Appendix E

Transportation Impact Analysis (2019)

LINSCOTT LAW & GREENSPAN engineers

TRANSPORTATION IMPACT ANALYSIS

LIBERTY BELL PLAZA

County of San Diego, California
July 15, 2019

LLG Ref. 3-18-2931

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TRANSPORTATION IMPACT ANALYSIS

LIBERTY BELL PLAZA

County of San Diego, California
July 15, 2019

1.0 INTRODUCTION

Linscott, Law & Greenspan Engineers (LLG) has been retained to assess the traffic impacts associated with the Liberty Bell Plaza project. The project is located on the northeast corner of the Valley Center Road / Mirar De Valle Road intersection in the County of San Diego.

The project proposes to develop the project site to include an 85,000 SF neighborhood shopping center. This transportation report addresses the potential transportation impacts associated with the proposed project.

The following sections are included in this report:

- Project Description
- Existing Conditions Discussion
- Analysis Approach and Methodology
- Significance Criteria
- Existing Conditions Analysis
- Trip Generation/Distribution/Assignment
- Cumulative Projects Discussion
- Near-Term Analysis
- Site Access and Circulation Review
- Pedestrian, Bicycle and Transit Assessment
- Significance of Impacts and Mitigation Measures

2.0 PROJECT LOCATION AND DESCRIPTION

2.1 Project Location

The project is located on the northeast corner of the Valley Center Road / Mirar De Valle Road intersection in the County of San Diego.

Figure 2–1 shows the general vicinity of the project and ***Figure 2–2*** shows a more detailed project area map.

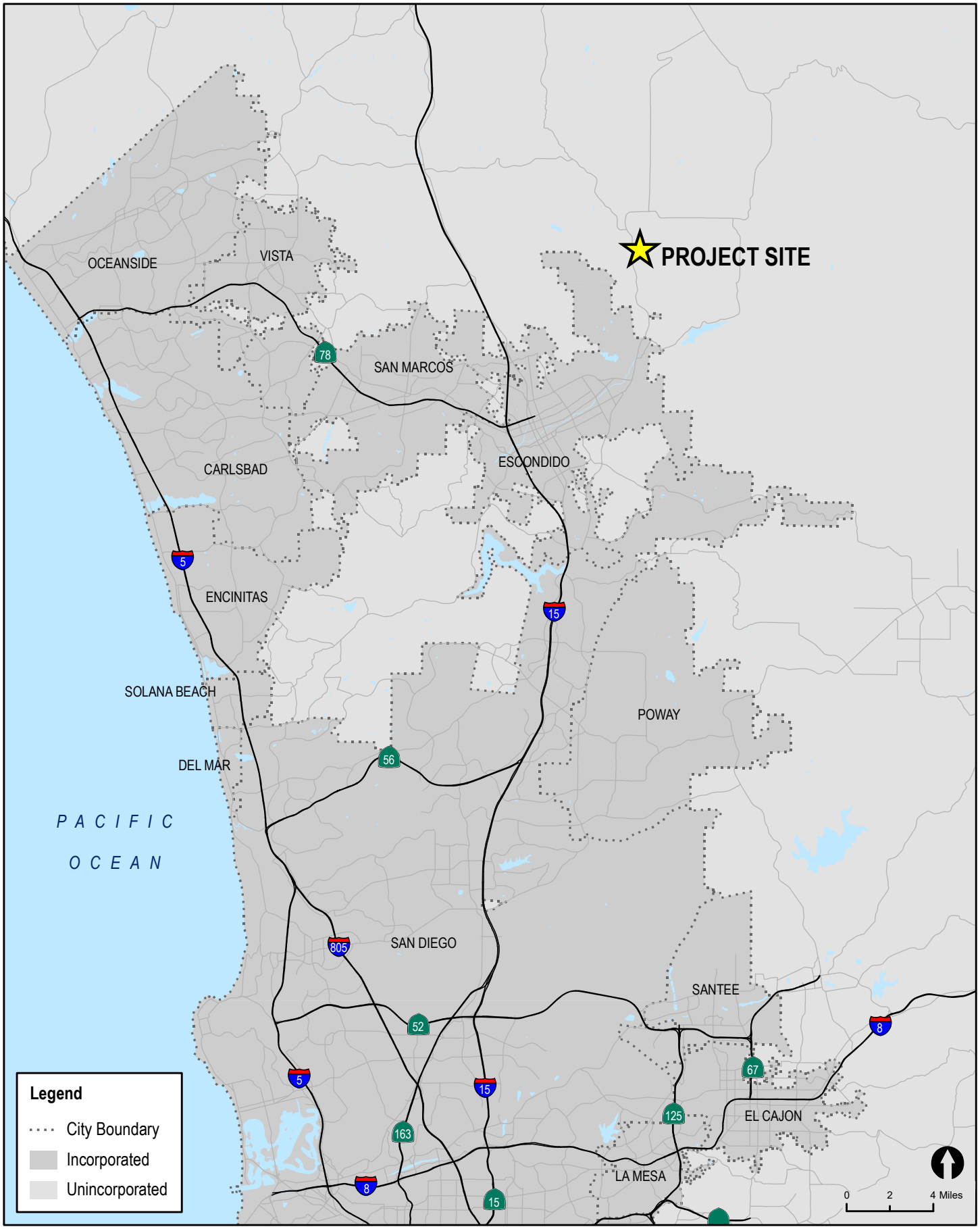
2.2 Project Description

The project proposes to develop the project site with an 85,000 SF neighborhood shopping center. Subsequent to the analysis being completed using 85,000 SF as the shopping center size, the project size was reduced to 81,884 SF. Therefore, the analysis is slightly conservative.

Figure 2–3 shows the conceptual site plan for the project.

2.3 Project Access

The project proposes direct site access along Valley Center Road via three (3) driveways. The north driveway will be only for service and will be very lightly used. Full movements can be allowed due to very small volumes and the need for trucks to turn left in and out of the driveway. The middle driveway should be right-in/right-out only. The main driveway should be signalized opposite the existing Mirar De Valle Road.



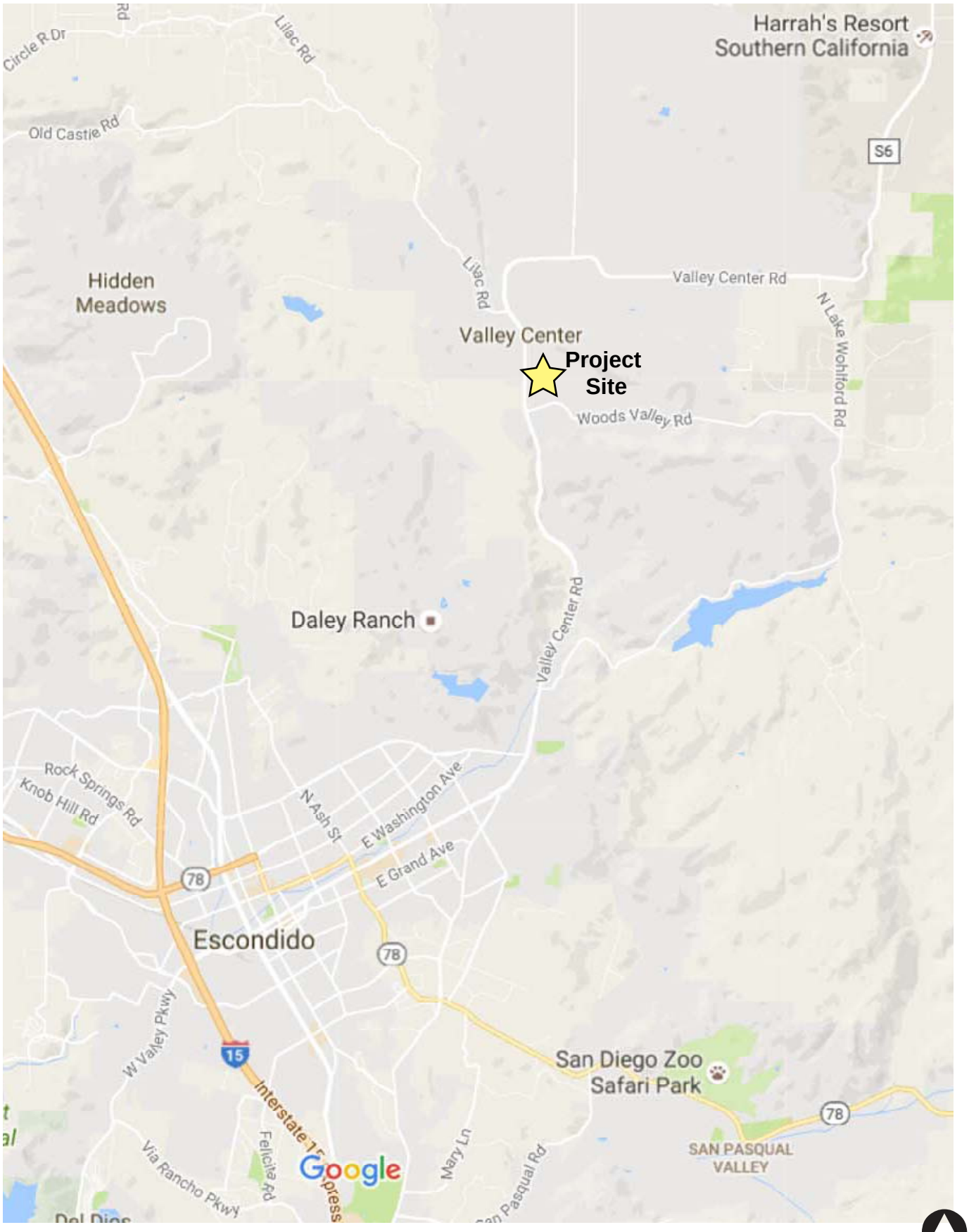
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Figure 2-1

Vicinity Map

LIBERTY BELL PLAZA



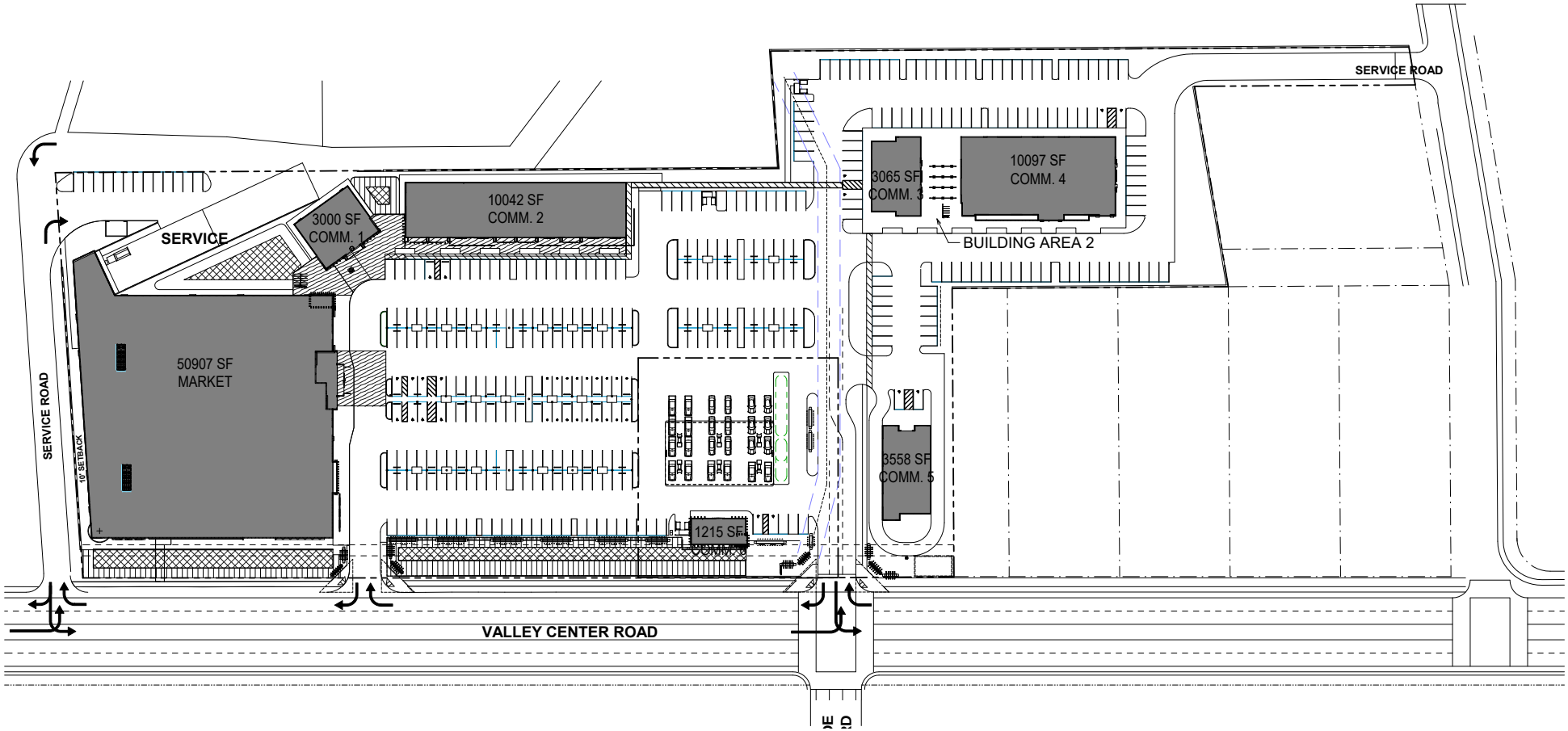
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Figure 2-2

Project Area Map

LIBERTY BELL PLAZA



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Figure 2-3

Site Plan

LIBERTY BELL PLAZA

3.0 EXISTING CONDITIONS

The intersections and segments included in the study area are listed below. These locations were chosen since they will carry the majority of project traffic.

Intersections

- Valley Center Road / Thundernut Lane / Lake Wohlford Road (North)
- Valley Center Road / Cole Grade Road
- Valley Center Road / Lilac Road
- Valley Center Road / Project Driveway #1
- Valley Center Road / Project Driveway #2
- Valley Center Road / Project Driveway #3 / Mirar De Valle Road
- Valley Center Road / Woods Valley Road
- Valley Center Road / Lake Wohlford Road (South)
- Valley Parkway / Beven Drive
- Valley Parkway / Eureka Drive
- Valley Parkway / Hidden Trails Road

Street Segments

Valley Center Road

- Thundernut Lane/N. Lake Wohlford Road to Cole Grade Road
- Cole Grade Road to Lilac Road
- Lilac Road to Project Driveway #1
- Project Driveway #1 to Project Driveway #2
- Project Driveway #2 to Project Driveway #3 / Mirar De Valle Road
- Project Driveway #3 / Mirar De Valle Road to Woods Valley Road
- Woods Valley Road to Escondido City Limits
- Escondido City Limits to Lake Wohlford Road

Valley Parkway

- Lake Wohlford Road to El Norte Parkway

Cole Grade Road

- Fruitvale Road to Valley Center Road

Lilac Road

- Valley Center Road to Betsworth Road

3.1 Existing Transportation Conditions

The project study area includes streets within the County of San Diego and City of Escondido. The existing street network in the study area is described by jurisdiction.

3.1.1 *San Diego County Street Network*

Following is a description of the street network in the Study Area within San Diego County:

The Classification of **Valley Center Road** varies along its length. Following is the classification of various sections of Valley Center within San Diego County:

- Between Escondido City Limits and North County Metro Subregion Boundary, Valley Center Road is classified on the San Diego County Mobility Element as a 4.1A Major Road. Going north, initially, it is built as a four-lane road with a center-two-way-left-turn lane. Curb, gutter and sidewalks are not provided. Parking is prohibited.
- Between North County Metro Subregion Boundary and Woods Valley Road, Valley Center Road is classified on the San Diego County Mobility Element as a 4.1A Major Road with a raised median. Curb, gutter and sidewalks are not provided. Parking is prohibited.
- Between Woods Valley Road and Lilac Road, Valley Center Road is classified on the San Diego County Mobility Element as a 4.2A Boulevard with a raised median. Currently, a raised median is provided intermittently. Bike lanes, Curb, gutter and sidewalks are provided. The posted speed limit is 45 mph. Parking is prohibited.
- Between Lilac Road and Miller Road, Valley Center Road is classified on the San Diego County Mobility Element as a 4.1A Major Road with a raised median. Bike lanes, Curb, gutter and sidewalks are provided. The posted speed limit is 45 mph.
- Between Miller Road and New Roads 14/15, Valley Center Road is classified on the San Diego County Mobility Element as a 4.2B Boulevard with a raised median. Currently, it is built as a 4.2B Boulevard with a raised median between Miller Road and Cole Grade Road with bike lanes, curb, gutter and sidewalks. The posted speed limit is 45 mph. Parking is prohibited. The remaining portion of this segment is a two-lane road with one lane in each direction with no bike lanes, curb, gutter or sidewalks.
- Between New Roads 14/15 and Lake Wohlford Road, Valley Center Road is classified on the San Diego County Mobility Element as a 2.1D Community Collector with passing lanes. Between New Roads 14/15 and Lake Wohlford Road N., two lanes are provided, one in each direction with no median. Parking is prohibited. Bike lanes, curb, gutter and sidewalks are provided. The posted speed limit is 45 mph. Parking is prohibited.

Cole Grade Road is classified as a *4.2A – Boulevard with a raised median* on the *County of San Diego General Plan Mobility Element* within the study area. It is currently constructed as a two-lane undivided roadway with intermittent turn lanes north of Valley Center Road. There are no bike lanes provided and curbside parking is prohibited. A contiguous sidewalk is provided on the east side only. The posted speed limit is 45 mph.

Lilac Road is classified as a *4.2B – Boulevard with intermittent turn lanes* on the *County of San Diego General Plan Mobility Element* within the study area. It is currently constructed as a two-lane

undivided roadway west of Valley Center Road. There are no bike lanes or sidewalks provided and curbside parking is prohibited. The posted speed limit is 55 mph.

Mirar De Valle Road is classified as a 2.*1D – Community Collector* on the *County of San Diego General Plan Mobility Element* within the study area. It is currently constructed as a two-lane undivided roadway west of Valley Center Road. There are no bike lanes or sidewalks provided and curbside parking is prohibited. The speed limit is 25 mph.

Woods Valley Road is classified as a 2.*1D – Community Collector* on the *County of San Diego General Plan Mobility Element* within the study area. It is currently constructed as a two-lane undivided roadway east of Valley Center Road. There are no bike lanes provided and curbside parking is prohibited. A contiguous sidewalk is provided on the north side only. The posted speed limit is 45 mph.

3.1.2 *City of Escondido Street Network*

Following is a description of the street network in the Study Area within the City of Escondido:

Valley Parkway is classified in the City of Escondido General Plan as a Super Prime Arterial, between the City / County Boundary and El Norte Parkway (Hidden Trails Drive) and a Prime Arterial between El Norte Parkway (Hidden Trails Drive) and Midway Drive. Currently, Valley Parkway is built as follows:

- Between the City / County Boundary and just south of Lake Wohlford Road (S), it is built as a four-lane divided roadway. The posted speed limit is 45 mph.
- Between just south of Lake Wohlford Road (S) and El Norte Parkway (Hidden Trails Drive), it is built as a six-lane road with a raised median, curb, gutter and sidewalk. The posted speed limit is 45 mph.
- Between El Norte Parkway (Hidden Trails Drive) and Falcon Road, it is built as a five-lane road with a raised median, curb, gutter and sidewalk. Two lanes are provided northbound and three lanes are provided southbound. The posted speed limit is 45 mph.
- Between Falcon Road and Bear Valley Parkway and further south, it is built as a six-lane Prime Arterial with a raised median, curb, gutter and sidewalk. The posted speed limit is 45 mph.

Figure 3–1 depicts the existing traffic conditions and the study area intersections and segments graphically.

3.2 Existing Traffic Volumes

Peak Hour Volumes– Existing weekday AM and PM peak hour (7:00-9:00 AM and 4:00-6:00 PM) traffic volume counts were commissioned at the study area intersections on Tuesday, June 12, 2018.

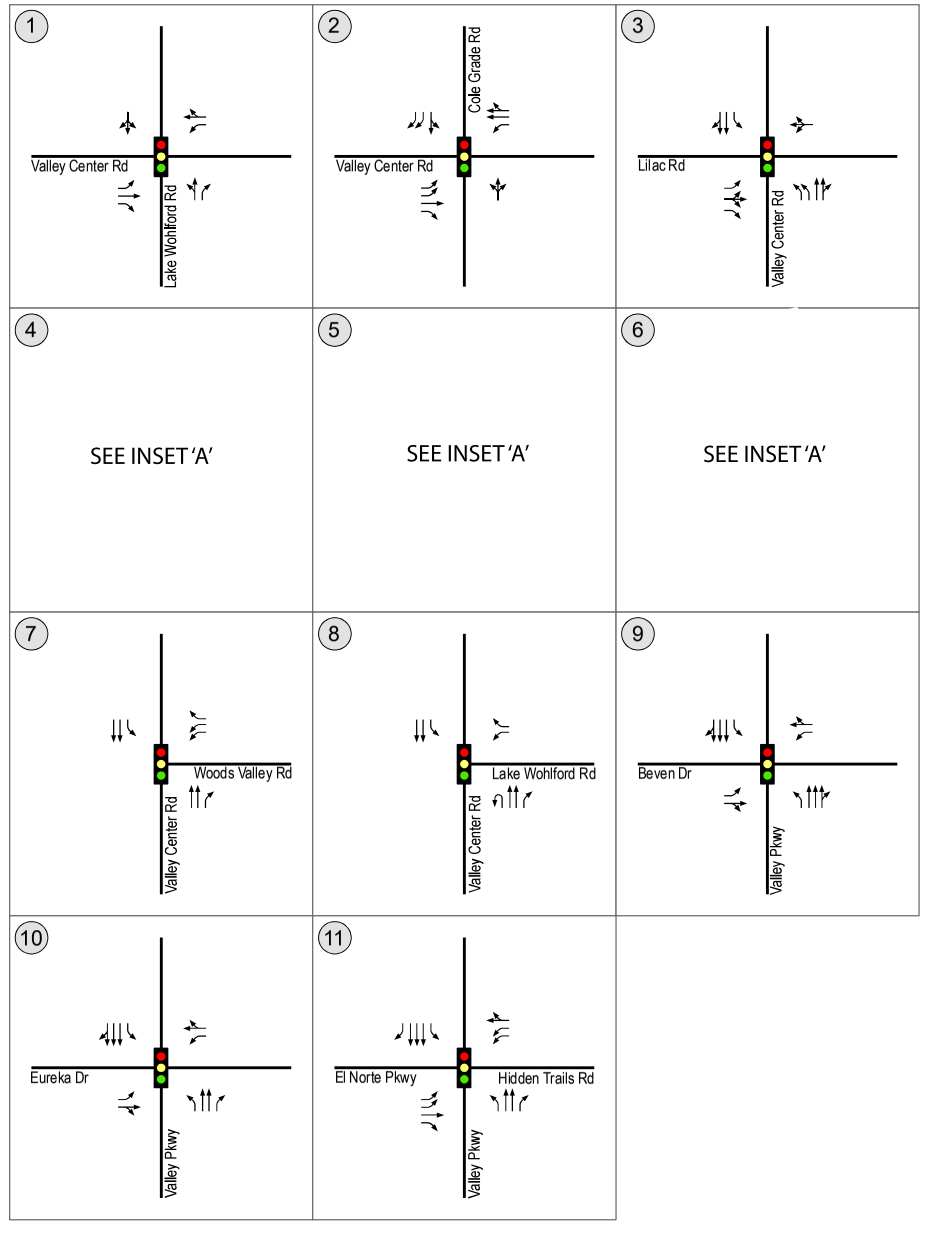
Daily Volumes– Existing street segment Average Daily Traffic (ADT) volume counts were commissioned on Tuesday, June 12, 2018.

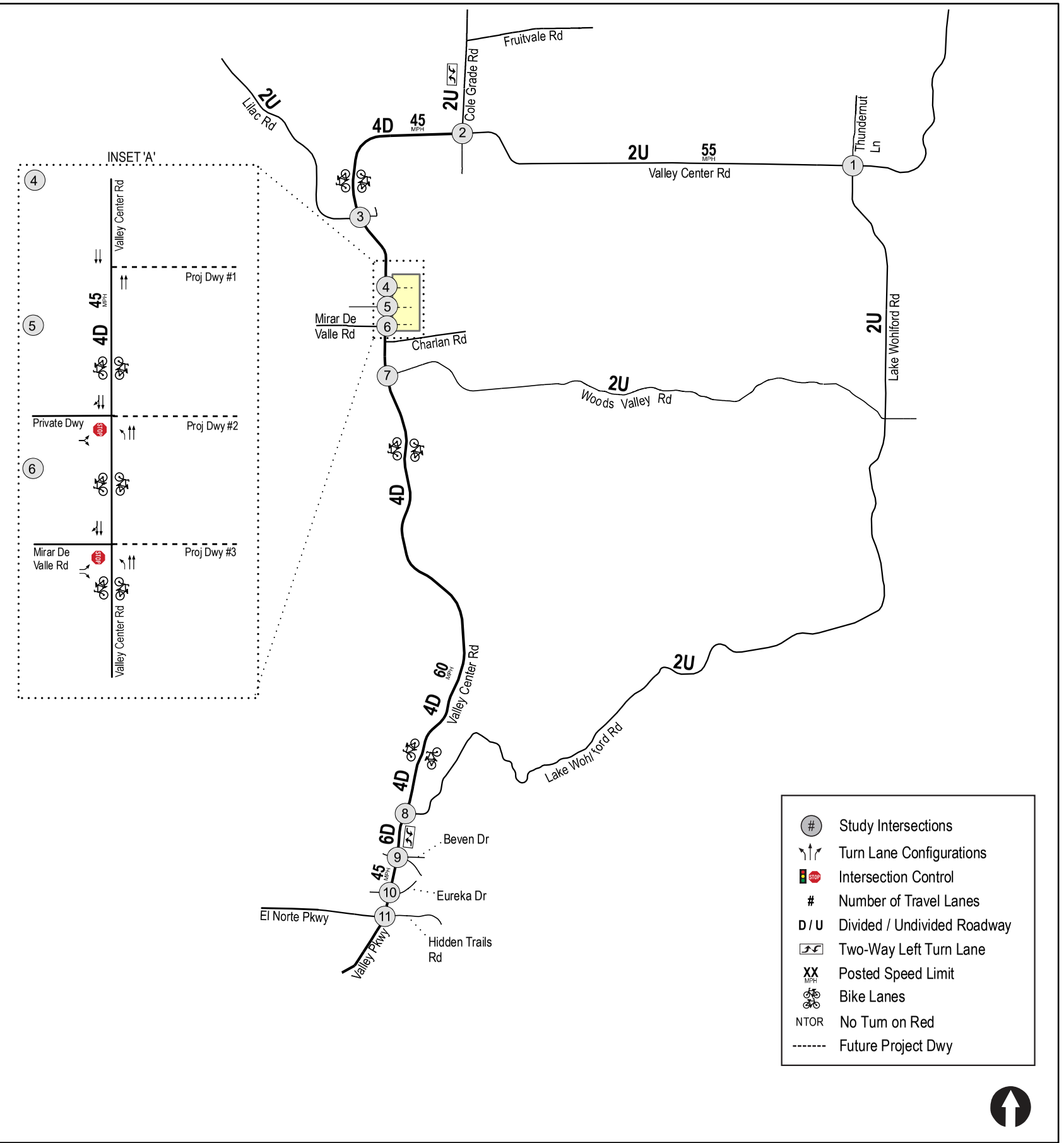
Table 3–1 is a summary of the existing street segment average daily traffic within the project study area. ***Figure 3–2*** depicts the peak hour intersection turning movement and 24-hour segment volumes at the study area intersections and segments. ***Appendix A*** contains copies of the intersection and segment count sheets.

TABLE 3–1
EXISTING TRAFFIC VOLUMES

Street Segment	ADT[a]	Date	Source
Valley Center Road			
Thundernut Ln / N. Lake Wohlford Rd to Cole Grade Road	11,880	June 2018	LLG
Cole Grade Road to Lilac Road	26,950	June 2018	LLG
Lilac Road to Project Driveway #1	24,080	June 2018	LLG
Project Driveway #1 to Project Driveway #2	24,080	June 2018	LLG
Project Driveway #2 to Project Driveway #3 / Mirar De Valle Road	24,080	June 2018	LLG
Project Driveway #3 / Mirar De Valle Road to Woods Valley Road	23,900	June 2018	LLG
Wood Valley Road to Escondido City Limits	25,170	June 2018	LLG
Escondido City Limits to Lake Wohlford Road	25,010	June 2018	LLG
Valley Parkway			
Lake Wohlford Road to El Norte Parkway	31,700	June 2018	LLG
Cole Grade Road			
Fruitvale Road to Valley Center Road	14,170	June 2018	LLG
Lilac Road			
Valley Center Road to Betsworth Road	7,360[b]	November 2013	LLG

Footnotes:
a. Average Daily Traffic Volumes.
b. A growth rate of 1% per year for 5 years was applied to account for volume growth.





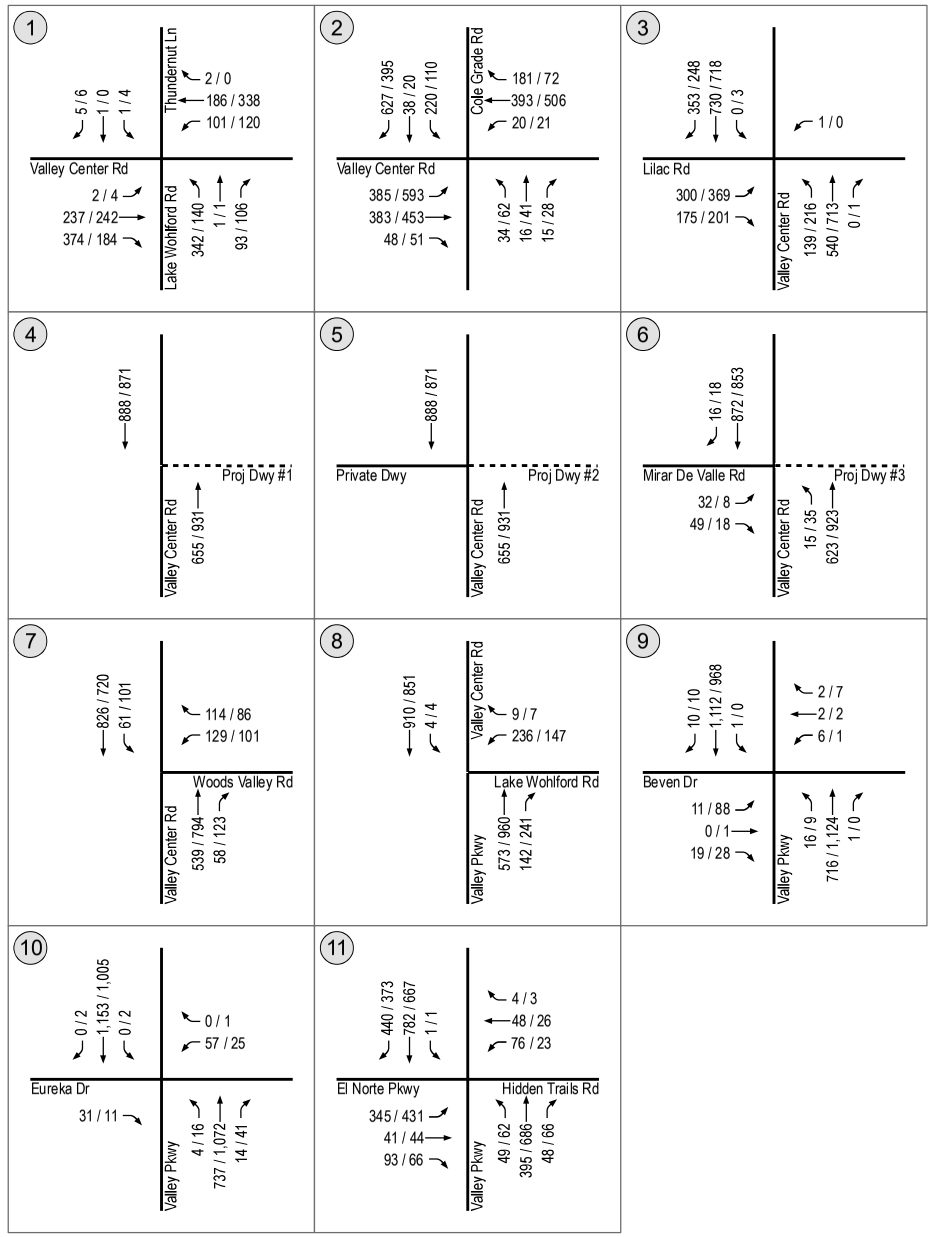
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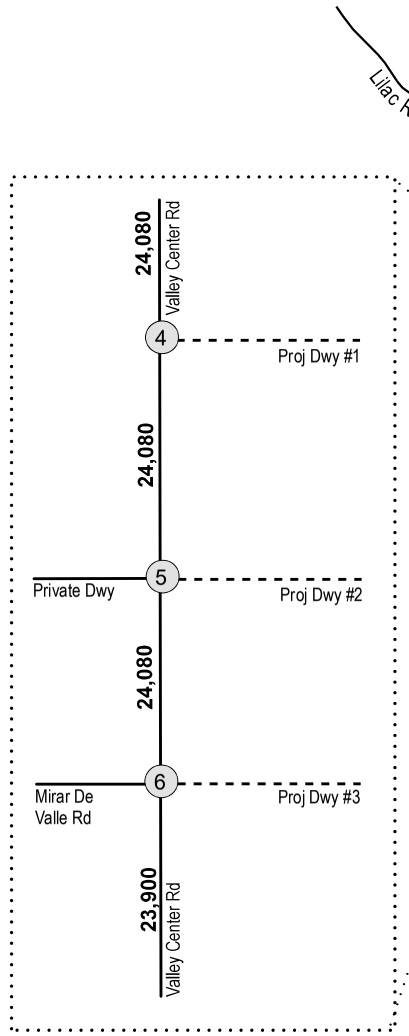
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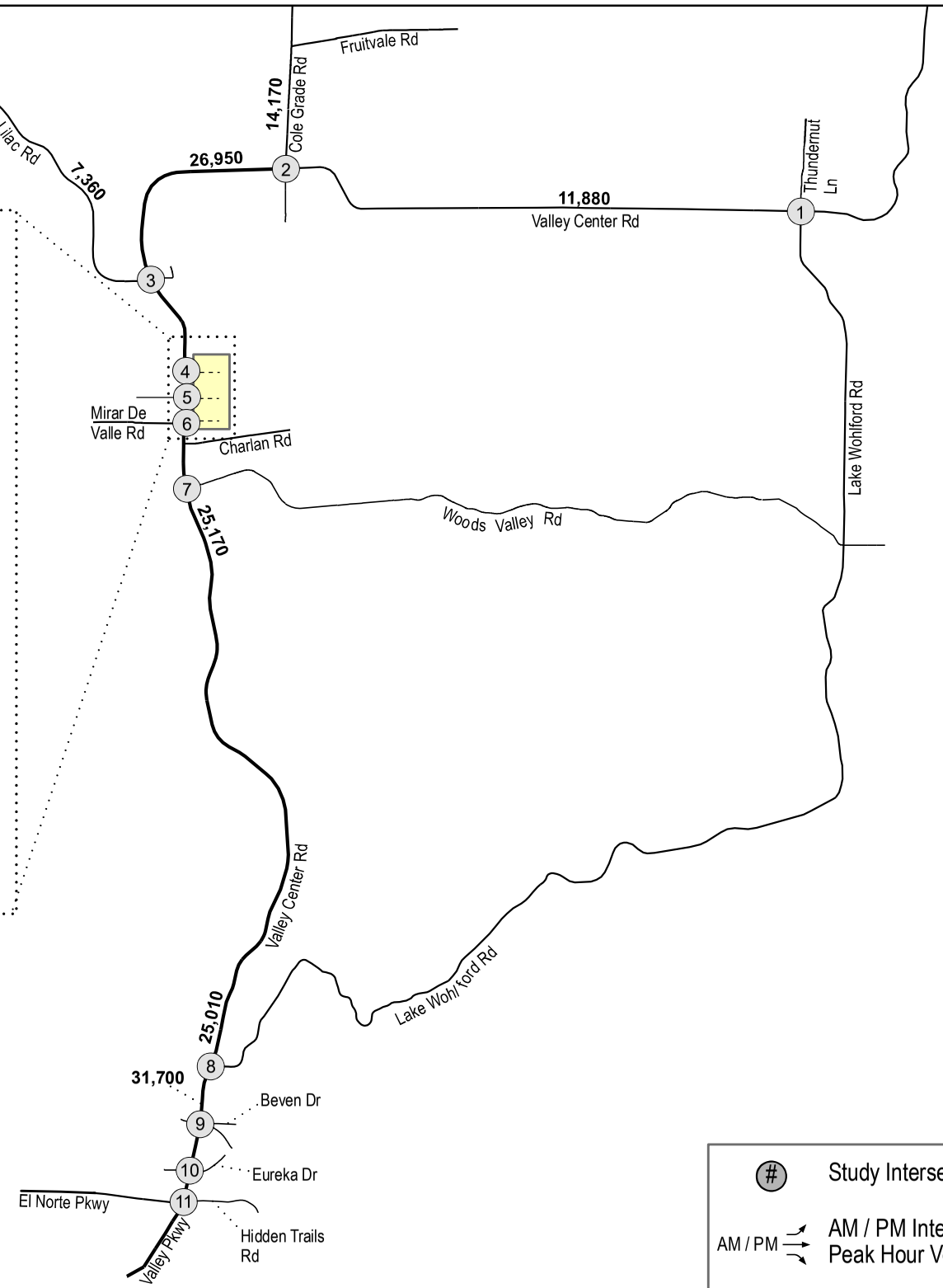
Figure 3-1

Existing Conditions Diagram

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Study Intersections

AM / PM — AM / PM Intersection Peak Hour Volumes

X,XXX — Average Daily Traffic Volumes

----- Future Project Dwy

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Figure 3-2

Existing Traffic Volumes

LIBERTY BELL PLAZA

4.0 ANALYSIS APPROACH AND METHODOLOGY

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, unsignalized intersections and roadway segments.

4.1 Intersections

Signalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay was determined utilizing the methodology found in Chapter 19 of the *Highway Capacity Manual (HCM),* with the assistance of the *Synchro* version 10 computer software. For the purposes of this analysis, the latest and current HCM 6th edition using Synchro software was used. Signalized intersection calculation worksheets and a more detailed explanation of the methodology are attached in ***Appendix B***.

Unsignalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay and Levels of Service (LOS) was determined based upon the procedures found in Chapter 20 and 21 of the latest *Highway Capacity Manual (HCM),* with the assistance of the *Synchro* 10 computer software. Unsignalized intersection calculation worksheets and a more detailed explanation of the methodology are attached in *Appendix B*.

4.2 Road Segments

Street segment analysis is based upon the comparison of daily traffic volumes (ADTs) to the County of San Diego and City of Escondido's *Roadway Classification, Level of Service, and ADT Tables*. These tables provide segment capacities for different street classifications, based on traffic volumes and roadway characteristics. The County of San Diego and City of Escondido's *Roadway Classification, Level of Service, and ADT Table* is attached in ***Appendix C***.

5.0 SIGNIFICANCE CRITERIA

The project study area includes transportation facilities primarily within the jurisdiction of the County of San Diego. However, some facilities analyzed in this study area are located within City of Escondido. Thus, the significance criteria of the jurisdiction within which a transportation facility is located were used to determine significance.

5.1 County of San Diego Criteria

5.1.1 *Intersections*

This section provides guidance for evaluating adverse environmental effects a project may have on signalized and unsignalized intersections. ***Table 5–1*** was obtained from County guidelines and summarizes the allowable increases in delay or traffic volumes at signalized and unsignalized intersections. Exceeding the thresholds in *Table 5–1* would result in a significant impact.

TABLE 5–1
MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION ON INTERSECTIONS
ALLOWABLE INCREASES ON CONGESTED INTERSECTIONS

Level of service	Signalized	Unsignalized
LOS E	Delay of 2 seconds or less	20 or less peak hour trips on a critical movement
LOS F	Either a Delay of 1 second, or 5 peak hour trips or less on a critical movement	5 or less peak hour trips on a critical movement

General Notes:

1. A critical movement is an intersection movement (right-turn, left-turn, through-movement) that experiences excessive queues, which typically operate at LOS F.
2. By adding proposed project trips to all other trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project is responsible for mitigating its share of the cumulative impact.
3. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.
4. For determining significance at signalized intersections with LOS F conditions, the analysis must evaluate both the delay ***and*** the number of trips on a critical movement, exceedance of either criteria result in a significant impact.

Signalized Intersections—Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on a signalized intersection:

- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a signalized intersection currently operating at LOS E or LOS F, or will cause a signalized intersection to operate at a LOS E or LOS F as identified in *Table 5–1*.
- Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the project would significantly impact the operations of the intersection.

***Unsignalized Intersections*—**The operating parameters and conditions for unsignalized intersections differ dramatically from those of signalized intersections. Very small volume increases on one leg or turn and/or through movement of an unsignalized intersection can substantially affect the calculated delay for the entire intersection. Significance criteria for unsignalized intersections are based upon a minimum number of trips added to a critical movement at an unsignalized intersection.

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic impact on an unsignalized intersection as listed in *Table 5–1* and described as text below:

- The additional or redistributed ADT generated by the proposed project will add 21 or more peak hour trips to a critical movement of an unsignalized intersection, and cause an unsignalized intersection to operate below LOS D, or
- The additional or redistributed ADT generated by the proposed project will add 21 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS E, or
- The additional or redistributed ADT generated by the proposed project will add 6 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate at LOS F, or
- The additional or redistributed ADT generated by the proposed project will add 6 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS F, or
- Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the project would significantly impact the operations of the intersection.

5.1.2 *Road Segments*

This section provides guidance for evaluating adverse environmental effects a project may have on street segments. The allowable ADT increases on LOS E/F operation roadways was obtained from County guidelines and are summarized in ***Table 5–2***. The thresholds in *Table 5–2* are based upon average operating conditions on County roadways. Exceeding the thresholds in *Table 5–2* would result in a significant impact. It should be noted that these thresholds only establish general guidelines, and that the specific project location must be taken into account in conducting an analysis of traffic impact from new development.

TABLE 5–2
MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION ON CIRCULATION ELEMENT ROAD SEGMENTS
ALLOWABLE INCREASES ON CONGESTED ROAD SEGMENTS

Level of Service	Two-Lane Road	Four-Lane Road	Six-Lane Road
LOS E	200 ADT	400 ADT	600 ADT
LOS F	100 ADT	200 ADT	300 ADT

General Notes:

1. By adding proposed project trips to all other trips from a list of projects, this same table must be used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes additional trips must mitigate a share of the cumulative impacts.
2. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.

5.2 City of Escondido Criteria

The following is a summary of the City of Escondido's published significance criteria.

In accordance with the San Diego Traffic Engineers' Council/Institute of Transportation Engineers (SANTEC/ITE) Guidelines for Traffic Impact Studies in the San Diego Region, the following thresholds shall be used to identify if a project is of significant traffic impact under any scenario. Based on SANTEC/ITE guidelines, if now or in the future, the project's traffic impact causes the values in ***Table 5–3*** to be exceeded in a roadway segment or intersection that is operating at LOS D or worse, it is determined to be a significant impact and the project shall identify mitigation measures.

TABLE 5–3
PROPOSED THRESHOLDS TO IDENTIFY A PROJECT'S SIGNIFICANT TRAFFIC IMPACT
CITY OF ESCONDIDO

Level of Service with Project	Allowable Change due to Project Impact		
	Roadway Segments		Intersections Delay (sec.)
	V/C	Speed (mph)	
D, E, or F	0.02	1	2

Source: City of Escondido

*No Significant Impact occurs at areas in GP Downtown Specific Area that operates at LOS "D" or better.

*Mitigation measures should also be considered for any segment or intersection operating at LOS "F" subject to less than significant impact.

*V: Volume

*C: Capacity (use LOS "E")

Furthermore, according to the City's General Plan, Mobility Element streets and intersections shall be planned and developed to achieve a minimum LOS "C" defined by the Highway Capacity Manual as amended or updated, or such other national standard deemed appropriate by the city. Level of Service "C" may not be feasible in all areas at all times and LOS "D" shall be considered the threshold for determining significant impacts and appropriate mitigation. Per the certified General Plan EIR, a significant impact would result from a General Plan (Year 2035) analysis when a project would "cause the LOS of a General Plan Mobility and Infrastructure Element roadway to fall below LOS D and/or add more than 200 ADT to a Mobility and Infrastructure Element roadway with an LOS E or F."

6.0 ANALYSIS OF EXISTING CONDITIONS

The analysis of existing conditions includes the assessment of the study area intersections and street segments using the methodologies described in *Section 4.0*.

6.1 Peak Hour Intersection Levels of Service

Table 6–1 summarizes the existing intersections level of service. As seen in *Table 6–1*, all study area intersections are calculated to currently operate at LOS D or better with the exception of the following:

- Valley Center Road / Project Driveway #3 / Mirar De Valle Road – minor street left-turn at LOS F during the AM and PM peak hours

Appendix D contains the Existing intersection calculation sheets.

6.2 Daily Street Segment Levels of Service

Table 6–2 summarizes the existing roadway segment operations. As seen in *Table 6–2*, all study area segments are calculated to currently operate at LOS D or better with the exception of the following:

- Valley Center Road between Thunder Lane/N. Lake Wohlford Road and Cole Grade Road – **LOS E**
- Cole Grade Road between Fruitvale Road and Valley Center Road – **LOS E**

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Jurisdiction	Peak Hour	Existing	
				Delay[a]	LOS[b]
1. Valley Center Rd / Lake Wohlford Rd N. / Thundernut Ln	Signal	SD County	AM	18.8	B
			PM	17.8	B
2. Valley Center Rd / Cole Grade Rd	Signal	SD County	AM	29.4	C
			PM	30.5	C
3. Valley Center Rd / Lilac Rd	Signal	SD County	AM	19.3	B
			PM	17.4	B
4. Valley Center Rd / Project Driveway #1	DNE	SD County	AM	–	–
			PM	–	–
5. Valley Center Rd / Project Driveway #2	DNE	SD County	AM	–	–
			PM	–	–
6. Valley Center Rd / Project Driveway #3 / Mirar De Valle Rd	TWSC[c]	SD County	AM	**59.7**	**F**
			PM	**64.8**	**F**
7. Valley Center Rd / Woods Valley Rd	Signal	SD County	AM	11.0	B
			PM	10.6	B
8. Valley Center Rd / Valley Pkwy / Lake Wohlford Rd S.	Signal	Escondido	AM	11.5	B
			PM	7.2	A
9. Valley Pkwy / Beven Dr	Signal	Escondido	AM	8.3	A
			PM	9.0	A
10. Valley Pkwy / Eureka Dr	Signal	Escondido	AM	7.7	A
			PM	6.9	A
11. Valley Pkwy / El Norte Pkwy / Hidden Trails Rd	Signal	Escondido	AM	18.2	B
			PM	19.0	B

Footnotes:
a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. TWSC – Two-Way Stop Controlled intersection. Minor street left turn delay is reported.

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	Jurisdiction	Classification	Capacity (LOS E) [a]	ADT [b]	LOS [c]	V/C [d]
Valley Center Rd						
Thundernut Lane/N. Lake Wohlford Rd to Cole Grade Rd	SD County	2.2E Light Collector	16,200	**11,880**	**E**	**0.733**
Cole Grade Rd to Lilac Rd	SD County	4.1A Major Road w/ Raised Median	37,000	26,950	C	0.728
Lilac Rd to Project Drwy #1	SD County	4.1A Major Road w/ Raised Median	37,000	24,080	B	0.651
Project Drwy #1 to Project Drwy #2	SD County	4.1A Major Road w/ Raised Median	37,000	24,080	B	0.651
Project Drwy #2 to Project Drwy #3/Mirar De Valle Rd	SD County	4.1A Major Road w/ Raised Median	37,000	24,080	B	0.651
Project Drwy #3/Mirar De Valle Rd to Woods Valley Rd	SD County	4.1A Major Road w/ Raised Median	37,000	23,900	B	0.646
Woods Valley Rd to Escondido City Limits	SD County	4.1A Major Road w/ Raised Median	37,000	25,170	C	0.680
Escondido City Limits to Lake Wohlford Rd	Escondido	4-Lane Major Road	37,000	25,010	C	0.676
Valley Pkwy						
Lake Wohlford Rd to El Norte Pkwy	Escondido	6-Lane Prime Arterial	60,000	31,700	B	0.528
Cole Grade Rd						
Fruitvale Rd to Valley Center Rd	SD County	2.2C Light Collector w/ Intermittent Turn Lanes	19,000	**14,170**	**E**	**0.746**
Lilac Rd						
Valley Center Rd to Betsworth Rd	SD County	2.2E Light Collector	16,200	7,360	D	0.454

Footnotes:

a. Capacities based on County of San Diego Roadway or City of Escondido Classification Table.

b. Average Daily Traffic Volumes.

c. Level of Service.

d. Volume to Capacity.

7.0 PROJECT TRIP GENERATION, DISTRIBUTION, AND ASSIGNMENT

7.1 Project Trip Generation

The project trip generation was calculated using the trip rates published by the San Diego Association of Governments (SANDAG) in the *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002* for Neighborhood Shopping Centers. ***Table 7–1*** tabulates the total project traffic generation.

Driveway (Total) Trips

The total project based on an initial building area assumption of 85,000 sf is calculated to generate approximately 10,200 ***driveway*** ADT with 408 AM peak hour trips (245 inbound / 163 outbound) and 1,020 PM peak hour trips (510 inbound / 510 outbound). Based on the final site plan in *Figure 2–3*, the actual traffic being generated from the proposed 81,884 sf would be 9,826 ADT. Thus, the Traffic Impact Analysis has incorporated a conservative approach which incorporates a slightly higher trip generation than would be generated by the final proposed site plan. The operations are slightly better with the smaller proposed project size; however, the differences are negligible and there is no change to the conclusions. Some of the trips generated by the Project are trips already on the adjacent streets (termed pass-by trips). The project is calculated to generate approximately 2,244 ***pass-by*** ADT with 90 AM peak hour trips (54 inbound / 36 outbound) and 408 PM peak hour trips (204 inbound / 204 outbound). An example of a pass-by trip are trips where a person on their way home from work on Valley Center Road stops at the shopping center. This is not a new trip to the street system. SANDAG provides the percentages of shopping center trips that are pass-by in nature. The actual trips added to the adjacent streets are less than the total trips at the Project driveways. The primary trips are obtained by deducting the pass-by trips from the driveway trips.

The daily pass-by percent is 22% and the PM peak hour is 40% per SANDAG. There is no SANDAG pass-by percentage for the AM peak hour. The daily percent was used for the AM peak hour which is considered to be conservative since the peak commuter hour would be expected to have more pass-by trips than on a daily basis.

Primary Trips

The project is calculated to generate a total of 7,956 ADT trips with 318 AM peak hour trips (191 inbound / 127 outbound) and 612 PM peak hour trips (306 inbound / 306 outbound).

7.2 Project Trip Distribution and Assignment

The project traffic was distributed and assigned to the street system based on the project's proximity to state highways and arterials and SANDAG's Year 2020 Series 12 Select Zone Assignment (SZA for TAZ 481).

Project Driveway #1 will serve service vehicles only, which will be less than five (5) trips per day. Therefore, to be conservative, only Project Driveways #2 and 3 were assigned project traffic volumes.

Figures 7–1A and ***7–1B*** depicts the *Project's Primary and Pass-By Traffic Distribution*, respectively. ***Figures 7–2A***, ***7–2B*** and ***7–2C*** depicts the *Project's Primary, Pass-By and Total Traffic Volumes*, respectively. ***Figure 7–3*** depicts the *Existing + Total Project Traffic Volumes*.

TABLE 7–1
PROJECT TRIP GENERATION

Land Use & Size	Pass-By / Primary Trip Percent	ADT[a]	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
					In	Out	Total			In	Out	Total
Neighborhood Shopping Center *85,000 SF at 120 trips / 1,000 SF*	***Driveway:***	***10,200****	***4%***	***60:40***	***245***	***163***	***408***	***10%***	***50:50***	***510***	***510***	***1,020***
	Primary (78% / 60%):	7,956			191	127	318			306	306	612
	Pass-By (22% / 40%[b]):	2,244			54	36	90			204	204	408

Footnotes:

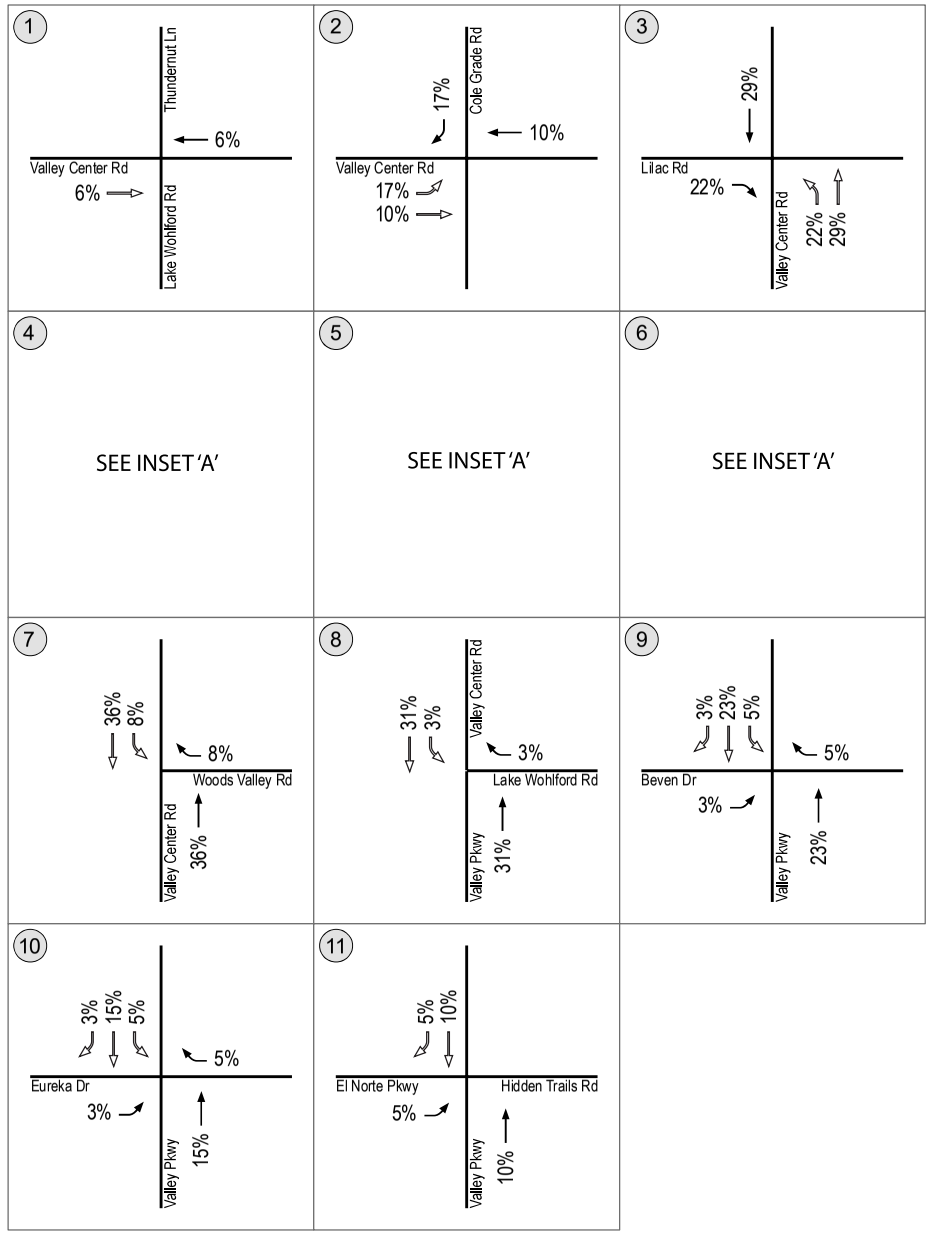
a. Traffic volumes expressed in vehicles per day.

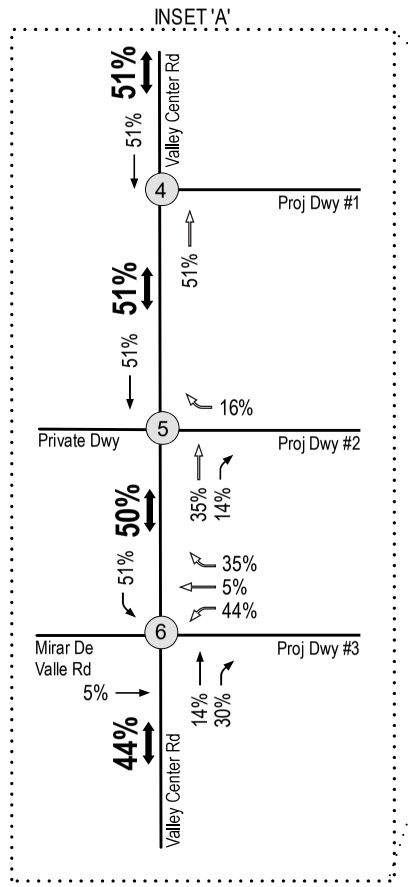
b. (Daily and AM peak hour pass-by / PM peak hour pass-by). The daily pass-by percent is 22% and the PM peak hour is 40% per SANDAG. There is no SANDAG pass-by percentage for the AM peak hour. The daily percent was used for the AM peak hour which is considered to be conservative since the peak commuter hour would be expected to have more pass-by trips than on a daily basis.

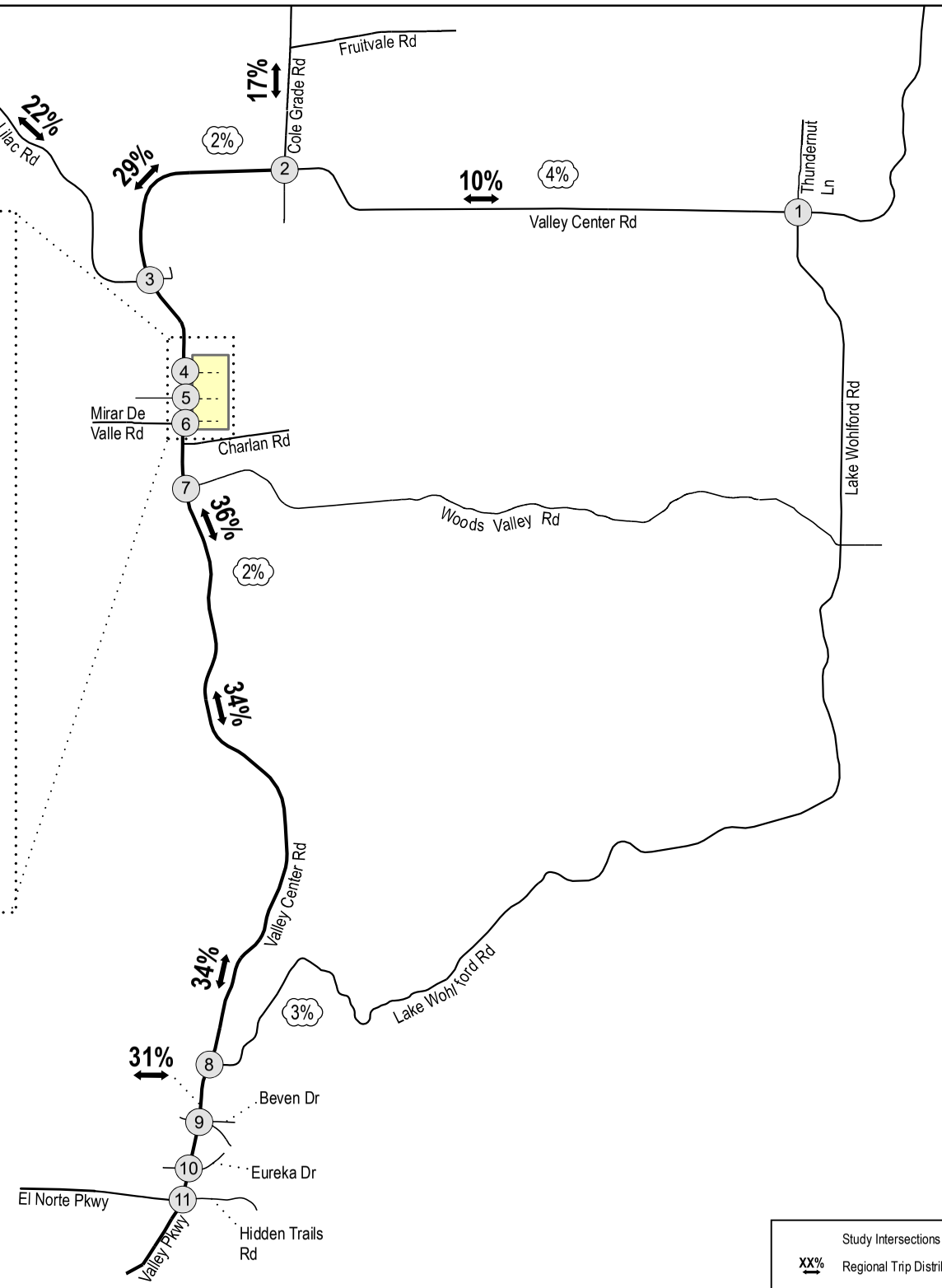
General Notes:

1. Rate and pass-by trip percent are based on *SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002*.
2. Driveway Trips—vehicles entering and exiting project driveways (Driveway = Primary + Pass-By)
3. Primary Trips—new vehicles added to the network
4. Pass-By Trips—vehicles already on the street network captured by the project site

* Shopping Center size was reduced to 81,884 SF subsequent to the completion of the analysis. A 81,884 SF center will generate 9,826 ADT, and therefore the analysis is slightly conservative.







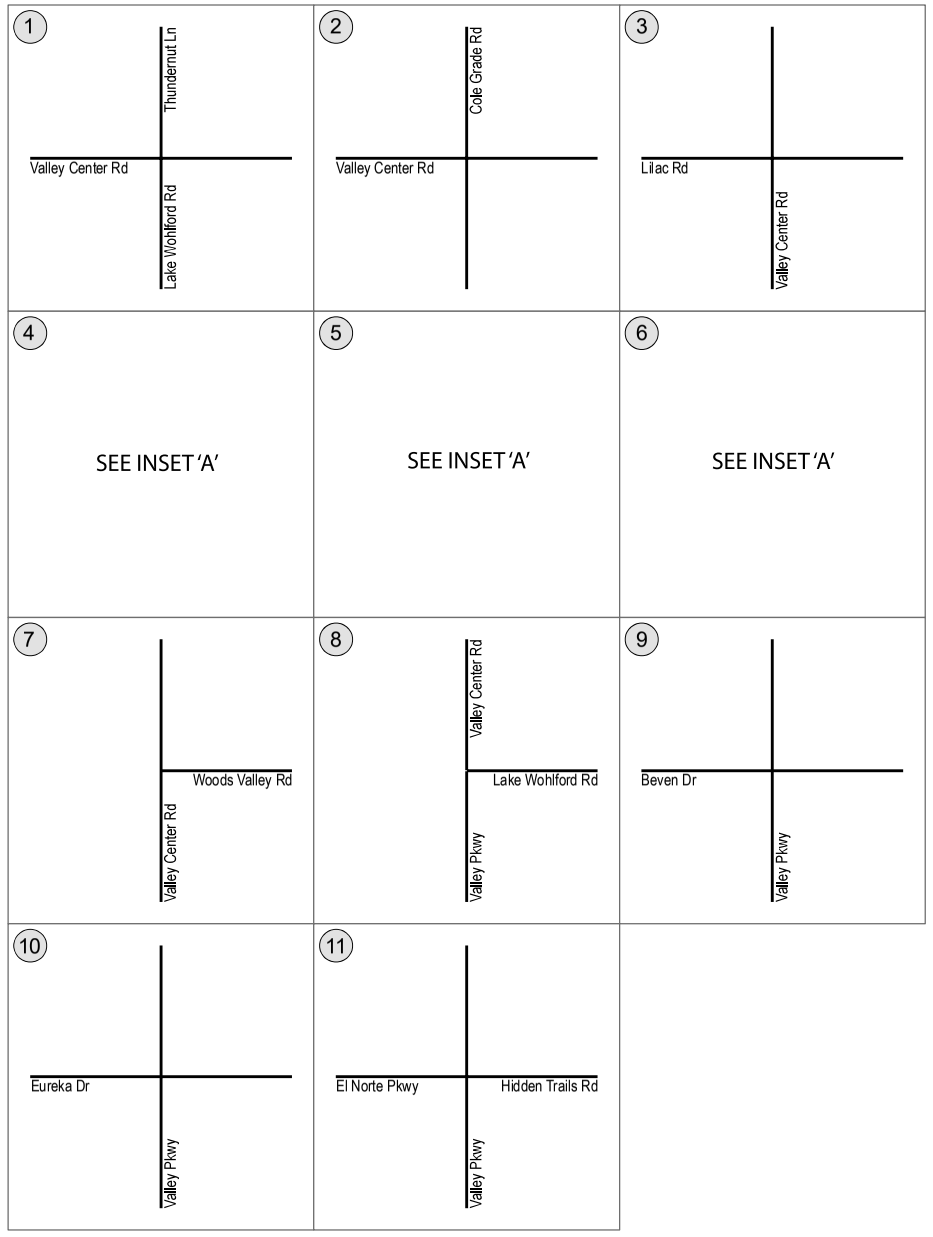
LINSCOTT LAW & GREENSPAN engineers

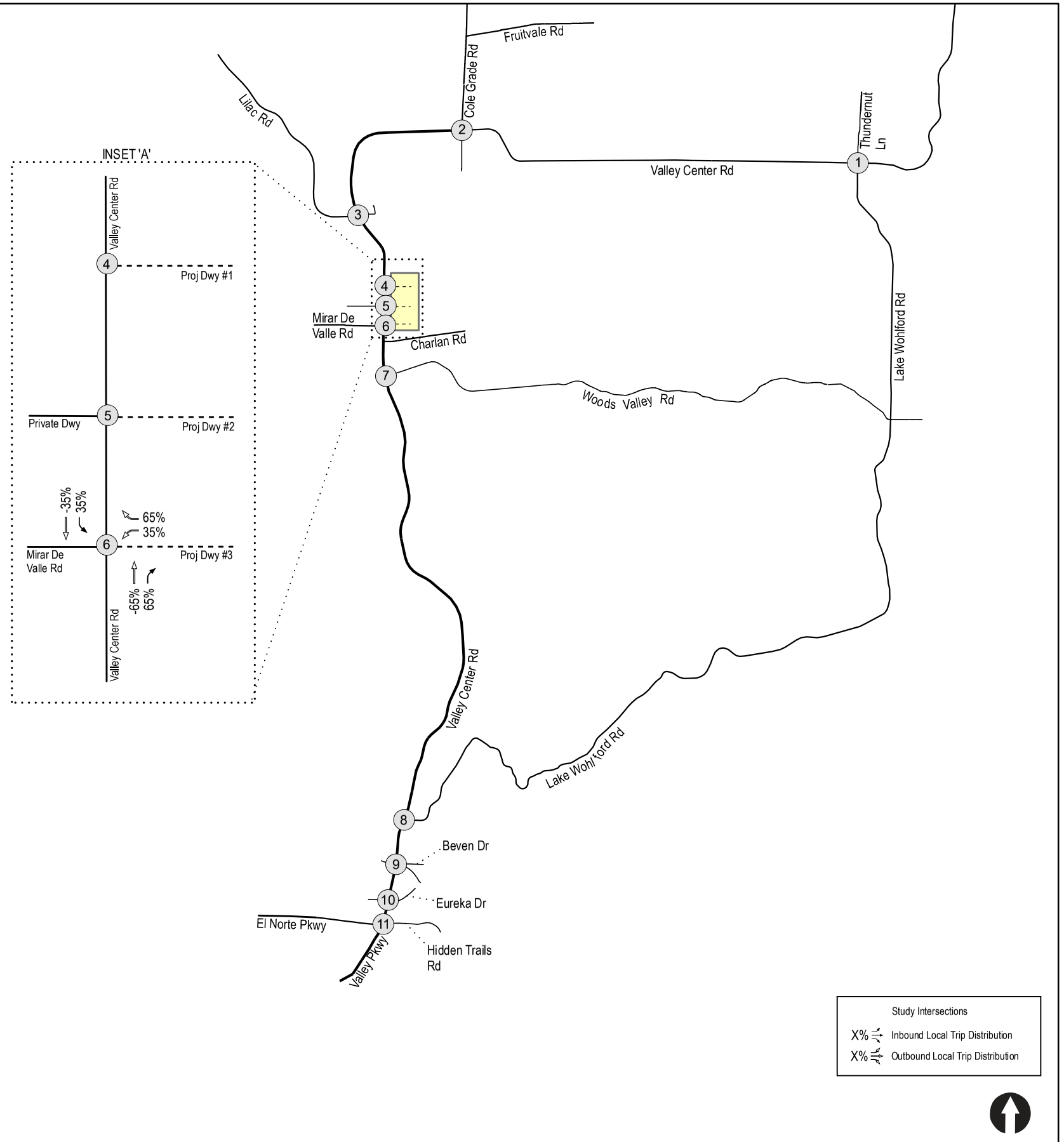
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Figure 7-1A

Project Primary Traffic Distribution

LIBERTY BELL PLAZA





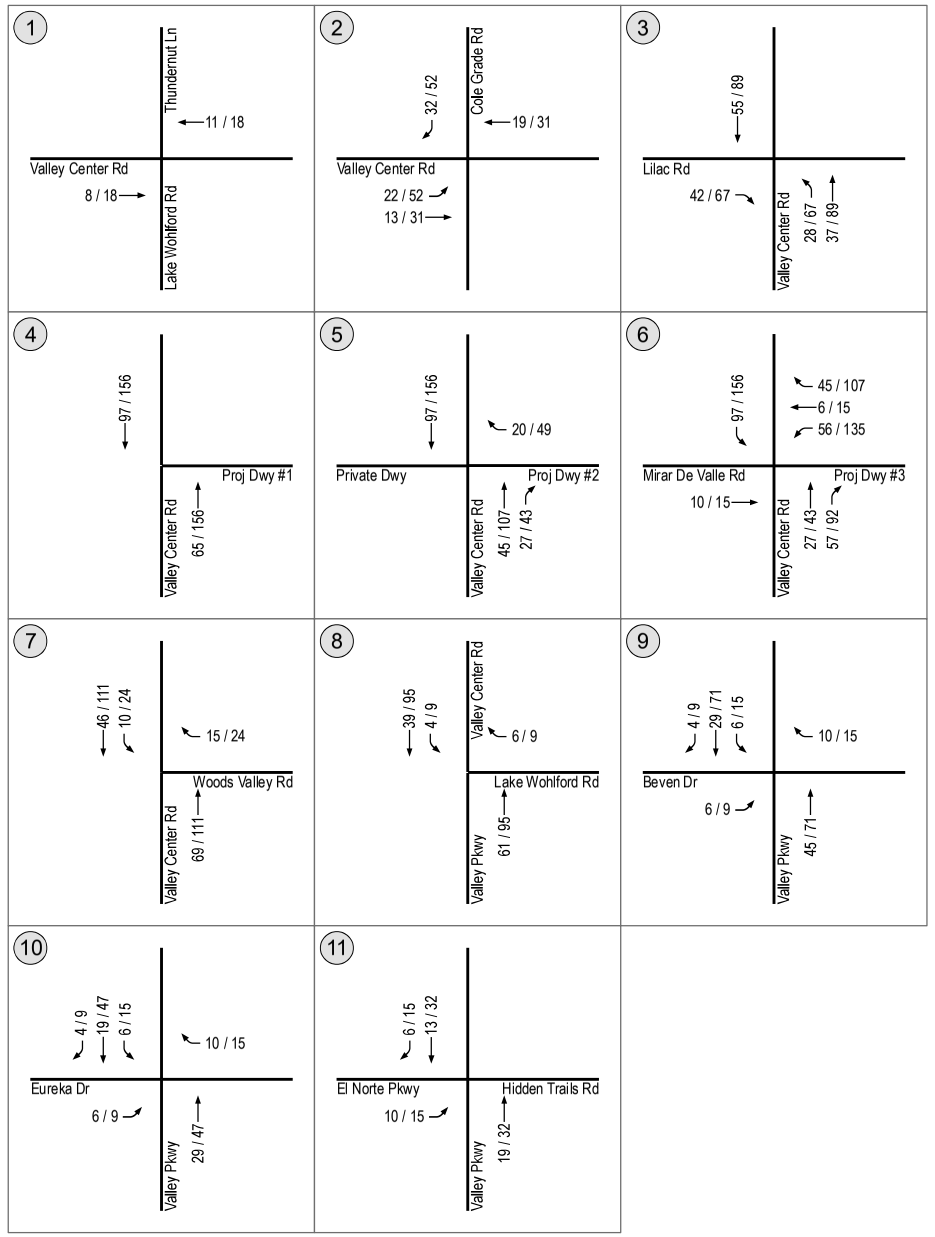
LINSCOTT LAW & GREENSPAN engineers

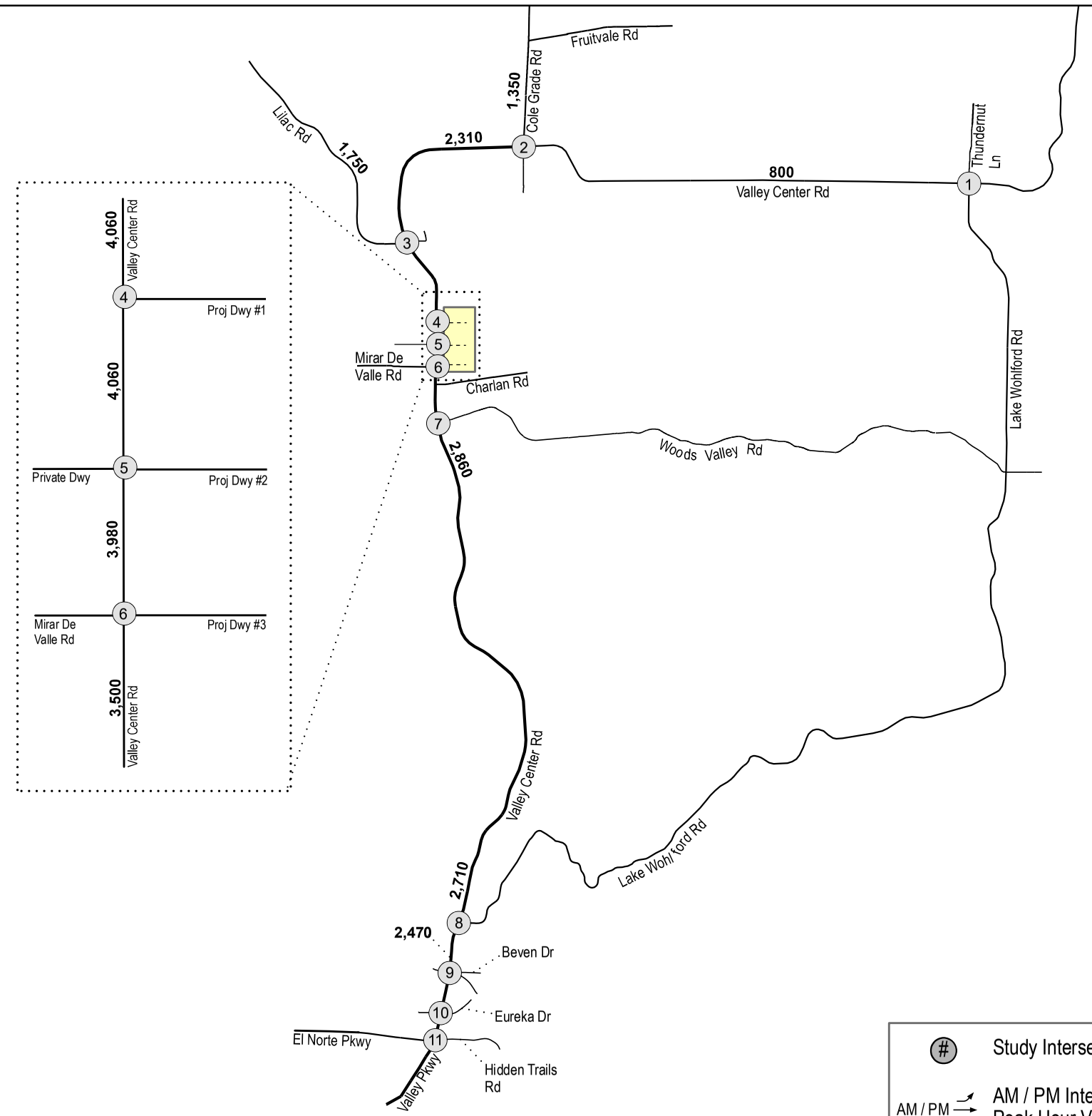
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Figure 7-1B

Project Pass-By Traffic Distribution

LIBERTY BELL PLAZA



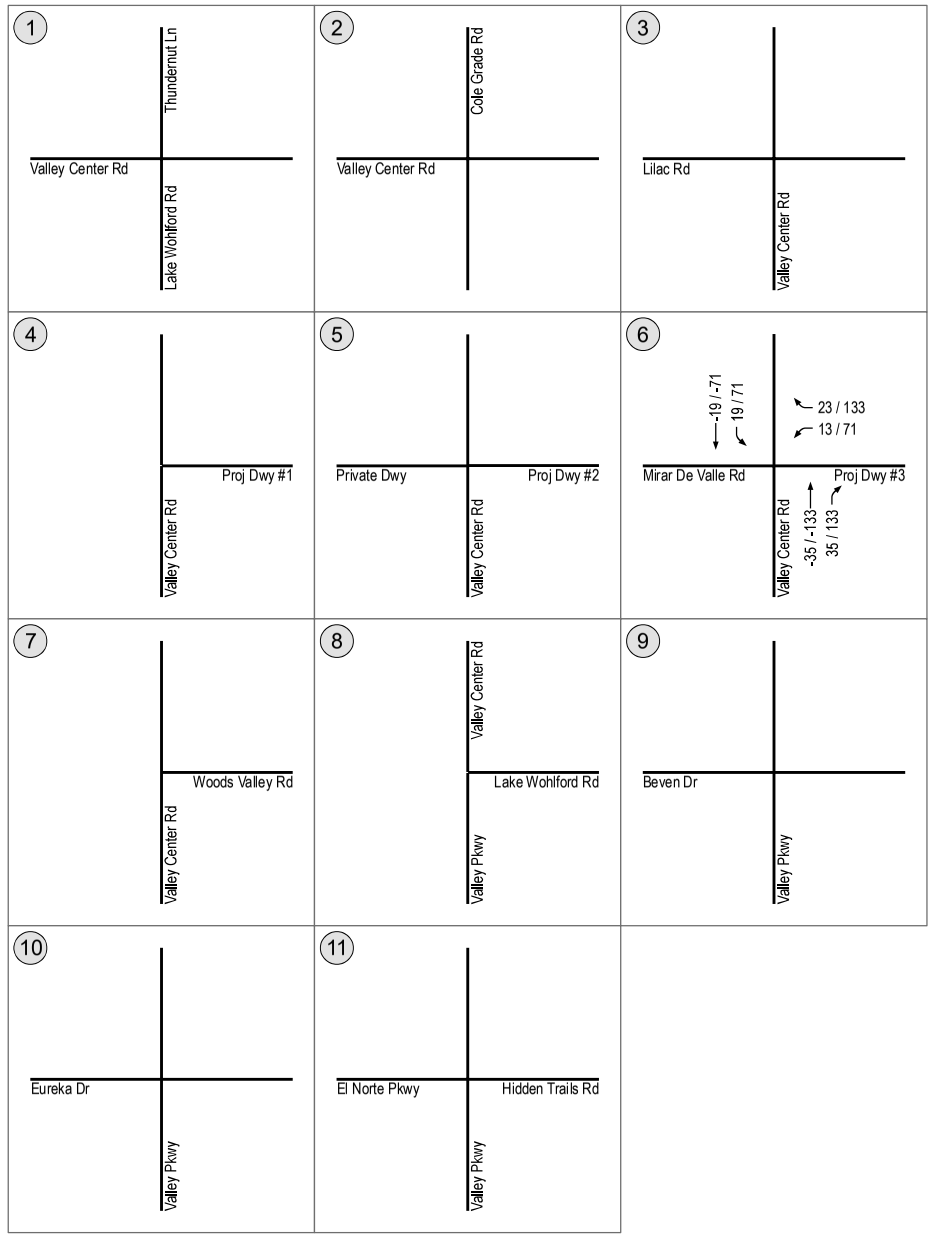


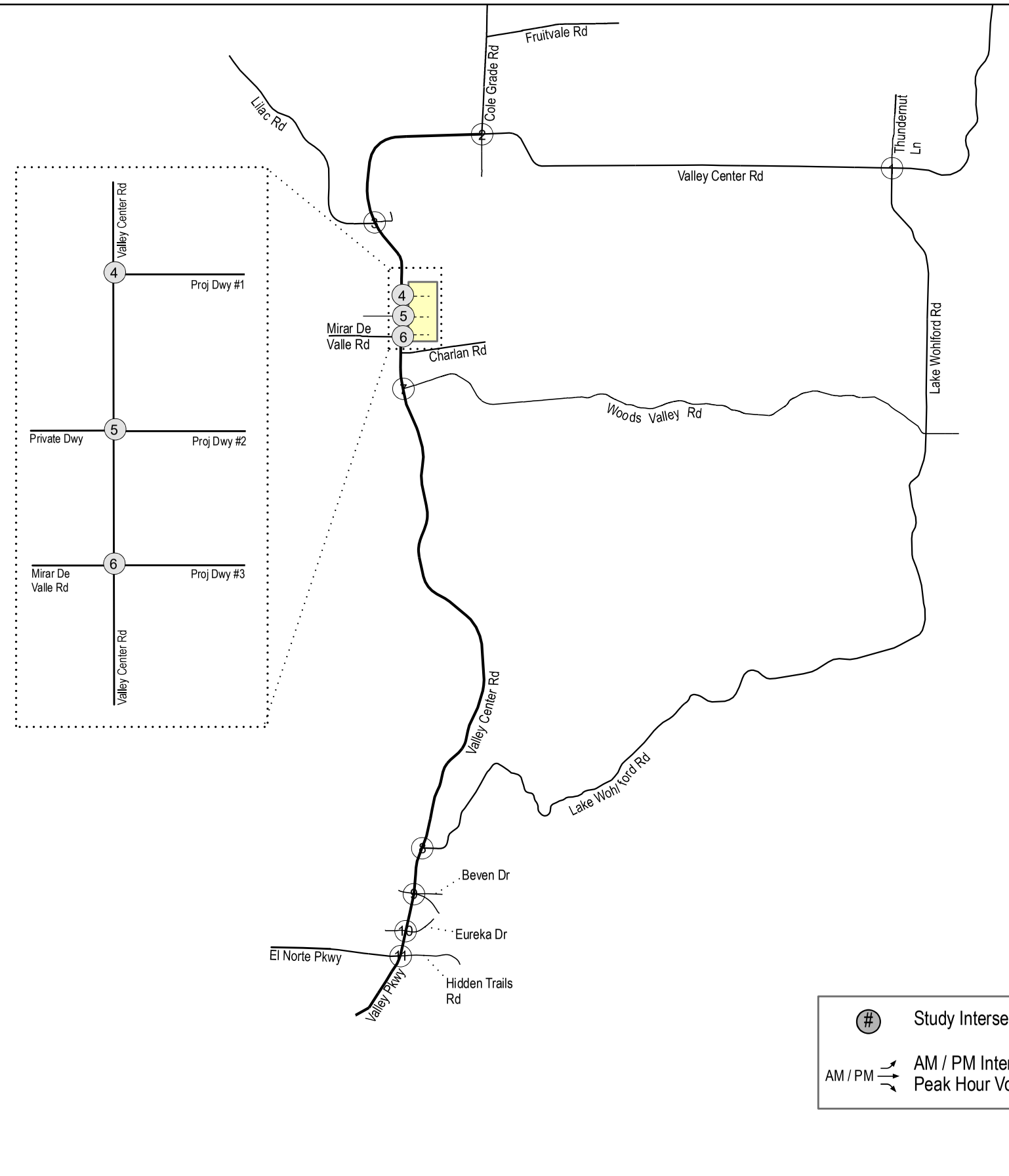
LINSCOTT LAW & GREENSPAN engineers

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Figure 7-2A

Project Primary Traffic Volumes





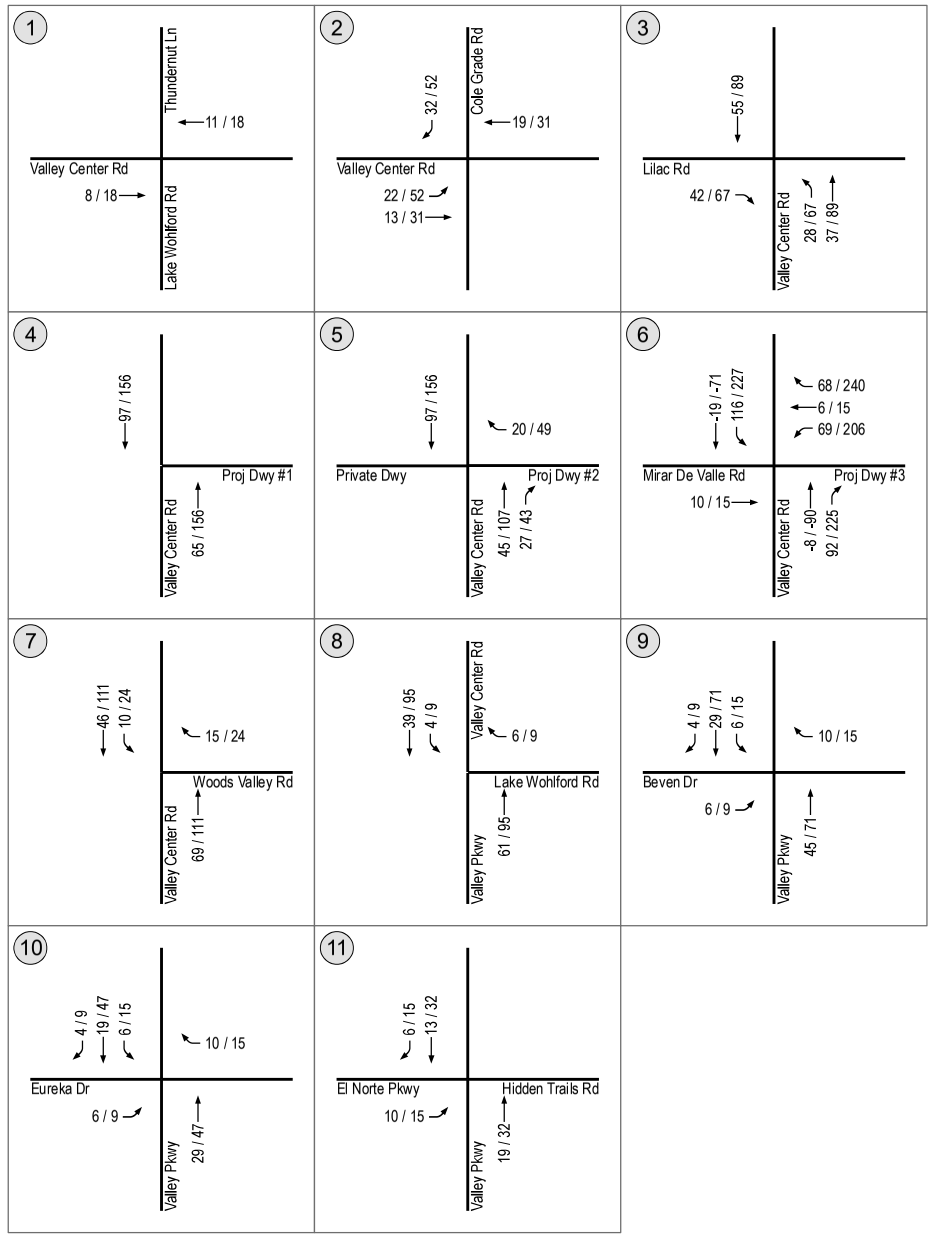
LINSCOTT LAW & GREENSPAN engineers

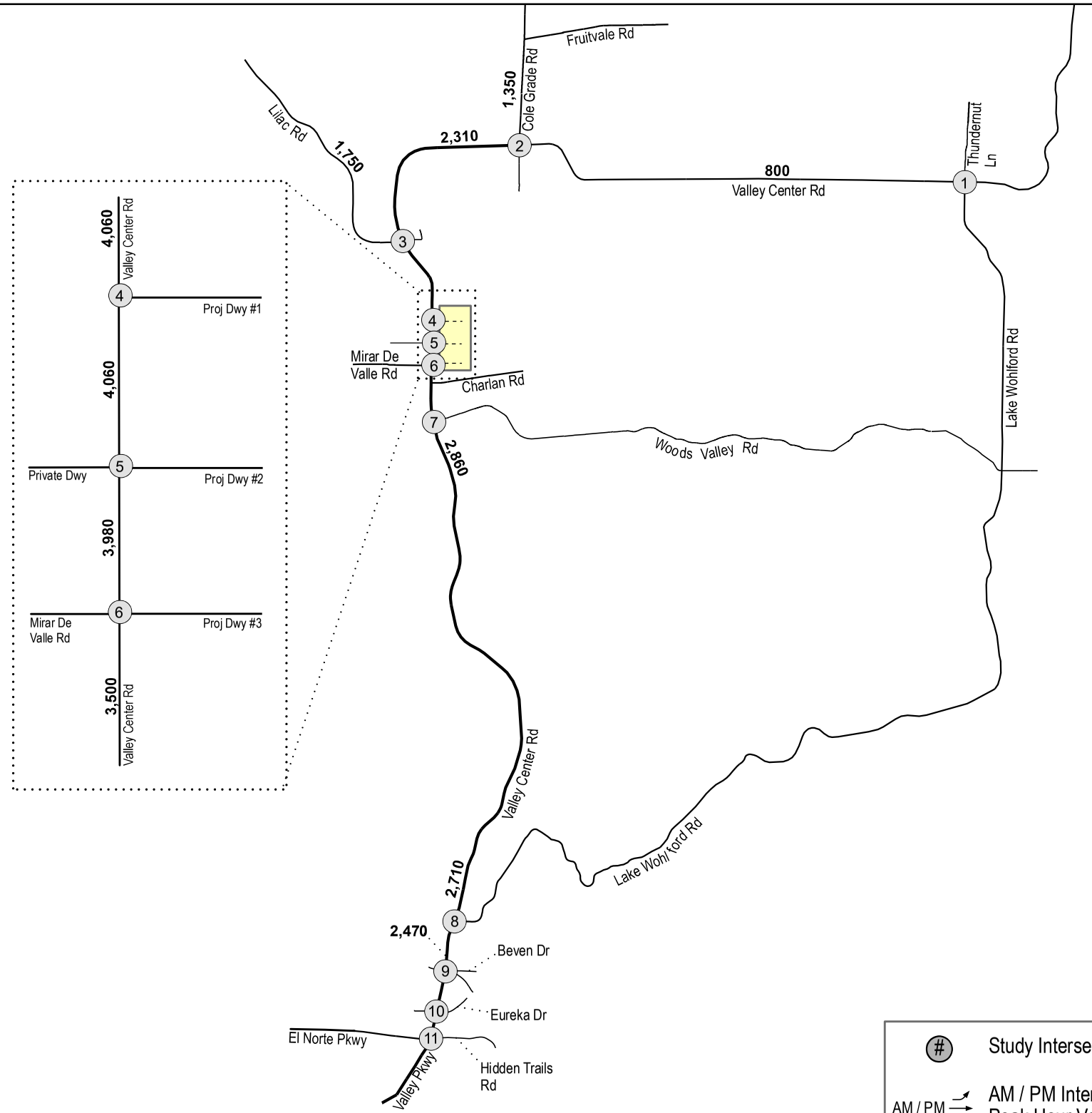
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Figure 7-2B

Project Pass-By Traffic Volumes

LIBERTY BELL PLAZA





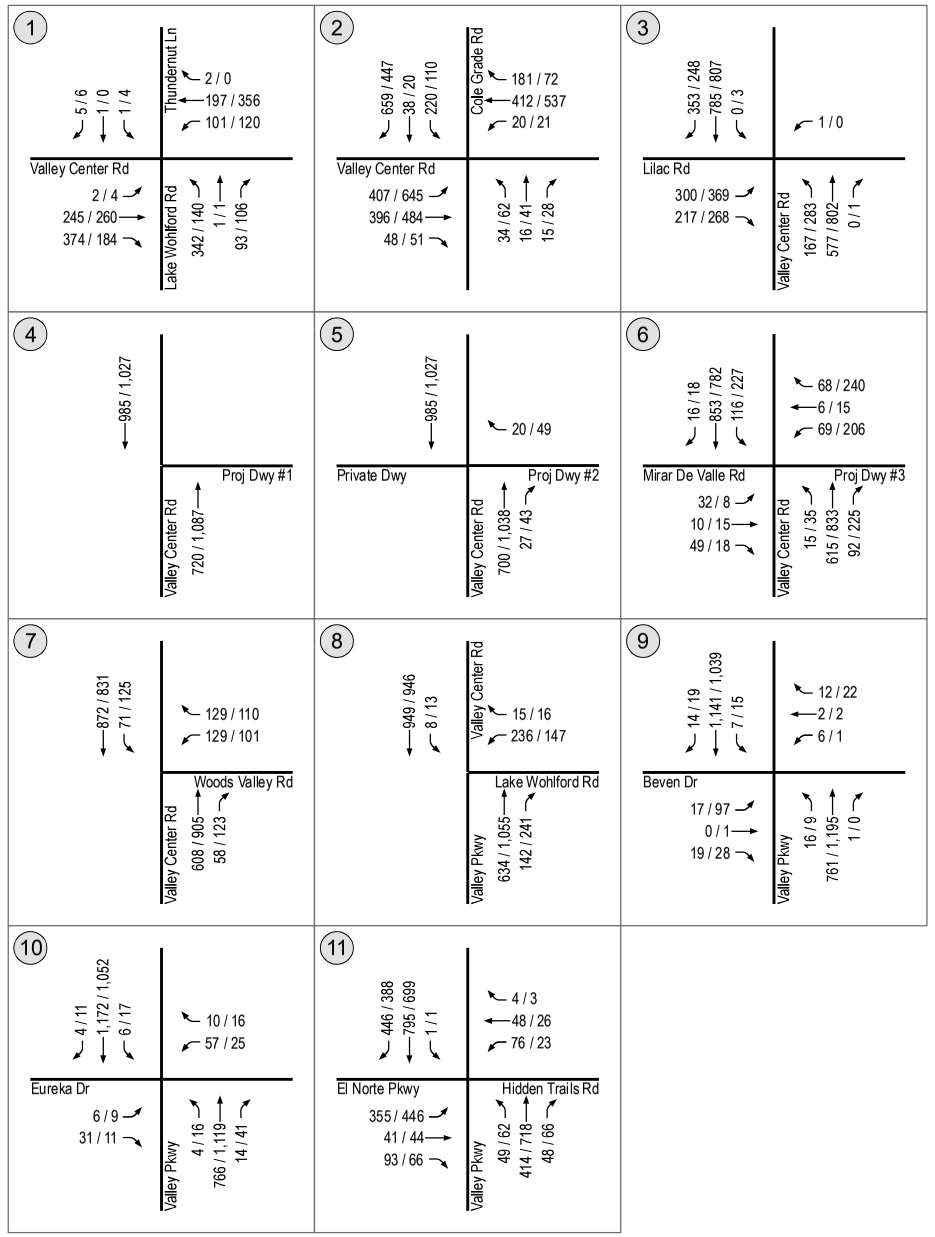
LINSCOTT LAW & GREENSPAN engineers

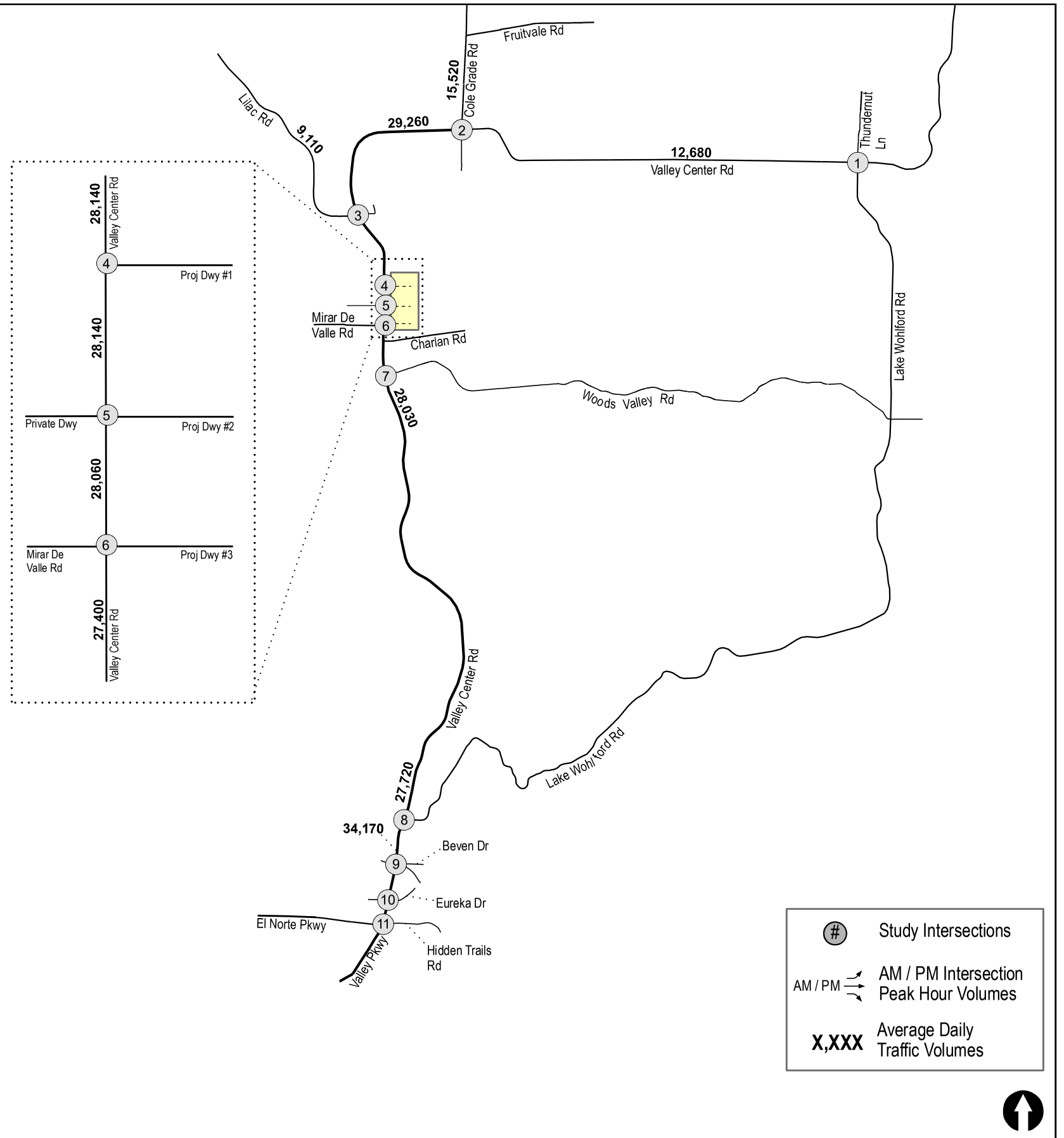
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Figure 7-2C

Total Project Traffic Volumes

LIBERTY BELL PLAZA





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Figure 7-3

Existing + Total Project Traffic Volumes

8.0 CUMULATIVE PROJECTS

Cumulative projects are other projects in the study area that are expected to be constructed and occupied between the date of existing data collection and the time of the Project's expected opening day, thus adding traffic to the local circulation system. Based on discussions with County Staff, the following cumulative projects were identified in the project study area.

8.1 Description of Projects

Each cumulative project is briefly described below:

1. Lilac Hills Ranch

Lilac Hills Ranch is a proposed mixed-use community located on 608 acres in the Valley Center area, south of SR-76 and east of I-15, which would eventually include 903 single-family homes, 468 age-restricted senior homes, 164 condominiums and 211 mixed-use units. Because the project is planned to be built over 10 years, only traffic through "Phase C" of development was added to the near-term cumulative condition. Phase C will generate 11,333 daily trips with 778 AM peak hour trips (285 in/493 out) and 1,077 PM peak hour trips (671 in/406 out). This is approximately 70% of the total traffic the project would generate upon full buildout.

2. Mountain Gate

Mountain Gate is a residential project with 147 single-family DU located along Mountain Meadow Road. This project is calculated to generate a total of 1,470 daily trips with 118 AM peak hour (35 in / 83 out) and 147 PM peak hour trips (103 in / 44 out).

3. Tyler Road Residential

Tyler Road Residential is a residential project with 16 single-family DU located at 14357 Tyler Road. This project is calculated to generate a total of 192 daily trips with 15 AM peak hour (5 in / 10 out) and 19 PM peak hour trips (13 in / 6 out).

4. Dabbs TM

Dabbs TM is an 8 DU estate residential project located at 32006 Aquaduct Road. This project is calculated to generate a total of 96 daily trips with 8 AM peak hour (2 in / 6 out) and 10 PM peak hour trips (7 in / 3 out).

5. McIntyre Subdivision

McIntyre Subdivision (TM 5014) is a 22 DU estate residential project located at 11278 Lilac Vista Drive. This project is calculated to generate a total of 264 daily trips with 21 AM peak hour (6 in / 15 out) and 26 PM peak hour trips (18 in / 8 out).

6. Oak Glen

Oak Glen is a 9 DU estate residential project located at 14099 West Oak Glen Road. This project is calculated to generate a total of 108 daily trips with 9 AM peak hour (3 in / 6 out) and 11 PM peak hour trips (8 in / 3 out).

7. Goodnight Ranchos (TPM)

Goodnight Ranchos (TPM) is a 2 DU estate residential project located at 30359 Circle R Lane. This project is calculated to generate a total of 24 daily trips with 2 AM peak hour (1 in / 1 out) and 2 PM peak hour trips (1 in / 1 out).

8. Rimsa (TPM)

Rimsa (TPM) is a 2 DU estate residential project located at 235 W. Camino Calafia. This project is calculated to generate a total of 24 daily trips with 2 AM peak hour (1 in / 1 out) and 2 PM peak hour trips (1 in / 1 out).

9. Sanders (TPM)

Sanders (TPM) is a 4 DU estate residential project located at 6993 W. Lilac Road. This project is calculated to generate a total of 48 daily trips with 4 AM peak hour (1 in / 3 out) and 5 PM peak hour trips (4 in / 1 out).

10. The Villages

The Villages is a residential project located at the site of the Escondido Country Club, which is no longer in operation, west of I-15 along Country Club Lane in the city of Escondido. This project proposes 392 single-family residential DU with a small amount of neighborhood-oriented restaurant, retail, and HOA amenities. This project is calculated to generate 4,280 daily trips with 319 AM peak hour (97 in / 222 out) and 420 PM peak hour trips (293 in / 127 out).

11. Orchard Run

Orchard Run proposes to construct 300 single-family homes. The project located on the northeast quadrant of the Mirar De Valle Road / Cypress Ridge Drive intersection. This project is calculated to generate a total of approximately 3,000 daily trips with 240 AM peak hour (72 in / 168 out) and 300 PM peak hour trips (210 in / 90 out).

12. Park Circle

Park Circle proposes to construct 318 single-family homes. The project located on the northwest quadrant of the Valley Center Road / Mirar De Valle Road intersection. This project is calculated to generate a total of approximately 3,180 daily trips with 254 AM peak hour (76 in / 178 out) and 318 PM peak hour trips (223 in / 95 out).

13. Shady Oaks

Shady Oaks proposes to construct 47 homes. The project located on the southwest quadrant of the Valley Center Road / Mirar De Valle Road intersection. This project is calculated to generate a total of approximately 470 daily trips with 38 AM peak hour (11 in / 27 out) and 47 PM peak hour trips (33 in / 14 out).

14. Lilac Plaza

Lilac proposes to construct 50 single-family homes. The project located on the southeast quadrant of the Lilac Road / Betsworth Road intersection. This project is calculated to generate a total of approximately 500 daily trips with 40 AM peak hour (12 in / 28 out) and 50 PM peak hour trips (35 in / 15 out).

15. Butterfield Ranch

Butterfield Ranch proposes to construct 66 single-family homes. The project located on the south side of the Sunday Drive terminus. This project is calculated to generate a total of approximately 660 daily trips with 53 AM peak hour (16 in / 37 out) and 66 PM peak hour trips (46 in / 20 out).

16. North Village

North Village proposes to construct approximately 500 single-family homes. The project located on the northwest quadrant of the Valley Center Road / Cole Grade Road intersection. This project is calculated to generate a total of approximately 5,000 daily trips with 400 AM peak hour (120 in / 280 out) and 500 PM peak hour trips (350 in / 150 out).

17. Safari Highlands Ranch

Safari Highlands Ranch proposes to construct 550 luxury residential units, along with additional facilities including a fire station and public trail system. This project is located in the unincorporated area immediately east of Escondido, east of the Rancho Vistamonte and Rancho San Pasqual residential neighborhoods, north of the San Diego Safari Park. This project is calculated to generate 5,907 daily trips with 500 AM peak hour (159 in / 341 out) and 589 PM peak hour trips (409 in / 180 out).

18. E. Mission

E. Mission proposes to construct 3 residential units. The project is located along El Norte Parkway just east of E. Tangelo Place. This project is calculated to generate a total of approximately 30 daily trips with 2 AM peak hour (1 in / 1 out) and 3 PM peak hour trips (2 in / 1 out).

19. Jacks Creek

Jacks Creek proposes to construct 12 residential units. The project is located just west of the Oakstone Creek Place terminus. This project is calculated to generate a total of approximately 120 daily trips with 10 AM peak hour (3 in / 7 out) and 12 PM peak hour trips (8 in / 4 out).

20. El Norte

El Norte proposes to construct 6 residential units. The project is located on the southwest quadrant of the Valley Parkway / El Norte Parkway intersection. This project is calculated to generate a total of approximately 60 daily trips with 5 AM peak hour (2 in / 3 out) and 6 PM peak hour trips (4 in / 2 out).

21. Moser

Moser proposes to construct 16 residential units. The project is located on the northeast quadrant of the Valley Parkway / Beven Drive intersection. This project is calculated to generate a total of approximately 160 daily trips with 13 AM peak hour (4 in / 9 out) and 16 PM peak hour trips (11 in / 5 out).

22. Silva

Silva proposes to construct 13 residential units. The project is located on the northeast quadrant of the Valley Parkway / Beven Drive intersection. This project is calculated to generate a total of approximately 130 daily trips with 10 AM peak hour (3 in / 7 out) and 13 PM peak hour trips (9 in / 4 out).

23. Hatfield Place

Hatfield Place proposes to construct 5,350 SF of commercial/retail. The project is located on the southwest corner of the Valley Center Road / Woods Valley Road intersection. This project is calculated to generate a total of approximately 449 daily trips with 18 AM peak hour (11 in / 7 out) and 38 PM peak hour trips (19 in / 19 out).

24. Arco Gas Station

The Arco Gas Station project is a 16 vehicle fueling space station. The project is located on the southwest corner of the Valley Center Road / Cole Grade Road intersection. This project is calculated to generate a total of approximately 1,792 daily trips with 126 AM peak hour (63 in / 63 out) and 102 PM peak hour trips (51 in / 51 out).

8.2 Summary of Cumulative Projects Trips

Table 8–1 tabulates the total cumulative projects traffic generation. As shown in *Table 8–1*, the cumulative projects above are estimated to generate at total of 38,899 daily trips with 2,985 AM peak hour (989 in / 1,996 out) and 3,779 PM peak hour trips (2,529 in / 1,250 out). The traffic generated by each cumulative project were individually distributed and assigned to the study area intersections and segments.

Figure 8–1 depicts the Cumulative Projects Location Map. ***Figure 8–2*** depicts the Cumulative Projects Traffic Volumes and Locations. ***Figure 8–3*** depicts the Existing + Project + Cumulative Projects traffic volumes.

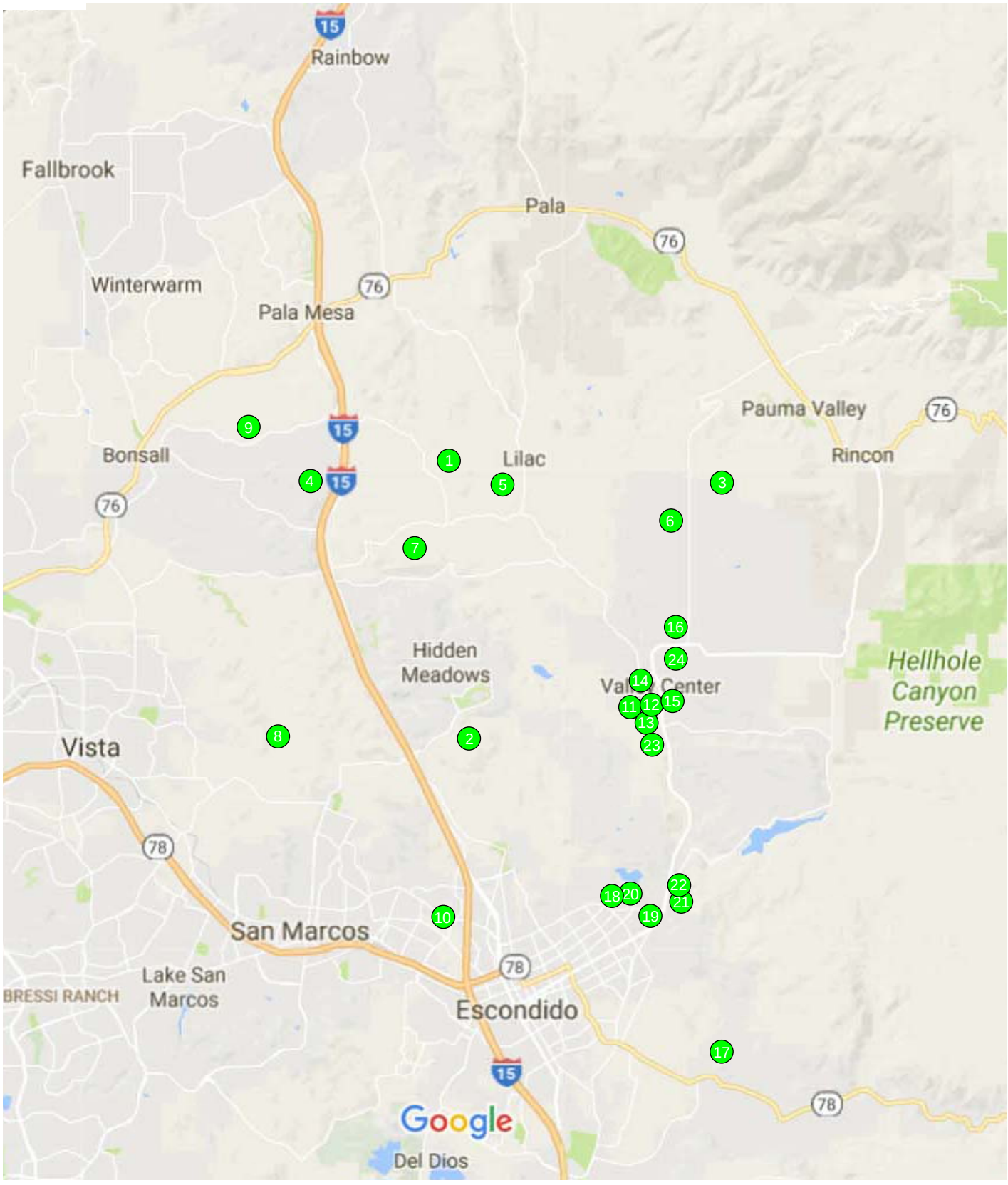
TABLE 8–1
CUMULATIVE PROJECTS TRIP GENERATION

Land Use	Quantity	Rate [a]	ADT	AM Peak Hour					PM Peak Hour				
				% of ADT	In: Out Split	Volume			% of ADT	In: Out Split	Volume		
						In	Out	Total			In	Out	Total
1. Lilac Hills Ranch	[b]	—	11,333	—	—	285	493	778	—	—	671	406	1,077
2. Mountain Gate	147 DU [c]	10 /DU	1,470	8%	3:7	35	83	118	10%	7:3	103	44	147
3. Tentative Map	16 DU	12 /DU	192	8%	3:7	5	10	15	10%	7:3	13	6	19
4. Dabbs TM	8 DU	12 /DU	96	8%	3:7	2	6	8	10%	7:3	7	3	10
5. McIntyre Subdivision TM5014	22 DU	12 /DU	264	8%	3:7	6	15	21	10%	7:3	18	8	26
6. Oak Glen	9 DU	12 /DU	108	8%	3:7	3	6	9	10%	7:3	8	3	11
7. Goodnight Ranchos TPM	2 DU	12 /DU	24	8%	3:7	1	1	2	10%	7:3	1	1	2
8. Rimsa TPM	2 DU	12 /DU	24	8%	3:7	1	1	2	10%	7:3	1	1	2
9. Sanders TPM	4 DU	12 /DU	48	8%	3:7	1	3	4	10%	7:3	4	1	5
10. The Villages	See text		4,280			97	222	319			293	127	420
11. Orchard Run	300 DU	10 /DU	3,000	8%	3:7	72	168	240	10%	7:3	210	90	300
12. Park Circle	318 DU	10 /DU	3,180	8%	3:7	76	178	254	10%	7:3	223	95	318
13. Shady Oaks	47 DU	10 /DU	470	8%	3:7	11	27	38	10%	7:3	33	14	47
14. Lilac Plaza	50 DU	10 /DU	500	8%	3:7	12	28	40	10%	7:3	35	15	50
15. Butterfield Ranch	66 DU	10 /DU	660	8%	3:7	16	37	53	10%	7:3	46	20	66
16. North Village	500 DU	10 /DU	5,000	8%	3:7	120	280	400	10%	7:3	350	150	500
17. Safari Highlands	See text		5,509			159	341	500			409	180	589
18. E. Mission	3 DU	10 /DU	30	8%	3:7	1	1	2	10%	7:3	2	1	3
19. Jacks Creek	12 DU	10 /DU	120	8%	3:7	3	7	10	10%	7:3	8	4	12
20. El Norte	6 DU	10 /DU	60	8%	3:7	2	3	5	10%	7:3	4	2	6

TABLE 8–1
CUMULATIVE PROJECTS TRIP GENERATION

Land Use	Quantity	Rate [a]	ADT	AM Peak Hour					PM Peak Hour				
				% of ADT	In: Out Split	Volume			% of ADT	In: Out Split	Volume		
						In	Out	Total			In	Out	Total
21. Moser	16 DU	10 /DU	160	8%	3:7	4	9	13	10%	7:3	11	5	16
22. Silva	13 DU	10 /DU	130	8%	3:7	3	7	10	10%	7:3	9	4	13
23. Hatfield Place	5,350 SF	120 /KSF	449	4%	6:4	11	7	18	10%	5:5	19	19	38
24. Arco Gas Station	16 Fueling positions	160 /vehicle fueling space	1,792	7%	5:5	63	63	126	8%	5:5	51	51	102
Total Cumulative Projects			**38,899**			**989**	**1,996**	**2,985**			**2,529**	**1,250**	**3,779**

Footnotes:
a. Rates obtained from a Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002, published by SANDAG.
b. Assumes "Phase C" development of proposed mixed-use community. See description in Section 8.1.
c. DU – Dwelling Units



Note: Please see Section 8.0 for a detailed list of each cumulative project.

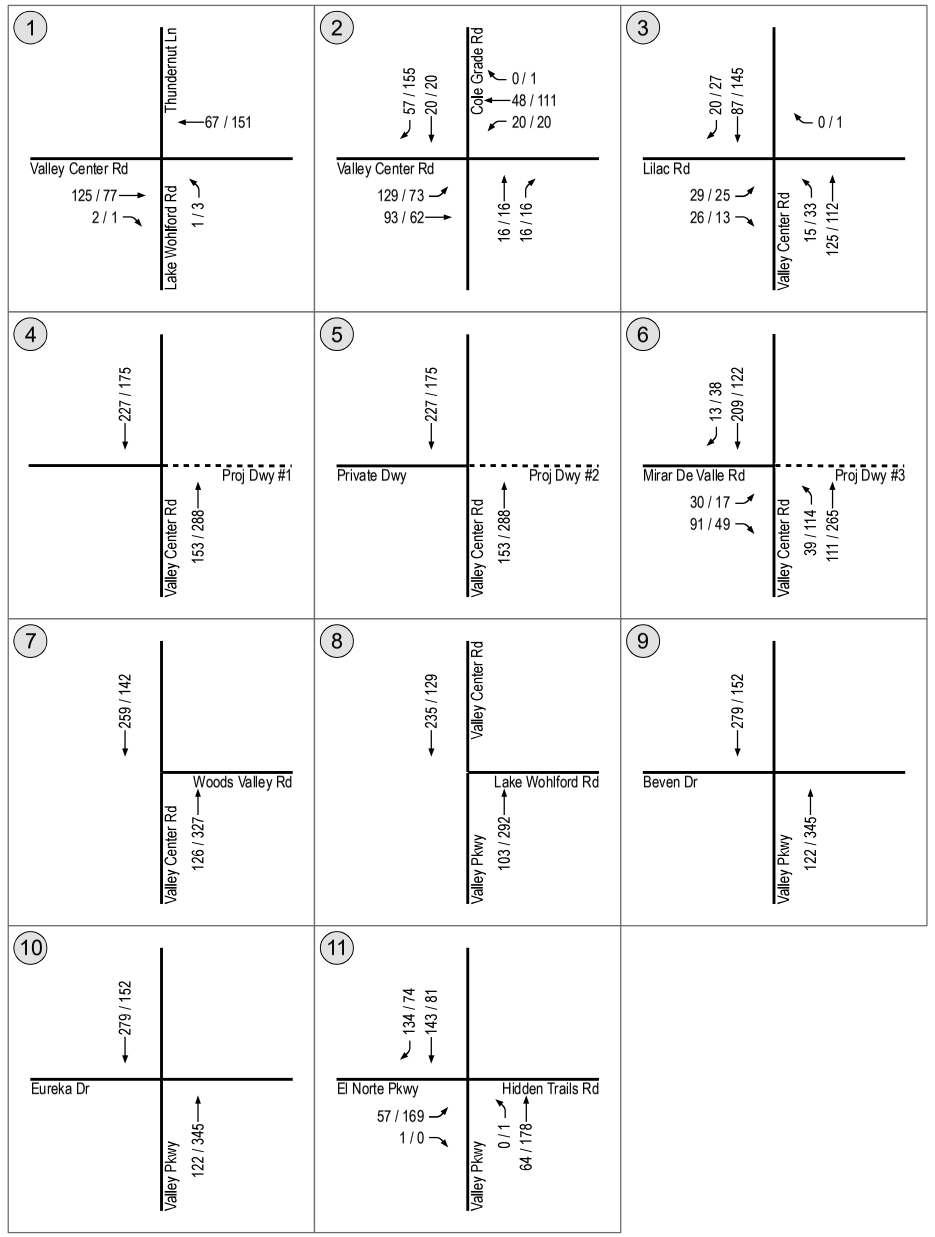
LINSCOTT LAW & GREENSPAN engineers

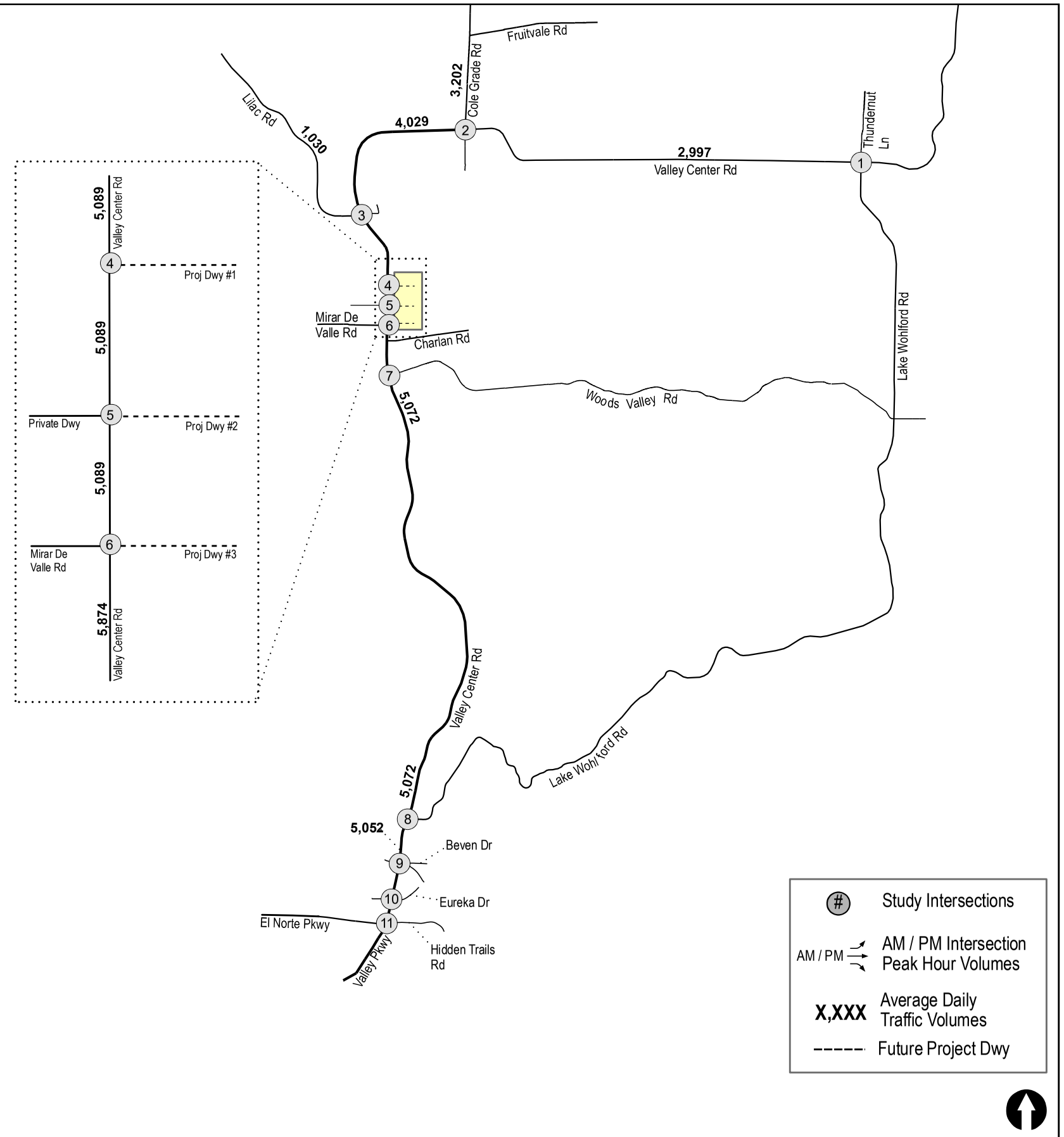
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Figure 8-1

Cumulative Projects Location Map

LIBERTY BELL PLAZA



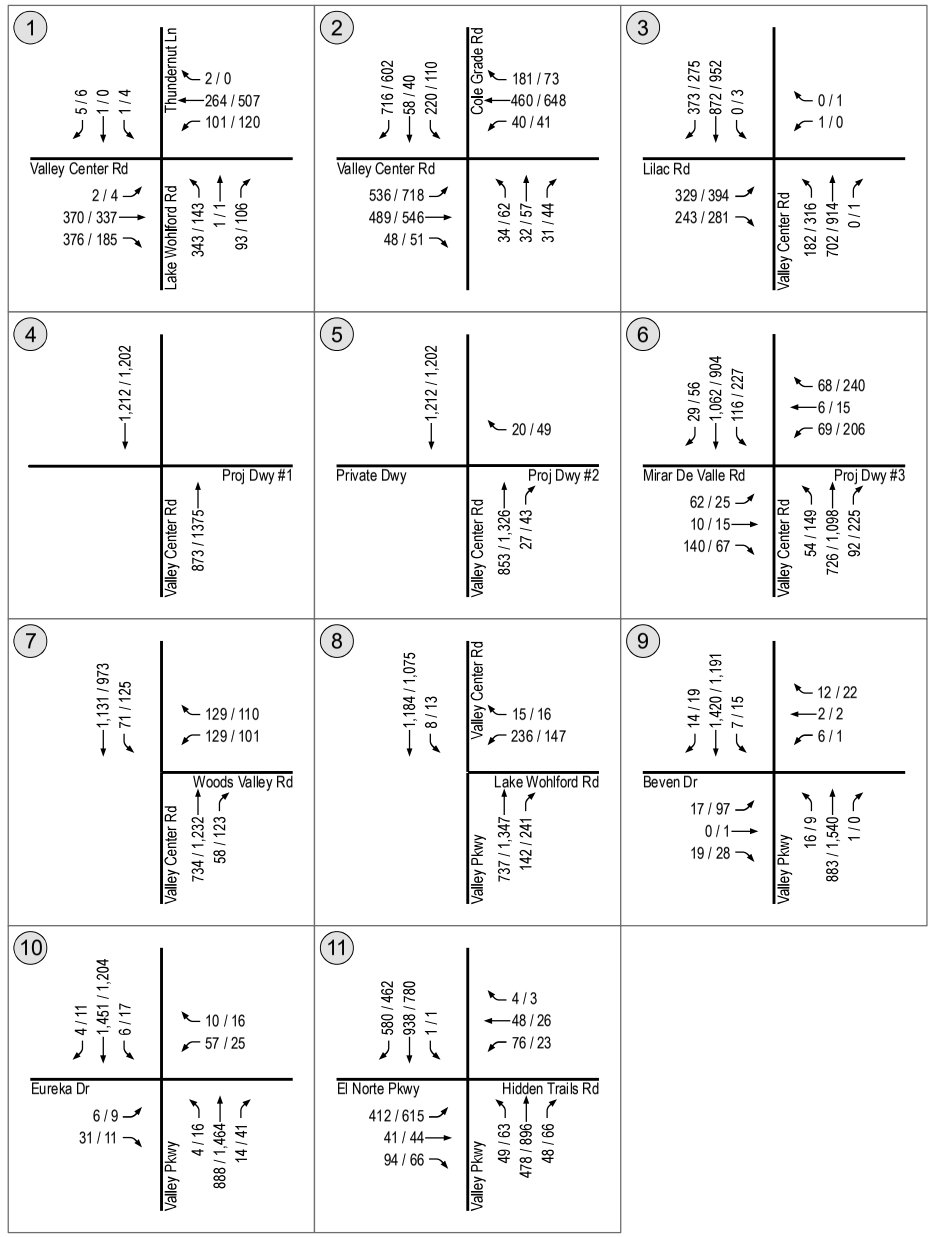


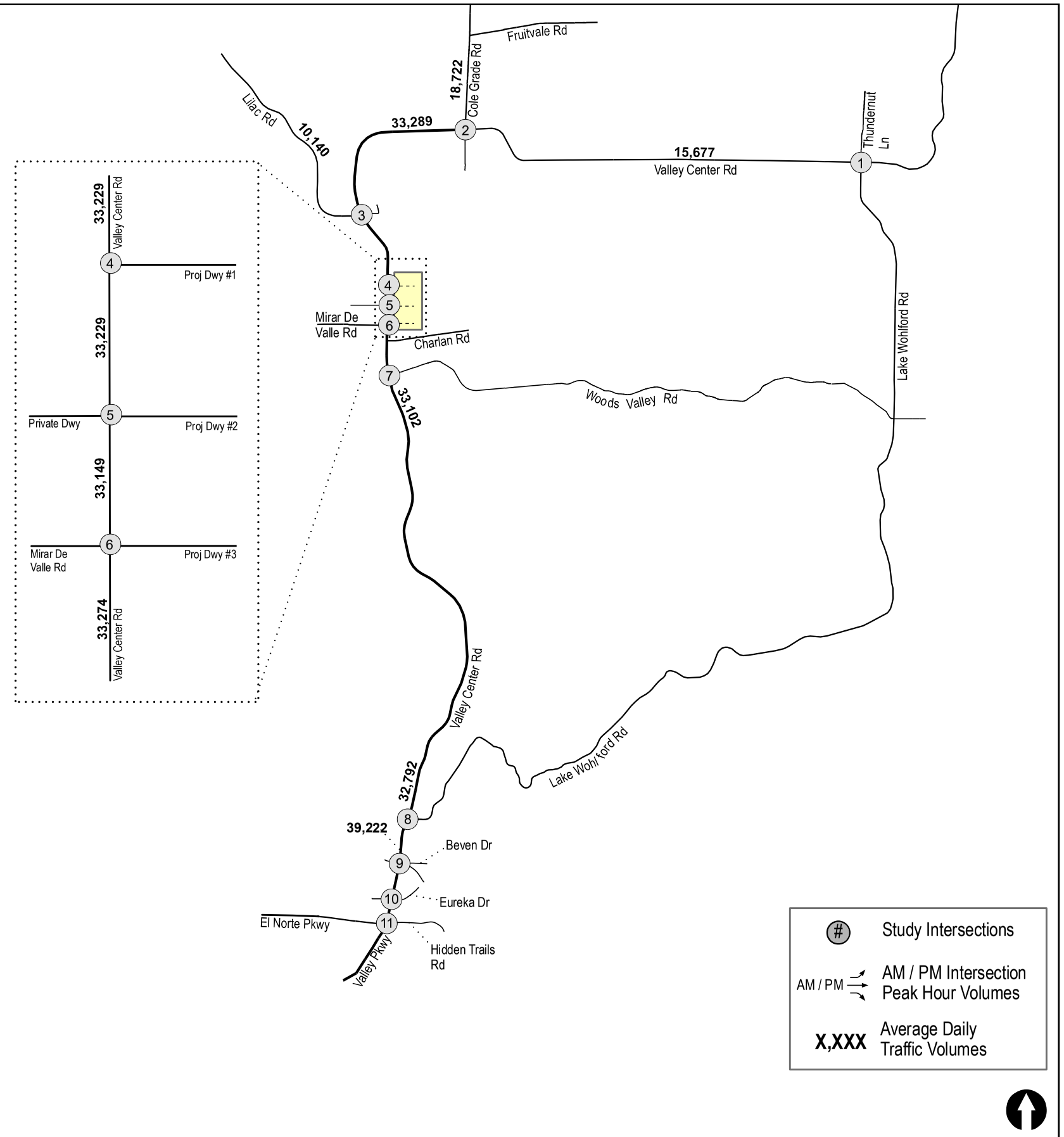
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Figure 8-2

Cumulative Projects Traffic Volumes





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Figure 8-3

Existing + Project + Cumulative Projects Traffic Volumes

9.0 ANALYSIS OF NEAR-TERM SCENARIOS

9.1 Existing + Project Conditions

Intersection and street segment analyses were conducted for the study intersections under Existing + Project conditions.

9.1.1 *Peak Hour Intersection Levels of Service*

Table 9–1 summarizes the *Existing + Project* intersections level of service. As shown in *Table 9–1*, with the addition of project traffic, all study area intersections are calculated to continue to operate at LOS D or better with the exception of the following:

- Valley Center Road / Project Driveway #3 / Mirar De Valle Road – minor street left-turn at LOS F during the AM and PM peak hours

Appendix E contains the Existing + Project intersection calculation sheets.

9.1.2 *Segment Operations*

Table 9–2 summarizes the *Existing + Project* roadway segment level of service. As shown in *Table 9–2*, with the addition of project traffic, all study area segments are calculated to continue to operate at LOS D or better with the exception of the following:

- Valley Center Road between Thunder Lane/N. Lake Wohlford Road and Cole Grade Road – **LOS E**
- Cole Grade Road between Fruitvale Road and Valley Center Road – **LOS E**

9.2 Existing + Project + Cumulative Projects Conditions

Intersection and street segment analyses were conducted for the study intersections under Existing + Project + Cumulative Projects conditions.

9.2.1 *Peak Hour Intersection Levels of Service*

Table 9–1 summarizes the *Existing + Project + Cumulative Projects* intersections level of service. As shown in *Table 9–1*, with the addition of cumulative and project traffic, all study area intersections are calculated to continue to operate at LOS D or better with the exception of the following:

- Valley Center Road / Cole Grade Road – LOS E during the PM peak hour
- Valley Center Road / Project Driveway #3 / Mirar De Valle Road – minor street left-turn at LOS F during the AM and PM peak hours

Appendix F contains the Existing + Project + Cumulative Projects intersection calculation sheets.

9.2.2 *Segment Operations*

Table 9–2 summarizes the *Existing + Project + Cumulative Projects* roadway segment level of service. As shown in *Table 9–2* with the addition of cumulative and project traffic, all study area segments are calculated to continue to operate at LOS D or better with the exception of the following:

- Valley Center Road between Thunder Lane/N. Lake Wohlford Road and Cole Grade Road – **LOS F**
- Cole Grade Road between Fruitvale Road and Valley Center Road – **LOS E**

TABLE 9–1
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project			Impact Type	Existing + Project + Cumulative Projects			Impact Type
			Delay[a]	LOS[b]	Delay	LOS	Δ[d]		Delay	LOS	Δ[d]	
1. Valley Center Rd / Thundernut Ln	Signal	AM	18.8	B	18.9	B	0.1	None	19.6	B	0.8	None
		PM	17.8	B	18.0	B	0.2	None	18.1	B	0.3	None
2. Valley Center Rd / Cole Grade Rd	Signal	AM	29.4	C	31.9	C	2.5	None	49.2	D	19.8	None
		PM	30.5	C	35.9	D	5.4	None	**76.9**	**E**	**46.4**	**Cumulative**
3. Valley Center Rd / Lilac Rd	Signal	AM	19.3	B	20.8	C	1.5	None	22.5	C	3.2	None
		PM	17.4	B	19.4	B	2.0	None	26.8	C	9.4	None
4. Valley Center Rd / Project Driveway #1	TWSC[c]	AM	–	–	0.0	A	0	None	0.0	A	0	None
		PM	–	–	0.0	A	0	None	0.0	A	0	None
5. Valley Center Rd / Project Driveway #2	TWSC	AM	–	–	11.6	B	0	None	12.6	B	0	None
		PM	–	–	14.9	B	0	None	18.2	C	0	None
6. Valley Center Rd / Project Driveway #3 / Mirar De Valle Rd	TWSC	AM	**59.7**	**F**	**>100.0**	**F**	**116**	**Direct**	**>100.0**	**F**	**116**	**Cumulative**
		PM	**64.8**	**F**	**>100.0**	**F**	**227**	**Direct**	**>100.0**	**F**	**227**	**Cumulative**
7. Valley Center Rd / Woods Valley Rd	Signal	AM	11.0	B	11.5	B	0.5	None	12.3	B	1.3	None
		PM	10.6	B	11.7	B	1.1	None	11.8	B	1.2	None
8. Valley Center Rd / Lake Wohlford Rd	Signal	AM	11.5	B	11.5	B	0.0	None	11.6	B	0.1	None
		PM	7.2	A	7.5	A	0.3	None	7.6	A	0.1	None
9. Valley Pkwy / Beven Drive	Signal	AM	8.3	A	8.9	A	0.6	None	9.0	A	0.1	None
		PM	9.0	A	11.1	B	2.1	None	11.3	B	0.2	None
10. Valley Pkwy / Eureka Dr	Signal	AM	7.7	A	9.3	A	1.6	None	9.5	A	0.2	None
		PM	6.9	A	8.5	A	1.6	None	9.2	A	0.7	None

TABLE 9–1
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project			Impact Type	Existing + Project + Cumulative Projects			Impact Type
			Delay[a]	LOS[b]	Delay	LOS	Δ[d]		Delay	LOS	Δ[d]	
11. Valley Pkwy / El Norte Pkwy / Hidden Trails Rd	Signal	AM	18.2	B	18.3	B	0.1	None	19.0	B	0.7	None
		PM	19.0	B	19.2	B	0.2	None	22.4	C	3.2	None

Footnotes:

a. Average delay expressed in seconds per vehicle.

b. Level of Service.

c. TWSC: Two-Way Stop Controlled. Minor street delay is reported.

d. "Δ" denotes the project-induced increase in delay for signalized intersections or Project Traffic added to the Critical Movement for unsignalized intersections operating at LOS E or F only.

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 STREET SEGMENT OPERATIONS

Street Segment	Classification	Capacity (LOS E) [a]	Existing			Existing + Project				Impact Type	Existing + Project + Cumulative Projects				Impact Type
			ADT[b]	LOS[c]	V/C[d]	ADT	LOS	V/C	Δ[e]		ADT	LOS	V/C	Δ[e]	
Valley Center Road															
Thundernut Lane/N. Lake Wohlford Rd to Cole Grade Rd	2.2E Light Collector	16,200	**11,880**	**E**	**0.733**	**12,680**	**E**	**0.783**	**800**	**Direct**	**15,677**	**E**	**0.968**	**3,797**	**Cumulative**
Cole Grade Rd to Lilac Rd	4.1A Major Road w/ Raised Median	37,000	26,950	C	0.728	29,260	C	0.791	2,310	None	33,289	D	0.900	6,339	None
Lilac Rd to Project Drwy #1	4.1A Major Road w/ Raised Median	37,000	24,080	B	0.651	28,140	C	0.761	4,060	None	33,229	D	0.898	9,149	None
Project Drwy #1 to Project Drwy #2	4.1A Major Road w/ Raised Median	37,000	24,080	B	0.651	28,140	C	0.761	4,060	None	33,229	D	0.898	9,149	None
Project Drwy #2 to Project Drwy #3/Mirar De Valle Rd	4.1A Major Road w/ Raised Median	37,000	24,080	B	0.651	28,060	C	0.758	3,980	None	33,149	D	0.896	9,069	None
Project Drwy #3/Mirar De Valle Rd to Woods Valley Rd	4.1A Major Road w/ Raised Median	37,000	23,900	B	0.646	27,400	C	0.741	3,500	None	33,274	D	0.899	9,374	None
Woods Valley Rd to Escondido City Limits	4.1A Major Road w/ Raised Median	37,000	25,170	C	0.680	28,030	C	0.758	2,860	None	33,102	D	0.895	7,932	None
Escondido City Limits to Lake Wohlford Rd	4-Lane Major Road	37,000	25,010	C	0.676	27,720	D	0.749	0.073	None	32,792	D	0.886	0.137	None
Valley Parkway															
Lake Wohlford Rd to El Norte Pkwy	6-Lane Prime Arterial	60,000	31,700	B	0.528	34,170	C	0.570	0.042	None	39,222	C	0.654	0.084	None
Cole Grade Road															
Fruitvale Road to Valley Center Road	2.2C Light Collector w/ Intermittent Turn Lanes	19,000	**14,170**	**E**	**0.746**	**15,520**	**E**	**0.817**	**1,350**	**Direct**	**18,722**	**E**	**0.985**	**4,552**	**Cumulative**

TABLE 9–2
NEAR-TERM STREET SEGMENT OPERATIONS

Street Segment	Classification	Capacity (LOS E) [a]	Existing			Existing + Project				Impact Type	Existing + Project + Cumulative Projects				Impact Type
			ADT[b]	LOS[c]	V/C[d]	ADT	LOS	V/C	Δ[e]		ADT	LOS	V/C	Δ[e]	
Lilac Road															
Valley Center Road to Betsworth Road	2.2E Light Collector	16,200	7,360	D	0.454	9,110	D	0.562	1,750	None	10,140	D	0.626	2,780	None

Footnotes:

a. Capacities based on County of San Diego Roadway and City of Escondido Classification Table.

b. ADT - Average Daily Traffic Volumes.

c. LOS - Level of Service.

d. Volume to Capacity.

e. "Δ" denotes the project-induced increase in ADT for segments operating at LOS E or F in County of San Diego jurisdiction or the Volume to Capacity ratio for City of Escondido jurisdiction.

10.0 SITE ACCESS AND CIRCULATION REVIEW

The project proposes direct site access along Valley Center Road via three (3) driveways. The north driveway will be primarily for service and will be lightly used. Full movements can be allowed due to very small volumes and the need for trucks to turn left in and out of the driveway. The middle driveway should be right-in/right-out only. The main driveway should be signalized opposite the existing Mirar De Valle Road.

Site access operations were calculated for all three driveways. Project Driveways #1 and #2 are calculated at LOS D or better for the minor street movements in the Near-Term scenarios during both the AM and PM peak hours. However, Project Driveway #3, if unsignalized, is calculated to operate at a deficient LOS F in the Near-Term scenarios during both the AM and PM peak hours. This can be attributed to the limited left-turn gaps in the oncoming traffic. An acceptable LOS D is calculated with the installation of a signal and the intersection geometry recommended in the mitigation section.

A review of the operations of the gas station circulation was conducted. Gas station patrons will stack in the westbound direction if waiting for an open pump, which means queues will stack within the site away from Valley Center Road and the main project driveway. In addition, there are twenty-four (24) fueling positions which means there will rarely be cars waiting to fuel. Overall, the gas station circulation has been planned to work in the most efficient manner with the most minimal impact to the public road system that is possible.

11.0 PEDESTRIAN, BICYCLE AND TRANSIT

Pedestrian, bicycle and transit mobility in the study area were reviewed. A brief description on each mode is provided below:

11.1 Pedestrian Mobility

Currently, Valley Center Road includes a contiguous sidewalk on the east side and a noncontinguous sidewalk on the west side of Valley Center Road fronting the project site. The nearest signalized intersection is located at Valley Center Road / Woods Valley Road, which provides a controlled crossing location with pedestrian push buttons and crosswalks. The Project proposes to signalize the Valley Center Road / Project Driveway #3 / Mirar De Valle Road intersection which will provide controlled crossing with pedestrian push buttons and crosswalks, facilitating the safe movement of pedestrians across Valley Center Road.

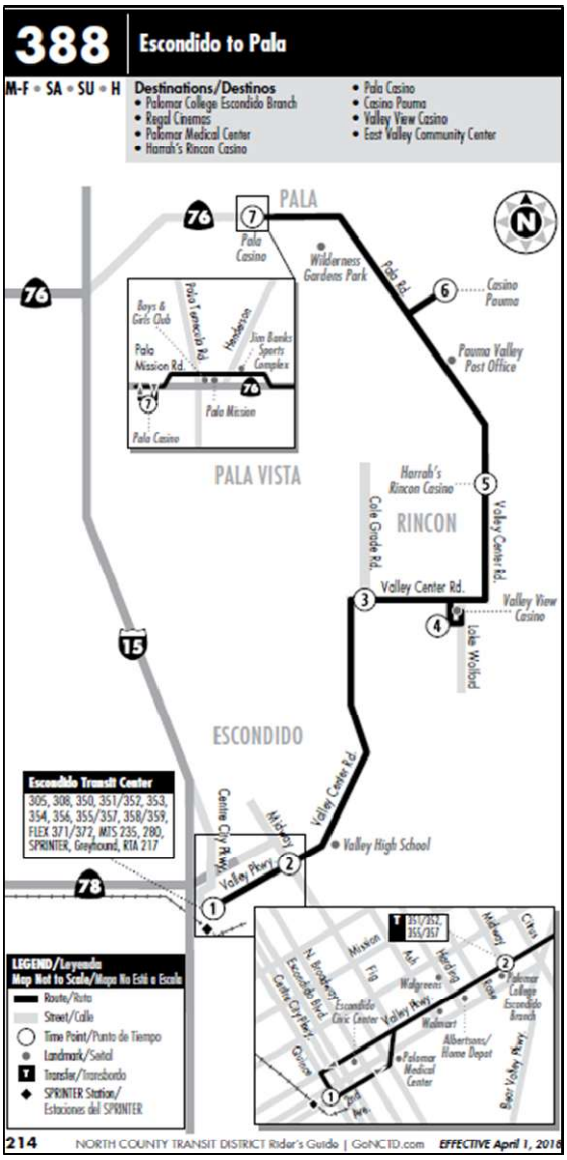
11.2 Bicycle Mobility

Currently, Valley Center Road includes a Class II bike lane on the east and west side.

11.3 Transit Mobility

Fronting the project site, there are two (2) bus stops on Valley Center Road. These bus stops serve NCTD Route 388. These bus stops connect the project site to Escondido and Pala. Below is a brief discussion of the bus route.

Route 388 runs a north-south route mostly along Valley Center Road from the Escondido Transit Center to Pala Casino. Route 388 currently operates between 5:06 AM and 10:23 PM during weekdays, Saturdays and Sundays, with headways varying between 1 and 2 hours depending on the time of day.



12.0 SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Per the County's significance thresholds and the analysis methodology presented in this report, project related traffic is calculated to cause significant impacts within the study area in the Near-Term scenarios. The following section identifies the significance of impacts and recommended mitigation to address operating deficiencies. These improvements, if implemented, would improve efficiency of traffic flow and return intersection and street segment operations to a level of "no significant" impact.

The site is zoned for Commercial Use, and the trip rate for neighborhood commercial is 1,200 ADT per acre. Therefore, the Mobility Element allocates 9,840 ADT for the 8.2-acre site. The 81,884 SF project generates 9,826 ADT, which is less than the ADT allocated to the site in the County Mobility Element.

12.1 Significance of Impacts

Based on the County of San Diego and City of Escondido significance criteria, the following impacts were calculated:

12.1.1 *Direct Impacts*

Under Existing + Project conditions, the project is calculated to have significant direct impacts at one (1) intersection and two (2) street segments.

INTERSECTION

- Valley Center Road / Project Driveway #3 / Mirar De Valle Road

STREET SEGMENTS

- Valley Center Road between Thundernut Lane/N. Lake Wohlford Road and Cole Grade Road
- Cole Grade Road between Fruitvale Road and Valley Center Road

12.1.2 *Cumulative Impacts*

Under Existing + Project + Cumulative Projects conditions, the project is calculated to have significant cumulative impacts at two (2) intersections and two (2) street segments.

INTERSECTIONS

- Valley Center Road / Cole Grade Road (LOS E during the PM peak hour)
- Valley Center Road / Project Driveway #3 / Mirar De Valle Road (minor street left-turn at LOS F during the AM and PM peak hours)

STREET SEGMENTS

- Valley Center Road between Thundernut Lane/N. Lake Wohlford Road and Cole Grade Road
- Cole Grade Road between Fruitvale Road and Valley Center Road

12.2 Mitigation Measures

12.2.1 *Direct Impacts*

The following summarizes the recommended mitigation measure for the direct impacted intersection and street segments:

INTERSECTION

- **Valley Center Road / Project Driveway #3 / Mirar De Valle Road –** Installation of a traffic signal and providing the following lane geometry will mitigate the direct impact at this intersection:
  - *Northbound:* provide one (1) exclusive left-turn lane, one (1) exclusive thru lane and one (1) shared thru/right-turn lane.
  - *Southbound:* provide one (1) exclusive left-turn lane, one (1) exclusive thru lane and one (1) shared thru/right-turn lane.
  - *Eastbound:* provide one (1) exclusive left-turn lane, one (1) shared left/thru lane and one (1) exclusive right-turn lane.
  - *Westbound:* provide one (1) exclusive left-turn lane and one (1) shared thru/right-turn lane (20 feet wide).

STREET SEGMENTS

- **Valley Center Road between Thundernut Lane/N. Lake Wohlford Road and Cole Grade Road –** Providing a westbound right-turn lane at the Valley Center Road / Cole Grade Road intersection, if not completed by others, will mitigate the calculated significant direct impact on this segment to a level below significance.
- **Cole Grade Road between Fruitvale Road and Valley Center Road –** Providing a westbound right-turn lane at the Valley Center Road / Cole Grade Road intersection, if not completed by others, will mitigate the calculated significant direct impact on this segment to a level below significance.

12.2.2 *Cumulative Impacts*

The following summarizes the recommended mitigation measure for the cumulative impacted intersections and street segments:

INTERSECTIONS

- **Valley Center Road / Cole Grade Road –** Payment of a County of San Diego traffic impact fee (TIF) will mitigate the cumulative impact at this intersection. TIF payment will be used to construct additional turn lanes at intersections along this portion of Valley Center Road as needed to provide the necessary capacity.
- **Valley Center Road / Project Driveway #3 / Mirar De Valle Road –** The direct impact mitigation that includes installation of a traffic signal and restriping the intersection to modify lane configurations will mitigate the direct impact at this intersection.

STREET SEGMENTS

- **Valley Center Road between Thundernut Lane/N. Lake Wohlford Road and Cole Grade Road –** Payment of a County of San Diego traffic impact fee (TIF) will mitigate the cumulative impact at this segment. TIF payment will be used to construct additional turn lanes at intersections along this portion of Valley Center Road as needed to provide the necessary capacity.
- **Cole Grade Road between Fruitvale Road and Valley Center Road –** Payment of a County of San Diego traffic impact fee (TIF) will mitigate the cumulative impact at this segment. TIF payment will be used to construct additional turn lanes at intersections along this portion of Cole Grade Road as needed to provide the necessary capacity.

It should be mentioned that encroachment permits will be required for all work performed within the County's and Caltrans' right-of-way.

The County Board of Supervisors adopted a TIF ordinance, which provides a mechanism for the County to obtain funding to mitigate anticipated cumulative transportation/circulation impacts, by requiring payment of an impact fee designated in the ordinance. The County updated the TIF Program in January 2008. Under the provisions of State CEQA Guidelines section 15130(a)(3), payment of the fee "to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact" allows an EIR to "determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant." The project will be conditioned to pay a fair-share contribution to the TIF Program.

12.3 Post Mitigation Analysis

This section discusses the post mitigation analysis results for the impacted facilities under all scenarios.

12.3.1 *Direct Impacts*

INTERSECTION

The following summarizes the post mitigation analysis results for the directly impacted intersections. ***Table 12–1*** shows the Existing + Project post mitigation intersection analysis. The intersection calculation sheets are contained in ***Appendix G***.

STREET SEGMENTS

The following summarizes the post mitigation analysis results for the directly impacted street segments.

In order to show that the recommended intersection improvements mitigate the two direct segment impacts, an arterial analysis was performed on the following segments that exceed the County's significance thresholds:

- Valley Center Road: Thundernut Lane / N. Lake Wohlford Road to Cole Grade Road
- Cole Grade Road: Fruitvale Road to Valley Center Road

The analysis was conducted incorporating the exclusive westbound right-turn lane mitigation at the Valley Center Rd / Cole Grade Rd intersection to show that improvement in average arterial travel speed is achieved when provided the necessary capacity. ***Table 12–2*** summarizes the *Existing + Project* arterial level of service. As shown in *Table 12–2*, with the addition of project traffic, the decrease in speeds are maintained within the allowable threshold.

TABLE 12–1
EXISTING + PROJECT INTERSECTION MITIGATION ANALYSIS

Intersection	Peak Hour	Existing		Existing + Project		Existing + Project with Mitigation			Mitigation
		Delay[a]	LOS[b]	Delay	LOS	Delay	LOS	Δ[c]	
6. Valley Center Rd / Project Driveway #3 / Mirar De Valle Rd	AM	59.7	F	450.1	F	15.7	B	(44.0)	Install a traffic signal and associated geometric improvements
	PM	64.8	F	623.0	F	27.6	C	(37.2)	

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Δ denotes an increase or (decrease) in delay due to project mitigation.

SIGNALIZED

DELAY/LOS THRESHOLDS	
Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

UNSIGNALIZED

DELAY/LOS THRESHOLDS	
Delay	LOS
0.0 ≤ 10.0	A
10.1 to 15.0	B
15.1 to 25.0	C
25.1 to 35.0	D
35.1 to 50.0	E
≥ 50.1	F

TABLE 12–2
EXISTING + PROJECT STREET SEGMENT MITIGATION ARTERIAL ANALYSIS

Arterial Segment	Period	Direction	Existing		Existing + Project		Existing + Project with Mitigation		Speed Increase/ Decrease	Mitigation
			Speed[a]	LOS[b]	Speed	LOS	Speed	LOS		
Valley Center Road										
Thundernut Lane / N. Lake Wohlford Rd to Cole Grade Rd	AM	EB	19.0	E	18.9	E	18.9	E	(0.1)	Provide an exclusive westbound right-turn lane at Valley Center Rd / Cole Grade Rd intersection
		WB	17.8	E	17.6	E	18.0	E	0.2	
	PM	EB	22.2	D	22.0	D	22.0	D	(0.2)	
		WB	16.7	E	16.2	E	16.7	E	0.0	
Cole Grade Road										
Fruitvale Road to Valley Center Road	AM	NB	40.0	A	39.9	A	39.9	A	(0.1)	Provide an exclusive westbound right-turn lane at Valley Center Rd / Cole Grade Rd intersection
		SB	26.4	D	26.2	D	27.1	C	0.7	
	PM	NB	39.0	A	38.6	A	38.6	A	(0.4)	
		SB	24.4	D	24.0	D	24.2	D	(0.2)	

Footnotes:

a. Speed in miles per hour.

b. Level of Service.

General Notes:

1. See *Appendix G* for the calculation sheets.

12.3.1 *Cumulative Impacts*

INTERSECTIONS

The following summarizes the post mitigation analysis results for the cumulatively impacted intersections. ***Table 12–3*** shows the Existing + Project + Cumulative Projects post mitigation intersection analysis. The intersection calculation sheets are contained in *Appendix G*.

STREET SEGMENTS

The following summarizes the post mitigation analysis results for the cumulatively impacted street segments.

In order to show that the recommended intersection improvements mitigate the two cumulative segment impacts, an arterial analysis was performed on the following segments that exceed the County's significance thresholds:

- Valley Center Road: Thundernut Lane / N. Lake Wohlford Road to Cole Grade Road
- Cole Grade Road: Fruitvale Road to Valley Center Road

The analysis was conducted incorporating the exclusive westbound right-turn lane mitigation at the Valley Center Rd / Cole Grade Rd intersection to show that improvement in average arterial travel speed is achieved when provided the necessary capacity. ***Table 12–4*** summarizes the *Existing + Project + Cumulative Projects* arterial level of service. As shown in *Table 12–4*, with the addition of project traffic, the decrease in speeds are maintained within the allowable threshold.

TABLE 12–3
EXISTING + PROJECT + CUMULATIVE PROJECTS INTERSECTION MITIGATION ANALYSIS

Intersection	Peak Hour	Existing + Project		Existing + Project + Cumulative Projects		Existing + Project + Cumulative Projects with Mitigation		Mitigation
		Delay[a]	LOS[b]	Delay	LOS	Delay	LOS	
2. Valley Center Rd / Cole Grade Rd	PM	35.9	D	76.9	E	36.5	D	Provide an exclusive westbound right-turn lane
6. Valley Center Rd / Project Driveway #3 / Mirar De Valle Rd	AM	450.1	F	2,780.0	F	19.9	B	Install a traffic signal and associated geometric improvements
	PM	623.0	F	3,988.8	F	38.1	D	

Footnotes:
a. Average delay expressed in seconds per vehicle.
b. Level of Service.

SIGNALIZED	
DELAY/LOS THRESHOLDS	
Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

UNSIGNALIZED	
DELAY/LOS THRESHOLDS	
Delay	LOS
0.0 ≤ 10.0	A
10.1 to 15.0	B
15.1 to 25.0	C
25.1 to 35.0	D
35.1 to 50.0	E
≥ 50.1	F

TABLE 12–4
EXISTING + PROJECT + CUMULATIVE PROJECTS STREET SEGMENT MITIGATION ARTERIAL ANALYSIS

Arterial Segment	Period	Direction	Existing + Project		Existing + Project + Cumulative Projects		Existing + Project + Cumulative Projects with Mitigation		Speed Increase/ Decrease	Mitigation
			Speed[a]	LOS[b]	Speed	LOS	Speed	LOS		
Valley Center Road										
Thundernut Lane / N. Lake Wohlford Rd to Cole Grade Rd	AM	EB	18.9	E	18.1	E	17.9	E	(1.0)	Provide an exclusive westbound right-turn lane at Valley Center Rd / Cole Grade Rd intersection
		WB	17.6	E	16.1	E	16.8	E	(0.8)	
	PM	EB	22.0	D	22.4	D	22.7	D	(0.6)	
		WB	16.2	E	13.8	F	15.4	F	(0.8)	
Cole Grade Road										
Fruitvale Road to Valley Center Road	AM	NB	39.9	A	39.0	A	39.0	A	(0.9)	Provide an exclusive westbound right-turn lane at Valley Center Rd / Cole Grade Rd intersection
		SB	26.2	D	24.8	D	25.6	D	(0.6)	
	PM	NB	38.6	A	37.9	A	37.9	A	(0.7)	
		SB	24.0	D	23.6	D	23.5	D	(0.5)	

Footnotes:

a. Speed in miles per hour.

b. Level of Service.

General Notes:

1. See *Appendix G* for the calculation sheets.