Appendix J

Transportation Impact Analysis

LINSCOTT LAW & GREENSPAN engineers

TRANSPORTATION IMPACT ANALYSIS

THE FARM IN POWAY

Poway, California
January 15, 2020

LLG Ref. 3-18-3015

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TRANSPORTATION IMPACT ANALYSIS

THE FARM IN POWAY

Poway, California
January 15, 2020

1.0 INTRODUCTION

Linscott, Law & Greenspan, Engineers (LLG) has prepared this Transportation Impact Analysis Report for The Farm in Poway Project (hereby referred to as the "Project"). The Project will be located in the City of Poway and proposes a mixed-use "Agri-hood" including Garden Homes, Social Amenities, Educational Amenities, and Agri-amenities on an approximate 118-acre site in place of the former Stoneridge County Club (which has been permanently closed since November 2017). A detailed description of the Project is included in Project description section of this report.

This Transportation Impact Study has been prepared to analyze the impacts from the proposed Project based on the currently adopted guidelines which focus on Automobile Delay (or Level of Service). Pursuant to Senate Bill (SB 743) Guidelines, a VMT analysis is also included.

In addition to the vehicular mode analyses, the multi-modal network in the influence of the Project study area was also reviewed. This included Pedestrian, Bicycle, Transit and Alternative Vehicle mobility. Collectively, vehicular mobility combined with multi-modal networks were reviewed to help promote local and regional mobility without auto-dependency.

The report is organized as follow:

Section 1.0	Introduction
Section 2.0	Project Description
Section 3.0	Study Area, Analysis Approach & Methodology
Section 4.0	Existing Conditions Discussion
Section 5.0	Significance Criteria
Section 6.0	Existing Auto Analysis
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2.0 PROJECT DESCRIPTION

2.1 Project Location

The Farm in Poway will be located in the City of Poway. The site is currently zoned Open Space Recreational (OS-R) and was formerly occupied by the Stoneridge County Club. The Stoneridge Country Club has been permanently closed since November 2017. The Project site is bounded by Valle Verde Road, St. Andrews Drive, Tam O'Shanter Drive, Cloudcroft Drive, and Espola Road.

Figure 2–1 shows the Project vicinity map. ***Figure 2–2*** shows the Project area map.

2.2 Project Description

The Farm in Poway Specific Plan proposes to develop the 118-acre site as an "Agri-hood", a new community trend that seeks to include a farm or garden(s) as a central community amenity promoting sustainable development through community connections promoting social and environmental wellness, natural, healthy, and local food, and recreational outlets. The creative vision for The Farm in Poway involves the creation of small residential enclaves supported by recreational, social, and educational opportunities within a farm setting. Surrounded by working farmlands, the community will function as a neighborhood within a farm. These community connections will be further enhanced through the provision of trails, parks, and other recreational amenities that deliver a vast array of convenient, healthy, and social activities. Finally, educational amenities including various types of gardens, a greenhouse, and a butterfly aviary offer community residents and the surrounding community resources to learn about nature, food, wellness, and more.

Table 2–1 summarizes the Project land use types and quantities.

TABLE 2–1
LAND USE SUMMARY

Land Use	Area [a] (Acres)	Residential [b] (Units)	Commercial [c] (Square feet)
Non-Residential Uses			
Open Space – Recreation (OS-R)			
The Club *Pool, 4 Tennis Courts, 16 Pickleball Courts, Multi-Purpose Room*	6.85 acres	–	6,000 SF
Social at The Gardens *Café, Coffee, Wine & Beer Garden*	1.78 acres	–	4,800 SF
The Barn [d] *Wedding Venue, Music Venue, Multi-Purpose Room*	0.87 acres	–	5,300 SF
Programmed Open Space Recreation [e] *The Butterfly Farm Vivarium/Greenhouse, Classroom, Picnic Area, Garden, Trails*	5.15 acres	–	13,100 SF
Subtotal OS-R	***14.65 acres***	**–**	***29,200 SF***
Open Space – Conservation (OS-C)			
Agri-Fields	8.7 acres	–	–
Community Garden	1.3 acres	–	–
Unprogrammed Open Space Conservation [f] *Tranquility Garden, Tot Lot, Community Gardens, Open Space Recreation*	45.72 acres	–	–
Subtotal OS-C	***55.72 acres***	–	–
Roadway Right-of-Ways	12.96 acres	–	–
Total Non-Residential Uses	**83.33 acres**	–	**29,200 SF**
Residential Uses			
Residential – Homestead *110'x180' Single-Family (2.5 DU/Acre)*	8.00 acres	20	–
Residential – Garden *70'x100' Single-Family (4.7 DU/Acre)*	2.78 acres	13	–
Residential – Twin *35'x100' Twin Homes (10.7 DU/Acre)*	2.05 acres	22	–
Residential – Meadow *100'x100' Single-Family (3.5 DU/Acre)*	4.31 acres	15	–
Residential – Cottage *100'x100' Single-Family (5.4 DU/Acre)*	16.71 acres	90	–
Total Residential	**33.85 acres**	**160**	–
TOTAL PROJECT	**117.18 acres**	**160**	**29,200 SF**

***Source**: The Farm in Poway Draft Specific Plan, April 2019*

***Footnotes**:*

a. Acreages are approximate and may vary slightly at Tentative Map and Final Map.
b. Residential Dwelling Units may be transferred between Residential Land Use Districts provided that the total number of dwelling units does not exceed 160.
c. Non-residential square footages are rounded up to the nearest hundredth in the trip generation calculations.
d. It should also be noted that weddings, parties, and similar larger events shall be limited to weekends and after peak hours on weekday to minimize traffic impacts per the Specific Plan. In addition, the amount of special events at The Barn will be limited in accordance with the Specific Plan and do not represent "typical day" conditions.
e. Programmed Park represents the potential for scheduled activities occurring during weekday periods.
f. Unprogrammed Park uses represent passive open space-type uses with no scheduled weekday activities

2.3 Project Access

Roadways that will provide direct access to the Project are Espola Road, existing residential streets St. Andrews Drive and Boca Raton Lane, and a series of proposed private streets, including motor courts and common access roads. The Project roadway design focuses on promoting walking and bicycling as the preferred modes of travel by designing low-speed streets that can be shared between automobiles bicycles, and low-speed vehicles (LSVs). Low speed streets also support pedestrian comfort and safety. Sidewalks are provided on one-side of all private streets, except motor courts. Sidewalks connect to trails, and provide access to an existing transit stop located just east of the Project site at the intersection of Espola Road and Cloudcroft Drive.

Vehicular access is primarily proposed at the Espola Road/ Martincoit Road/ Private Street 'A' intersection. Secondary access is proposed at three additional locations: Cloudcroft Drive/ Cloudcroft Court, Boca Raton Lane/ Private Street 'E' and Tam O'Shanter Drive/ Private Street 'A'. A more detailed discussion of Project access is provided in *Section 17.0* of this report.

Figure 2–3 illustrates the Project site plan.

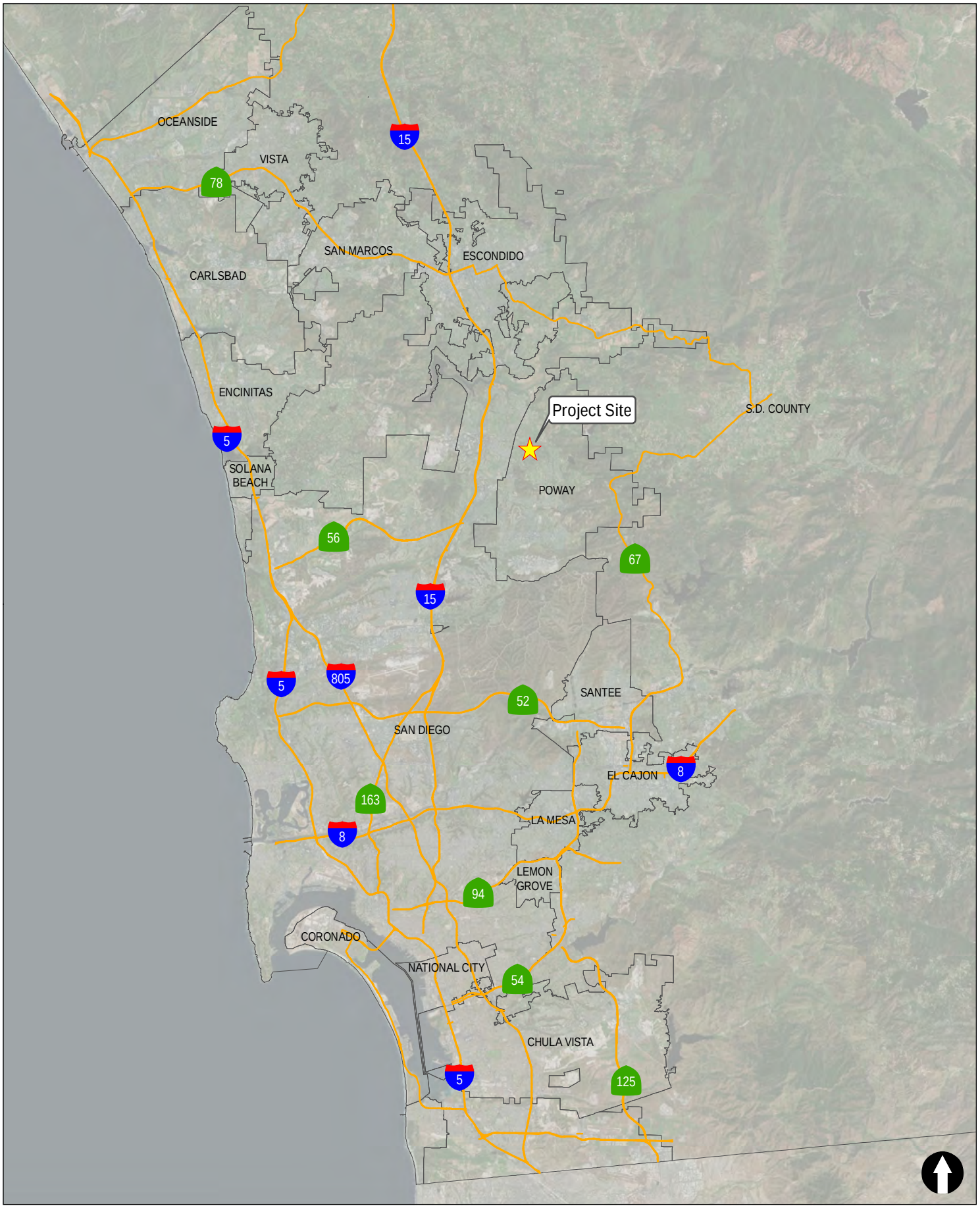

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Figure 2-1

Vicinity Map

THE FARM IN POWAY

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Figure 2-2

Project Area Map

THE FARM IN POWAY

THE FARM IN POWAY

SITE PLAN

I	**SOCIAL AMENITIES**	7.55 AC
1	SWIM & RAQUET CLUB 25 YARD 4 LANE POOL FAMILY POOL SNACK SHOP GAME ROOM CLUB HOUSE MEN'S & WOMEN'S LOCKER ROOM 5 TENNIS COURTS 4 PICKLE BALL COURTS	4.95 AC
2	SOCIAL @ THE GARDENS CAFE / COFFEE / WINE & BEER GARDEN WEDDING VENUE MUSIC VENUE MULTI-PURPOSE ROOM CROSS-FIT, YOGA, PILATES	2.60 AC
II	**EDUCATIONAL AMENITIES**	4.01 AC
3	AGRICULTURAL EDUCATIONAL CENTER MULTI-PURPOSE BARN	1.05 AC
4	BUTTERFLY FARMS DISCOVERY CENTER VIVARIUM GRE CLASSROOM PICNIC AREA GARDEN	2.96 AC
III	**AGRI-AMENITIES**	57.50 AC
5	ORGANIC COMMUNITY GARDENS	
6	ORGANIC AGRI-FIELDS	
7	TRAILS HIKING MOUNTAIN BIKING HORSE	
8	FAMILY POND	
IV	**GARDEN HOMES**	31.14 AC
A	20 110' X 180' LOTS SINGLE FAMILY	4.72 AC
B	13 70' X 100' LOTS SINGLE FAMILY	2.16 AC
C	22 70' X 100' LOTS SF TWIN HOMES	1.95 AC
D	12 100' X 100' LOTS SINGLE FAMILY	2.60 AC
E	92 100' X 100' LOTS SF COTTAGE COURTS	19.72 AC
	SITE TOTAL	117.94 AC

* ACREAGE IS APPROXIMATE

CONCEPT SITE PLAN N

* Conceptual Site Plan provided for illustrative purposes only. See the Specific Plan for the latest site plan.

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Figure 2-3

Project Site Plan

THE FARM IN POWAY

3.0 STUDY AREA, ANALYSIS APPROACH, & METHODOLOGY

The Transportation Impact Study evaluates The Farm at Poway's potential vehicular impacts within the study area based on the currently adopted guidelines which focus on Automobile Delay (and corresponding Level of Service).

In addition, and in compliance with Senate Bill 743 (SB 743), an alternative method of identifying transportation impacts was also reviewed. Per SB 743, Vehicle Miles Traveled (VMT) has been identified as a more appropriate metric for measuring transportation impacts. A lead agency may elect to be governed by this new metric at any time. However, beginning January 1, 2020, this new metric shall become a requirement statewide. After the CEQA guidelines take effect, Automobile Delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant effect on the environment. As regulatory agencies are in transition, both an Automobile Delay and a VMT Analysis have been prepared for The Farm at Poway Project.

The forecast vehicular travel demand and VMT were reviewed to determine potential transportation impacts. Although the City of Poway has not yet adopted VMT guidelines, a VMT analysis was conducted given forthcoming changes to CEQA requirements. The analysis is focused on impacts to the surrounding area and community. The following sections provide more detail of the analysis approach and methodology.

In addition, the multi-modal network was comprehensively reviewed. Pedestrian and bicycle mobility were reviewed on the surrounding street network. Transit conditions and access to transit was evaluated. The growing role of Alternative Vehicles and Intelligent Transportation Systems (ITS) were also reviewed (see *Sections 15.0 and 18.0* of this report, respectively). Collectively, these multi-modal networks and trip efficiency strategies help promote local and regional mobility without auto-dependency.

3.1 Project Study Area

3.1.1 *Roadway Network*

The scope of the study area was developed with City of Poway staff per the *SANTEC/ITE Regional Guidelines for Traffic Impact Studies* and the *City of San Diego Traffic Impact Study Manual* guidelines for intersections, segments and ramp meters. A preliminary Project distribution, a review of approved traffic studies in the area, and a working knowledge of the local transportation system were also considered when determining the study area.

Based on the above guidelines and approach, this study analyzed twenty-five (25) intersections, forty-six (46) off-site street segments, four (4) freeway mainline segments, and two (2) ramp meter locations.

The study area includes the following major roadways: Rancho Bernardo Road, Espola Road, Pomerado Road, Avenida Florencia, Stone Canyon Road, Martincoit Road, Twin Peaks Road, Valle Verde Road, and Bernardo Heights Parkway.

The specific vehicular study area intersections, street segments, freeway mainline segments, and ramp meters analyzed in this report are shown below.

INTERSECTIONS

ID	Location	Jurisdiction	Traffic Control
1.	I-15 SB Ramps/Rancho Bernardo Rd	Caltrans/City of San Diego	Signalized
2.	I-15 NB Ramps/Rancho Bernardo Rd	Caltrans/City of San Diego	Signalized
3.	Bernardo Center Dr/Rancho Bernardo Rd	City of San Diego	Signalized
4.	Pomerado Rd/Rancho Bernardo Rd	City of San Diego	Signalized
5.	Summerfield Ln/Rancho Bernardo Rd/Espola Rd	City of Poway	Signalized
6.	Avenida Florencia/Espola Rd	City of Poway	Unsignalized
7.	Valle Verde Rd/Espola Rd	City of Poway	Signalized
8.	Valle Verde Rd/St Andrews Dr	City of Poway	Unsignalized
9.	Martincoit Rd/Espola Rd	City of Poway	Signalized
10.	Cloudcroft Dr/Espola Rd	City of Poway	Unsignalized
11.	Old Coach Rd/Espola Rd	City of Poway	Signalized
12.	Espola Rd/Lake Poway Rd	City of Poway	Signalized
13.	Espola Rd/Eden Grove/Titan Way	City of Poway	Signalized
14.	Espola Rd/Twin Peaks Rd	City of Poway	Signalized
15.	Pomerado Rd/Rios Rd	City of San Diego	Signalized
16.	Pomerado Rd/Avenida La Valencia	City of San Diego	Signalized
17.	Pomerado Rd/Stone Canyon Rd	City of San Diego	Signalized
18.	Pomerado Rd/Bernardo Heights Pkwy	City of San Diego	Signalized
19.	Pomerado Rd/Twin Peaks Rd	City of Poway	Signalized
20.	Avenida Florencia/Avenida La Valencia	City of Poway	Unsignalized
21.	Del Norte/Stone Canyon Rd	City of Poway	Unsignalized
22.	Martincoit Rd/Stone Canyon Rd	City of Poway	Unsignalized
23.	Tam O'Shanter Dr/ Private Street "E"	City of Poway	Unsignalized
24.	Tam O Shanter Dr/Private Street "A"	City of Poway	Unsignalized
25.	Tam O'Shanter Dr/Cloudcroft Dr	City of Poway	Unsignalized

STREET SEGMENTS

ID	Roadway	Segment	Jurisdiction
1.	Rancho Bernardo Road	W. Bernardo Dr to I-15 SB Ramps	Caltrans/ City of San Diego
2.	Rancho Bernardo Road	I-15 SB Ramps to I-15 NB Ramp	Caltrans/ City of San Diego
3.	Rancho Bernardo Road	I-15 NB Ramps to Bernardo Center Dr	Caltrans/ City of San Diego
4.	Rancho Bernardo Road	Bernardo Center Dr to Pomerado Rd	City of San Diego
5.	Rancho Bernardo Road	Pomerado Rd to Summerfield Ln	City of San Diego
6.	Espola Road	Summerfield Ln to Avenida Florencia	City of Poway
7.	Espola Road	Avenida Florencia to Valle Verde Rd	City of Poway
8.	Espola Road	Valle Verde Rd to Martincoit Rd	City of Poway
9.	Espola Road	Martincoit Rd to Cloudcroft Dr	City of Poway
10.	Espola Road	Cloudcroft Dr to Old Coach Rd	City of Poway
11.	Espola Road	Old Coach Rd to Lake Poway Rd	City of Poway
12.	Espola Road	Lake Poway Rd to Titan Wy	City of Poway
13.	Espola Road	Titan Wy to Willow Ranch Rd	City of Poway
14.	Espola Road	Willow Ranch Rd to Del Poniente Rd	City of Poway
15.	Espola Road	Del Poniente Rd to Twin Peaks Rd	City of Poway
16.	Espola Road	Twin Peaks Rd to Ezra Ln	City of Poway
17.	Pomerado Road	Pomerado Ct to Rancho Bernardo Rd	City of San Diego
18.	Pomerado Road	Rancho Bernardo Rd to Rios Rd	City of San Diego
19.	Pomerado Road	Rios Rd to Avenida La Valencia	City of San Diego
20.	Pomerado Road	Avenida La Valencia to Stone Canyon Rd	City of San Diego
21.	Pomerado Road	Stone Canyon Rd to Bernardo Heights Pkwy	City of San Diego
22.	Pomerado Road	Bernardo Heights Pkwy to Pomerado Hospital	City of Poway
23.	Pomerado Road	Pomerado Hospital to Monte Vista Rd	City of Poway
24.	Pomerado Road	Monte Vista Rd to Twin Peaks Rd	City of Poway
25.	Pomerado Road	Twin Peaks Rd to Ted Williams Pkwy	City of Poway
26.	Bernardo Center Drive	Bajada Rd to Rancho Bernardo Rd	City of San Diego
27.	Bernardo Center Drive	Rancho Bernardo Rd to Bernardo Plaza Ct	City of San Diego
28.	Rios Road	Pomerado Rd to Summerfield Ln	City of San Diego
29.	Summerfield Lane	Rios Rd to Rancho Bernardo Rd	City of Poway
30.	Avenida La Valencia	Pomerado Rd to Avenida Florencia	City of Poway
31.	Avenida Florencia	Rancho Bernardo Rd and Avenida La Valencia	City of Poway
32.	Del Norte	Avenida La Valencia to Stone Canyon Rd	City of Poway
33.	Stone Canyon Road	Pomerado Rd to Avenida Florencia	City of Poway
34.	Stone Canyon Road	Avenida Florencia to Martincoit Rd	City of Poway
35.	Martincoit Road	Rancho Bernardo Rd to Stone Canyon Rd	City of Poway
36.	Twin Peaks Road	World Trade Center to Pomerado Rd	City of Poway
37.	Twin Peaks Road	Pomerado Rd to Deerwood Dr	City of Poway

STREET SEGMENTS (CONT'D)

ID	Roadway	Segment	Jurisdiction
38.	Twin Peaks Road	Tierra Bonita Rd to Espola Rd	City of Poway
39.	Valle Verde Road	Espola Rd to St Andrews Dr	City of Poway
40.	St. Andrews Drive	Valle Verde Rd to Tam O'Shanter Dr	City of Poway
41.	Tam O'Shanter Drive	St Andrews Dr to Entrance 'A'	City of Poway
42.	Tam O'Shanter Drive	Entrance 'B' to Cloudcroft Dr	City of Poway
43.	Cloudcroft Drive	Tam O'Shanter Dr to Espola Rd	City of Poway
44.	Bernardo Heights Parkway	Paseo Lucido to Pomerado Rd	City of San Diego
45.	Lake Poway Road	East of Espola Rd	City of Poway
46.	Titan Way	West of Espola Rd	City of Poway

FREEWAY MAINLINE SEGMENTS

ID	Freeway	Segment	Jurisdiction
1.	Interstate 15	Northbound; North of Rancho Bernardo Road	Caltrans
2.	Interstate 15	Southbound; North of Rancho Bernardo Road	Caltrans
3.	Interstate 15	Northbound; South of Rancho Bernardo Road	Caltrans
4.	Interstate 15	Southbound; South of Rancho Bernardo Road	Caltrans

FREEWAY RAMPS

ID	Freeway	On-Ramp	Jurisdiction
1.	Interstate 15 Southbound	Westbound Rancho Bernardo Road	Caltrans
2.	Interstate 15 Northbound	Westbound Rancho Bernardo Road	Caltrans

3.2 Auto Analysis Methodology

3.2.1 *Auto Level of Service*

Level of service (LOS) is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level of service designation is reported differently for signalized intersections and for roadway segments.

Intersections

Signalized intersections were analyzed under weekday 7:00-9:00 AM and 4:00-6:00 PM peak hour conditions. An additional 1:45-3:45 PM count was conducted at intersections located within a 1.0-mile distance to nearby schools. Average vehicle delay was determined utilizing the methodology found in Chapter 18 of the *2016 Highway Capacity Manual (HCM 6th Edition)*, with the assistance of the *Synchro* (version 10) computer software. The delay values (represented in seconds) were qualified with a corresponding intersection LOS. A more detailed explanation of the methodology is attached in ***Appendix A***. ***Table 3–1*** shows the signalized intersection delay categorized for each level of service (LOS).

Unsignalized intersections were analyzed under weekday 7:00-9:00 AM and 4:00-6:00 PM peak hour conditions. An additional 1:45-3:45 PM count was conducted at intersections located within a 1.0-mile distance to nearby schools. Average vehicle delay and Levels of Service (LOS) were determined based upon the procedures found in Chapters 19 and 20 of the *HCM 6,* with the assistance of the *Synchro* (version 10) computer software. A more detailed explanation of the methodology is attached in *Appendix A. Table 3–1* shows the unsignalized intersection delay categorized for each level of service (LOS).

TABLE 3–1
INTERSECTION LOS & DELAY RANGES

LOS	Delay (seconds/vehicle)	
	Signalized Intersections	**Unsignalized Intersections**
A	≤ 10.0	≤ 10.0
B	10.1 to 20.0	10.1 to 15.0
C	20.1 to 35.0	15.1 to 25.0
D	35.1 to 55.0	25.1 to 35.0
E	55.1 to 80.0	35.1 to 50.0
F	≥ 80.1	≥ 50.1

Source: Highway Capacity Manual

Street Segments

Street segment analysis is based upon the comparison of daily traffic volumes (ADTs) to the City of Poway, SANTEC/ITE, and City of San Diego's *Roadway Classification, Level of Service, and ADT Table*. These tables provide segment capacities for different street classifications, based on traffic volumes and roadway characteristics. ***Appendix B*** include City of Poway, SANTEC/ITE, and City of San Diego Roadway Classification.

Freeway Segments

Freeway segments were analyzed under AM and PM peak hour based on the standards outlined in the *Caltrans Guide for the Preparation of Traffic Impact Studies using Highway Capacity Manual* (HCM 6th Edition). The freeway analyses were conducted using the *Highway Capacity Software* (HCS version 7.3). The freeway analysis is based on assessing freeway operations based on traffic volumes, freeway network and other segment specific characteristics and reporting freeway volume to capacity ratio, speed and density. ***Table 3–2*** presents the freeway segment criteria based on density.

TABLE 3–2
FREEWAY SEGMENT LOS CRITERIA

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Notes:

1. *Source: HCM 6th Edition*
2. pc/mi/ln– Passenger car per mile per lane

The freeway analyses significance criteria uses "Volume to Capacity ratio (v/c)" or "Speed" as the measures of effectiveness (MOE) to determine impacts on freeways. While Freeway Density has been reported in the analyses, v/c was used as the MOE to determine significant Project impacts on freeways given the software limitations in reporting speeds at congested conditions (i.e. LOS F).

Freeway Ramp Meters

Ramp metering is a means of controlling the volume of traffic entering the freeway with the goal of improving the safety, traffic operations, and flow on the freeway main lanes. Freeway ramp meter analysis estimates the peak hour queues and delays at freeway ramps by comparing existing volumes to the meter rate at the given location.

The Project ramp meters were analyzed using *the Fixed Rate method*. The fixed rate approach is based solely on the specific time intervals at which the ramp meter is programmed to release traffic. The ramp meter results are theoretical and based on Caltrans' most restrictive meter rates, which were obtained from Caltrans. The ramp meter rates fluctuate during the peak hour; however, to be conservative, the most restrictive rate was used.

Adaptive Traffic Signal Controls

According to the Federal Highway Administration (FHWA), the key benefits of Adaptive Traffic Signal Control over conventional signal systems is that that it can continuously distribute green light time equitably for all traffic movements, improve travel time reliability by progressively moving vehicles through green lights, reduce congestion by creating smoother flow and prolong the effectiveness of traffic signal timing.

Case studies have been completed to quantify the benefits of Adaptive Traffic Signal Control. A review of Southern California case studies indicates an average reduction in AM/PM delay of 32%, an average reduction in AM/PM travel time of 17%, and an average increase in AM /PM travel speed of 29% with the implementation of Adaptive Traffic Signal Control. Additional information on Adaptive Traffic Signal Control is includes in *Section 18.1.3*.

3.2.2 *Auto Analysis Scenarios*

It would be expected that the development of the Project will occur over several years with Opening Day planned for a future timeframe in Year 2025. In order to provide for a worst-case analysis, significant impacts were measured assuming construction of all the entire Project at once.

Table 3–3 shows the analyses performed in each of the scenarios to determine the potential impacts to the road network.

TABLE 3–3
AUTO ANALYSIS SCENARIOS

Scenario	Analysis Performed
Proposed Project – Existing & Near-Term Conditions	
• Existing • Near-Term (Opening Year 2025) • Near-Term (Opening Year 2025) With Project	Peak Hour Intersection Analysis Daily Street Segment Analysis Peak Hour Ramp Meter Analysis Peak Hour Freeway Mainline Analysis
Proposed Project – Horizon Year 2035 Conditions	
• Horizon Year 2035 • Horizon Year 2035 With Project	Peak Hour Intersection Analysis Daily Street Segment Analysis Peak Hour Ramp Meter Analysis Peak Hour Freeway Mainline Analysis
School Zone Conditions	
• Existing • Near-Term (Opening Year 2025) • Near-Term (Opening Year 2025) With Project	Peak Hour Intersection Analysis

3.3 Multi-Modal Analysis Methodology

3.3.1 *Pedestrian Mobility*

Pedestrian network connectivity was evaluated by developing the pedestrian network and performing a pedestrian travelshed analysis for the network.

The pedestrian travelshed analysis evaluates the level of connectivity provided at each study intersection within the pedestrian study area. The walkshed analysis requires first creating a 0.25- mile crow files buffer and then a 0.25-mile pedestrian walkshed buffer based on the location of each project access point and the associated walkability infrastructure such as pedestrian crosswalks, sidewalks, pathways, trails, etc.

3.3.2 *Bicycle Mobility*

Bicycle network connectivity was evaluated by developing the bicycle network and performing a bicycle travelshed analysis for the network.

The bicycle travelshed analysis evaluates the level of connectivity provided at each study intersection within the bicycle study area. The bikeshed analysis requires first creating a 1.0-mile crow files buffer

and then a 1.0-mile bikeshed buffer based on the location of each project access point and associated bicycle infrastructure.

3.3.3 *Transit Mobility*

Transit mobility was reviewed by documenting transit service within the study area. A walkshed evaluation was also performed to identify locations around the Project site where pedestrians could access transit by walking.

3.4 Vehicle Miles Traveled Methodology

In compliance with Senate Bill 743 (SB 743), this Transportation Impact Study also evaluates The Farm in Poway's potential vehicular impacts using a Vehicle Miles Traveled (VMT) metric, pursuant to direction from the state legislature. Public Resources Code section 20199, enacted pursuant to SB 743, identifies Vehicle Miles Traveled (VMT) as an appropriate metric for measuring transportation impacts. VMT Analysis focuses on the number and length of vehicle trips made by a project's employees and residents.

The methodology used for the Project is based on the Governor's Office of Planning and Research (OPR) update to the CEQA Guidelines and Technical Advisory released in November 2017. Given that no criteria or methodologies have been formally adopted, OPR guidance was used to develop significance thresholds and technical methodologies for the Project.

Under OPR's proposed revisions to the CEQA guidelines, VMT exceeding an applicable threshold of significance may indicate a significant transportation impact. Furthermore, under the proposed guideline revisions, for projects other than roadway capacity projects, automobile delay, as described solely by Level of Service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant effect on the environment. The proposed revisions to the guidelines would allow a lead agency to elect to evaluate transportation impacts under the revised guidelines at any time and would make the revised guidelines applicable statewide beginning January 1, 2020. Although the City of Poway has not yet adopted VMT guidelines, a VMT analysis was conducted given forthcoming changes to CEQA requirements . *Sections 19.0* through *21.0* provide detailed information on the VMT analysis.

4.0 EXISTING CONDITIONS

Effective evaluation of the traffic impacts associated with the proposed Project requires an understanding of the existing transportation system within the Project area. ***Figure 4–1*** shows an existing conditions diagram, including signalized intersections and lane configurations.

4.1 Existing Roadway Conditions

The following is a description of the existing street network in the study area.

Rancho Bernardo Road is located within the City of San Diego's jurisdiction and is classified on the *Rancho Bernardo Community Plan* as a 6-Lane Major Arterial between I-15 SB and NB ramps, and as a 4-Lane Major Road between I-15 NB ramps and eastern city limits. It is currently built to its community plan classifications with a posted speed limit of 40 mph. On-street parking is generally permitted west of Bernardo Oaks Drive and bike lanes are provided east of Bernardo Oaks Drive. Bus stops are provided in both directions west of Pomerado road and in the westbound direction east of the Pomerado Road.

Espola Road, east of Summerfield Lane, is located within the City of Poway's jurisdiction and is classified as a 4-Lane Collector between Summerfield Lane and Titan Way and as a Specific Arterial between Titan Way and Poway Road on the City of Poway's *Transportation Master Element*. It is currently built as a 4-lane roadway with a two-way left-turn lane (TWLTL) between Summerfield Lane and Martincoit Road, as a 3-lane roadway (with two westbound lanes and one eastbound lane) between Martincoit Road and Old Coach Road, as a 4-lane roadway with a TWLTL between Old Coach Road and Willow Ranch, and as a 2-lane roadway with a TWLTL between Willow Ranch Road and Ezra Road. The posted speed limit is 45 mph. Bike lanes are provided in both directions. Bus stops are provided in the eastbound and westbound directions. On-street parking is generally not permitted.

Pomerado Road, north of Bernardo Heights Parkway is located within the City of San Diego jurisdiction and is classified as a 4-Lane Major Arterial on the *Rancho Bernardo Community Plan*. Between Pomerado Court and Avenida La Valencia, the roadway is constructed with four (4) lanes divided by a raised median. From Avenida La Valencia to Bernardo Heights Parkway, the 4-lane roadway is divided by a TWLTL. South of Bernardo Heights Parkway the roadway is within the City of Poway jurisdiction and is classified as a Major arterial between Pomerado Court and Ted Williams Parkway on the City of Poway's *Transportation Master Element*. The roadway is 4-lanes and undivided between the sections of Bernardo Heights Parkway and Gateway Park Road, and then again between Monte Vista Road and Twin Peaks Road. From Gateway Park Road to Monte Vista Road and Twin Peaks Road to Ted Williams Parkway, the roadway is separated by a raised median. The speed limit is 35 mph from Pomerado Court to Rios Road, 45 mph from Rios Road to Twin Peaks Parkway, and 40 mph from Twin Peaks Road to Ted Williams Parkway. Class II Bike Lanes are provided along Pomerado Road between Twin Peaks Road and Rancho Bernardo Road. Class III Bike Lanes are provided between Rancho Bernardo Road and Pomerado Court. Transit Routes 945 and 945A have stops along this road. On-street parking is generally prohibited on this section of the Pomerado Road.

Bernardo Center Drive between Bajada Road and Bernardo Plaza Court is located in the City of San Diego jurisdiction and is classified and currently built as a 4-Lane Major Arterial on the *Rancho Bernardo Community Plan* between Bajada Road and Bernardo Plaza Court. The posted speed limit is 40 mph north of Rancho Bernardo Road and 35mph South of Rancho Bernardo Road. Transit Route 945 have stops along this road north of Rancho Bernardo Road. Class II bike lanes are provided intermittently on both sides of the roadway between Bajada Road and Rancho Bernardo Road. A Class III bike route is provided along this roadway south of Rancho Bernardo Road. On-street parking is generally prohibited.

Rios Road, between Pomerado Road and Summerfield Lane, is an unclassified roadway on the *Rancho Bernardo Community Plan* and the City of Poway's *Transportation Master Element*. It is currently built as a 2-lane undivided road. The speed limit is 25 mph. The classification is assumed as 2-lane sub-collector (single-family) from City of San Diego Roadway Classification. On-street parking is allowed on both sides of the roadway.

Summerfield Lane, between Rios Road and Espola Road, is an unclassified roadway on the City of Poway's *Transportation Master Element* and is currently built as a 2-lane undivided road. The speed limit is 25 mph and the classification is assumed as Residential Collector from the City of Poway's Circulation Element Roadway Classification. On-street parking is allowed on both sides of the roadway.

Avenida La Valencia, between Pomerado Road and Avenida Florencia, is an unclassified roadway on the City of Poway's Transportation Master Element. It is currently built as a 2-lane undivided road. The speed limit is 25 mph. The classification is assumed as Residential Collector from the City of Poway's Circulation Element Roadway Classification.

Avenida Florencia, between Avenida La Valencia and Espola, is an unclassified roadway on the City of Poway's *Transportation Master Element*. It is currently built as a 2-lane undivided road. The speed limit is 25 mph. A Class III Bike Route is provided along this road. The classification is assumed as Residential Collector from the City of Poway's Circulation Element Roadway Classification.

Del Norte, between Stone Canyon Road and Avenida La Valencia, is an unclassified roadway on the City of Poway's *Transportation Master Element* and is currently built as a 2-lane undivided Road. The speed limit is 25 mph. The classification is assumed as Residential Collector from the City of Poway's Circulation Element Roadway Classification. Class III Bike Route is provided along this road.

Stone Canyon Road, between Pomerado Road and Martincoit Road, is classified and currently built as a Local Collector on the City of Poway's *Transportation Master Element*. The speed limit is 35 mph. A Class III Bike Route is provided between Pomerado Road and Del Norte. On-street parking is generally permitted.

Martincoit Road, between Stone Canyon Road and Espola Road, is classified and currently built as a Local Collector on the City of Poway's *Transportation Master Element*. The speed limit is 35 mph. On-street parking is provided on both sides of the road for the most part north of Avenida La Valencia.

Twin Peaks Road, is located in the City of Poway jurisdiction. Between World Trade Center and Pomerado Road, it is classified as a 6-Lane Prime Arterial on the City of Poway's *Transportation Master Element* with a posted speed limit of 50 mph. Between Pomerado Road and Espola Road, it is classified as a 4-Lane Major Arterial on the City of Poway's *Transportation Master Element* with a posted speed limit of 45 mph. Between Pomerado Road and Deerwood Drive, Twin Peak Road is separated by a raised median. From Tierra Bonita Road to Espola Road the roadway is divided by a striped median. On-street parking is prohibited on this section of the Twin Peaks Road. Class II bike lanes are provided along this roadway between World Trade Center and Espola Road.

Valle Verde Road, is classified as Local Collector based on the City of Poway's *Transportation Master Element*. Between Espola Road and St Andrewes Drive, it is currently built as a 2-lane undivided road with Two-Way Left-Turn Lane TWLTL. The speed limit is 35 mph. Class II Bike Lanes are provided on this section of the road. On-street parking is provided on both sides of the street.

St. Andrews Drive, is not classified on the City of Poway's *Transportation Master Element*. It is currently built as an undivided road with 25 mph posted speed limit. The classification is assumed as Residential Collector based on City of Poway's *Transportation Master Element.* On-street parking is permitted on both sides of the street.

Tam O Shanter Drive, is not classified on the City of Poway's *Transportation Master Element*. It is currently built as an undivided road with 25 mph posted speed limit. The classification is assumed as Residential Collector based on City of Poway's *Transportation Master Element.* On-street parking is permitted on both sides of the street.

Cloudcroft Drive, is not classified on the City of Poway's *Transportation Master Element*. It is currently built as an undivided road with 25 mph posted speed limit. The classification is assumed as Residential Collector based on City of Poway's *Transportation Master Element.* On-street parking is permitted on both sides of the street.

Bernardo Heights Parkway, west of Pomerado Road is located in the City of San Diego jurisdiction. It is currently built as a 4-lane divided roadway with a speed limit of 45 mph. The classification is assumed as Major Arterial from the City of San Diego's roadway classification. Class II buffered bike lanes are provided along both sides of the roadway west of Pomerado Road.

Lake Poway Road east of Espola Road is classified as a 2-Lane Local Collector on the City of Poway's *Transportation Master Element*. It is currently built as an undivided roadway with a posted speed limit of 30 mph. Class II Bike Lanes are provided on both sides of the roadway.

Titan Way west of Espola Road is classified as a 2-Lane Local Collector on the City of Poway's *Transportation Master Element*. It is currently built as an undivided roadway with a posted speed limit of 25 mph. On-street parking is generally prohibited.

4.2 Existing Traffic Volumes

4.2.1 *Intersections & Street Segments*

Existing weekday daily traffic counts, AM peak hour (7:00-9:00 AM) and PM peak hour (and 4:00-6:00 PM) peak hour traffic volume counts were collected at the study area intersections and street segments. The majority of the counts were conducted on December 4 and December 11, 2018 while schools were in session.

In addition, mid-day school peak hour (1:45 PM–3:45PM) traffic volume counts were conducted at study area intersections located within the 1.0-mile school buffer zones. *Section 15.0* of this report provides the school zone analysis including the traffic volume data.

Figure 4–2 shows the existing daily and AM and PM peak hour commute volumes. ***Appendix C*** contains the manual count sheets.

4.2.2 *Existing Freeway Volumes*

Existing Freeway traffic volumes were obtained from *Caltrans 2017 Volumes on California State Highways*, which is the latest publication available at the time of preparation of this report.

In addition to obtaining traffic volumes, "K" and "D" factors were obtained from *Caltrans 2017 Peak Hour Volume Data*. K factor is the percentage of ADT during the peak hour for both directions of travel. D factor is the percentage of the peak hour travel in the peak direction. The truck factor is the percentage of average daily truck traffic. Truck factors were obtained from *Caltrans 2016 Annual Average Daily Truck Traffic on the California State Highway System,* which is the latest publication available at the time of preparation of this report.

Appendix D contains the Caltrans freeway traffic volume data.

4.2.3 *Existing Ramp Volumes*

Existing on-ramp volumes during the AM/PM peak hours were developed from the AM/PM intersection volumes. The peak volumes used in the analysis represent the peak of the intersection as a whole.

4.3 Existing Cut-Through Traffic

A review of existing traffic volumes and travel patterns indicates that certain residential roadways function as "cut-through" routes between the *Point A:* Espola Road/Martincoit Road and *Point B:* Pomerado Road/Stone Canyon Road intersections. The roadways affected by cut-through traffic are Martincoit Road, Stone Canyon Road, Avenida Florencia and Avenida La Valencia, and Summerfield Lane and Rios Road. Four (4) routes exist within this area:

Route 1 (Primary): Espola Road – Pomerado Road

Route 2 (Cut-Through): Espola Road – Martincoit Road – Stone Canyon Road – Pomerado Road

Route 3 (Cut-Through): Espola Road – Avenida Florencia – Avenida La Valencia – Pomerado Road

Route 4 (Cut-Through): Espola Road – Summerfield Lane – Rios Road – Pomerado Road

Route 1 is the primary route between the *Point A:* Espola Road/Martincoit Road and *Point B:* Pomerado Road/Stone Canyon Road intersections and is approximately 2.5 miles and consists of five (5) traffic signals, excluding the Pomerado Road/Stone Canyon Road signal. Both roadways are major arterials designed to carry the majority of peak commute traffic. Green time is mostly allocated to the through traffic on Espola Road and Pomerado Road. The speeds on Espola Road and Pomerado Road range between 35-45 mph. During non-peak periods, this route takes approximately four (4) minutes. During morning and evening peak commute periods, travel times can increase.

Route 2 is a potential cut-through route that is approximately 2.3 miles and consists of three (3) stop-controlled intersections. Two (2) are all-way stop controlled intersections which stop the flow of through traffic along this route. One is a minor-street stop-sign that stops the eastbound to northbound trips from Stone Canyon Road to Martincoit Road. The speeds on Martincoit Road and Stone Canyon Road are 25 mph. The roadways are narrow, and windy, with stop signs along the way. Painted Rock Elementary is located along this route, which during peak school periods enforces slower speeds through school-implemented traffic control measures (student flaggers, supervising staff). During non-peak periods, this route takes approximately six (6) minutes. During morning and evening peak commute periods, travel times can increase.

Route 3 is a potential cut-through route that is approximately 2.1 miles and consists of one (1) traffic signal and four (4) all-way stop-controlled intersections. The speeds on Avenida Florencia and Avenida La Valencia are 25 mph. The roadways are narrow, and windy, with stop signs along the way that have likely been installed as a traffic calming measure for the neighborhood. A traffic signal exists at the Avenida La Valencia/ Pomerado Road intersection. During non-peak periods, this route takes approximately six (6) minutes. During morning and evening peak commute periods, travel times can increase

Route 4 is a potential cut-through route that is approximately 2.4 miles and consists of four (4) traffic signals and one (1) all-way stop-controlled intersection. The speeds on Summerfield Lane and Rios Road are 25 mph. Speed humps have been installed along this route as a traffic calming measure. During non-peak periods, this route takes approximately six (6) minutes. During morning and evening peak commute periods, travel times can increase.

Cut-through travel patterns were estimated using data science analytics. This data source was StreetLight Data. StreetLight Data uses data obtained from GPS devices such as cell phones and connected vehicles to help predict travel patterns and behaviors. An origin-destination analysis of a proxy site north of Espola Road (representing the project) was also completed using the travel behavior of existing trips starting from the proxy site (at *Point A:* Espola Road/Martincoit Road intersection

destined) to *Point B:* Pomerado Road/Stone Canyon Road intersection. The data analytics yielded the percentage of traffic originating from the origination to the intersection. The data used was collected for one year on weekdays over a 24-hour period, Tuesdays through Thursdays. Traffic patterns of background traffic were not reviewed since they are captured in the traffic counts.

Based on the origin-destination study, it was concluded that a portion of existing residential traffic (approximately 8%) north of *Point A:* Espola Road/ Martincoit Road intersection destined to *Point B:* Pomerado Road/ Stone Canyon Road intersection are likely to "cut-through" the residential communities noted as Routes 2, 3 and 4.

Based on the vehicular volumes from StreetLight Data, percentages of the existing residential traffic volumes between these destination intersections were identified as follows:

Route Number	**Route**	**Traffic Percentage (Primary Route)**	**Traffic Percentage (Cut-Through)**
Route 1 *(Primary)*	Espola Road – Pomerado Road	92%	N/A
Route 2 *(Cut-Through)*	Espola Road – Martincoit Road – Stone Canyon Road – Pomerado Road		3%
Route 3 *(Cut-Through)*	Espola Road – Avenida Florencia – Avenida La Valencia – Pomerado Road		4%
Route 4 *(Cut-Through)*	Espola Road – Summerfield Lane – Rios Road – Pomerado Road		1%
Total Trips from Point A to Point B		**92%**	**8%**

Source: StreetLight Data
Data Period: September 1, 2018 – August 31, 2018
Average Weekday: Tuesday – Thursday
Approximate Device Count: 1,000
Approximate Trip Count: 6,000

As a result of this exercise, it was concluded that Project traffic would utilize these alternative routes between the origin and destination intersections. Further details on these distribution patterns is provided in *Section 7.2* of this report.

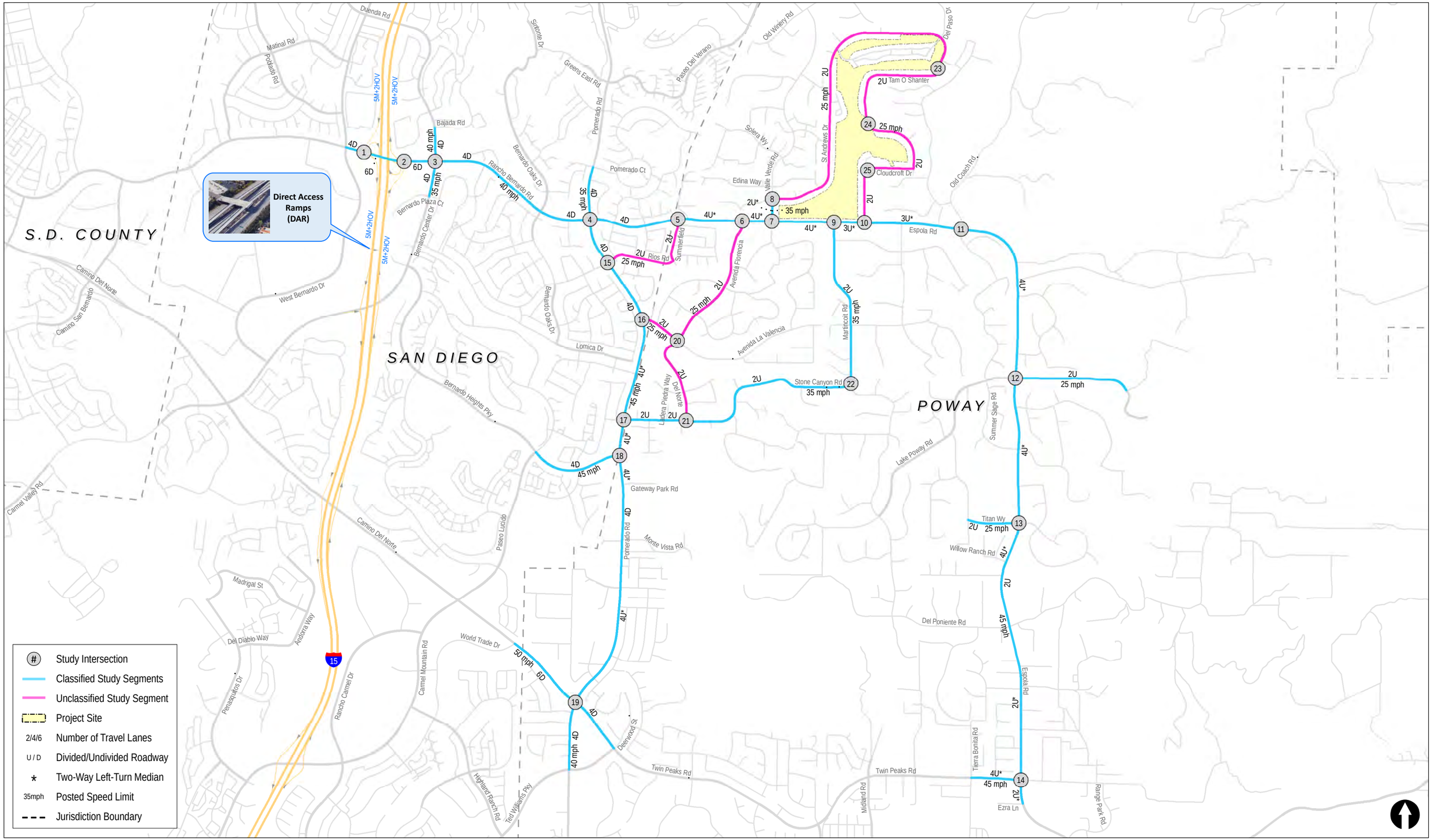
4.4 Existing Pedestrian & Bicycle Activity

Existing AM peak hour (7:00-9:00 AM) and PM peak hour (and 4:00-6:00 PM) pedestrian crossing and bicycle volumes were conducted at the same time the vehicular peak hour traffic counts were conducted when schools were in session. Pedestrian crossing volumes were collected for each leg of each intersection where a crosswalk is provided.

In addition, mid-day (1:45 PM–3:45 PM) pedestrian crossing and bicycle volumes were conducted at the intersections located within the 1.0-mile school buffer zones. *Section 16.0* later on in this report provides the school zone analysis.

4.5 Existing Transit Conditions

Transit conditions for the public transit types within the Project study area, including the MTS Bus Services were documented. In addition to obtaining transit service information, transit center amenities in the Project area were also documented. *Section 14.0* provides detailed information on the Transit Mobility in the area.



LINSCOTT LAW & GREENSPAN engineers

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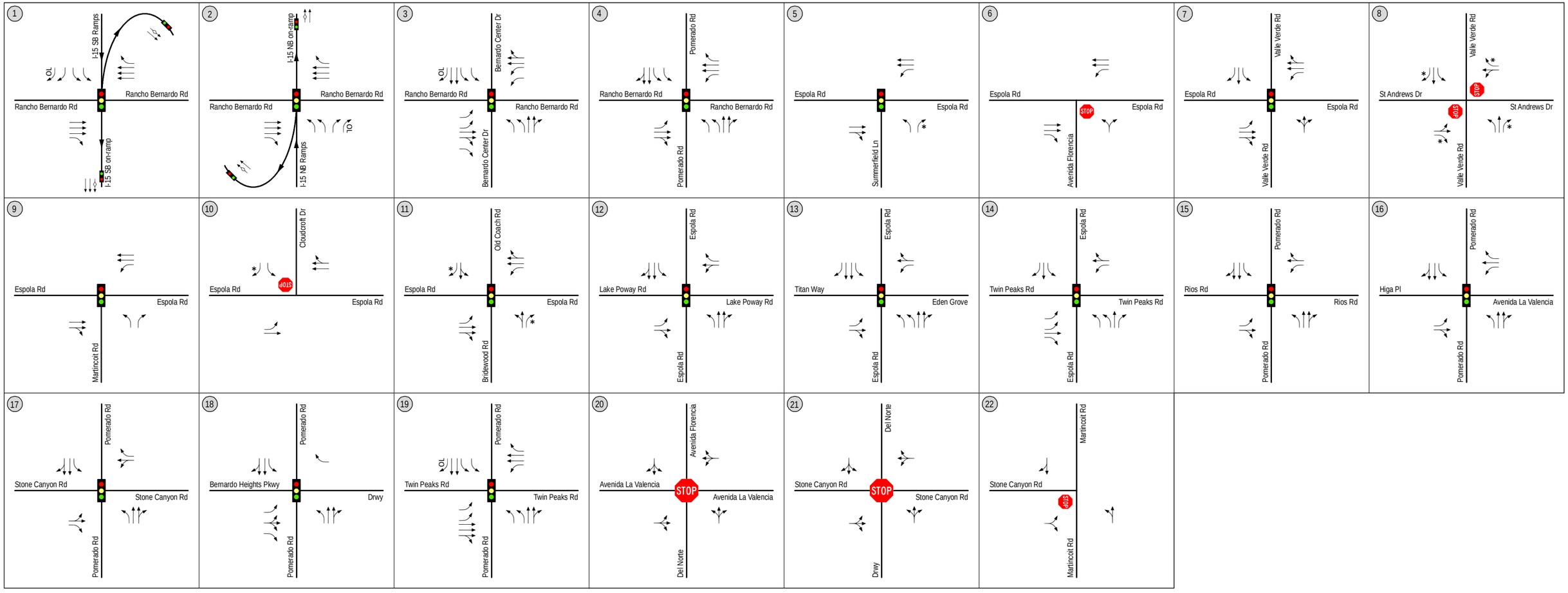
Figure 4-1

Existing Conditions Diagram

(Page 1 of 2)

THE FARM IN POWAY



Traffic Signal
Ramp Meter
Stop Sign
Turning Movements
HOV Lane
Sneaker Lane
Right-Turn Overlap

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Figure 4-1

Existing Conditions Diagram
(Page 2 of 2)

THE FARM IN POWAY

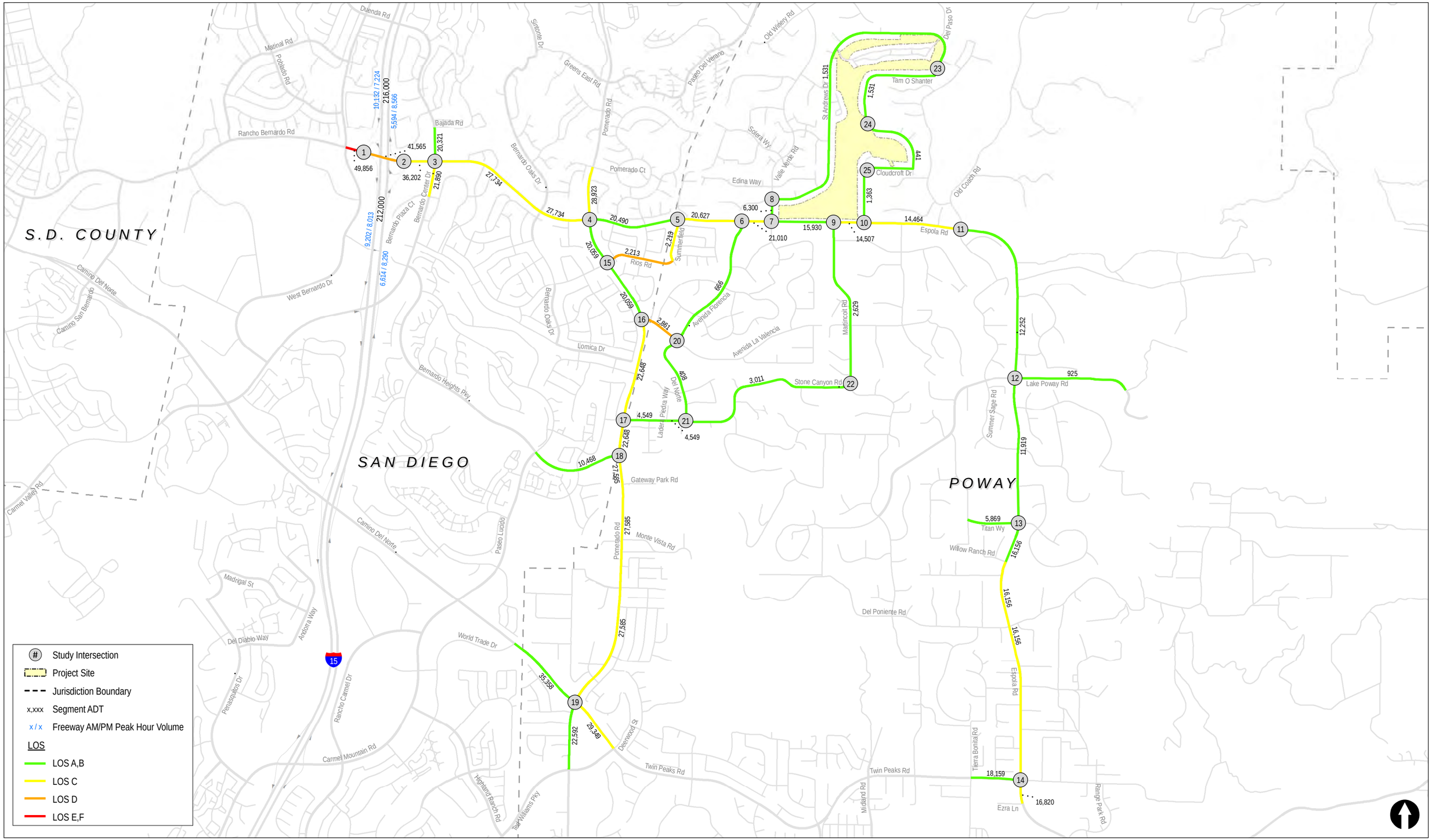

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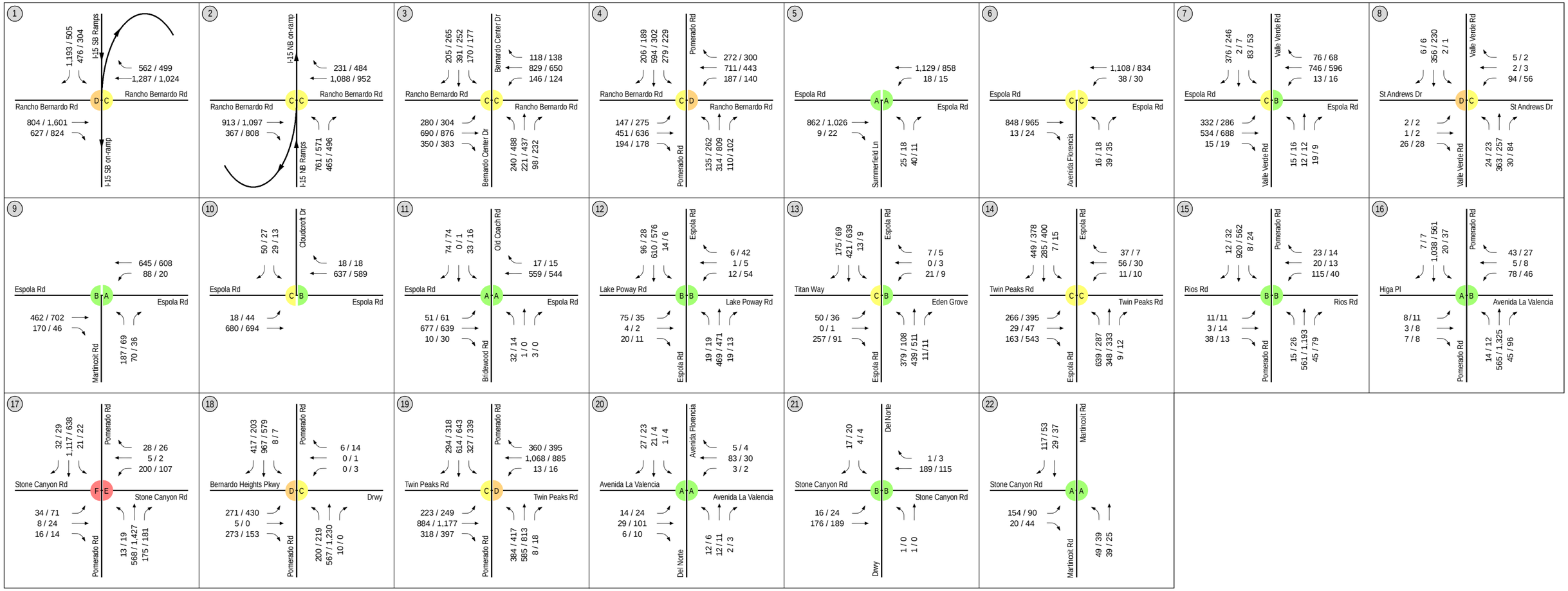
Figure 4-2

Existing Volumes (Segments)

(Page 1 of 2)

THE FARM IN POWAY



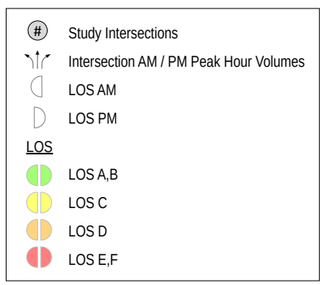


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Figure 4-2

Existing Traffic Volumes
(Page 2 of 2)

THE FARMS IN POWAY

5.0 SIGNIFICANCE CRITERIA

The following criteria was used to evaluate potential significant impacts based on either the City of Poway's significance criteria (SANTEC/ITE) or the City of San Diego's significance criteria, depending on where the facility is located.

5.1 City of Poway

A project is considered to have a significant impact if the new project traffic has decreased the operations of surrounding roadways by a defined threshold. The defined thresholds shown in ***Table 5–1*** below for freeway segments, roadway segments, intersections, and ramp meters are based on published SANTEC/ITE guidelines. If the project exceeds the thresholds in *Table 5–1*, then the project may be considered to have a significant project impact. A feasible mitigation measure will need to be identified to return the impact within the thresholds (pre-project + allowable increase) or the impact will be considered significant and unmitigated.

If project traffic causes the location to degrade from an acceptable LOS D or better to LOS E or LOS F, or exceeds the allowable thresholds as shown in *Table 5–1* below for currently LOS E or F operating locations, a significant impact occurs.

Under Existing and Near-Term conditions, impacts are considered to be *direct*. Impacts in the Horizon Year 2035 condition are considered to be *cumulative*, since the impacts would occur with a reduction in reserve capacity due to traffic generated by future growth in the City with the buildout of General Plan land uses.

TABLE 5–1
CITY OF POWAY (SANTEC/ITE)
TRAFFIC IMPACT SIGNIFICANCE THRESHOLDS

Level of Service with Project [a]	Allowable Increase Due to Project Impacts [b]	
	Roadway Segments	Intersections
	V/C [c]	Delay (sec.)
E & F	0.02	2.0

Source: SANTEC/ITE

Footnotes:

a. All level of service measurements are based upon HCM procedures for peak-hour conditions. However, V/C ratios for Roadway Segments may be estimated on an ADT/24-hour traffic volume basis (using the City's roadway capacity table or a similar LOS chart for each jurisdiction). The acceptable LOS roadways and intersections is generally "D".

b. If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are deemed to be significant. These impact changes may be measured from appropriate computer programs or expanded manual spreadsheets. The project applicant shall then identify feasible mitigations (within the Traffic Impact Study [TIS] report) that will maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable (see note a above) the project applicant shall be responsible for mitigating significant impact changes.

General Notes:

1. V/C = Volume to Capacity Ratio
2. Delay = Average stopped delay per vehicle measured in seconds for intersections.

5.2 City of San Diego

According to the City of San Diego's *Significance Determination Thresholds* dated January 2011, a project is considered to have a significant impact if project traffic would decrease the operations of surrounding roadways by a defined threshold. For projects deemed complete on or after January 1, 2007, the City defined thresholds are shown in ***Table 5–2***.

The impact is designated either a "direct" or "cumulative" impact. According to the City's *Significance Determination Thresholds*,

> "*Direct* traffic impacts are those projected to occur at the time a proposed development becomes operational, including other developments not presently operational but which are anticipated to be operational at that time (opening day)."
>
> "*Cumulative* traffic impacts are those projected to occur at some point after a proposed development becomes operational, such as during subsequent phases of a project and when additional proposed developments in the area become operational (short-term cumulative) or when affected community plan area reaches full planned buildout (long-term cumulative)."
>
> It is possible that a project's opening day (direct) impacts may be reduced in the long term, as future projects develop and provide additional roadway improvements (for instance, through

implementation of traffic phasing plans). In such a case, the project may have direct impacts but not contribute considerably to a cumulative impact."

For intersections and roadway segments affected by a project, level of service (LOS) D or better is considered acceptable under both direct and cumulative conditions."

If the project exceeds the thresholds in *Table 5–2*, then the project is considered to have a significant "direct" or "cumulative" project impact. A significant impact can also occur if a project causes the Level of Service to degrade from D to E, even if the allowable increases in *Table 5–2* are not exceeded. A feasible mitigation measure will need to be identified to return the impact within the City thresholds, or the impact will be considered significant and unmitigated.

TABLE 5–2
CITY OF SAN DIEGO
TRAFFIC IMPACT SIGNIFICANT THRESHOLDS

Level of Service with Project [b]	Allowable Increase Due to Project Impacts [a]			
	Freeways	Roadway Segments	Intersections	Ramp Metering [c]
	V/C	V/C	Delay (sec.)	Delay (min.)
E	0.010	0.02	2.0	2.0
F	0.005	0.01	1.0	1.0

Footnotes:

a. If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are determined to be significant. The project applicant shall then identify feasible improvements (within the Traffic Impact Study) that will restore/and maintain the traffic facility at an acceptable LOS.

b. All LOS measurements are based upon Highway Capacity Manual procedures for peak-hour conditions. However, V/C ratios for roadway segments are estimated on an ADT/24-hour traffic volume basis (using Table 2 of the City's Traffic Impact Study Manual). The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped locations). For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.

c. The allowable increase in delay at a ramp meter with more than 15 minutes delay and freeway LOS E is 2 minutes. The allowable increase in delay at a ramp meter with more than 15 minutes delay and freeway LOS F is 1 minute.

General Notes:

1. Delay = Average control delay per vehicle measured in seconds for intersections or minutes for ramp meters
2. LOS = Level of Service
3. V/C = Volume to Capacity ratio

6.0 EXISTING AUTO ANALYSIS

The analysis of existing conditions includes the assessment of the study area intersections, street segments, freeway mainline segments, and freeway on-ramps. A separate analysis of the school zone mid-day PM peak period is provided later on in *Section 16.0* of this report.

6.1 Peak Hour Intersection Operations

Intersection capacity analyses were conducted for the study intersections under Existing conditions. ***Table 6–1*** reports the intersection operations during the peak hour conditions. The study area intersections are calculated to currently operate at LOS D or better, except for:

- Intersection #17. Pomerado Road/ Stone Canyon Road – LOS F/E during the AM/PM peak hours *(City of San Diego)*

Appendix E contains the intersection analysis worksheets for the Existing scenario.

6.2 Daily Street Segment Operations

Existing street segment analyses were conducted for the study roadways. ***Table 6–2*** reports the Existing daily street segment operations. The study area street segments are calculated to currently operate at LOS D or better with the exception of:

- Segment #1. Rancho Bernardo Road: W. Bernardo Drive to I-15 – LOS F *(City of San Diego)*

6.3 Peak Hour Ramp Meter Operations

Table 6–3 summarizes the Existing ramp meter operations at the Rancho Bernardo Road / I-15 northbound and southbound ramps. It should be noted that the westbound to northbound ramp meter only operates during the PM peak hour and the westbound to southbound ramp meter only operates during the AM peak hour. As seen in *Table 6–3*, there is 1.7 minutes of existing delay calculated for the I-15 southbound ramp during the AM peak hour. There is no delay calculated at the I-15 northbound ramp as the peak demand is less than the most restrictive meter rate.

6.4 Peak Hour Freeway Mainline Operations

Table 6–4 summarizes the Existing freeway mainline segment operations. As seen in *Table 6–4*, the study area freeway mainline segments of I-15 are calculated to currently operate at LOS D or better under Existing conditions except for the following:

- Mainline #1. I-15 north of Rancho Bernardo Road
  - Northbound – LOS E (PM peak hour)
  - Southbound – LOS F (AM peak hour)
- Mainline #2. I-15 south of Rancho Bernardo Road
  - Southbound – LOS E (AM peak hour)

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

Intersection	Jur.	Control Type	Peak Hour	Existing	
				Delay[a]	LOS[b]
1. I-15 SB Ramps/ Rancho Bernardo Rd	Caltrans/ San Diego	Signal	AM	39.8	D
			PM	27.8	C
2. I-15 NB Ramps/ Rancho Bernardo Rd	Caltrans/ San Diego	Signal	AM	29.7	C
			PM	33.5	C
3. Bernardo Center Dr/ Rancho Bernardo Rd	San Diego	Signal	AM	25.4	C
			PM	33.4	C
4. Pomerado Rd/ Rancho Bernardo Rd	San Diego	Signal	AM	33.3	C
			PM	42.8	D
5. Summerfield Ln/ Espola Rd/ Rancho Bernardo Rd	Poway	Signal	AM	5.2	A
			PM	4.6	A
6. Avenida Florencia/ Espola Rd	Poway	MSSC [c]	AM	17.3	C
			PM	17.2	C
7. Valle Verde Rd/ Espola Rd	Poway	Signal	AM	34.4	C
			PM	18.4	B
8. Valle Verde Rd/ St Andrews Dr	Poway	TWSC	AM	26.9	D
			PM	16.0	C
9. Martincoit Rd/ Espola Rd	Poway	Signal	AM	10.2	B
			PM	7.1	A
10. Cloudcroft Dr/ Espola Rd	Poway	MSSC	AM	18.5	C
			PM	14.3	B
11. Old Coach Rd/ Espola Rd	Poway	Signal	AM	9.7	A
			PM	8.7	A
12. Espola Rd/ Lake Poway Rd	Poway	Signal	AM	15.6	B
			PM	14.7	B
13. Espola Rd/ Eden Grove/ Titan Way	Poway	Signal	AM	31.0	C
			PM	12.0	B
14. Espola Rd/ Twin Peaks Rd	Poway	Signal	AM	32.6	C
			PM	29.0	C
15. Pomerado Rd/ Rios Rd	San Diego	Signal	AM	10.9	B
			PM	10.7	B
16. Pomerado Rd/ Avenida La Valencia	San Diego	Signal	AM	9.3	A
			PM	10.0	B

Continued on Next Page

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

Intersection	Jur.	Control Type	Peak Hour	Existing Delay[a]	Existing LOS[b]
Continued from Previous Page					
17. Pomerado Rd/ Stone Canyon Rd	San Diego	Signal	AM	93.8	F
			PM	79.3	E
18. Pomerado Rd/ Bernardo Heights Pkwy	San Diego	Signal	AM	36.1	D
			PM	23.1	C
19. Pomerado Rd/ Twin Peaks Rd	Poway	Signal	AM	32.3	C
			PM	36.5	D
20. Avenida Florencia/ Avenida La Valencia	Poway	AWSC [d]	AM	7.5	A
			PM	7.6	A
21. Del Norte/ Stone Canyon Rd	Poway	AWSC	AM	9.1	A
			PM	8.4	A
22. Martincoit Rd/ Stone Canyon Rd	Poway	MSSC	AM	9.5	A
			PM	7.8	A

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service
c. Minor Street Stop Controlled intersection. Minor street left-turn delay reported.
d. All-Way Stop Controlled intersection. Average intersection delay reported.

General Notes:

1. Jur = Jurisdiction

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 6–2
EXISTING STREET SEGMENT OPERATIONS

Street Segment	Jur.	Functional Classification	Capacity (LOS E) [a]	ADT [b]	LOS [c]	V/C [d]
Rancho Bernardo Rd						
1. W. Bernardo Dr to I-15 SB Ramps	Caltrans/ San Diego	4-Lane Major Arterial	40,000	49,856	F	1.247
2. I-15 SB Ramps to I-15 NB Ramp	Caltrans/ San Diego	6-Lane Major Arterial	50,000	41,565	D	0.832
3. I-15 NB Ramps to Bernardo Center Dr	Caltrans/ San Diego	6-Lane Major Arterial	50,000	36,202	C	0.725
4. Bernardo Center Dr to Pomerado Rd	San Diego	4-Lane Major Arterial	40,000	27,734	C	0.694
5. Pomerado Rd to Summerfield Ln	San Diego	4-Lane Major Arterial	40,000	20,490	B	0.513
Espola Rd						
6. Summerfield Ln to Avenida Florencia	Poway	4-Lane Collector w/ TWLTL	41,000	20,627	C	0.504
7. Avenida Florencia to Valle Verde Rd	Poway	4-Lane Collector w/ TWLTL	41,000	21,010	C	0.513
8. Valle Verde Rd to Martincoit Rd	Poway	4-Lane Collector w/ TWLTL	41,000	15,930	B	0.389
9. Martincoit Rd to Cloudcroft Dr	Poway	3-Lane Collector w/ TWLTL	31,000	14,507	C	0.468
10. Cloudcroft Dr to Old Coach Rd	Poway	3-Lane Collector w/ TWLTL	31,000	14,464	C	0.467
11. Old Coach Rd to Lake Poway Rd	Poway	3-Lane Collector w/ TWLTL	31,000	12,252	B	0.396
12. Lake Poway Rd to Titan Wy	Poway	4-Lane Collector w/ TWLTL	41,000	11,919	A	0.291
13. Titan Wy to Willow Ranch Rd	Poway	4-Lane Collector w/ TWLTL	41,000	16,156	B	0.395
14. Willow Ranch Rd to Del Poniente Rd	Poway	Specific Arterial	29,000	16,156	C	0.558
15. Del Poniente Rd to Twin Peaks Rd	Poway	Specific Arterial	29,000	16,156	C	0.558
16. Twin Peaks Rd to Ezra Ln	Poway	Specific Arterial	29,000	16,820	C	0.580
Pomerado Rd						
17. Pomerado Ct to Rancho Bernardo Rd	San Diego	4-Lane Major Arterial	40,000	28,923	C	0.724
18. Rancho Bernardo Rd to Rios Rd	San Diego	4-Lane Major Arterial	40,000	20,059	B	0.502
19. Rios Rd to Avenida La Valencia	San Diego	4-Lane Major Arterial	40,000	20,059	B	0.502
20. Avenida La Valencia to Stone Canyon Rd	San Diego	4-Lane Major Arterial	40,000	22,648	C	0.567
21. Stone Canyon Rd to Bernardo Heights Pkwy	San Diego	4-Lane Major Arterial	40,000	22,648	C	0.567
22. Bernardo Heights Pkwy to Pomerado Hospital	Poway	Major Arterial	50,000	27,585	C	0.552

Continued on Next Page

TABLE 6–2
EXISTING STREET SEGMENT OPERATIONS

Street Segment	Jur.	Functional Classification	Capacity (LOS E) [a]	ADT [b]	LOS [c]	V/C [d]
Continued from Previous Page						
23. Pomerado Hospital to Monte Vista Rd	Poway	Major Arterial	50,000	27,585	C	0.552
24. Monte Vista Rd to Twin Peaks Rd	Poway	Major Arterial	50,000	27,585	C	0.552
25. Twin Peaks Rd to Ted Williams Pkwy	Poway	Major Arterial	50,000	22,592	B	0.452
Bernardo Center Dr						
26. Bajada Rd to Rancho Bernardo Rd	San Diego	4-Lane Major Arterial	40,000	20,321	B	0.509
27. Rancho Bernardo Rd to Bernardo Plaza Ct	San Diego	4-Lane Major Arterial	40,000	21,890	C	0.548
Rios Rd						
28. Pomerado Rd to Summerfield Ln	San Diego	Sub-Collector (single-family)	3,500	2,213	D	0.633
Summerfield Ln						
29. Rios Rd to Rancho Bernardo Rd	Poway	2-Lane Residential Collector	3,800	2,213	C	0.583
Avenida La Valencia						
30. Pomerado Rd to Avenida Florencia	Poway	2-Lane Residential Collector	3,800	2,861	D	0.753
Avenida Florencia						
31. Rancho Bernardo Rd and Avenida La Valencia	Poway	2-Lane Residential Collector	3,800	666	A	0.176
Del Norte						
32. Avenida La Valencia to Stone Canyon Rd	Poway	2-Lane Residential Collector	3,800	408	A	0.108
Stone Canyon Rd						
33. Pomerado Rd to Avenida Florencia	Poway	2-Lane Local Collector	14,000	4,549	A	0.325
34. Avenida Florencia to Martincoit Rd	Poway	2-Lane Local Collector	14,000	3,011	A	0.216
Martincoit Rd						
35. Rancho Bernardo Rd to Stone Canyon Rd	Poway	2-Lane Collector w/o TWLTL	14,000	2,629	A	0.188
Twin Peaks Rd						
36. World Trade Center to Pomerado Rd	Poway	6-Lane Prime Arterial	63,000	35,358	B	0.562
37. Pomerado Rd to Deerwood Dr	Poway	4-Lane Major Arterial	50,000	29,349	C	0.587
38. Tierra Bonita Rd to Espola Rd	Poway	4-Lane Major Arterial	50,000	18,159	A	0.364
Continued on Next Page						

TABLE 6–2
EXISTING STREET SEGMENT OPERATIONS

Street Segment	Jur.	Functional Classification	Capacity (LOS E) [a]	ADT [b]	LOS [c]	V/C [d]
Continued from Previous Page						
Valle Verde Rd						
39. Espola Rd to St Andrews Dr	Poway	2-Lane Local Collector	14,000	6,300	B	0.450
St. Andrews Dr						
40. Valle Verde Rd to Tam O Shanter Dr	Poway	2-Lane Residential Collector	3,800	1,531	B	0.403
Tam O'Shanter Dr						
41. St Andrews Dr to Entrance 'A'	Poway	2-Lane Residential Collector	3,800	1,531	B	0.403
42. Entrance 'B' to Cloudcroft Dr	Poway	2-Lane Residential Collector	3,800	441	A	0.117
Cloudcroft Dr						
43. Tam O Shanter Dr to Espola Rd	Poway	2-Lane Residential Collector	3,800	1,363	B	0.359
Bernardo Heights Pkwy						
44. Paseo Lucido to Pomerado Rd	San Diego	4-Lane Major Arterial	40,000	10,468	A	0.262
Lake Poway Rd						
45. East of Espola Rd	Poway	2-Lane Local Collector	14,000	925	A	0.067
Titan Way						
46. West of Espola Rd	Poway	2-Lane Collector w/o TWLTL	14,000	5,869	B	0.420

Footnotes:

a. Capacities based on City of Poway and City of San Diego Roadway Classification & LOS table *(See Appendix B).*
b. Average Daily Traffic Volumes
c. Level of Service
d. Volume to Capacity ratio

TABLE 6–3
EXISTING CALTRANS RAMP METER ANALYSIS – FIXED RATE

Location	Peak Hour [a]	Existing						
		Volume		Peak Hour Demand (D) [b]	Meter Rate (R) [c]	Excess Demand (E) (veh)	Delay (min)	Queue (ft) [d]
		SOV	HOV					
WB Rancho Bernardo Rd to I-15 SB (1 SOV+ 1 HOV)	AM	506	56	506	492	14	1.7	350
WB Rancho Bernardo Rd to I-15 NB (1 SOV+ 1 HOV)	PM	447	37	447	475	0	0	0

Footnotes:

a. Selected peak hour based on period when ramp meter is operating.
b. Peak hour demand in vehicles/hour/lane for SOV and HOV lanes.
c. Meter rate "R" is the most restrictive rate at which the ramp meter (signal) discharges traffic onto the freeway (obtained from Caltrans). The discharge rate varies depending on the mainline volumes.
d. Queue calculated assuming vehicle length of 25 feet.

General Notes:

1. SOV = Single Occupancy Vehicle, HOV = High Occupancy Vehicle
2. Lane utilization factor accounted for in peak hour demand calculation. (HOV % based on observed PeMS data).

TABLE 6–4
EXISTING FREEWAY MAINLINE OPERATIONS

Freeway Segment	Dir	# of Lanes [a]	Volume [b]	%K [c]		%D [c]		Truck Factor	Peak Hour Volume [c]		V/C [d]		Density [e]		LOS [f]	
				AM	PM	AM	PM		AM	PM	AM	PM	AM	PM	AM	PM
Interstate 15																
1. North of Rancho Bernardo Rd	NB	5M	216,000	7.28%	7.31%	35.57%	54.25%	7.1%	5,594	8,566	0.590	0.903	20.0	36.3	C	E
	SB	5M		7.28%	7.31%	64.43%	45.75%	7.1%	10,132	7,224	1.067	0.761	> 45.0	27.5	F	D
2. South of Rancho Bernardo Rd	NB	5M	212,000	7.46%	7.69%	41.82%	50.85%	7.1%	6,614	8,290	0.697	0.873	24.4	34.1	C	D
	SB	5M		7.46%	7.69%	58.18%	49.15%	7.1%	9,202	8,013	0.969	0.844	41.9	32.2	E	D

Footnotes:

a. Lane geometry taken from PeMS lane configurations at corresponding postmile.
b. Existing ADT volumes from most recent Caltrans Traffic Census Program (2017).
c. Peak hour volumes calculated from K and D factors provided in most recent Caltrans Traffic Census Program *Peak Hour Volume Data* (2017).
d. V/C = (Peak Hour Volume/Hourly Capacity)
e. Density measures passenger cars per mile per lane. Density = Flow Rate (passenger-cars/hour/lane) ÷ Speed (average passenger-car speed in mph).
f. LOS = Level of Service

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Note:

1. M = Mainline
2. A = Auxiliary
3. Truck factor sourced to most recent Caltrans Traffic Census Program *Peak Hour Volume Data* (2016).

7.0 AUTO TRIP GENERATION, DISTRIBUTION & ASSIGNMENT

As discussed in *Section 2.2* of this report, the Project proposes to develop the site with 160 residential units and non-residential uses primarily site-serving agricultural and social land uses. No existing trip generation credits were taken for the former golf course use.

The creative vision for The Farm in Poway involves the creation of small residential enclaves supported by recreational, social, and educational opportunities within a farm setting. Residents will benefit from the close proximity to fresh, organically grown food, which can be bought and sold on-site via a local farm stand, farmers' market, or through a Community Supported Agriculture (CSA) program. These community connections will be further enhanced through the provision of trails, parks, and other recreational amenities that deliver a vast array of convenient, healthy, and social activities. Finally, educational amenities including various types of gardens, a greenhouse, and a butterfly aviary offer community residents and the surrounding community resources to learn about nature, food, wellness, and more. Community and recreation buildings, including an Event Barn, will reinforce and enhance the agrarian character of the community while providing visual and social focal points. Recreational sites are distributed throughout the community and connected to trails and sidewalks to provide ample opportunities for fun and relaxation for new and existing residents.

7.1 Trip Generation

The Farm at Poway is a combination of multiple land uses, as discussed above. The Project is designed as an "Agri-hood" that places residential uses adjacent to amenity land uses that will primarily cater to residents of the site. The Event Barn, Social at the Gardens, and The Club will connect residents of the site socially and provide programmed events for both residents and for the nearby community.

Trip generation rates for each land use are derived from the SANDAG *"Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region"* published on April 2002. Many of the non-residential uses proposed by the Project are atypical and do not have published trip generation rates. Based on the Specific Plan Project Description, it would not be expected that the non-residential land uses would generate many new trips from outside the site. It is more likely that these uses will serve residents of The Farm in Poway with the capacity to welcome community residents as well. However, for purposes of using commonly known, published trip rates, SANDAG was sourced for gross trip generation, internal mixed-use reductions, and net trip generation. Special consideration was given where SANDAG rates were not available (i.e. peak hour splits, in/out trips) and is noted in the calculations.

A review of the trip rates for the former golf course/country club use were also reviewed for comparative purposes and demonstrate the historical baseline for the site. The former golf course/country club was in operation for approximately 60 years and ceased operations in November 2017. The rates are listed below in ***Table 7–1*** for each use with additional footnotes explaining variances in the rate source and/or rate selection. ***Table 7–2*** shows the trip generation rates for the former Stoneridge Country Club to be replaced.

TABLE 7–1
TRIP GENERATION RATES – PROPOSED PROJECT

Project Component	Source	Land Use	Rate
Non-Residential			
The Club [a] *Pool/4 tennis courts,/16 pickleball courts/Multi-Purpose Room*	SANDAG	Racquetball/ Health Club	30 /KSF
Social @ The Gardens [b] *Café/Coffee/Wine & Beer Garden*	SANDAG	Quality Restaurant	100 /KSF
The Barn [c] *Wedding Venue/Music Venue/ Multi-Purpose Room*	SANDAG	Theater (multiplex/with matinee)	40 /KSF
Programmed Open Space Recreation [d] *The Butterfly Farm Vivarium/Greenhouse, Classroom, Picnic Area, Garden, Trails*	SANDAG/ITE [d]	City Park	50 /acre
Agri-Fields [e]	SANDAG/ITE [e]	Agriculture	2 /acre
Unprogrammed Open Space Conservation [f] *Tranquility Garden, Tot Lot, Community Gardens, Open Space Recreation*	SANDAG/ITE [f]	Neighborhood/ County Park	5 /acre
Residential [g]			
110'x180' Single-Family *(2.5 DU/Acre)*	SANDAG	Single-Family Detached > 2 < 6 DU/Acre	10 /DU
70'x100' Single-Family *(4.7 DU/Acre)*	SANDAG	Single-Family Detached > 2 < 6 DU/Acre	10 /DU
35'x100' Twin Homes *(10.7 DU/Acre)*	SANDAG	Condominium (or any multi-family) > 6 < 10 DU/Acre	10 /DU
100'x100' Single-Family *(3.5 DU/Acre)*	SANDAG	Single-Family Detached > 2 < 6 DU/Acre	10 /DU
100'x100' Single-Family Cottage Courts *(5.4 DU/Acre)*	SANDAG	Single-Family Detached > 2 < 6 DU/Acre	10 /DU

Footnotes:

a. SANDAG rate for "Racquetball/Health Club" used.
b. SANDAG "Quality Restaurant" rate applied.
c. SANDAG trip rate for "Theaters" is used to calculate generated trips. The rate was reduced by 50% given the unlikelihood of weekday activity per the Specific Plan. To account for potential morning trips from schools to educational sites, morning peak hour share was increased from 1% to 4% (6:4). It should also be noted that weddings, parties, and similar larger events shall be limited in accordance with the Specific Plan to minimize traffic impacts. In addition, the amount of special events at The Barn will be limited in use and do not represent “typical day” conditions.
d. Programmed Park rate sourced to SANDAG rate for "City Park". City Park rate is defined as being “developed with meeting room and sport facilities.” It is anticipated that the Programmed Park uses would allow for educational activities for students from local schools. Programmed Park represents the potential for scheduled activities occurring during weekday periods.
e. SANDAG "Agriculture" rate applied. For peak splits, ITE 818 "Nursery (Wholesale)" rate applied. (Ins/Outs sourced to 9th Edition, since 10th doesn't provide Ins/Outs).
f. Unprogrammed Park rate sourced to SANDAG rate for "Neighborhood/County (undeveloped)" Park. Unprogrammed Park uses represent passive open space-type uses with no scheduled weekday activities.
g. SANDAG residential trip rates based on density (dwelling units/acre).

General Notes:

1. DU = dwelling units
2. KSF = Thousand square feet

TABLE 7–2
TRIP GENERATION RATES – FORMER STONERIDGE COUNTRY CLUB

Former Use	Source	Land Use	Rate
Stoneridge Country Club			
Golf Course [a]	SANDAG	Golf Course	40 /Hole
Club House [b]	SANDAG	Racquetball/ Health Club	30 /KSF

Footnotes:

a. SANDAG rate for "Golf Course" used.
b. SANDAG rate for "Racquetball/Health Club" used.

General Notes:

1. DU = dwelling units
2. KSF = Thousand square feet

Table 7–3 tabulates the Project traffic generation using the rates in *Table 7–1* for the proposed Project. The total trips generated by the Project are approximately 2,938 ADT with 189 AM peak hour trips (72 inbound / 117 outbound) and 273 PM peak hour trips (181 inbound / 92 outbound).

Where a project contains a mix of uses that would interact with one another, a deduction against a project's trips may be taken to account for the share of trips that would occur internally within the project site. A mixed-use project is a development that blends different land use types whose functions are physically and functionally integrated. A prime example of a mixed-use project would be the combination of residential and retail uses. For a project to be considered mixed use, the key feature is proximity to the integrated land uses. These uses can be near each other, within walking/bicycling distance, and within driving distance of each other within the project boundary, i.e. trips do not leave a project site. The internal capture rate from the SANDAG guide was reviewed for use in the trip generation. The SANDAG guide allows for a reduction in trip generation for projects that have access to transit (5%) and projects that include a mix of uses such as residential with retail (10%), for a total of up to 15%. The non-residential uses on-site consist of recreational, retail, educational, and event space. These uses are primarily provided as amenities to local residents within the site. For example, it would not be expected that a large number of trips generated by The Club, The Social, and weekday events at The Barn would come from external uses. The majority of these trips would likely be residents of The Farm in Poway that either walk, bike, or use alternative vehicles to get from their homes to these amenity uses. To capture the phenomenon of these captured internal trips, the SANDAG mixed-use reduction of 15% was applied given the Project's close proximity to transit and mix of residential and site-serving non-residential uses. With this applied credit, the net new trips generated by the Project are approximately 2,524 ADT with 169 AM peak hour trips (62 inbound / 107 outbound) and 237 PM peak hour trips (159 inbound / 78 outbound).

Prior to the closure of the Stoneridge Country Club, the golf course land use was calculated to generate approximately 1,440 ADT with 80 AM peak hour trips (58 inbound / 22 outbound) and 130 PM peak hour trips (59 inbound / 71 outbound) as shown in ***Table 7–4***. As previously stated, no existing trip generation credits were taken for the former golf course/country club use.

TABLE 7–3
TRIP GENERATION – PROPOSED PROJECT

ID	Land Use	Size	Daily Trip Ends (ADTs) [a]		AM Peak Hour					PM Peak Hour				
			Rate [b]	Volume	Rate [b]	In:Out Split	Volume In	Volume Out	Volume Total	Rate [b]	In:Out Split	Volume In	Volume Out	Volume Total
	Non-Residential													
A	The Club [c] *Pool/4 tennis courts/16 pickleball courts/Multi-Purpose Room*	6 KSF	30/KSF	180	4%	60:40	4	3	7	9%	60:40	10	6	16
B	Social @ The Gardens [d] *Café/Coffee/Wine & Beer Garden*	4.8 KSF	100/KSF	480	1%	60:40	3	2	5	8%	70:30	27	11	38
C	The Barn [e] *Wedding Venue/Music Venue/ Multi-Purpose Room*	5.3 KSF	40/KSF	212	4%	60:40	5	3	8	8%	60:40	10	7	17
D	Programmed Open Space Recreation [f] *The Butterfly Farm Vivarium/Greenhouse, Classroom, Picnic Area, Garden, Trails*	5.15 Acres	50/Acre	258	13%	50:50	17	17	34	9%	50:50	12	11	23
E	Agri-Fields [g]	8.7 Acres	2/Acre	17	0.26	43:57	1	1	2	0.45	57:43	2	2	4
F	Unprogrammed Open Space Conservation [h] *Tranquility Garden, Tot Lot, Community Gardens, Open Space Recreation*	47.0 Acres	5/Acre	235	4%	50:50	5	4	9	8%	50:50	10	9	19
G	**Subtotal Non-Residential Trips (A+B+C+D+E+F)**			**1,382**	**—**	**—**	**35**	**30**	**65**	**—**	**—**	**71**	**46**	**117**
H	**Non-Residential Internal Capture (G*15%) [i]**		**15%**	**(207)**	**—**	**—**	**(5)**	**(5)**	**(10)**	**—**	**—**	**(11)**	**(7)**	**(18)**
I	**Net New Non-Residential Trips (G+H)**			**1,175**	**—**	**—**	**30**	**25**	**55**	**—**	**—**	**60**	**39**	**99**
	Residential [j]													
J	110'x180' Single-Family *(2.5 DU/Acre)*	20 DU	10/DU	200	8%	30:70	5	11	16	10%	70:30	14	6	20
K	70'x100' Single-Family *(4.7 DU/Acre)*	13 DU	10/DU	130	8%	30:70	3	7	10	10%	70:30	9	4	13
L	35'x100' Twin Homes *(10.7 DU/Acre)*	22 DU	8/DU	176	8%	20:80	3	11	14	10%	70:30	13	5	18
M	100'x100' Single-Family *(3.5 DU/Acre)*	15 DU	10/DU	150	8%	30:70	4	8	12	10%	70:30	11	4	15
N	100'x100' Single-Family Cottage Courts *(5.4 DU/Acre)*	90 DU	10/DU	900	8%	30:70	22	50	72	10%	70:30	63	27	90
O	**Subtotal Residential Trips (J+K+L+M+N)**	**160 DU**	**—**	**1,556**	**—**	**—**	**37**	**87**	**124**	**—**	**—**	**110**	**46**	**156**
P	**Residential Internal Capture (Match Non-Residential) (H) [k]**			**(207)**	**—**	**—**	**(5)**	**(5)**	**(10)**	**—**	**—**	**(11)**	**(7)**	**(18)**
Q	**Net New Residential Trips (O+P)**			**1,349**	**—**	**—**	**32**	**82**	**114**	**—**	**—**	**99**	**39**	**138**
	Gross Trip Generation (G+O)			**2,938**	**—**	**—**	**72**	**117**	**189**	**—**	**—**	**181**	**92**	**273**
	Total Internal Capture			**(414)**	**—**	**—**	**(10)**	**(10)**	**(20)**	**—**	**—**	**(22)**	**(14)**	**(36)**
	Net New Trip Generation (I+Q)			**2,524**	**—**	**—**	**62**	**107**	**169**	**—**	**—**	**159**	**78**	**237**

Footnotes:

a. Average Daily Trips

b. Rates are based on SANDAG's *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002*, for all gross, primary, and pass-by-diverted trip rates, except where noted. SANDAG calculates AM and PM peak hour trips as a percentage of ADT. ITE rates utilize ratios of the independent variable for calculating ADT, AM and PM peak hour trips.

c. SANDAG rate for "Racquetball/Health Club" used.

d. SANDAG "Quality Restaurant" rate applied.

e. SANDAG trip rate for "Theaters" is used to calculate generated trips. The rate was reduced by 50% given the unlikelihood of weekday activity per the Specific Plan. To account for potential morning trips from schools to educational sites, morning peak hour share was increased from 1% to 4% (6:4). It should also be noted that weddings, parties, and similar events should be limited in accordance with the Specific Plan to minimize traffic impacts.

f. Programmed Park rate sourced to SANDAG rate for "City Park". City Park rate is defined as being developed with meeting room and sport facilities. Programmed Park represents the potential for scheduled activities occurring during weekday periods.

g. SANDAG "Agriculture" rate applied. For peak splits, ITE 818 "Nursery (Wholesale)" rate applied. (Ins/Outs sourced to 9th Edition, since 10th doesn't provide Ins/Outs).

h. Unprogrammed Park rate sourced to SANDAG rate for "Neighborhood/County (undeveloped)" Park. Unprogrammed Park uses represent passive open space-type uses with no scheduled weekday activities.

i. SANDAG allows a 5% trip reduction for land uses with transit access or near transit stations accessible within a 0.25-mile distance. The Poway Loop MTS Route 945A stops directly adjacent to the Project site. In addition, SANDAG allows an additional 10% mixed-use reduction for developments where residential and commercial land uses are combined. For the site, this applies to the non-residential uses as it would not be expected that the majority of trips generated by The Club, Social Room, Event Barn, and all Open Space uses would likely be from outside the residents of the proposed Project site. Thus, 15% internal capture appears to be a conservative internal capture rate. The non-residential internal capture volumes were deducted from the reciprocal residential trips.

j. SANDAG residential trip rates based on density (dwelling units/acre).

k. The mixed-use internal capture reduction from the non-residential uses results in a reciprocal reduction in trips for the residential uses.

General Notes:

1. SANDAG calculates daily trips using a rate based on an independent variable (i.e., dwelling units, students, acres) and expresses AM and PM peak hour trips as a percentage of ADT. ITE rates utilize ratios of the independent variable for calculating ADT, AM and PM peak hour trips.
2. DU = dwelling units
3. KSF = Thousand square feet

TABLE 7–4
TRIP GENERATION – FORMER STONERIDGE COUNTRY CLUB

Land Use (To be Replaced)	Size	Daily Trip Ends (ADTs) [a]		AM Peak Hour					PM Peak Hour				
		Rate [b]	Volume	Rate [b]	In:Out Split	Volume In	Volume Out	Volume Total	Rate [b]	In:Out Split	Volume In	Volume Out	Volume Total
Stoneridge Country Club													
Golf Course [c]	18 Holes	40/Hole	720	7%	80:20	41	10	51	9%	30:70	20	45	65
Club House [d]	24 KSF	30/KSF	720	4%	60:40	17	12	29	9%	60:40	39	26	65
Total Former Site Trip Generation			**1,440**	**—**	**—**	**58**	**22**	**80**	**—**	**—**	**59**	**71**	**130**

Footnotes:

a. Average Daily Trips
b. Rates are based on SANDAG's *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002*.
c. SANDAG rate for "Golf Course" used.
d. SANDAG "Racquetball/Health Club" rate applied. Square footage estimated from aerial imagery.

General Notes:

1. Former Stoneridge Country Club trip generation represents the Historical Baseline for the Project site.
2. KSF = Thousand square feet
3. No existing trip generation credits were taken for the former golf course/country club use.

7.2 Trip Distribution and Assignment

The distribution of Project traffic was determined using StreetLight Data as a source. This data source utilizes GPS and location services data from automobiles and mobile devices to identify travel patterns for a selected area. An origin-destination analysis was completed using the travel behavior of existing single-family residential homes located in the residential community to the west, adjacent to the site. The travel patterns and behavior of these existing residences was considered reasonably proxy for what could be expected by the Project's residents. The data analytics yielded the percentage of traffic originating from the adjacent area to cordon lines on the nearby roadway network. For the Project distribution a one-year period during Tuesday-Thursday weekdays was selected to develop the distribution for use in the analysis. As a result of this exercise, 34% of Project trips are expected to be regional trips using I-15 (25% south of Ranch Bernardo Road, 9% north of Rancho Bernardo Road). The remaining 66% of trips would use local streets to reach their ultimate destinations.

It should be noted that Project traffic was distributed through the identified "cut-through" routes along Martincoit Road – Stone Canyon Road, Avenida Florencia – Avenida La Valencia, and Summerfield Lane – Rios Road based on the results of the Origin-Destination exercise.

Once the traffic distribution was established, the Project-generated traffic was assigned to the adjacent street system.

Figure 7–1 depicts the Project distribution. ***Figure 7–2*** depicts the proposed Project traffic assignment.

Appendix F contains the data science information used in the distribution.

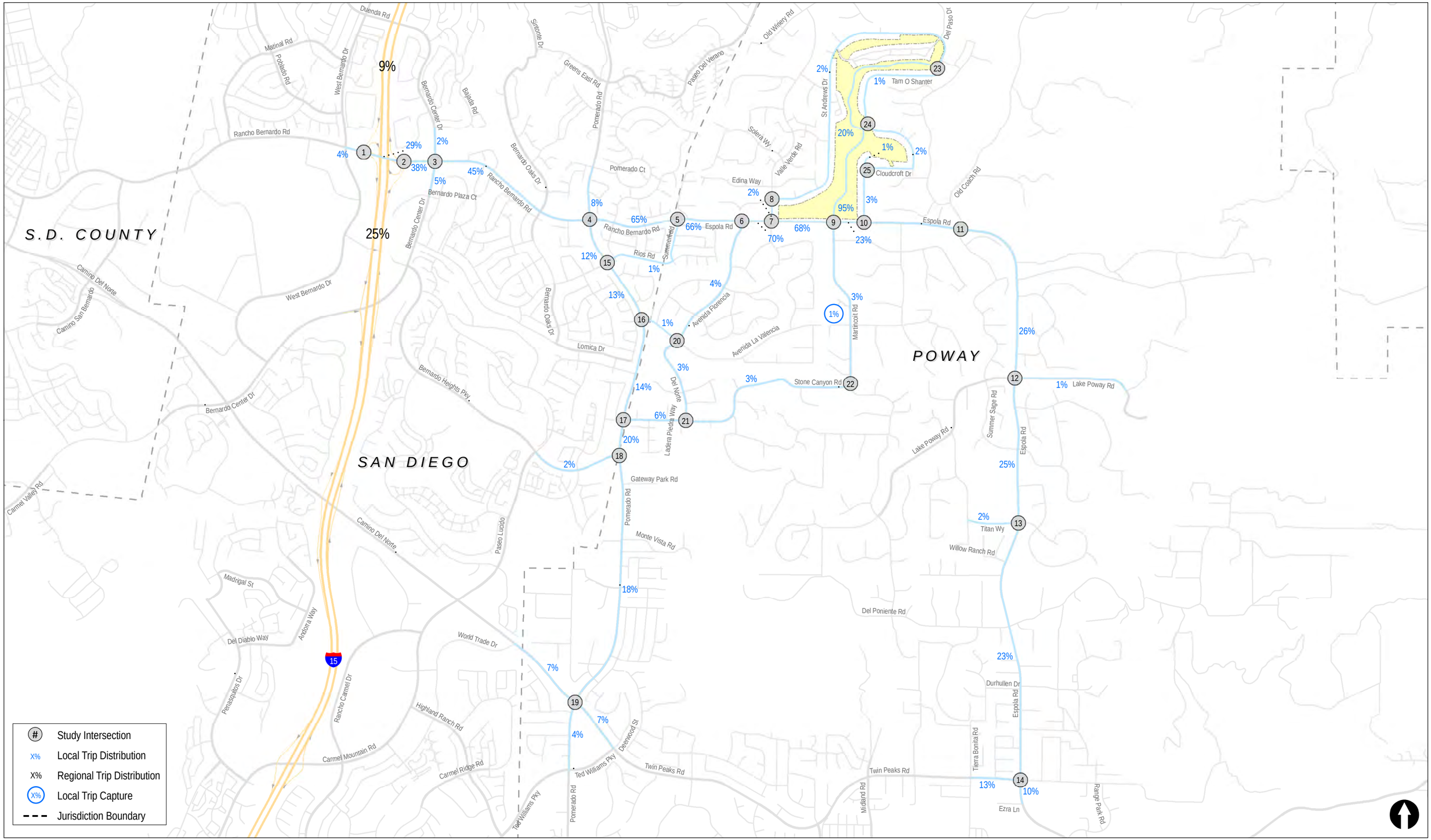

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Figure 7-1

Project Traffic Distribution
(Page 1 of 2)

THE FARM IN POWAY

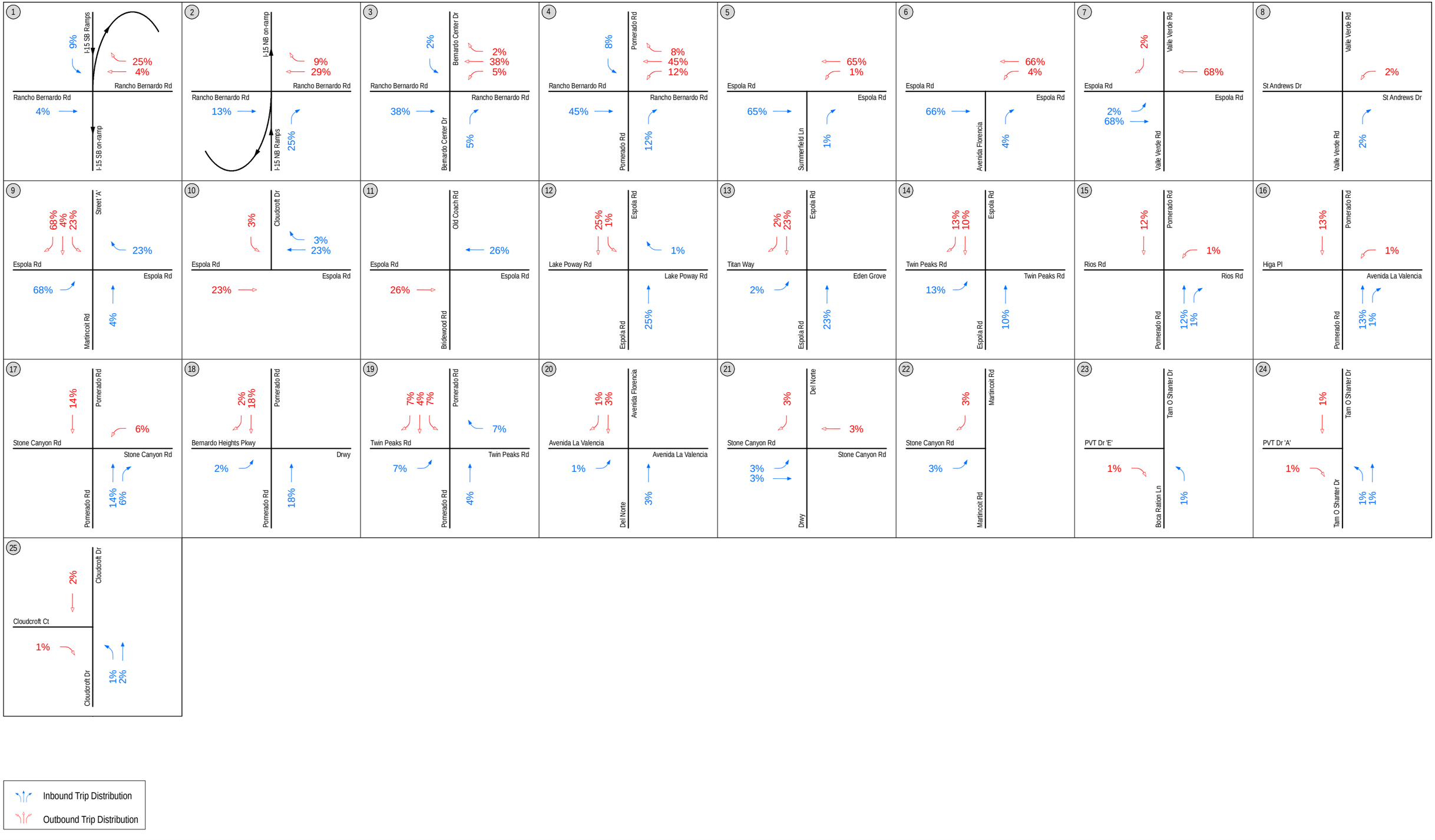

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Figure 7-1

Project Traffic Distribution
(Page 2 of 2)

THE FARMS IN POWAY

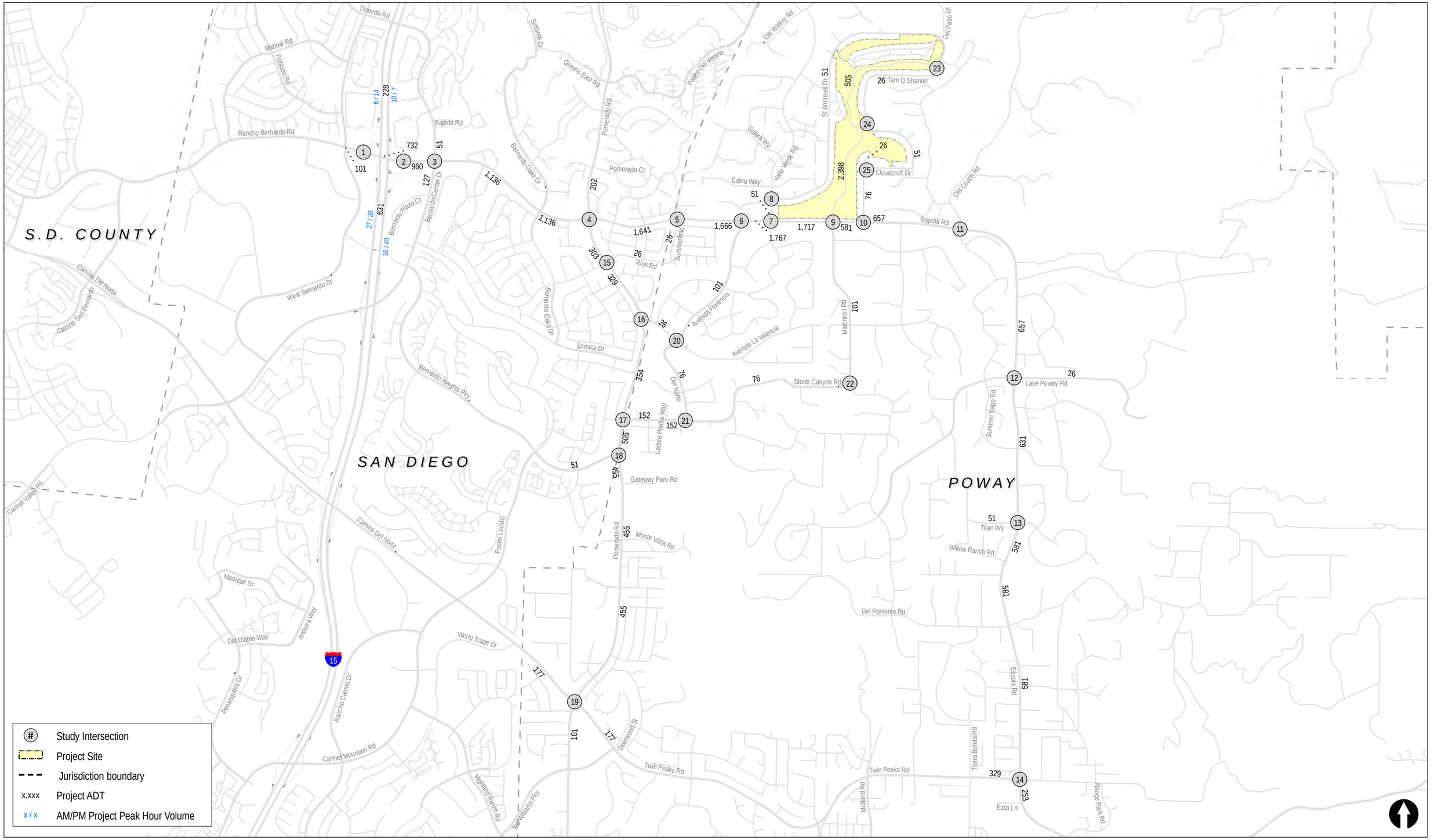

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Figure 7-2

Project Traffic Volumes
(Page 1 of 2)

THE FARM IN POWAY

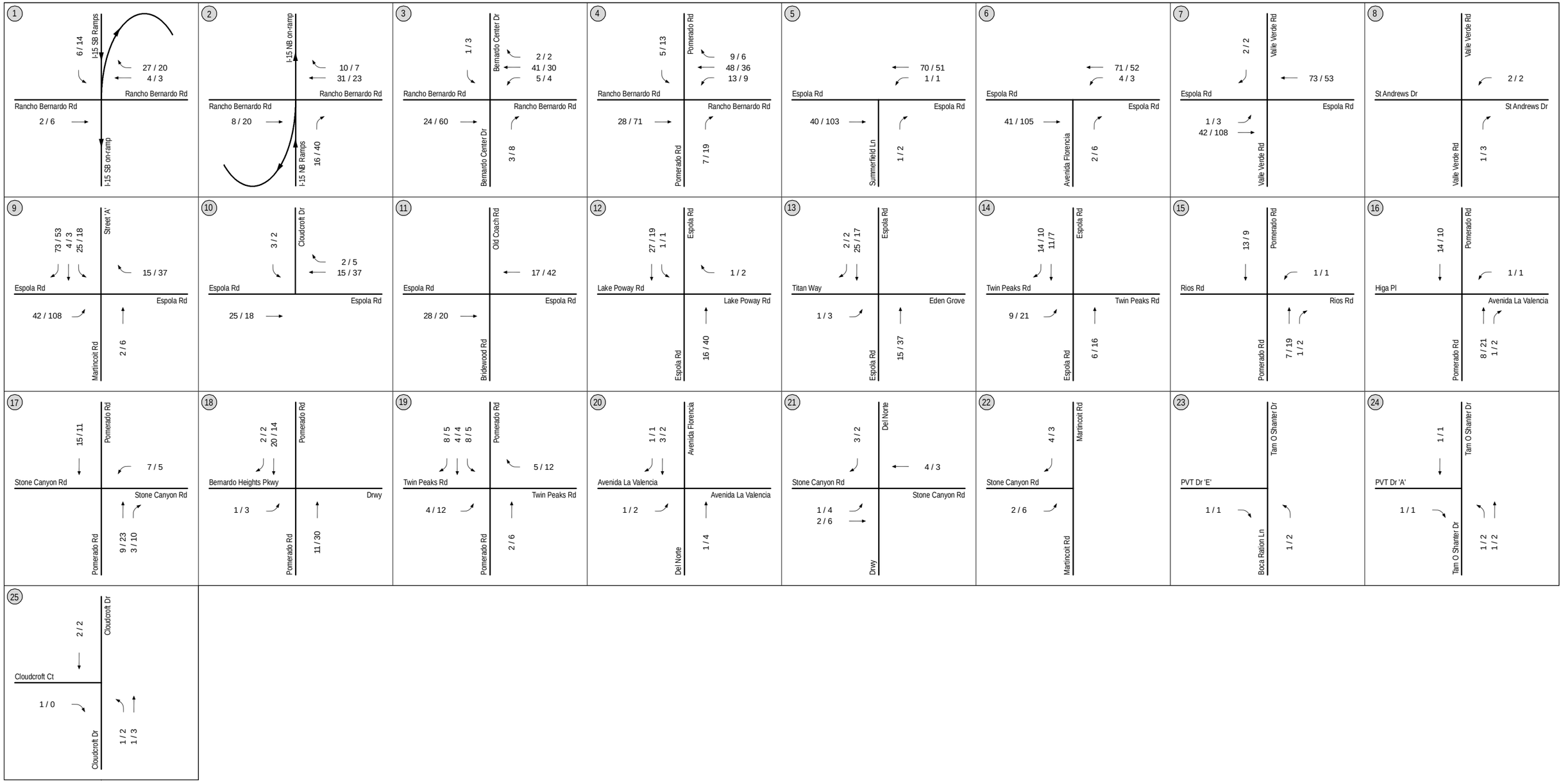

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Figure 7-2

Project Traffic Volumes
(Page 2 of 2)

THE FARM IN POWAY

8.0 NEAR-TERM (OPENING YEAR 2025) CUMULATIVE CONDITIONS

Cumulative projects are other projects in the study area that will add traffic to the local circulation system in the near future. LLG coordinated with City of Poway staff and reviewed the City of San Diego's Open DSD website to identify relevant, pending cumulative projects in the study area that could be constructed and generating traffic in the study area vicinity by the expected opening year of the Project in Year 2025. Based on this research, ten (10) cumulative projects are planned nearby that would add to traffic to study area intersections, street segments, and freeways. Traffic generated by these projects was added to the existing traffic volumes to develop the Near-Term (Opening Year 2025) condition. Project traffic was added to the near-term traffic volumes to arrive at the Near-Term (Opening Year 2025) With Project condition. The following is a brief description of each of the cumulative projects.

8.1 Description of Cumulative Projects

8.1.1 *City of Poway*

1. **Aria Estates** proposes seven (7) market rate single-family housing units. The proposed residential project is located near the northeast quadrant of the Poway Road/Pomerado Road intersection on a vacant parcel. The permit application was submitted on March 15, 2018 per the Annual Report – Implementation of the General Plan in 2018. The proposed Aria Estates project was included in both the near-term and horizon year analysis. The project is calculated to generate approximately 70 ADT with 2 inbound and 4 outbound trips in the AM peak hour, and 5 inbound and 2 outbound trips in the PM peak hour. *Trip generation, distribution and assignment estimated using SANDAG trip rates and professional engineering judgement.*

2. **Vantage Point (former Parkway Summit)** proposes approximately 531,000 SF of warehouse/distribution land use in two (2) buildings, approved by City Council in October 2018. The project is located at 14400 and 14500 Kirkham Way in the South Poway Business Park. Construction is expected to start in Spring 2019 with an anticipated completion date of late 2019/early 2020. The proposed Vantage Point project was included in both the near-term and horizon year analysis. The project is calculated to generate approximately 2,655 ADT with 243 inbound and 103 outbound trips in the AM peak hour, and 160 inbound and 239 outbound trips in the PM peak hour. *Trip generation, distribution and assignment estimated using SANDAG trip rates and professional engineering judgement.*

3. **Villa de Vida** proposes an affordable housing project, approved by City Council in 2017, that would provide rental units to low- and moderate-income disabled adults. The proposed two-story, 54-unit complex is located at 12341 Oak Knoll Road, adjacent to Poway Creek. Construction is expected to commence in 2019 per the Annual Report – Implementation of the General Plan in 2018. The proposed Villa de Vida project was included in both the near-term and horizon year analysis. The project is calculated to generate approximately 432 ADT with 7 inbound and 28 outbound trips in the AM peak hour, and 31 inbound and 13 outbound trips in the PM peak hour. *Trip generation, distribution and assignment estimated using SANDAG trip rates and professional engineering judgement.*

4. **Outpost** proposes three (3) mixed-use buildings consisting of commercial/retail, restaurant, residential, and fitness land uses. Building one consists of a 30-foot-tall, two-story structure with the 20,000-square-foot food hall on the first and second floor and a 6,500-square-foot patio on the upper floor. Building two consists of a three-story, 30-foot-tall residential building with four (4) two-bedroom live/work units and two (2) two-story lofts. Building three consists of a three-story, 38-foot-tall structure with the 20,225-square-foot fitness center, 33 two-bedroom apartments, 10 one-bedroom apartments and four (4) two-bedroom units. The proposed project is located at 13247 Poway Road, near Community Road. The project is currently under construction, commencing in August 2018, with completion expected in Fall 2019. The proposed Outpost project was included in both the near-term and horizon year analysis. The project is calculated to generate approximately 4,196 ADT with 99 inbound and 87 outbound trips in the AM peak hour, and 221 inbound and 193 outbound trips in the PM peak hour. *Trip generation, distribution and assignment estimated using SANDAG trip rates and professional engineering judgement.*

5. **Chick-fil-A** proposes to redevelopment the former Cocos restaurant site with a Chick-fil-A restaurant. The proposed project will demolish the vacant 6,500 SF restaurant and replace it with a 4,584 SF fast food restaurant with a double drive through order lane. The proposed project is located at 13464 Poway Road. The proposed Chick-fil-A project was included in both the near-term and horizon year analysis. The project is calculated to generate approximately 1,107 net new ADT with 35 inbound and 35 outbound trips in the AM peak hour, and 35 inbound and 35 outbound trips in the PM peak hour. A timeframe for completion of this Project is currently unknown. *Trip generation, distribution and assignment taken from the approved Traffic & Parking Analysis prepared by TJW Engineering, Inc. February 22, 2017.*

6. **Poway Commons** proposes to develop a mixed-use project consisting of residential and commercial/retail uses. The development proposes 98 for-sale, market rate, attached housing units, approximately 25,000 SF of commercial retail space, and 44 affordable senior housing units. The affordable unit component will consist of 36 one-bedroom units, eight (8) two-bedroom units, a 2,750 SF community room, and a manager's office. The project was approved at City Council in March 2019 and is expected to take up to 15 months to construct. The project is located on Poway Road near the intersection of Tarascan Drive and Civic Center Drive. The proposed Poway Commons project was included in both the near-term and horizon year analysis. The project is calculated to generate approximately 4,136 ADT with 91 inbound and 120 outbound trips in the AM peak hour, and 230 inbound and 184 outbound trips in the PM peak hour. *Trip generation, distribution and assignment estimated using SANDAG trip rates and professional engineering judgement.*

8.1.2 *City of San Diego*

7. **Black Mountain Ranch North Village (Subarea I)** represents Phase II-B of Black Mountain Ranch. The design of the North Village, which is approximately 640 acres in size, is the product of community-based planning by the property owner, the City, the surrounding

communities and environmental organizations. The tentative map for the North Village was approved by the San Diego City Council on November 27, 2001. Per the Black Mountain Ranch Subarea Plan, the North Village projected development consists of 2,902 residential units with 590,000 SF of non-residential uses. A modification to the Black Mountain Ranch Specific Plan was made in 2008 to reallocate land uses within the North Village and thus increase traffic generation. Per the Black Mountain Ranch – North Village Proposed Project traffic letter prepared by KOA Corporation, dated July 30, 2008, a total of 27,330 ADT was projected to be generated by the North Village. Since that time, the majority of the North Village has been constructed and is currently occupied. Based on LLG's best efforts to determine the amount of development remaining to be constructed, approximately 80% of the North Village was assumed to be constructed and generating traffic. Research on currently pending/approved projects within the North Village indicate that Back Mountain Ranch North Village No. 14224, PTS#550005 proposes to construct 119 condominium units in Block F and 94 row homes in Block G. For inclusion in the near-term cumulative condition, the trips generated by the 119 condominium units and 94 row homes were assumed in the near-term analysis. The remaining 20% of the North Village buildout was assumed to be operational by the horizon year condition. The Block F & G projects within North Village is calculated to generate approximately 1,892 ADT with 39 inbound and 114 outbound trips in the AM peak hour, and 134 inbound and 56 outbound trips in the PM peak hour. *Trip generation, distribution and assignment estimated using City of San Diego trip rates and professional engineering judgement.*

8. **Pacific Village** proposes the redevelopment of an existing 41-acre, 332-unit, one and two bedroom apartment rental complex known as Peñasquitos Village. The project is located west of Interstate 15 (I-15), east of Carmel Mountain Road, and south of the Peñasquitos Drive Shopping Center. Pacific Village proposes 99 single-family cluster homes, 105 multi-family tri-plex units, and 120 row homes, for a total of 324 units. In addition, the northern portion of the site will be entitled for 277 apartments for rent. The total allowable development is 600 dwelling units. The project discretionary permit application number with the City is (PTS#470158) and was approved by City Council on March 5, 2018 and is currently under construction. The proposed Pacific Village project was included in both the near-term and horizon year analyses. Subtracting the existing site trip generation from the proposed Project, the net new trips expected on the street system with redevelopment of the site is 1,796 net new ADT with 144 net new trips during the AM peak hour (29 inbound / 115 outbound) and 163 net new trips during the PM peak hour (114 inbound / 49 outbound). *Trip generation, distribution and assignment taken from the Approved Pacific Village EIR Traffic Impact Study, prepared by LLG Engineers, dated November 7, 2017.*

9. **The Junipers** proposes the redevelopment of the defunct golf course (closed permanently in March 2015), as well as the demolition of the existing operational tennis courts serving the Hotel Karlan. with an age-qualified (55+) residential neighborhood featuring 455 attached and detached, for-sale multi-family housing units and 81 multi-family, for-rent affordable housing

units for a total of 536 housing units. The project requires a Community Plan Amendment and currently has a discretionary permit application into the City (PTS#586670). The proposed Junipers project was included in both the near-term and horizon year analysis. The project is calculated to generate approximately 2,144 ADT with 43 inbound and 64 outbound trips in the AM peak hour, and 90 inbound and 60 outbound trips in the PM peak hour. *Trip generation, distribution and assignment taken from the Junipers EIR Traffic Impact Study, currently being prepared by LLG Engineers, most recently dated February 28, 2019.*

10. **Casa De Las Campañas** proposes a mechanical remodel of a 40,000-SF, 99-bed skilled-nursing facility and construction of a new 32,000-SF special care assisted-living facility consisting of 18 apartments located at the existing Casa Del Las Campañas Continuing Care Retirement Community located at 18655 W. Bernardo Drive. The project discretionary permit application number with the City is (PTS#400695). The project is currently under construction and was included in both the near-term and horizon year analysis. The project is calculated to generate approximately 72 ADT with 2 inbound and 1 outbound trips in the AM peak hour, and 3 inbound and 3 outbound trips in the PM peak hour. *Trip generation, distribution and assignment estimated using SANDAG trip rates and professional engineering judgement.*

Figure 8–1 shows the locations of the cumulative projects. As shown in this figure, the cumulative projects are located well outside the study area for the proposed Project. The City of Poway projects are mostly located along Poway Road and would not be expected to traverse substantially within the local study area. The City of San Diego projects also are far from the study area boundary and would not generate substantial trips on local study area roadways. Trip from cumulative projects were, however, assigned to I-15 where appropriate.

Given the lack of nearby cumulative development projects adding traffic to the study area, a review of traffic volumes along key arterials (Rancho Bernardo Road, Espola Road, Pomerado Road) was conducted using the SANDAG Traffic Forecast Model, as well as forecast volumes from the Poway Circulation Element. An average growth factor of 0.5% per year for seven (7) years was calculated and, therefore, applied to the 2018 counts to arrive at the anticipated Opening Year (Year 2025) traffic volumes.

It should also be noted that the PM peak hour cumulative traffic volumes were also applied to the School Zone mid-day peak between 1:45-3:45 PM, for purposes of being conservative. Analysis of the school peak hour is provided in *Section 15* of this report.

Figure 8–2 depicts the Near-Term (Opening Year) traffic volumes and ***Figure 8–3*** depicts the Near-Term (Opening Year) With Project traffic volumes.

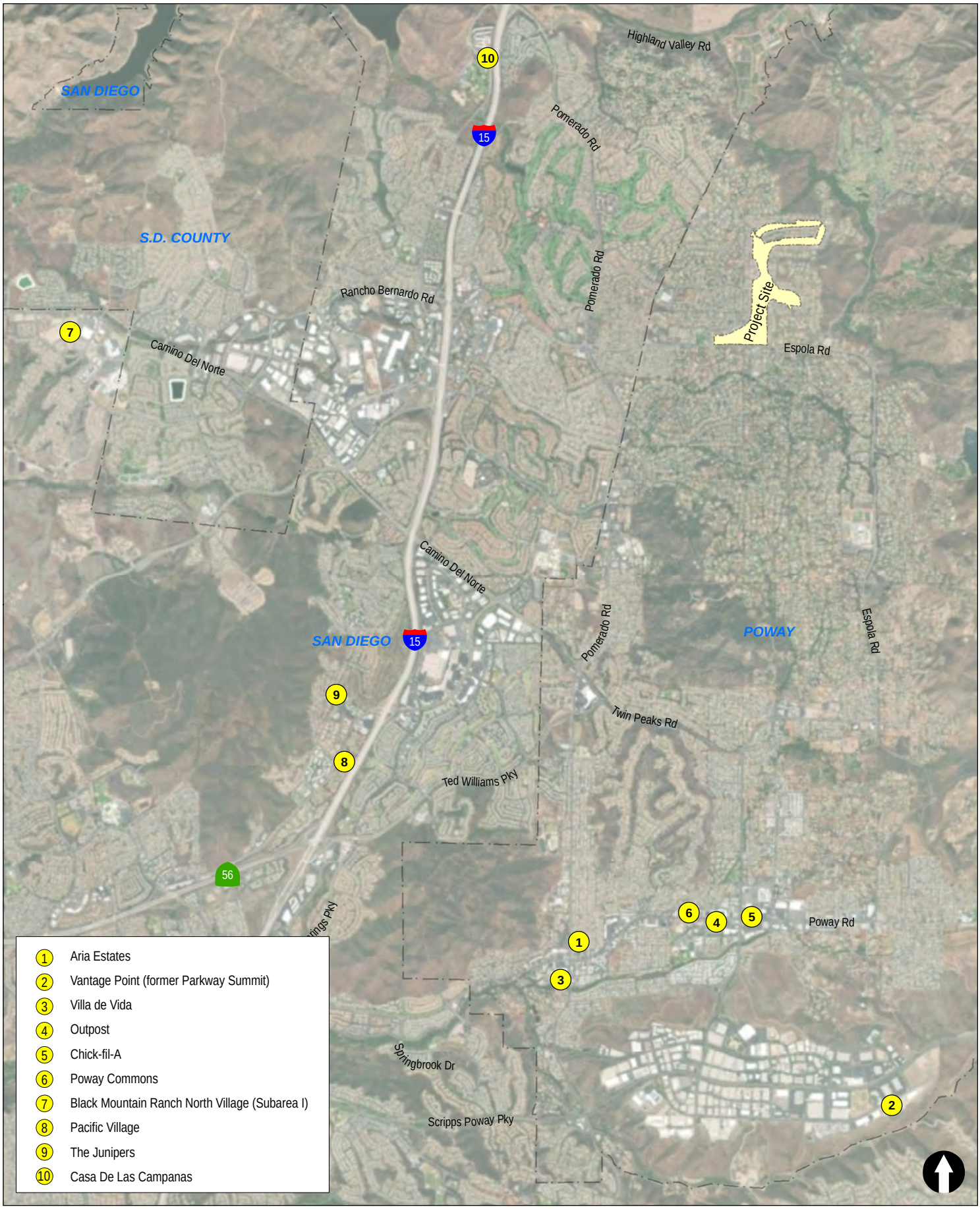

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Figure 8-1

Cumulative Projects Location Map

THE FARM IN POWAY

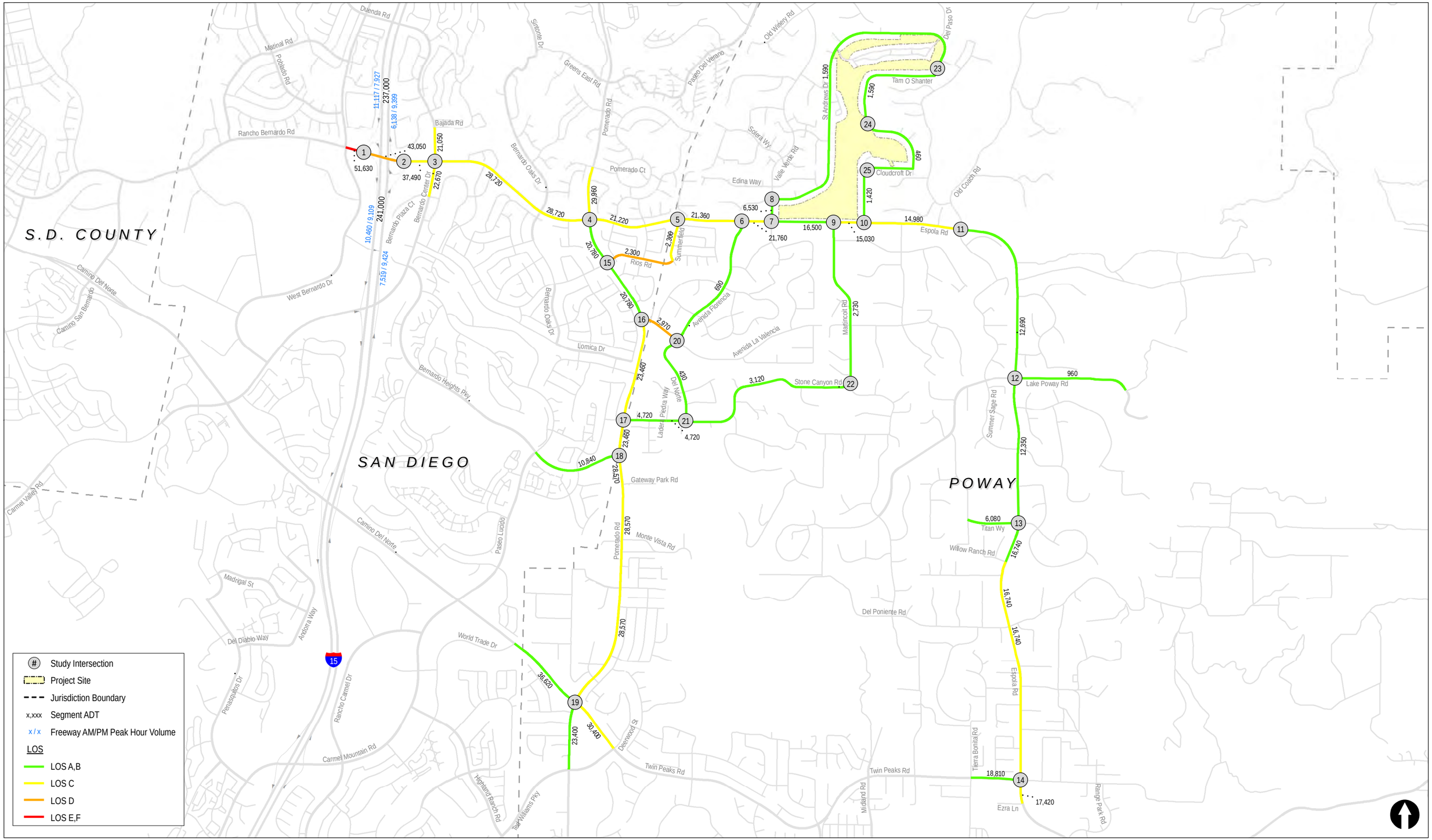

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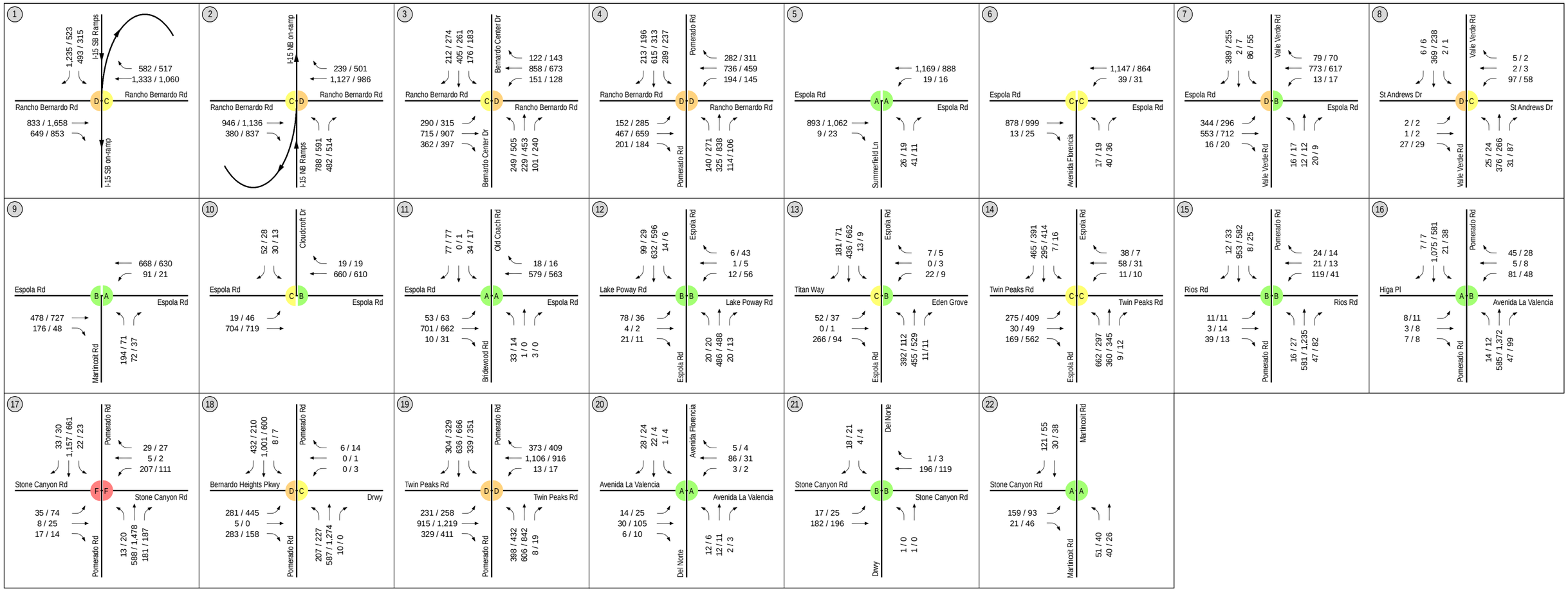
Figure 8-2

Near-Term (Opening Day) Traffic Volumes

(Page 1 of 2)

THE FARM IN POWAY



Study Intersections

Intersection AM / PM Peak Hour Volumes

LOS AM

LOS PM

LOS

LOS A,B

LOS C

LOS D

LOS E,F

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Figure 8-2

Near-Term (Opening Day) Traffic Volumes

(Page 2 of 2)

THE FARM IN POWAY

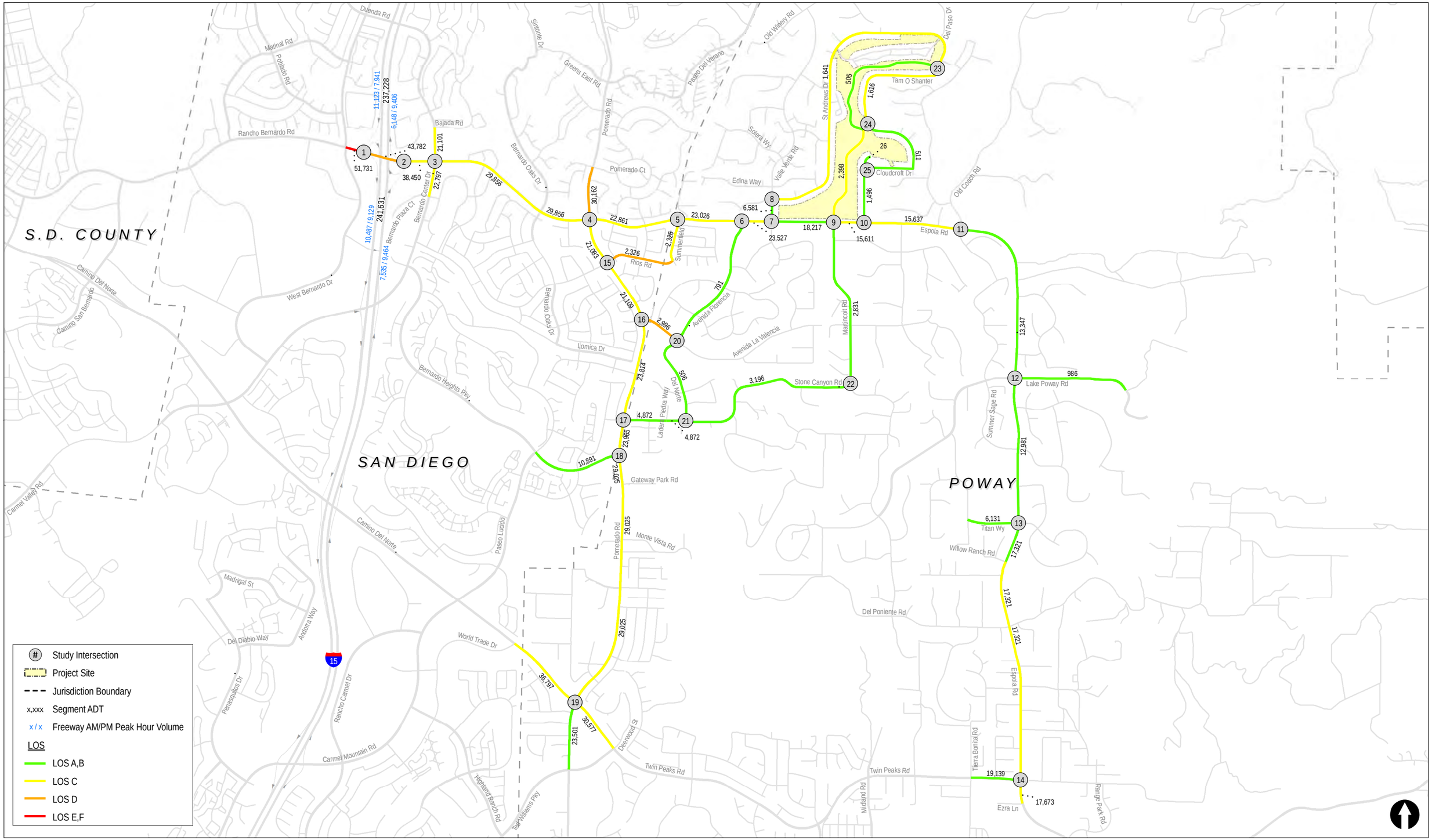

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Figure 8-3

Near-Term (Opening Day) with Project Traffic Volumes

(Page 1 of 2)

THE FARM IN POWAY

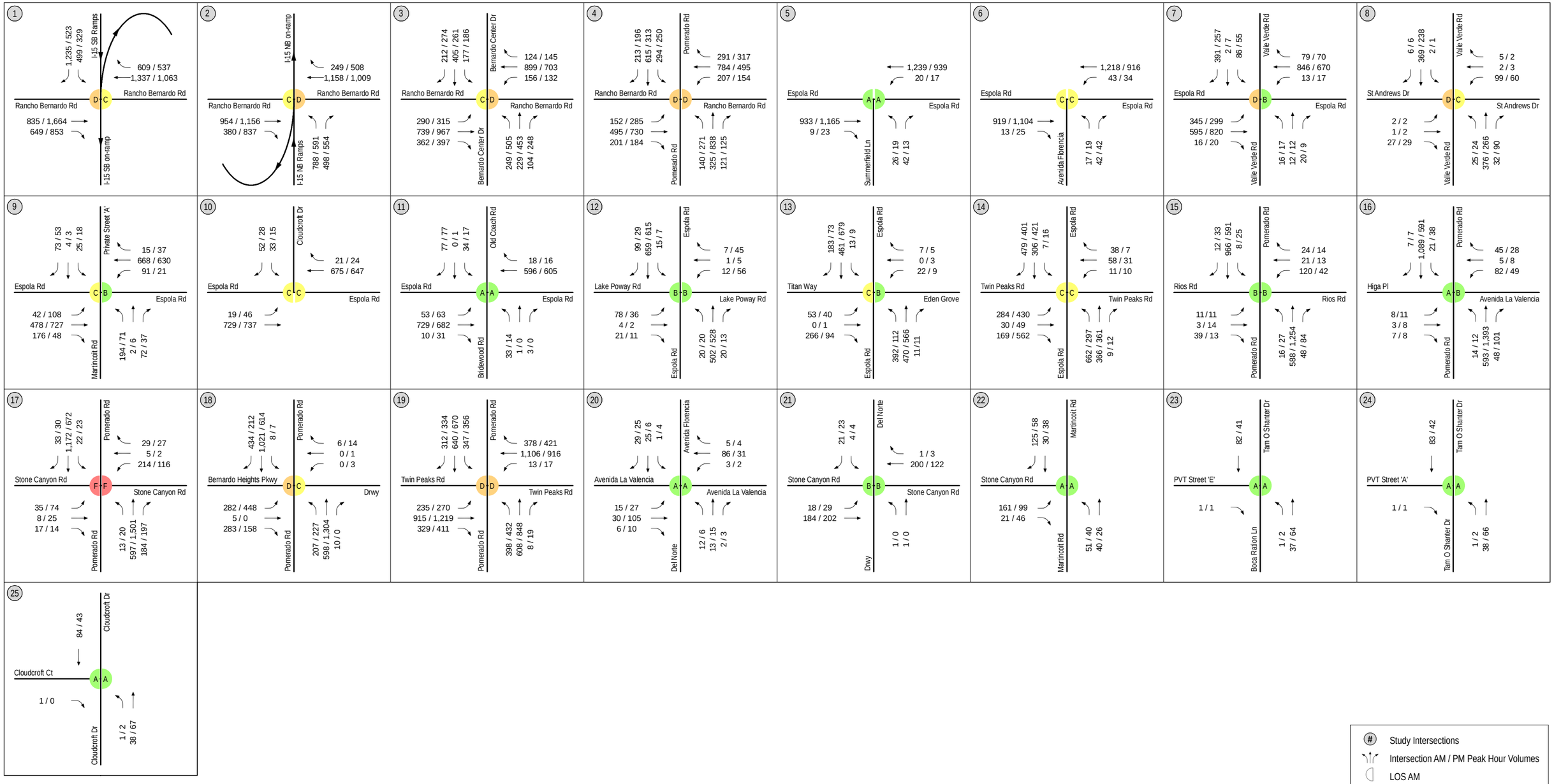

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Figure 8-3

Near-Term (Opening Day) with Project Traffic Volumes

(Page 2 of 2)

THE FARM IN POWAY

9.0 NEAR-TERM (OPENING YEAR 2025) AUTO ANALYSIS

The following section presents the analysis of study area locations under two (2) scenarios. The Near-Term (Opening Year 2025) condition includes nearby cumulative development projects, but not the project. As discussed in *Section 8.0*, a cumulative growth factor was added to existing traffic volumes given the majority of cumulative development projects are located outside the study area. This scenario assumes the existing lane geometrics. The Near-Term (Opening Year 2025) With Project scenario represents the effect of adding Project traffic to the existing street network with no improvements assumed, and the assumed cumulative growth.

A separate analysis of the school zone mid-day PM peak period is provided later on in *Section 16.0* of this report.

9.1 Near-Term (Opening Year 2025)

9.1.1 *Peak Hour Intersection Operations*

Table 9–1 summarizes the peak hour intersection operations for the Near-Term (Opening Year 2025) condition. As seen in *Table 9–1*, with the addition of cumulative projects traffic, all intersections are calculated to operate at acceptable LOS D or better except for the following:

- Intersection #17. Pomerado Road / Stone Canyon Road – LOS F during the AM/PM peak hours *(City of San Diego)*

Appendix G contains the peak hour intersection analysis worksheets for the Near-Term (Opening Year 2025) condition.

9.1.2 *Daily Street Segment Operations*

Table 9–2 summarizes the key segment operations in the study area for the Near-Term (Opening Year 2025) condition. As seen in *Table 9–2*, with the addition of cumulative projects traffic, all study area segments are calculated to operate at LOS D or better, except for:

- Segment #1. Rancho Bernardo Road, from W. Bernardo Drive to I-15 Southbound Ramps – LOS F *(City of San Diego)*

9.1.3 *Peak Hour Freeway Ramp Meter Operations*

Table 9–3 summarizes the operations of the on-ramp meter for the Near-Term (Opening Year 2025) condition. The results of the ramp meter analysis are shown below.

- Rancho Bernardo Road WB to I-15 SB: Under the Near-Term (Opening Year 2025) conditions, this ramp is calculated to operate with 3.9 minutes of delay during the AM peak hour.
- Rancho Bernardo Road WB to I-15 SB: Under the Near-Term (Opening Year 2025) conditions, this ramp is calculated to continue to operate with no delay during the PM peak hour.

9.1.4 *Peak Hour Freeway Segment Operations*

Table 9–4 shows the freeway mainline segment analyses for the Near-Term (Opening Year 2025) condition. As seen in *Table 9–4*, the study area freeway mainline segments of I-15 are calculated to continue to operate at LOS D or better conditions except for the following:

- Mainline #1. I-15 north of Rancho Bernardo Road
  - Northbound – LOS E (PM peak hour)
  - Southbound – LOS F (AM peak hour)
- Mainline #2. I-15 south of Rancho Bernardo Road
  - Northbound – LOS E (PM peak hour)
  - Southbound – LOS F/E (AM/PM peak hours)

9.2 Near-Term (Opening Year 2025) With Project

9.2.1 *Peak Hour Intersection Operations*

Table 9–1 summarizes the peak hour intersection operations for Near-Term (Opening Year 2025) With Project conditions. As seen in *Table 9–1*, with the addition of cumulative projects and Project traffic all intersections are calculated to continue to operate at acceptable LOS D or better except for the following:

- **Intersection #17. Pomerado Road / Stone Canyon Road – LOS F during the AM/PM peak hours** *(City of San Diego)*

The Project-related increase in delay at the two intersections shown bolded and underlined above exceeds the allowable threshold based on the applied criteria. Therefore, **one (1) significant direct** impact is calculated at this location.

Appendix H contains the peak hour intersection analysis worksheets for the Near-Term (Opening Year 2025) With Project condition.

9.2.2 *Daily Street Segment Operations*

Table 9–2 summarizes the key segment operations in the study area for the Near-Term (Opening Year 2025) With Project conditions. As seen in *Table 9–2*, all study area segments are calculated to continue to operate at LOS D or better, except for:

- Segment #1. Rancho Bernardo Road, from W. Bernardo Drive to I-15 Southbound Ramps – LOS F *(City of San Diego)*

Based on the applied significance criteria, **no significant direct impacts** were calculated with the addition of Project traffic, as the increase in V/C due to the Project on the above-listed segment is below the significance threshold of 0.02.

9.2.3 *Peak Hour Freeway Ramp Meter Operations*

Table 9–3 summarizes the operations of the on-ramp meter for the Near-Term (Opening Year 2025) With Project condition. The results of the ramp meter analysis are shown below.

- **Rancho Bernardo Road WB to I-15 SB:** Under the Near-Term (Opening Year 2025) +Project conditions, this ramp is calculated to operate with 6.8 minutes of delay during the AM peak hour.
- **Rancho Bernardo Road WB to I-15 SB:** Under the Near-Term (Opening Year 2025) conditions, this ramp is calculated to continue to operate with no delay during the PM peak hour.

No significant direct impacts to study area ramp meters are determined as both ramp meters are calculated operate with less than fifteen minutes of delay.

9.2.4 *Peak Hour Freeway Segment Operations*

Table 9–4 shows the freeway segment analyses for the Near-Term (Opening Year 2025) condition. As seen in *Table 9–4*, the study area freeway mainline segments of I-15 are calculated to continue to operate at LOS D or better conditions except for the following:

- Mainline #1. I-15 north of Rancho Bernardo Road
  - Northbound – LOS E (PM peak hour)
  - Southbound – LOS F (AM peak hour)
- Mainline #2. I-15 south of Rancho Bernardo Road
  - Northbound – LOS E (PM peak hour)
  - Southbound – LOS F/E (AM/PM peak hours)

Based on the established significance criteria, **no significant direct impacts** were calculated with the addition of Project traffic on the freeway segments since the Project-induced change in V/C is less than 0.01 for LOS E or LOS F operating freeway segments.

TABLE 9–1
NEAR-TERM (OPENING YEAR 2025) INTERSECTION OPERATIONS

Intersection	Jur.	Control Type	Peak Hour	Near-Term (Opening Year 2025)		Near-Term (Opening Year 2025) With Project		Δ [c] Delay	Sig?
				Delay [a]	LOS [b]	Delay	LOS		
1. I-15 SB Ramps/ Rancho Bernardo Rd	Caltrans/ San Diego	Signal	AM	41.9	D	44.5	D	2.6	No
			PM	28.1	C	28.9	C	0.8	
2. I-15 NB Ramps/ Rancho Bernardo Rd	Caltrans/ San Diego	Signal	AM	30.0	C	30.1	C	0.1	No
			PM	36.7	D	37.0	D	0.3	
3. Bernardo Center Dr/ Rancho Bernardo Rd	San Diego	Signal	AM	26.8	C	27.7	C	0.9	No
			PM	35.6	D	36.6	D	1.0	
4. Pomerado Rd/ Rancho Bernardo Rd	San Diego	Signal	AM	35.6	D	37.5	D	1.9	No
			PM	46.7	D	51.3	D	4.6	
5. Summerfield Ln/ Espola Rd/ Rancho Bernardo Rd	Poway	Signal	AM	5.2	A	5.2	A	0.0	No
			PM	4.7	A	4.7	A	0.0	
6. Avenida Florencia/ Espola Rd	Poway	MSSC [d]	AM	18.2	C	19.2	C	1.0	No
			PM	18.0	C	19.7	C	1.7	
7. Valle Verde Rd/ Espola Rd	Poway	Signal	AM	38.2	D	42.7	D	4.5	No
			PM	19.0	B	19.4	B	0.4	
8. Valle Verde Rd/ St Andrews Dr	Poway	TWSC	AM	29.1	D	29.5	D	0.4	No
			PM	16.6	C	16.7	C	0.1	
9. Martincoit Rd/ Espola Rd	Poway	Signal	AM	10.5	B	20.7	C	10.2	No
			PM	7.2	A	15.3	B	81	
10. Cloudcroft Dr/ Espola Rd	Poway	MSSC	AM	19.2	C	20.6	C	1.4	No
			PM	14.6	B	15.5	C	0.9	
11. Old Coach Rd/ Espola Rd	Poway	Signal	AM	9.9	A	9.9	A	0.0	No
			PM	8.8	A	8.8	A	0.0	
12. Espola Rd/ Lake Poway Rd	Poway	Signal	AM	16.0	B	16.4	B	0.4	No
			PM	14.8	B	14.9	B	0.1	
13. Espola Rd/ Eden Grove/ Titan Way	Poway	Signal	AM	33.6	C	34.5	C	0.9	No
			PM	12.1	B	12.1	B	0.0	
14. Espola Rd/ Twin Peaks Rd	Poway	Signal	AM	34.1	C	34.8	C	0.7	No
			PM	31.3	C	31.8	C	0.5	
15. Pomerado Rd/ Rios Rd	San Diego	Signal	AM	11.0	B	11.0	B	0.0	No
			PM	10.9	B	11.0	B	0.1	
16. Pomerado Rd/ Avenida La Valencia	San Diego	Signal	AM	9.3	A	9.3	A	0.0	No
			PM	10.4	B	10.6	B	0.2	

Continued on Next Page

TABLE 9–1
NEAR-TERM (OPENING YEAR 2025) INTERSECTION OPERATIONS

Intersection	Jur.	Control Type	Peak Hour	Near-Term (Opening Year 2025)		Near-Term (Opening Year 2025) With Project		Δ [c] Delay	Sig?
				Delay [a]	LOS [b]	Delay	LOS		
Continued from Previous Page									
17. Pomerado Rd/ Stone Canyon Rd	San Diego	Signal	AM	99.6	F	**105.7**	**F**	**6.1**	**Yes**
			PM	90.5	F	**97.6**	**F**	**7.1**	
18. Pomerado Rd/ Bernardo Hts Pkwy	San Diego	Signal	AM	40.8	D	42.3	D	1.5	No
			PM	24.0	C	24.3	C	0.3	
19. Pomerado Rd/ Twin Peaks Rd	Poway	Signal	AM	35.3	D	35.8	D	0.5	No
			PM	40.5	D	42.3	D	1.8	
20. Avenida Florencia/ Avenida La Valencia	Poway	AWSC [e]	AM	7.6	A	7.6	A	0.0	No
			PM	7.7	A	7.7	A	0.0	
21. Del Norte/ Stone Canyon Rd	Poway	AWSC	AM	9.3	A	9.4	A	0.1	No
			PM	8.5	A	8.6	A	0.1	
22. Martincoit Rd/ Stone Canyon Rd	Poway	MSSC	AM	9.7	A	9.8	A	0.1	No
			PM	7.9	A	7.9	A	0.0	
23. Boca Raton Ln/ Drwy "E"	Poway	DNE/ MSSC	AM	—	—	7.3	A	—	No
			PM	—	—	7.3	A	—	
24. Tam O'Shanter Dr/ Drwy "A"	Poway	DNE/ MSSC	AM	—	—	7.3	A	—	No
			PM	—	—	7.3	A	—	
25. Tam O'Shanter Dr / Cloudcroft Dr	Poway	MSSC	AM	—	—	7.3	A	—	No
			PM	—	—	7.3	A	—	

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service
c. Δ denotes the increase in delay due to Project.
d. Minor Street Stop Controlled intersection. Minor street left turn delay reported.
e. All-Way Stop Controlled intersection. Average intersection delay reported.

General Notes:

1. Sig = Significant impact, yes or no
2. Jur. = Jurisdiction
3. DNE = Does not exist

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 9–2
NEAR-TERM (OPENING YEAR 2025) STREET SEGMENT OPERATIONS

Street Segment	Jur.	Existing Capacity (LOS E) [a]	Near-Term (Opening Year 2025)			Near-Term (Opening Year 2025) With Project			Project Volumes	Δ [e] V/C	Sig?
			ADT [b]	LOS [c]	V/C [d]	ADT	LOS	V/C			
Rancho Bernardo Rd											
1. W. Bernardo Dr to I-15 SB Ramps	Caltrans/ San Diego	40,000	51,630	F	1.291	51,731	F	1.294	101	0.003	No
2. I-15 SB Ramps to I-15 NB Ramps	Caltrans/ San Diego	50,000	43,050	D	0.861	43,782	D	0.876	732	0.015	No
3. I-15 NB Ramps to Bernardo Center Dr	Caltrans/ San Diego	50,000	37,490	C	0.750	38,450	C	0.769	960	0.019	No
4. Bernardo Center Dr to Bernardo Oaks Dr	San Diego	40,000	28,720	C	0.718	29,856	C	0.747	1136	0.029	No
5. Pomerado Rd to Summerfield Ln	San Diego	40,000	21,220	C	0.531	22,861	C	0.572	1641	0.041	No
Espola Rd											
6. Summerfield Ln to Avenida Florencia	Poway	41,000	21,360	C	0.521	23,026	C	0.562	1666	0.041	No
7. Avenida Florencia to Valle Verde Rd	Poway	41,000	21,760	C	0.531	23,527	C	0.574	1767	0.043	No
8. Valle Verde Rd to Martincoit Rd	Poway	41,000	16,500	B	0.403	18,217	B	0.445	1717	0.042	No
9. Martincoit Rd to Cloudcroft Dr	Poway	31,000	15,030	C	0.485	15,611	C	0.504	581	0.019	No
10. Cloudcroft Dr to Old Coach Rd	Poway	31,000	14,980	C	0.484	15,637	C	0.505	657	0.021	No
11. Old Coach Rd to Lake Poway Rd	Poway	31,000	12,690	B	0.410	13,347	B	0.431	657	0.021	No
12. Lake Poway Rd to Titan Wy	Poway	41,000	12,350	A	0.302	12,981	A	0.317	631	0.015	No
13. Titan Wy to Willow Ranch Rd	Poway	41,000	16,740	B	0.409	17,321	B	0.423	581	0.014	No
14. Willow Ranch Rd to Del Poniente Rd	Poway	29,000	16,740	C	0.578	17,321	C	0.598	581	0.020	No
15. Del Poniente Rd to Twin Peak Rd	Poway	29,000	16,740	C	0.578	17,321	C	0.598	581	0.020	No
16. Twin Peaks Rd to Ezra Ln	Poway	29,000	17,420	C	0.601	17,673	C	0.610	253	0.010	No
Pomerado Rd											
17. Pomerado Ct to Rancho Bernardo Rd	San Diego	40,000	29,960	C	0.749	30,162	D	0.755	202	0.007	No
18. Rancho Bernardo Rd to Rios Rd	San Diego	40,000	20,780	B	0.520	21,083	C	0.528	303	0.009	No
19. Rios Rd to Avenida La Valencia	San Diego	40,000	20,780	B	0.520	21,109	C	0.528	329	0.009	No
20. Avenida La Valencia to Stone Canyon Rd	San Diego	40,000	23,460	C	0.587	23,814	C	0.596	354	0.010	No

Continued on Next Page

TABLE 9–2
NEAR-TERM (OPENING YEAR 2025) STREET SEGMENT OPERATIONS

Street Segment	Jur.	Existing Capacity (LOS E) [a]	Near-Term (Opening Year 2025)			Near-Term (Opening Year 2025) With Project			Project Volumes	Δ [e] V/C	Sig?
			ADT [b]	LOS [c]	V/C [d]	ADT	LOS	V/C			
Continued from Previous Page											
Pomerado Rd (cont.)											
21. Stone Canyon Rd to Bernardo Heights Pkwy	San Diego	40,000	23,460	C	0.587	23,965	C	0.600	505	0.013	No
22. Bernardo Heights Pkwy to Pomerado Hospital	Poway	50,000	28,570	C	0.572	29,025	C	0.581	455	0.010	No
23. Pomerado Hospital to Monte Vista Rd	Poway	50,000	28,570	C	0.572	29,025	C	0.581	455	0.010	No
24. Monte Vista Rd to Twin Peaks Rd	Poway	50,000	28,570	C	0.572	29,025	C	0.581	455	0.010	No
25. Twin Peaks Rd to Ted Williams Pkwy	Poway	50,000	23,400	B	0.468	23,501	B	0.471	101	0.003	No
Bernardo Center Dr											
26. Bajada Rd to Rancho Bernardo Rd	San Diego	40,000	21,050	C	0.527	21,101	C	0.528	51	0.001	No
27. Rancho Bernardo Rd to Bernardo Plaza Ct	San Diego	40,000	22,670	C	0.567	22,797	C	0.570	127	0.003	No
Rios Rd											
28. Pomerado Rd to Summerfield Ln	San Diego	3,500	2,300	D	0.658	2,326	D	0.665	26	0.008	No
Summerfield Ln											
29. Rios Rd to Rancho Bernardo Rd	Poway	3,800	2,300	C	0.606	2,326	C	0.613	26	0.008	No
Avenida La Valencia											
30. Pomerado Rd to Avenida Florencia	Poway	3,800	2,970	D	0.782	2,996	D	0.789	26	0.008	No
Avenida Florencia											
31. Rancho Bernardo Rd to Avenida La Valencia	Poway	3,800	690	A	0.182	791	A	0.209	101	0.027	No
Del Norte											
32. Avenida La Valencia to Stone Canyon Rd	Poway	3,800	430	A	0.114	506	A	0.134	76	0.020	No
Stone Canyon Rd											
33. Pomerado Rd to Ladera Piedra Way	Poway	14,000	4,720	A	0.338	4,872	A	0.348	152	0.010	No
34. Avenida Florencia to Martincoit Rd	Poway	14,000	3,120	A	0.223	3,196	A	0.229	76	0.007	No
Continued on Next Page											

TABLE 9–2
NEAR-TERM (OPENING YEAR 2025) STREET SEGMENT OPERATIONS

Street Segment	Jur.	Existing Capacity (LOS E) [a]	Near-Term (Opening Year 2025)			Near-Term (Opening Year 2025) With Project			Project Volumes	Δ [e] V/C	Sig?
			ADT [b]	LOS [c]	V/C [d]	ADT	LOS	V/C			
Continued from Previous Page											
Martincoit Rd											
35. Rancho Bernardo Rd to Stone Canyon Rd	Poway	14,000	2,730	A	0.195	2,831	A	0.203	101	0.009	No
Twin Peaks Rd											
36. World Trade Dr to Pomerado Rd	Poway	63,000	36,620	B	0.582	36,797	C	0.585	177	0.003	No
37. Pomerado Rd to Deerwood Dr	Poway	50,000	30,400	C	0.608	30,577	C	0.612	177	0.004	No
38. Tierra Bonita Rd to Espola Rd	Poway	50,000	18,810	B	0.377	19,139	B	0.383	329	0.007	No
Valle Verde Rd											
39. Espola Rd to St Andrews Dr	Poway	14,000	6,530	B	0.467	6,581	B	0.471	51	0.004	No
St Andrews Dr											
40. Valle Verde Rd to Tam O'Shanter Dr	Poway	3,800	1,590	B	0.419	1,641	C	0.432	51	0.013	No
Tam O'Shanter Dr											
41. St Andrews Dr to Pvt Dr "E"	Poway	3,800	1,590	B	0.419	1,616	C	0.426	26	0.008	No
42. Pvt Dr "E" to Cloudcroft Ct	Poway	3,800	460	A	0.122	511	A	0.135	51	0.013	No
Cloudcroft Dr											
43. Cloudcroft Ct to Espola Rd	Poway	3,800	1,420	B	0.374	1,496	B	0.394	76	0.020	No
Bernardo Heights Pkwy											
44. Paseo Lucido to Pomerado Rd	San Diego	40,000	10,840	A	0.271	10,891	A	0.273	51	0.002	No
Lake Poway Rd											
45. East of Espola Rd	Poway	14,000	960	A	0.069	986	A	0.071	26	0.002	No
Titan Way											
46. West of Espola Rd	Poway	14,000	6,080	B	0.435	6,131	B	0.438	51	0.003	No
Continued on Next Page											

TABLE 9–2
NEAR-TERM (OPENING YEAR 2025) STREET SEGMENT OPERATIONS

Street Segment	Jur.	Existing Capacity (LOS E) [a]	Near-Term (Opening Year 2025)			Near-Term (Opening Year 2025) With Project			Project Volumes	Δ [e] V/C	Sig?
			ADT [b]	LOS [c]	V/C [d]	ADT	LOS	V/C			
Continued from Previous Page											

Footnotes:

a. Capacities based on City of Poway and City of San Diego Roadway Classification & LOS tables (See *Appendix B*).
b. Average Daily Traffic
c. Level of Service
d. Volume to Capacity ratio
e. Δ denotes a Project-induced increase in the Volume to Capacity ratio

General Notes:

1. Jur = Jurisdiction
2. Sig = Significant impact, yes or no
3. DNE = Does not exist

TABLE 9–3
NEAR-TERM (OPENING YEAR 2025) RAMP METER ANALYSIS – FIXED RATE

Location	Peak Hour [a]	Near-Term (Opening Year 2025)						
		Volume		Peak Hour Demand (D) [b]	Meter Rate (R) [c]	Excess Demand (E) (veh)	Delay (min)	Queue (ft) [d]
		SOV	HOV					
Rancho Bernardo Rd WB to I-15 SB (1 SOV+1 HOV)								
Near-Term (Opening Year 2025)	AM	524	58	524	492	32	3.9	800
Near-Term (Opening Year 2025) With Project	AM	548	61	548	492	56	6.8	1400
Project Increase	*AM*	*24*	*3*	*24*	—	*24*	*2.9*	*600*
Rancho Bernardo Rd WB to I-15 NB (1 SOV+1 HOV)								
Near-Term (Opening Year 2025)	PM	463	38	463	475	0	0	0
Near-Term (Opening Year 2025) With Project	PM	470	38	470	475	0	0	0
Project Increase	*PM*	*7*	—	*7*	—	—	—	—

***Footnotes**:*

a. Selected peak hour based on period when ramp meter is operating.
b. Peak hour demand in vehicles/hour/lane for SOV and HOV lanes.
c. Meter rate "R" is the most restrictive rate at which the ramp meter (signal) discharges traffic onto the freeway (obtained from Caltrans). The discharge rate varies during the peak hour depending on the mainline volumes.
d. Queue calculated assuming vehicle length of 25 feet.

General Notes:

1. SOV = Single Occupancy Vehicle, HOV = High Occupancy Vehicle
2. Lane utilization factor accounted for in peak hour demand calculation. (HOV % observed from PeMS data).

TABLE 9–4
NEAR-TERM (OPENING YEAR 2025) FREEWAY SEGMENT OPERATIONS

Freeway Segment	Dir.	Lanes [a]	Near-Term (Opening Year 2025)								Near-Term (Opening Year 2025) With Project								Δ V/C [f]		Sig?
			Volume [b]		V/C [c]		Density [d]		LOS [e]		Volume		V/C		Density		LOS				
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
Interstate 15																					
North of Rancho Bernardo Rd	NB	5M	6,138	9,399	0.647	0.990	22.2	43.9	C	E	6,148	9,406	0.648	0.991	22.3	44.0	C	E	0.001	0.001	No
	SB	5M	11,117	7,927	1.171	0.835	>45.0	31.6	F	D	11,123	7,941	1.172	0.837	>45.0	31.7	F	D	0.001	0.002	No
South of Rancho Bernardo Rd	NB	5M	7,519	9,424	0.792	0.993	29.1	44.2	D	E	7,535	9,464	0.794	0.997	29.2	44.6	D	E	0.002	0.004	No
	SB	5M	10,460	9,109	1.102	0.959	>45.0	41.0	F	E	10,487	9,129	1.105	0.961	>45.0	41.1	F	E	0.003	0.002	No

Footnotes:

a. Lane geometry taken from PeMS lane configurations at corresponding postmile.
b. Existing volume calculated from most recent Caltrans *Traffic Census Program* Peak Hour Volume Data (2017). See *Table 6–3* for K and D factors. Cumulative growth added to existing volumes to arrive at Near-Term (Opening Year 2025).
c. V/C = (Peak Hour Volume/Hourly Capacity)
d. Density measures passenger cars per mile per lane. Density = Flow Rate (passenger-cars/hour/lane) ÷ Speed (average passenger-car speed in mph).
e. Level of Service
f. "Δ" denotes the Project-induced increase in V/C. Per City Guidelines, a significant impact occurs when the V/C is increased by greater than 0.01 for LOS E or LOS F.

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Note:

1. M = Mainline
2. A = Auxiliary
3. Sig? = Significant impact, yes or no.

10.0 HORIZON YEAR 2035 CONDITIONS

The following summarizes the assumptions and methods used to assess Horizon Year 2035 street system conditions and traffic volumes.

10.1 Horizon Year 2035 Network Conditions

LLG conducted a review of the *City of Poway Master Transportation Element, Rancho Bernardo Community Plan Circulation Element, Rancho Bernardo Public Facilities Financing Plan FY 2014*, and the SANDAG Series 12 and 13 Traffic Models to identify future network changes in the study area. Specifics on future infrastructure improvements to the circulation network affecting the auto analysis are mentioned below:

- Espola Road Safety Improvement Project – *Capital Improvement Projects Status Report (February 2018) CIP #12010*: This project involves improving the safety for those who walk, jog, cycle, or ride horses along Espola Road between Poway High School (Titan Way) and Twin Peaks Road. No vehicular auto enhancements are proposed. Therefore, no auto capacity improvements were assumed in the analysis.
- Poway Road Corridor Project – *Capital Improvement Projects Status Report (February 2018) CIP #12009*: This project seeks to improve land use, transportation, design/aesthetics, and economic development for Poway Road. The transportation analysis will result in recommendations for appropriate transportation improvements along the project corridor. The project is currently in the design stage. Therefore, no auto capacity improvements were assumed in the analysis.

10.2 Horizon Year 2035 Traffic Volumes

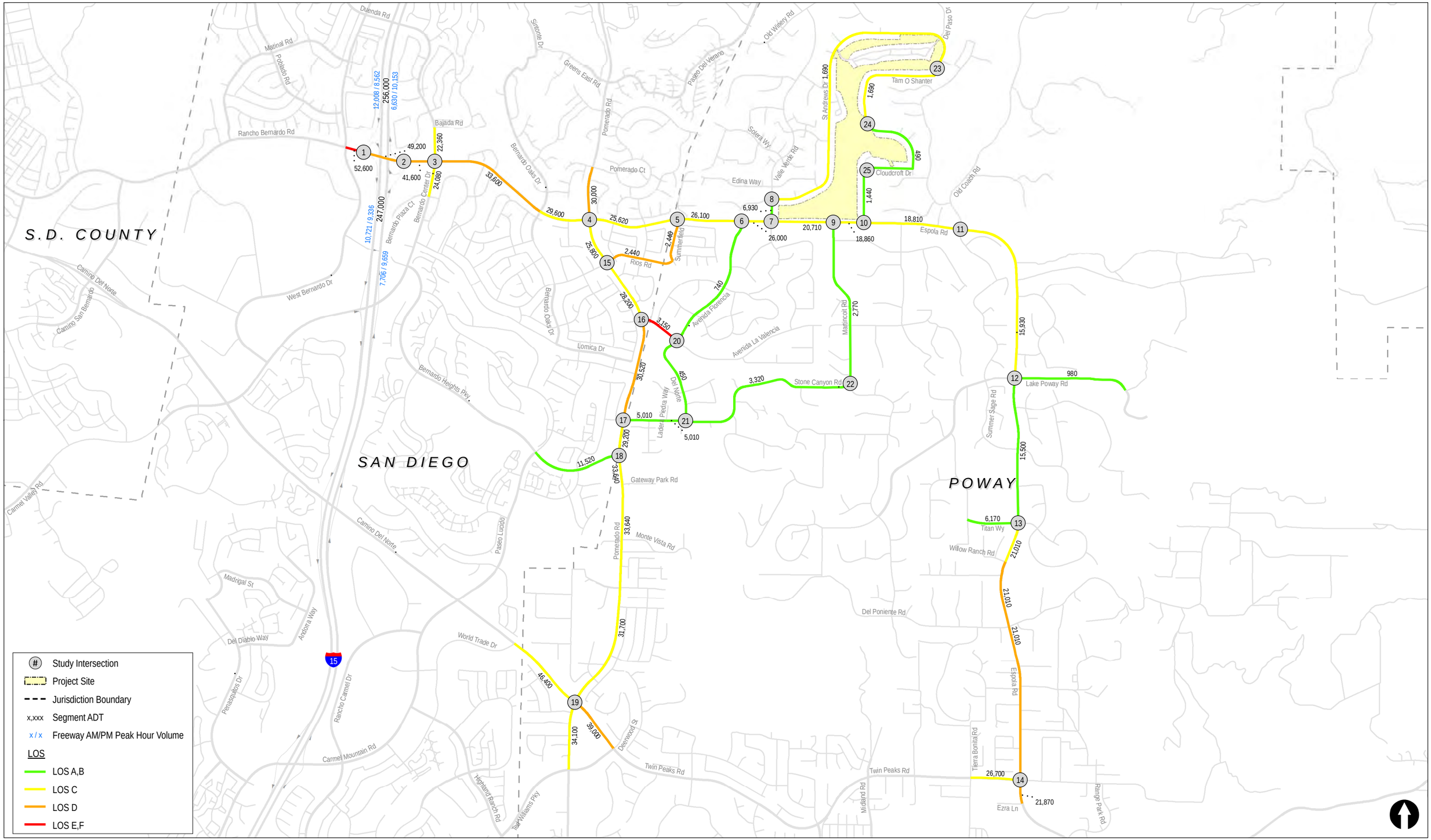
In order to forecast Year 2035 roadway segment volumes without the Project, LLG conducted a review of the *City of Poway Master Transportation Element Year 2030* traffic volumes and the SANDAG Series 12 and 13 Year 2035 traffic model volumes.

In accordance with the industry standard methodology for forecasting Year 2035 volumes, LLG compared the Poway Year 2008 (base year) to the Poway Year 2030 forecast, the Series 12 Year 2008 (base year) volumes to the Series 12 Year 2035 forecast, and the Series 13 Year 2012 (base year) to the Series 12 Year 2035 traffic volumes on study area roadway segments and calculated the annual growth rate over each time period for the major roads through the study area: Rancho Bernardo Road, Espola Road, Pomerado Road. The average growth rate was then applied to the Existing (Year 2018) traffic volumes used in this study to arrive at Horizon Year 2035 (without Project) traffic volumes.

The peak hour turning movement volumes at an intersection were estimated from future ADT volumes using the relationship between existing peak hour turning movements and the existing ADT volumes. This same relationship can be assumed to generally continue in the future.

The proposed Project traffic was then added to the baseline Year 2035 traffic volumes to arrive at Horizon Year 2035 With Project conditions.

Figure 10–1 depicts the Horizon Year 2035 traffic volumes without the Project. ***Figure 10–2*** depicts the Horizon Year 2035 With Project traffic volumes.



LINSCOTT LAW & GREENSPAN engineers

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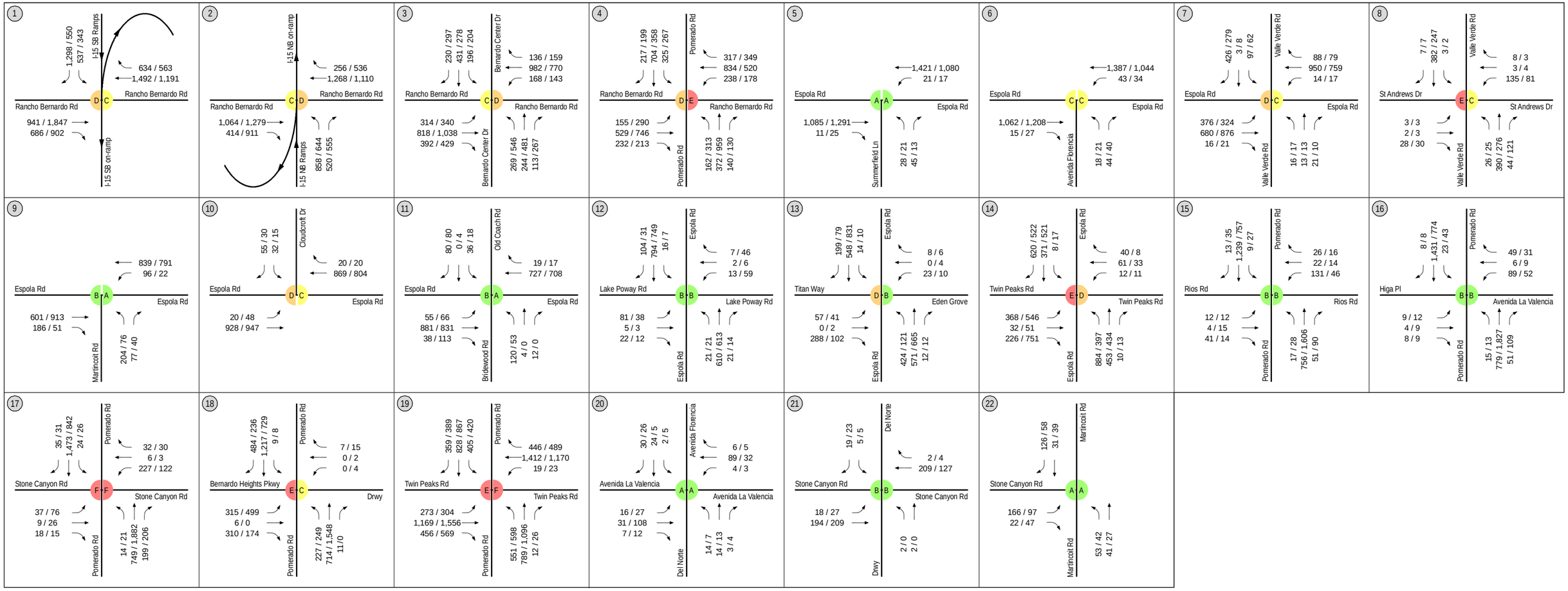
Figure 10-1

Horizon Year 2035 Traffic Volumes

(Page 1 of 2)

THE FARM IN POWAY



Study Intersections

Intersection AM / PM Peak Hour Volumes

LOS AM

LOS PM

LOS

LOS A,B

LOS C

LOS D

LOS E,F

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Figure 10-1

Horizon Year 2035 Traffic Volumes
(Page 2 of 2)

THE FARM IN POWAY

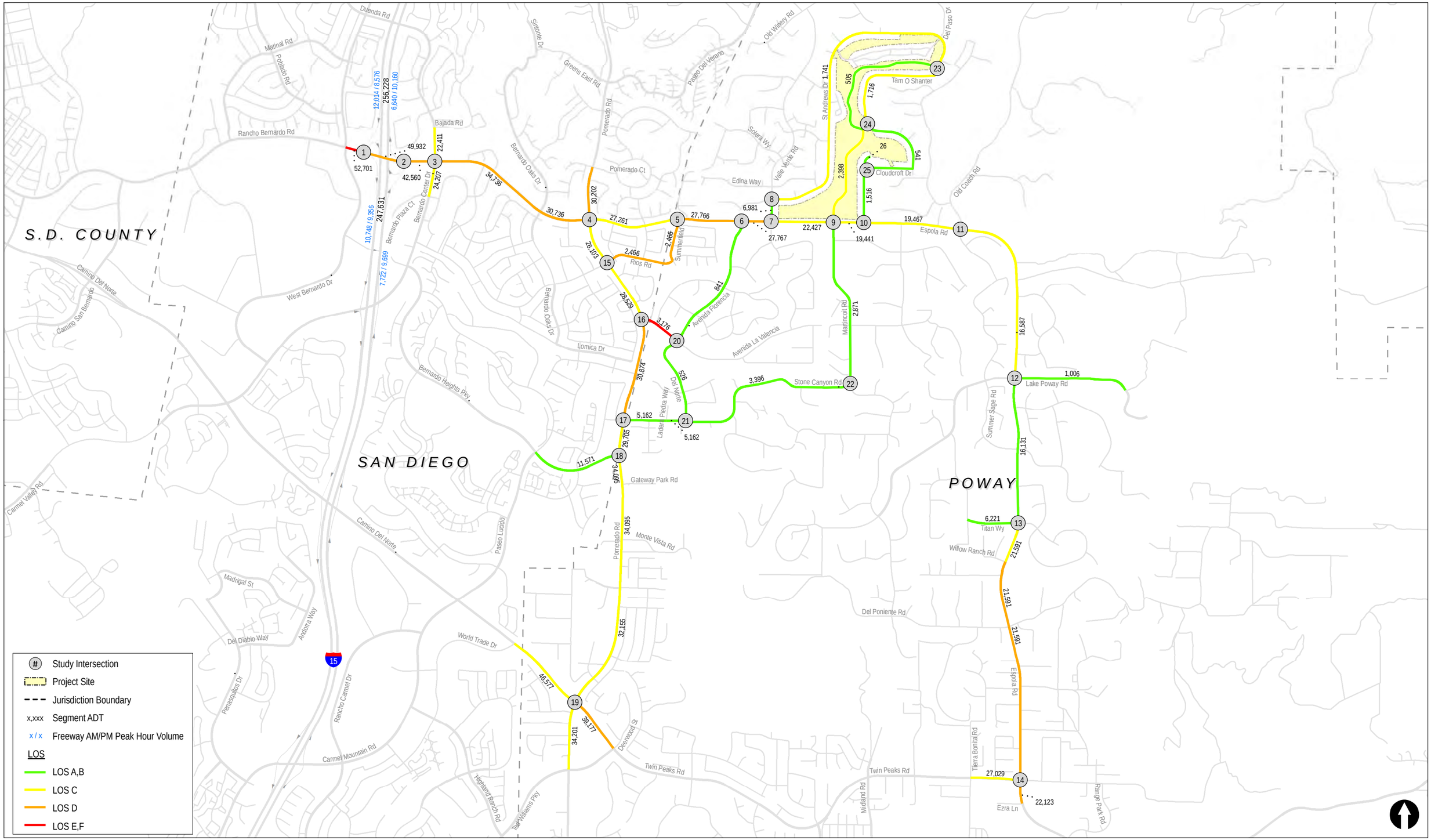

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Figure 10-2

Horizon Year 2035 with Project Traffic Volumes

(Page 1 of 2)

THE FARM IN POWAY

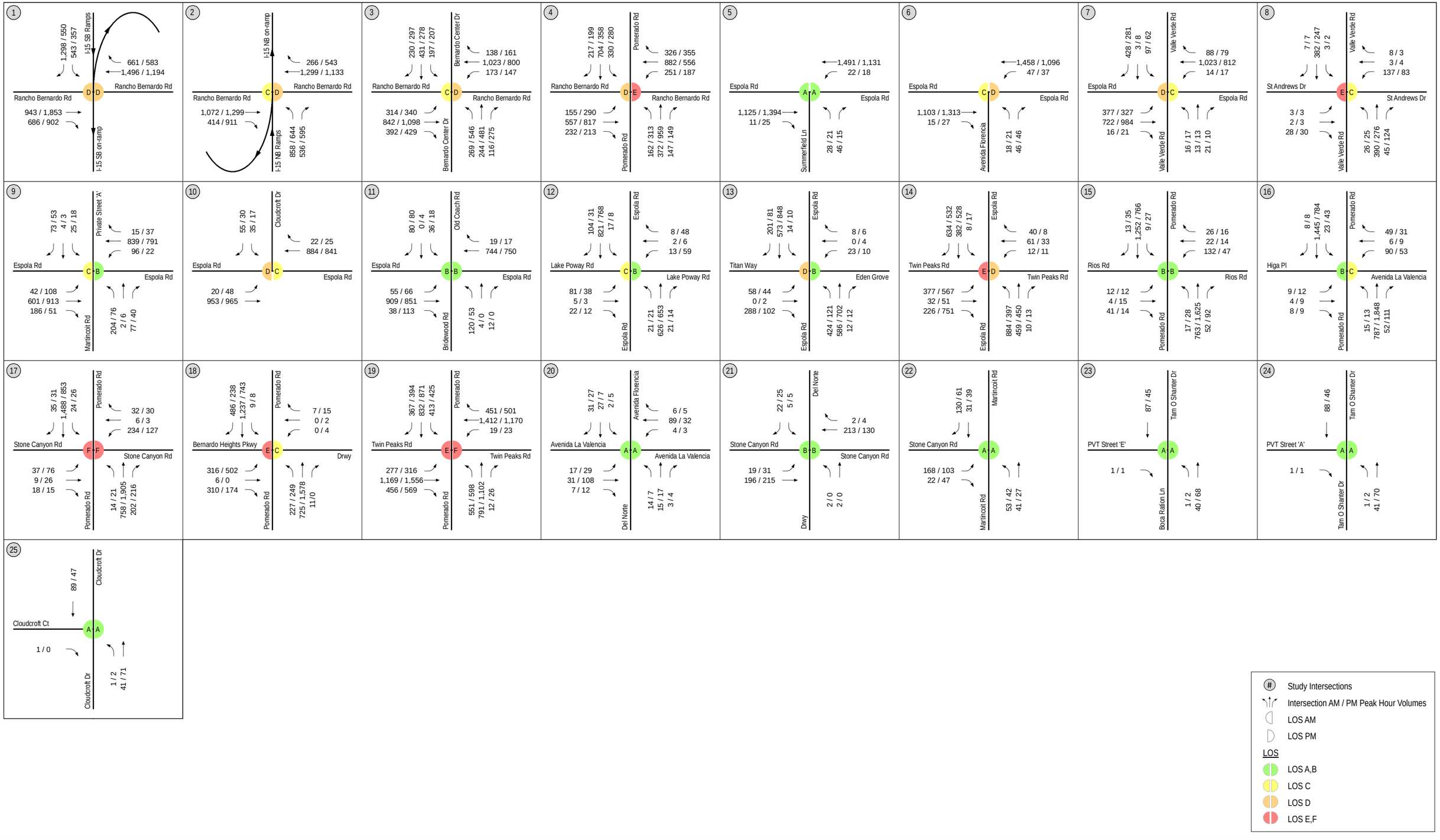

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Figure 10-2

Horizon Year 2035 with Project Traffic Volumes

(Page 2 of 2)

THE FARM IN POWAY

11.0 HORIZON YEAR 2035 AUTO ANALYSIS

11.1 Horizon Year 2035

11.1.1 *Peak Hour Intersection Operations*

Table 11–1 summarizes the peak hour intersection operations for the Horizon Year 2035 condition. As seen in *Table 11–1*, with the addition of cumulative projects traffic, all intersections are calculated to operate at acceptable LOS D or better except for the following:

- Intersection #4/ Pomerado Road / Rancho Bernardo Road – LOS E during the PM peak hour *(City of San Diego)*
- Intersection #8. Valle Verde Road / St. Andrews Drive – LOS E during the AM peak hour *(City of Poway)*
- Intersection #14. Espola Road / Twin Peaks Road – LOS E during the AM peak hour *(City of Poway)*
- Intersection #17. Pomerado Road / Stone Canyon Road – LOS F during the AM/PM peak hours *(City of San Diego)*
- Intersection #18. Pomerado Road / Bernardo Heights Parkway – LOS E during the AM peak hour *(City of San Diego)*
- Intersection #19. Pomerado Road / Twin Peaks Road – LOS E/F during the AM/PM peak hours *(City of Poway)*

Appendix I contains the peak hour intersection analysis worksheets for the Horizon Year 2035 condition.

11.1.2 *Daily Street Segment Operations*

Table 11–2 summarizes the key segment operations in the study area for the Horizon Year 2035 condition. As seen in *Table 11–2*, with the addition of cumulative projects traffic, all study area segments are calculated to operate at LOS D or better, except the following:

- Segment #1. Rancho Bernardo Road, W. Bernardo Drive to I-15 SB Ramps – LOS F *(City of San Diego)*
- Segment #30. Avenida La Valencia, Pomerado Road to Avenida Florencia – LOS E *(City of Poway)*

11.1.3 *Peak Hour Freeway Ramp Meter Operations*

Table 11–3 summarizes the operations of the on-ramp meter for the Horizon Year 2035 condition. The results of the ramp meter analysis are shown below.

- Rancho Bernardo Road WB to I-15 SB: Under the Horizon Year 2035 conditions, this ramp is calculated to operate with 9.5 minutes of delay during the AM peak hour.
- Rancho Bernardo Road WB to I-15 SB: Under the Horizon Year 2035 conditions, this ramp is calculated to operate with 3.0 minutes of delay during the PM peak hour.

11.1.4 *Peak Hour Freeway Segment Operations*

Table 11–4 shows the freeway mainline segment analyses for the Horizon Year 2035 condition. As seen in *Table 11–4*, the study area freeway mainline segments of I-15 are calculated to continue to operate at LOS D or better conditions except for the following:

- Mainline #1. I-15 north of Rancho Bernardo Road
  - Northbound – LOS F (PM peak hour)
  - Southbound – LOS F/E (AM/PM peak hours)
- Mainline #2. I-15 south of Rancho Bernardo Road
  - Northbound – LOS F (PM peak hour)
  - Southbound – LOS F/E (AM/PM peak hours)

11.2 Horizon Year 2035 With Project

11.2.1 *Peak Hour Intersection Operations*

Table 11–1 summarizes the peak hour intersection operations for Horizon Year 2035 With Project conditions. As seen in *Table 11–1*, with the addition of cumulative projects and Project traffic all intersections are calculated to continue to operate at acceptable LOS D or better except for the following:

- Intersection #4/ Pomerado Road / Rancho Bernardo Road – LOS E during the PM peak hour *(City of San Diego)*
- Intersection #8. Valle Verde Road / St. Andrews Drive – LOS E during the AM peak hour *(City of Poway)*
- Intersection #14. Espola Road / Twin Peaks Road – LOS E during the AM peak hour *(City of Poway)*
- **Intersection #17. Pomerado Road / Stone Canyon Road – LOS F during the AM/PM peak hours** *(City of San Diego)*
- Intersection #18. Pomerado Road / Bernardo Heights Parkway – LOS E during the AM peak hour *(City of San Diego)*
- Intersection #19. Pomerado Road / Twin Peaks Road – LOS E/F during the AM/PM peak hours *(City of Poway)*

The Project-related increase in delay at the two intersections shown bolded and underlined above exceeds the allowable threshold based on the applied criteria. Therefore, **one (1) significant cumulative** impact is calculated at this location. The Project-related increase in delay at the remaining intersections is less than the allowable threshold.

Appendix J contains the peak hour intersection analysis worksheets for the Horizon Year 2035 With Project condition.

11.2.2 *Daily Street Segment Operations*

Table 11–2 summarizes the key segment operations in the study area for the Horizon Year 2035 With Project conditions. As seen in *Table 11–2*, all study area segments are calculated to continue to operate at LOS D or better, except for:

- Segment #1. Rancho Bernardo Road, W. Bernardo Drive to I-15 SB Ramps – LOS F *(City of San Diego)*
- Segment #30. Avenida La Valencia, Pomerado Road to Avenida Florencia – LOS E *(City of Poway)*

Based on the applied significance criteria, **no significant cumulative impacts** were calculated with the addition of Project traffic.

11.2.3 *Peak Hour Freeway Ramp Meter Operations*

Table 11–3 summarizes the operations of the on-ramp meter for the Horizon Year 2035 With Project condition. The results of the ramp meter analysis are shown below.

- Rancho Bernardo Road WB to I-15 SB: Under the Horizon Year 2035 + Project conditions, this ramp is calculated to operate with 12.6 minutes of delay during the AM peak hour.
- Rancho Bernardo Road WB to I-15 SB: Under the Horizon Year 2035 conditions, this ramp is calculated to continue to operate with 3.0 minutes of delay during the PM peak hour.

No significant cumulative impacts to study area ramp meters are determined as both ramp meters are calculated operate with less than fifteen minutes of delay.

11.2.4 *Peak Hour Freeway Segment Operations*

Table 11–4 shows the freeway segment analyses for the Horizon Year 2035 condition. As seen in *Table 11–4*, the study area freeway mainline segments of I-15 are calculated to continue to operate at LOS D or better conditions except for the following:

- Mainline #1. I-15 north of Rancho Bernardo Road
  - Northbound – LOS F (PM peak hour)
  - Southbound – LOS F/E (AM/PM peak hours)
- Mainline #2. I-15 south of Rancho Bernardo Road
  - Northbound – LOS F (PM peak hour)
  - Southbound – LOS F/E (AM/PM peak hours)

Based on the established significance criteria, **no significant cumulative impacts** were calculated with the addition of Project traffic on the freeway segments since the Project-induced change in V/C is less than 0.01 for LOS E or F operating freeway segments.

TABLE 11–1
HORIZON YEAR 2035 INTERSECTION OPERATIONS

Intersection	Jur.	Control Type	Peak Hour	Horizon Year 2035		Horizon Year 2035 With Project		Δ [c] Delay	Sig?
				Delay [a]	LOS [b]	Delay	LOS		
1. I-15 SB Ramps/ Rancho Bernardo Rd	Caltrans/ San Diego	Signal	AM	45.8	D	48.6	D	2.8	No
			PM	31.6	C	31.7	D	0.1	
2. I-15 NB Ramps/ Rancho Bernardo Rd	Caltrans/ San Diego	Signal	AM	30.6	C	30.7	C	0.1	No
			PM	44.0	D	50.7	D	6.7	
3. Bernardo Center Dr/ Rancho Bernardo Rd	San Diego	Signal	AM	32.5	C	33.9	C	1.4	No
			PM	44.0	D	45.7	D	1.7	
4. Pomerado Rd/ Rancho Bernardo Rd	San Diego	Signal	AM	47.2	D	49.8	D	2.6	No
			PM	69.9	E	70.2	E	0.3	
5. Summerfield Ln/ Espola Rd/ Rancho Bernardo Rd	Poway	Signal	AM	5.2	A	5.2	A	0.0	No
			PM	4.7	A	4.7	A	0.0	
6. Avenida Florencia/ Espola Rd	Poway	MSSC [d]	AM	23.1	C	24.7	C	1.6	No
			PM	23.0	C	25.8	D	2.8	
7. Valle Verde Rd/ Espola Rd	Poway	Signal	AM	49.2	D	53.0	D	3.8	No
			PM	21.7	C	22.6	C	0.9	
8. Valle Verde Rd/ St Andrews Dr	Poway	MSSC	AM	42.8	E	43.6	E	0.8	No
			PM	18.4	C	18.5	C	0.1	
9. Martincoit Rd/ Espola Rd	Poway	Signal	AM	11.2	B	23.4	C	12.2	No
			PM	7.3	A	15.6	B	8.3	
10. Cloudcroft Dr/ Espola Rd	Poway	MSSC	AM	29.5	D	32.7	D	3.2	No
			PM	18.8	C	20.2	C	1.4	
11. Old Coach Rd/ Espola Rd	Poway	Signal	AM	13.6	B	13.7	B	0.1	No
			PM	10.0	A	10.0	B	0.0	
12. Espola Rd/ Lake Poway Rd	Poway	Signal	AM	19.4	B	20.4	C	1.0	No
			PM	15.0	B	15.0	B	0.0	
13. Espola Rd/Eden Grove/ Titan Wy	Poway	Signal	AM	46.9	D	48.1	D	1.2	No
			PM	12.6	B	12.7	B	0.1	
14. Espola Rd/ Twin Peaks Rd	Poway	Signal	AM	60.3	E	61.6	E	1.3	No
			PM	53.7	D	54.4	D	0.7	
15. Pomerado Rd/ Rios Rd	San Diego	Signal	AM	11.1	B	11.4	B	0.3	No
			PM	14.7	B	15.1	B	0.4	
16. Pomerado Rd/ Avenida La Valencia	San Diego	Signal	AM	10.8	B	11.0	B	0.2	No
			PM	19.4	B	20.5	C	1.1	

Continued on Next Page

TABLE 11–1
HORIZON YEAR 2035 INTERSECTION OPERATIONS

Intersection	Jur.	Control Type	Peak Hour	Horizon Year 2035		Horizon Year 2035 With Project		Δ [c] Delay	Sig?
				Delay [a]	LOS [b]	Delay	LOS		
Continued from Previous Page									
17. Pomerado Rd/ Stone Canyon Rd	San Diego	Signal	AM	123.6	F	**129.4**	**F**	**5.8**	**Yes**
			PM	130.0	F	**137.2**	**F**	**7.2**	
18. Pomerado Rd/ Bernardo Hts Pkwy	San Diego	Signal	AM	63.0	E	63.7	E	0.7	No
			PM	29.8	C	30.3	C	0.5	
19. Pomerado Rd/ Twin Peaks Rd	Poway	Signal	AM	68.9	E	69.8	E	0.9	No
			PM	87.7	F	88.3	F	0.6	
20. Avenida Florencia/ Avenida La Valencia	Poway	AWSC [e]	AM	7.6	A	7.6	A	0.0	No
			PM	7.7	A	7.7	A	0.0	
21. Del Norte/ Stone Canyon Rd	Poway	AWSC	AM	9.6	A	9.7	A	0.1	No
			PM	8.7	A	8.8	A	0.1	
22. Martincoit Rd/ Stone Canyon Rd	Poway	MSSC	AM	9.9	A	10.0	A	0.1	No
			PM	7.9	A	7.9	A	0.0	
23. Boca Raton Ln/ Drwy "E"	Poway	DNE/ MSSC	AM	—	—	7.3	A	—	No
			PM	—	—	7.3	A	—	
24. Tam O'Shanter Dr/ Drwy "A"	Poway	DNE/ MSSC	AM	—	—	7.3	A	—	No
			PM	—	—	7.3	A	—	
25. Tam O'Shanter Dr / Cloudcroft Dr	Poway	MSSC	AM	—	—	7.3	A	—	No
			PM	—	—	7.3	A	—	

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service
c. Δ denotes the increase in delay due to Project.
d. Two-Way Stop Controlled intersection. Minor street left turn delay reported.
e. All-Way Stop Controlled intersection. Average intersection delay reported.

General Notes:

1. Sig = Significant impact, yes or no.
2. Jur. = Jurisdiction
3. DNE = Does not exist.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 11–2
HORIZON YEAR 2035 STREET SEGMENT OPERATIONS

Street Segment	Jur.	Existing Capacity (LOS E) [a]	Horizon Year 2035			Horizon Year 2035 With Project			Project Volumes	Δ [e] V/C	Sig?
			ADT [b]	LOS [c]	V/C [d]	ADT	LOS	V/C			
Rancho Bernardo Rd											
1. W. Bernardo Dr to I-15 SB Ramps	Caltrans/ San Diego	40,000	52,600	F	1.315	52,701	F	1.318	101	0.003	No
2. I-15 SB Ramps to I-15 NB Ramps	Caltrans/ San Diego	50,000	49,200	D	0.984	49,932	D	0.999	732	0.015	No
3. I-15 NB Ramps to Bernardo Center Dr	Caltrans/ San Diego	50,000	41,600	D	0.832	42,560	D	0.852	960	0.020	No
4. Bernardo Center Dr to Bernardo Oaks Dr	San Diego	40,000	33,600	D	0.840	34,736	D	0.869	1136	0.029	No
5. Pomerado Rd to Summerfield Ln	San Diego	40,000	25,620	C	0.641	27,261	C	0.682	1641	0.041	No
Espola Rd											
6. Summerfield Ln to Avenida Florencia	Poway	41,000	26,100	C	0.637	27,766	D	0.678	1666	0.041	No
7. Avenida Florencia to Valle Verde Rd	Poway	41,000	26,000	C	0.635	27,767	D	0.678	1767	0.043	No
8. Valle Verde Rd to Martincoit Rd	Poway	41,000	20,710	C	0.506	22,427	C	0.547	1717	0.041	No
9. Martincoit Rd to Cloudcroft Dr	Poway	31,000	18,860	C	0.609	19,441	C	0.628	581	0.019	No
10. Cloudcroft Dr to Old Coach Rd	Poway	31,000	18,810	C	0.607	19,467	C	0.628	657	0.021	No
11. Old Coach Rd to Lake Poway Rd	Poway	31,000	15,930	C	0.514	16,587	C	0.536	657	0.022	No
12. Lake Poway Rd to Titan Wy	Poway	41,000	15,500	B	0.379	16,131	B	0.394	631	0.015	No
13. Titan Wy to Willow Ranch Rd	Poway	41,000	21,010	C	0.513	21,591	C	0.527	581	0.014	No
14. Willow Ranch Rd to Del Poniente Rd	Poway	29,000	21,010	D	0.725	21,591	D	0.745	581	0.020	No
15. Del Poniente Rd to Twin Peak Rd	Poway	29,000	21,010	D	0.725	21,591	D	0.745	581	0.020	No
16. Twin Peaks Rd to Ezra Ln	Poway	29,000	21,870	D	0.755	22,123	D	0.763	253	0.009	No
Pomerado Rd											
17. Pomerado Ct to Rancho Bernardo Rd	San Diego	40,000	30,000	D	0.750	30,202	D	0.756	202	0.007	No
18. Rancho Bernardo Rd to Rios Rd	San Diego	40,000	25,800	C	0.645	26,103	C	0.653	303	0.009	No
19. Rios Rd to Avenida La Valencia	San Diego	40,000	28,200	C	0.705	28,529	C	0.714	329	0.010	No
20. Avenida La Valencia to Stone Canyon Rd	San Diego	40,000	30,520	D	0.763	30,874	D	0.772	354	0.010	No

Continued on Next Page

TABLE 11–2
HORIZON YEAR 2035 STREET SEGMENT OPERATIONS

Street Segment	Jur.	Existing Capacity (LOS E) [a]	Horizon Year 2035			Horizon Year 2035 With Project			Project Volumes	Δ [e] V/C	Sig?
			ADT [b]	LOS [c]	V/C [d]	ADT	LOS	V/C			
Continued from Previous Page											
Pomerado Rd (cont.)											
21. Stone Canyon Rd to Bernardo Heights Pkwy	San Diego	40,000	29,200	C	0.730	29,705	C	0.743	505	0.013	No
22. Bernardo Heights Pkwy to Gateway Park Rd	Poway	50,000	33,640	C	0.673	34,095	C	0.682	455	0.010	No
23. Gateway Park Rd to Monte Vista Rd	Poway	50,000	33,640	C	0.673	34,095	C	0.682	455	0.010	No
24. Monte Vista Rd to Twin Peaks Rd	Poway	50,000	31,700	C	0.634	32,155	C	0.644	455	0.010	No
25. Twin Peaks Rd to Ted Williams Pkwy	Poway	50,000	34,100	C	0.682	34,201	C	0.685	101	0.003	No
Bernardo Center Dr											
26. Bajada Rd to Rancho Bernardo Rd	San Diego	40,000	22,360	C	0.559	22,411	C	0.561	51	0.002	No
27. Rancho Bernardo Rd to Bernardo Plaza Ct	San Diego	40,000	24,080	C	0.602	24,207	C	0.606	127	0.004	No
Rios Rd											
28. Pomerado Rd to Summerfield Ln	San Diego	3,500	2,440	D	0.698	2,466	D	0.705	26	0.008	No
Summerfield Ln											
29. Rios Rd to Rancho Bernardo Rd	Poway	3,800	2,440	D	0.643	2,466	D	0.649	26	0.007	No
Avenida La Valencia											
30. Pomerado Rd to Avenida Florencia	Poway	3,800	3,150	E	0.829	3,176	E	0.836	26	0.008	No
Avenida Florencia											
31. Rancho Bernardo Rd to Avenida La Valencia	Poway	3,800	740	A	0.195	841	A	0.222	101	0.027	No
Del Norte											
32. Avenida La Valencia to Stone Canyon Rd	Poway	3,800	450	A	0.119	526	A	0.139	76	0.020	No
Stone Canyon Rd											
33. Pomerado Rd to Ladera Piedra Way	Poway	14,000	5,010	A	0.358	5,162	A	0.369	152	0.011	No
34. Avenida Florencia to Martincoit Rd	Poway	14,000	3,320	A	0.238	3,396	A	0.243	76	0.005	No
Continued on Next Page											

TABLE 11–2
HORIZON YEAR 2035 STREET SEGMENT OPERATIONS

Street Segment	Jur.	Existing Capacity (LOS E) [a]	Horizon Year 2035			Horizon Year 2035 With Project			Project Volumes	Δ [e] V/C	Sig?
			ADT [b]	LOS [c]	V/C [d]	ADT	LOS	V/C			
Continued from Previous Page											
Martincoit Rd											
35. Rancho Bernardo Rd to Stone Canyon Rd	Poway	14,000	2,770	A	0.198	2,871	A	0.206	101	0.008	No
Twin Peaks Rd											
36. World Trade Dr to Pomerado Rd	Poway	63,000	46,400	C	0.737	46,577	C	0.740	177	0.003	No
37. Pomerado Rd to Deerwood Dr	Poway	50,000	39,000	D	0.780	39,177	D	0.784	177	0.004	No
38. Tierra Bonita Rd to Espola Rd	Poway	50,000	26,700	C	0.534	27,029	C	0.541	329	0.008	No
Valle Verde Rd											
39. Espola Rd to St Andrews Dr	Poway	14,000	6,930	B	0.495	6,981	B	0.499	51	0.004	No
St Andrews Dr											
40. Valle Verde Rd to Tam O'Shanter Dr	Poway	3,800	1,690	C	0.445	1,741	C	0.459	51	0.014	No
Tam O'Shanter Dr											
41. St Andrews Dr to Pvt Dr "E"	Poway	3,800	1,690	C	0.445	1,716	C	0.452	26	0.008	No
42. Pvt Dr "E" to Cloudcroft Ct	Poway	3,800	490	A	0.129	541	A	0.143	51	0.014	No
Cloudcroft Dr											
43. Cloudcroft Ct to Espola Rd	Poway	3,800	1,440	B	0.379	1,516	B	0.399	76	0.020	No
Bernardo Heights Pkwy											
44. Paseo Lucido to Pomerado Rd	San Diego	40,000	11,520	A	0.288	11,571	A	0.290	51	0.002	No
Lake Poway Rd											
45. East of Espola Rd	Poway	14,000	980	A	0.070	1,006	A	0.072	26	0.002	No
Continued on Next Page											

TABLE 11–2
HORIZON YEAR 2035 STREET SEGMENT OPERATIONS

Street Segment	Jur.	Existing Capacity (LOS E) [a]	Horizon Year 2035			Horizon Year 2035 With Project			Project Volumes	Δ [e] V/C	Sig?
			ADT [b]	LOS [c]	V/C [d]	ADT	LOS	V/C			
Continued from Previous Page											
Titan Way											
46. West of Espola Rd	Poway	14,000	6,170	B	0.441	6,221	B	0.445	51	0.004	No

Footnotes:

a. Capacities based on City of Poway and City of San Diego Roadway Classification & LOS tables (See *Appendix B*).
b. Average Daily Traffic
c. Level of Service
d. Volume to Capacity ratio
e. Δ denotes a Project-induced increase in the Volume to Capacity ratio

General Notes:

1. Jur = Jurisdiction
2. Sig = Significant impact, yes or no

TABLE 11–3
HORIZON YEAR 2035 RAMP METER ANALYSIS – FIXED RATE

Location	Peak Hour [a]	Horizon Year						
		Volume		Peak Hour Demand (D) [b]	Meter Rate (R) [c]	Excess Demand (E) (veh)	Delay (min)	Queue (ft) [d]
		SOV	HOV					
Rancho Bernardo Rd WB to I-15 SB (1 SOV+1 HOV)								
Horizon Year 2035	AM	570	64	570	492	79	9.6	1950
Horizon Year 2035 With Project	AM	595	66	595	492	103	12.6	2575
Project Increase	*AM*	*25*	*2*	*25*	—	*24*	*3.0*	*625*
Rancho Bernardo Rd WB to I-15 NB (1 SOV+1 HOV)								
Horizon Year 2035	PM	495	41	495	475	21	2.7	525
Horizon Year 2035 With Project	PM	502	41	502	475	27	3.4	675
Project Increase	*PM*	*7*	—	*7*	—	*6*	*0.7*	*150*

***Footnotes**:*

a. Selected peak hour based on period when ramp meter is operating.
b. Peak hour demand in vehicles/hour/lane for SOV and HOV lanes.
c. Meter rate "R" is the most restrictive rate at which the ramp meter (signal) discharges traffic onto the freeway (obtained from Caltrans). The discharge rate varies during the peak hour depending on the mainline volumes.
d. Queue calculated assuming vehicle length of 25 feet.

General Notes:

1. SOV = Single Occupancy Vehicle, HOV = High Occupancy Vehicle
2. Lane utilization factor accounted for in peak hour demand calculation. (HOV % observed from PeMS data).

TABLE 11–4
HORIZON YEAR FREEWAY SEGMENT OPERATIONS

Freeway Segment	Dir.	Lanes [a]	Horizon Year 2035								Horizon Year 2035 + Project								Δ V/C [f]		Sig?
			Volume [b]		V/C [c]		Density [d]		LOS [e]		Volume		V/C		Density		LOS				
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
Interstate 15																					
North of Rancho Bernardo Rd	NB	5M	6,630	10,153	0.698	1.069	24.4	>45.0	C	F	6,640	10,160	0.700	1.070	24.5	>45.0	C	F	0.002	0.001	No
	SB	5M	12,008	8,562	1.265	0.902	>45.0	36.2	F	E	12,014	8,576	1.265	0.903	>45.0	36.3	F	E	0.000	0.001	No
South of Rancho Bernardo Rd	NB	5M	7,706	9,659	0.812	1.017	30.2	>45.0	D	F	7,722	9,699	0.814	1.022	30.3	>45.0	D	F	0.002	0.005	No
	SB	5M	10,721	9,336	1.129	0.984	>45.0	43.3	F	E	10,748	9,356	1.132	0.985	>45.0	43.4	F	E	0.003	0.001	No

Footnotes:

a. Lane geometry taken from PeMS lane configurations at corresponding postmile.
b. Existing volume calculated from most recent Caltrans *Traffic Census Program* Peak Hour Volume Data (2017). See *Table 6–3* for K and D factors. Cumulative growth added to existing volumes to arrive at Horizon Year 2035.
c. V/C = (Peak Hour Volume/Hourly Capacity)
d. Density measures passenger cars per mile per lane. Density = Flow Rate (passenger-cars/hour/lane) ÷ Speed (average passenger-car speed in mph).
e. Level of Service
f. "Δ" denotes the Project-induced increase in V/C. Per City Guidelines, a significant impact occurs when the V/C is increased by greater than 0.01 for LOS E or LOS F.

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Note:

1. M = Mainline
2. Sig? = Significant impact, yes or no.

12.0 PEDESTRIAN MOBILITY

Improving pedestrian connections around The Farm in Poway Project area is one of the focus areas in the current study. The study puts special emphasis on locations near school zones where high walking activities are expected by students. Of particular importance is Chaparral Elementary, which is the school assigned to the Project residents. Access to Chaparral Elementary is provided by Espola Road to Valle Verde Road to Solera Way, and ultimately Tannin Drive. It is also worth noting that Painted Rock Elementary is located within the vicinity of the Project site just 750-feet south of the Espola Road/ Martincoit Road intersection. Painted Rock Elementary may frequent the Project agricultural amenities for educational opportunities.

In addition, Poway is one of the popular destinations for hikers in the San Diego area. Potato Chip Rock on Mount Woodson, Lake Poway, and the Blue Sky Reserve are among some of destinations that could be accessed by roadways that are in the vicinity of the study area. In this regard, the study also investigates potential improvements by the Project that could improve trail network's connectivity and provide better access to named locations.

12.1 Existing Pedestrian Conditions

Pedestrian circulation throughout the study area is mainly provided by pathways and crossings. Few sidewalks are provided in the study area given the semi-rural character of the community. A pedestrian network inventory was conducted along street segments, which included documenting missing sidewalks, pedestrian barriers and pedestrian pathways within the Project's sphere of influence.

Figure 12–1 shows the existing pedestrian network along street segments.

12.1.1 *Existing Pedestrian Demand*

Existing pedestrian demand was collected at every intersection in the Project study area during the commuter AM/PM peak hours, as well as the mid-day school peak hour. The average combined AM, PM and mid-day pedestrian demand for was calculated and every intersection was categorized as lower than average, average demand or higher than average demand. This represents a measure of pedestrian demand in close proximity to the Project site. ***Figure 12–2*** shows the existing pedestrian demand in and around the study area for each of the peak hours.

The following intersections were observed as "high" pedestrian activity locations within the area.

- Intersection #13. Espola Road/Eden Grove Road/Titan Way (AM and mid-day peak hours)

Espola Road at Titan Way is the main access for Poway High School. Thus, the existence of high pedestrian demand at this intersection would be expected.

Pedestrian conditions at the other intersections located near school access points experience medium levels pedestrian activity.

12.2 Future Pedestrian Conditions

The *City of Poway Transportation Master Plan* places an emphasis on reducing the dependence on automobile travel by enhancing the network of safe and direct walking routes within the City. The City's current inventory of existing and proposed trails amounts to approximately 60 miles of multi-use trails (hiking, bicycling, and equestrian). The overall goal of the trail system is to connect recreation areas, parks, open spaces, schools, residential and commercial areas, and equestrian facilities. A review of the *City of Poway Master Transportation Plan, Espola Road Safety Improvement Project*, and *Capital Improvements Projects Status Report* was conducted to identify relevant local projects. In addition, a review of the *City of San Diego Pedestrian Master Plan, Rancho Bernardo Community Plan Circulation Element,* and *Rancho Bernardo Public Facilities Financing Plan FY 2014* were reviewed.

Table 12–1 shows the planned pedestrian improvements that were reviewed. *Figure 12–1* also illustrates the future planned bicycle network.

TABLE 12–1
PLANNED IMPROVEMENTS – PEDESTRIAN

Project Name	Source	Improvements	Funding
Espola Road Safety Improvements	Poway Master Transportation Element	Provide a multi-purpose trail on the west side of Espola Road from Mountain Road to Willow Ranch Road.	Design 100% Complete Estimated Construction
Accessibility Compliance: Project T-9	Rancho Bernardo Public Facilities Financing Plan FY 2014	Curb Ramps, Audible Signals, and Installation of Sidewalks, based on ADA complaints within the Community.	Unidentified

12.3 Pedestrian Mobility Review

As part of the pedestrian mobility review, a walkshed analysis was conducted as noted below.

12.3.1 *Walkshed Analysis*

In this study, a walkshed analysis was performed to evaluate Project site connectivity. This analysis also identifies potential locations where providing pedestrian access could improve Project site connectivity to surrounding area.

The walkshed analysis was performed by identifying all access points to/from the Project site. From each access point, areas outside the Project site that could be reached by walking 0.25 miles were identified. Selected walking routes from each access point consider the existence of crosswalks, pedestrian bridges, etc. In this regard, while some areas are within the 0.25-mile buffer around the campus, they may not be reached by walking due to lack of facilities. After creating the walkshed network, the area that could be captured by walking was measured. A larger walkshed area (walkshed network) means higher connectivity between Project site and nearby areas.

As shown in ***Figure 12–3*** illustrating the walkshed analysis, the Project site in general has good connectivity with the exception of limited walkability along St. Andrews Drive abutting the majority of the residential development within the Project site where there are no direct access points.

12.4 Recommended Pedestrian Improvements

As previously mentioned, the community surrounding the Project is semi-rural in character. Most roadways in the immediate vicinity of the site do not have sidewalks.

Based on the review of the pedestrian network, walkshed evaluation, and City planning documents, the following pedestrian related improvements are recommended on- and off-site:

On-Site Improvements

- In order to preserve the semi-rural character of Espola Road given its classification as a "scenic roadway", construct a six-foot concrete sidewalk and nine-foot trail separated from the roadway by a landscaped buffer.
- Construct sidewalks on at least one side of all on-site roadways to connect to on-site trails, leading to the transit stop at the Espola Road/Cloudcroft Drive.
- Provide curb extensions, also referred to as bulb-outs at key on-site intersections, where on-street parking is proposed and feasible, to reduce crossing length and improve pedestrian visibility.
- Provide crosswalks on-site where trails and sidewalks meet vehicular traffic.

Off-Site Improvements

- Enhance connectivity between the Project site and St. Andrews Drive given the residents of the Project will be assigned to Chaparral Elementary School, which is located in close proximity to the site. Therefore, special safety features at the Espola Road/ Valle Verde Road intersection should include enhanced crosswalk paving for high visibility, pedestrian signals with countdown timers, leading pedestrian interval timing, ADA compliant curb ramps, and smart adaptive signals that can adjust signal phasing and extend pedestrian walk time based upon time of day.
- There is currently a pedestrian trail that takes access from Valle Verde Road between Edina Way and Solera Way that meanders through private property ultimately reaching Chaparral Elementary. While it is likely that some residents use this trail to reach the school via bike or foot, it is a private HOA-maintained facility without any guarantees of remaining open. Therefore, it is recommended that the Project construct the missing connection of the five-foot contiguous sidewalk along the west side of Valle Verde Road approximately 350 feet north of Edina Way to Solera Way.
- The uncontrolled intersection of St. Andrews Drive and Valle Verde Road should be improved to provide a high visibility crosswalk with ADA compliant curb ramps.
- Provide an enhanced crosswalk at the Espola Road/Martincoit Road intersection and include a pedestrian crossing on the west leg of Espola Road. Special safety features should include enhanced crosswalk paving for high visibility, and pedestrian signals with countdown timers, leading pedestrian interval timing, ADA compliant curb ramps, and

smart adaptive signals that can adjust signal phasing and extend pedestrian walk time based upon time of day.

Figure 12–4 shows the recommended pedestrian improvements.

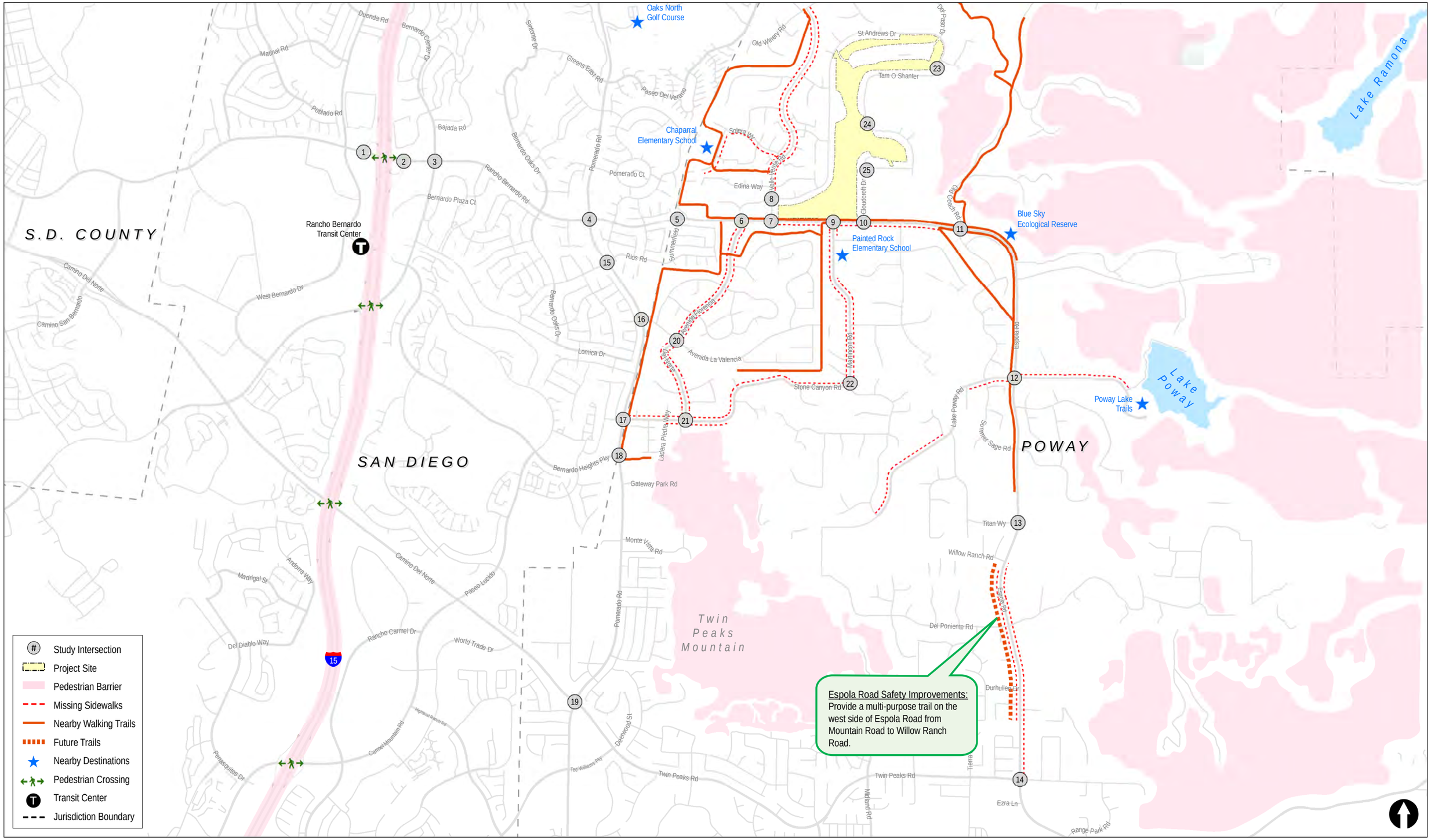

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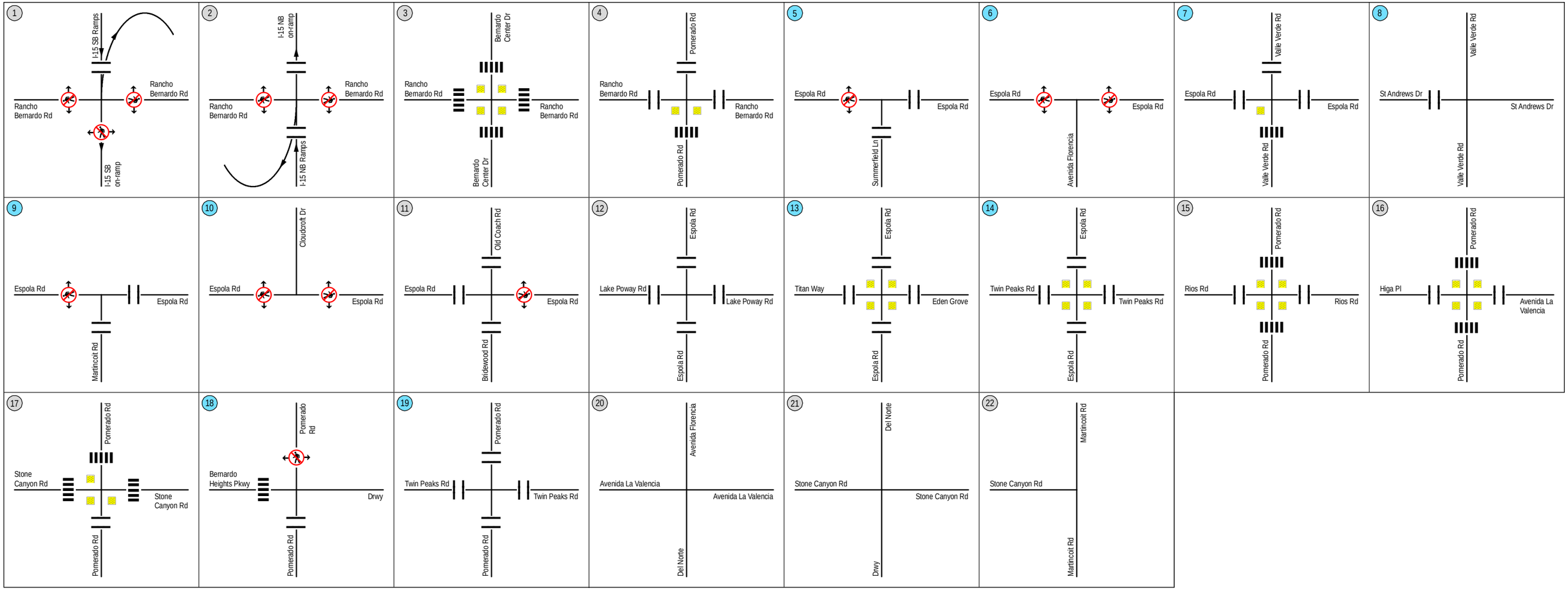
Figure 12-1

Pedestrian Network

(Page 1 of 2)

THE FARM IN POWAY



- # Study Intersection
- # Study Intersection within School Buffer (1-mile)
- ADA Tactile Paving
- Standard Crosswalk
- High Visibility Crosswalk
- Ped Crossing Prohibited

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Figure 12-1

Pedestrian Network
(Page 2 of 2)
THE FARM IN POWAY

AM Peak Hour

School Peak Hour

PM Peak Hour

Pedestrian Activity

- High Activity (> 25)
- Medium Activity (11 – 25)
- Low Activity (< 11)

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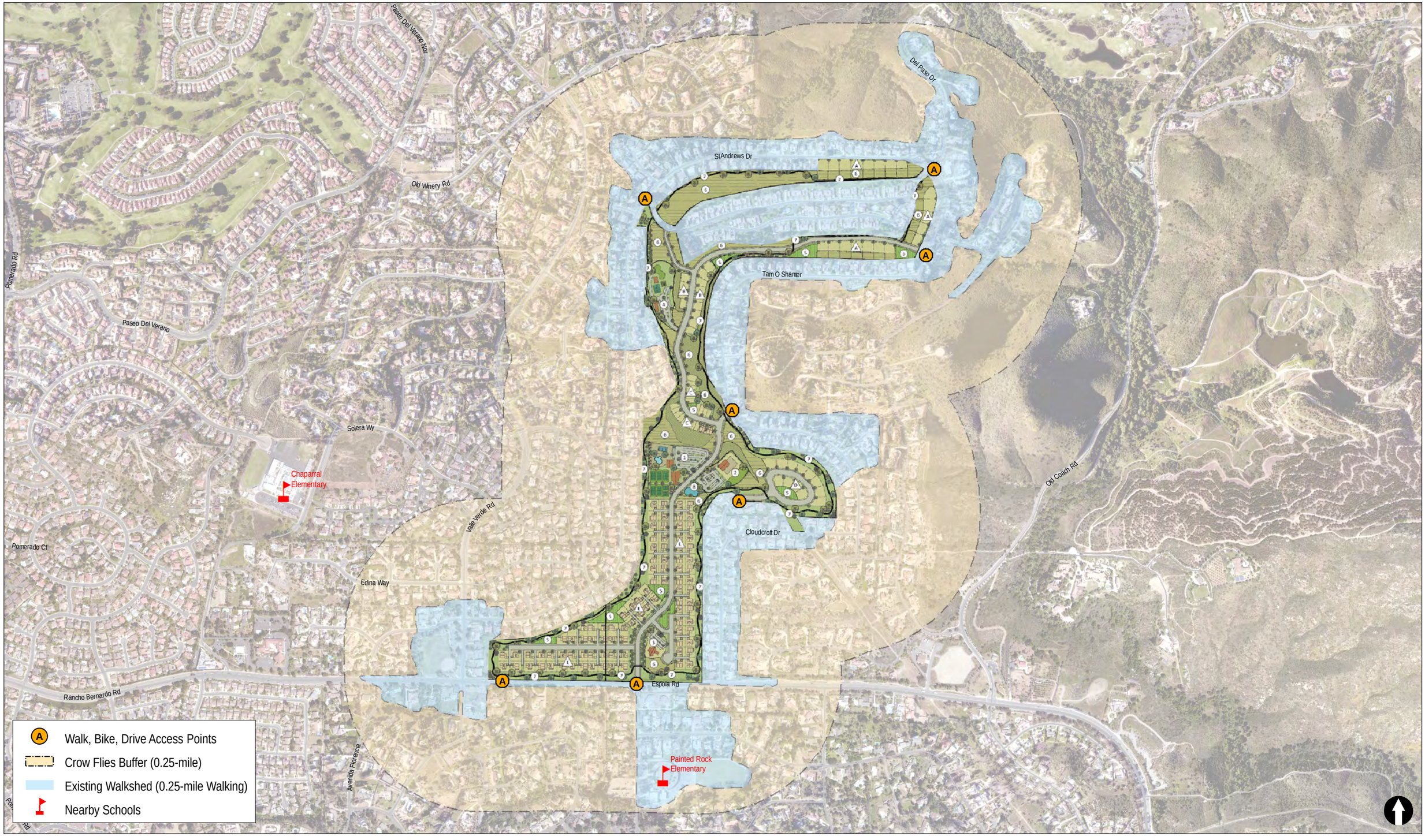
Figure 12-2

Existing Pedestrian Demand

THE FARM IN POWAY



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* Conceptual Site Plan provided for illustrative purposes only. See the Specific Plan for the latest site plan.

Figure 12-3

Walkshed Analysis

THE FARM IN POWAY

- Provide crosswalk on left leg
- Provide raised median

Provide missing sidewalks

Pedestrian Recommended Improvements

7 8 9	→	High Visibility Crosswalk
7 9	→	Ped Countdown Timers
7 8 9	→	ADA Compliance
7 9	→	Leading Pedestrian Intersection

SAN DIEGO

POWAY

Project Site

Chaparral Elementary School

Painted Rock Elementary School

Blue Sky Ecological Reserve

Poway Lake Trails

Lake Poway

Twin Peaks Mountain

West Bernardo Dr
Duenda Rd
Bernardo Center Dr
Matinal Rd
Poblado Rd
Bajada Rd
Bernardo Oaks Dr
Bernardo Plaza Ct
Rancho Bernardo
Paseo Del Verano Nor
Paseo Del Verano
Solera Wy
Valle Verde Rd
Edina Way
Summerfield
Rios Rd
Pomerado Rd
Avenida Florencia
Avenida La Valencia
Lomica Dr
Del Norte
Ladera Piedra Way
Paseo Lucido
Bernardo Heights Pkwy
Gateway Park Rd
Stone Canyon Rd
Martincoit Rd
St Andrews Dr
Tam O Shanter
Cloudcroft Dr
Del Paso Dr
Old Coach Rd
Espola Rd
Lake Poway Rd
Summer Sage Rd

1 2 3 5 6 7 8 9 10 11 12 15 16 17 18 20 21 22 23 24 25

- # Study Intersection
- Project Site
- Pedestrian Barrier
- Nearby Walking Trails
- ★ Nearby Destinations
- Jurisdiction Boundary
- # Recommended pedestrian improvement at intersection
- Recommended pedestrian improvement on sidewalks
- Recommended School Route

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Figure 12-4

Recommended Pedestrian Improvements

THE FARM IN POWAY

13.0 BICYCLE MOBILITY

Bicycle mobility has become a prominent part of roadway networks today and will continue to evolve as a more viable option to auto use in many parts of San Diego. Improving bicycle connections in and around the Project site is an important focus area for this study. The *City of San Diego Bicycle Master Plan (2013)*, the *City of San Diego General Plan - Mobility Element (2008)*, the *SANDAG San Diego Regional Bike Plan (2010)*, and the *City of Poway Transportation Master Element (2010)* establish guidelines for a safe, comprehensive local and regional bikeway network.

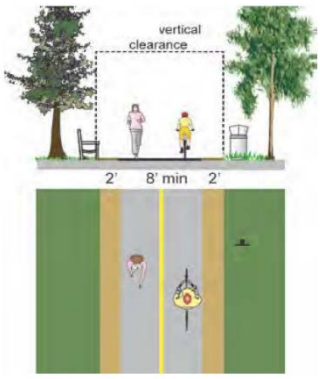
13.1 Bicycle Classifications

There are four (4) different bicycle classifications – Class I, Class II, Class III and Class IV as shown in ***Table 13–1.***

TABLE 13–1
CALIFORNIA BIKEWAY CLASSIFICATION SYSTEM

Class I – Bike Path

Bike paths, also termed shared-use or multi-use paths, are paved right-of-way for exclusive use by bicyclists, pedestrians, and those using non-motorized modes of travel. They are physically separated from vehicular traffic and can be constructed in roadway right-of-way or exclusive right-of-way. Bike paths provide critical connections in the city where roadways are absent or are not conducive to bicycle travel.



Class II – Bike Lane

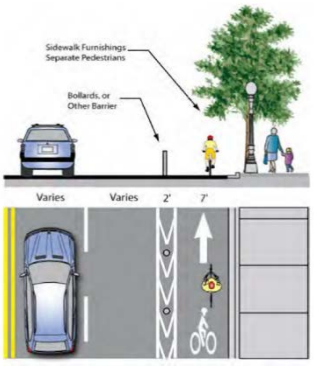
Bike lanes are defined by pavement striping and signage used to allocate a portion of a roadway for exclusive or preferential bicycle travel. Bike lanes are one-way facilities on either side of a roadway. Whenever possible, Bike Lanes should be enhanced with treatments that improve safety and connectivity by addressing site-specific issues, such as additional warning or wayfinding signage.

Class III - Bike Route

Bike routes provide shared use with motor vehicle traffic within the same travel lane. Designated by signs, Bike Routes provide continuity to other bike facilities or designate preferred routes through corridors with high demand. Whenever possible, Bike Routes should be enhanced with treatments that improve safety and connectivity, such as the use of "sharrows" or shared lane markings to delineate that the road is a shared-use facility.

Cycle Track

A Cycle Track is a hybrid type bicycle facility that combines the experience of a separated path with the on-street infrastructure of a conventional Bike Lane. Cycle tracks are bikeways located in roadway right-of-way but separated from vehicle lanes by physical barriers or buffers. Cycle tracks provide for one-way bicycle travel in each direction adjacent to vehicular travel lanes and are exclusively for bicycle use. Cycle tracks are not recognized by Caltrans Highway Design Manual as a bikeway facility. To provide bicyclists with the option of riding outside of the Cycle Track to position themselves for a left or right turn, parallel bikeways should be added adjacent to Cycle Track facilities whenever feasible.



Source: *City of San Diego Bicycle Master Plan (2013)*

13.2 Existing Bicycle Conditions

A detailed bicycle network inventory was conducted for the surrounding study area. ***Table 13–2*** summarizes the existing bicycle classifications found on the study street segments. As shown in *Table 13–2*, all roadways provide their classified bicycle facilities with the exception of a few locations, as shown in bold typeface in the table below.

It would be expected that these roadways will be improved to provide their classified bicycle facilities sometime in the future. *Section 13.3* below details the future bicycle improvements in the study area.

Figure 13–1 shows the existing bicycle mobility in the Project study area.

TABLE 13–2
BICYCLE MOBILITY

Street Segment	Existing Classification	Future Classification
Rancho Bernardo Rd		
1. W. Bernardo Dr to I-15 SB Ramps	Class II	Class II
2. I-15 SB Ramps to I-15 NB Ramp	Class III	**Class II**
3. I-15 NB Ramps to Bernardo Center Dr	Class III (Bike Route w/ Sharrow)	**Class II**
4. Bernardo Center Dr to Pomerado Rd	Class III (Bike Route w/ Sharrow)/ Class II	**Class II**
5. Pomerado Rd to Summerfield Ln	Class II	Class II
Espola Rd		
6. Summerfield Ln to Avenida Florencia	Class II	Class II
7. Avenida Florencia to Valle Verde Rd	Class II	Class II
8. Valle Verde Rd to Martincoit Rd	Class II	Class II
9. Martincoit Rd to Cloudcroft Dr	Class II	Class II
10. Cloudcroft Dr to Old Coach Rd	Class II	Class II
11. Old Coach Rd to Lake Poway Rd	Class II	Class II
12. Lake Poway Rd to Titan Wy	Class II	Class II
13. Titan Wy to Willow Ranch Rd	Class II	Class II
14. Willow Ranch Rd to Del Poniente Rd	Class II	Class II
15. Del Poniente Rd to Twin Peaks Rd	Class II	Class II
16. Twin Peaks Rd to Ezra Ln	Class II	Class II
Pomerado Rd		
17. Pomerado Ct to Rancho Bernardo Rd	Class III	Class II
18. Rancho Bernardo Rd to Rios Rd	Class II	Class II
19. Rios Rd to Avenida La Valencia	Class II	Class II
20. Avenida La Valencia to Stone Canyon Rd	Class II	Class II
21. Stone Canyon Rd to Bernardo Heights Pkwy	Class II	Class II

Continued on Next Page

TABLE 13–2
BICYCLE MOBILITY

Street Segment	Existing Classification	Future Classification
Continued from Previous Page		
22. Bernardo Heights Pkwy to Gateway Park Rd	Class II	Class II
23. Gateway Park Rd to Monte Vista Rd	Class II	Class II
24. Monte Vista Rd to Twin Peaks Rd	Class II	Class II
25. Twin Peaks Rd to Ted Williams Pkwy	Class II	Class II
Bernardo Center Dr		
26. Bajada Rd to Rancho Bernardo Rd	Class III	Class III
27. Rancho Bernardo Rd to Bernardo Plaza Ct	Class III	Class III
Rios Rd		
28. Pomerado Rd to Summerfield Ln	None	None
Summerfield Ln		
29. Rios Rd to Rancho Bernardo Rd	None	None
Avenida La Valencia		
30. Pomerado Rd to Avenida Florencia	None	None
Avenida Florencia		
31. Rancho Bernardo Rd and Avenida La Valencia	Class III	Class III
Del Norte		
32. Avenida La Valencia to Stone Canyon Rd	Class III	Class III
Stone Canyon Rd		
33. Pomerado Rd to Avenida Florencia	Class III	Class III
34. Avenida Florencia to Martincoit Rd	None	**Class III**
Martincoit Rd		
35. Rancho Bernardo Rd to Stone Canyon Rd	None	**Class III**
Twin Peaks Rd		
36. World Trade Center to Pomerado Rd	Class II	Class II
37. Pomerado Rd to Deerwood Dr	Class II	Class II
38. Tierra Bonita Rd to Espola Rd	Class II	Class II
Valle Verde Rd		
39. Espola Rd to St Andrews Dr	Class II	Class II
St Andrews Dr		
40. Valle Verde Rd to Tam O Shanter Dr	None	None
Tam O'Shanter Dr		
41. St Andrews Dr to Entrance 'A'	None	None
42. Entrance 'B' to Cloudcroft Dr	None	None
Cloudcroft Dr		
43. Tam O Shanter Dr to Rancho Bernardo Dr	None	None
Continued on Next Page		

TABLE 13–2
BICYCLE MOBILITY

Street Segment	Existing Classification	Future Classification
Continued from Previous Page		
Bernardo Heights Pkwy 44. Paseo Lucido to Pomerado Rd	Class II	Class II
Lake Poway Rd 45. East of Espola Rd	Class II	Class II
Titan Way 46. West of Espola Rd	None	None

Note:
Improved conditions in the future shown in bold typeface.

13.2.1 *Existing Bicycle Demand*

Existing bicycle demand was collected at every intersection in the Project study area during the commuter AM/PM peak hours, as well as the mid-day school peak hour. The average combined AM, PM and mid-day bicycle demand for was calculated and every intersection was categorized as lower than average, average demand or higher than average demand.

Figure 13–2 shows the existing bicycle activity in and around the study area for AM/PM peak hour.

The following intersections were observed as "high" bicycle activity locations within the area.

- Intersection #13. Espola Road/ Valle Verde Road (school mid-day peak hour)

13.3 Future Bicycle Conditions

As stated in the future pedestrian conditions section of this report, the *City of Poway Transportation Master Plan* places an emphasis on reducing the dependence on automobile travel by enhancing the network of safe and direct walking routes within the City. The City's current inventory of existing and proposed trails amounts to approximately 60 miles of multi-use trails (hiking, bicycling, and equestrian). The overall goal of the trail system is to connect recreation areas, parks, open spaces, schools, residential and commercial areas, and equestrian facilities. A review of the *City of Poway Master Transportation Plan, Espola Road Safety Improvement Project*, and *Capital Improvements Projects Status Report* was conducted to identify relevant local projects. In addition, a review of the *City of San Diego Bicycle Master Plan, Rancho Bernardo Community Plan Circulation Element*, and *Rancho Bernardo Public Facilities Financing Plan FY 2014* were reviewed.

Table 13–3 shows the planned improvements that were identified and reviewed. For locations in which funding sources and completion schedules are unknown, improvements were not taken into account in the existing bike mobility analysis.

Figure 13–1 also illustrates the future planned bicycle network.

TABLE 13–3
PLANNED IMPROVEMENTS – BICYCLE

Corridor	Source	Improvements	Schedule/ Funding
Rancho Bernardo Road Between Bernardo Oaks Drive and West Bernardo Drive	San Diego Regional Bicycle Plan (2013)	The improvement will provide for a Class-II Bike Lane.	Unknown
Pomerado Road Between Rancho Bernardo and Pomerado Ct		The improvement will provide for a Class-II Bike Lane	Unknown
Stone Canyon Road Between Del Norte and Martincoit Road	City of Poway Transportation Master Elements (2010)	The improvement will provide for a Class-III Bike Route	Unknown
Martincoit Road Between Stone Canyon Road and Rancho Bernardo Road		The improvement will provide for a Class-III Bike Route	Unknown
Valle Verde Road Between Espola Road and Old Winery Rd		The improvement will provide for a Class-II Bike Lane.	Unknown
Espola Road Bike Lanes Between Range Park Road and Poway Road	Poway Adopted Financial Plan for FY 18-19	The improvement will widen the roadway to accommodate Class II Bike Lanes.	Fully Funded/ Estimated

13.4 Bicycle Mobility Review

As part of the bicycle mobility review, a bikeshed analysis was conducted as noted below.

13.4.1 *Bikeshed Analysis*

In this study, a bikeshed analysis was performed to evaluate site connectivity. This analysis also identifies potential locations where providing bicycle facilities could improve Project site's connectivity to surrounding area.

The bikeshed analysis was performed by identifying all access points to / from the Project site. From each access point, areas outside the Project site that could be reached by bicycling for a conservative 1.0-mile (or approximately 10 minutes) were identified. Selected bicycle routes from each access point consider the existence of bike routes, lanes, dedicated pathways, intersection crosswalks, bicycle/pedestrian bridges, etc. In this regard, while some areas are within the 1.0-mile buffer around the site, they may not be reached by bike due to lack of facilities. The bikeshed analysis was conducted under existing and future conditions assuming planned improvements. A larger bikeshed area (bikeshed network) means higher connectivity between the site and nearby areas.

As shown in ***Figure 13–3*** illustrating the bikeshed analysis, the Project site, in general, has good connectivity to the surrounding community. This finding can be attributed to a good bicycle network both currently in place and planned for the future.

13.5 Recommended Bicycle Improvements

Based on the review of the bicycle network, bikeshed analysis and planning documents, the following bicycle related improvements are recommended both on- and off-site:

On-Site Improvements

- Provision of the on-site multi-use trails will be shared between bicycles and other users, including pedestrians and equestrians. Appropriate signage will indicate rules for yielding to various users.
- Traffic calming measures and low speed designs should be used in the design of on-site roadways, with "shared roadway" markings identifying that bicycle use is permitted.
- Provide bicycle parking stations on-site, staging areas, trail respite rest stops, and seating along the multi-use trail, and a bike station.

Off-Site Improvements

- Retrofit the intersection crossings at Espola Road/ Martincoit Road and Espola Road/ Valle Verde Road with high visibility crosswalks to reduce bicycle /vehicle conflicts and provide bicycle signal detection. Coordinate with the City of Poway on implementing bike treatments (e.g. bike detection, green striping) at the intersection.

Figure 13–4 shows the recommended bicycle improvements.

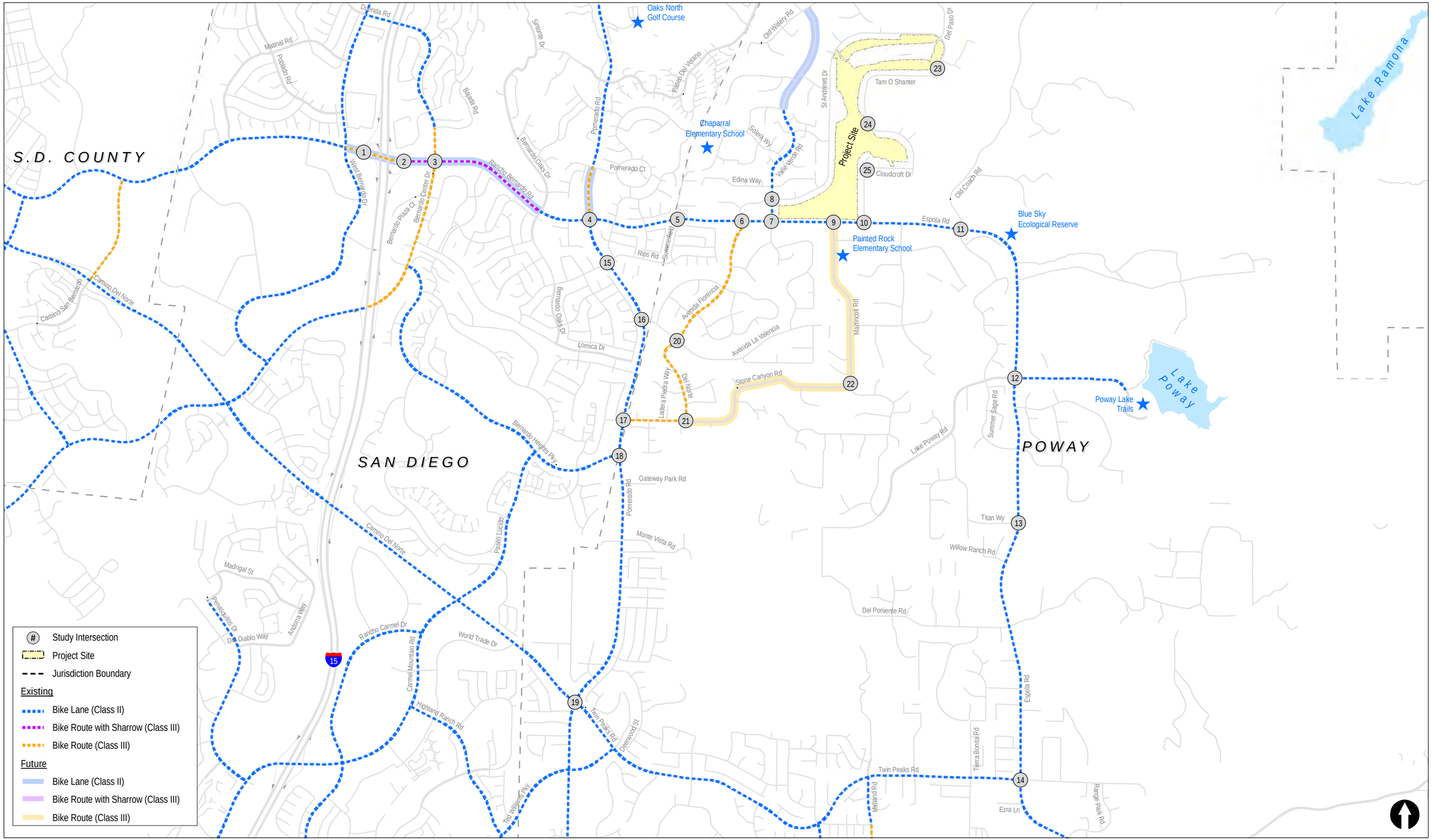


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Figure 13-1

Bicycle Network

THE FARM IN POWAY

AM Peak Hour

School Peak Hour

PM Peak Hour

SAN DIEGO

POWAY

Bicycle Activity
- High Activity (> 10)
- Medium Activity (6 – 10)
- Low Activity (< 6)

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Figure 13-2

Existing Bicycle Demand

THE FARM IN POWAY

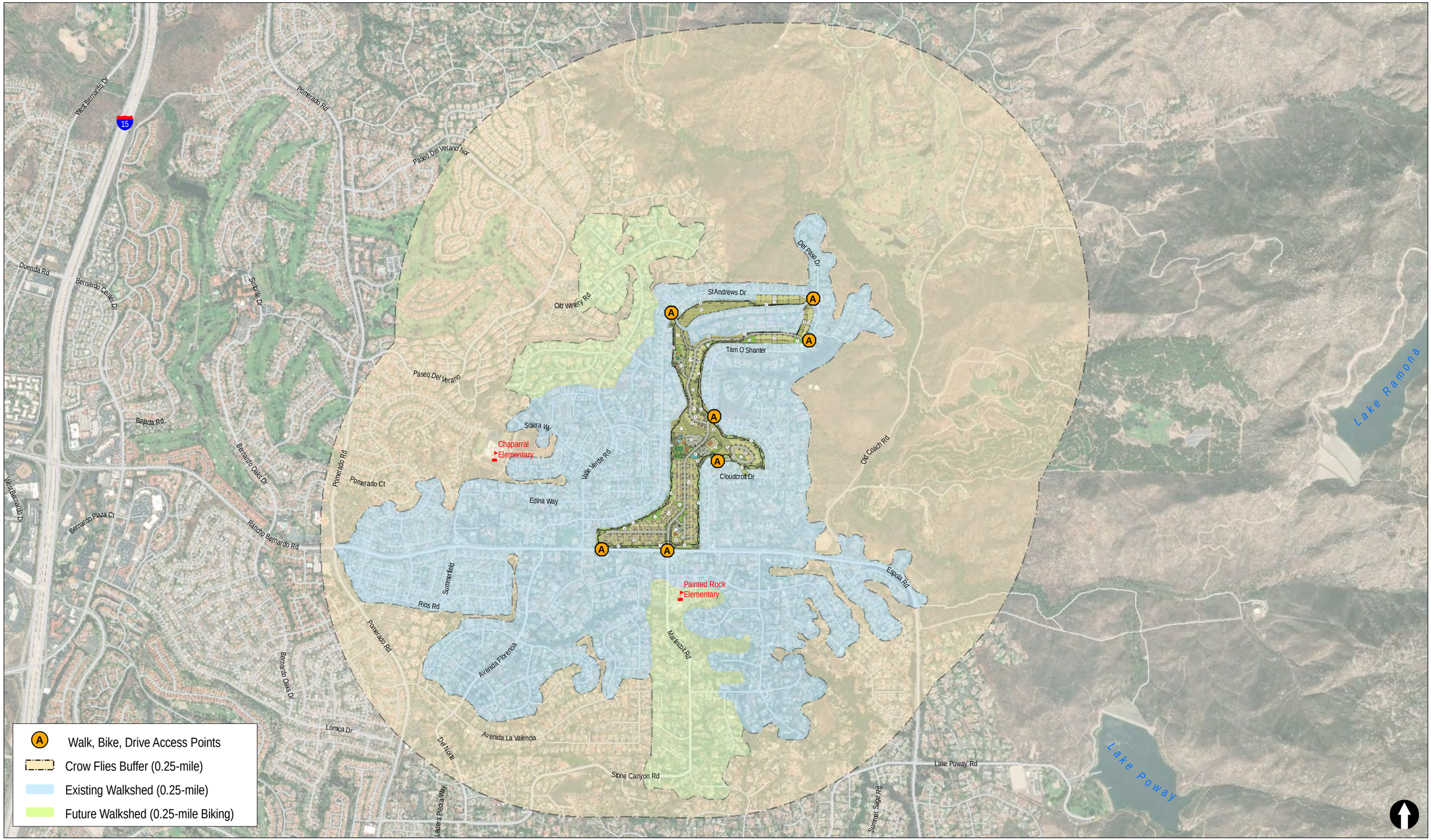

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Figure 13-3

Bikeshed Anaysis

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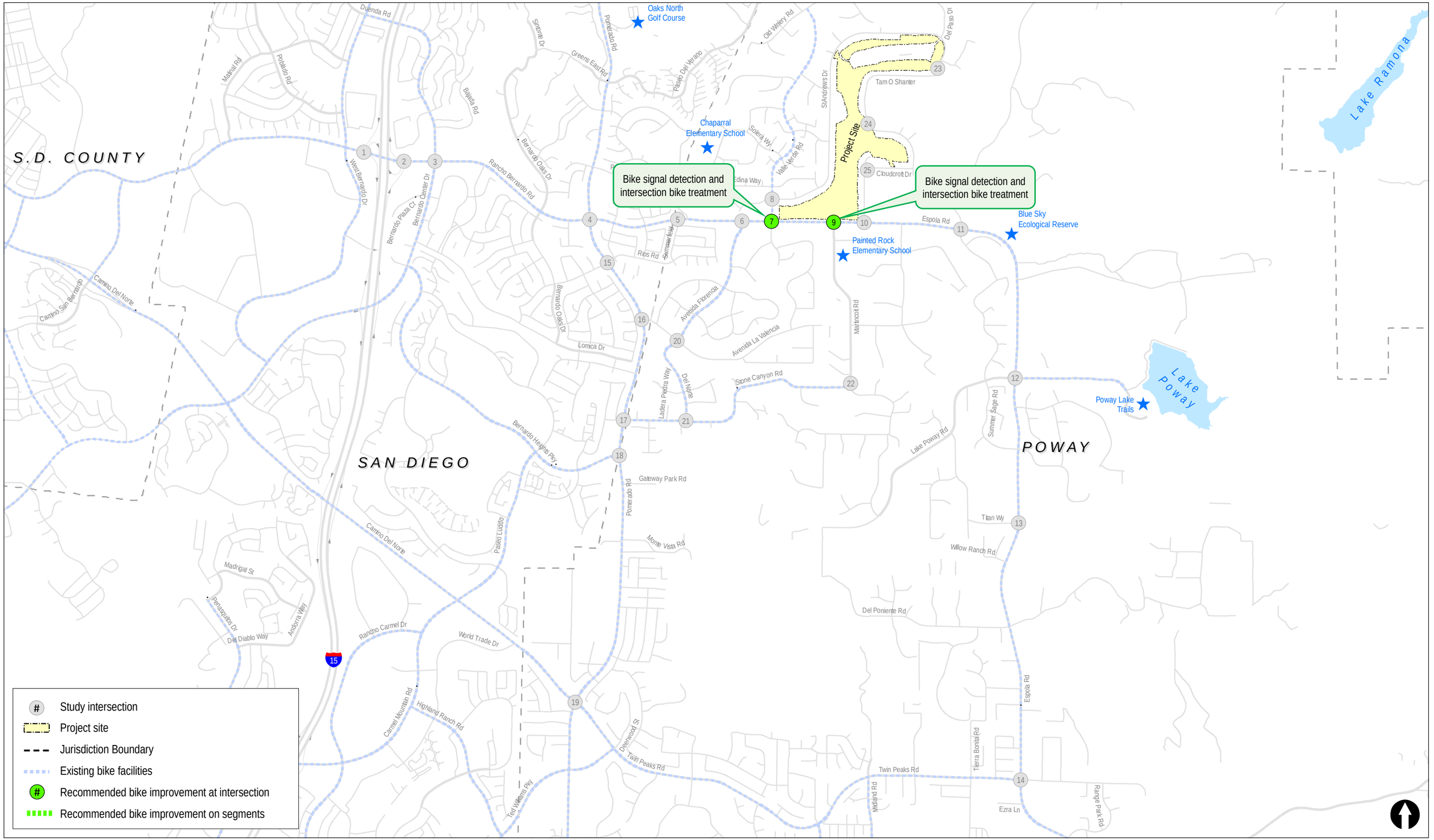

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Figure 13-4

Recommended Bicycle Improvements

THE FARM IN POWAY

14.0 TRANSIT MOBILITY

In this section, transit mobility is reviewed for the existing and future transit condition. In addition, potential improvements are also discussed. Public transportation improves mobility and reduces congestion in the community and the region.

14.1 Existing Transit Conditions

Bus transportation is the main mode of transportation served around the Project area. Bus transit in the study area is categorized in following classifications:

- *MTS Bus* – is the main type of bus service that is provided by MTS in San Diego area. MTS Bus provides service at different headways depending on the demand and location. There are currently two (2) MTS Bus routes; 20, 945 and 945A that are serving the Project area. Details of the bus routes are provided in *Section 14.1.2.*
- *MTS Express* – are high frequency bus services that have 15-minute headways during peak and non-peak hours. No Express Routes are provided in the area.
- *MTS Rapid* – are high frequency bus services that have 15-minute headways during peak and non-peak hours and provides riders with improved wait time and enhanced comfort and convenience. Route 235 is an MTS Rapid route.
- *MTS Rapid Express/Premium* – operates along the I-15 corridor during weekdays. It provides frequent trips south in the morning (5:00-9:00 AM) and north in the evening (3:00-7:00 PM). Express routes have 15-minute headways during peak and non-peak hours and usually take up to 45 minutes to an hour to get from departure to the final destination.

14.1.1 *Transit Centers*

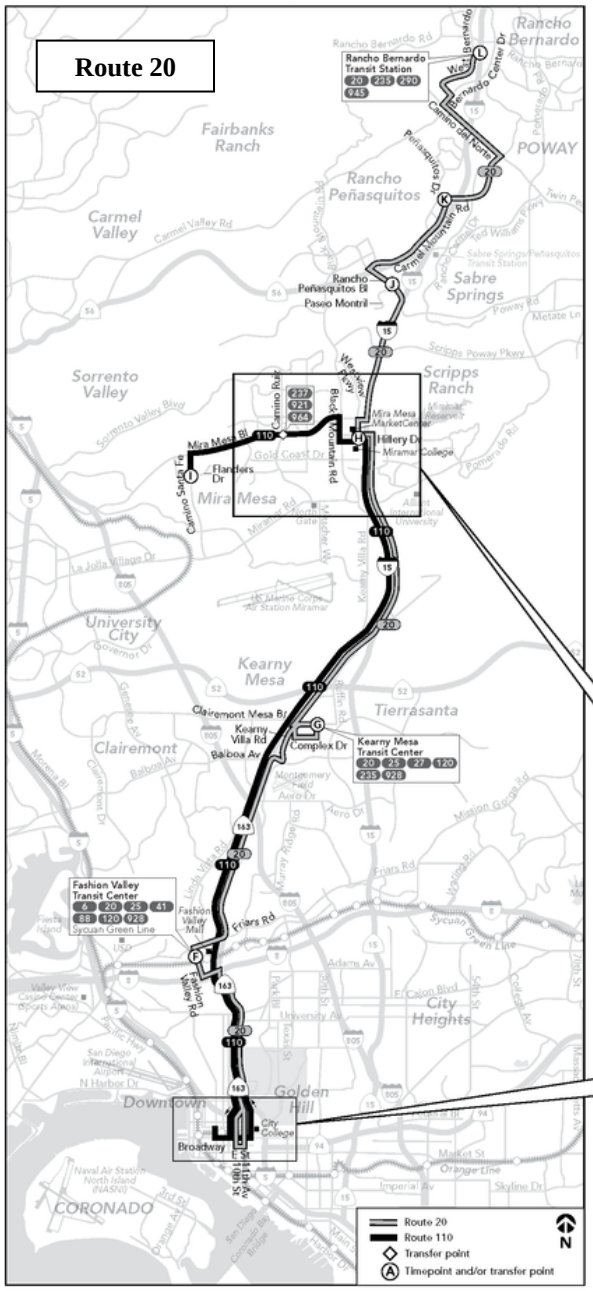
Transit centers (or hubs) are the interchange of various transit routes and travel modes. The following transit center is in the study area. A brief description is provided below:

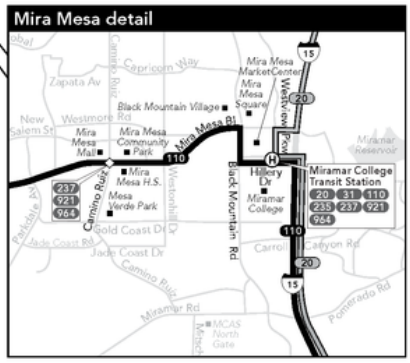
- *Rancho Bernardo Transit Center* – mainly serves MTS networks. Routes include MTS route 235, 290, and 945.

Figure 14–1 shows existing transit center and transit routes serving the study area.

14.1.2 *Route Summaries*

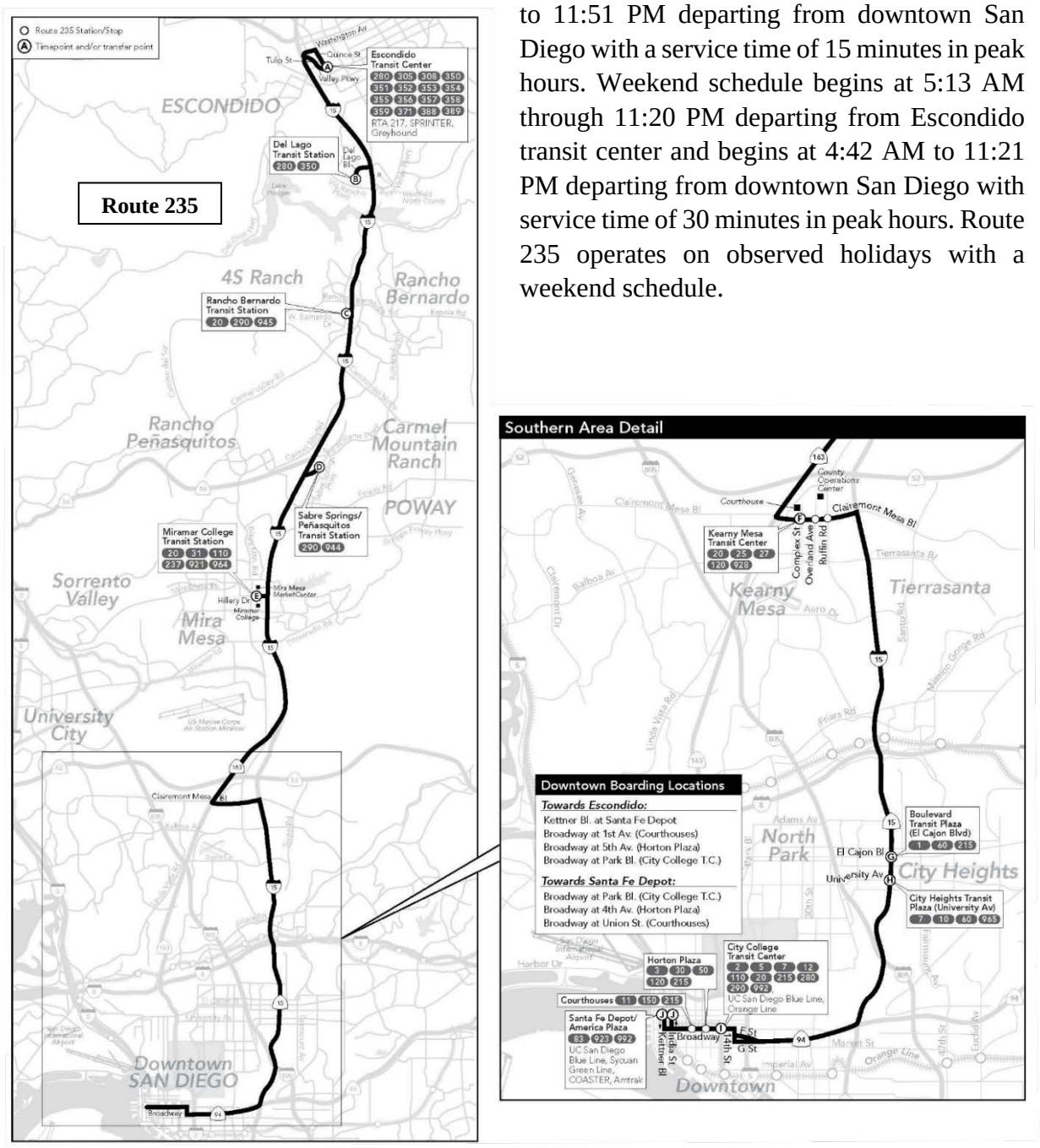
This section provides a detailed description of the various routes in the Project study area.

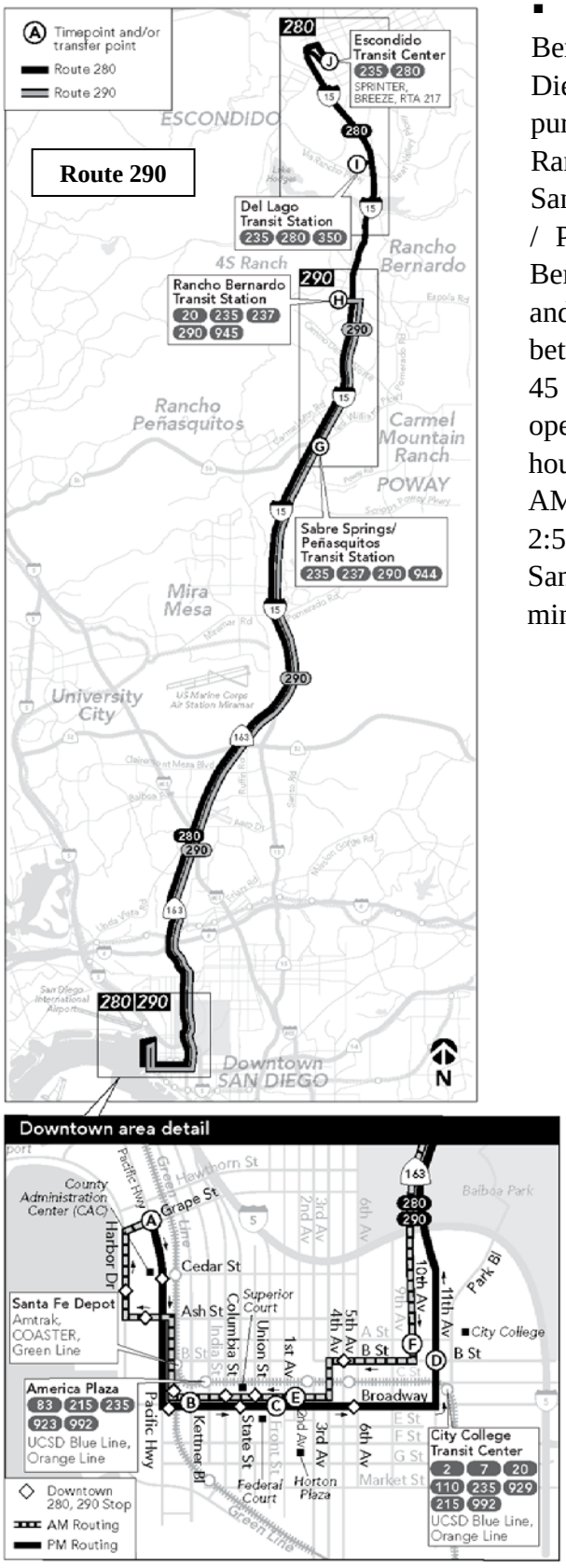




▪ **Route 20** runs from Rancho Bernardo Transit Station to downtown. There are eight (8) stops along this route with destinations to Miramar College, City College, and Fashion Valley. Route 20 currently operates Monday through Friday from 5:15 AM to 10:17 PM departing from Rancho Bernardo transit center and 4:57 AM to 9:22 PM departing from City College transit center. Saturday route schedule begins at 6:12 AM through 9:17 PM departing from Miramar College transit center and begins at 5:41 AM to 8:49 PM departing from City College transit center. Sunday route schedule begins at 6:13 AM through 8:18 PM departing from Rancho Bernardo transit center and begins at 5:41 AM to 8:49 PM departing from City College transit center. Route 20 operates on observed holidays with a Saturday or Sunday schedule. Weekdays and Saturday schedule include 30-minute headways. Service rate for Sunday is 1 hour.

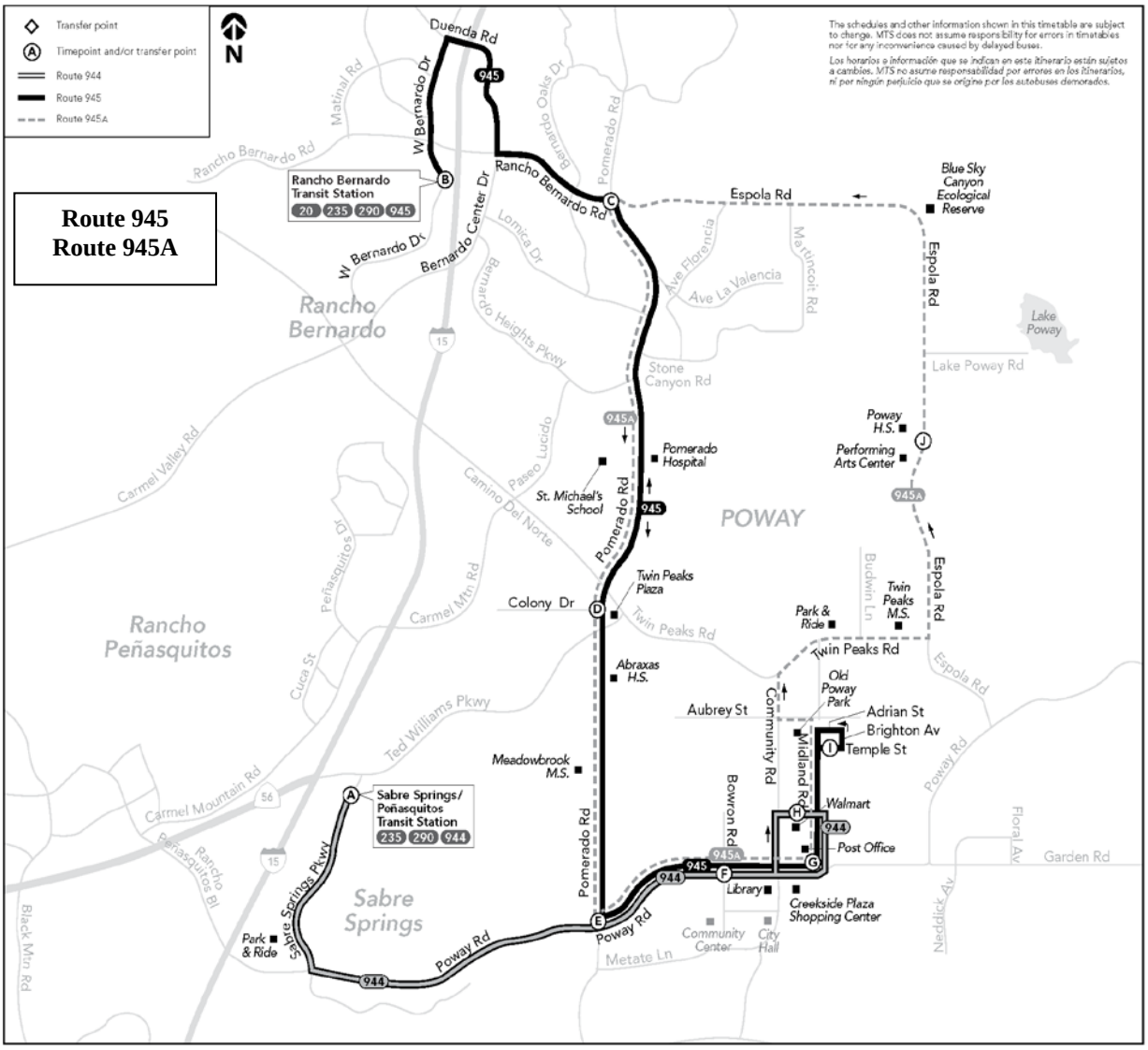
- **Route 235** runs from Escondido to downtown San Diego. There are ten (10) stops along this route with destinations to Miramar College, and City College. Route 235 currently operates Weekdays from 4:58 AM to 11:48 PM departing from Escondido transit center and 4:42 AM to 11:51 PM departing from downtown San Diego with a service time of 15 minutes in peak hours. Weekend schedule begins at 5:13 AM through 11:20 PM departing from Escondido transit center and begins at 4:42 AM to 11:21 PM departing from downtown San Diego with service time of 30 minutes in peak hours. Route 235 operates on observed holidays with a weekend schedule.





- **Route 290** operates between Rancho Bernardo Transit Station and downtown San Diego. It is a MTS Rapid Express with the purpose of moving travelers directly between Rancho Bernardo transit center and downtown San Diego. There is only one stop at Sabre Spring / Penasquitos transit station between Rancho Bernardo transit center and downtown San Diego and it uses freeway I-15. Total travel time between the departure and destination is typically 45 minutes to 1 hour. Route 235 currently operates on weekdays and only during peak hours. Operation starts from 5:00 AM to 9:03 AM departing from Escondido transit center and 2:57 PM to 6:57 PM departing from downtown San Diego. Frequency of bus arrivals is 15 minutes for the most part of the operation period.

- **Route 945** runs from Rancho Bernardo Transit Station to Old Poway. It operates weekdays starting 5:52 AM to 8:22 PM departing from Rancho Bernardo and 5:09 AM to 7:35 PM departing from Old Poway. Total travel time between the two ends of the route is 45 minutes or less. Service time is 30 minute during peak hours. Saturday operation starts from 6:42 AM to 7:34 PM departing from Rancho Bernardo transit center and 6:41 AM to 6:29 PM departing from Old Poway. Route 945 operates on observed holidays with Saturday schedule. Route 945 does not operate on Sundays or on holidays that run on a Sunday schedule.
- **Route 945A** runs on a loop route in counterclockwise direction passing through Espola Road, Pomerado Road, Poway Road, Midland Road, and Twin Peaks Road. Route 945A runs on weekdays from 6:36 AM to 8:25 AM departing from Pomerado Road and Rancho Bernardo Road and 2:35 PM to 4:34 PM departing from Midland Road and Poway Road. This route does not run on weekends or observed holidays.



14.2 Transit Mobility Review

As discussed in *Section 12.3.1* of this study, a walkshed analysis was performed to evaluate Project site connectivity. The walkshed analysis also identifies pedestrian accessibility to transit and locations where providing pedestrian access could improve Project site connectivity to the transit network.

In this section, pedestrian access from the Project site to nearby bus stations is evaluated. The Poway Loop Route 945A is served by existing bus stops adjacent to the main access intersection of Espola Road at Martincoit Road. As previously mentioned, Route 945A runs on a loop route in counterclockwise direction passing through Espola Road, Pomerado Road, Poway Road, Midland Road, and Twin Peaks Road. Route 945A runs on weekdays from 6:36 AM to 8:25 AM departing from Pomerado road and Rancho Bernardo Road and 2:35 PM to 4:34 PM departing from Midland Road and Poway Road. This route does not run on weekends or observed holidays.

TABLE 14–1
AMENITIES AT BUS STATIONS WITHIN PROJECT WALKSHED

Location	Shelters	Benches	Trash Receptacles	Station Signs	Maps / Wayfinding	Lighting	ADA Compliance
Espola Rd & Martincoit Rd	No	Yes	No	Yes	No	No	Yes
Espola Rd & Cloudcroft Dr	No	Yes	No	Yes	No	No	Yes

14.3 Recommended Transit Access Improvements

The following off-site transit access improvements are recommended:

- Work with the San Diego Metropolitan Transit System (MTS) to improve and replace the existing stop(s) on Espola Road on the northwest corner of the Espola Road/Martincoit Drive/Private Street 'A' intersection and/or the northwest corner of the Espola Road/Cloudcroft Drive intersection and adjust schedules, if needed, to meet the demands of new and existing riders.

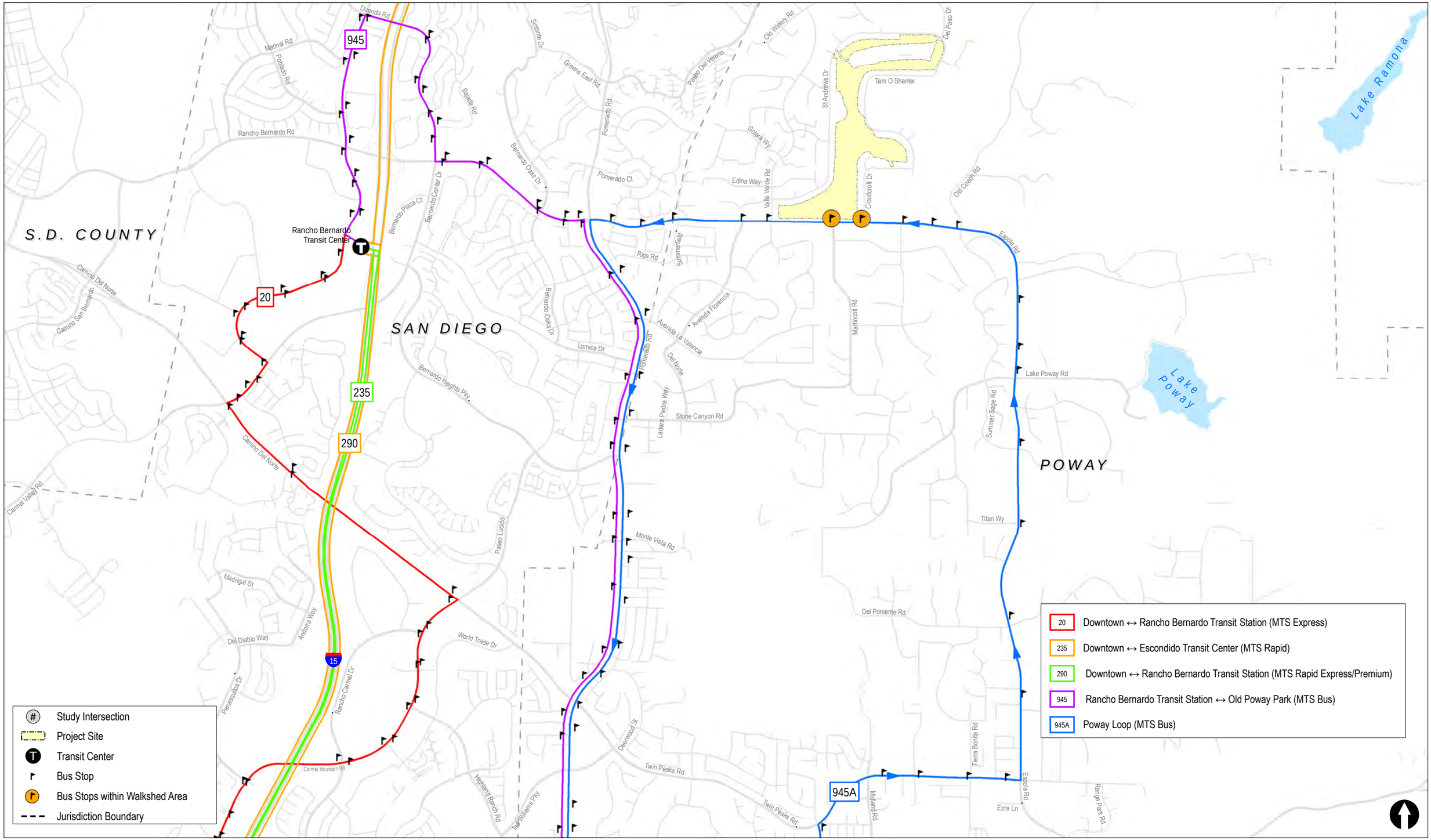


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Figure 14-1

Existing Transit Network

THE FARM IN POWAY

15.0 ALTERNATIVE VEHICLES

Low Speed Vehicles (LSVs) are small electric or gas-powered cars designed for low-speed, local trips in areas such as planned communities, resorts, college campuses, and even large industrial parks. LSVs are typically one- or two-passenger vehicles, though some models are equipped to carry up to six passengers. A Neighborhood Electric Vehicle (NEV) is a commonly used type of LSV. NEVs are powered by rechargeable batteries and typically provide a driving range of up to 40 miles on a single charge.

Exhibit 15–1 shows a visual representation of an LSV. ***Figure 15–1*** shows the states which currently allow LSVs on public roads.

Neighborhood Electric Vehicle (NEV)/Low-Speed Vehicle (LSV) Definition per California Vehicle Code (CVC §§ 385.5, 21250):

An NEV/LSV is a motor vehicle that:

- Has four wheels.
- Within 1.0 mile can reach a speed of more than 20 miles per hour (mph) but not more than 25 mph on a paved level surface.
- Has a 17-digit conforming vehicle identification number (VIN).
- Has a gross vehicle weight rating (GVWR) of less than 3,000 pounds.
- Must be certified to meet Federal Motor Vehicle Safety Standards (FMVSS) to be registered and operated on public streets, roads, or highways.
- May look like a golf-cart to the casual observer, but is actually a motor vehicle requiring a valid California driver license, registration, and insurance.

Exhibit 15–1

15.1 Operation of NEVs / LSVs

Based on State law defining the use of NEVs and LSVs, these alternative modes shall:

- Not be operated on any roadway with a speed limit above 35 mph.
- Only cross state highways only at controlled intersections. Crossing at uncontrolled intersections is permitted with approval of the local authority governing that intersection.

- Only cross at intersections that have a speed limit above 35 mph, if the crossing begins and ends on a road of 35 mph or less.
- Be operated as a golf cart within a distance of 1.0 mile or less from a golf course or on roads designated for such operation by ordinance or resolution by a local authority.

15.2 Modified or Altered NEVs / LSVs

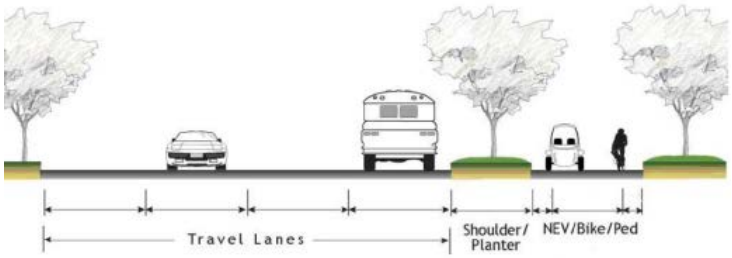
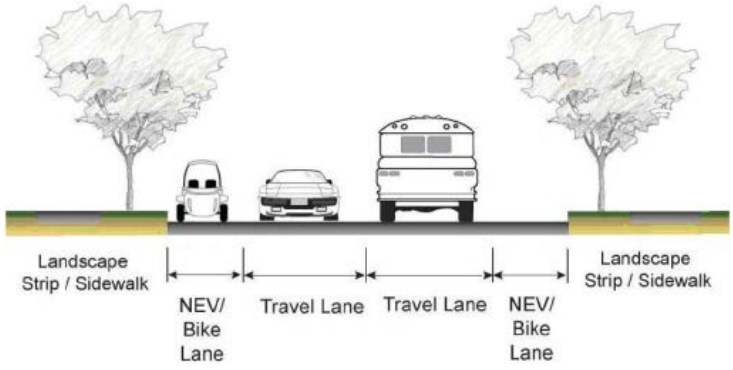
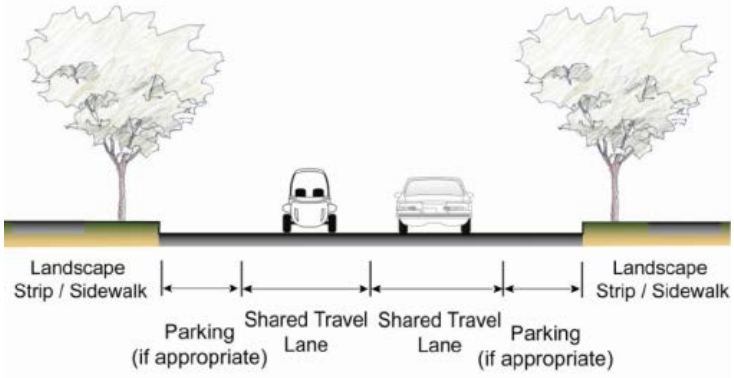
If a NEV/LSV is modified to go faster than 25 mph, the vehicle no longer qualifies for the relaxed Federal Motor Vehicle Safety Standards (FMVSS) established for NEV/LSVs. A vehicle will be required to meet the same FMVSS established for passenger vehicles. Failure to comply with all necessary regulations may result in a citation.

15.3 NEVs / LSVs Transportation Network

NEVs and LSVs have been used for many years in master planned communities, resorts, college campuses, beach communities and large industrial campuses. In recent years, however, their use on public roadways has become more popular. They provide a motorized alternative to larger, fossil-fueled passenger cars and trucks for short trips.

Table 15–1 shows the cross sections of LSV accommodations.

TABLE 15–1
CROSS SECTIONS OF LSV ACCOMMODATIONS

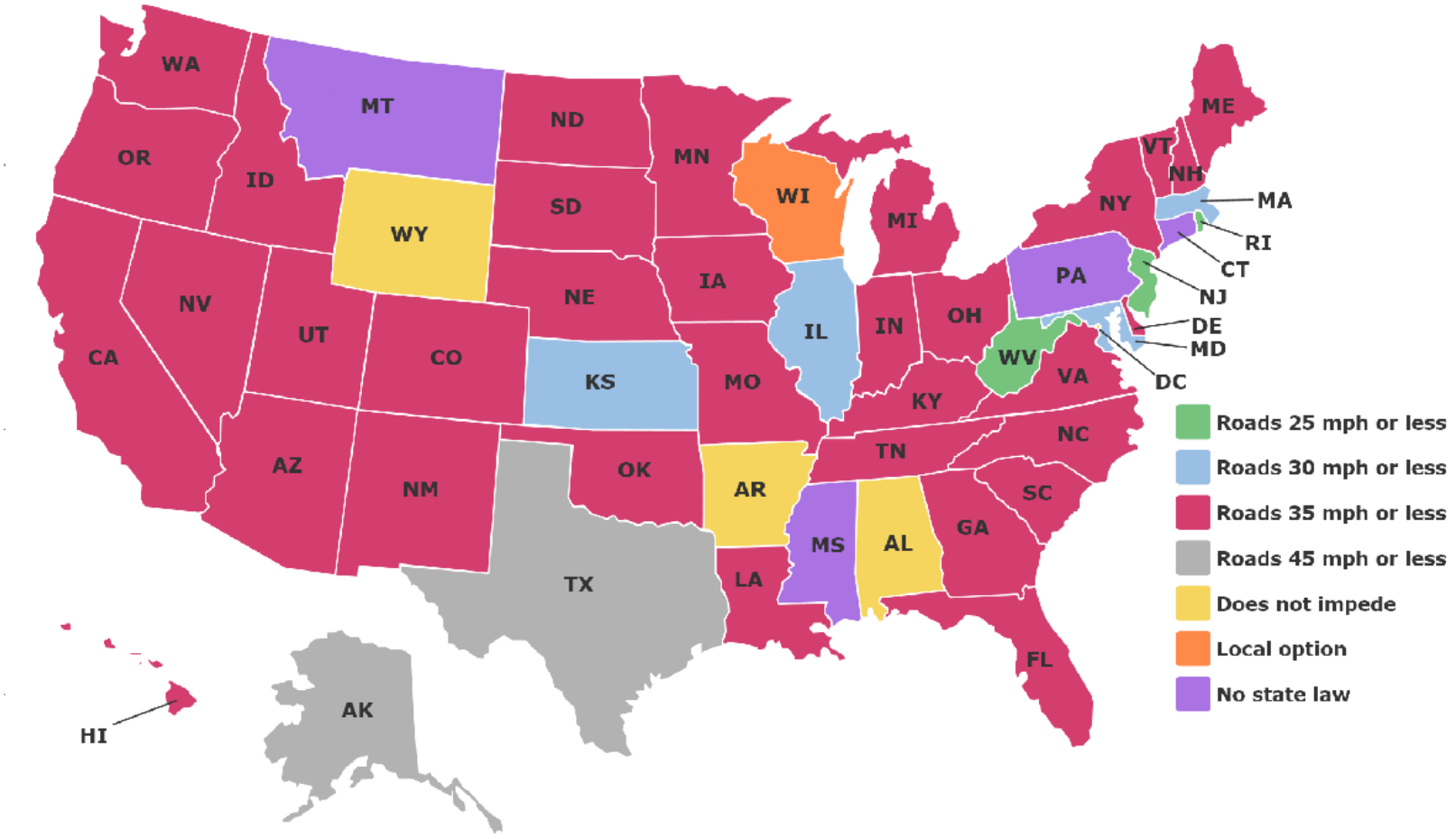
Classification	Description	Example Cross-Section
Class I	Completely separate pathway; adjacent to major roadways. NEVs can share a path with bicycles and pedestrians.	
Class II	Collector streets and minor arterials where speeds are typically greater than 35 mph. NEVs share lane with bicycles.	
Class III	Shared travel lane. Residential and low volume roads, low-speed commercial streets. Posted speed limits of up to 35 mph.	

The National Household Travel Survey reported nearly 70,000 light electric vehicles and golf carts in operation on the nation's roadways in 2009, the first year the Federal Highway Administration began tracking this vehicle type. Americans took more than 180 million trips and drove nearly 65 million miles on these vehicles that year. Forty-five percent of these trips were taken by persons age 65 and older, a surprisingly high number given that older adults comprise just 13% of the U.S. population and account for 12% of all trips in the United States.

The nation's growing population of older adults is likely to generate an increasing demand for mobility options beyond the automobile. LSVs and street-legal golf carts could provide a convenient, cost effective, and clean local transportation alternative for older adults, students, commuters, and government fleet operators. A number of recently enacted state laws aim to reduce greenhouse gas emissions and vehicle miles traveled. This fact has created an immediate market for zero emission vehicles, especially in California. More than three-quarters (76%) of all American vehicle trips are 10 miles or less. The use of LSVs for a larger share of these short trips could play an important part in reducing America's greenhouse gas emissions.

15.4 Recommendations

It is recommended that the Project design all on-site roadways to accommodate NEVs and LSVs during daylight hours.



Courtesy of the Insurance Institute for Highway Safety.

LINSCOTT LAW & GREENSPAN engineers

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Figure 15-1

States with Laws Allowing Low-speed Vehicles on Public Roads

THE FARM IN POWAY

16.0 SCHOOL ZONE ANALYSIS

Several schools are located in the vicinity of Project study area intersections. Of particular importance is the proximity to Chaparral Elementary, the school assigned to residents of the Project and Painted Rock Elementary, which is within close proximity of the main Project access intersection of Espola Road/ Martincoit Road.

The following supplementary analysis was conducted in order to determine if the Project would have an impact on the circulation system during the school afternoon peak hour (1:45-3:45 PM), which represents the school end time. This timeframe falls outside of the commuter PM peak hour (4:00-6:00 PM). Analysis for the AM peak hour is not provided in this section since the school AM peak hour generally coincides with the commuter peak hours (7:00-9:00 AM). Analysis results for the AM school peak hour under Existing, Near-Term (Opening Year 2025), and Near-Term (Opening Year 2025) With Project conditions can be found in *Sections 6.1 and 9.1* respectively.

Recommendations for mitigation at significantly impacted locations are provided, where necessary, and recommendations for improved school safety are provided, ranging from traffic calming measures to roadway and intersection signing and striping.

16.1 Traffic Volumes

As discussed earlier in *Section 4.2.1* of this report, mid-day school peak hour (1:45 PM–3:45PM) traffic volume counts were conducted at study area intersections located within the 1.0-mile school buffer zones. Pedestrian and bicycle activity was also collected at these locations. The intersections selected for the School Zone analysis are as follows:

5. Espola Road / Summerfield Lane/ Rancho Bernardo Road *(City of Poway)*
6. Espola Road / Avenida Florencia *(City of Poway)*
7. Espola Road / Valle Verde Road *(City of Poway)*
9. Espola Road / Martincoit Road *(City of Poway)*
10. Espola Road / Cloudcroft Drive *(City of Poway)*
13. Espola Road / Titan Way / Eden Grove *(City of Poway)*
15. Pomerado Road/ Rios Road *(City of San Diego)*
16. Pomerado Road/ Avenida La Valencia *(City of San Diego)*
18. Pomerado Road/ Bernardo Heights Pkwy *(City of San Diego)*

For purposes of being conservative, the PM peak hour for Project traffic was assumed in the mid-day analysis. Project PM peak hour volumes were added to existing and near-term conditions. The Near-Term (Opening Year 2025) mid-day volumes use the same annual growth factor applied to the PM peak hour condition.

Figure 16–1 shows the intersections depicted graphically that were included in this analysis.

Figures 16–2, 16–3, and 16–4 illustrate the Existing, Near-Term (Opening Year 2025), and Near-Term (Opening Year 2025) With Project mid-day peak hour traffic volumes as school zone study area intersections, respectively.

16.2 Existing Analysis – School Peak Hour

Table 16–1 summarizes the intersection operations throughout the study area for the Existing scenario under school afternoon peak hour conditions. As seen in *Table 16–1*, all of the study intersections are calculated to operate at LOS C or better.

Appendix K contains the Existing mid-day school peak hour intersection analysis calculation worksheets.

16.3 Near-Term (Opening Year 2025) Analysis – School Peak Hour

Table 16–2 summarizes the intersection operations throughout the study area for the Near-Term (Opening Year 2025) and Near-Term (Opening Year 2025) With Project scenarios under school afternoon peak hour conditions. As seen in *Table 16–2*, all of the study intersections are calculated to operate at LOS D or better.

Based on the applied significance criteria, **no significant impacts** were identified under Near-Term (Opening Year 2025) With Project conditions.

Appendix L contains the Near-Term (Opening Year 2025) and ***Appendix M*** contains the Near-Term (Opening Year 2025) With Project intersection analysis calculation worksheets.

TABLE 16–1
EXISTING MID-DAY INTERSECTION OPERATIONS

Intersection	Jur.	Control Type	Peak Hour	Existing	
				Delay [a]	LOS [b]
5. Summerfield Ln/ Espola Rd/ Rancho Bernardo Rd	San Diego	Signal	Mid-day	5.6	A
6. Avenida Florencia/ Espola Rd	Poway	MSSC [c]	Mid-day	14.0	B
7. Valle Verde Rd/ Espola Rd	Poway	Signal	Mid-day	22.4	C
8. Valle Verde Rd/ St Andrews Dr	Poway	MSSC	Mid-day	18.8	C
9. Martincoit Rd/ Espola Rd	Poway	Signal	Mid-day	9.2	A
10. Cloudcroft Dr/ Espola Rd	Poway	MSSC	Mid-day	13.6	B
13. Espola Rd/Eden Grove	Poway	Signal	Mid-day	16.6	B
14. Espola Rd/ Twin Peaks Rd	Poway	Signal	Mid-day	27.6	C
18. Pomerado Rd/ Bernardo Heights Pkwy	San Diego	Signal	Mid-day	30.6	C
19. Pomerado Rd/ Twin Peaks Rd	Poway	Signal	Mid-day	32.5	C

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service
c. Minor Street Stop Controlled intersection. Minor street left-turn delay reported.

General Notes:

1. Jur = Jurisdiction

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 16–2
NEAR-TERM MID-DAY INTERSECTION OPERATIONS

Intersection	Jur.	Control Type	Peak Hour	Near-Term (Opening Year 2025)		Near-Term (Opening Year 2025) With Project		Δ [c] Delay	Sig?
				Delay [a]	LOS [b]	Delay	LOS		
5. Summerfield Ln/ Espola Rd	San Diego	Signal	Mid-day	5.6	A	5.6	A	0.0	No
6. Avenida Florencia/ Espola Rd	Poway	MSSC [d]	Mid-day	14.3	B	15.5	C	1.2	No
7. Valle Verde Rd/ Espola Rd	Poway	Signal	Mid-day	23.4	C	24.4	C	1.0	No
8. Valle Verde Rd/ St Andrews Dr	Poway	MSSC	Mid-day	19.6	C	19.8	C	0.2	No
9. Martincoit Rd/ Espola Rd	Poway	Signal	Mid-day	9.3	A	19.1	B	9.8	No
10. Cloudcroft Dr/ Espola Rd	Poway	MSSC	Mid-day	13.9	B	14.7	B	0.8	No
13. Espola Rd/Eden Grove/ Titan Way	Poway	Signal	Mid-day	16.9	B	16.9	B	0.0	No
14. Espola Rd/ Twin Peaks Rd	Poway	Signal	Mid-day	29.5	C	29.9	C	0.4	No
18. Pomerado Rd/ Bernardo Hts Pkwy	San Diego	Signal	Mid-day	33.2	C	33.8	C	0.6	No
19. Pomerado Rd/ Twin Peaks Rd	Poway	Signal	Mid-day	35.8	D	37.4	D	1.6	No

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service
c. Δ denotes the increase in delay due to Project.
d. Minor Street Stop Controlled intersection. Minor street left turn delay reported.

General Notes:

1. Sig = Significant impact, yes or no.
2. Jur. = Jurisdiction

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

16.4 Recommendations

Provided earlier in this report are the assessments of pedestrian and bicycle mobility in the study area, including the school zone intersections. Recommendations to improve pedestrian and bicycle mobility were discussed in these sections and would contribute to school route mobility.

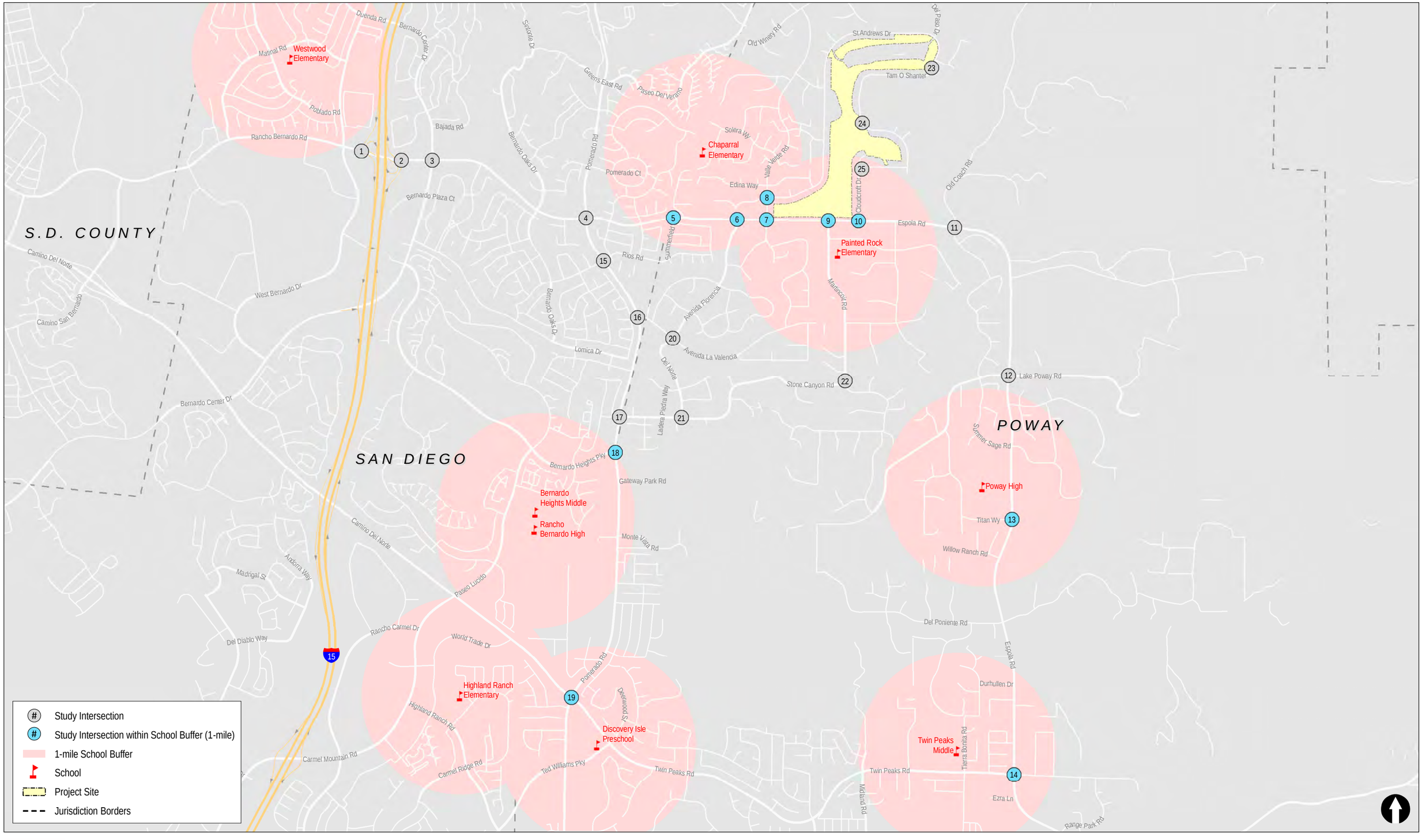

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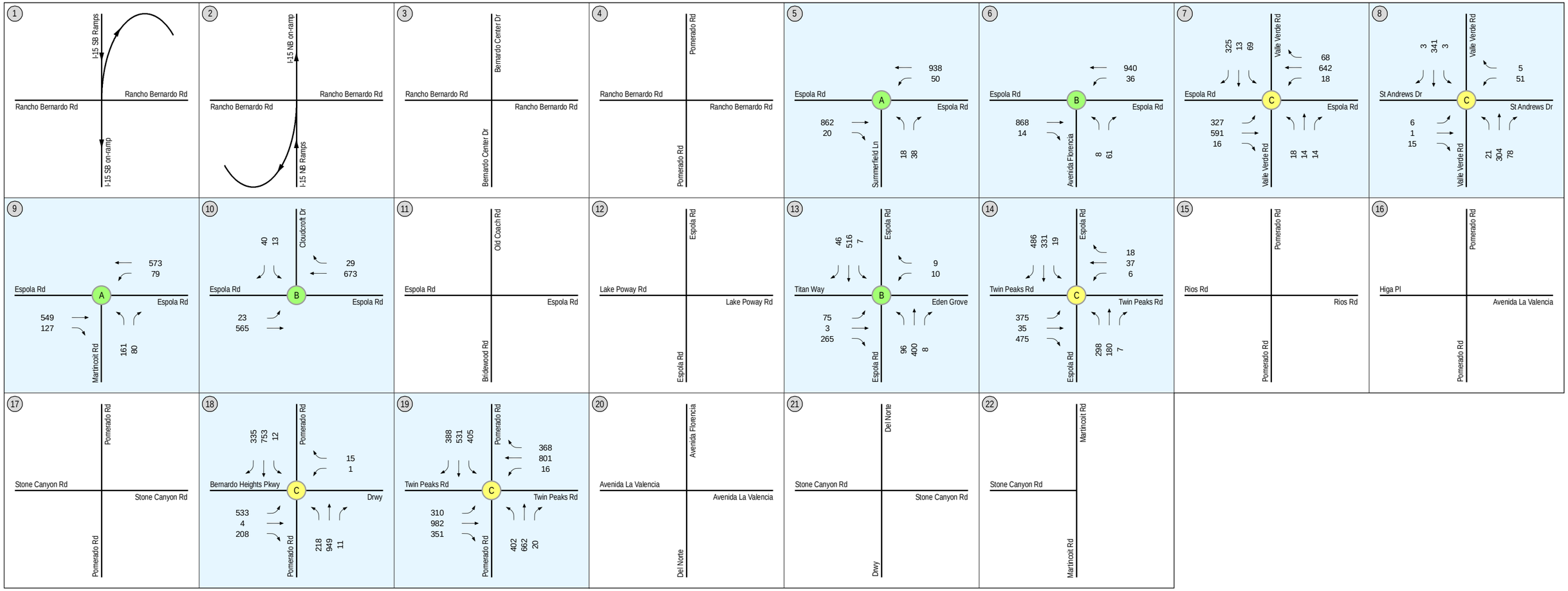
Figure 16-1

School Zone Study Area Intersections

THE FARM IN POWAY



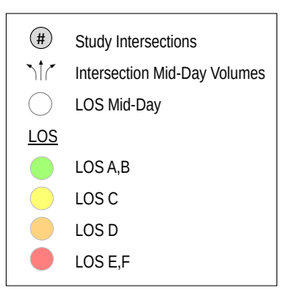


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Figure 16-2

Existing Mid-day Peak HourTraffic Volumes

THE FARM IN POWAY

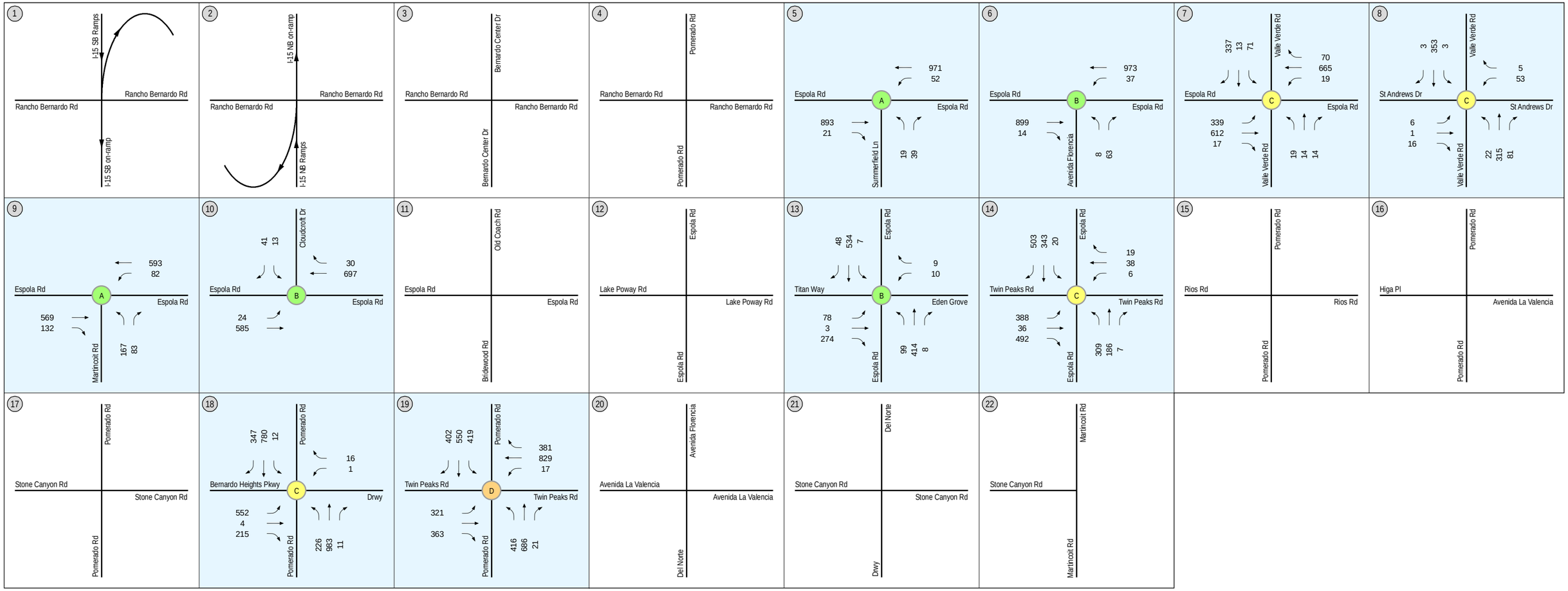

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Figure 16-3

Near-Term (Opening Day) Mid-day Peak Hour Traffic Volumes

THE FARM IN POWAY

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Figure 16-4

Near-Term (Opening Day) Mid-day Peak Hour with Project Traffic Volumes

THE FARM IN POWAY

17.0 ACCESS ASSESSMENT

17.1 Network Conditions

Vehicular access is primarily proposed at the Espola Road/ Martincoit Road/ Private Street 'A' intersection. Secondary access is proposed at three (3) additional locations: Boca Raton Lane/ Private Street 'E', Tam O'Shanter Drive/ Private Street 'A'. Currently, the Espola Road/ Martincoit Road intersection is signalized. The Project proposes to construct the fourth leg of this intersection complete with dedicated southbound left-turn lane and shared southbound thru/right-turn lane. The northbound approach on Martincoit Road will be restriped to provide a dedicated left-turn lane and share thru/right-turn lane. The intersection was assumed to be controlled by protected left-turn phasing. The intersection phasing shall be implemented to the satisfaction of the City Engineer. All other access points from the Project (secondary access points) would be controlled by stop-signs. The geometry at the secondary access points would provide shared left-turn/thru lanes and shared right-turn/thru lanes on the public roadways with shared left-turn/right-turn lanes exiting the Project site. One inbound lane would be provided on the private streets.

Figure 17–1 shows the proposed Project Access Conditions Diagram for use in the analysis.

17.2 Traffic Volumes

Figure 7–1 provided earlier in this report shows the general distribution of Project trips on Espola Road. Seventy percent (70%) of trips were distributed to/from the west and 26% to/from the east. Traffic volumes at Project access intersections are shown in their respective sections earlier in this report.

The main access serves the majority of non-residential and residential uses within the site. The secondary access intersections at Cloudcroft Court, Private Street 'E" and Private Street 'A' were assumed to each serve one percent (1%) of Project traffic given the majority of the uses in the northern portion of the Project are agrarian, open space and low trip generators. It was assumed that the driveway distribution for the site is as follows:

Access Location	**Land Uses Served**	**Trip Distribution**
Main Access: Espola Road/ Martincoit Road/ Private Street 'A'	Residential and Non-Residential	97% of Project Trips
Secondary Access: Tam O'Shanter Drive/ Private Street 'A'	Community Gardens, Agri-fields, Open Space	1% of Project Trips
Secondary Access: Boca Raton Lane/ Private Street 'E'	Community Gardens, Agri-fields, Open Space	1% of Project Trips
Secondary Access: Cloudcroft Drive/ Cloudcroft Court	Residential, Community Gardens and Open Space	1% of Project Trips

17.3 Access Analysis

Table 17–1 summarizes the results of the Project Access intersection analysis.

With the proposed improvements to the Project access intersections, LOS B or better operations are calculated under all "Plus Project" scenarios.

The access intersections are also analyzed in the main body of the report and worksheets can be found in the appendices for the sections corresponding to each analysis scenario.

TABLE 17–1
ACCESS INTERSECTION OPERATIONS

Intersection	Proposed Control Type	Peak Hour	Near-Term (Opening Year 2025) With Project		Year 2035 With Project	
			Delay [a]	LOS [b]	Delay	LOS
9. Espola Road/ Martincoit Road/ Private Street'A'	Signal	AM	20.7	C	23.4	C
		PM	15.3	B	15.6	B
23. Cloudcroft Drive/ Cloudcroft Court	MSSC [c]	AM	7.3	A	7.3	A
		PM	7.3	A	7.3	A
24. Boca Raton Lane/ Private Street 'E'	MSSC	AM	7.3	A	7.3	A
		PM	7.3	A	7.3	A
25. Tam O'Shanter Drive/ Private Street 'A'	MSSC	AM	7.3	A	7.3	A
		PM	7.3	A	7.3	A

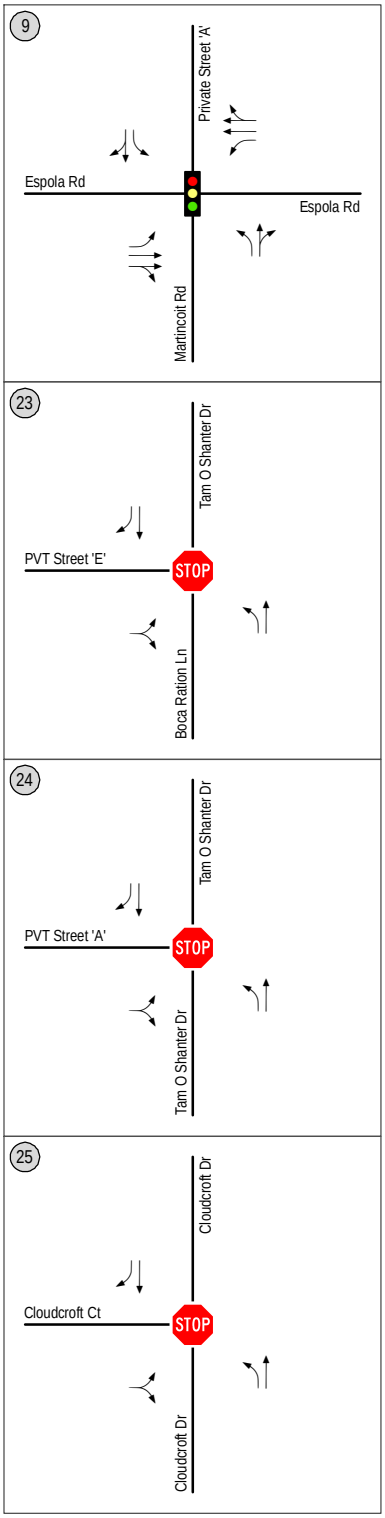
Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service
c. Minor Street Stop-Controlled. Minor street left-turn delay reported.

SIGNALIZED		UNSGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

17.4 Emergency Access Discussion

The Project proposes four (4) access point on the site plan. Emergency medical services, including ambulance transportation, are provided by the City of Poway as part of the Poway Fire Department operations. The nearest emergency facility, Palomar Medical Center, is located 3.5 miles away on Pomerado Road. The nearest fire station to the Project site is located less than half a mile east, on Westling Court, just off Espola Road. Response time to the furthest planned home within the site is within the five (5) minute response standards maintained by the Fire Department, per the Specific Plan.



#	Intersection Number
	Traffic Signal
STOP	Stop Sign
	Turning Movements

* Conceptual Site Plan provided for illustrative purposes only. See the Specific Plan for the latest site plan.

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Figure 17-1

Project Access Condition Diagram

THE FARM IN POWAY

18.0 INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

Achieving optimal and sustainable mobility for different modes of transportation requires a comprehensive traffic signal system that utilizes a variety of operations and Intelligent Transportation Systems (ITS) technologies. The use of ITS can provide many benefits to a mobility network, including improved travel time, providing transit bypass methods, helping relay valuable traffic-related information to vehicular and non-vehicular / emergency users, and providing guidance to key destinations. Some ITS applications applicable to the City of Poway include:

- Traffic Signal Coordination
- Emergency Vehicle Preemption (EVP)
- Transit Signal Priority (TSP)
- Adaptive Signal Control

18.1.1 *Traffic Signal Coordination*

Coordinated traffic signals are an example of an ITS strategy that help improve roadway operations. Traffic signals have coordinated timing plans and information is relayed between traffic signals in real-time. The traffic signals typically communicate using underground copper or fiber optic interconnects. Having traffic signals coordinated helps to maximize the efficiency of the traffic signal system on that roadway.

18.1.2 *Emergency Vehicle Preemption (EVP)*

Emergency Vehicle Preemption technology is utilized to override signal operations and provide priority to approaching emergency responders. EVP is typically a requirement for all traffic signals.

18.1.3 *Transit Signal Priority (TSP)*

Transit signal priority is an ITS strategy that allows public transit vehicles, such as an MTS bus, to communicate with traffic signals to advance transition to a green phase for its approach. Objectives of TSP include improved schedule adherence and improved transit time efficiency while minimizing impacts to normal traffic operations. TSP is typically used for more urban areas with high transit ridership and roadway congestion.

18.1.4 *Adaptive Traffic Signal Control (ATSC)*

Adaptive traffic signal controls (ATSC) are an established solution for mobility along unpredictable and fluctuating traffic patterns of arterials. Adaptive traffic signals or “Smart” traffic signals communicate with each other and dynamically adjust signal timings, memorize traffic patterns, improve traffic flow and reduce vehicle stops.

The San Diego region has already implemented adaptive traffic signals on several corridors including Rosecrans Street, Mira Mesa Boulevard, Lusk Boulevard, Friars Road, La Jolla Parkway and Vista Sorrento Parkway in the City of San Diego. The City of Carlsbad and Chula Vista are also deploying major projects.

There are currently no Adaptive Signals in the study area; however, the school zone intersections could benefit from the ATSC technology to facilitate heavy traffic fluctuations. In addition, enhancing the travel flow along Espola Road between Martincoit Road and Pomerado Road would likely deter drivers from taking cut-through routes through nearby residential neighborhoods.

18.2 ITS Communication Systems

The communication system is an integral part of ITS functionality and effectiveness. ITS communication occurs between traffic signals, transit / emergency vehicle preemptions and the Traffic Management Center (TMC).

18.3 The Farm in Poway ITS Mobility Considerations

The proposed Project will consider Intelligent Transportation Systems (ITS) strategies including traffic signal coordination, and Adaptive Traffic Signal Control.

Implementation of ITS strategies must be according to the Cities of Poway and San Diego requirements and may require communications upgrades between the traffic signals, upgrades to vehicle detection and system implementation at the controller cabinets. Remote link to Traffic Management Centers (TMCs) may also be required.

19.0 VEHICLE MILES TRAVELED (VMT) APPROACH

19.1 Statewide VMT Guidelines

This section provides an introduction to evaluating potential transportation impacts of a project as proposed by the California Governor's Office of Planning and Research (OPR) to implement California State Law Senate Bill (SB) 743. OPR proposes that metrics based on Vehicle Miles Traveled (VMT) be used to evaluate a project's transportation effects, and that projects in proximity to transit are presumed to result in less-than-significant impacts. OPR also suggests thresholds of significance and technical methodologies to calculate VMT.

19.1.1 *VMT Background and Induced Travel*

VMT is defined as a measurement of miles traveled by vehicles within a specified region and for a specified time period. VMT is a measure of the use and efficiency of the transportation network. VMT's are calculated based on individual vehicle trips generated and their associated trip lengths. VMT accounts for two-way (round trip) travel and is often estimated for a typical weekday for the purposes of measuring transportation impacts.

Induced travel occurs where roadway capacity is expanded in an area of present or projected future congestion. The effect typically manifests over several years. Lower travel times make the modified facility more attractive to travelers, resulting in potential trip-making changes. Each of these effects has implications for the total amount of vehicle travel.

- **Longer Trips.** The ability to travel a long distance in a shorter time increases the attractiveness of destinations that are farther away, increasing trip length and vehicle travel.
- **Changes in Mode Choice.** When transportation investments are devoted to reducing automobile travel time, travelers tend to shift toward automobile use from other modes, which increases vehicle travel.
- **Route Changes.** Faster travel times on a route attract more drivers to that route from other routes, which can increase or decrease vehicle travel depending on whether it shortens or lengthens trips.
- **Newly Generated Trips.** Increasing travel speeds can induce additional trips, which increases vehicle travel. For example, an individual who previously telecommuted or purchased goods on the internet might choose to accomplish those tasks via automobile trips as a result of increased speeds.
- **Land Use Changes.** Faster travel times along a corridor lead to land development farther along that corridor; that new development generates and attracts longer trips, which increases vehicle travel. Over several years, this growth component of induced vehicle travel can be substantial.

19.1.2 *Senate Bill 743*

In September 2013, the Governor's Office signed SB 743 into law, starting a process that fundamentally changes the way transportation impact analysis is conducted under CEQA. Within the State's CEQA Guidelines, these changes include the elimination of Auto Delay, Level Of Service

(LOS), and similar measurements of vehicular roadway capacity and traffic congestion as the basis for determining significant impacts. The guidance identifies VMT as the most appropriate CEQA transportation metric, along with the elimination of Auto Delay/LOS for CEQA purposes statewide. The justification for this paradigm shift is that Auto Delay/LOS impacts lead to improvements that increase roadway capacity and therefore induce more traffic and greenhouse gas emissions.

In January 2016, the OPR issued Draft Guidance, which provided recommendations for updating the State's CEQA Guidelines in response to SB 743 and recommended practice for VMT analysis in an accompanying *Technical Advisory on Evaluating Transportation Impacts in CEQA*. OPR released an update to the CEQA Guidelines and Technical Advisory in December 2018. The technical advisory is publicly available on the state's website[1].

Per OPR's proposed revisions to the CEQA guidelines, a lead agency may elect to be governed by the VMT guidelines immediately. However, beginning July 1, 2020, the VMT guidelines shall apply statewide. Although the City of Poway has not yet adopted VMT guidelines, a VMT analysis was conducted for informational purposes.

19.1.3 *Revised CEQA Guidelines*

The following is an excerpt from the *New Section 15064.3 Determining the Significance of Transportation Impacts, Update 2018*. This represents regulatory CEQA guidelines on evaluating transportation impacts using VMT.

Subdivision (a): Purpose

This section describes specific considerations for evaluating a project's transportation impacts. Generally, vehicle miles traveled is the most appropriate measure of transportation impacts. For the purposes of this section, "vehicle miles traveled" refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in subdivision (b)(2) below (regarding roadway capacity), a project's effect on automobile delay does not constitute a significant environmental impact.

Subdivision (b): Criteria for Analyzing Transportation Impacts

While subdivision (a) sets forth general principles related to transportation analysis, subdivision (b) focuses on specific criteria for determining the significance of transportation impacts. It is further divided into four subdivisions: (1) land use projects, (2) transportation projects, (3) qualitative analysis, and (4) methodology.

Subdivision (b)(1): Land Use Projects

Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less

[1]*Technical Advisory on Evaluating Transportation Impacts in CEQA, December 2018.* http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be considered to have a less than significant transportation impact

Subdivision (b)(2): Transportation Projects

Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, a lead agency may tier from that analysis as provided in Section 15152.

Subdivision (b)(3): Qualitative Analysis

If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.

Subdivision (b)(4): Methodology

A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

Subdivision (c): Applicability

The provisions of this section shall apply prospectively as described in Section 15007. A lead agency may elect to be governed by the provisions of this section immediately. Beginning on July 1, 2020, the provisions of this section shall apply statewide.

19.1.4 *Technical Guidance: Recommended Methodology, Significance Thresholds, Mitigation, and Alternatives*

The following information is sourced from the *Technical Advisory on Evaluating Transportation Impacts in CEQA*. This represents a non-regulatory technical advisory on evaluating transportation impacts using VMT, with emphasis on larger-scale land development projects.

RECOMMENDATIONS REGARDING METHODOLOGY

The following section provides methodology recommendations to evaluate VMT for various technical areas and project types.

Using Models to Estimate VMT

Travel demand models, sketch models, spreadsheet models, research, and data can all be used to calculate and estimate VMT. To the extent possible, lead agencies should choose models that have sensitivity to features of the project that affect VMT. Those tools and resources can also assist in establishing thresholds of significance and estimating VMT reduction attributable to mitigation measures and project alternatives.

Trip and Tour Based VMT

Trip-based assessment of a project's effect on travel behavior counts VMT from individual trips to and from the project. It is the most basic, and traditionally the most common, method of counting VMT. For residential projects, the sum of home-based trips is called *home-based* VMT.

A *Tour-based* assessment counts the entire home-back-to-home tour that includes the project and any trips within the tour. Examples include Tour 1: Home → Coffee Shop → Work → Home; Tour 2: Home → Store → Home. Together, all tours comprise *household* VMT. A tour-based assessment of VMT is a more complete characterization of a project's effect on VMT. In many cases, a project affects travel behavior beyond the first destination. The location and characteristics of the home and workplace will often be the main drivers of VMT. For example, a residential or office development located near high quality transit will likely lead to some commute trips utilizing transit, affecting mode choice on the rest of the tour.

Vehicle Types

Vehicle Miles Traveled refers to on-road passenger vehicles, specifically cars and light trucks. Heavy-duty truck VMT could be included for modeling convenience and ease of calculation.

Residential and Office Projects

Tour- and trip-based approaches offer the best methods for assessing VMT from residential/office projects and for comparing those assessments to VMT thresholds. When available, tour-based assessment is ideal because it captures travel behavior more comprehensively. But where tour-based tools or data are not available for all components of an analysis, a trip-based assessment of VMT serves as a reasonable proxy.

When a trip-based method is used to analyze a residential project, the focus can be on home-based trips. Similarly, when a trip-based method is used to analyze an office project, the focus can be on home-based work trips.

When tour-based models are used to analyze an office project, either employee work tour VMT or VMT from all employee tours may be attributed to the project. This is because workplace location influences overall travel.

For office projects that feature a customer component, such as a government office that serves the public, a lead agency can analyze the customer VMT component of the project using the methodology for retail development (see below).

Retail Projects

Generally, lead agencies should analyze the effects of a retail project by assessing the change in total VMT because retail projects typically re-route travel from other retail destinations. A retail project might lead to increases or decreases in VMT, depending on previously existing retail travel patterns.

Considerations for All Projects

Lead agencies should not truncate any VMT analysis because of jurisdictional or other boundaries. Thus, where methodologies exist that can estimate the full extent of vehicle travel from a project, the lead agency should apply them to do so. Analyses should also consider a project's both short- and long-term effects on VMT.

RECOMMENDATIONS REGARDING SIGNIFICANCE THRESHOLDS

Lead agencies have the discretion to set or apply their own thresholds of significance. However, the criteria for determining the significance of transportation impacts should promote:

- Reduction of greenhouse gas emissions;
- Development of multimodal transportation networks; and
- A diversity of land uses.

The OPR Advisory describes the analysis for the following circumstances which may or may not be applicable to the Project.

Presumption of Less Than Significant Impact Near Transit Stops

CEQA Guideline Section 15064.3, subdivision (b)(1), states that lead agencies generally should presume that certain projects (including residential, retail, and office projects, as well as projects that are a mix of these uses) proposed within ½ mile of an existing major transit stop or an existing stop along a high-quality transit corridor will have a less-than-significant impact on VMT.

Major Transit Stop refers to an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

A High-Quality Transit Corridor refers to a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.

This presumption would not apply, however, if project-specific or location-specific information indicates that the project will still generate significant levels of VMT. One key indicator may be inconsistency with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization). If any of these exceptions to the

presumption might apply, the lead agency should conduct a detailed VMT analysis to determine whether the project would exceed VMT thresholds.

Recommended Numeric Thresholds for Residential, Office, and Retail Projects

Residential Projects: Per the OPR guidelines, a proposed project exceeding a level of 15 percent below existing VMT per capita may indicate a significant transportation impact. Existing VMT per capita may be measured as Regional VMT per capita or as City VMT per capita. Proposed development referencing City VMT per capita must not cumulatively exceed the number of units specified in the SCS for that City and must be consistent with the SCS.

For residential projects in unincorporated County areas, the local agency can compare a residential project's VMT to (1) the region's VMT per capita, or (2) the aggregate population-weighted VMT per capita of all cities in the region. In MPO areas, development in unincorporated areas measured against aggregate City VMT per capita (rather than Regional VMT per capita) must not cumulatively exceed the population or number of units specified in the SCS for that City because greater-than-planned amounts of development in areas above the regional threshold would undermine achievement of regional targets under SB 375.

These thresholds can be applied to either household (i.e., tour-based) VMT or home-based (i.e., trip-based) VMT assessments.

Office Projects: Per the OPR guidelines, a proposed project exceeding a level of 15 percent below existing regional VMT per employee may indicate a significant transportation impact.

In cases where the region is substantially larger than the geography over which most workers would be expected to live, it might be appropriate to refer to a smaller geography, such as the county, that includes the area over which nearly all workers would be expected to live.

Tour-based analysis of office project VMT could consider either total employee VMT or employee work tour VMT. Where tour-based information is unavailable, home-based work trip VMT should be used.

Retail Projects: Per the OPR guidelines, a net increase in total VMT may indicate a significant transportation impact.

Because new retail development typically redistributes shopping trips rather than creating new trips, estimating the total change in VMT (i.e., the difference in total VMT in the area affected with and without the project) is the best way to analyze a retail project's transportation impacts.

By adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT. Thus, lead agencies generally may presume local-serving retail creates a less-than-significant transportation impact. Regional-serving retail development, on the other hand, which can lead to substitution of longer trips for shorter

ones, may tend to have a significant impact. Where such development decreases VMT, lead agencies should consider the impact to be less-than-significant.

Because lead agencies will best understand their own communities and the likely travel behaviors of future project users, they are likely in the best position to decide when a project will likely be local-serving.

Consideration of Thresholds for Other Project Types

Of land use projects, residential, office, and retail projects tend to have the greatest influence on VMT. For that reason, OPR recommends the quantified thresholds described above for purposes of analysis and mitigation. Lead agencies, using more location-specific information, may develop their own more specific thresholds, which may include other land use types.

Mixed-Use Projects

Lead agencies can evaluate each component of a mixed-use project independently and apply the significance threshold for each project type included (e.g., residential and retail) if data is available. Alternatively, a lead agency may consider only the project's dominant use. In the analysis of each use, a project should take credit for internal capture. Combining different land uses and applying one threshold to those land uses may result in an inaccurate impact assessment.

Redevelopment Projects

Where a project replaces existing VMT-generating land uses, if the replacement leads to a net overall decrease in VMT, the project would lead to a less-than-significant transportation impact. If the project leads to a net overall increase in VMT, then the thresholds described above should apply.

Land Use Plans

As with projects, agencies should analyze VMT outcomes of land use plans over the full area over which the plan may substantively affect travel patterns, including beyond the boundary of the plan or jurisdiction's geography. Analysis of specific plans may employ the same thresholds described above for projects. A general plan, area plan, or community plan may have a significant impact on transportation if it is not consistent with the relevant RTP-SCS.

Rural Projects

In rural areas (i.e., areas not near established or incorporated cities or towns), fewer options may be available for reducing VMT, and significance thresholds may be best determined on a case-by-case basis. Note, however, that clustered small towns and small-town main streets may have substantial VMT benefits compared to isolated rural development, similar to the transit-oriented development described above.

RTP-SCS Consistency (All Land Use Projects)

Section 15125, subdivision (d), of the CEQA Guidelines provides that lead agencies should analyze impacts resulting from inconsistencies with regional plans, including regional transportation plans general plan and land use designation and density. For this reason, if a project is inconsistent with the

Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS), the lead agency should evaluate whether that inconsistency indicates a significant impact on transportation.

Multimodal Transportation Network

Because criteria for determining the significance of transportation impacts must promote "the development of multimodal transportation networks," lead agencies should consider project impacts to transit systems and bicycle and pedestrian networks. For example, a project that blocks access to a transit stop or blocks a transit route itself may interfere with transit functions.

When evaluating impacts to multimodal transportation networks, lead agencies generally should not treat the addition of new transit users as an adverse impact. An infill development may add riders to transit systems and the additional boarding and alighting may slow transit vehicles, but it also adds destinations, improving proximity and accessibility. Such development also improves regional vehicle flow by adding less vehicle travel onto the regional network.

Increased demand throughout a region may, however, cause a cumulative impact by requiring new or additional transit infrastructure. Such impacts may be adequately addressed through a fee program that fairly allocates the cost of improvements not just to projects that happen to locate near transit, but rather across a region to all projects that impose burdens on the entire transportation system, since transit can broadly improve the function of the transportation system.

Transportation Project Considerations (Induced Demand)

Transportation projects may change travel patterns. If a project would likely lead to a measurable and substantial increase in vehicle travel, the lead agency should conduct an analysis assessing the amount of vehicle travel the project will induce.

Project types that would likely lead to a measurable and substantial increase in vehicle travel generally include the addition of through lanes on existing or new highways, including:

- General purpose lanes, HOV lanes, peak period lanes, auxiliary lanes, or lanes through grade-separated interchanges.

Projects that would <u>not</u> likely lead to a substantial or measurable increase in vehicle travel, and therefore generally should not require an induced travel analysis, include:

- Installation, removal, or reconfiguration of traffic lanes that are not for through traffic, such as left, right, and U-turn pockets, or emergency breakdown lanes that are not utilized as through lanes.
- Addition of roadway capacity on local or collector streets provided the project also substantially improves conditions for pedestrians, cyclists, and, if applicable, transit as well.
- Installation, removal, or reconfiguration of traffic control devices, including Transit Signal Priority (TSP) features.
- Traffic metering systems

- Timing of signals to optimize vehicle, bicycle, or pedestrian flow

Analyzing Safety Impacts

Because safety concerns result from many different factors, they are best addressed at a programmatic level (i.e., in a general plan or regional transportation plan) in cooperation with local governments, metropolitan planning organizations, and, where the state highway system is involved, the California Department of Transportation. In most cases, such an analysis would not be appropriate on a project-by-project basis.

Increases in traffic volumes at a particular location resulting from a project typically cannot be estimated with sufficient accuracy or precision to provide useful information for an analysis of safety concerns. Moreover, an array of factors affect travel demand (e.g., strength of the local economy, price of gasoline), causing substantial additional uncertainty. Lead agencies should note that automobile congestion or delay does not constitute a significant environmental impact starting on July 1st, 2020.

VMT Mitigation and Alternatives

When a lead agency identifies a significant impact, it must identify feasible mitigation measures and project alternatives that could avoid or substantially reduce that impact. VMT is largely a regional impact. Therefore, regional VMT reduction programs may be an appropriate form of mitigation. In-lieu fees have been found to be valid mitigation where there is both a commitment to pay the fees and evidence that the mitigation will occur.

Potential mitigation to reduce vehicle miles traveled include, but are not limited to:

- Improve or increase access to transit.
- Increase access to common goods and services, such as groceries, schools, and daycare.
- Incorporate housing into the project.
- Incorporate neighborhood electric vehicle network.
- Orient the project toward transit, bicycle and pedestrian facilities.
- Improve pedestrian or bicycle networks, or transit service.
- Provide traffic calming.
- Provide bicycle parking.
- Limit or eliminate parking supply.
- Unbundle parking costs.
- Provide parking or roadway pricing or cash-out programs.
- Implement or provide access to a commute reduction program.
- Provide car-sharing, bike sharing, and ride-sharing programs.
- Provide transit passes.
- Shifting single occupancy vehicle trips to carpooling or vanpooling, for example providing ride- matching services.
- Providing telework options.

- Providing incentives or subsidies that increase the use of modes other than single-occupancy vehicle.
- Providing on-site amenities at places of work, such as priority parking for carpools and vanpools, secure bike parking, and showers and locker rooms.
- Providing employee transportation coordinators at employment sites.
- Providing a guaranteed ride home service to users of non-auto modes.

Examples of project alternatives that may reduce vehicle miles traveled include, but are not limited to:

- Locate the project in an area of the region that already exhibits low VMT.
- Locate the project near transit.
- Increase project density.
- Increase the mix of uses within the project or within the project's surroundings.
- Increase connectivity and/or intersection density on the project site.
- Deploy management strategies (e.g., pricing, vehicle occupancy requirements) on roadways or roadway lanes.

19.2 Local/Regional VMT Guidelines

19.2.1 *Transition to SB 743 Guidelines*

Local and regional agencies, as well as transportation professionals, have already begun transitioning to SB 743. To date, like most cities, the City of Poway has not yet adopted significance criteria or technical methodologies for VMT analysis. However, many local agencies, along with SANDAG, and San Diego County are actively participating in San Diego's local Institute of Transportation Engineers (ITE) SB 743 Subcommittee. Through the collaboration of the subcommittee, an update to the *Guidelines for Transportation Impact Studies in the San Diego Region, May 2019*, has been completed consistent with CEQA VMT requirements. Though, this document has yet to be officially adopted by local agencies as it has recently been published.

The guidelines are generally consistent with the OPR thresholds for VMT significance, including that lead agencies have the discretion to choose a VMT metric and threshold. Key differences between the OPR and San Diego ITE Subcommittee guidelines are:

1. Minimum Project Size Based on Previous TIS Guidelines – Under this alternative, projects would be subjected to different levels of VMT analysis, depending on the size of the project and whether the project is consistent with the local jurisdiction's General Plan or Community Plan. Projects that are consistent with the General Plan or Community Plan are also considered to be consistent with the RTP/SCS. The determination of minimum project size for VMT analysis differs from the Statewide guidance. Below shows the Subcommittee guidelines.

Projects Inconsistent with General Plan or Community Plan	
ADT	Level of Analysis
0 – 500	VMT Analysis Not Needed/VMT Impacts Presumed Less than Significant
500 and Greater	VMT Analysis Recommended
Projects Consistent with General Plan or Community Plan	
ADT	Level of Analysis
0 – 1,000	VMT Analysis Not Needed/VMT Impacts Presumed Less than Significant
1,000 and Greater	VMT Analysis Recommended
*Statewide guidance can still be applied per lead agency.	

2. Projects proposed within ½-mile of an existing major transit stop or an existing stop along a high-quality transit corridor will have a less-than-significant impact on VMT. This presumption would not apply, however, if project-specific or location-specific information indicates that the project would still generate significant levels of VMT. In addition, the distance between the project site and the transit station is typically based on direct walking distance without missing sidewalks or physical barriers.

3. The lead agency may choose that VMT comparisons be made at a community level rather than a citywide level, providing flexibility as compared to the Statewide guidelines.

4. These guidelines recommend that VMT/employee comparisons be made at both the regional and citywide level (or community level), where the Statewide guidelines suggestion regionwide only.

19.2.2 *Significance Criteria*

Based on both OPR and local guidelines, described in the preceding sections, significance thresholds were developed for the Project.

Per the San Diego ITE SB 743 Subcommittee guidelines, "The target is to achieve a project VMT per capita or VMT per employee that is 85% or less of the appropriate average based on suggestions in [the] guidelines. Note that the lead agencies have discretion for choosing a VMT metric and threshold." Since the City of Poway has yet to adopt guidelines for measuring VMT impacts, the OPR guidelines were applied which suggest the Project would be presumed to have a less-than-significant impact if the Project VMT per capita is less than 15 percent of the Citywide average VMT per capita. **Thus, the threshold for significance for projects located within the City of Poway would be exceeded if a project's VMT per capita is higher than 85 percent of the Citywide average VMT per capita.**

19.2.3 *Technical Methodology*

As discussed in the previous sections, both the OPR Statewide and the recently published San Diego ITE SB 743 Subcommittee guidelines were reviewed. This section discusses key technical methodologies and approaches for some of these criteria, as appropriate. The over-arching technical approach for the Project can be broken down into several components:

- Adherence to OPR and Local Guidelines

- Utilize local, independent resources and data science (i.e. GPS/Navigation data analytics)
- Account for the Total Site Population
- Review the VMT analysis on the near-term conditions, which represents the worst-case scenario as average trip lengths and mode splits will reduce auto-dependency and associated VMT over time.

Adherence to OPR & Local Guidelines

The VMT calculations for the Project were based on the OPR's Technical Advisory that have been detailed in the preceding sections. The reason for utilizing OPR's Statewide guidance for Project impacts was due to the reliance on data science for existing travel behavior, population, and other statistical information. Significance criteria applied to the VMT calculations was based on the local San Diego ITE SB 743 Subcommittee guidelines.

Utilize Local Independent Resources and Data

GPS data analytics was a key tool in determining average trip length for trip based VMT calculations VMT calculations in the existing baseline. This data source is commonly referred to as "data science" analytics. The existing baseline and Project VMT analyses were conducted for the Project considering all population types (i.e. residents and employees.)

20.0 THE FARM IN POWAY VMT ANALYSIS

Although the City of Poway has not yet adopted VMT guidelines, a VMT analysis was conducted given forthcoming changes to CEQA.

20.1 VMT Project Context Screening

Prior to any detailed VMT analysis, OPR and the San Diego ITE SB 743 Subcommittee guidelines recommend "screening thresholds" to help identify if a project is expected to result in a less-than-significant impact. To that end, The Farm in Poway Project was reviewed. Specifically, the surrounding land uses, population density, transportation infrastructure and Project-specific design was considered. These elements, collectively, shape mobility behavior and provide a strong indication of expected Project VMT.

In general, higher density and mix of land uses with access to mobility options are expected to generate lower VMT. ***Table 20–1*** summarizes the key elements relative to The Farm in Poway Project.

TABLE 20–1
VMT PROJECT CONTEXT SCREENING

Project Context Elements	**Notes**
Surrounding Area Land Use Mix	Adjacent retail and employment centers provide good land use mix and may promote a lower VMT than the regional average.
Surrounding Area Population Density	San Diego County has an average density of 793 people per square mile. City of Poway has a density of 1,220 people per square mile. A lower density in the City of Poway may promote a higher VMT than the region. ***Appendix U*** contains population density calculations.
Mobility Options	High frequency transit service is not provided within ½ mile from the Project boundary. However, the Project may provide internal low-speed electric and neighborhood electric vehicles on-site connecting between the various planning areas. The Project will provide pedestrian and bicycle facilities. Overall, the Project may provide enhanced mobility options.
Project-Specific Design Elements	The proposed Project introduces local serving retail, agricultural, and recreational amenities which increases the land use mix and density. Project design features consider enhanced bicycle and pedestrian facilities to connect residents both within and outside the Project site. These Project-specific design elements promote lower VMT.

20.2 Proximity to Transit

Public transportation improves mobility and reduces congestion in the community and the region. Per the significance criteria, if a project is within ½ mile of a major transit stop or a stop along a high-quality transit corridor, it should be presumed to have a less-than-significant impact on VMT. This presumption would not apply, however, if project-specific or location-specific information indicates that the project will still generate significant levels of VMT. A transit stop can include a planned and funded stop that is included in an adopted regional transportation improvement program.

> *Major transit stop refers to a location containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.*
>
> *A High-Quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.*

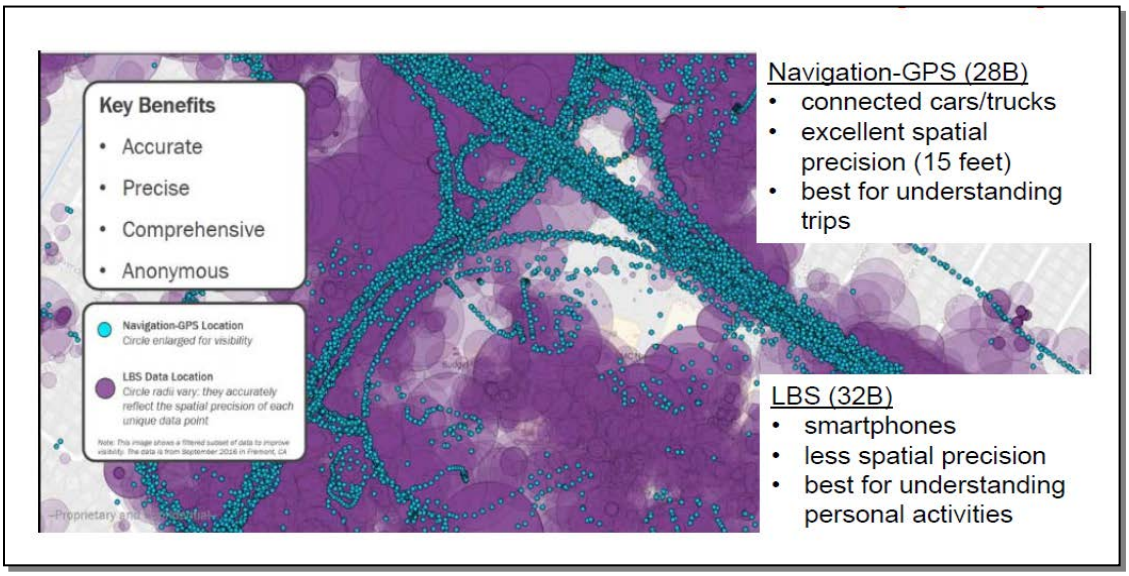
For The Farm in Poway Project, bus service is provided by the Metropolitan Transit System (MTS) with stops along Espola Road fronting the Project site. Route 945A runs on a loop route in counterclockwise direction passing through Espola Road, Pomerado Road, Poway Road, Midland Road, and Twin Peaks Road. Route 945A runs on weekdays from 6:36 AM to 8:25 AM departing from Pomerado Road and Rancho Bernardo Road and 2:35 PM to 4:34 PM departing from Midland Road and Poway Road. This route operates with two (2) morning routes and two (2) afternoon routes. This route does not run on weekends or observed holidays.

Improvements to overall transit access for the site are recommended through coordination with MTS to improve and replace the existing stop(s) on Espola Road on the northwest corner of the Espola Road/Martincoit Drive/Private Street 'A' intersection and/or the northwest corner of the Espola Road/Cloudcroft Drive intersection and adjust schedules, if needed, to meet the demands of new and existing riders.

20.3 VMT per Capita

A detailed VMT analysis was conducted using the identified guidelines. In order to calculate the existing baseline and Project VMT per capita, the VMT average trip lengths were determined using navigation / GPS data analytics. This data source is commonly referred to as "data science" analytics.

The data was obtained from Navigation-GPS devices, and Location-Based Services (LBS) such as cellphones and connected vehicles. Other location-based data was obtained from cellphone applications actively tracking location, public census, traffic counts, and other third-party suppliers. A software program is used to measure origin-destination travel patterns and trip length attributes. This data represents trip-based VMT which represent individual trips between an origin and destination. This differs from tour-based VMT where trips are characterized by trip type and traveler (i.e. home-based work or home-based other).



20.3.1 *City of Poway VMT*

The City of Poway baseline VMT was developed first through population data obtained from US Census Bureau – American Community Survey (2017). This information is provided via the SANDAG Data Surfer publicly available website. The average trip lengths were GPS based and represent a data size of approximately 31,200 devices over the course of one year.

Table 20–2 summarizes the data utilized and the resultant existing baseline City of Poway VMT per capita. As shown in *Table 20–2*, the "trip based" City of Poway baseline VMT per capita was calculated as 24.8 miles.

For the purpose of determining the significance of VMT impacts, the Project VMT per capita would need to be 85% below the Citywide average, which equates to 21.0 VMT per capita. ***Appendix N*** contains the VMT calculations.

TABLE 20–2
CITY OF POWAY – EXISTING BASELINE VMT/CAPITA

Area	City Population (Residents & Employees)	Regional Person Trip Rate per Capita (Daily)	Auto Mode Split Total	Daily Auto Trips (roundtrip)	Average Auto Trip Length (one-way, miles)	Total Daily VMT	City VMT per Capita	Significance Threshold (85% of Existing)
City of Poway	49,981	3.50	88.0%	145,545	8.5	1,237,133	24.8	21.0

General Notes:

1. Populations and auto mode splits obtained from US Census Bureau data - American Community Survey (ACS) 2017
2. A person trip rate per capita of 3.5 was assumed based on a review of available information. The lower the trip rate directly translates to a lower City threshold and therefore represents a conservative approach. The SANDAG Regional Transportation Study identifies and average of 4.3 daily trips per person. NCHRP Research Report 868 - Cell Phone Location Data for Travel Behavior Analysis, 2018 reports Call Detail Records (CDR) are estimated to generate 3.5 daily person trips per Capita and the FHWA Travel Model Validation and Reasonableness Checking Manual, 2010 estimates 4.0 daily person trips per Capita.
3. Mode splits (SOV: drive alone & HOV: carpool) obtained from US Census Bureau data - American Community Survey (ACS) 2017. Auto mode share calculated at 80% SOV and 8% HOV for a total of 88%. Vehicle Occupancy Ratio (VOR) was assumed to be 1.0 persons per vehicle for SOV and 2.5 persons per vehicle for HOV. The 2.5 HOV VOR was assumed given a minimum of 2 persons per vehicle is the required number of passengers to use the HOV lane, and the expectancy that greater than 2 persons per vehicle would be traveling in the HOV lane as well.
4. Average Trip Lengths based on GPS data obtained from daily, weekday trip data for a 1-year time period between March 2018 and February 2019. The total data sample size is approximately 31,200. This represents trip-based travel patterns (and not tour-based travel patterns).
5. Total VMT = Daily Auto Trips (roundtrip) x Average Auto Trip Length (one-way)
6. VMT per Capita = Total VMT / Total Population
7. Significance threshold is 85% of the City VMT per capita (24.8 x 85% = 21.0)

20.3.2 *Project VMT*

Similar to the City calculations, the Project VMT per capita was determined. The first method uses data science to calculate the Project VMT under baseline conditions. The Project was categorized into land use types which include Residential, Health Club, Entertainment, Restaurant, Agricultural, and Park and Trails. Given the Project site is occupied by a decommissioned golf course, proxy sites in the immediate vicinity with similar characteristics were used to determine average trip lengths using Navigation GPS Analytics. Average trip lengths were based on GPS data obtained from daily, weekday trip data for a one-year time period between March 1, 2018 and February 28, 2019. The total data sample size is approximately 2,000 devices.

Appendix N contains the existing Project VMT calculations.

The Farm in Poway Project population estimates were used along with the trip generation estimates for auto mode splits and daily auto trips. As shown in ***Table 20–3***, the Project VMT per capita is calculated at 19.0.

TABLE 20–3
THE FARM IN POWAY – PROJECT VMT/CAPITA

Land Use Type	Site Population Estimate	Daily Auto Trips (roundtrips)	Average Trip Length (one-way, miles)	Total VMT	VMT per capita
The Club [a] *Pool/4 tennis courts, 16 pickleball courts/Multi-Purpose Room*	69	155	6.3	974	14.2
Social @ The Gardens [b] *Café/Coffee/Wine & Beer Garden*	183	412	4.7	1938	10.6
The Barn [c] *Wedding Venue/Music Venue/ Multi-Purpose Room*	81	182	6.3	1147	14.2
Programmed Open Space Recreation [d] *The Butterfly Farm Vivarium/Greenhouse, Classroom, Picnic Area, Garden, Trails*	98	222	5.0	1108	11.3
Agri-Fields [e]	7	15	4.3	63	9.4
Unprogrammed Open Space Conservation [f] *Tranquility Garden, Tot Lot, Community Gardens, Open Space Recreation*	89	202	5.4	1090	12.3
Residential *160 Dwelling Units*	*531*	*1337*	*10.3*	*13768*	*25.9*
Total	**–**	**2,524**	**–**	**20,099**	**19.0**

General Notes:

1. Residential population was obtained from proxy site data showing average occupancy of 3.32 persons per unit.
2. The Club population was obtained from SANDAG population estimates: Code 7214 for "Recreational/Racquetball Club". See *Appendix N* on population estimate calculations.
3. The Social at the Gardens population was obtained from SANDAG population estimates: Code 5012 for "Quality Restaurant". See *Appendix N* on population estimate calculations.
4. The Barn population was obtained from SANDAG population estimates: Code 7202 for "Recreational/Arena". See *Appendix N* on population estimate calculations.
5. The Programmed Park population was obtained from SANDAG population estimates: Code 6895 for "Middle School". This use was selected given the classroom characteristics of the Butterfly Vivarium and greenhouse programming. See *Appendix N* on population estimate calculations.
6. The Agri-Fields and Unprogrammed Park populations were estimated using the ADT generation.
7. Average vehicle occupancy rate (VOR) for this area is calculated to be 1.14 persons per vehicle.
8. Population estimates that were derived from Trip Generation assumes one full trip includes and inbound and an outbound trip.
9. Daily Auto Trips assumes a 15% internal / mixed use reduction
10. Average Trip Lengths based on GPS data obtained from daily, weekday trip data for a 1-year time period between March 1 2018 and February 28, 2019. The total data sample size is approximately 2,000 devices.
11. Total SB743 VMT = Daily Auto Trips (roundtrip) x Average Auto Trip Length (one-way)
12. VMT per capita = Total VMT / Total Population

As shown in *Table 20–3*, the Project VMT per capita of 19.0 is lower than the Citywide average VMT per capita threshold of 21.0. **Therefore, based on the applied significance criteria, The Farm in Poway Project VMT does not result in a significant transportation impact. Therefore, mitigation measures are not required.**

21.0 PROJECT DESIGN FEATURES, SIGNIFICANCE OF IMPACTS, MITIGATION MEASURES, AND RECOMMENDATIONS

Project Design Features are new public facilities constructed as part of the Project to provide direct access to the Project site. Significant impacts are calculated at existing locations where the addition of Project traffic would result in unacceptable operations and/or exceed the thresholds set forth by the respective jurisdiction. Significant impacts require the implementation of mitigation measures to restore operations to below significant levels.

The analyses presented in this report evaluate The Farm in Poway's potential vehicular impacts based on the currently adopted guidelines which focus on Automobile Delay (or Level of Service). In addition to these analyses, the multi-modal network was comprehensively reviewed. Pedestrian and bicycle mobility were reviewed on- and off-site. Transit conditions and access to transit were evaluated. The growing role of Intelligent Transportation Systems (ITS) is also reviewed. Collectively, these multi-modal networks and trip efficiency strategies help promote local and regional mobility without auto-dependency.

21.1 Project Design Features

As part of the Project, access improvements are proposed from public roadways. ***Table 21–1*** below provides a summary of the Project Design Features:

TABLE 21–1
PROJECT DESIGN FEATURES

Location	Project Design Features
PDF-1	***Intersection #9.*** Espola Road/ Martincoit Road/ Private Street 'A': Construct the north leg of the intersection and provide one dedicated left-turn lane, and a shared thru/right-turn lane. Provide protected traffic signal phasing in the north/south directions and protected left-turn phasing in the east/west directions. Restripe the south leg (northbound approach) to provide a left-turn lane and shared thru/right-turn lane.
PDF-1	***Intersection #23.*** Cloudcroft Drive/ Cloudcroft Court: Install a stop-sign on the Project access road (Cloudcroft Court) to control movements egressing the site. Provide a shared left-turn/right-turn.
PDF-3	***Intersection #24.*** Boca Raton Lane/ Private Street 'E': Install a stop-sign on the Project access road (Private Street 'E') to control movements egressing the site. All turn lanes will be shared with through movements.
PDF-4	***Intersection #25.*** Tam O'Shanter Drive/ Private Street 'A': Install a stop-sign on the Project access road (Private Street 'A') to control movements egressing the site. All turn lanes will be shared with through movements.

21.2 Significance of Impacts & Mitigation Measures

Per City of Poway and City of San Diego significance thresholds and the analysis methodology presented in this report, Project and cumulative traffic is calculated to result in one (1) significant auto-related impact. *Direct* impacts were calculated where Project-added traffic resulted in a degradation in measures of effectiveness above the allowable thresholds in the Near-Term (Opening Year 2025) conditions. *Cumulative* impacts were calculated where Project-added traffic resulted in a degradation in measures of effectiveness greater than the allowable thresholds in the Horizon Year 2035 condition. (See *Tables 5–1 and 5–2* for the allowable thresholds of significance.)

Table 21–2 summarizes the impacted locations for each scenario analyzed in this report.

TABLE 21–2
IMPACT SUMMARY TABLE

MM#	Location	Jur.	Near-Term (Opening Year 2025)		Horizon Year 2035
			Near-Term With Project	Near-Term With Project (School Zone Mid-Day Analysis) [a]	Horizon Year 2035 With Project
TRA-1	***Intersection #17.*** Pomerado Road/ Stone Canyon Road	San Diego	Direct	None	Cumulative

Footnotes:

a. The Near-Term With Project (School Zone Mid-Day Analysis) analyzes the 1:45-3:45 PM peak hour, which represents the school end time. Analysis for the AM peak hour generally coincides with the AM commute peak hour (7:00-9:00 AM).

General Notes:

1. MM = Mitigation Measure
2. Jur. = Jurisdiction

Table 21–3 identifies recommended mitigation measures.

Figure 21–1 shows the locations of the significantly impacted intersections and ***Figure 21–2*** identifies the recommended mitigation measures.

TABLE 21–3
RECOMMENDED MITIGATION MEASURES

MM#	Jur.	Location	Impact Type	Mitigated to Below Significant Levels? (Yes/No)
TRA-1	San Diego	***Intersection #17***. *Pomerado Road/ Stone Canyon Road* In order to mitigate this Project impact to below significant levels, it is recommended that the Project modify the traffic signal to provide east/west split phasing.	Near-Term Direct & Horizon Year Cumulative	Yes

General Notes:

1. MM = Mitigation Measure
2. Jur. = Jurisdiction

21.3 Post-Mitigation Analysis

Table 21–4 summarizes the pre- and post-mitigation levels of service at the significantly impacted intersections for the Near-Term (Opening Year 2025) and Horizon Year 2035 scenarios. The mitigation proposed for Near-Term (Opening Year 2025) direct impacts also mitigates the Horizon Year 2035 cumulative impacts.

The analysis worksheets of the mitigated intersections are included in ***Appendix O***.

TABLE 21–4
POST-MITIGATION ANALYSIS

MM#	Location	Jur.	Control Type	Scenario	Peak Hour	Pre-Mitigation Operations [a]				Post Mitigation Operations	
						Without Project		With Project			
						Delay [b]	LOS [c]	Delay	LOS	Delay	LOS
TRA-1	***Intersection #17.*** Pomerado Rd/ Stone Canyon Rd	San Diego	Signal	Near-Term (OY 2025)	AM	99.6	F	105.7	F	17.6	B
					PM	90.5	F	97.6	F	21.5	C
				Horizon Year 2035	AM	123.6	F	129.4	F	24.1	C
					PM	130.0	F	137.2	F	43.7	D

Footnotes:

a. Average delay expressed in second per vehicle.
b. Level of service.
c. Minor-street stop-controlled intersection. Minor street critical movement delay reported (southbound left-turn).

General Notes:

1. MM# = Mitigation measure number.
2. Sig = Significant impact post-mitigation?
3. Mitigation provided for locations currently operating at LOS E or F are required to improve operations to better than or equal to pre-Project conditions only.
4. Jur. = Jurisdiction
5. OY = Opening Year

21.4 Recommendations

In addition to the Project Design Features and Mitigation Measures discussed above, the following improvements are recommended:

21.4.1 *Auto Improvements*

AI-1. **Adaptive Traffic Signal Controls:** In order to deter cut-through traffic on Martincoit Road, Stone Canyon Road, Avenida Florencia, Avenida La Valencia, Summerfield Lane, and Rios Road, it is recommended that Adaptive Traffic Signal Controls (ATSC) be installed at four (4) existing traffic signals along Espola Road between Pomerado Road and Martincoit Road. Adaptive traffic signal controls (ATSC) are an established solution for mobility along unpredictable and fluctuating traffic patterns of arterials. Adaptive traffic signals or "Smart" traffic signals communicate with each other and dynamically adjust signal timings, memorize traffic patterns, improve traffic flow and reduce vehicle stops. The provision of ATSC along this corridor would be expected to improve travel times and thus, cut-through travel routes would be less desirable.

In addition to diverting traffic from residential streets, ATSC along Espola Road would be expected to improve signal responsiveness to weekday mid-day school peak traffic periods. (*Figure 21–2* also shows the location of the ATSC along Espola Road.)

21.4.2 *Pedestrian Improvements*

PI-1. In order to preserve the semi-rural character of Espola Road given its classification as a "scenic roadway", construct a six-foot concrete sidewalk and nine-foot trail separated from the roadway by a landscaped buffer.

PI-2. Construct sidewalks on at least one side of all on-site roadways to connect to on-site trails, leading to the transit stop at the Espola Road/Cloudcroft Drive.

PI-3. Provide curb extensions, also referred to as bulb-outs at key on-site intersections, where on-street parking is proposed and feasible, to reduce crossing length and improve pedestrian visibility.

PI-4. Provide crosswalks on-site where trails and sidewalks meet vehicular traffic.

PI-5. Enhance connectivity between the Project site and St. Andrews Drive given the residents of the Project will be assigned to Chaparral Elementary School, which is located within close proximity to the site. Therefore, special safety features at the Espola Road/ Valle Verde Road intersection should include enhanced crosswalk paving for high visibility, pedestrian signals with countdown timers, leading pedestrian interval timing, ADA compliant curb ramps, and smart adaptive signals that can adjust signal phasing and extend pedestrian walk time based upon time of day.

PI-6. There is currently a pedestrian trail that takes access from Valle Verde Road between Edina Way and Solera Way that meanders through private property ultimately reaching Chaparral Elementary. While it is likely that some residents use this trail to reach the school via bike or foot, it is a private HOA-maintained facility without any guarantees of remaining open. Therefore, it is recommended that the Project construct the missing connection of the five-foot contiguous sidewalk along the west side of Valle Verde Road approximately 350 feet north of Edina Way to Solera Way.

PI-7. The uncontrolled intersection of St. Andrews Drive and Valle Verde Road should be improved to provide a high visibility crosswalk with ADA compliant curb ramps.

PI-8. Provide an enhanced crosswalk at the Espola Road/Martincoit Road intersection and include a pedestrian crossing on the west leg of Espola Road. This intersection serves as a major access intersection to the Painted Rock Elementary School. Special safety features should include enhanced crosswalk paving for high visibility, and pedestrian signals with countdown timers, leading pedestrian interval timing, ADA compliant curb ramps, and smart adaptive signals that can adjust signal phasing and extend pedestrian walk time based upon time of day.

21.4.3 *Bicycle Improvements*

BI-1. Retrofit the intersection crossings at Espola Road/ Martincoit Road and Espola Road/ Valle Verde Road with high visibility crosswalks to reduce bicycle /vehicle conflicts and provide bicycle signal detection. Coordinate with the City of Poway on implementing bike treatments (e.g. bike detection, green striping) at the intersection.

BI-2. Provision of the on-site multi-use trails will be shared between bicycles and other users, including pedestrians and equestrians. Appropriate signage will indicate rules for yielding to various users.

BI-3. Traffic calming measures and low speed designs should be used in the design of on-site roadways, with "shared roadway" markings identifying that bicycle use is permitted.

BI-4. Provide bicycle parking stations on-site, staging areas, trail respite rest stops, and seating along the multi-use trail, and a bike station.

21.4.4 *Transit Improvements*

TI-1. Work with the San Diego Metropolitan Transit System (MTS) to improve and replace the existing stop(s) on Espola Road on the northwest corner of the Espola Road/Martincoit Drive/Private Street 'A' intersection and/or the northwest corner of the Espola Road/Cloudcroft Drive intersection and adjust schedules, if needed, to meet the demands of new and existing riders.

21.4.5 *Alternative Vehicles*

AV-1. It is recommended that the Project design all on-site roadways to accommodate NEVs and LSVs during daylight hours.

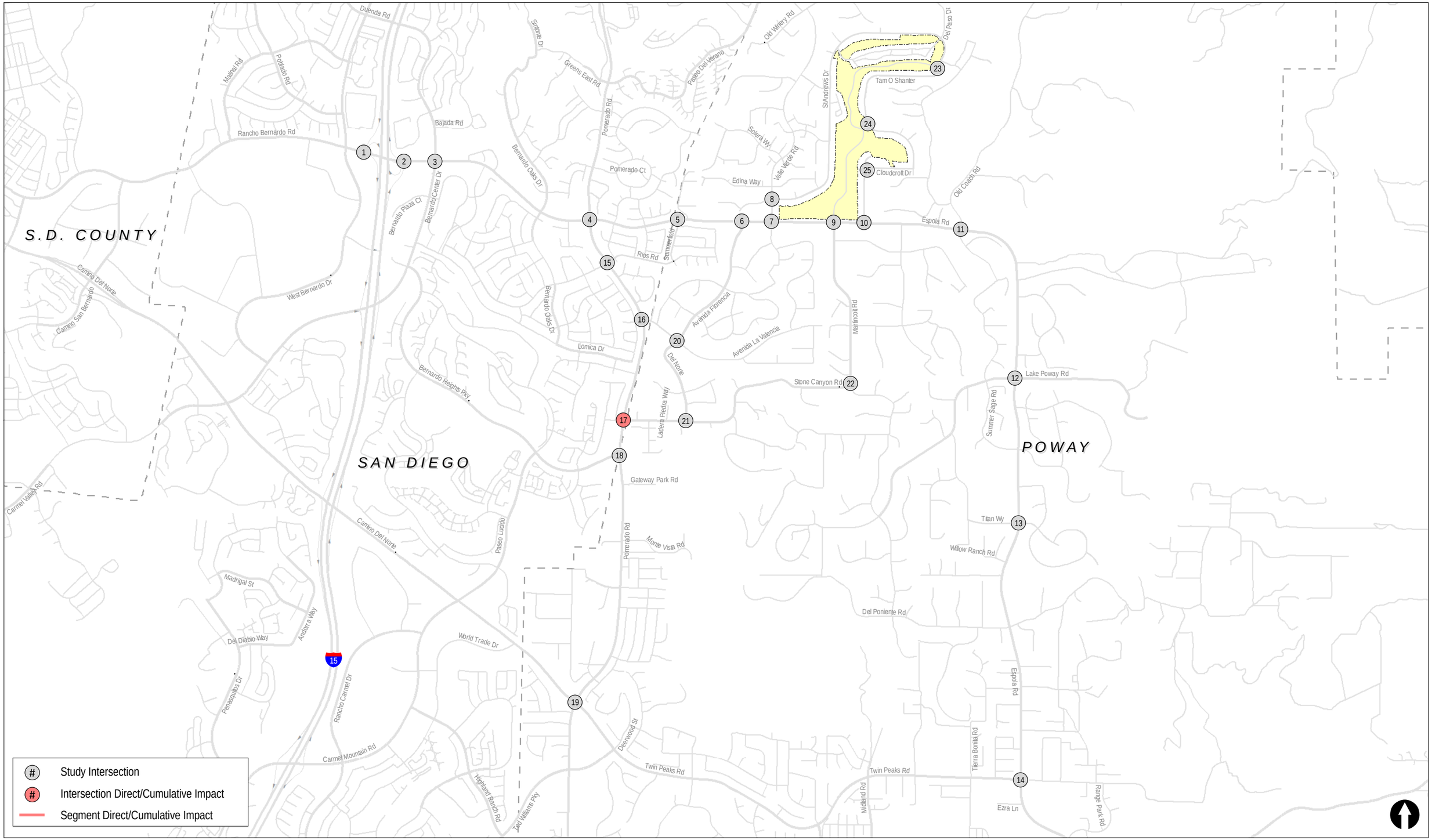


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Figure 21-1

Significant Impacts

THE FARM IN POWAY

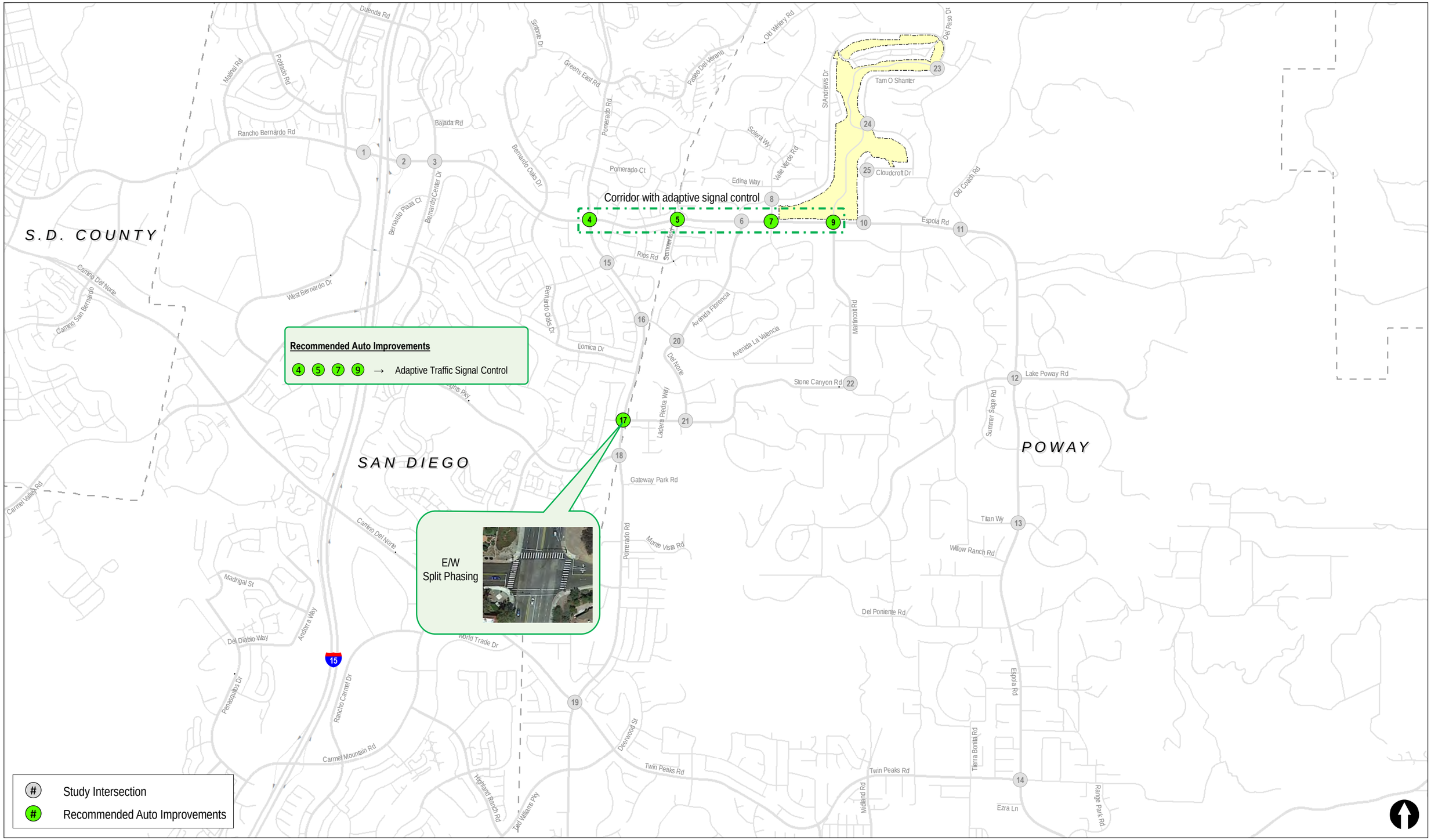

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Figure 21-2

Mitigation Measures & Recommended Auto Improvements

THE FARM IN POWAY

22.0 REFERENCES

The following key adopted and ongoing planning documents were referenced:

22.1.1 *City of Poway*

City of Poway Transportation Master Element (2010)

The City of Poway Transportation Master Element identifies transportation planning goals and policies related to pedestrian, transit, street and freeway systems. The document provides description and location of basic element of the network that provides for transportation needs of the City of Poway. The document also provides for potential strategies to improve the transportation system within the jurisdiction.

Espola Road Safety Improvement Project (2018)

The Espola Road Safety Improvements Project will improve safety for those who walk, jog, cycle or ride horses along the stretch of Espola Road between Poway High School and Twin Peaks Road. Specifically, it will add a pathway where none currently exists on the west side of Espola Road, from Mountain Road (just north of Twin Peaks Road) to Willow Ranch Road (about a block south of Titan Way).

City of Poway Public Facilities Financing Plan (2018)

The document provides for potential improvements to the local street system as well as reviewing status of the associated funds of each improvement. The City of Poway PFFP also includes a comprehensive overview of the City's operating budget for Fiscal Year 2018-19 (July-June).

22.1.2 *City of San Diego*

Rancho Bernardo Community Plan – Circulation Element (last amended January 11, 1999)

The Rancho Bernardo Community Plan Circulation Element identifies transportation planning goals and policies related to pedestrian, transit, street and freeway systems. The document provides description and location of basic element of the network that provides for transportation needs of the Community of Rancho Bernardo. The document also provides for potential strategies to improve the transportation system within the community boundary.

City of San Diego General Plan – Mobility Element (2008)

The City of San Diego General Plan Mobility Element identifies transportation planning goals and policies related to pedestrian, transit, street and freeway systems, Intelligent Transportation Systems (ITS), Transportation Demand Management (TDM), bicycling, parking management, airports, passenger rail, goods movement/freight, and regional coordination and financing. The element discusses several key topics related to pedestrian-oriented planning, traffic calming techniques, bicycle network improvements, and transit priorities.

City of San Diego Bicycle Master Plan (2011)

The City of San Diego Bicycle Master Plan provides a framework for making cycling a more practical and convenient transportation option for all users. The plan is comprised of a proposed bicycle network, projects, policies and programs aimed at improving bicycling through 2030 and beyond. The

City has continued development of the plan to address urban core communities as well as other communities.

City of San Diego Pedestrian Master Plan (2006)
The Pedestrian Master Plan provides guidance for the implementation of pedestrian projects. The document also includes a prioritization process used to identify high priority pedestrian routes within Community Planning areas and a methodology to determine potential pedestrian improvement projects along identified routes. The guidance aims to establish a level of consistency among the plans and analysis methodologies utilized.

22.1.3 *Regional*

SANDAG San Diego Forward: The Regional Plan / Sustainable Communities Strategy 2050 (2015)
The Regional Transportation Plan (RTP) proposes a vision for a regional transportation system that enhances quality of life, promotes sustainability, and offers more mobility options for the movement of people and goods. The RTP includes an integrated, multimodal transportation with transit investments concentrated in strategic areas. These include identifying a network of planned high-quality transit corridors consisting of major transit stops and/or peak period services.

Developed in accordance with California Senate Bill 375 (SB 375), the Sustainable Communities Strategy (SCS) is a new element of the 2050 Regional Transportation Plan (RTP). The SCS lays out how the region will meet greenhouse gas (GHG) reduction targets set by the California Air Resources Board (CARB). CARB's targets call for the region to reduce per capita emissions seven percent by 2020 and 13 percent by 2035 from a 2005 baseline.

SANDAG San Diego Regional Bike Plan (2010)
The Regional Bike Plan identifies a vision for a diverse regional bicycle system of interconnected bicycle corridors, support facilities, and programs to make cycling more practical and desirable to a broader range of the population. The document includes recommendations and goals that seek to increase bicycle ridership and the frequency of bicycle trips for all purposes. It also encourages the development of Complete Streets, to improve safety for bicyclists, and to increase public awareness and support for bicycling in the region.

SANTEC/ITE Guidelines for Traffic Impact Studies (TIS) In the San Diego Region (2000)
The San Diego Traffic Engineers' Council (SANTEC) and the Institute of Transportation Engineers (ITE) were requested by the San Diego Regional Standards Task Force to develop guidelines through the cooperation of Cities, Caltrans, and the County San Diego providing for a region-wide standard to determine traffic impacts that are reported in environmental reports. The document includes measures of significance of impact for roadway and freeways, intersections, and ramp metering.

22.1.4 *Statewide*

Technical Advisory on Evaluating Transportation Impacts in CEQA (2017)

The Governor's Office of Planning and Research (OPR) has prepared a Technical Advisory on Evaluating Transportation Impacts in CEQA, which contains OPR's technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures under SB 743.

Proposed Updates to the CEQA Guidelines (2017)

Per Section 21083 of the Public Resources Code, which requires regular updates to the Guidelines Implementing the California Environmental Quality Act. The Governor's Office of Planning and Research (OPR) has proposed updates to the Guidelines per SB 743.

End of Report