Rd	D	Signal	>100	F	*	>100	F	*	Signal	53.3	D	48	D
34 . Green Valley Loop Rd/Ethanac Rd	D	TWSC	>100	F	*	>100	F	*	Signal	17.1	B	6.2	A

Notes:

* Exceeds LOS Standard

LOS = Level of Service

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case movement.

- improvements are included in the City's General Plan. The project will pay DIF fees for these planned improvements.
- Murrieta Road and Green Valley Parkway: Install a traffic signal.
- Murrieta Road and Ethanac Road: Add a northbound left-turn lane, a second southbound left-turn lane, and a westbound right-turn lane with overlap phasing. These improvements are included in the City's General Plan. The project will pay DIF fees for these planned improvements.
- Green Valley Loop Road and Ethanac Road: Install a traffic signal and an eastbound left-turn lane. These improvements are included in the City's General Plan. The project will pay DIF fees for these planned improvements.

Figure 24 illustrates the opening with project with recommended improvements and Table K shows the resulting levels of service.

9.0 QUEUING ANALYSIS

A queuing analysis was conducted at the Caltrans intersections to evaluate traffic operations under existing, opening year, and year 2040 conditions. Caltrans does not have thresholds of significance for intersection queues and is for informational purposes. Tables L, M, N, O, and P show the queue lengths under each of the analysis years for without and with project conditions.

10.0 IMPACT CRITERIA FOR CEQA DETERMINATION

This section evaluates the CEQA checklist for impact evaluation.

A. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

The project is consistent with the City's adopted plans and policies. With implementation of the recommended improvements, the project has less than significant impacts based on the City's impact criteria. The project would not conflict with adopted policies supporting alternative transportation modes. The project will not change roadway designations from those in the City's General Plan. The project will also not result in removal of any of the facilities listed above. Therefore, the project impact is considered less than significant.

B. Conflict or be inconsistent with CEQA Guidelines 15064.3, subdivision (b)?

Based on the City's Low VMT Screening Tool, the project will not require a full VMT analysis and will therefore have a less than significant impact under CEQA.

C. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

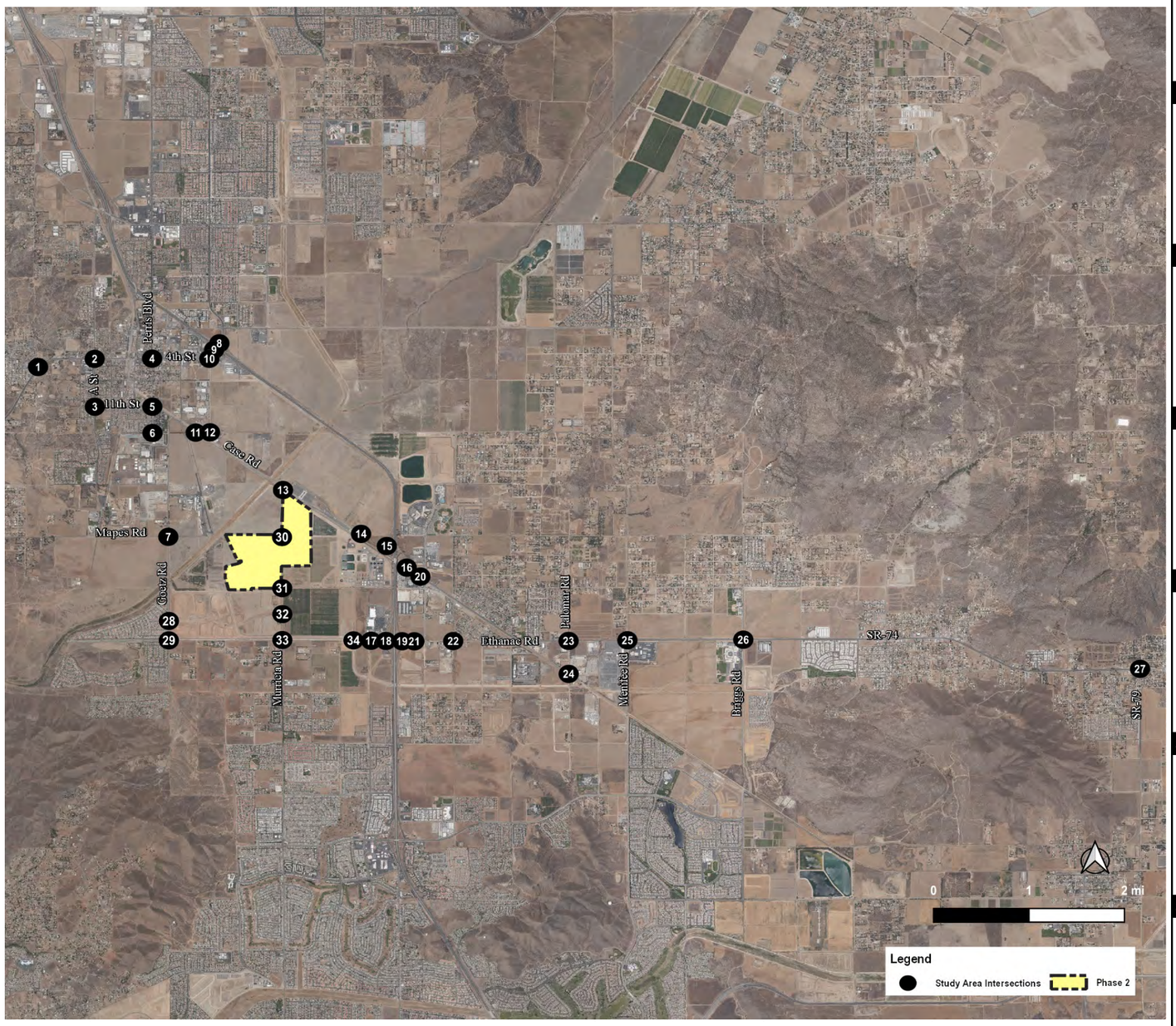
The design of driveways and other project access locations will be based on City Code, which sets the standard for such design. It is not anticipated that traffic hazards will increase, therefore, the project impact is considered less than significant.

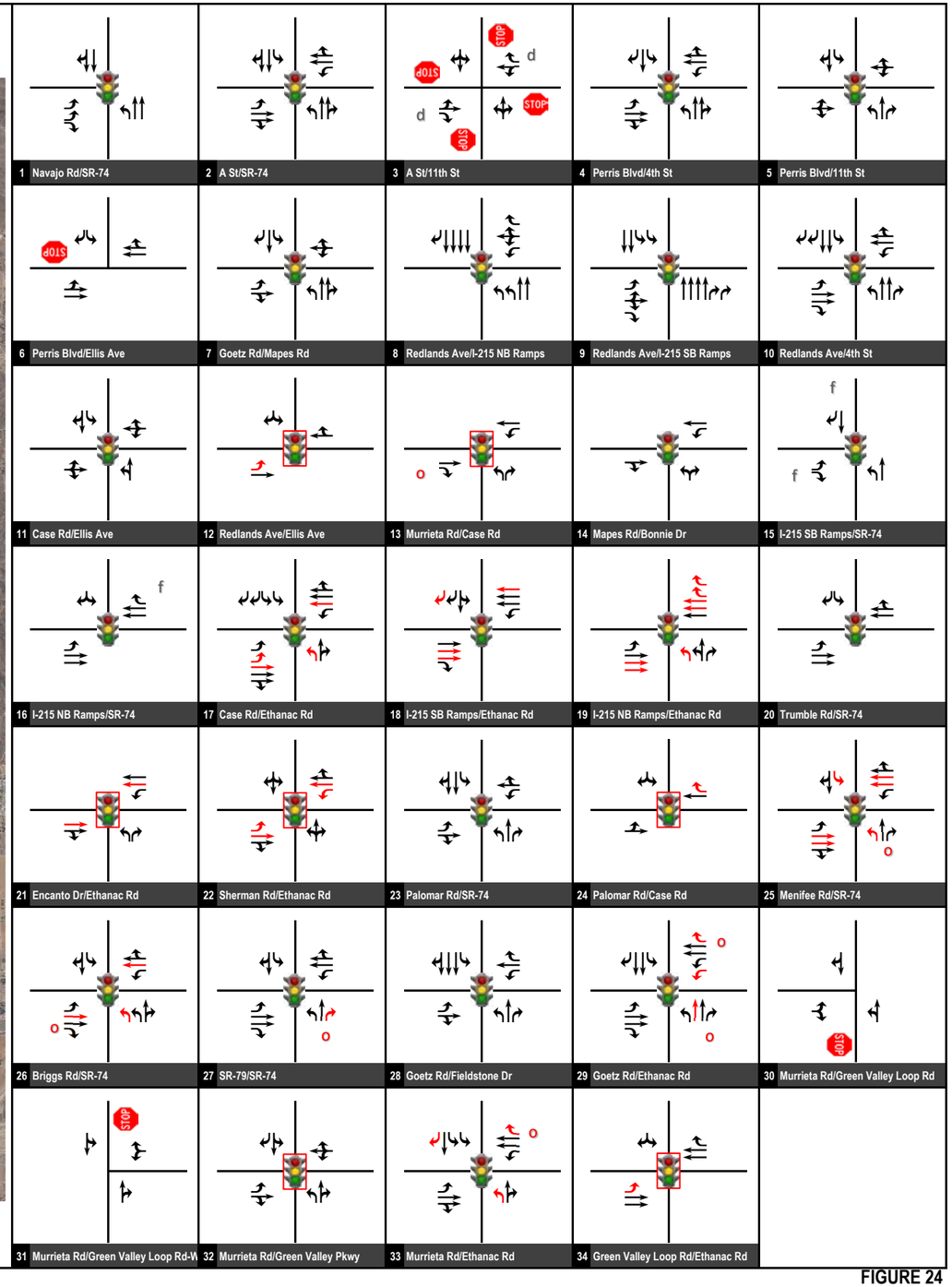
D. Result in inadequate emergency access?

The proposed driveways will be designed in accordance with all applicable design and safety standards required by adopted fire codes, safety codes, and building codes established by the City's Engineering and Fire Departments. The project will not increase delays on street segments substantially, therefore, the project will not result in inadequate emergency access, and the project impact is considered less than significant.

11.0 SUMMARY & CONCLUSIONS

Based on the intersection LOS analysis, with the circulation improvements, the study intersections will operate at satisfactory LOS under existing, opening year, and year 2040 with project conditions.





Legend

Signal
Stop Sign
Free-right turn
De-facto right
Improvements
Overlap

FIGURE 24

Green Valley Specific Plan Phase 2
Year 2040 With Project With Improvements Intersection Geometrics and Stop Control

translutions
the transportation solutions company...

Table K: Year 2040 Without and With Project Levels of Service

Intersection	LOS Standard	Control	With Project AM Peak Hour Delay	AM LOS		With Project PM Peak Hour Delay	PM LOS		With Project With Improvements Control	AM Peak Hour Delay	AM LOS	PM Peak Hour Delay	PM LOS
12 . Redlands Ave/Ellis Ave	E	TWSC	28.9	C		>100	F	*	Signal	26.4	C	26.8	C
13 . Murrieta Rd/Case Rd	D	AWSC	17	B		60.1	E	*	Signal	14.8	B	16.3	B
17 . Case Rd/Ethanac Rd	D	Signal	95.7	F	*	>100	F	*	Signal	40.5	D	53.3	D
18 . I-215 SB Ramps/Ethanac Rd	E	Signal	>100	F	*	>100	F	*	Signal	39.5	D	53.9	D
19 . I-215 NB Ramps/Ethanac Rd	E	Signal	>100	F	*	>100	F	*	Signal	52.7	D	50.0	D
21 . Encanto Dr/Ethanac Rd	D	TWSC	>100	F	*	>100	F	*	Signal	14.6	B	38.5	D
22 . Sherman Rd/Ethanac Rd	D	TWSC	47	D		>100	F	*	Signal	53.7	D	43.2	D
24 . Palomar Rd/Case Rd	D	TWSC	>100	F	*	15.4	B		Signal	40.9	D	31.2	C
25 . Menifee Rd/SR-74	D	Signal	>100	F	*	>100	F	*	Signal	48.2	D	52.5	D
26 . Briggs Rd/SR-74	D	Signal	>100	F	*	>100	F	*	Signal	49.1	D	41.4	D
27 . SR-79/SR-74	D	Signal	68.8	E	*	80.3	F	*	Signal	42.8	D	52.4	D
28 . Goetz Rd/Fieldstone Dr	D	Signal	16	B		20.4	C		Signal	16.1	B	23.4	C
29 . Goetz Rd/Ethanac Rd	D	Signal	>100	F	*	>100	F	*	Signal	42.8	D	51.4	D
32 . Murrieta Rd/Green Valley Pkwy	D	TWSC	56.1	E	*	>100	F	*	Signal	10.5	B	8.8	A
33 . Murrieta Rd/Ethanac Rd	D	Signal	>100	F	*	>100	F	*	Signal	53.4	D	52.5	D
34 . Green Valley Loop Rd/Ethanac Rd	D	TWSC	>100	F	*	60.9	F	*	TWSC	21.5	C	24.8	C

Notes:

* Exceeds LOS Standard

LOS = Level of Service

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case movement.

translutions
the transportation solutions company...

Table L: Existing Queuing Analysis

Intersection	Movement	Storage Length (In Feet)	Without Project		With Project	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
			Queue Length[1]	Queue Length[1]	Queue Length[1]	Queue Length[1]
8 . Redlands Ave/I-215 NB Ramps	NBL	275	80	45	70	75
	SBR	640	35	35	40	35
	WBL	790	225	245	230	245
	WBR	400	105	175	95	150
9 . Redlands Ave/I-215 SB Ramps	SBL	275	140	100	120	75
	NBR	200	25	30	25	25
	EBL	740	115	145	130	150
	EBR	140	50	50	60	125
15 . I-215 SB Ramps/SR-74	NBL	115	**125**	**155**	**145**	**215**
16 . I-215 NB Ramps/SR-74	EBL	240	20	20	20	20
18 . I-215 SB Ramps/Ethanac Rd	SBR	240	80	70	95	230
	EBR	530	85	20	80	20
	WBL	200	135	110	120	90
19 . I-215 SB Ramps/Ethanac Rd	NBR	250	50	55	50	70
	EBL	190	**405**	**315**	**465**	**410**

Notes:

Bold = Queue exceeds storage length.

[1]Queues reported are 95th Percentile queue lengths per movement in feet.

NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, L = Left, T = Through, R = Right.

translutions
the transportation solutions company...

Table M: Opening Year Queuing Analysis

Intersection	Movement	Storage Length (In Feet)	Without Project		With Project	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
			Queue Length[1]	Queue Length[1]	Queue Length[1]	Queue Length[1]
8 . Redlands Ave/I-215 NB Ramps	NBL	275	40	100	50	170
	SBR	640	45	45	50	45
	WBL	790	245	275	255	295
	WBR	400	145	220	140	230
9 . Redlands Ave/I-215 SB Ramps	SBL	275	155	85	125	135
	NBR	200	45	25	35	20
	EBL	740	135	170	150	180
	EBR	140	50	70	90	**160**
15 . I-215 SB Ramps/SR-74	NBL	115	**360**	**460**	**390**	**530**
16 . I-215 NB Ramps/SR-74	EBL	240	110	65	105	65
18 . I-215 SB Ramps/Ethanac Rd	SBR	240	**645**	**1060**	**725**	**1160**
	EBR	530	60	215	55	250
	WBL	200	90	85	85	80
19 . I-215 SB Ramps/Ethanac Rd	NBR	250	100	130	120	140
	EBL	190	**670**	**510**	**630**	**520**

Notes:

Bold = Queue exceeds storage length.

[1]Queues reported are 95th Percentile queue lengths per movement in feet.

NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, L = Left, T = Through, R = Right.

translutions
the transportation solutions company...

Table N: Year 2040 Queuing Analysis

Intersection	Movement	Storage Length (In Feet)	Without Project		With Project	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
			Queue Length[1]	Queue Length[1]	Queue Length[1]	Queue Length[1]
8 . Redlands Ave/I-215 NB Ramps	NBL	275	30	45	150	70
	SBR	640	50	40	50	40
	WBL	790	225	230	225	230
	WBR	400	55	110	55	115
9 . Redlands Ave/I-215 SB Ramps	SBL	275	85	75	85	85
	NBR	200	45	25	15	25
	EBL	740	100	145	95	150
	EBR	140	50	50	60	65
15 . I-215 SB Ramps/SR-74	NBL	115	15	60	45	85
16 . I-215 NB Ramps/SR-74	EBL	240	15	25	10	25
18 . I-215 SB Ramps/Ethanac Rd	SBR	240	**795**	**1140**	**845**	**1240**
	EBR	530	15	225	10	240
	WBL	200	110	70	105	65
19 . I-215 SB Ramps/Ethanac Rd	NBR	250	210	**485**	225	**500**
	EBL	190	**670**	**545**	**665**	**550**

Notes:

Bold = Queue exceeds storage length.

[1]Queues reported are 95th Percentile queue lengths per movement in feet.

NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, L = Left, T = Through, R = Right.

translutions
the transportation solutions company...

Table O: Opening Year With Project With Improvements Queuing Analysis

Intersection	Movement	Storage Length (In Feet)	With Project With Improvements	
			AM Peak Hour Queue Length[1]	PM Peak Hour Queue Length[1]
18 . I-215 SB Ramps/Ethanac Rd	SBR	240	225	**470**
	EBR	530	**855**	120
	WBL	200	130	115
19 . I-215 SB Ramps/Ethanac Rd	NBR	250	110	140
	EBL	190	**820**	**725**

Notes:

Bold = Queue exceeds storage length.

[1]Queues reported are 95th Percentile queue lengths per movement in feet.

NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, L = Left, T = Through, R = Right.

translutions
the transportation solutions company...

Table P: Year 2040 With Project With Improvements Queuing Analysis

Intersection	Movement	Storage Length (In Feet)	With Project With Improvements	
			AM Peak Hour Queue Length[1]	PM Peak Hour Queue Length[1]
18 . I-215 SB Ramps/Ethanac Rd	SBR	240	**360**	**455**
	EBR	530	**850**	**660**
	WBL	200	**220**	165
19 . I-215 SB Ramps/Ethanac Rd	NBR	250	235	**475**
	EBL	190	**1125**	**855**

Notes:

Bold = Queue exceeds storage length.

[1]Queues reported are 95th Percentile queue lengths per movement in feet.

NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, L = Left, T = Through, R = Right.