PACIFICA ESTATES
ISSUE SPECIFIC TRAFFIC IMPACT STUDY

TM: 5510

Prepared for:

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Revised: February 23, 2015

JN 141257

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Glossary of Key Terms

AM/PM Peak Hour – One hour period in the morning and in the evening when commute traffic is at its greatest and when traffic impacts are most likely to occur.

Average Daily Traffic (ADT) – Average number of vehicles using a roadway segment during a 24-hour period.

Capacity – The maximum number of vehicles that can be expected to travel through a roadway segment or intersection before congestion occurs and breaks down the traffic flow through the facility. Capacity corresponds to the maximum saturation flow rate on a roadway segment or through an intersection. The LOS E traffic volume threshold is typically regarded as the maximum capacity of a roadway segment.

Delay – Refers to the average delay experienced by vehicles at an intersection, and is measured in seconds. Intersection delay is calculated by averaging the delay experienced for each turning movement, which is weighted based on volume for each movement.

Level of Service (LOS) – A rating system of traffic conditions ranging from excellent (LOS A) to congested (LOS F). ADT volume thresholds are used to measure LOS on roadway segment based on roadway classification and number of lanes. Average delay in seconds is used to measure the LOS of intersection operations. Level of service D or better is considered acceptable by the County of San Diego and by most local jurisdictions.

Volume to Capacity Ratio (V/C) – The ratio of the traffic volume on a roadway segment or at an intersection to the design volume capacity of the roadway segment or intersection. The ADT thresholds for measuring level of service on roadway segments is based on V/C ratios.

List of Acronyms

ADT = Average Daily Traffic
CEQA = California Environmental Quality Act
DU = Dwelling Unit
HCM = Highway Capacity Manual
LOS = Level of Service
NA = Not Available, or Not Applicable
SANDAG = San Diego Association of Governments
SFDU = Single-Family Dwelling Unit
TIF = Traffic Impact Fee
TIS = Traffic Impact Study
TM = Tentative Map
V/C = Volume to Capacity

EXECUTIVE SUMMARY

This issue specific traffic impact study analyzes the potential cumulative traffic impact of the proposed Pacifica Estates project located along Mission Road between Sterling Bridge Road and Stage Coach Lane in the community of Fallbrook. The single-family residential project will consist of 21 dwelling units, and is forecast to generate approximately 210 trips per day, with 17 trips in the a.m. peak hour and 21 trips in the p.m. peak hour.

The results of the analysis show that all study intersections and roadway segments are currently operating at acceptable levels of service (LOS D or better).

To determine the cumulative impacts of the planned developments on the roadway system associated with County approved or pending projects within the study area, forecast project traffic associated with 24 approved or pending projects in the Fallbrook/Bonsall/Pala area was added to the existing conditions traffic volumes. A 10% growth factor was also applied to all existing traffic volumes to account for potential future projects not included in the analysis. This formed the base near-term cumulative conditions upon which traffic generated by the proposed project was added.

The results of the analysis under existing plus near-term cumulative conditions show that all study intersections and roadway segments are forecast to operate at acceptable levels of service (LOS D or better).

The results of the analysis under existing plus near-term cumulative conditions with the proposed project show that all study intersections and roadway segments are forecast to continue operating at acceptable levels of service (LOS D or better). The addition of traffic generated by the proposed project does not result in project-related direct and/or cumulative significant impacts to the study intersections and roadway segments.

The proposed project will take access from Mission Road via an on-site private street that will be constructed to serve the 21 dwelling units. The project access street would be limited to right-turns entering and exiting the site at the Mission Road / Project Access Street intersection. Left-turn access into and out of the site will be restricted by the existing raised median on Mission Road.

Per the request of County Staff, a specific site access study was prepared in September 8, 2010 to assess six access alternatives. Proposed Alternative Two, which restricts left-turns and provides a northbound left-turn bay and modified signal phasing to allow u-turns at Mission Road / Sterling Bridge Road, was the preferred alternative moving forward.

Under the preferred access alternative, vehicles heading south from the project site would need to u-turn at the signalized intersection of Mission Road / Sterling Bridge. Vehicles entering the site from the north would need to u-turn at the signalized intersection of Mission Road / Stage Coach Lane. U-turns are currently allowed at Mission Road / Stage Coach Lane but prohibited at Mission Road / Sterling Bridge; the addition of u-turning project traffic is expected to have a minimal impact on the peak hour operations of these two intersections.

INTRODUCTION

This issue specific traffic impact study analyzes the potential cumulative traffic impact of the proposed Pacifica Estates project located along Mission Road between Sterling Bridge Road and Stage Coach Lane in the community of Fallbrook. Exhibit 1 shows the regional project location.

This issue specific traffic impact study has been prepared in accordance with the County of San Diego *Guidelines for Determining Significance and Report Format and Content Requirements – Transportation and Traffic* (August 2011). The County of San Diego *Guidelines for Determining Significance and Report Format and Content Requirements – Transportation and Traffic* states that a full traffic impact study (TIS) should be prepared for all projects that generate more than 1,000 daily trips, or at least 100 peak hour trips. A full TIS assesses the potential impacts of the regional roadway network, including freeway facilities. A focused TIS should be prepared for all projects that generate between 500 and 1,000 daily trips, or between 50 and 100 peak hour trips. A focused TIS assesses the potential impacts of roadways and intersections in closer proximity to the project site. An issue specific TIS is required for all projects that generate between 200 and 500 trips per day, or between 20 and 50 peak hour trips. An issue specific TIS may focus on a particular traffic issues such as driveway access, sight distance, parking capacity, or signal timing.

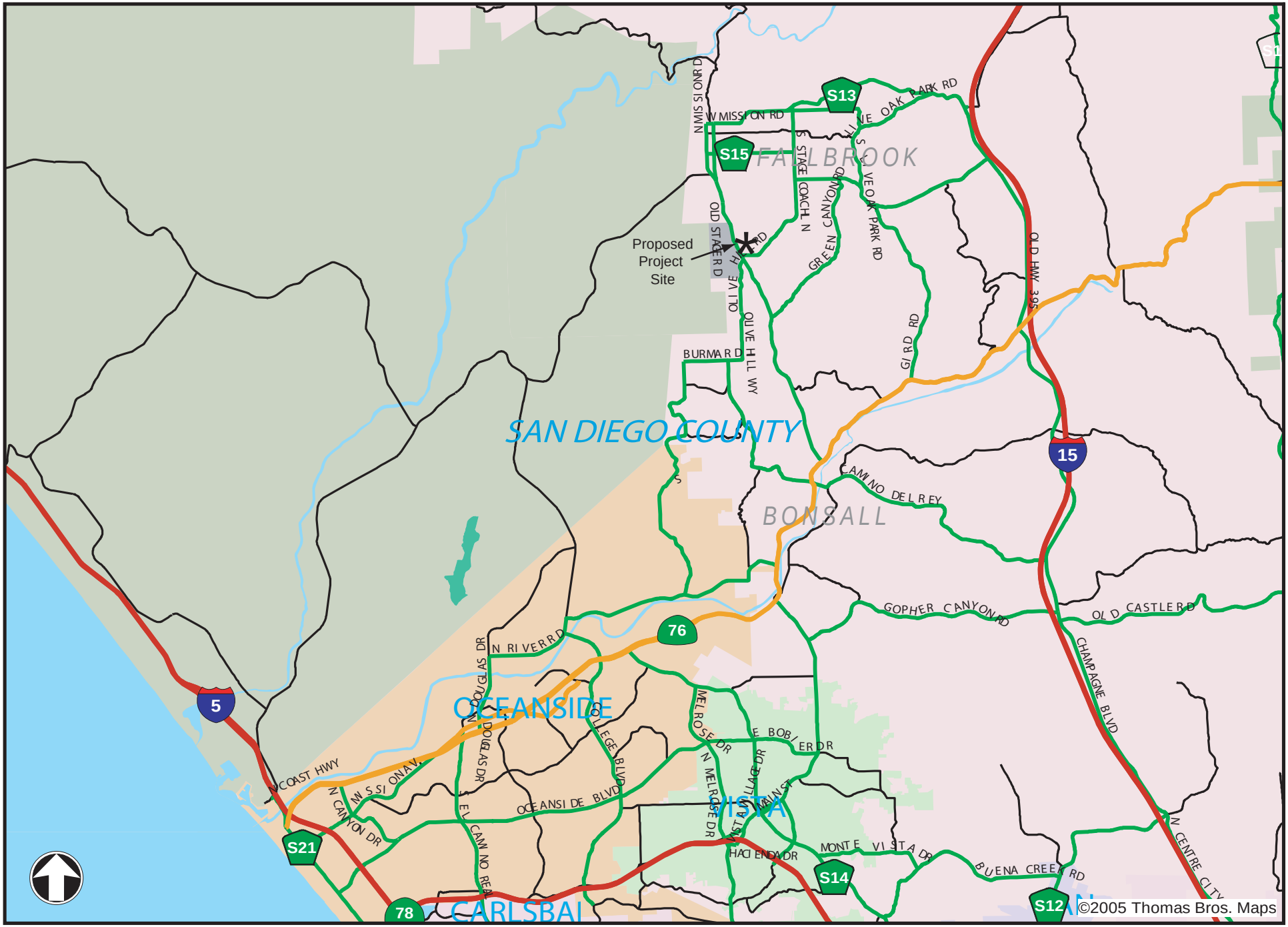
The County of San Diego has requested that an issue specific TIS be prepared to address cumulative impacts to which the proposed project may contribute. The following scenarios were identified for inclusion in this report:

- **Existing Conditions** – Analysis of existing traffic count volumes, intersection geometry and existing roadway network.
- **Existing Plus Near-Term Cumulative Conditions** – Analysis of existing traffic volumes overlaid with traffic associated with approved/pending projects to be constructed in the near future.
- **Existing Plus Near-Term Cumulative Plus Project Conditions** – Analysis of the existing traffic volumes overlaid with both approved/pending projects and project-generated traffic.

Project Description

The proposed project is located along Mission Road between Sterling Bridge Road and Stage Coach Lane in the community of Fallbrook. As shown in Exhibit 2, the proposed site plan includes 21 single-family dwelling units. At present, the site is vacant, and is zoned for single-family residential (RR-2). Therefore, the proposed land use is consistent with the General Plan land use for the project site.

The single-family residential project will consist of 21 dwelling units, and is forecast to generate approximately 210 trips per day, with 17 trips in the a.m. peak hour and 21 trips in the p.m. peak hour.



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REGIONAL PROJECT LOCATION

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EXHIBIT 1

As shown in the project site plan (Exhibit 2), the project will take access from Mission Road via an on-site private street that will be constructed to serve the 21 dwelling units. The Mission Road / Project Access Street intersection would be limited to right-turns entering and exiting the site. The project site plan shows that an access easement connects the project site to Morro Road, a private street along the eastern boundary of the project site. The access easement to Morro Road will be used for emergency access purposes only and would be gated at all times.

Project Study Area

At the direction of County of San Diego staff, the following intersections and roadway segments have been included in the analysis to determine the impact to the intersections and roadway segments in the vicinity of the project site:

Study Area Intersections:

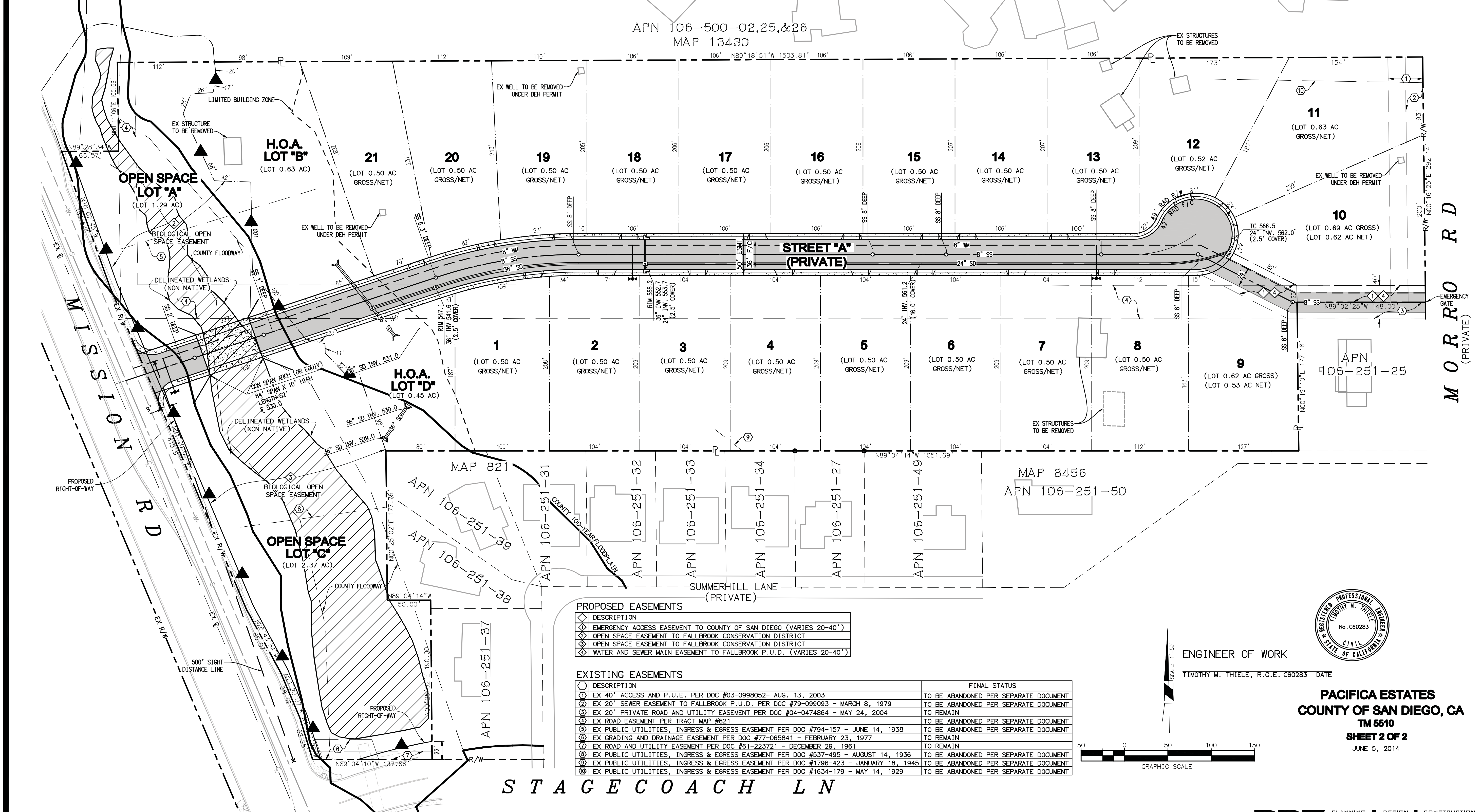
- Mission Road / Air Park Road (unsignalized);
- Mission Road / Sterling Bridge Road;
- Mission Road / Project Access Street (unsignalized);
- Mission Road / Stage Coach Lane; and
- Mission Road / Olive Hill Road.

Study Area Roadway Segments:

- Mission Road, Air Park Road to Sterling Bridge Road;
- Mission Road, from Sterling Bridge Road to Stage Coach Lane;
- Mission Road, from Stage Coach Lane to Olive Hill Road; and
- Mission Road, Olive Hill Road to Winterhaven Road.

The project study area is illustrated in Exhibit 3.

COUNTY OF SAN DIEGO TRACT TM 5510 - PACIFICA ESTATES
TENTATIVE MAP



PROPOSED EASEMENTS

◇	DESCRIPTION
1	EMERGENCY ACCESS EASEMENT TO COUNTY OF SAN DIEGO (VARIES 20-40')
2	OPEN SPACE EASEMENT TO FALLBROOK CONSERVATION DISTRICT
3	OPEN SPACE EASEMENT TO FALLBROOK CONSERVATION DISTRICT
4	WATER AND SEWER MAIN EASEMENT TO FALLBROOK P.U.D. (VARIES 20-40')

EXISTING EASEMENTS

⬡	DESCRIPTION	FINAL STATUS
1	EX 40' ACCESS AND P.U.E. PER DOC #03-0998052- AUG. 13, 2003	TO BE ABANDONED PER SEPARATE DOCUMENT
2	EX 20' SEWER EASEMENT TO FALLBROOK P.U.D. PER DOC #79-099093 - MARCH 8, 1979	TO BE ABANDONED PER SEPARATE DOCUMENT
3	EX 20' PRIVATE ROAD AND UTILITY EASEMENT PER DOC #04-0474864 - MAY 24, 2004	TO REMAIN
4	EX ROAD EASEMENT PER TRACT MAP #821	TO BE ABANDONED PER SEPARATE DOCUMENT
5	EX PUBLIC UTILITIES, INGRESS & EGRESS EASEMENT PER DOC #794-157 - JUNE 14, 1938	TO BE ABANDONED PER SEPARATE DOCUMENT
6	EX GRADING AND DRAINAGE EASEMENT PER DOC #77-065841 - FEBRUARY 23, 1977	TO REMAIN
7	EX ROAD AND UTILITY EASEMENT PER DOC #61-223721 - DECEMBER 29, 1961	TO REMAIN
8	EX PUBLIC UTILITIES, INGRESS & EGRESS EASEMENT PER DOC #537-495 - AUGUST 14, 1936	TO BE ABANDONED PER SEPARATE DOCUMENT
9	EX PUBLIC UTILITIES, INGRESS & EGRESS EASEMENT PER DOC #1796-423 - JANUARY 18, 1945	TO BE ABANDONED PER SEPARATE DOCUMENT
10	EX PUBLIC UTILITIES, INGRESS & EGRESS EASEMENT PER DOC #1634-179 - MAY 14, 1929	TO BE ABANDONED PER SEPARATE DOCUMENT

ENGINEER OF WORK

TIMOTHY M. THIELE, R.C.E. C60283 DATE

PACIFICA ESTATES
COUNTY OF SAN DIEGO, CA
TM 5510
SHEET 2 OF 2
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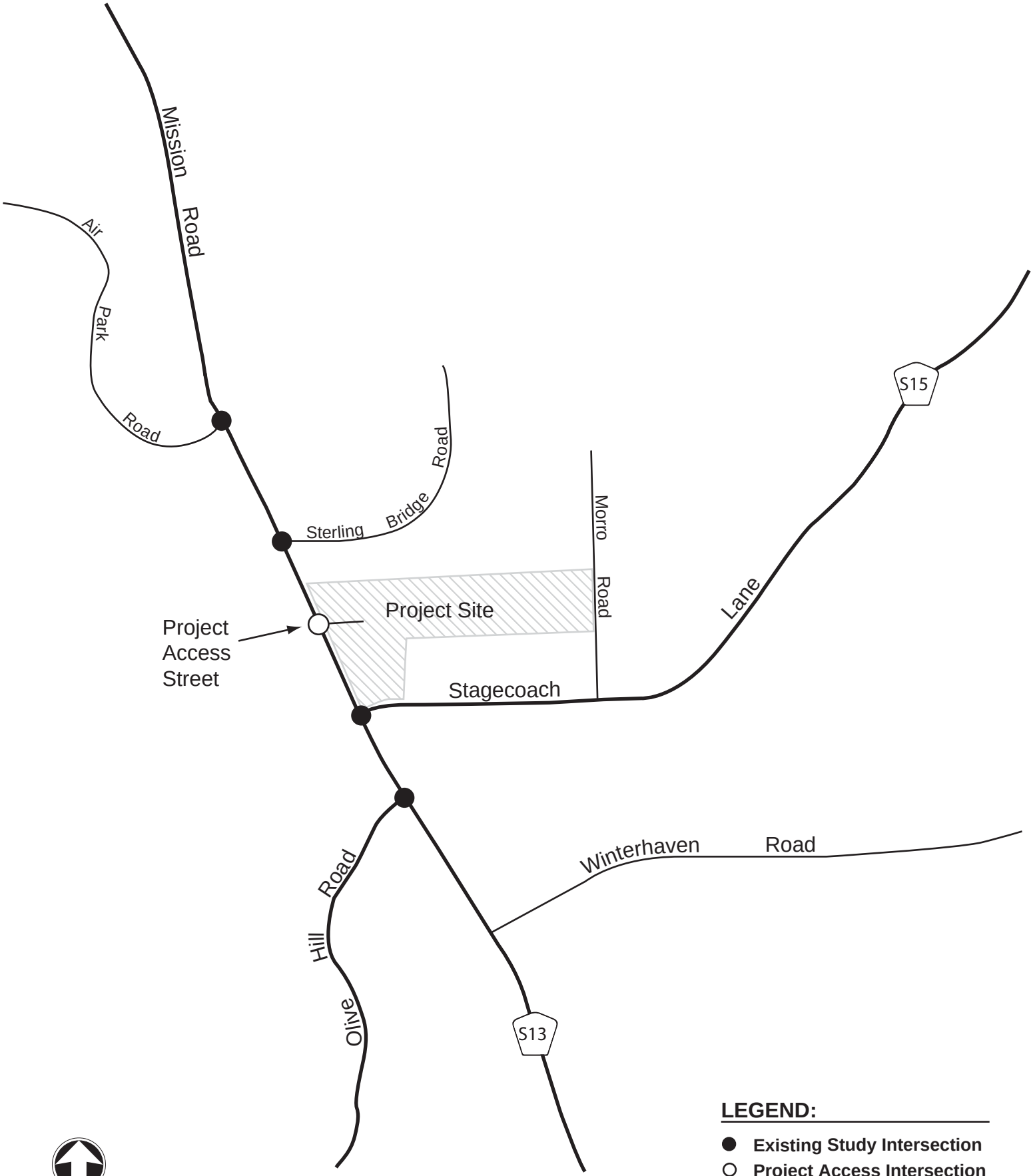


NOT TO SCALE

PROJECT STUDY AREA

JN 141257 FEBRUARY 2015

EXHIBIT 3

Analysis Methodology

As stated previously, the County has requested an issue specific traffic study to evaluate the cumulative impacts to the intersections and roadway segments in the immediate vicinity of the project site. To assess the cumulative impacts, this study analyzes the followings scenarios:

- Existing Conditions;
- Existing Plus Near-Term Cumulative Conditions; and
- Existing Plus Near-Term Cumulative Plus Project Conditions.

The 2000 Highway Capacity Manual (HCM) operation methodology for *Signalized Intersections and Unsignalized Intersections* was used to determine the operating Levels of Service (LOS) of the study intersections. The TRAFFIX software package was used to evaluate the study intersections using the HCM methodology. The HCM methodology describes the operation of an intersection using a range of levels of service (LOS) from LOS A (free-flow conditions) to LOS F (severely congested conditions), based on corresponding delay per vehicle thresholds for signalized and unsignalized intersections shown in Table 1. The County of San Diego's goal for acceptable service standards during peak hour intersection operations is LOS D or better.

Table 1
Level of Service (LOS) & Delay Ranges

LOS	Delay (seconds/vehicle)	
	Signalized Intersections	**Unsignalized Intersections**
A	$\leq$ 10.0	$\leq$ 10.0
B	> 10.0 to $\leq$ 20.0	> 10.0 to $\leq$ 15.0
C	> 20.0 to $\leq$ 35.0	> 15.0 to $\leq$ 25.0
D	> 35.0 to $\leq$ 55.0	> 25.0 to $\leq$ 35.0
E	> 55.0 to $\leq$ 80.0	> 35.0 to $\leq$ 50.0
F	> 80.0	> 50.0

Source: 2000 Highway Capacity Manual.

Table 2 below shows the roadway segment classifications and daily level of service thresholds based on the County of San Diego General Plan Mobility Element (adopted August 2011). The County of San Diego General Plan Mobility Element roadway classifications and level of service thresholds for roadway segments (page 9 from the County of San Diego 2012 *Public Road Standards*) is provided in Appendix A.

Table 2
Level of Service Thresholds for Roadway Segments
County of San Diego General Plan Mobility Element

Classification / Lanes		Level of Service				
		A	B	C	D	E
Expressway / 6		36,000	54,000	70,000	86,000	108,000
Prime Arterial / 6		22,200	37,000	44,600	50,000	57,000
Major Road / 4	w/ Raised Median (4.1A)	14,800	24,700	29,600	33,400	37,000
	w/ Intermittent Turn Lanes (4.1B)	13,700	22,800	27,400	30,800	34,200
Boulevard / 4	w/ Raised Median (4.2A)	18,000	21,000	24,000	27,000	30,000
	w/ Intermittent Turn Lanes (4.2B)	16,600	19,600	22,500	25,000	28,000
Community Collector / 2	w/ Raised Median (2.1A)	10,000	11,700	13,400	15,000	19,000
	w/ Continuous Left Turn Lane (2.1B)	3,000	6,000	9,500	13,500	19,000
	w/ Intermittent Turn Lanes (2.1C)	3,000	6,000	9,500	13,500	19,000
	w/ Passing Lane (2.1D)	3,000	6,000	9,500	13,500	19,000
	No Median (2.1E)	1,900	4,100	7,100	10,900	16,200
Light Collector / 2	w/ Raised Median (2.2A)	3,000	6,000	9,500	13,500	19,000
	w/ Continuous Left Turn Lane (2.2B)	3,000	6,000	9,500	13,500	19,000
	w/ Intermittent Turn Lanes (2.2C)	3,000	6,000	9,500	13,500	19,000
	w/ Passing Lane (2.2D)	3,000	6,000	9,500	13,500	19,000
	No Median (2.2E)	1,900	4,100	7,100	10,900	16,200
	Reduced Shoulder (2.2F)	5,800	6,800	7,800	8,700	9,700
Minor Collector / 2	w/ Raised Median (2.3A)	3,000	6,000	7,000	8,000	9,000
	w/ Intermittent Turn Lanes (2.3B)	3,000	6,000	7,000	8,000	9,000
	No Median (2.3C)	1,900	4,100	6,000	7,000	8,000

Source: *County of San Diego General Plan Update Mobility Element*; County of San Diego 2012 *Public Road Standards*

The County of San Diego's goal for acceptable service standards during daily periods is LOS D or better for all roadway segments. However, the County of San Diego General Plan Update Mobility Element includes certain criteria in which LOS E and F conditions are accepted for some roadway classifications (Goal M-2, Policy M-2.1). The criteria for accepting LOS E and F roadway classifications are as follows:

- Marginal Deficiencies: This situation would apply when only a short segment of a road is forecast to operate at LOS E or F, or when the forecasted traffic volumes are only slightly higher than the LOS D threshold. Potential improvement options for marginal deficiencies would be to apply operational improvements on a short segment or at key intersections along the segment.

- Town Center Impacts: This situation would apply when the right-of-way required to add travel lanes would adversely impact town center land development patterns and/or impede bicycle and pedestrian circulation. Potential improvement options would be to establish alternate parallel routes to distribute traffic volumes, promoting the use of alternate modes of travel in town centers, or to apply operational improvements at key intersections.

- Regional Connectivity: This situation would apply when congestion on State freeways or highways causes regional travelers to use County roads, resulting in deficiencies on the County road network. Rather than widening County roads to accommodate the regional traffic, improvements to the regional transportation network should be identified.

- Impacts to Environmental and Cultural Resources: This situation would occur when adding travel lanes would adversely impact environmental and cultural resources. Potential improvement options would be to provide passing lanes in areas that are without environmental or cultural restraints.

Table M-4 of the County of San Diego General Plan Update Mobility Element identifies roadways where roadway classifications that result in LOS E or F are accepted based on the criteria listed above. The study area segments of Mission Road are not included in Table M-4 of the County's General Plan Update Mobility Element; therefore, daily operations of LOS D or better are considered acceptable for the segments of Mission Road within the project study area.

County of San Diego Project Significance Criteria

Table 3 summarizes the County of San Diego's project traffic significance standards for roadway segments and intersections, as defined in the *Guidelines for Determining Significance and Report Format and Content Requirements – Transportation and Traffic* (August 2011). The significance criteria shown in Table 3 are used in this traffic impact analysis to determine the proposed project's traffic impact on the study intersections and roadway segments. Excerpts from the August 2011 *Guidelines for Determining Significance and Report Format and Content Requirements – Transportation and Traffic* (Table 1, page 13, and Table 2, page 15) summarizing the County's significance criteria are provided in Appendix B.

Table 3
County of San Diego Project Traffic Significance Criteria

Roadway Segments			
Level of Service	**2-Lane Road**	**4-Lane Road**	**6-Lane Road**
LOS E	200 ADT	400 ADT	600 ADT
LOS F	100 ADT	200 ADT	300 ADT
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	Delay of 1 second, or 5 peak hour trips or less on critical movement.	5 or less peak hour trips on a critical movement.	

Source: County of San Diego *Guidelines for Determining Significance and Report Format and Content Requirements – Transportation and Traffic* (August 2011).

The County of San Diego identifies traffic impacts as either direct impacts or cumulative impacts. A *direct impact* is caused individually by the increase in traffic generated by a proposed project that results in one of the following:

1. The addition of project-generated traffic results in a change from an acceptable (LOS D or better) to a deficient (LOS E or worse) level of service at an intersection or along a roadway segment; OR

2. At a location operating at a deficient level of service (LOS E or worse) without the project, the addition of project traffic results in an increase in delay at an intersection or increase in ADT on a roadway segment that exceeds the project significance thresholds shown in Table 3.

A project that results in a direct impact is fully responsible for mitigating the impact to restore the deficient intersection or roadway segment to an acceptable level of service.

A *cumulative impact* is caused by the increase in traffic generated by a proposed project and all other potential developments that result in a deficient level of service. On roadway segments or at intersections operating at a deficient LOS without a proposed project, any incremental increase in traffic is considered to be a cumulative impact. Cumulative impacts are typically mitigated through contributions to the County Traffic Impact Fee (TIF) program. Even if no cumulative impacts are identified within the project study area, contribution to the TIF program is typically required to mitigate any potential regional cumulative impacts outside of the immediate study area.

EXISTING CONDITIONS

Existing Roadway Circulation System

A detailed field review was conducted to determine the existing intersection geometry, traffic control devices, signal phasing and other factors, which may affect intersection or roadway segment capacity. The existing intersection geometry is illustrated in Exhibit 4. The following is a detailed description of roadways in the study area:

Mission Road is a two to four-lane roadway generally oriented in a north-south direction. Mission Road extends north from SR-76 into the community of Fallbrook before extending east and terminating at Interstate 15. Mission Road is currently built with four lanes with a raised median through the project study area.

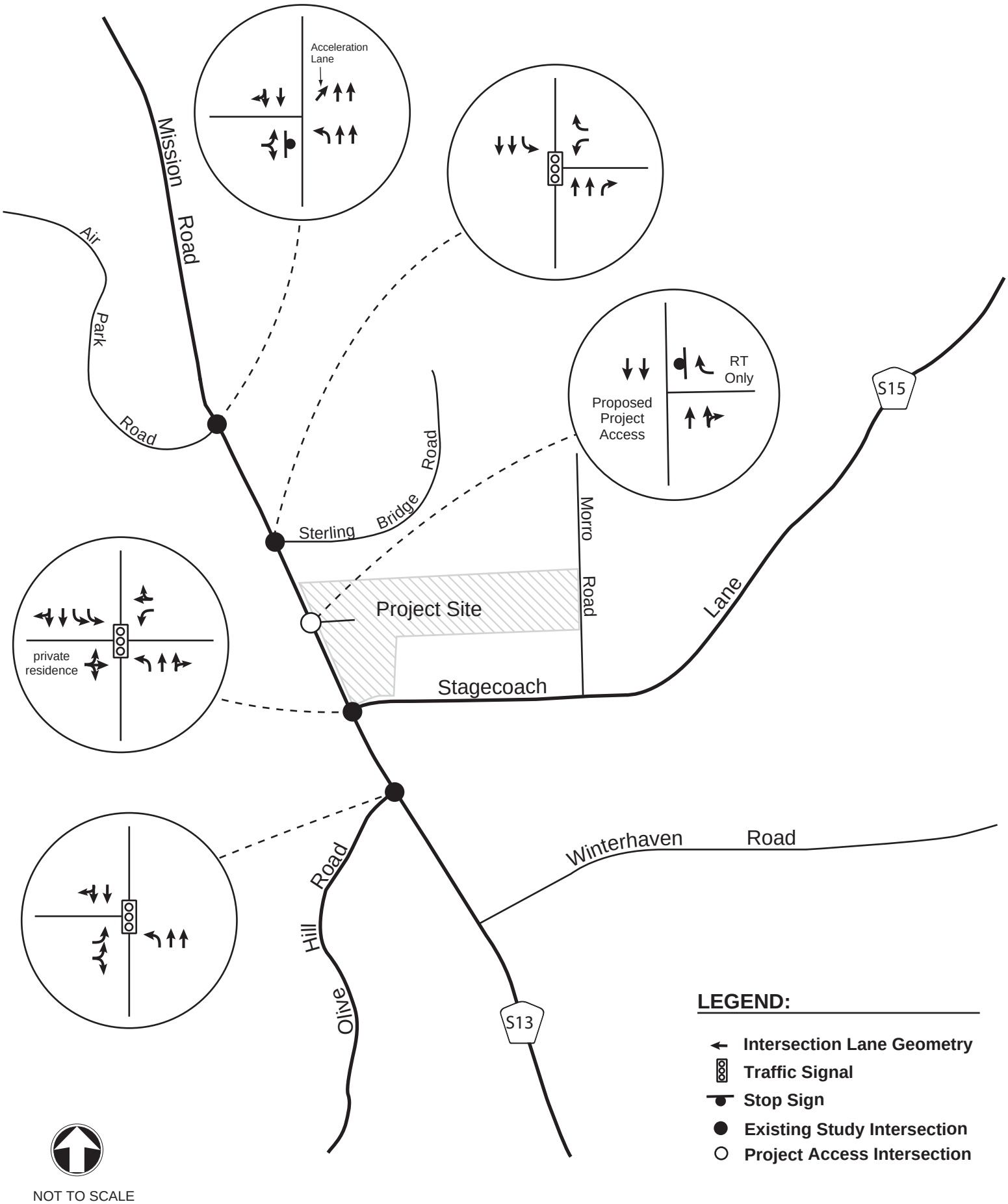
Mission Road is classified in the County of San Diego General Plan Update Mobility Element as a four-lane Major Road with Raised Median (4.1A) from Pepper Tree Lane to just south of Winterhaven Road, which includes the roadway segments of Mission Road included in this analysis.

Table 2A of the County's *Public Road Standards* (March 2012) shows the following design standards for a Major Road with Raised Median (4.1A): a curb-to-curb width of 78 feet and a right-of-way width of 98 feet, which includes a 14-foot raised median with two 12-foot lanes, an 8-foot shoulder, and a 10-foot parkway on each side of the roadway.

Mission Road is currently built with a curb-to-curb width that varies from 81 feet near the northern project boundary to 85 feet near the southern project boundary. Northbound Mission Road along the project frontage is built with two 12-foot lanes, a 6-foot shoulder, and a 5-foot sidewalk. The center raised median varies from 20 feet near the northern project boundary to 25 feet near the southern project boundary. Field survey measurements have shown that the built curb-to-curb width of Mission Road along the project frontage exceeds the required curb-to-curb width for a 4.1A Major Road.

Based on the existing field survey measurements and the design standards for a 4.1A Major Road as stated in the County's Public Road Standards, additional right-of-way width would not be needed for Mission Road. However, the project would provide an easement of Issue of Dedication (IOD) for an 8-foot shoulder and a 10-foot parkway along the project frontage on northbound Mission Road if requested to do so by the County.

Stage Coach Lane is a two-lane roadway generally oriented in a north-south direction. Stage Coach Lane extends northeast from Mission Road and transitions to a north-south orientation through the eastern portion of the community of Fallbrook. Stage Coach Lane is classified in the County of San Diego General Plan Update Mobility Element as a two-lane Light Collector with Intermittent Turn Lanes (2.2C).



EXISTING INTERSECTION GEOMETRY

Olive Hill Road is a two-lane roadway generally oriented in a north-south direction. Olive Hill Road extends north from SR-76 through the community of Bonsall and terminates at Mission Road in the southern portion of the community of Fallbrook. Olive Hill Road is classified in the County of San Diego General Plan Update Mobility Element as a two-lane Light Collector with Reduced Shoulder (2.2F).

Sterling Bridge Road is a private two-lane roadway that extends northeast from Mission Road to provide exclusive access to the gated Peppertree residential development. Sterling Bridge Road is constructed as a local street, and is not classified in the County of San Diego General Plan Update Mobility Element.

Air Park Road is a two-lane roadway that extends northwest from Mission Road to provide access to the Fallbrook Air Park. Air Park Road is constructed as a local street, and is not classified in the County of San Diego General Plan Update Mobility Element.

Morro Road is a private two-lane roadway that extends north from Stage Coach Lane to provide access to eleven single-family dwelling units. Morro Road is constructed as a local street, and is not classified in the County of San Diego General Plan Update Mobility Element.

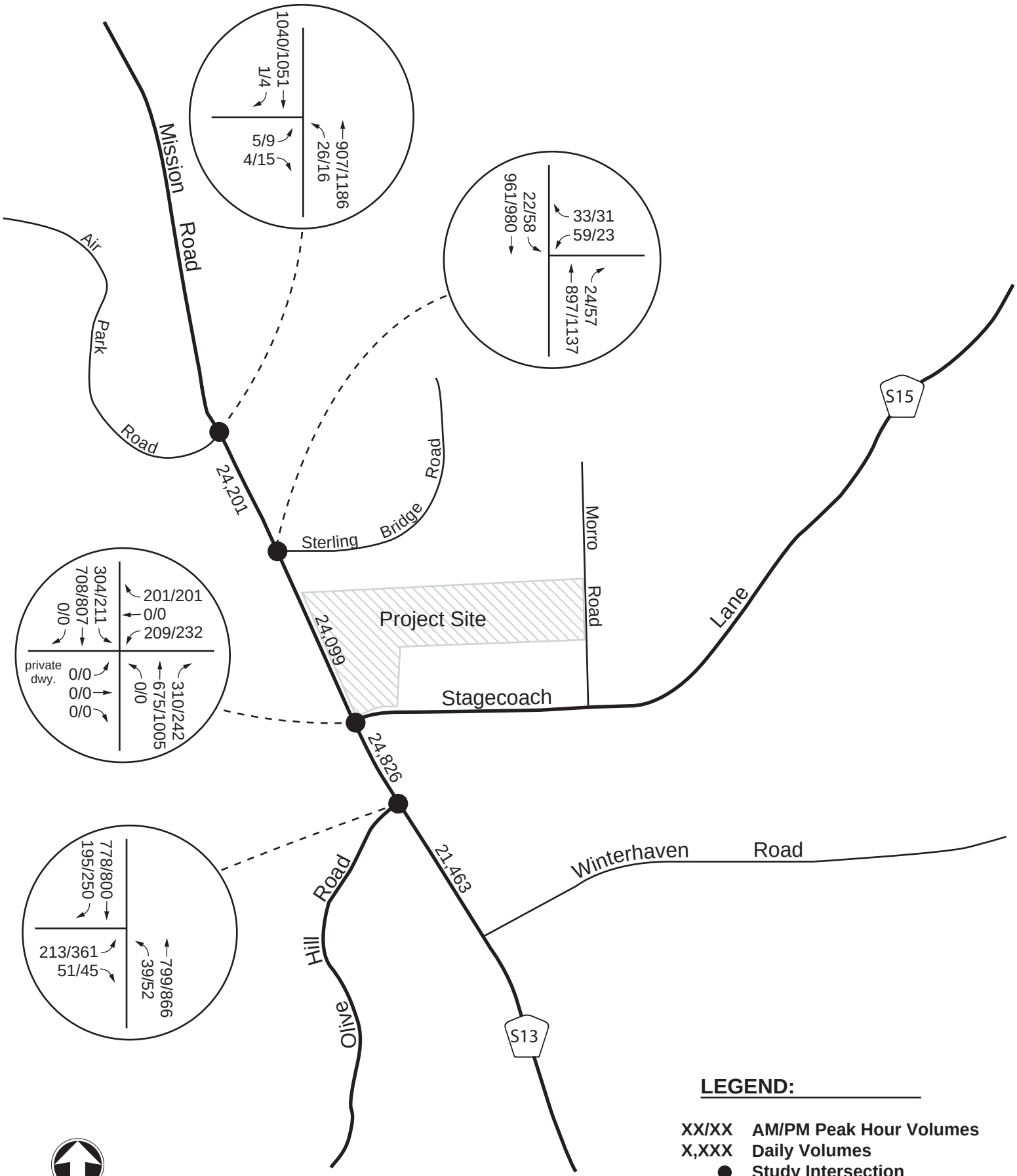
Existing Levels of Service

To determine the existing traffic operating conditions, daily and peak hour traffic counts were collected in October 2007 during the a.m. (7:00 to 9:00 a.m.) and p.m. (4:00 to 6:00 p.m.) peak periods. Traffic count data from July 2010 within the study area showed lower daily and peak hour traffic volumes than in 2007. Therefore, the 2007 traffic counts were utilized in the previous 2011 Issue Specific Traffic Impact Study to maintain a conservative analysis.

Based on the trends in the historical traffic data available within the project study area, it is RBF's professional opinion that traffic volumes within the Fallbrook area have been relatively static over the last 5-10 years due to limited development. Therefore, the traffic counts that were collected in 2007 and in 2010 are still considered applicable to this analysis.

Exhibit 5 shows existing daily and peak hour volumes at each of the study roadway segments and intersections. Traffic count data is contained in Appendix C.

Table 4 summarizes the existing a.m. and p.m. peak hour LOS of the study intersections based on the existing peak hour intersection volumes and existing intersection geometry. Detailed HCM calculation sheets are contained in Appendix D.



EXISTING DAILY AND PEAK HOUR VOLUMES

JN 141257 FEBRUARY 2015

EXHIBIT 5

Table 4
Existing Peak Hour Intersection LOS

Study Intersection		AM Peak Hour Delay [1] – LOS	PM Peak Hour Delay [1] – LOS
Mission Road / Air Park Road [2]	SB [3]	17.7 – C	16.2 – C
	NB [4]	12.3 – B	13.6 – B
Mission Road / Sterling Bridge Road		6.1 – A	5.6 – A
Mission Road / Stage Coach Lane		20.2 – C	19.4 – B
Mission Road / Olive Hill Road		11.9 – B	14.8 – B

[1] Seconds of delay.
[2] Unsignalized intersection.
[3] LOS for eastbound and southbound traffic using HCM calculation.
[4] LOS for eastbound and northbound traffic using HCM calculation.

Special note regarding Mission Road / Air Park Road: A northbound acceleration lane is currently provided in the center median on Mission Road for traffic making a left-turn from eastbound Air Park Road to northbound Mission Road. This acceleration lane provides refuge for left-turning vehicles before merging into northbound traffic on Mission Road. In actuality, there would be two separate instances of delay for the eastbound left-turn movement: 1.) from the eastbound stop bar line to the northbound acceleration lane, and 2.) from the northbound acceleration lane to merging into the northbound through lanes. Therefore, the HCM calculations for Mission Road / Air Park Road were divided into two parts based on delay for the eastbound and southbound traffic, and delay for the eastbound and northbound traffic.

As shown in Table 4, the existing study intersections are currently operating at acceptable levels of service (LOS D or better) during the a.m. and p.m. peak hours.

Roadway segment levels of service were calculated based on the capacity of the roadway determined based on classification and ADT volumes. Table 5 presents the results of the existing conditions roadway segment level of service analysis.

Table 5
Existing Daily Roadway Segment LOS

Street	Location	Class / Lanes	LOS E Capacity	Existing ADT	V/C	LOS
Mission Road	Air Park to Sterling Bridge	Major Road (4.1A) / 4	37,000	24,201	0.654	B
	Sterling Bridge to Stage Coach	Major Road (4.1A) / 4	37,000	24,099	0.651	B
	Stage Coach to Olive Hill	Major Road (4.1A) / 4	37,000	24,826	0.671	C
	Olive Hill to Winterhaven	Major Road (4.1A) / 4	37,000	21,463	0.580	B

As shown in Table 5, all study roadway segments are currently operating at acceptable levels of service (LOS D or better).

Existing Parking and Transit Conditions

Currently on-street parking is not provided along Mission Road in the vicinity of the project site. A bus transit stop is currently located on Mission Road within walking distance of the project site, approximately 400 feet south of the project access point. The existing transit stop serves NCTD Breeze Route 306, with headways every 30 minutes from 5:00 a.m. to 10:00 a.m. (both directions) and from 4:30 p.m. to 6:30 p.m. (northbound only) Monday through Friday. Route 306 provides 60-minute headways from 10:00 a.m. to 4:30 p.m. and from 6:30 p.m. to 10:00 p.m. Monday through Friday. Route 306 provides 60-minute headways from 5:00 a.m. to 9:00 p.m. on Saturday, Sunday, and holidays.

PROJECT IMPACT ANALYSIS

The proposed Pacifica Estates project consists of 21 single-family dwelling units, and is located along Mission Road between Sterling Bridge Road and Stage Coach Lane in the community of Fallbrook. The proposed land use is consistent with the General Plan land use for the project site. The project will take access from a private street located along Mission Road.

Project Trip Generation

To determine the trips forecast to be generated by the proposed project, *April 2002 SANDAG Trip Generation* rates were utilized in accordance with the County of San Diego *Guidelines for Determining Significance and Report Format and Content Requirements – Transportation and Traffic* (August 2011). Table 6 summarizes the project trip generation. As summarized in Table 6, the proposed project is forecast to generate approximately 210 trips per day, which includes approximately 17 a.m. peak hour trips and approximately 21 p.m. peak hour trips.

Table 6
Proposed Project Trip Generation

Trip Generation Rates

Land Use	Units	Daily Trip Rate	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Single-Family Detached	DU	10	8%	30%	70%	10%	70%	30%

Daily and Peak Hour Trips

Land Use	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Single-Family Detached	21 DU	210	17	5	12	21	15	6
Total		**210**	**17**	**5**	**12**	**21**	**15**	**6**

Source: SANDAG (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (April 2002).
Note: DU = Dwelling Unit.

Project Trip Distribution

The project trip distribution was manually developed, and is based on knowledge of the existing and future traffic patterns in the project study area. Exhibit 6 shows the forecast project trip distribution. Since the project access intersection will be limited to right-turns only entering and exiting the project site, the distribution percentages include u-turns at intersections to the north and south of the project site (described in the Site Access section).

Project Trip Assignment

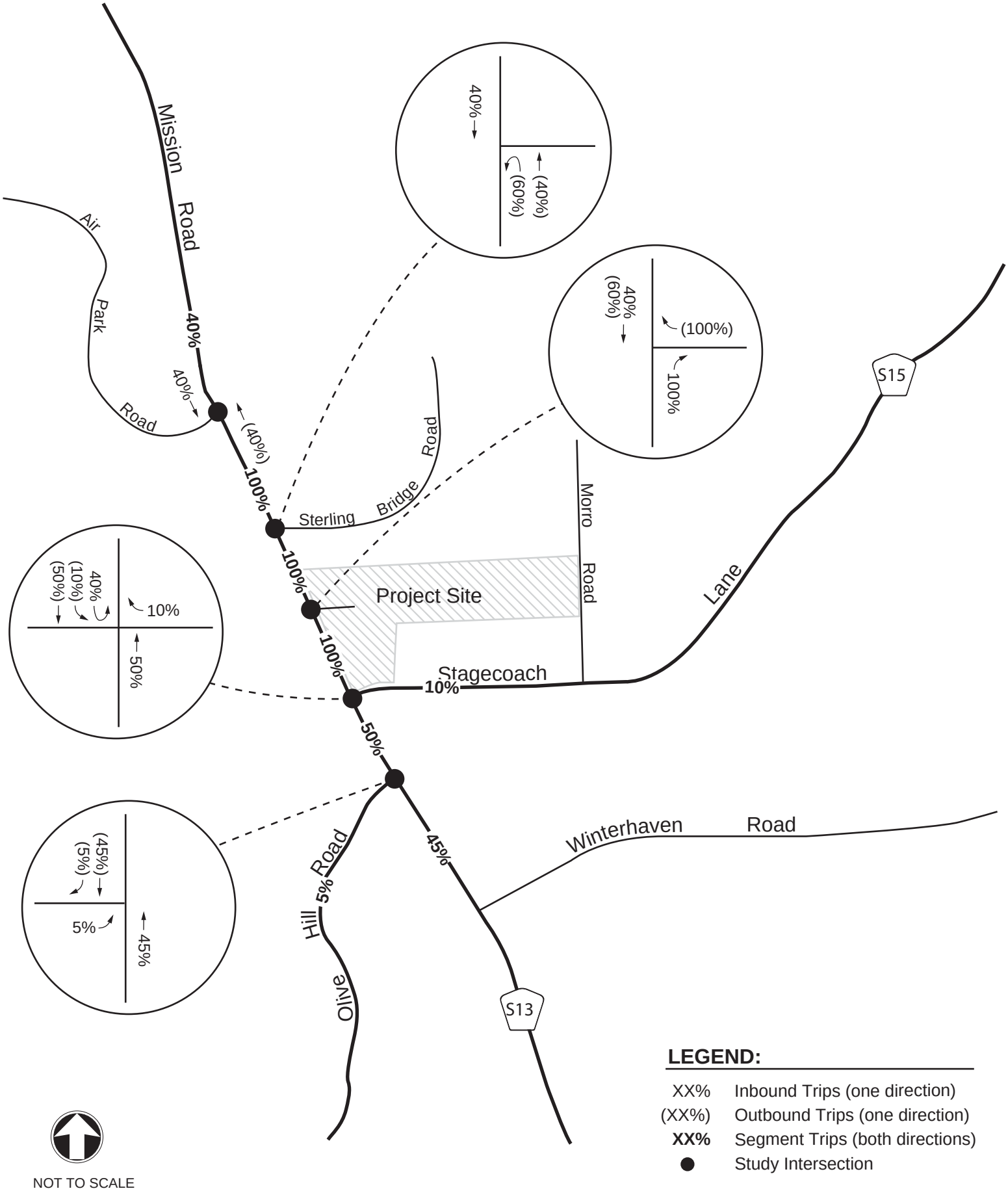
Utilizing the project trip distribution shown in Exhibit 6, the forecast project-generated trips were assigned to the roadway network. Exhibit 7 illustrates the forecast assignment of project-generated daily and peak hour volumes at the study roadway segments and intersections.

Approved/Pending Cumulative Projects

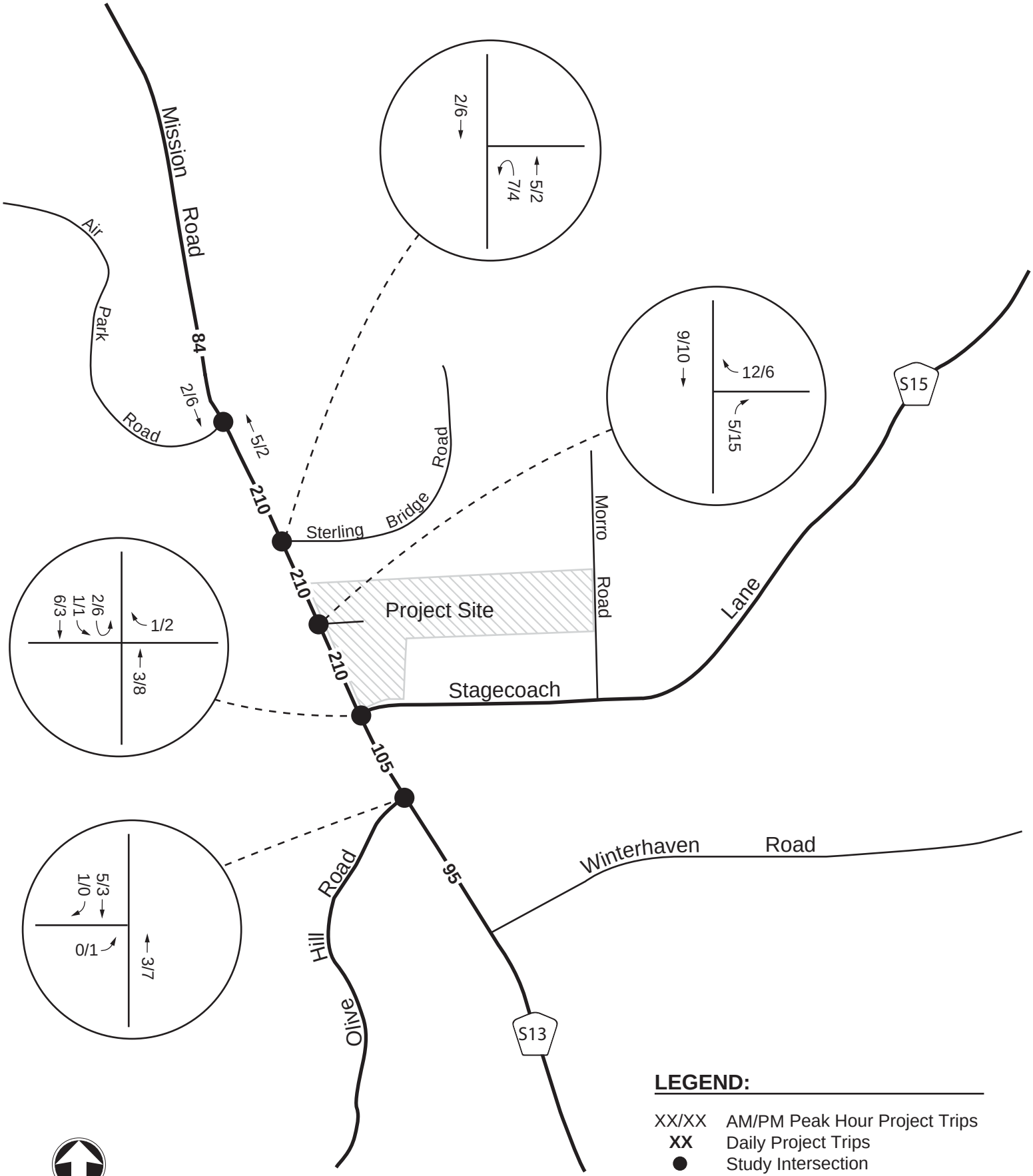
To determine the cumulative impacts of the planned developments on the roadway system associated with County approved or pending projects within the study area, forecast project traffic associated with 24 approved or pending projects in the Fallbrook/Bonsall/Pala area was added to the existing conditions traffic volumes. This formed the base near-term cumulative conditions upon which traffic generated by the proposed project was added. The approved/pending project forecast have been prepared in close coordination with the County of San Diego

The daily and peak hour trip generation for the approved/pending cumulative projects is shown in Table 7. Exhibit 8 shows the locations of the approved/pending cumulative projects. Exhibit 9 shows the daily and peak hour approved/pending cumulative project trips.

As presented in Table 7, the approved/pending cumulative projects are forecast to generate approximately 60,472 trips per day, which includes approximately 4,370 a.m. peak hour trips and approximately 5,939 p.m. peak hour trips.

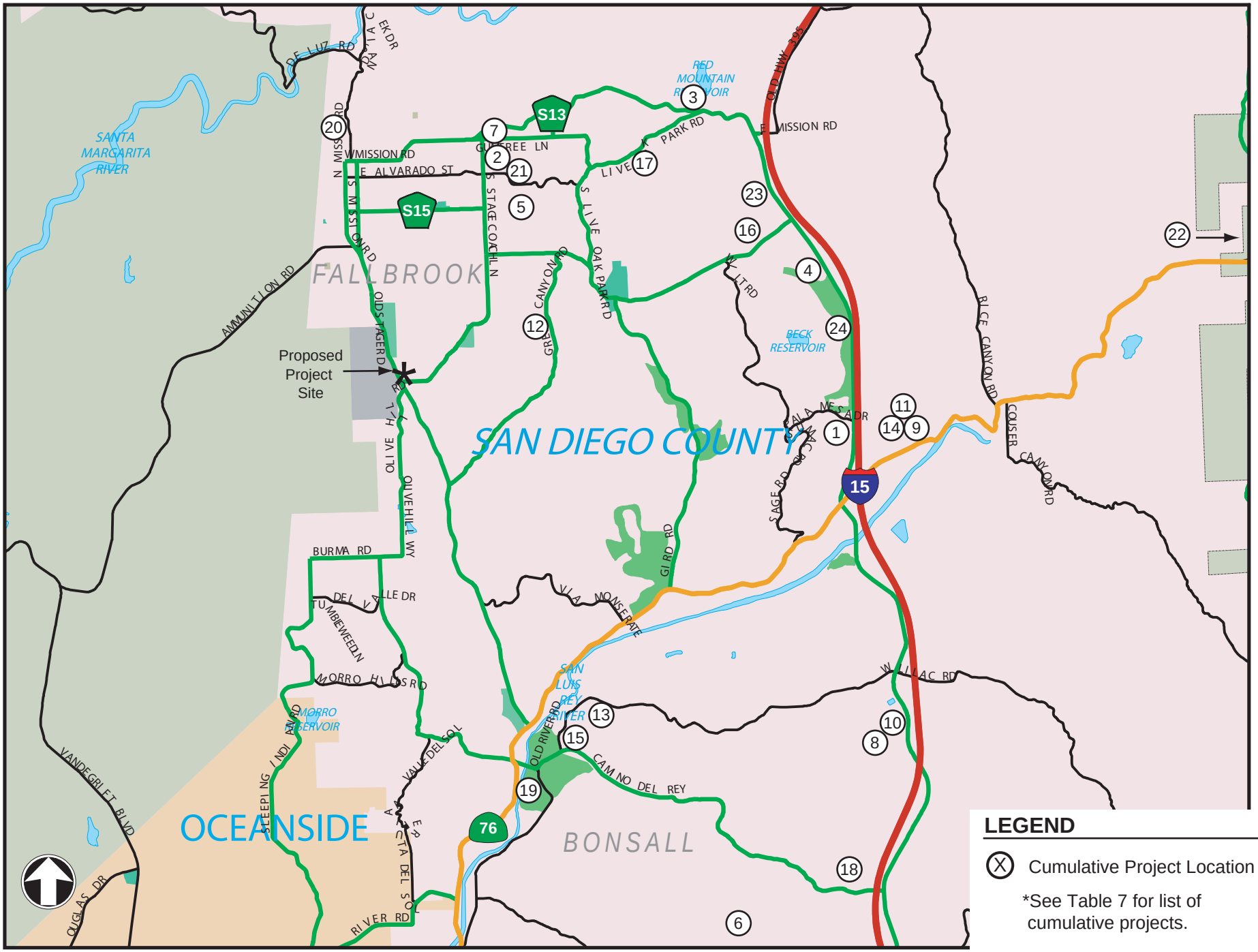


PROJECT TRIP DISTRIBUTION



PROJECT TRIP ASSIGNMENT

EXHIBIT 7



APPROVED/PENDING CUMULATIVE PROJECTS LOCATION MAP

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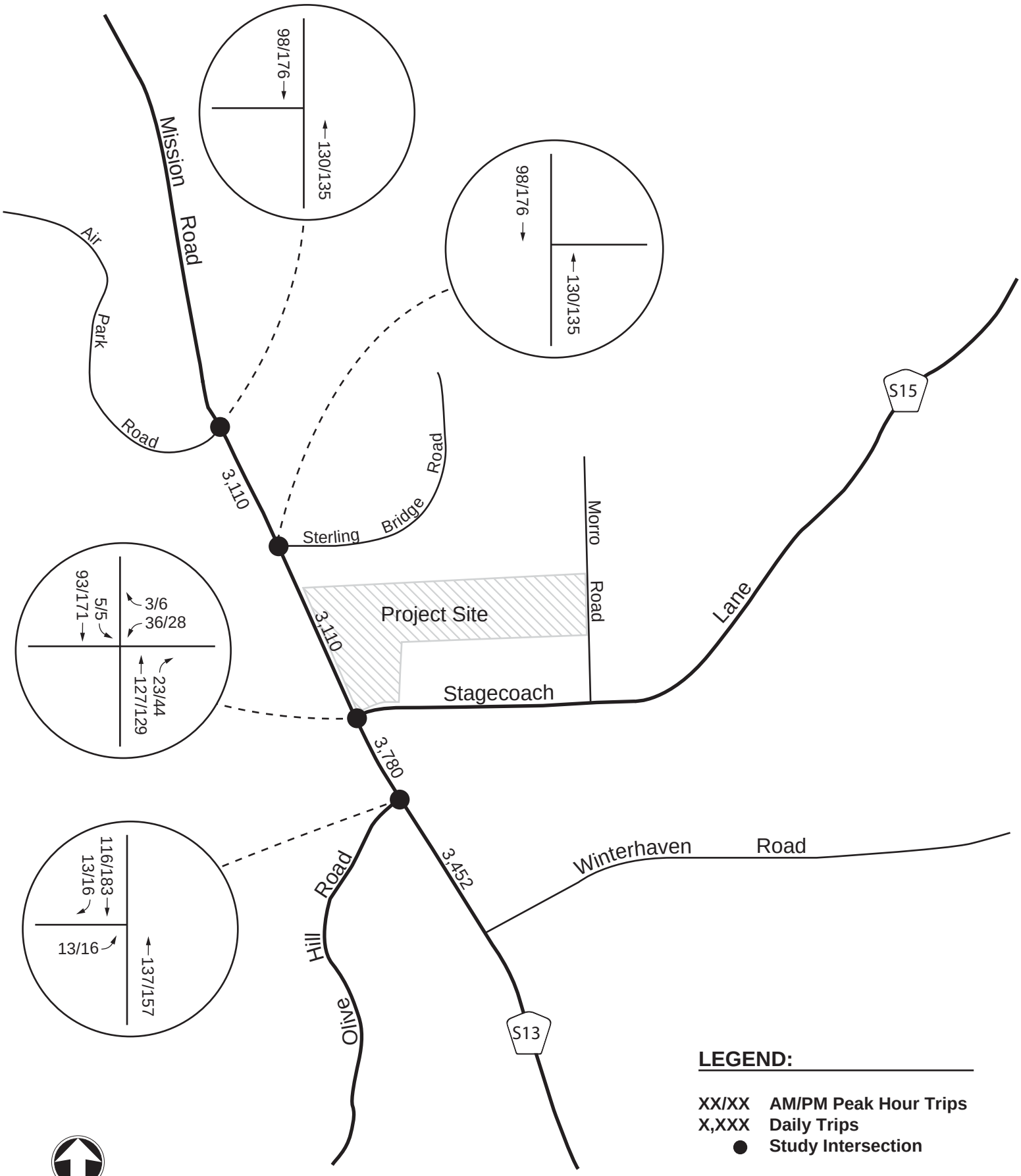
EXHIBIT 8



NOT TO SCALE

APPROVED/PENDING CUMULATIVE PROJECTS DAILY AND PEAK HOUR TRIPS

Table 7
Approved/Pending Cumulative Projects Trip Generation

Project Number		Project Name	Land Use	Intensity	Unit	Daily Trips	AM Trips	AM In	AM Out	PM Trips	PM In	PM Out
1.	TM 5187	NA	SFDU	126	DU	1,260	101	30	71	126	88	38
2.	TM 5195	NA	SFDU	101	DU	1,010	81	24	57	101	71	30
3.	TM 5227	NA	SFDU	4	DU	40	3	1	2	4	3	1
4.	TM 5231	NA	condos	39	DU	390	31	9	22	39	27	12
5.	TM 5243	NA	SFDU	8	DU	80	6	2	4	8	6	2
6.	TM 5264	NA	SFDU	9	DU	90	7	2	5	9	6	3
7.	TM 5268	The Arbors	SFDU	17	DU	170	14	4	10	17	12	5
8.	TM 5276	NA	SFDU	8	DU	80	6	2	4	8	6	2
9.	TM 5338	Campus Park	SFDU	529	DU	5,290	423	127	296	529	370	159
			condos	472	DU	3,776	302	60	242	340	238	102
			Total Project Trips			*9,066*	*725*	*187*	*538*	*869*	*608*	*261*
10.	TM 5346	NA	SFDU	9	DU	90	7	2	5	9	6	3
11.	TM 5354	The Meadowood [(1)]	SFDU	394	DU	3,940	315	95	221	394	276	118
			condos	756	DU	6,048	484	97	387	544	381	163
			Total Project Trips			*9,988*	*799*	*191*	*608*	*938*	*657*	*281*
12.	TM 5364	NA	SFDU	10	DU	100	8	2	6	10	7	3
13.	TM 5387	Las Casitas	SFDU	130	DU	1,300	104	31	73	130	91	39
14.	TM 5424	Campus Park West	SFDU	109	DU	1,090	87	26	61	109	76	33
			condos	457	DU	3,656	292	58	234	329	230	99
			retail	22	acres	15,400	616	370	246	1,540	770	770
			office	10	acres	3,000	420	378	42	390	78	312
			Total Project Trips			*23,146*	*1,416*	*832*	*583*	*2,368*	*1,155*	*1,213*
15.	TM 5427	NA	condos	76	DU	608	49	10	39	55	38	16
16.	TM 5449	Fallbrook Oaks	SFDU	19	DU	190	15	5	11	19	13	6
17.	TM 5469	Ridge Creek	SFDU	14	DU	140	11	3	8	14	10	4
18.	TM 5492	NA	SFDU	22	DU	220	18	5	12	22	15	7
19.	TM 5498	NA	SFDU	116	DU	1,160	93	28	65	116	81	35
20.	TM 5502	NA	SFDU	13	DU	130	10	3	7	13	9	4
21.	TM 5503	NA	SFDU	10	DU	100	8	2	6	10	7	3
22.	TM 5508	Warner Ranch	SFDU	732	DU	7,320	586	176	410	732	512	220
			condos	168	DU	1,344	108	22	86	121	85	36
			Total Project Trips			*8,664*	*693*	*197*	*496*	*853*	*597*	*256*
23.	TM 5532	NA	SFDU	11	DU	110	9	3	6	11	8	3
24.	TM 5534	Pala Mesa Resort Expansion	SFDU	10	DU	100	8	2	6	10	7	3
			condos	148	DU	1,184	95	19	76	107	75	32
			timeshare units	78	DU	624	31	19	12	44	17	26
			resort hotel	54	rooms	432	22	13	9	30	12	18
			Total Project Trips			*2,340*	*156*	*53*	*102*	*190*	*111*	*79*
Total Cumulative Project Trips						**60,472**	**4,370**	**1,631**	**2,739**	**5,939**	**3,632**	**2,307**

Source: County of San Diego Department of Planning and Development Services.

[(1)] This project also includes a 600-student elementary school to serve the residential component of the project. The school would not generate new traffic outside of the immediate neighborhood surrounding the school; therefore, the traffic generated by the elementary school was not included in the analysis. The proposed Pacifica Estates project is located approximately 10 miles from the Meadowood project.

Existing Plus Near-Term Cumulative Levels of Service

To determine the existing plus near-term cumulative operating conditions at the study intersections, the approved/pending cumulative project trips were added to the existing conditions volumes. A 10% growth factor was also applied to all existing traffic volumes to account for potential future projects not listed in Table 7. Exhibit 10 shows existing plus near-term cumulative daily and peak hour volumes.

Table 8 summarizes the existing plus near-term cumulative a.m. and p.m. peak hour intersection LOS. Detailed HCM calculation sheets are contained in Appendix E.

Table 8
Existing Plus Near-Term Cumulative
Peak Hour Intersection LOS

Intersection		Existing Conditions		Existing Plus Near-Term Cumulative	
		AM Peak Hour Delay [1] – LOS	PM Peak Hour Delay [1] – LOS	AM Peak Hour Delay [1] – LOS	PM Peak Hour Delay [1] – LOS
Mission Road / Air Park Road [2]	SB [3]	17.7 – C	16.2 – C	22.0 – C	21.4 – C
	NB [4]	12.3 – B	13.6 – B	13.6 – B	15.5 – C
Mission Road / Sterling Bridge Road		6.1 – A	5.6 – A	6.1 – A	5.7 – A
Mission Road / Stage Coach Lane		20.2 – C	19.4 – B	23.1 – C	23.7 – C
Mission Road / Olive Hill Road		11.9 – B	14.8 – B	12.1 – B	15.5 – B

[1] Seconds of delay.
[2] Unsignalized intersection.
[3] LOS for eastbound and southbound traffic using HCM calculation.
[4] LOS for eastbound and northbound traffic using HCM calculation.

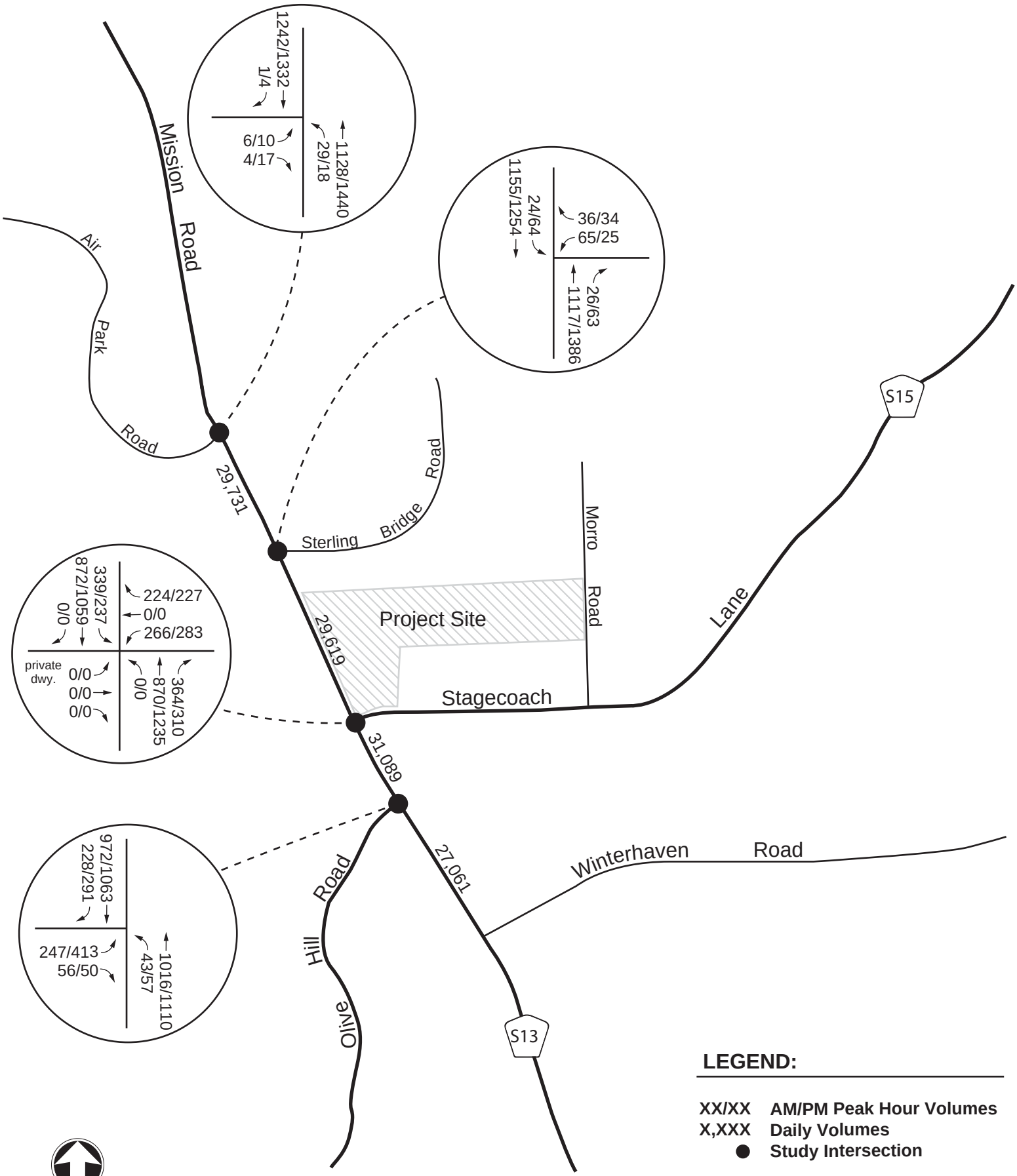
As shown in Table 8, all study intersections are forecast to operate at acceptable levels of service (LOS D or better) during the a.m. and p.m. peak hours under existing plus near-term cumulative conditions.

Roadway segment levels of service were calculated based on the capacity of the roadways determined based on classification and ADT volumes. Table 9 presents the results of the existing plus near-term cumulative roadway segment level of service analysis.

Table 9
Existing Plus Near-Term Cumulative
Daily Roadway Segment LOS

Street	Location	Class / Lanes	LOS E Capacity	Existing Conditions			Existing Plus Near-Term Cumulative		
				ADT	V/C	LOS	ADT	V/C	LOS
Mission Road	Air Park to Sterling Bridge	Major Road (4.1A) / 4	37,000	24,201	0.654	B	29,731	0.804	D
	Sterling Bridge to Stage Coach	Major Road (4.1A) / 4	37,000	24,099	0.651	B	29,619	0.801	D
	Stage Coach to Olive Hill	Major Road (4.1A) / 4	37,000	24,826	0.671	C	31,089	0.840	D
	Olive Hill to Winterhaven	Major Road (4.1A) / 4	37,000	21,463	0.580	B	27,061	0.731	C

As shown in Table 9, all study roadway segments are forecast to operate at acceptable levels of service (LOS D or better) under existing plus near-term cumulative conditions.



EXISTING PLUS NEAR-TERM CUMULATIVE DAILY AND PEAK HOUR VOLUMES

Existing Plus Near-Term Cumulative Plus Project Levels of Service

To determine the existing plus near-term cumulative plus project operating conditions at the study intersections, the forecast project-generated trips were added to the existing plus existing plus near-term cumulative volumes. Exhibit 11 shows existing plus existing plus near-term cumulative plus project daily and peak hour volumes.

Table 10 summarizes the existing plus existing plus near-term cumulative plus project a.m. and p.m. peak hour intersection conditions. Detailed HCM calculation sheets are contained in Appendix F.

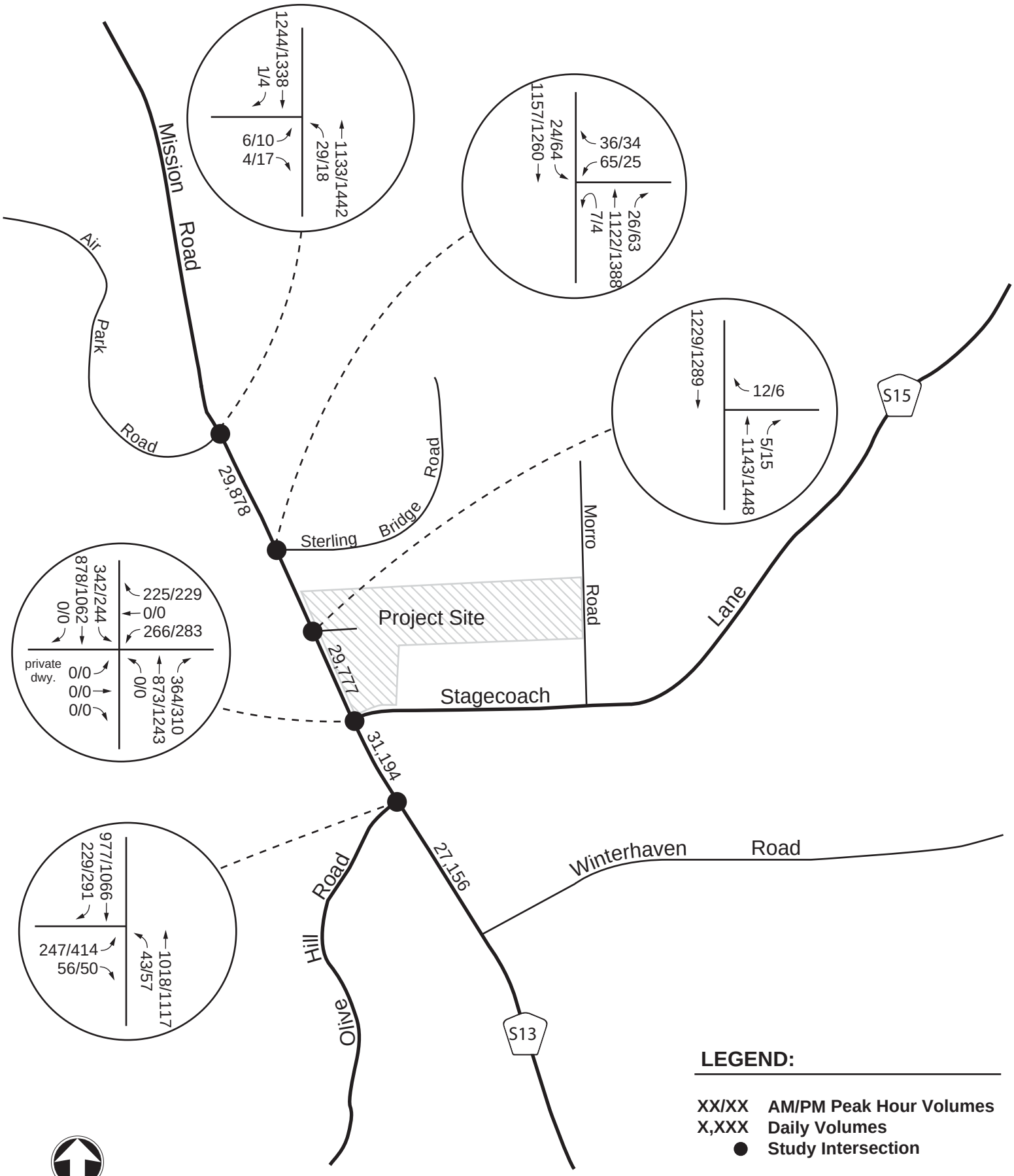
Table 10
Existing Plus Near-Term Cumulative Plus Project
Peak Hour Intersection LOS

Intersection		Without Project		With Project		Change in Delay [1]	
		AM Peak Hour Delay [1] – LOS	PM Peak Hour Delay [1] – LOS	AM Peak Hour Delay [1] – LOS	PM Peak Hour Delay [1] – LOS	AM	PM
Mission Road / Air Park Road [2]	SB [3]	22.0 – C	21.4 – C	22.5 – C	21.7 – C	0.5	0.3
	NB [4]	13.6 – B	15.5 – C	13.9 – B	15.7 – C	0.3	0.2
Mission Road / Sterling Bridge Road		6.1 – A	5.7 – A	6.1 – A	5.7 – A	0.0	0.0
Mission Road / Stage Coach Lane		23.1 – C	23.7 – C	23.1 – C	24.0 – C	0.0	0.3
Mission Road / Olive Hill Road		12.1 – B	15.5 – B	12.1 – B	15.5 – B	0.0	0.0
Mission Road / Project Access [2]		–	–	13.3 – B	15.6 – C	–	–

[1] Seconds of delay.
[2] Unsignalized intersection.
[3] LOS for eastbound and southbound traffic using HCM calculation.
[4] LOS for eastbound and northbound traffic using HCM calculation.

As shown in Table 10, all study intersections are forecast to continue operating at acceptable levels of service (LOS D or better) during the a.m. and p.m. peak hours under existing plus near-term cumulative conditions with the proposed project.

Table 11 presents the results of the existing plus near-term cumulative plus project conditions roadway segment level of service analysis. As shown in Table 11, all study roadway segments are forecast to operate at acceptable levels of service (LOS D or better) under existing plus near-term cumulative plus project conditions.



LEGEND:

XX/XX **AM/PM Peak Hour Volumes**
X,XXX **Daily Volumes**
● **Study Intersection**

NOT TO SCALE

EXISTING PLUS NEAR-TERM CUMULATIVE PLUS PROJECT DAILY AND PEAK HOUR VOLUMES

RBF

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EXHIBIT 11

Table 11
Existing Plus Near-Term Cumulative Plus Project
Daily Roadway Segment LOS

Street	Location	Class/ Lanes	LOS E Capacity	Existing Conditions			Existing Plus Near-Term Cumulative			Existing Plus Near-Term Cumulative Plus Project			Change in V/C	Increase in ADT	Significant Impacts	
				ADT	V/C	LOS	ADT	V/C	LOS	ADT	V/C	LOS			Direct Impacts	Cumulative Impacts
Mission Road	Air Park to Sterling Bridge	Major Road (4.1A) / 4	37,000	24,201	0.654	B	29,731	0.804	D	29,878	0.808	D	0.004	147	No	No
	Sterling Bridge to Stage Coach	Major Road (4.1A) / 4	37,000	24,099	0.651	B	29,619	0.801	D	29,777	0.805	D	0.004	158	No	No
	Stage Coach to Olive Hill	Major Road (4.1A) / 4	37,000	24,826	0.671	C	31,089	0.840	D	31,194	0.843	D	0.003	105	No	No
	Olive Hill to Winterhaven	Major Road (4.1A) / 4	37,000	21,463	0.580	B	27,061	0.731	C	27,156	0.734	C	0.003	95	No	No

Site Access

Per request by County staff, a specific study was prepared on September 8, 2010 to assess the six site access alternatives for Pacifica Estates. The preferred Alternative Two includes the following:

- Provide a northbound left-turn bay and modify signal phasing to allow u-turns at Mission Road / Sterling Bridge Road
- All left-turn access would remain restricted at Mission Road / Project Access intersection

The advantage of Alternative Two is that u-turn access for southbound project traffic would be provided at a signalized intersection, which is safer for u-turn maneuvers than at the unsignalized Mission Road / Air Park Road intersection. The disadvantage of Alternative Two is that left-turn access at the Mission Road / Project Access intersection would remain restricted for both inbound and outbound project traffic, and only a short distance would be available for project traffic to travel and cross two lanes to get into the left-turn lane.

Exhibit 12 shows the proposed u-turn lane configuration at Mission Road / Sterling Bridge under the preferred Alternative Two. Exhibit 13 shows the approximate project driveway location between Sterling Bridge and Stage Coach Lane.

During the assessment of the site access alternatives, a northbound right-turn lane from Mission Road to the project access road was evaluated. The addition of a northbound right-turn lane was deemed unnecessary due to the low project-related right-turn volume as well as environmental constraints related to the proximity to Ostrich Farm Creek.

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PROPOSED U-TURN LANE CONFIGURATION
MISSION ROAD / STERLING BRIDGE

JN 141257 FEBRUARY 2015

EXHIBIT 12

NOT TO SCALE

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PROJECT ACCESS LOCATION

JN 141257 FEBRUARY 2015

EXHIBIT 13

SUMMARY OF IMPACTS

Traffic Operational Impacts

The results of the analysis under existing plus near-term cumulative conditions with the proposed project show that all study intersections are forecast to continue operating at acceptable levels of service (LOS D or better) during the a.m. and p.m. peak hours.

The results of the roadway segment analysis show that all study roadway segments are forecast to operate at acceptable levels of service (LOS D or better) under existing plus near-term cumulative plus project conditions.

The addition of traffic generated by the proposed project does not result in project-related direct and/or cumulative significant impacts to the study intersections and roadway segments.

It is recognized that traffic generated by the proposed project may potentially result in cumulative significant impacts on roadways outside of the project study area within the community of Fallbrook. In order to mitigate these potential impacts, the proposed project will contribute to the County Traffic Impact Fee (TIF) program for the Fallbrook TIF Area.

The u-turning project traffic in the southbound left-turn lane at Mission Road / Stage Coach Lane would have a minimal effect on the high school traffic that is currently using that lane to access the high school. Currently, the heaviest utilization of the southbound left-turn lane at Mission Road / Stage Coach Lane occurs during the morning peak hour when students are arriving to school. Based on the trip generation and trip distribution estimates, two inbound project trips are expected to u-turn in the southbound left-turn lane at Mission Road / Stage Coach Lane during the a.m. peak hour.

An “existing plus project” analysis scenario was not included in this report. Based on the results of the existing plus near-term cumulative plus project conditions analysis, the addition of traffic generated by the proposed project would not result in project-related direct and/or cumulative significant impacts to the study intersections and roadway segments under “existing plus project” conditions.

Hazards Due to an Existing Design Feature

The proposed project would not result in any hazards due to an existing design feature for the following reasons:

- Mission Road in the vicinity of the proposed project site is not constructed with any horizontal or vertical curvatures in the roadway that would potentially result in sight distance obstructions or other safety hazards for vehicles at the proposed project access road location.
- The increase in traffic as a result of the proposed project is not significant enough to affect the safety of the existing roadways.
- The proposed project would conform to the requirements of the private and/or public road standards.

Hazards to Pedestrians or Bicyclists

There is currently a sidewalk and a bicycle lane on northbound Mission Road along the project frontage. Pedestrian call buttons are currently located at the signalized intersections to the north and south of the project site.

The proposed project would not result in hazards to pedestrians or bicyclists for the following reasons:

- The proposed project would not generate increased pedestrian activity at the project access point.
- The proposed project would not hinder the existing pedestrian and bicycle facilities along Mission Road.
- The increase in traffic as a result of the proposed project is not significant enough to create hazards to pedestrians and/or bicyclists where such facilities exist in the project study area.

Parking Capacity Impacts

The proposed project would not result in parking capacity impacts for the following reasons:

- The project applicant will provide parking prohibition along Mission Road fronting the project site. While on-street parking on Mission Road fronting the project site is currently not prohibited, there was no demand or utilization of the on-street parking at the time this study was prepared. Therefore, no impact to the existing parking demand is identified.
- The proposed project would conform to the minimum off-street parking requirements set in the *County of San Diego Zoning Ordinance (Sections 6750-6799)* and the *County of San Diego Off-Street Design Manual* based on the land use type.

Alternative Transportation (Transit) Conflicts

There is currently a bus stop located on Mission Road within walking distance of the project site, approximately 400 feet south of the project access point. The existing transit stop serves NCTD Breeze Route 306, with headways every 30 minutes from 5:00 a.m. to 10:00 a.m. (both directions) and from 4:30 p.m. to 6:30 p.m. (northbound only) Monday through Friday. Route 306 provides 60-minute headways from 10:00 a.m. to 4:30 p.m. and from 6:30 p.m. to 10:00 p.m. Monday through Friday. Route 306 provides 60-minute headways from 5:00 a.m. to 9:00 p.m. on Saturday, Sunday, and holidays.

The proposed project would not result in alternative transportation (transit) conflicts for the following reasons:

- There is sufficient spacing between the existing bus stop and the proposed project access point.
- The increase in traffic as a result of the proposed project is not significant enough to create conflicts with the existing transit along Mission Road.

CONCLUSIONS

This issue specific traffic impact study analyzes the potential cumulative traffic impact of the proposed Pacifica Estates project along Mission Road between Sterling Bridge Road and Stage Coach Lane in the community of Fallbrook. The project is forecast to generate approximately 210 trips per day, with 17 trips in the a.m. peak hour and 21 trips in the p.m. peak hour.

Based on the trends in the historical traffic data available within the project study area, it is RBF's professional opinion that traffic volumes within the Fallbrook area have been relatively static over the last 5-10 years due to limited development. Therefore, the traffic counts that were collected in 2007 and in 2010 are still considered applicable to this analysis.

The results of the analysis show that all study intersections are currently operating at acceptable levels of service (LOS D or better) based on the 2000 Highway Capacity Manual operations methodology for evaluating signalized and unsignalized intersections. The results of the roadway segment analysis show that all study roadway segments are currently operating at acceptable levels of service (LOS D or better) based on the County of San Diego *Guidelines for Determining Significance and Report Format and Content Requirements – Transportation and Traffic* (August 2011).

The results of the analysis under existing plus near-term cumulative conditions show that all study intersections are forecast to operate at acceptable levels of service (LOS D or better) during the a.m. and p.m. peak hours.

The results of the roadway segment analysis show that all study roadway segments are forecast to operate at acceptable levels of service (LOS D or better) under existing plus near-term cumulative conditions.

The results of the analysis under existing plus near-term cumulative conditions with the proposed project show that all study intersections are forecast to continue operating at acceptable levels of service (LOS D or better) during the a.m. and p.m. peak hours.

The results of the roadway segment analysis show that all study roadway segments are forecast to operate at acceptable levels of service (LOS D or better) under existing plus near-term cumulative plus project conditions.

The addition of traffic generated by the proposed project does <u>not</u> result in project-related direct and/or cumulative significant impacts to the study intersections and roadway segments.

The proposed project will take access from Mission Road via an on-site private street that will be constructed to serve the 21 dwelling units. The project access street would be limited to right-turns entering and exiting the site at the Mission Road / Project Access Street intersection. Left-turn access into and out of the site will be restricted by the existing raised median on Mission Road.

Per the request of County Staff, a specific site access study was prepared on September 8, 2010 to assess six access alternatives. Proposed Alternative Two, which restricts left-turns and provides a northbound left-turn bay and modified signal phasing to allow u-turns at Mission Road / Sterling Bridge Road, was the preferred alternative moving forward.

Under the preferred access alternative, vehicles heading south from the project site would need to u-turn at the signalized intersection of Mission Road / Sterling Bridge. Vehicles entering the site from the north would need to u-turn at the signalized intersection of Mission Road / Stage Coach Lane. U-turns are currently allowed at Mission Road / Stage Coach Lane but prohibited at Mission Road / Sterling Bridge; the addition of u-turning project traffic is expected to have a minimal impact on the peak hour operations of these two intersections.