Meadowood (TM 5354 & GPA 04-02)
San Diego County (Fallbrook)
April 22, 2008
Revised February 20, 2009
Revised May 5, 2009

Traffic Impact Study

Prepared for:

County of San Diego
Department of Public Works
5469 Kearny Villa Road, Suite 305
San Diego, CA 92123

Prepared on behalf of:

Pardee Homes
12626 High Bluff Drive, Suite 100
San Diego, CA 92130

Prepared by Justin Rasas (RCE 60690) with:

LOS Engineering, Inc.
5629 Willowmere Ln, San Diego, CA 92130
Phone 619-890-1253, Fax 619-374-7247

Job #726

Table of Contents

List of Figures

List of Tables

Appendices

Glossary of Terms and Acronyms

ADT ..... Average Daily Traffic
AKA ..... Also Known As
CALTRANS ..... California Department of Transportation
CEQA ..... California Environmental Quality Act
CMP ..... Congestion Management Program
DPW ..... Department of Public Works
GP Update ..... General Plan Update
HCM ..... Highway Capacity Manual
ITE ..... Institute of Traffic Engineers
LOS ..... Level of Service
MPH ..... Miles per Hour
MUTCD ..... Manual on Uniform Traffic Control Devices
PFE ..... Public Facilities Element
RAS ..... Regional Arterial System
SANDAG ..... San Diego Association of Governments
TIS ..... Traffic Impact Study(1)
V/C ..... Volume to Capacity Ratio

Notes: (1) a traffic study can be referred to as a Traffic Impact Study or a Traffic Impact Analysis. A TIS designation is used throughout this report because the County of San Diego Guidelines for Determining Significance references TIS for traffic studies.

Executive Summary
Meadowood (TM 5354 & GPA 04-02)

The Meadowood Project is proposed with 858 residential dwelling units and land set aside for an elementary school and park. The site consists of 389.5 gross acres and is located just north of SR-76 and approximately 0.25 miles east of Interstate 15 in the Fallbrook Community Planning area of San Diego County, California. The project site is generally vacant.

The project trip generation was calculated using SANDAG trip rates from the *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002. The project is calculated to generate 8,740 ADT, 965 AM peak hour trips, and 864 PM peak hour trips.

Project trips were distributed based on a SANDAG Series 11 traffic model. The SANDAG traffic model documented a 33% internal capture rate; however, at the request of Caltrans and to be conservative, the 33% was rounded down to 30%. The internal capture rate reflects the percentage of vehicles that would stay within the Traffic Analysis Zones (TAZs) located northeast of I-15 and SR-76 (Pala Road). These combined land uses create the equivalent of a small town where residents have retail, office, commercial, schools, and social attractions all within a short drive, a reasonable walking distance, or a short bike ride. The internal capture rate will vary based on the level of mixed-use development. Under near-term conditions, the surrounding retail/commercial/office uses proposed by other applicants are anticipated to be constructed after a critical mass of residential units are built and occupied. Thus, a conservative analysis is provided where a 0% internal capture rate is applied under existing plus project conditions. However, the built-out analysis incorporates the SANDAG based internal capture rate of 30%.

Cumulative projects were accounted for through a general plan summary approach where SANDAG provided a Series 10 Year 2030 model that included all cumulative projects that are consistent with the current land use plan, all inconsistent cumulative projects that will require a variance such as a General Plan Amendment, and all Casino projects that have been submitted to the County. This cumulative traffic model approach is currently being utilized by the County for the General Plan Update. In addition to the aforementioned approach, ninety five (95) nearby cumulative projects were reviewed in detail and confirmed that they are included in the SANDAG Series 10 Year 2030 model.

Roadway improvements already under construction (i.e. widening of SR-76 from 2 to 4 lanes by the Granite Construction Company) or roadway improvements that will be constructed by the applicant in order to achieve access to the project site (i.e. Horse Ranch Creek Road, Pala Mesa Drive, Street R and all associated internal intersections) were incorporated into the analysis. Even though other roadway improvements are planned by other applicants, they were not incorporated into the analysis because construction has not been started. These other cumulative project improvements not assumed to be completed in this analysis include (with a brief summary of the improvement):

1) Pala Tribe (various improvements along SR-76)
2) Palomar College (Horse Ranch Creek Road and other off-site)
3) Caltrans SR-76 Alignment Study (widen SR-76 to 4 lanes from Oceanside to I-15)

Unknown improvements from other cumulative projects that will generate significant amounts of traffic are not included. The other significant cumulative projects include:

1) Campus Park
2) Campus Park West
3) Pala Mesa Resort
4) Warner Ranch
5) Pauma Tribe
6) Pala Shopping Center
7) Gregory Landfill

Of significant importance is that this analysis includes all of the cumulative project traffic but does not include the necessary roadway mitigation measures required to support all of the other cumulative projects. Based on the size of the proposed cumulative developments, significant roadway improvements would most likely be forthcoming to satisfy CEQA requirements.

The project is calculated to have direct impacts at one intersection and two state route segments. The intersection impact is mitigated to below a level of significance with the construction of a traffic signal by the applicant first in time. The two State Route 76 direct impacts are mitigated to below a level of significance with the planned TransNet SR-76 widening project (since the timing of these improvements is not assured at this time, a significant impact would occur if the Meadowood project were to proceed in advance of this mitigation. Under these circumstances, the applicant would be responsible for making a fair share contribution toward these improvements to mitigate this impact).

The horizon year (2030) analysis is based on roadway conditions per the adopted County Circulation Element. All of the horizon year analyses were calculated to operate at acceptable levels of service based on current circulation element classifications.

The cumulative impacts can be mitigated through participation in the County of San Diego 2008 TIF Program Update. Furthermore, the project applicant proposes to construct new roadways and intersections to provide access to and through the project site. A summary of direct and cumulative impacts is shown in **Table E-1**.

TABLE E-1: IMPACT SUMMARY TABLE

Facility	Direct Impacts	Cumulative Impacts
Intersections	1) Old Hwy 395/Reche Road	1) SR-76/Via Monserate 2) SR-76/Gird Road 3) SR-76/Sage Road 4) SR-76/Old Hwy 395 5) SR-76/I-15 SB Ramp 6) SR-76/I-15 NB Ramp 7) SR-76/Pankey Road 8) SR-76/Rice Canyon Road 9) SR-76/Couser Canyon Road 10) Old Hwy 395/Pala Mesa Dr 11) Old Hwy 395/Stewart Canyon Road 12) Old Hwy 395/Reche Road 13) Mission Rd at Old Hwy 395 14) Mission Road at I-15 SB Ramp 15) Mission Road at I-15 NB Ramp

Facility	Direct Impacts	Cumulative Impacts
		16) SR-76/E Vista Way 17) SR-76/North River Road 18) SR-76/Olive Hill Road 19) SR-76/S Mission Road
Segments and State Routes	1) SR-76 (Via Monserate to Gird Rd) 2) SR-76 (I-15 NB Ramp to I-15 SB Ramp)	1) Old Hwy 395 (E Mission Rd to Reche Rd) 2) Old Hwy 395 (Reche Rd to Stewart Cyn) 3) Old Hwy 395 (Pala Mesa Dr to SR-76) 4) SR-76 (E Vista Way to North River Rd) 5) SR-76 (North River Rd to Olive Hill Rd) 6) SR-76 (Olive Hill Rd to S Mission Rd) 7) SR-76 (S Mission Rd to Via Monserate) 8) SR-76 (Via Monserate to Gird Rd) 9) SR-76 (Gird Rd to Sage Rd) 10) SR-76 (Sage Rd to Old Hwy 395) 11) SR-76 (I-15 SB Ramp to I-15 NB Ramp) 12) SR-76 (Horse Ranch Creek Rd to Rice Cyn) 13) SR-76 (Rice Cyn to Couser Cyn Rd) 14) SR-76 (Couser Cyn Rd to Pala Mission Rd)
Freeways	None	None
Ramps	None	None
Horse Ranch Creek Road Classification Change	Copy of a Modification to Road Standard Request is included in the Appendix	Copy of a Modification to Road Standard Request is included in the Appendix

1.0 Introduction

This report describes the existing roadway network in the vicinity of the project site and includes a review of the existing and proposed activities for weekday peak AM and PM periods, and daily traffic conditions when the project is completed. The format of this study includes the following chapters:

1.0 Introduction
2.0 Existing Conditions
3.0 Project Impact Analysis
4.0 Impact Summary
5.0 Summary of Project Impacts & Mitigation
6.0 References
7.0 List of Preparers and Persons and Organizations Contacted

1.1 Purpose of the Report

The purpose of this traffic impact study is to determine and analyze potential traffic impacts for the proposed project.

1.2 Project Location and Description

The project will be located on the northeast corner of I-15/SR-76 in the Fallbrook/Pala area of San Diego County, California. The location of the project is shown in **Figure 1.**

The project is planned with 355 single-family dwelling units, 503 multi-family dwelling units, a 10 acre neighborhood park, and an elementary school. The project site is generally vacant. A preliminary site plan is shown in **Figure 2**. The map of the Traffic Impact Study (TIS) area is shown in **Figure 3.**

A General Plan Amendment (GPA) is also being submitted under separate cover that documents the proposed changes to the County's Circulation Element Plan. The proposed amendments to the Circulation Element Plan as shown in **Figure 4** include:

1) New alignment of SC 2602 to Horse Ranch Creek Road
2) Reclassification of SC 2602 to General Plan Update Boulevard Standard
3) Relocation of SC 160 to a new alignment from Old Highway 395 to SR-76
4) Reclassification of Pala Mesa Drive between SR-76 and Pankey Place to a Collector
5) Creation of a connection (Street R) for SC 160 between Pala Mesa Drive and Horse Ranch Creek Road as a Light Collector

Figure 1: Project Location

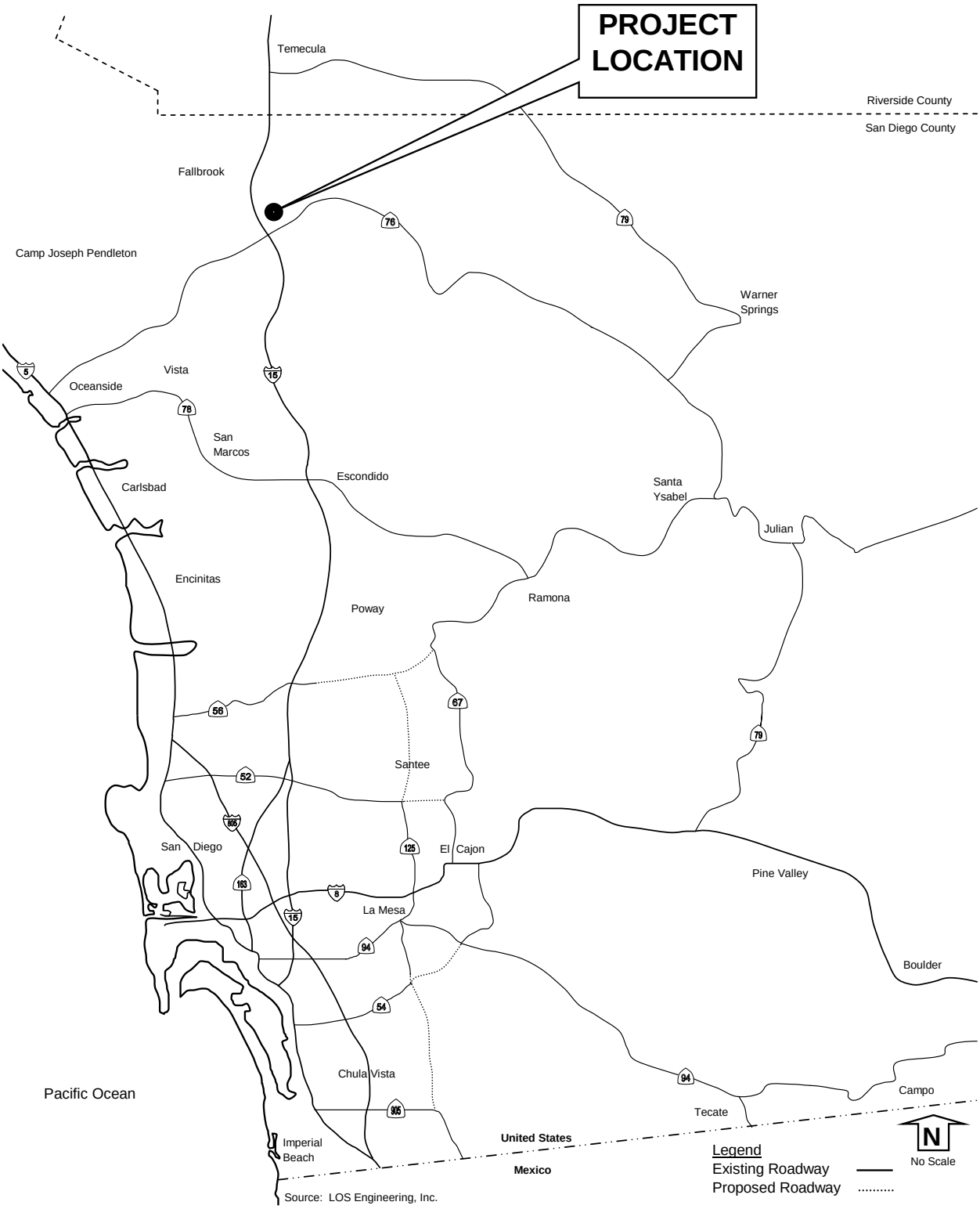
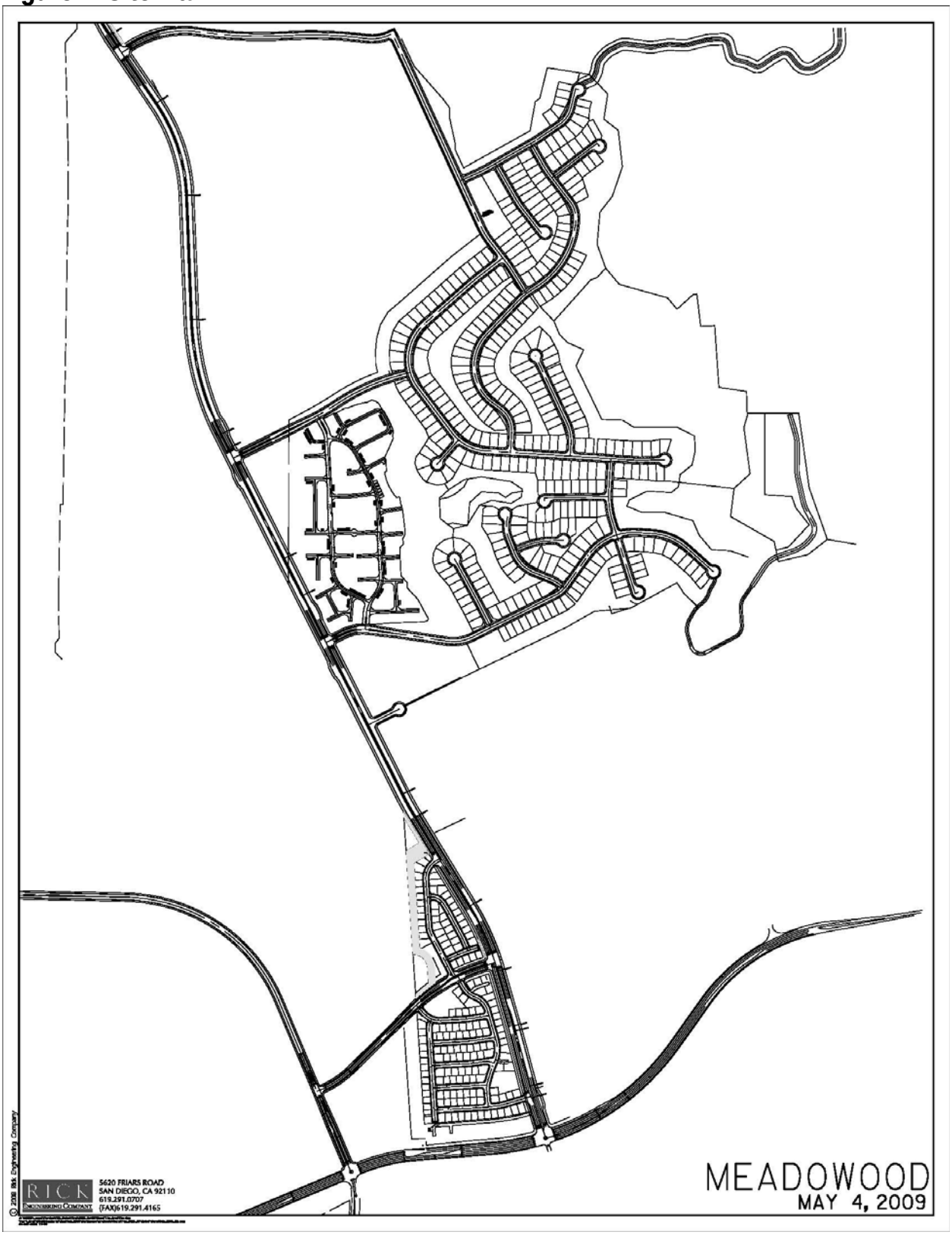


Figure 2: Site Plan



Source: Rick Engineering

Figure 3: TIS Study Area

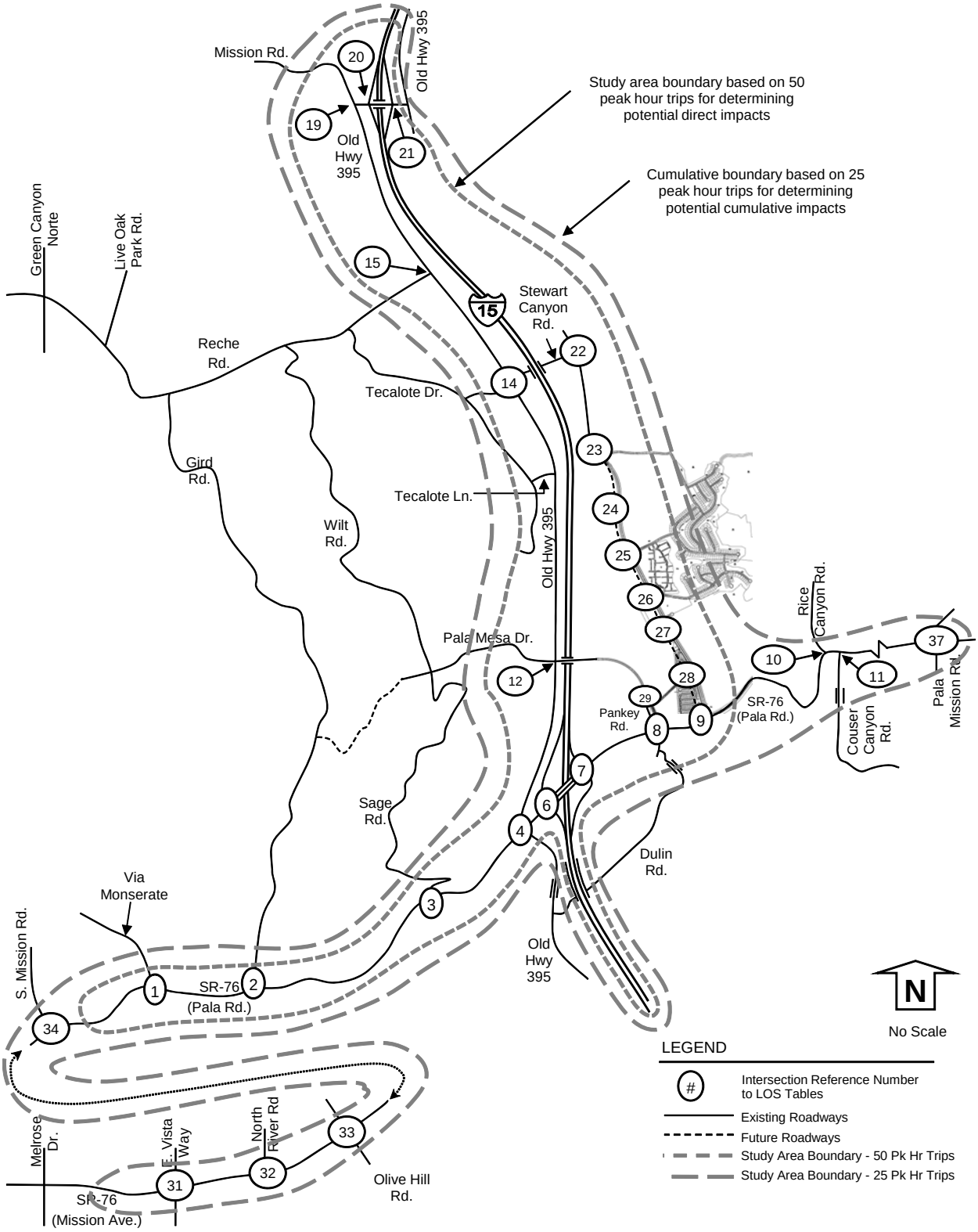
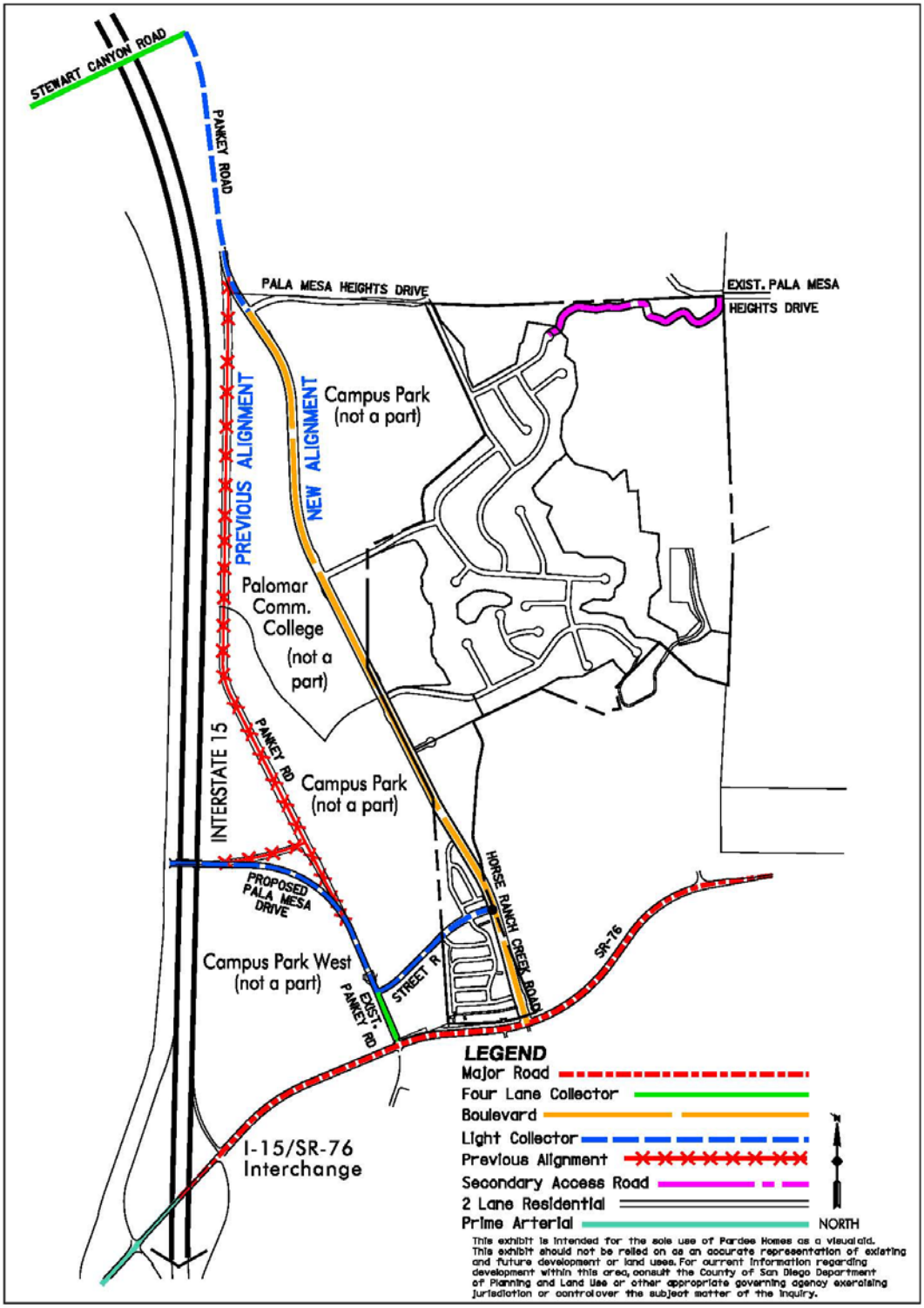


Figure 4: Proposed Changes to County's Circulation Element Plan



1.3 Summary of Significance Criteria

This section describes traffic impact significance criteria, which is based on the *County of San Diego Guidelines for Determining Significance*, December 5, 2007, the County of San Diego General Plan Public Facilities Element (Part XII), and the San Diego Association of Governments Congestion Management Program.

1.3.1 County of San Diego Guidelines for Determining Significance

Based on the *County of San Diego Guidelines for Determining Significance*, December 5, 2007, a project may have a direct and/or cumulative impact if the significance criteria are exceeded, as shown in **Table 1**.

TABLE 1: COUNTY OF SAN DIEGO SIGNIFICANT TRAFFIC IMPACT THRESHOLDS

Measures of Significant Project Impacts to Congestion Allowable Increases on Congested Roads and Intersections					
	Road Segments			Intersections	
Operations	2-Lane Road	4-Lane Road	6-Lane Road	Signalized	Un-signalized
LOS E	200 ADT	400 ADT	600 ADT	Delay of 2 seconds	20 peak hour trips on a critical movement
LOS F	100 ADT	200 ADT	300 ADT	Delay of 1 second, or 5 peak hour trips on a critical movement	5 peak hour trips on a critical movement

Source: County of San Diego *Guidelines for Determining Significance* Tables 1 & 2. Note: A critical movement is one that is experiencing excessive queues. By adding proposed project 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 that contributes any trips must mitigate it's share of the cumulative impacts. 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.

A direct impact would occur when the significance criteria are exceeded. If the proposed project exceeds the values provided in the above table, then the individually proposed project would result in a direct traffic impact. Specific improvements to mitigate direct impacts must be identified.

A cumulative impact would occur when two conditions are met: 1) build-out of all near-term projects results in a cumulative traffic impact and 2) the amount of traffic generated by the individual proposed project contributes (even in a small part) to that cumulative impact. Both conditions must be met for an individual project to result in a cumulative traffic impact. If the traffic generated from all the near-term projects (cumulative projects) would result in a cumulative traffic impact then condition one is met. If the total amount of traffic generated exceeds the values provided in the above table, then condition two is met and the individually proposed project would result in a cumulative traffic impact. Fair-share contributions toward cumulative impacts may only be provided when a specific transportation improvement project is identified and the schedule for completion of the improvement project has been identified.

Potential mitigation measures may include traffic signal improvements, physical road improvements, street re-striping and parking prohibitions, fair-share contributions, and transportation demand management programs.

1.3.2 County of San Diego General Plan Public Facilities Element (Part XII)

The *County of San Diego Guidelines for Determining Significance* dated December 5, 2007 includes a summary of the Public Facilities Element of the San Diego County General Plan as follows:

> "The County of San Diego General Plan Public Facilities Element establishes policies and implementation measures regarding the assessment and mitigation of traffic impacts of new development. One of the goals of the Public Facilities Element (PFE) is to provide "A safe, convenient, and economical integrated transportation system including a wide range of transportation modes (PFE, page XII-4-18)." The PFE also identifies an objective in the Transportation Section to provide a "Level of Service C or better on County Circulation Element roads (PFE, page XII-4-18)." The PFE, however, establishes LOS D as an off-site mitigation threshold for discretionary projects. When an existing Level of Service is already D, "a LOS of D may be allowed (PFE, page XII-4-18)." According to the PFE, projects that significantly increase congestion on roads operating at LOS E or LOS F must provide mitigation. According to the PFE, this mitigation can consist of a fair-share contribution to an established program or project to mitigate the project's impacts. If impacts cannot be mitigated, the project will be denied unless a specific statement of overriding findings is made pursuant to Sections 15091 and 15093 of the State CEQA Guidelines to approve the project as proposed."

The County of San Diego significance criteria is consistent with the aforementioned summary of PFE Policy 1.1, which requires mitigation for projects that significantly increase congestion on roads operating at LOS E or LOS F.

PFE Policy 1.2 states "General Plan Amendments and Rezones shall be reviewed to ensure that any proposed increases in density of intensity of use will not prevent the planned Circulation Element road system from operating at its planned Level of Service at build out." The project applicant proposes a General Plan Amendment.

In summary, the County of San Diego traffic impact significance criteria covers the significance criteria identified in PFE policies 1.1 and 1.2.

1.3.3 SANDAG Congestion Management Program Criteria

The San Diego Association of Governments (SANDAG) Congestion Management Program (CMP) is intended to determine if a large project (greater than 2,400 ADT or more than 200 peak hour trips) will adversely impact the CMP transportation system. A CMP analysis is included because this project is calculated to generate more than 2,400 ADT and more than 200 peak hour trips. A CMP analysis is required on the Regional Arterial System (RAS), which includes the following in the vicinity of the project site:

1) I-15,
2) SR-76, and
3) Old Highway 395.

All of the above have been included in the analysis. A copy of the CMP RAS listing is included in **Appendix A**.

Based on the *County of San Diego County Guidelines for Determining Significance*, December 5, 2007, the CMP significance criteria are shown in **Table 2**.

TABLE 2: SANDAG CMP SIGNIFICANT TRAFFIC IMPACT THRESHOLDS

Level of Service with Project	Allowable Increase Due to Project Impacts				
	Freeways	Roadway Segments		Intersections	Ramps > 15 min
	V/C	V/C	Speed (mph)	Delay (sec.)	Delay (min.)
E & F	0.01	0.02	1	2	2*

Source: County of San Diego *Guidelines for Determining Significance* Table 5.

1.3.4 CALTRANS' Criteria

Caltrans' *Guide for the Preparation of Traffic Impact Studies,* December 2002, outlines recommended procedures for traffic study contents but does not identify specific traffic impact thresholds. Caltrans staff has indicated that there is a desire to maintain freeway operations between LOS C and D levels.

Specific traffic impact thresholds are typically identified by local Caltrans staff. For the San Diego region, Caltrans' staff has previously indicated that an impact to a freeway is generally identified when project traffic causes the operations to drop one letter grade (i.e. from LOS E to LOS F).

2.0 Existing Conditions

This section describes the existing study area street system: existing peak hour intersection volumes with Level of Service (LOS), existing daily roadway volumes with LOS, and existing parking, transit and on-site circulation conditions.

2.1 Existing Transportation Conditions

As shown previously in Figure 3, the study area is based on where 50 directional peak hour project trips will travel. This figure also shows where 25 directional peak hour project trips will travel for potential cumulative impacts. The 50 peak hour project trip study area is utilized for existing + project, horizon year, and horizon year + project conditions (scenarios where the project will add 50 peak hour trips to determine potential direct impacts). The 25 peak hour study area is used for existing, existing + cumulative, and existing + cumulative + project conditions (scenarios where potential cumulative impacts are calculated). The existing transportation conditions are described for the larger 25 peak hour study area, which include:

I-15 in the vicinity of the project is classified as a *Freeway* on the September 2005 San Diego County Circulation Element map. A copy of the September 2005 San Diego County Circulation Element Map showing the study area roadways is included in **Appendix B**. I-15 from Rainbow Valley Boulevard to Escondido Highway (Old Highway 395) is constructed as an eight lane divided freeway with a center divider. The travel lanes are generally 12 feet in width and the shoulder is generally 10 to 12 feet in width. The posted speed limit is 70 MPH along I-15 in the vicinity of the project.

SR-76 from Melrose Drive to S. Mission Road is classified as an *Expressway*; from S. Mission Road to I-15, SR-76 is classified as a *Prime Arterial with bike lanes* and from I-15 to Pala Mission Road, SR-76 is classified as a *Major Road with bike lanes* on the September 2005 San Diego County Circulation Element map. SR-76 from Melrose Drive to S. Mission Road is generally constructed as a two-lane un-divided roadway (one travel lane of approximately 12 feet in each direction) with shoulder widths ranging from one to five feet (total pavement width ranges from approximately 26 feet to approximately 34 feet). SR-76 from Via Monserate to Old Highway 395 is generally constructed as a two-lane un-divided roadway (one travel lane of approximately 12 feet in each direction) with a shoulder width ranging from two to eight feet (total pavement width ranges from approximately 28 feet to approximately 40 feet). From Old Highway 395 to I-15 southbound ramps, SR-76 is constructed within approximately 76 feet of pavement with a center two way left turn lane of approximately 12 feet, two travel lanes in each direction for approximately 24 feet, and a paved shoulder in each direction of approximately eight feet. From I-15 southbound ramps to I-15 northbound ramps, SR-76 is constructed within approximately 56 feet of pavement with one travel lane of approximately 13 feet in each direction, a back to back left turn lane of approximately 14 feet, and a shoulder of approximately eight feet for each travel direction. From I-15 northbound ramps to Pala Mission Road, SR-76 is constructed within approximately 28 feet with one travel lane of approximately 12 feet in each direction and a shoulder of approximately two feet in each

direction. Speed limit signs of 55 MPH were observed on the segments between Melrose Drive and North River Road. Additionally, several horizontal alignment signs from the Manual on Uniform Traffic Control Devices (MUTCD) are posted along SR-76. The 85th percentile speeds are summarized at the end of this section.

SR-76 from the I-15 NB Ramp easterly a distance of approximately 1.4 miles is currently being widened from 2 to 4 lanes (pictures included at the end of Appendix B). This widening is anticipated to be completed by the end of 2009, which is before Meadowood will request certificates of occupancy. Therefore, the State Route 76 segment analyses used 2 lanes for existing conditions and 4 lanes for all other scenarios.

SR-76 has two identified widening projects that include the Caltrans SR-76 Middle Project (from approximately Melrose Drive to S Mission Road) and the Caltrans SR-76 East Project (from approximately S. Mission Road to the I-15 NB Ramp). On 10/24/08, the SANDAG Board approved the redistribution of funds between SR-76 corridor projects to fully fund the construction phase of the Caltrans SR-76 Middle Project. The estimated completion date for the Caltrans SR-76 Middle Project is 2012. The Caltrans SR-76 East Project has identified TransNet as a funding source and the current estimate of completion is 2015.

Horse Ranch Creek Road is a proposed roadway that will connect to the existing portion of Pankey Road that exists south of Stewart Canyon Road to SR-76 along a new alignment. The applicant proposes to construct Horse Ranch Creek Road per General Plan Update Circulation Element "Boulevard" standards and has received approval of a request for a modification to a road standard . The proposed Horse Ranch Creek Road will replace the existing Pankey Road that is classified as a *Light Collector* on the September 2005 San Diego County Circulation Element map. The project applicant will be responsible for constructing this segment of Horse Ranch Creek Road before obtaining occupancy permits, should Meadowood be constructed prior to Palomar College or Campus Park.

Old Highway 395 from Mission Road to Dulin Road is classified as a *Collector with bike lanes* and from Dulin Road to W. Lilac Road is classified as a *Rural Collector with bike lanes* on the September 2005 San Diego County Circulation Element map. From Mission Road to Dulin Road, Old Highway 395 is generally constructed as a two-lane un-divided roadway (one travel lane of approximately 12 feet in each direction) with a shoulder width ranging from two to eight feet (total pavement width ranges from approximately 28 feet to approximately 40 feet). The posted speed limit on Old Highway 395 from Mission Road to SR-76 is 55 MPH. Between Dulin Road and W. Lilac Road, Old Highway 395 is generally constructed as a two-lane un-divided roadway (one travel lane of approximately 12 feet in each direction) with a shoulder width ranging from two to six feet (total pavement width ranges from approximately 28 feet to approximately 36 feet). A posted speed limit was not observed on this segment of Old Highway 395 south of Dulin Road. The 85th percentile speeds are summarized at the end of this section.

Pankey Road from Stewart Canyon Road to Dulin Road is classified as a *Light Collector* on the September 2005 San Diego County Circulation Element map. From Stewart Canyon Road to a terminus cul-de-sac approximately 0.7 miles to the south, Pankey Road is constructed with approximately 32 feet of pavement with a northbound travel lane of approximately 20 feet and southbound travel lane of approximately 12 feet. From SR-76 south to Shearer Crossing (connects

to Dulin Road), Panky Road is constructed with approximately 40 feet of pavement and one travel lane in each direction. No posted speed limits were observed. The 85th percentile speeds are summarized at the end of this section.

Pala Mesa Drive from Old Highway 395 to Pankey Road is classified as a *Light Collector* on the September 2005 San Diego County Circulation Element map. Pala Mesa Drive east of Old Highway 395 only exists as a bridge over I-15 that is closed to traffic. From Old Highway 395 to Pankey Road, the Pala Mesa Drive alignment is proposed to be changed in order to avoid a biological wetland. The new alignment is shown throughout the various figures located within this report and will be a 2 lane roadway designed per County Standards to the satisfaction of the Department of Public Works (DPW). The project applicant will be responsible for constructing this segment of Pala Mesa Drive before obtaining occupancy permits, should Meadowood be constructed prior to Palomar College of Campus Park.

Street R (aka Pankey Place) is a proposed roadway that will connect the new Pala Mesa Drive extension (from the existing Pala Mesa Drive bridge over I-15 down to SR-76) to the new Horse Ranch Creek Road. Street R is proposed as a two lane roadway to be designed per County Standards to the satisfaction of the DPW. The project applicant will be responsible for constructing this segment of Street R (aka Pankey Place) before obtaining occupancy permits, should Meadowood be constructed prior to Palomar College of Campus Park.

Stewart Canyon Road from Old Highway 395 to Pankey Road is classified as a *Collector* on the September 2005 San Diego County Circulation Element map. Stewart Canyon Road from Old Highway 395 to Pankey Road is generally constructed as a two-lane un-divided roadway within approximately 40 feet of pavement. A posted speed limit was not observed on this segment. The 85th percentile speeds are summarized at the end of this section.

The existing roadway conditions are shown in **Figures 5a, & 5b**. The 85th percentile speeds for the aforementioned roadways are summarized in **Table 3** with data included in **Appendix C.**

Figure 5a: Existing Roadway Conditions

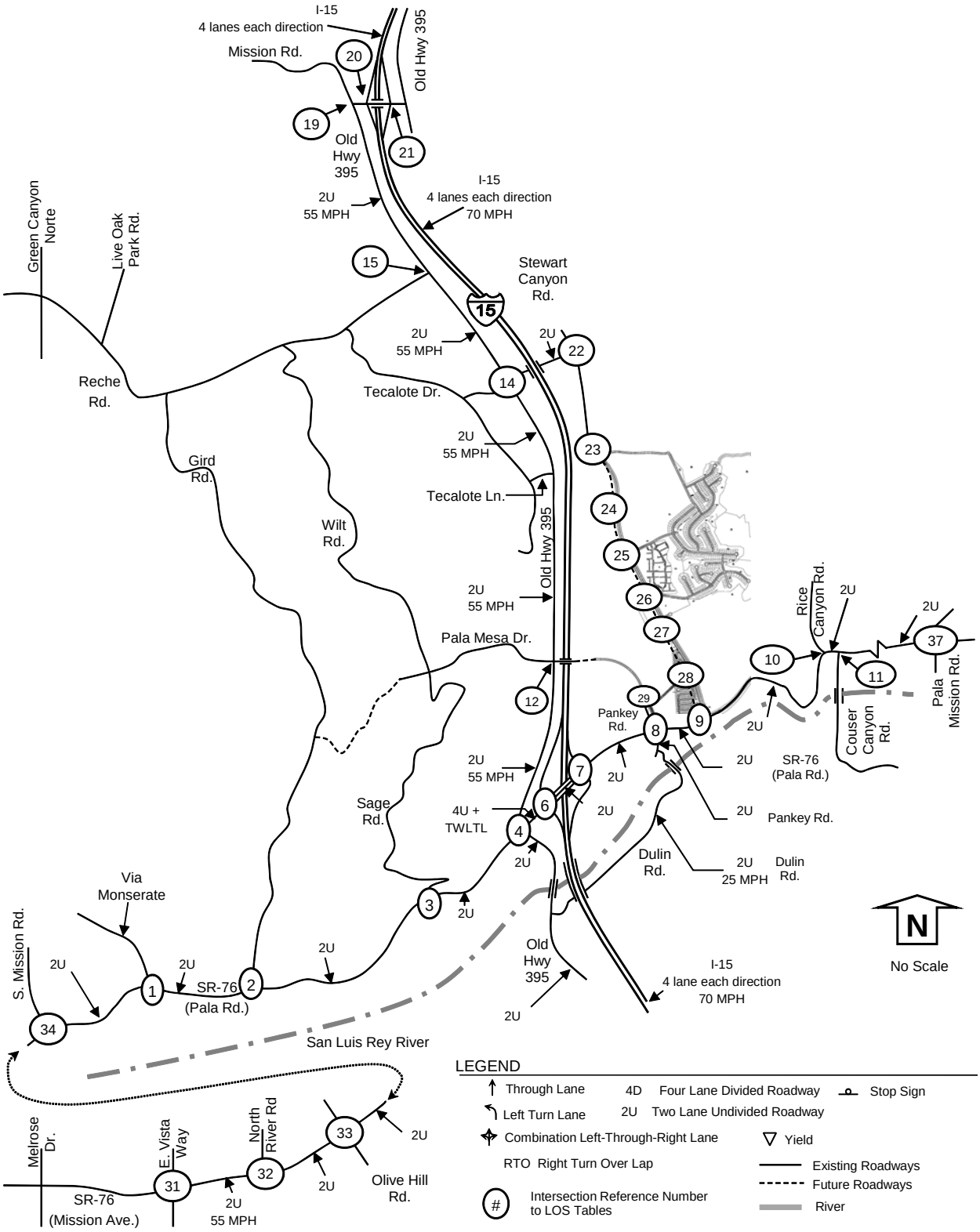


Figure 5b: Existing Roadway Conditions

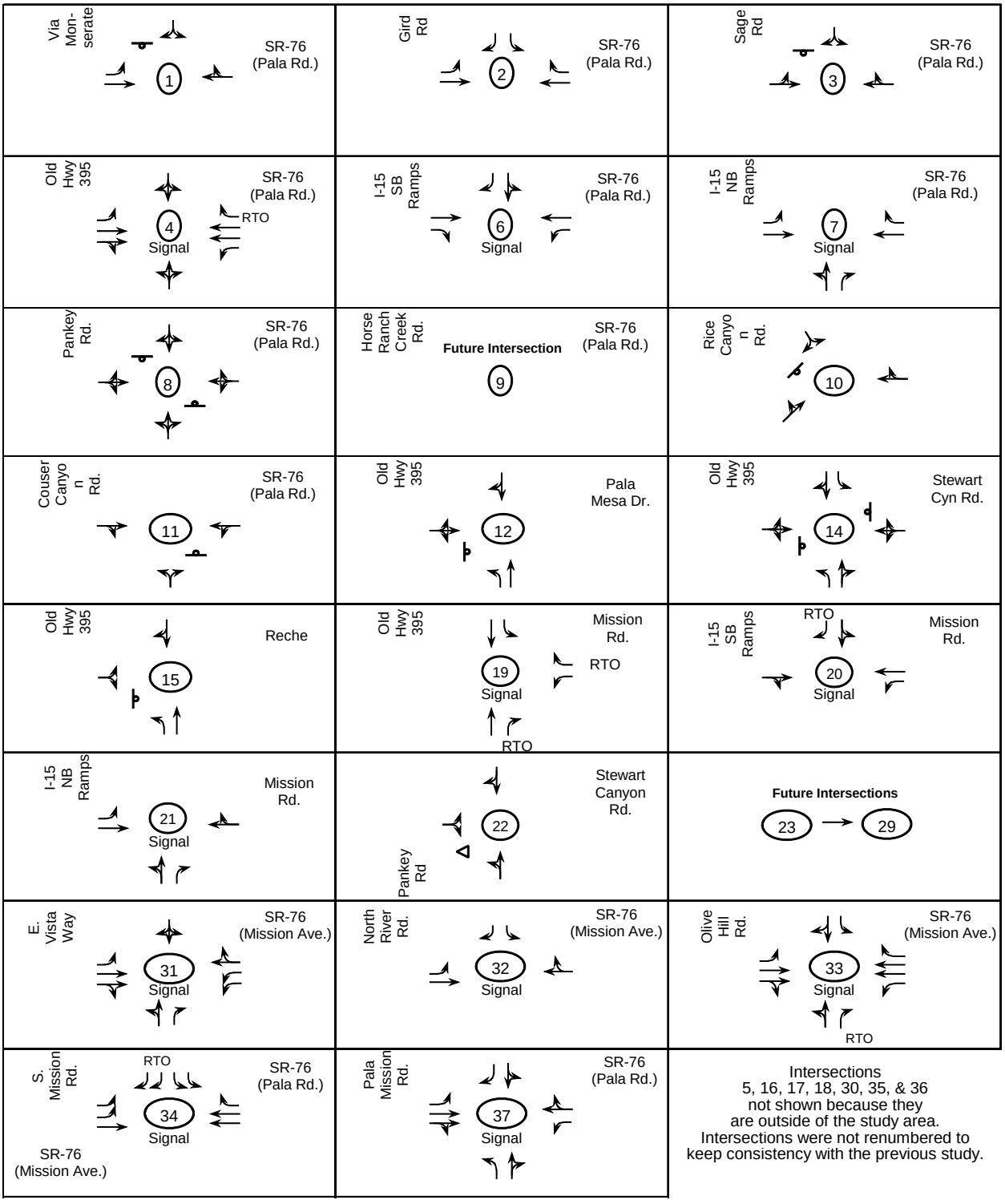


TABLE 3: STUDY AREA STATE ROUTE AND ROADWAY SPEEDS – 85TH PERCENTILE

Segment	85th Percentile Speed (MPH) and Direction	
SR-76		
E Vista Way to North River Road	Eastbound 49 MPH	Westbound 51 MPH
North River Road to Olive Hill Road	Eastbound 52 MPH	Westbound 49 MPH
Olive Hill Road to S Mission Road	Eastbound 44 MPH	Westbound 44 MPH
S Mission Road to Via Monerate	Eastbound 49 MPH	Westbound 49 MPH
Via Monserate to Gird Road	Eastbound 50 MPH	Westbound 53 MPH
Gird Road to Sage Road	Eastbound 58 MPH	Westbound 55 MPH
Sage Road to Old Highway 395	Eastbound 53 MPH	Westbound 50 MPH
Old Highway 395 to I-15 SB Ramp	Eastbound 42 MPH	Westbound 41 MPH
I-15 SB Ramp to I-15 NB Ramp	Eastbound 42 MPH	Westbound 36 MPH
I-15 NB Ramp to Pankey Road	Eastbound 65 MPH	Westbound 58 MPH
Pankey Road to Horse Ranch Creek Road	Eastbound 65 MPH	Westbound 58 MPH
Horse Ranch Creek Road to Rice Canyon Road	Eastbound 48 MPH	Westbound 39 MPH
Rice Canyon Road to Couser Canyon Road	Eastbound 44 MPH	Westbound 45 MPH
Couser Canyon Road to Pala Mission Road	Eastbound 51 MPH	Westbound 52 MPH
Old Highway 395		
East Mission Road to Reche Road	Northbound 54 MPH	Southbound 57 MPH
Reche Road to Stewart Canyon Road	Northbound 57 MPH	Southbound 54 MPH
Stewart Canyon Road to Tecalote Lane	Northbound 57 MPH	Southbound 60 MPH
Tecalote Lane to Pala Mesa Drive	Northbound 59 MPH	Southbound 61 MPH
Pala Mesa Drive to SR-76 (Pala Road)	Northbound 54 MPH	Southbound 59 MPH
Stewart Canyon Road		
Old Hwy 395 to Horse Ranch Creek Road	Eastbound 43 MPH	Westbound 41 MPH
Pankey Road		
South of Stewart Canyon Road	Northbound 40 MPH	Southbound 38 MPH
SR-76 (Pala Road) to Dulin Road	Northbound 30 MPH	Southbound 30 MPH

MPH: Miles Per Hour

2.1.1 Existing Traffic Volumes and Level of Service

Existing AM and PM peak hour intersection volumes (with count dates) for the following intersections were collected for this study:

1) SR-76 (Pala Rd) / Via Monserate – Thursday (12/18/2008)
2) SR-76 (Pala Rd) / Gird Rd – Thursday (12/18/2008)
3) SR-76 (Pala Rd) / Sage Rd – Thursday (12/18/2008)
4) SR-76 (Pala Rd) / Old Highway 395 – Tuesday (1/6/2009)
5) SR-76 (Pala Rd) / I-15 SB Ramp – Thursday (12/18/2008)
6) SR-76 (Pala Rd) / I-15 NB Ramp – Thursday (12/18/2008)
7) SR-76 (Pala Rd) / Pankey Road – Tuesday (12/4/2007)
8) SR-76 (Pala Rd) / Horse Ranch Creek Rd – Future Intersection
9) SR-76 (Pala Rd) / Rice Canyon Rd – Tuesday (1/6/2009)
10) SR-76 (Pala Rd) / Couser Canyon Rd – Tuesday (1/6/2009)
11) Old Highway 395 / Pala Mesa Dr – Tuesday (1/6/2009)
12) Old Highway 395 / Stewart Canyon Rd – Thursday (12/11/2008)
13) Old Highway 395 / Reche Rd – Thursday (12/11/2008)
14) Mission Rd / Old Highway 395 – Thursday (12/18/2008)
15) Mission Rd / I-15 SB Ramp – Thursday (12/18/2008)
16) Mission Rd / I-15 NB Ramp – Thursday (12/18/2008)
17) Stewart Canyon Rd / Pankey Rd – Thursday (12/11/2008)
18) SR-76 (Mission Rd) / E. Vista Rd – Thursday (11/13/2008)
19) SR-76 (Mission Rd) / North River Rd – Thursday (11/13/2008)

20) SR-76 (Mission Rd) / Olive Hill Rd – Thursday (11/13/2008)
21) SR-76 (Mission Rd) / S. Mission Rd – Thursday (11/13/2008)
22) SR-76 (Pala Rd) / Pala Mission Rd – Wednesday (11/19/2008)

The following street segment volumes (with count dates) were analyzed as part of this study:

1) SR-76 (Mission Rd) from E Vista Way to North River Rd – Wednesday (11/12/2008)
2) SR-76 (Mission Rd) from North River Rd to Olive Hill Rd – Tuesday (11/11/2008)
3) SR-76 (Mission Rd) from Olive Hill Rd and S Mission Rd – Wednesday (11/12/2008)
4) SR-76 (Pala Rd) from S Mission Rd to Via Monserate – Tuesday (11/18/2008)
5) SR-76 (Pala Rd) from Via Monserate to Gird Road – Tuesday (1/6/2009)
6) SR-76 (Pala Rd) from Gird Road to Sage Road – Tuesday (1/6/2009)
7) SR-76 (Pala Rd) from Sage Road to Old Highway 395 – Tuesday (1/6/2009)
8) SR-76 (Pala Rd) from Old Highway 395 to I-15 SB Ramp – Tuesday (1/6/2009)
9) SR-76 (Pala Rd) from I-15 SB Ramp to I-15 NB Ramp - Tuesday (1/6/2009)
10) SR-76 (Pala Rd) from I-15 NB Ramp to Pankey Road – Tuesday (1/6/2009)
11) SR-76 (Pala Rd) from Pankey Road to Horse Ranch Creek Rd – Tuesday (1/6/2009)
12) SR-76 (Pala Rd) from Horse Ranch Creek Rd to Rice Canyon Rd – Tuesday (1/6/2009)
13) SR-76 (Pala Rd) from Rice Canyon Rd to Couser Canyon Rd – Tuesday (1/6/2009)
14) SR-76 (Pala Rd) from Couser Canyon Rd to Pala Mission Rd – Wednesday (11/12/2008)
15) Old Highway 395 from East Mission Road to Reche Road – Tuesday (1/6/2009)
16) Old Highway 395 from Reche Road to Stewart Canyon Road – Tuesday (1/6/2009)
17) Old Highway 395 from Pala Mesa Drive to SR-76 (Pala Rd) – Thursday (12/11/2008)
18) Stewart Canyon Road from Old Highway 395 to Pankey Rd – Thursday (12/11/2008)
19) Pankey Road south of Stewart Canyon Rd – Thursday (12/11/2008)
20) Pankey Road from SR-76 (Pala Rd) to Dulin Road – Thursday (12/13/2007)

The following freeway segment volumes (from Caltrans web site documenting year 2007 volumes) were analyzed as part of this study:

1) I-15 from Rainbow Valley Boulevard to Mission Road
2) I-15 from Mission Road to SR-76 (Pala Rd)
3) I-15 from SR-76 (Pala Rd) to Escondido Highway (Old Highway 395)

Additionally, the following State Route segment volumes (from SANDAG Hwy Coverage documenting year 2007 volumes) were analyzed as part of this study:

1) SR-76 from E. Vista Way to North River Road
2) SR-76 from North River Road to Olive Hill Road
3) SR-76 from Olive Hill Road to Mission Road
4) SR-76 from Mission Road to Via Monserate
5) SR-76 from Via Monserate to Gird Road
6) SR-76 from Gird Road to Sage Road
7) SR-76 from Sage Road to Old Hwy 395
8) SR-76 from Old Hwy 395 to I-15 SB Ramp
9) SR-76 from I-15 SB Ramp to I-15 NB Ramp
10) SR-76 from I-15 NB Ramp to Pankey Road

11) SR-76 from Pankey Road to Horse Ranch Creek Road
12) SR-76 from Horse Ranch Creek Road to Rice Canyon Road
13) SR-76 from Rice Canyon Road to Couser Canyon Road
14) SR-76 from Couser Canyon Road to Pala Mission Road

The existing AM, PM, and ADT volumes are shown on **Figures 6a, 6b & 6c**. Please note that the intersection of SR-76 at Pankey Place is currently closed as part of the current SR-76 widening from 2 to 4 lanes east of I-15; therefore, the previous count from 12/4/07 was utilized. Also, some of the intersection cross streets along Horse Ranch Creek Road may have a different name by the Campus Park applicant. These intersections include (with intersection reference #):

1) Horse Ranch Creek Road at Baltimore Oriole/Pala Mesa Heights Drive (#23)
2) Horse Ranch Creek Road at Harvest Glen Lane/Street B (#25)
3) Horse Ranch Creek Road at Pardee South Loop/Street A (#26)
4) Horse Ranch Creek Road at School Park Access/Street Q (#27)
5) Horse Ranch Creek Road at Street R/Pankey Place (#28)

To provide consistency between the traffic impact studies for Meadowood and Campus Park, the first cross street name noted above is used in the figures, tables, text, and appendix. Should reference to the alternate name be required, please reference this aforementioned list.

Roadway count data, freeway data, and Caltrans freeway factors are included in **Appendix D**. The LOS calculated for the intersections, street segments, state route segments, and freeway segments are shown in **Tables 4, 5, 6a, 6b, and 7**, respectively. SR-76 from the I-15 NB Ramp easterly a distance of approximately 1.4 miles is currently being widened from 2 to 4 lanes. The state route LOS for this portion is reported both under current 2 lane conditions (Table 6a) and when completed with 4 lanes (Table 6b). The SR-76 peak hour volumes and capacities reported in Table 6a and 6b are included at the end of Appendix D.

Figure 6a: Existing Volumes

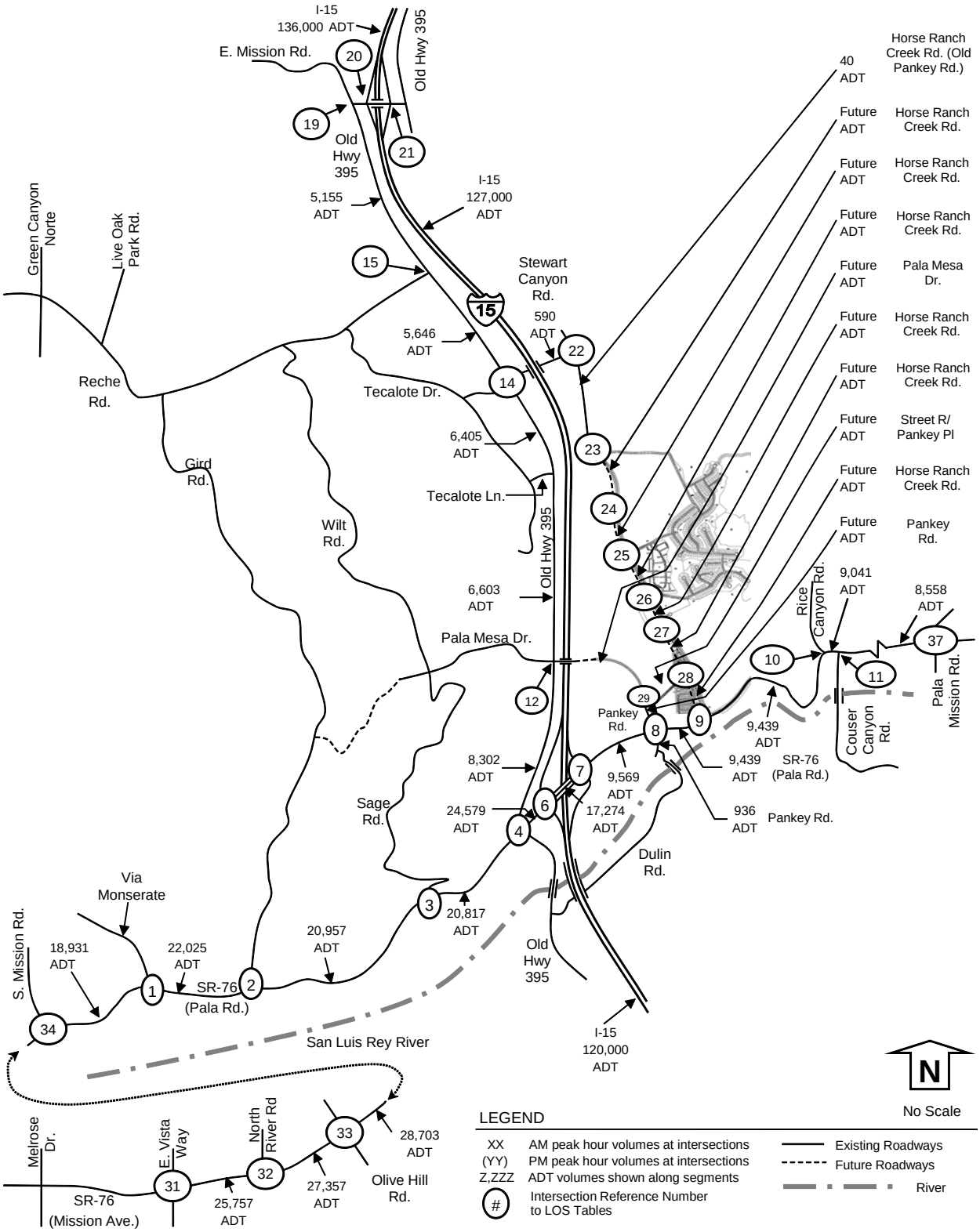


Figure 6b: Existing Volumes

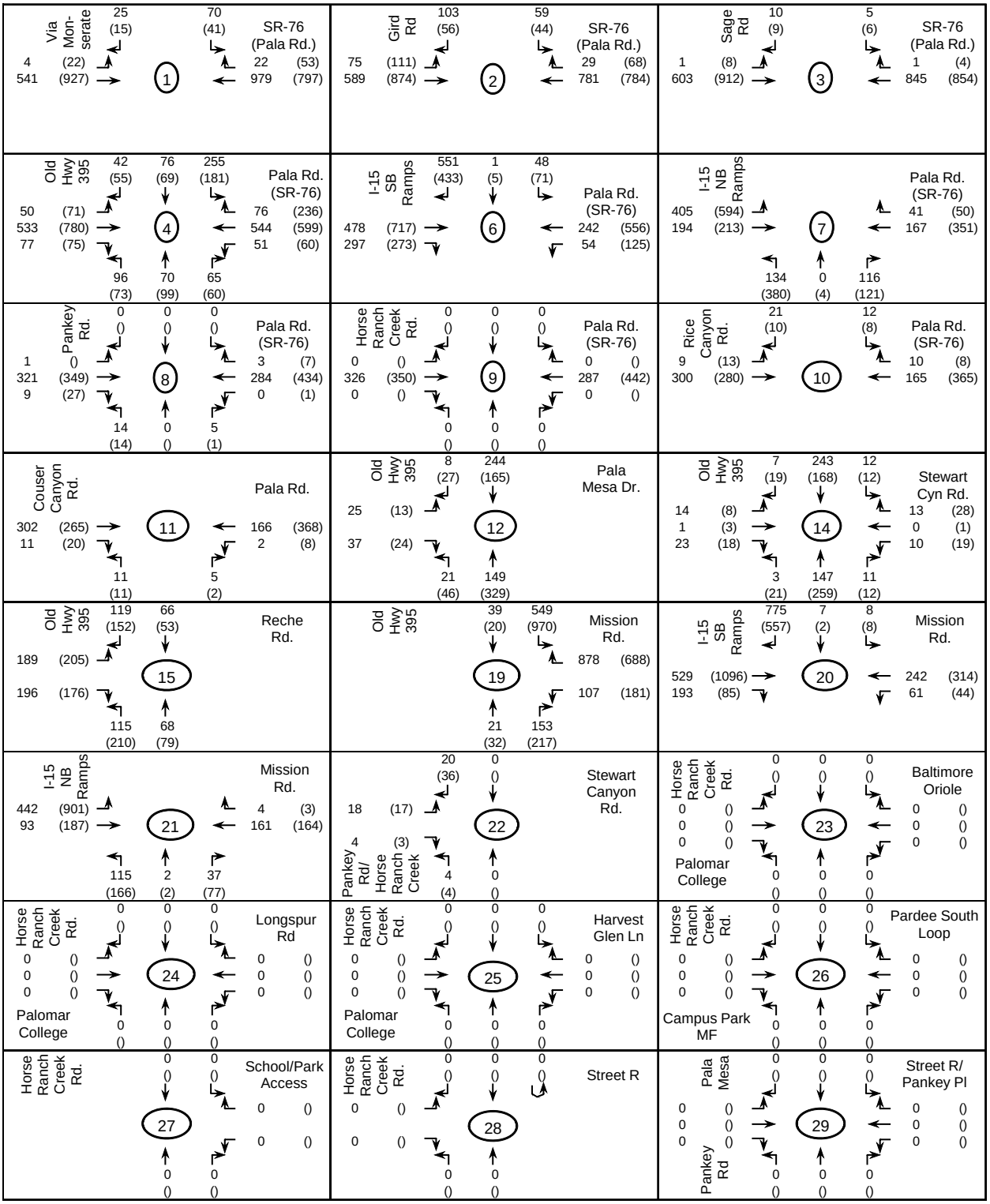


Figure 6c: Existing Volumes

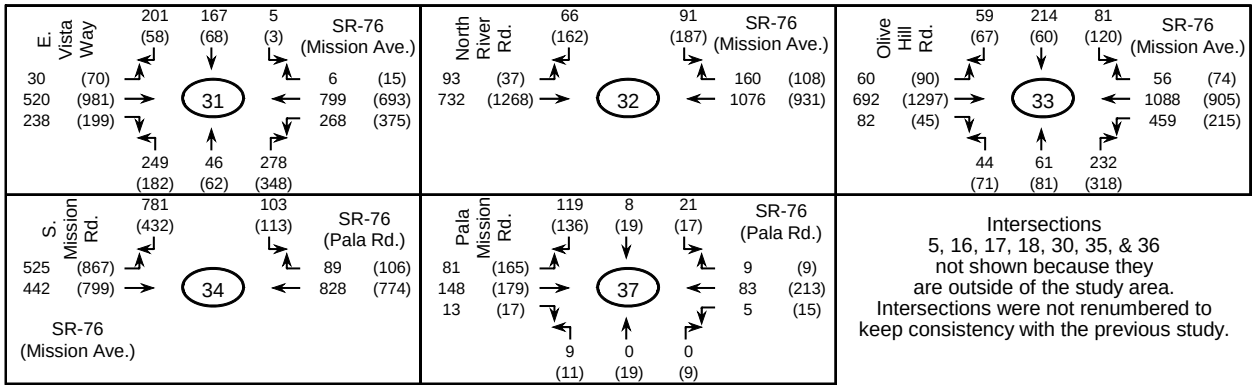


TABLE 4: EXISTING INTERSECTION LEVEL OF SERVICE

Intersection and (Analysis)[1]	Movement	Peak Hour	Existing Delay[2]	Existing LOS[3]
1) SR-76 (Pala Rd) at	SB LR	AM	86.1	**F**
Via Monserate (U)	SB LR	PM	91.4	**F**
	All	AM	5.0	A
	All	PM	2.9	A
2) SR-76 (Pala Rd) at	All	AM	12.9	B
Gird Rd (S)	All	PM	12.6	B
3) SR-76 (Pala Rd) at	SB LR	AM	22.6	C
Sage Rd (U)	SB LR	PM	33.0	D
	All	AM	0.2	A
	All	PM	0.4	A
4) SR-76 (Pala Rd) at	All	AM	29.7	C
Old Hwy 395 (S)	All	PM	30.2	C
6) SR-76 (Pala Rd) at	All	AM	27.5	C
I-15 SB Ramps (S)	All	PM	26.4	C
7) SR-76 (Pala Rd) at	All	AM	22.4	C
I-15 NB Ramps (S)	All	PM	43.6	D
8) SR-76 (Pala Rd) at	NB LTR	AM	12.2	B
Pankey Road (U)	NB LTR	PM	14.6	B
	SB LTR	AM	0.0	A
	SB LTR	PM	0.0	A
9) SR-76 (Pala Rd) at	Future	AM	DNE	NA
Horse Ranch Creek Rd (U)	Intersection	PM	DNE	NA
10) SR-76 (Pala Rd) at	SB LR	AM	10.7	B
Rice Canyon Road (U)	SB LR	PM	12.9	B
11) SR-76 (Pala Rd) at	NB LR	AM	11.9	B
Couser Canyon Road (U)	NB LR	PM	14.2	B
12) Old Highway 395 at	EB LR	AM	11.0	B
Pala Mesa Dr (U)	EB LR	PM	11.1	B
14) Old Highway 395 at	WB LTR	AM	10.8	B
Stewart Canyon Road (U)	WB LTR	PM	11.9	B
15) Old Highway 395 at	EB LR	AM	18.4	C
Reche Road (U)	EB LR	PM	35.9	**E**
	All	AM	10.6	B
	All	PM	17.6	B
19) Mission Road at	SB L	AM	12.2	B
Old Highway 395 (S)	SB L	PM	23.0	C
20) Mission Road at	SB LTR	AM	20.6	C
I-15 SB Ramps (S)	SB LTR	PM	17.8	B
21) Mission Road at	All	AM	17.2	B
I-15 NB Ramps (S)	All	PM	37.5	D
22) Stewart Canyon Rd at	EB LR	AM	8.7	A
HRCR/Pankey Road (U)	EB LR	PM	8.7	A
23) Horse Ranch Crk Rd at	WB LR	AM	DNE	NA
Baltimore Oriole (U)	WB LR	PM	DNE	NA
24) Horse Ranch Crk Rd at	All	AM	DNE	NA
Longspur Rd (S)	All	PM	DNE	NA
25) Horse Ranch Crk Rd at	WB LR	AM	DNE	NA
Harvest Glen Ln (U)	WB LR	PM	DNE	NA
26) Horse Ranch Crk Rd at	WB LR	AM	DNE	NA
Pardee South Loop (U)	WB LR	PM	DNE	NA
27) Horse Ranch Crk Rd at	All-Way	AM	DNE	NA
School/Park Access (U)	All-Way	PM	DNE	NA
28) Horse Ranch Crk Rd	EB LR	AM	DNE	NA
at Street R (U)	EB LR	PM	DNE	NA
29) Pankey/Pala Mesa Dr	WB LR	AM	DNE	NA
at Street R (U)	WB LR	PM	DNE	NA
31) SR-76 (Mission Ave) at	All	AM	60.9	**E**
E. Vista Way (S)	All	PM	48.4	D
32) SR-76 (Mission Ave) at	All	AM	61.7	**E**
North River Rd (S)	All	PM	29.7	C
33) SR-76 (Mission Ave) at	All	AM	53.8	D
Olive Hill Rd (S)	All	PM	52.9	D
34) SR-76 (Mission Ave) at	All	AM	18.9	B
S. Mission Rd (S)	All	PM	21.5	C
37) SR-76 (Pala Rd.) at	All	AM	29.3	C
Pala Mission Rd. (S)	All	PM	32.4	C

Notes: HRCR: Horse Ranch Creek Rd. 1) Intersection Analysis - (S) Signalized, (U) Unsignalized 2) Delay - HCM Average
3) LOS: Level of Service.

TABLE 5: EXISTING SEGMENT ADT VOLUMES AND LEVEL OF SERVICE

Segment	Classification Circulation Element (9/05)	Existing				
		Daily Volume	# of lanes	LOS E Capacity	V/C	LOS
Old Highway 395						
East Mission Road to Reche Road	Collector	5,155	2	16,200	0.32	C
Reche Road to Stewart Canyon Road	Collector	5,646	2	16,200	0.35	C
Pala Mesa Drive to SR-76 (Pala Road)	Collector	8,302	2	16,200	0.51	D
Stewart Canyon Road						
Old Hwy 395 to Horse Ranch Creek Rd	Collector	590	2	16,200	0.04	A
Pankey Road						
Stewart Canyon Rd to Baltimore Oriole (#23)	Light Collector	40	2	16,200	0.00	A
Break in Pankey Road						
Street R/Pankey Place to SR-76 (Pala Rd)	Light Collector	Minimal	2	16,200	0.00	A
SR-76 (Pala Road) to Dulin Rd	Light Collector	936	2	16,200	0.06	A

Notes: Classification per September 2005 Circulation Element Maps. Daily volume is a 24 hour volume.
LOS: Level of Service. V/C: Volume to Capacity ratio. NA: Not Applicable.

TABLE 6A: EXISTING STATE ROUTE VOLUMES AND LEVEL OF SERVICE (WITHOUT GRANITE IMPROVEMENT)

State Route 76	Lanes in	AM (Eastbound)					AM (Westbound)					PM (Eastbound)					PM (Westbound)				
Study Limits (direct & cumulative)	each dir	Vol	Dir	Cap	v/c	LOS	Vol	Dir	Cap	v/c	LOS	Vol	Dir	Cap	v/c	LOS	Vol	Dir	Cap	v/c	LOS
E. Vista Way to North River Rd	1	718	EB	950	0.76	D	1040	WB	950	1.09	**F**	1107	EB	950	1.17	**F**	652	WB	950	0.69	C
North River Rd to Olive Hill Rd	1	852	EB	950	0.90	**E**	1200	WB	950	1.26	**F**	1176	EB	950	1.24	**F**	781	WB	950	0.82	D
Olive Hill Rd to Mission Rd	1	1031	EB	950	1.09	**F**	1245	WB	950	1.31	**F**	1457	EB	950	1.53	**F**	1069	WB	950	1.13	**F**
Mission Rd to Via Monserate	1	745	EB	950	0.78	D	901	WB	950	0.95	**E**	1064	EB	950	1.12	**F**	618	WB	950	0.65	C
Via Monserate to Gird Rd	1	808	EB	950	0.85	D	895	WB	950	0.94	**E**	1077	EB	950	1.13	**F**	786	WB	950	0.83	D
Gird Rd to Sage Rd	1	740	EB	950	0.78	D	542	WB	950	0.57	C	645	EB	950	0.68	C	742	WB	950	0.78	D
Sage Rd to Old Hwy 395	1	760	EB	950	0.80	D	534	WB	950	0.56	C	638	EB	950	0.67	C	768	WB	950	0.81	D
Old Hwy 395 to I-15 SB Ramps	2	1507	EB	2050	0.74	D	665	WB	2028	0.33	B	816	EB	2050	0.40	B	1258	WB	2028	0.62	C
I-15 SB Ramps to I-15 NB Ramps	1	844	EB	950	0.89	**E**	539	WB	950	0.57	C	718	EB	950	0.76	D	1153	WB	950	1.21	**F**
I-15 NB Ramps to Pankey Rd	1	559	EB	950	0.59	C	606	WB	950	0.64	C	696	EB	950	0.73	D	820	WB	950	0.86	**E**
Pankey Rd to Horse Ranch Creek Rd	1	589	EB	950	0.62	C	540	WB	950	0.57	C	631	EB	950	0.66	C	897	WB	950	0.94	**E**
Horse Ranch Creek Rd to Rice Cyn	1	588	EB	950	0.62	C	539	WB	950	0.57	C	631	EB	950	0.66	C	897	WB	950	0.94	**E**
Rice Cyn to Couser Cyn	1	589	EB	950	0.62	C	540	WB	950	0.57	C	526	EB	950	0.55	C	930	WB	950	0.98	**E**
Couser Cyn to Pala Mission Rd	1	634	EB	950	0.67	C	357	WB	950	0.38	B	434	EB	950	0.46	B	950	WB	950	1.00	**F**

Source: SANDAG Hwycov 2007. Notes: Dir = Direction. Vol = Volume. Cap = Capacity. v/c = volume to capacity ratio. LOS = Level of Service.

TABLE 6B: EXISTING STATE ROUTE VOLUMES AND LEVEL OF SERVICE (WITH GRANITE IMPROVEMENT)

State Route 76	Lanes in	AM (Eastbound)					AM (Westbound)					PM (Eastbound)					PM (Westbound)				
Study Limits (direct & cumulative)	each dir	Vol	Dir	Cap	v/c	LOS	Vol	Dir	Cap	v/c	LOS	Vol	Dir	Cap	v/c	LOS	Vol	Dir	Cap	v/c	LOS
E. Vista Way to North River Rd	1	718	EB	950	0.76	D	1040	WB	950	1.09	**F**	1107	EB	950	1.17	**F**	652	WB	950	0.69	C
North River Rd to Olive Hill Rd	1	852	EB	950	0.90	**E**	1200	WB	950	1.26	**F**	1176	EB	950	1.24	**F**	781	WB	950	0.82	D
Olive Hill Rd to Mission Rd	1	1031	EB	950	1.09	**F**	1245	WB	950	1.31	**F**	1457	EB	950	1.53	**F**	1069	WB	950	1.13	**F**
Mission Rd to Via Monserate	1	745	EB	950	0.78	D	901	WB	950	0.95	**E**	1064	EB	950	1.12	**F**	618	WB	950	0.65	C
Via Monserate to Gird Rd	1	808	EB	950	0.85	D	895	WB	950	0.94	**E**	1077	EB	950	1.13	**F**	786	WB	950	0.83	D
Gird Rd to Sage Rd	1	740	EB	950	0.78	D	542	WB	950	0.57	C	645	EB	950	0.68	C	742	WB	950	0.78	D
Sage Rd to Old Hwy 395	1	760	EB	950	0.80	D	534	WB	950	0.56	C	638	EB	950	0.67	C	768	WB	950	0.81	D
Old Hwy 395 to I-15 SB Ramps	2	1507	EB	2050	0.74	**D**	665	WB	2028	0.33	B	816	EB	2050	0.40	B	1258	WB	2028	0.62	C
I-15 SB Ramps to I-15 NB Ramps	1	844	EB	950	0.89	**E**	539	WB	950	0.57	C	718	EB	950	0.76	D	1153	WB	950	1.21	**F**
I-15 NB Ramps to Pankey Rd	2	559	EB	3100	0.18	A	606	WB	3030	0.20	A	696	EB	3100	0.22	A	820	WB	3030	0.27	A
Pankey Rd to Horse Ranch Creek Rd	2	589	EB	1806	0.33	B	540	WB	2028	0.27	A	631	EB	1806	0.35	B	897	WB	2028	0.44	B
Horse Ranch Creek Rd to Rice Cyn	1	588	EB	950	0.62	C	539	WB	950	0.57	C	631	EB	950	0.66	C	897	WB	950	0.94	**E**
Rice Cyn to Couser Cyn	1	589	EB	950	0.62	C	540	WB	950	0.57	C	526	EB	950	0.55	C	930	WB	950	0.98	**E**
Couser Cyn to Pala Mission Rd	1	634	EB	950	0.67	C	357	WB	950	0.38	B	434	EB	950	0.46	B	950	WB	950	1.00	**F**

Source: SANDAG Hwycov 2007. Notes: Dir = Direction. Vol = Volume. Cap = Capacity. v/c = volume to capacity ratio. LOS = Level of Service.

TABLE 7: EXISTING FREEWAY VOLUMES AND LEVEL OF SERVICE

Freeway	I-15				I-15				I-15			
Segment	Rainbow Valley Blvd to Mission Rd				Mission Rd to SR-76 (Pala Rd)				SR-76 to Escondido Hwy (Old 395)			
Existing (Year 2006)												
ADT	136,000				127,000				120,000			
Peak Hour	A M		P M		A M		P M		A M		P M	
Direction	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
Number of Lanes	4	4	4	4	4	4	4	4	4	4	4	4
Capacity (1)	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400
K Factor (2)	0.0619	0.0619	0.0738	0.0738	0.0619	0.0619	0.0738	0.0738	0.0590	0.0590	0.0723	0.0723
D Factor (3)	0.1653	0.8347	0.6398	0.3602	0.1653	0.8347	0.6398	0.3602	0.1989	0.8011	0.6955	0.3045
Truck Factor (4)	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.8977	0.8977	0.8977	0.8977
Peak Hour Volume	1,515	7,650	6,991	3,936	1,415	7,143	6,528	3,675	1,569	6,318	6,722	2,943
Volume to Capacity	0.161	0.814	0.744	0.419	0.150	0.760	0.694	0.391	0.167	0.672	0.715	0.313
LOS	A	D	C	A	A	C	C	A	A	C	C	A

Notes: (1) Capacity of 2,350 passenger cars per hour per lane (pcphpl) from Caltrans' Guide for the Preparation of Traffic Impact Studies, Dec 2002. (2) Latest K factor from Caltrans (based on 2005 data), which is the percentage of Annual Average Daily Traffic (AADT) in both directions. (3) Latest D factor from Caltrans (based on 2005 data), which when multiplied by K and ADT will provide peak hour volume. (4) Latest truck factor from Caltrans (based on 2000 data).

Under existing conditions, all study intersections and roadways were calculated to operate at LOS D or better with the exception of the:

1) Intersection of SR-76 (Pala Rd) / Via Monserate (Minor Leg LOS F AM & PM; overall LOS A AM & PM)
2) Intersection of Old Highway 395 / Reche Road (Minor Leg LOS E PM; overall LOS B AM & PM)
3) Intersection of SR-76 (Mission Ave.) / E. Vista Way (LOS E AM)
4) Intersection of SR-76 (Mission Ave.) / North River Rd. (LOS E AM)
5) State Route 76 (Mission Ave.) from E Vista Way to North River Road (LOS F AM & PM)
6) State Route 76 (Mission Ave.) from North River Road to Olive Hill Road (LOS F AM & PM)
7) State Route 76 (Mission Ave.) from Olive Hill Road to S Mission Road (LOS F AM & PM)
8) State Route 76 (Pala Rd) from S Mission Road to Via Monserate (LOS E AM & LOS F PM)
9) State Route 76 (Pala Rd) from Via Monserate to Gird Rd (LOS E AM & LOS F PM)
10) State Route 76 (Pala Rd) from I-15 SB Ramp to I-15 NB Ramp (LOS E AM & LOS F PM)
11) State Route 76 (Pala Rd) from I-15 NB Ramp to Pankey Road (LOS E PM)
12) State Route 76 (Pala Rd) from Pankey Road to Horse Ranch Creek Rd (LOS E PM)
13) State Route 76 (Pala Rd) from Horse Ranch Creek Rd to Rice Canyon Rd (LOS E PM)
14) State Route 76 (Pala Rd) from Rice Canyon Rd to Couser Canyon Road (LOS E PM)
15) State Route 76 (Pala Rd) from Couser Canyon Road to Pala Mission Road (LOS F PM)

The unacceptable LOS for State Route 76 (Pala Rd) from I-15 NB Ramp to Pankey Road and from Pankey Road to Horse Ranch Creek Road is calculated to change to acceptable LOS when the current widening of SR-76 from 2 to 4 lanes is completed. Existing LOS calculations are included in **Appendix E**.

2.2 Existing Parking, Transit and On-site Circulation

The project site is generally vacant. No nearby transit service routes are published.

3.0 Project Impact Analysis

3.1 Analysis Methodology

The project study area is generally determined by the limits or extent of where 50 or more peak hour trips would travel in either direction, which is documented on page 4 of the *County of San Diego County* Guidelines for Determining Significance, December 5, 2007. The project study area was also based on previous traffic study versions prepared for Meadowood.

The traffic analyses prepared for this study were based on the *2000 Highway Capacity Manual* (HCM) operations analysis using Level of Service (LOS) evaluation criteria. The operating conditions of the study intersections, street segments, and highway segments are measured using the HCM LOS designations, which range from A through F. LOS A represents the best operating condition and LOS F denotes the worst operating condition. The individual LOS criteria for each roadway component are described below.

3.1.1 Intersections

The study intersections were analyzed based on the **operational analysis** outlined in the 2000 HCM. This process defines LOS in terms of **average control delay** per vehicle, which is measured in seconds. LOS at the intersections were calculated using the computer software program Synchro 6.0 (Trafficware Corporation, 2003). These calculations incorporate potential pedestrian calls to cross an intersection. A pedestrian call includes a single person, group of people, or persons with a horse or other domesticated animal crossing an intersection. The HCM LOS for the range of delay by seconds for un-signalized and signalized intersections is described in **Table 8**.

TABLE 8: UN-SIGNALIZED AND SIGNALIZED INTERSECTION LEVEL OF SERVICE (HCM 2000)

Level of Service	Un-Signalized Average Control Delay (seconds/vehicle)	Signalized Average Control Delay (seconds/vehicle)
A	0-10	0-10
B	> 10-15	> 10-20
C	> 15-25	> 20-35
D	> 25-35	> 35-55
E	> 35-50	> 55-80
F	> 50	> 80

Source: Highway Capacity Manual 2000.

3.1.2 Street Segments

The street segments were analyzed based on the functional classification of the roadway using the County of San Diego *Average Daily Vehicle Trips* capacity lookup table. The roadway segment capacity and LOS standards used to analyze street segments are summarized in **Table 9**.

TABLE 9: STREET SEGMENT DAILY CAPACITY AND LOS (COUNTY OF SAN DIEGO)

Circulation Element Road Classification	CROSS SECTION	LOS A	LOS B	LOS C	LOS D	LOS E
Expressway	126/146	<36,000	<54,000	<70,000	<86,000	<108,000
Prime Arterial	102/122	<22,200	<37,000	<44,600	<50,000	<57,000
Major Road	78/98	<14,800	<24,700	<29,600	<33,400	<37,000
Collector	64/84	<13,700	<22,800	<27,400	<30,800	<34,200
Town Collector	54/74	<3,000	<6,000	<9,500	<13,500	<19,000
Light Collector	40/60	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Collector	40/84	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Light Collector	40/60	<1,900	<4,100	<7,100	<10,900	<16,200
Recreational Parkway	40/100	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Mountain	40/100	<1,900	<4,100	<7,100	<10,900	<16,200
Non-Circulation Roads						
Residential Collector	40/60	NA	NA	<4,500	NA	NA
Residential Road	36/56	NA	NA	<1,500	NA	NA

Source: County of San Diego Department of Public Works *Public Road Standards* July 14, 1999.

3.1.3 State Route Segments

The state route segments were analyzed using a Volume to Capacity (V/C) ratio as outlined in the 2000 HCM. This approach is consistent with the County's current method for reporting segment operations for state routes and is consistent with the method used in the General Plan Update. This methodology is used by Caltrans and SANDAG because the analysis focuses on the directional commuter peak periods (AM & PM), which is a more detailed analysis than an overall Average Daily Trip (ADT) analysis. The V/C ratio formulas and associated LOS were provided by SANDAG (included in **Appendix F**) and are shown in **Table 10**.

TABLE 10: STATE ROUTE LEVEL OF SERVICE (SANDAG)

Measure of Effectiveness	LOS A - C	LOS D	LOS E	LOS F
Volume/Capacity Ratio	0.00 - 0.70	0.71 - 0.85	0.86 - 0.99	> 1.00

Source: SANDAG.

3.1.4 Freeway Segments

The freeway segments were analyzed based on a multilane highway LOS criteria using a Volume to Capacity (V/C) ratio as outlined in the 2000 HCM. The accepted methodology by Caltrans for the analysis of freeway sections is to use the most current edition of the HCM as noted on page 5 of Caltrans' *Guide for the Preparation of Traffic Impact Studies*, December 2002, which also documents a maximum service flow rate of 2,350 passenger cars per hour per lane. The freeway LOS operations are based on the SANDAG's *2006 Congestion Management Program* Update (July 2006) V/C ratios as summarized below in **Table 11**. An excerpt from the SANDAG CMP and the Caltrans maximum service flow rate are both included in **Appendix G**.

TABLE 11: FREEWAY LEVEL OF SERVICE (SANDAG)

Measure of Effectiveness	LOS A - C	LOS D	LOS E	LOS F
Volume/Capacity Ratio	0.00 - 0.79	0.80 - 0.92	0.93 - 1.00	> 1.00

Source: 2006 SANDAG Congestion Management Program, page 113.

3.2 Project Trip Generation

This section describes the anticipated interim construction trip generation and the final product trip generation.

3.2.1 Construction Trip Generation

The project would result in a temporary increase in traffic on local area roadways; however, the amount of temporary construction traffic will be less than the final product described in the next section and analyzed within this study. Furthermore, the project is designed to have the earthwork balanced; therefore, no import or export of soil is anticipated. If needed, traffic control plans will be submitted under separate cover for adjacent roadways to mitigate project related roadway construction projects.

3.2.2 Final Product Trip Generation

The final product trip generation was calculated using SANDAG trip rates from the *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002. Based on SANDAG trip rates the project is calculated to generate 8,740 ADT, 965 AM peak hour trips (365 inbound and 600 outbound), and 864 PM peak hour trips (574 inbound and 290 outbound) as shown in **Table 12**.

TABLE 12: PROJECT TRIP GENERATION

Proposed									AM					PM	
Land Use	Rate		Size & Units		ADT	%	Split		IN	OUT	%	Split		IN	OUT
Residential - Single Family	10	/DU	355	DU	**3,550**	8%	0.3	0.7	**85**	**199**	10%	0.7	0.3	**249**	**107**
Residential - Multi Family	8	/DU	503	DU	**4,024**	8%	0.2	0.8	**65**	**257**	10%	0.7	0.3	**282**	**121**
Residential Subtotal			**858**		**7,574**				**150**	**456**				**531**	**228**
Neighborhood Park	5	/Acre	10.0	Acres	**50**	4%	0.5	0.5	**1**	**1**	8%	0.5	0.5	**2**	**2**
Elementary School	90	/Acre	12.7	Acres (1)	**1,116**	32%	0.6	0.4	**214**	**143**	9%	0.4	0.6	**41**	**60**
School & Park Subtotal					**1,166**				**215**	**144**				**43**	**62**
Total					**8,740**				**365**	**600**				**574**	**290**

Source: SANDAG *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region,* April 2002. DU - Dwelling Unit; ADT-Average Daily Traffic; Split-percent inbound and outbound. (1) School site of 12.7 acres includes a detention basin, thus a usable size of 12.4 acres was used for the traffic generation. This 12.4 usable acres may be conservative as the site is a cone shape that may yield less usable space.

The Bonsall Unified School District will determine whether it will utilize the 12.7-acre site for elementary school purposes. An alternative use for the site will be 42 residential units if the District elects not to build an elementary school on the 12.7-acre site. The daily traffic generation for the elementary school is 1,116 ADT while the daily traffic generation for 42 single family units is 420 ADT (10 ADT/units x 42 unts). This traffic study documents and analyzes the elementary school scenario due to its higher overall traffic generation. If the elementary school is not constructed, then a supplemental traffic analysis with the lower single family traffic generation will be prepared if otherwise required.

3.2.3 Project Alternatives Trip Generation

In addition to the proposed project, there are six project alternatives. These include: 1) No Project (No Development) Alternative, 2) No Project (Development Consistent with the Adopted

General Plan) Alternative, 3) Groundwater Dependent (Development Consistent with the Groundwater Ordinance) Alternative, 4) Reduced Grading Alternative, 5) General Plan Update Draft Land Use Map Alternative (Development Consistent with the San Diego County General Plan Update), and 6) General Plan Update Draft Referral Map Alternative (Development consistent with the San Diego County General Plan Update Alternative). A comparison of the calculated traffic generation between the alternatives is shown in **Table 13**.

TABLE 13: PROJECT ALTERNATIVES TRIP GENERATION

Land Use	Rate		Size & Units		ADT	%	Split		AM IN	AM OUT	%	Split		PM IN	PM OUT
Proposed Project															
Residential - Single Family	10	/DU	355	DU	3,550	8%	0.3	0.7	85	199	10%	0.7	0.3	249	107
Residential - Multi Family	8	/DU	503	DU	4,024	8%	0.2	0.8	65	257	10%	0.7	0.3	282	121
Neighborhood Park	5	/Acre	10.0	Acres	50	4%	0.5	0.5	1	1	8%	0.5	0.5	2	2
Elementary School	90	/Acre	12.7	Acres(1)	1,116	32%	0.6	0.4	214	143	9%	0.4	0.6	41	60
Proposed Project Total					***8,740***				***365***	***600***				***574***	***290***
1) No Project (No Development) Alternative - retains existing four SF residences and related agriculture use															
Residential - Single Family	10	/DU	4	DU	***40***	8%	0.3	0.7	***0***	***2***	10%	0.7	0.3	***3***	***1***
2) No Project (Development Consistent with the Adopted General Plan) Alternative															
Residential - Single Family	10	/DU	262	DU	***2,620***	8%	0.3	0.7	***62***	***147***	10%	0.7	0.3	***184***	***79***
3) Groundwater Dependent (Development Consistent with the Groundwater Ordinance) Alternative															
Residential - Single Family	12	/DU	46	DU	***552***	8%	0.3	0.7	***13***	***31***	10%	0.7	0.3	***39***	***17***
4) Reduced Grading Alternative															
Residential - Multi Family	8	/DU	1,138	DU	9,104	8%	0.2	0.8	146	582	10%	0.7	0.3	638	273
Neighborhood Park	5	/Acre	10.0	Acres	50	4%	0.5	0.5	1	1	8%	0.5	0.5	2	2
Elementary School	90	/Acre	12.7	Acres(1)	1,116	32%	0.6	0.4	214	143	9%	0.4	0.6	41	60
Reduced Grading Total					***10,270***				***361***	***726***				***681***	***336***
5) General Plan Update Draft Land Use Map Alternative															
Residential - Single Family	10	/DU	385	DU	3,850	8%	0.3	0.7	92	216	10%	0.7	0.3	270	116
Residential - Multi Family	8	/DU	783	DU	6,264	8%	0.2	0.8	101	400	10%	0.7	0.3	439	188
Neighborhood Park	5	/Acre	10.5	Acres	53	4%	0.5	0.5	1	1	8%	0.5	0.5	3	2
Elementary School	90	/Acre	12.7	Acres	1,143	32%	0.6	0.4	219	146	9%	0.4	0.6	42	62
Neighborhood Commercial	1200	/Acre	1.8	Acres	2,160	4%	0.6	0.4	52	35	10%	0.5	0.5	108	108
General Plan Update Draft Land Use Map Total					***13,470***				***466***	***798***				***862***	***476***
6) General Plan Update Draft Referral Map Alternative															
Residential - Single Family	10	/DU	263	DU	2,630	8%	0.3	0.7	63	147	10%	0.7	0.3	185	79
Residential - Multi Family	8	/DU	273	DU	2,184	8%	0.2	0.8	35	139	10%	0.7	0.3	153	66
Neighborhood Park	5	/Acre	4.8	Acres	24	4%	0.5	0.5	0	0	8%	0.5	0.5	1	1
Elementary School	90	/Acre	12.7	Acres	1,143	32%	0.6	0.4	219	146	9%	0.4	0.6	42	62
Neighborhood Commercial	1200	/Acre	1.8	Acres	2,160	4%	0.6	0.4	52	35	10%	0.5	0.5	108	108
General Plan Update Draft Referral Map Total					***8,141***				***369***	***467***				***489***	***316***

Source: SANDAG Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002. DU - Dwelling Unit; ADT-Average Daily Traffic; Split-percent inbound & outbound. (1) School site of 12.7 acres includes a detention basin, thus a usable size of 12.4 acres was used for the traffic generation. This 12.4 usable acres may be conservative as site is a cone shape that may yield less usable space.

3.3 Project Distribution and Assignment

Project trips were distributed based on a SANDAG Series 11 traffic model (a folded copy is included in a pocket at the back of the appendix). The Series 11 model is based on a regional model per the 2007 Regional Transportation Plan.

The SANDAG traffic model documented a 33% internal capture rate; however, to be conservative and based on a Caltrans request, the 33% was rounded down to 30%. The internal capture rate reflects the percentage of vehicles that would stay within the Traffic Analysis Zones (TAZs) located northeast of I-15 and SR-76. These TAZs included Campus Park (mixed-use), Campus Park West (mixed-use), Meadowood, and Palomar College. Campus Park West includes developments south of SR-76; however, the 30% internal capture rate was not based on traffic using this commercial area south of SR-76. These combined land uses create the equivalent of a small town where

residents have retail, office, commercial, schools, and social attractions all within a short drive, a reasonable walking distance, or a short bike ride. Supporting documentation for the 30% internal capture rate, a County general acceptance letter, and a Caltrans email acceptance are included in **Appendix H**.

The internal capture rate will vary based on the level of mixed-use development. Under near-term conditions, the surrounding retail/commercial/office uses proposed by other applicants are anticipated to be constructed after a critical mass of residential units are built and occupied. Thus, a conservative analysis is provided where a 0% internal capture rate is applied under near-term conditions. However, the built-out analysis incorporates the SANDAG based internal capture rate of 30%. The following scenarios are analyzed:

1) Near-term where residential, school, and park land uses are generating traffic. An internal capture rate is not applied because no surrounding commercial uses are anticipated to be completed until a critical mass of residential units are built and occupied.
2) Long-term where both the residential/school/park and surrounding retail/commercial/office are completed. A 30% internal capture rate is applied.

The SANDAG model assigned approximately 20% of the residential trips to/from the north via Stewart Canyon Road. This trip distribution is directly from the SANDAG traffic model, which uses Stewart Canyon Road for more direct access routes to/from the north on I-15 and into and out of Fallbrook (via Reche Rd and E Mission Rd). The center of Meadowood is approximately 1.5 miles from the interchange of I-15/SR-76. Thus, traveling through the I-15/SR-76 interchange to/from the north would add approximately 3 miles to the trip and require passing through more intersections.

3.3.1 Near-Term Distribution and Assignment (0% Internal Capture Rate)

The near-term distribution contains a residential component and a school with park component. The residential distribution covers the entire study area. The school and park distribution covers the residential areas of Meadowood and Campus Park. The school and park users are not planned to extend outside of the core area (i.e. not cross SR-76 or I-15). The school and park distribution are based on the weighted average of the groups of dwelling units to the total number of dwelling units (calculations included in **Appendix I**).

The near-term residential distribution is shown in **Figures 7a, 7b & 7c**. Please note that the distribution shown is almost verbatim from the SANDAG plot, thus it is based on a 33% internal capture rate. To translate the 67% external rate to a 100% external rate, the distribution percentage can be divided by 67%. For example the 7% distribution along SR-76 west of Old Hwy 395 is really 7%/67% =10.45%. To keep the percentage simple, only the SANDAG whole percentages numbers are shown. The assignment of project traffic is based on applying an increased project generation (7574/0.67 = 11,304). Therefore, taking 7% times 11,304 ADT = 791 ADT, which is the ADT on SR-76 west of Old Highway 395 as shown in **Figures 8a, 8b & 8c**.

The near-term school and park distribution is shown in **Figure 9** with the assignment in **Figure 10**. The combined near-term residential, school, and park assignments are shown in **Figure 11a, 11b &11c**.

Figure 7a: Near-Term Residential Distribution (0% Internal Capture Rate)

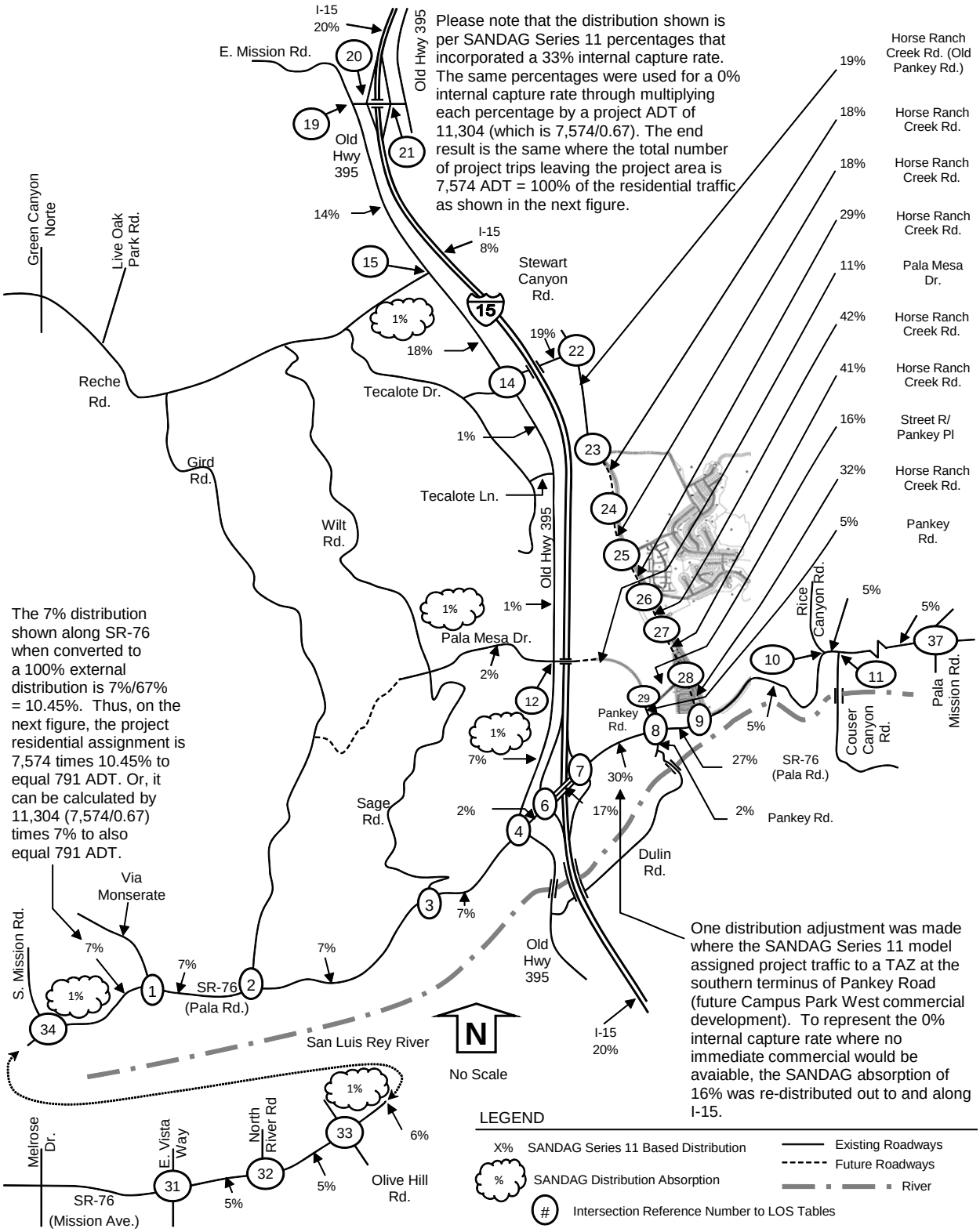


Figure 7b: Near-Term Residential Distribution (0% Internal Capture Rate)

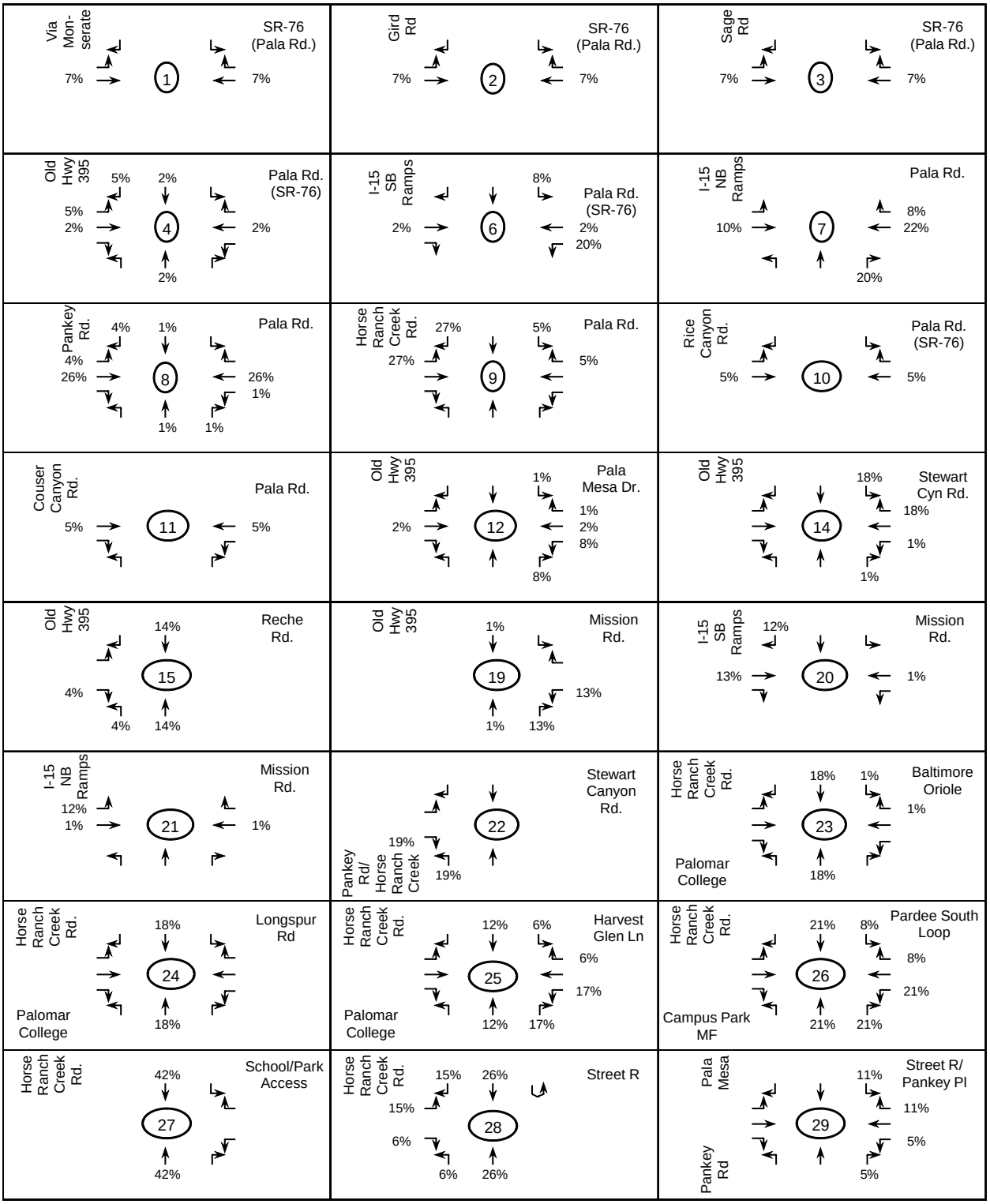
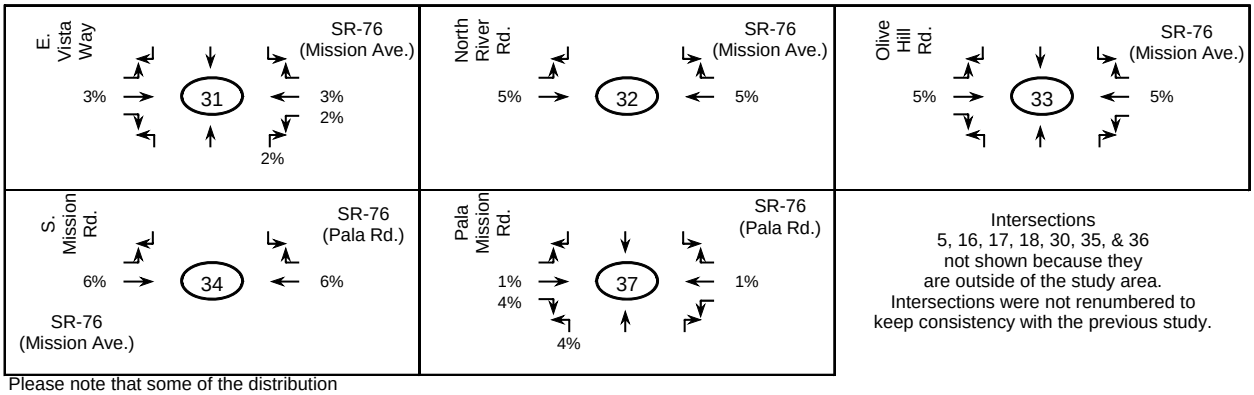
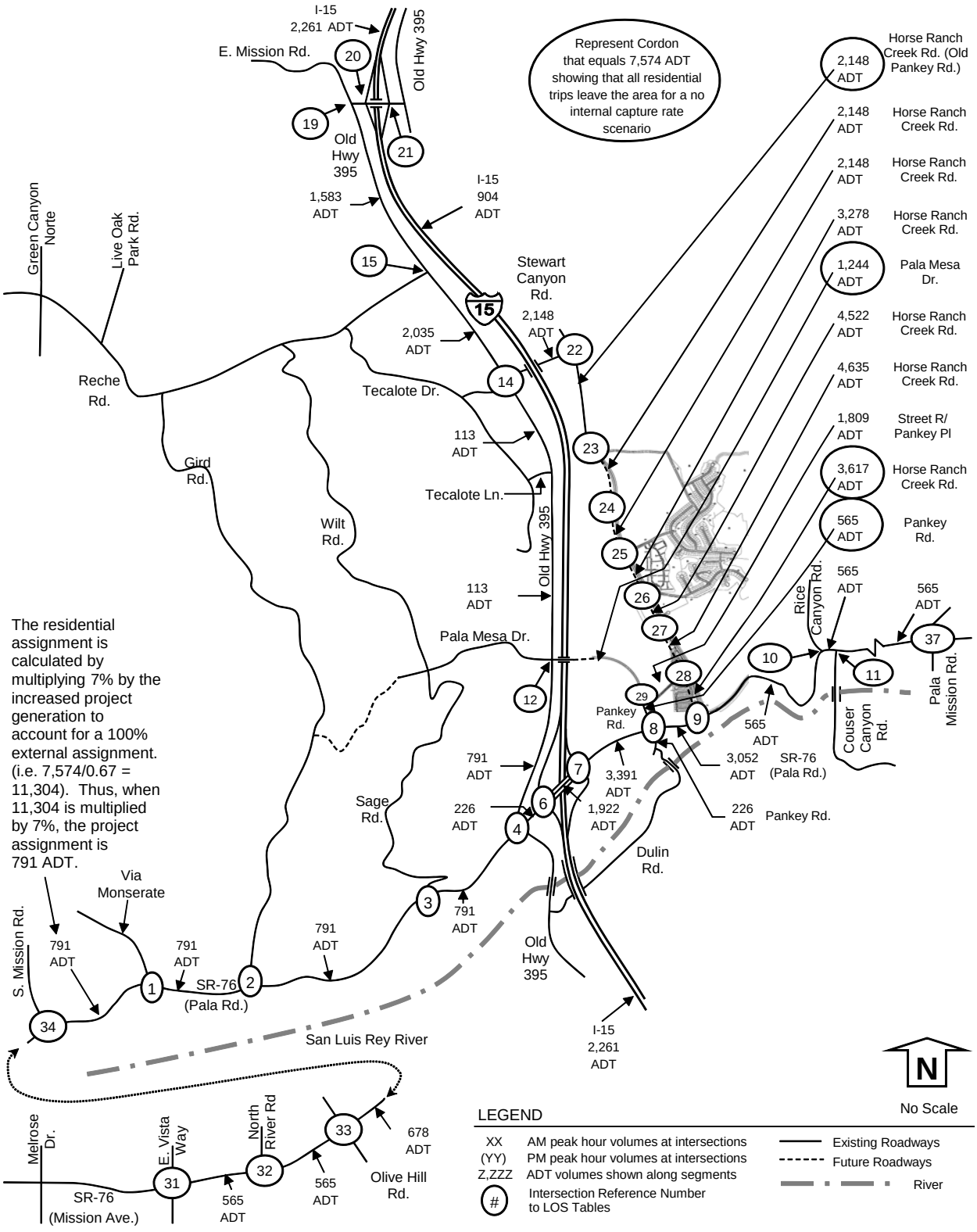


Figure 7c: Near-Term Residential Distribution (0% Internal Capture Rate)



Please note that some of the distribution percentages on the internal intersections (#23-29) reflect both inbound and outbound percentages; therefore, the assignment will be a mix of inbound and outbound traffic.

Figure 8a: Near-Term Residential Assignment (0% Internal Capture Rate)



The residential assignment is calculated by multiplying 7% by the increased project generation to account for a 100% external assignment. (i.e. 7,574/0.67 = 11,304). Thus, when 11,304 is multiplied by 7%, the project assignment is 791 ADT.

Figure 8b: Near-Term Residential Assignment (0% Internal Capture Rate)

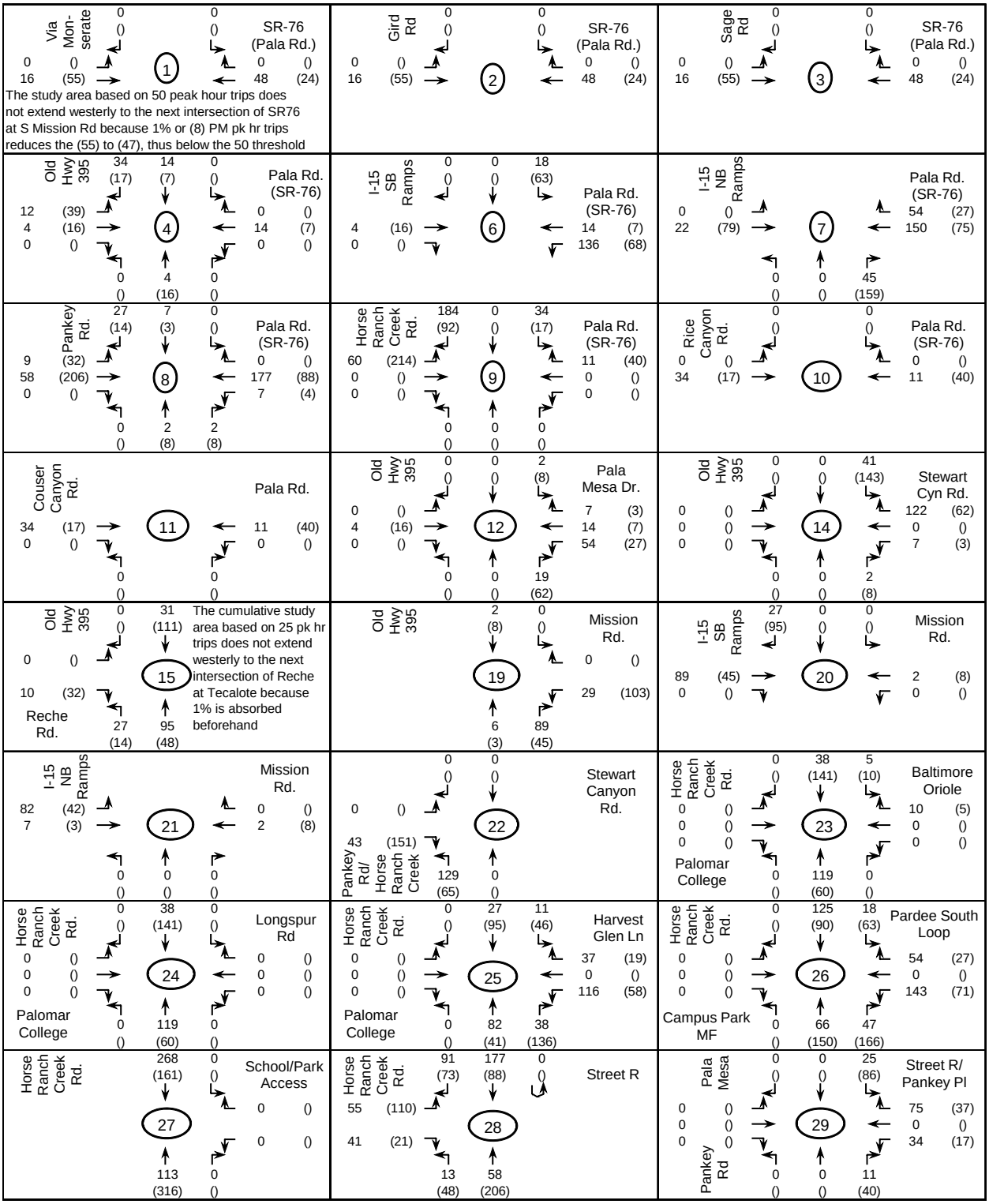


Figure 8c: Near-Term Residential Assignment (0% Internal Capture Rate)

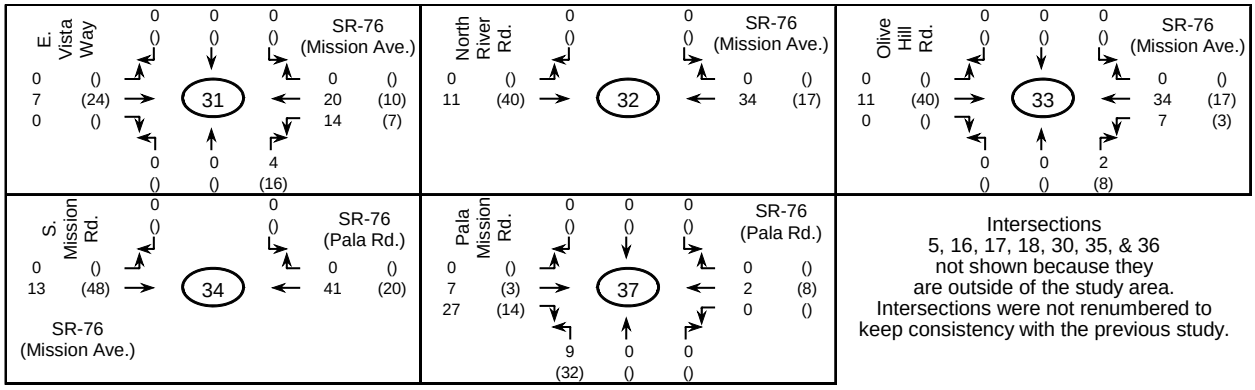


Figure 9: Near-Term School and Park Distribution (All Internal Traffic)

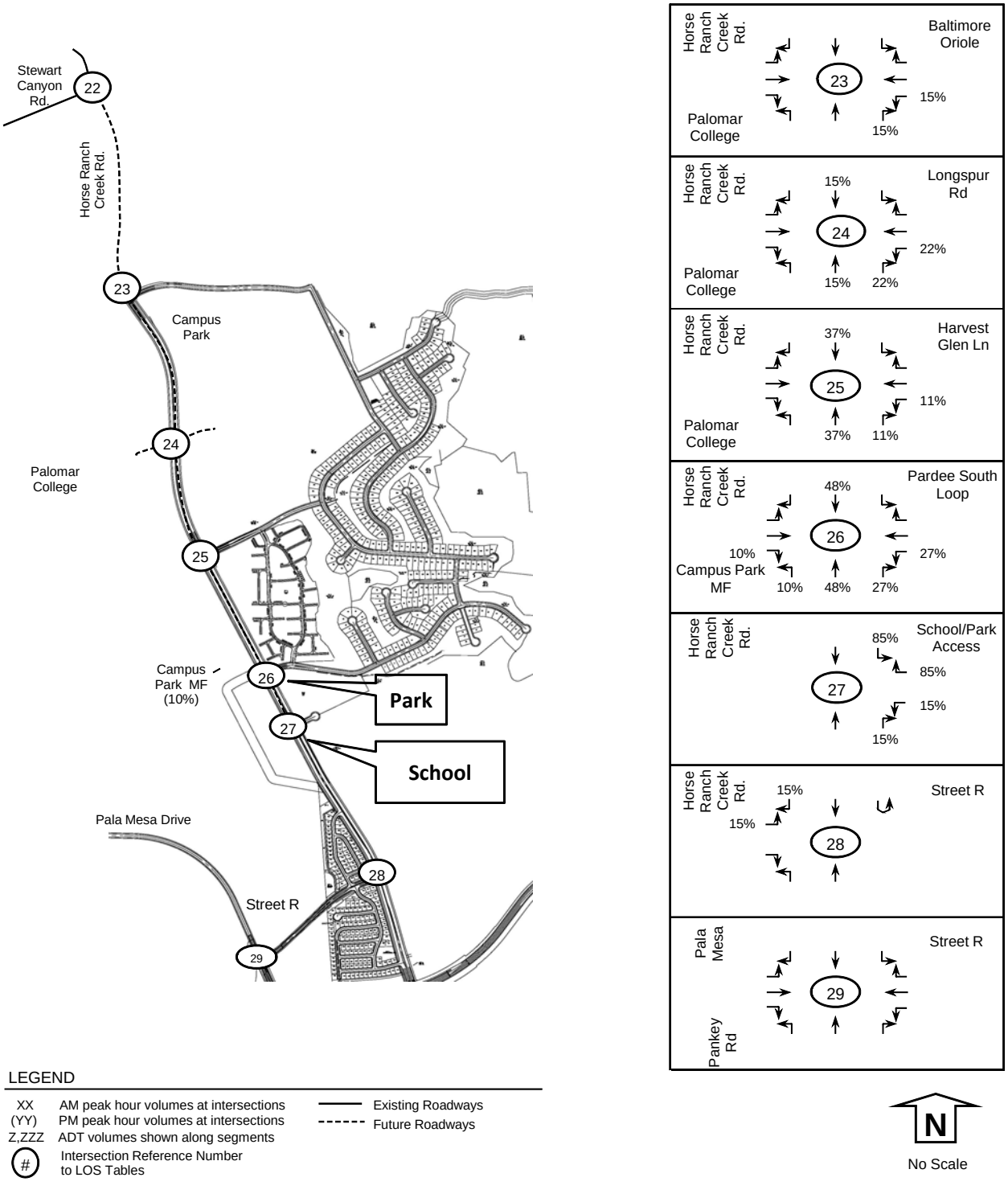


Figure 10: Near-Term School and Park Assignment (All Internal Traffic)

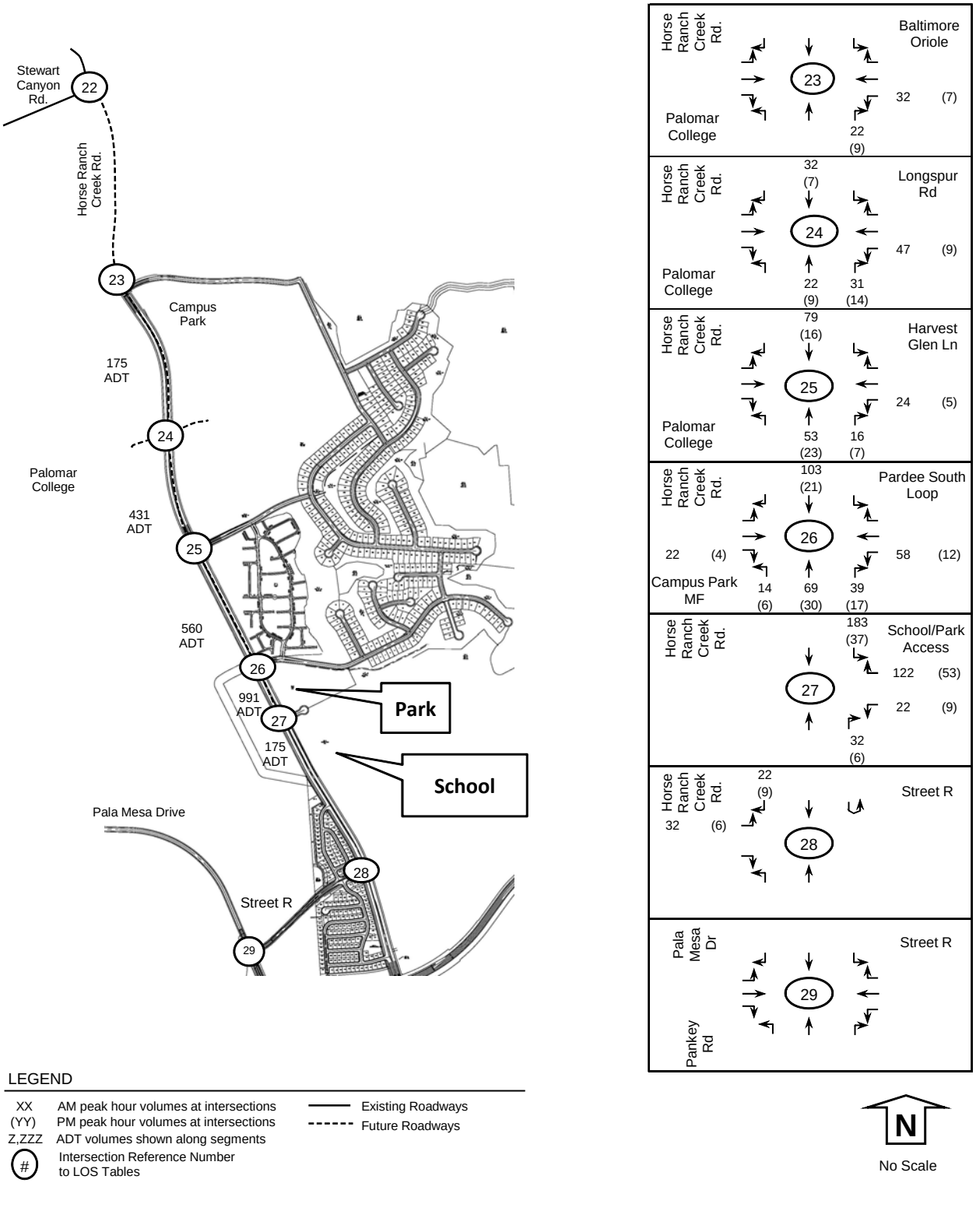


Figure 11a: Near-Term Residential, School, and Park Assignment (0% Internal Capture Rate)

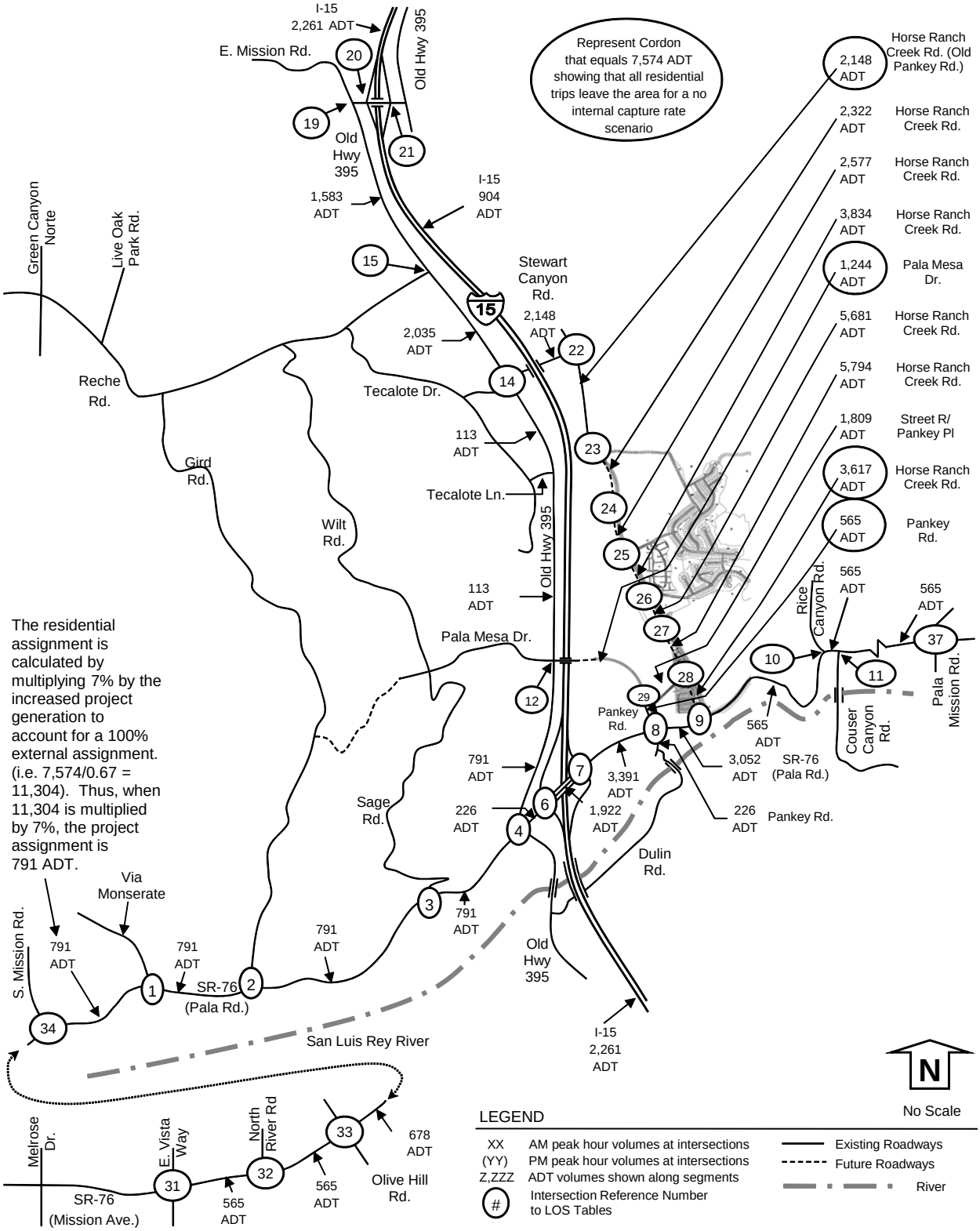


Figure 11b: Near-Term Residential, School, and Park Assignment (0% Internal Capture Rate)

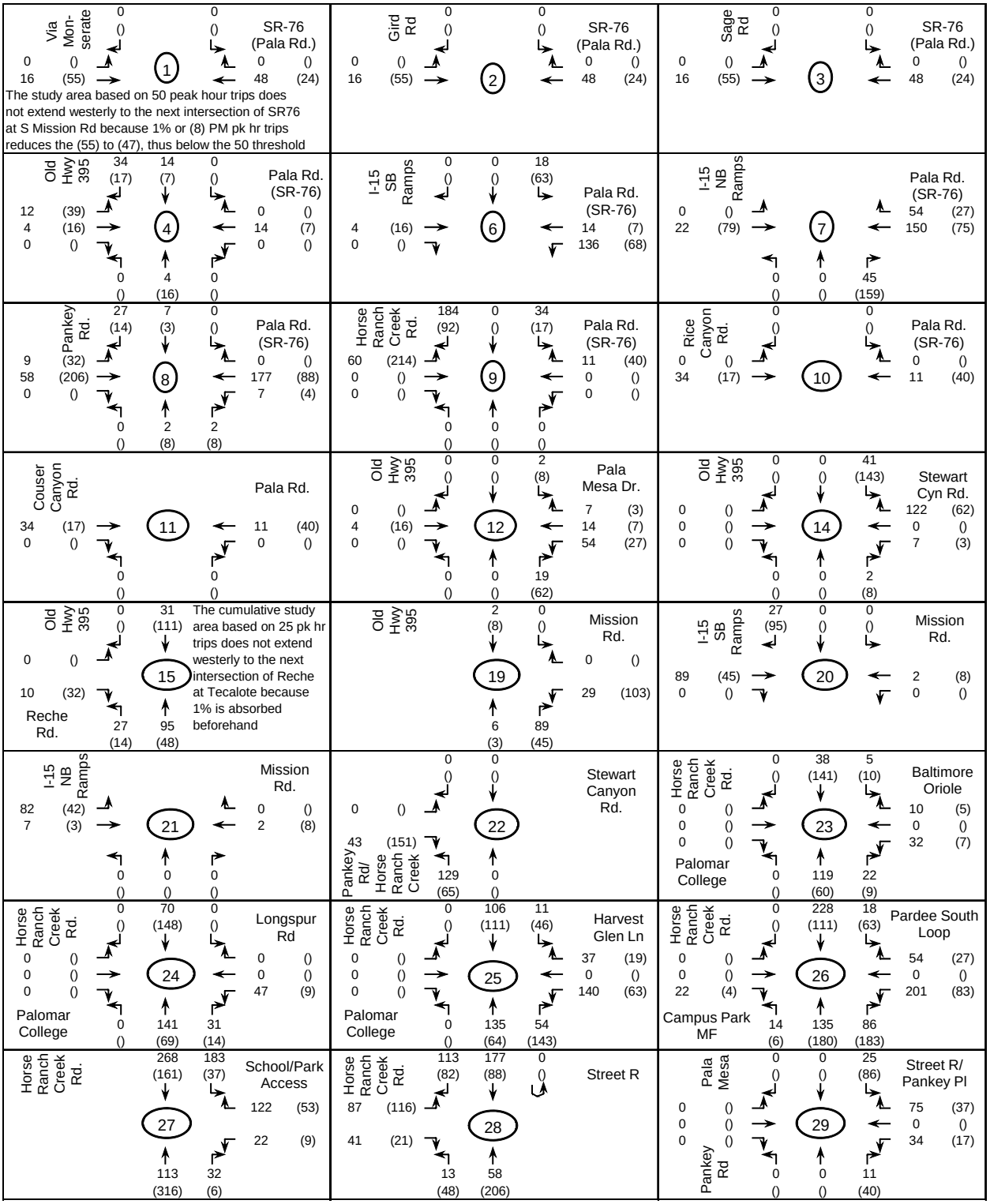
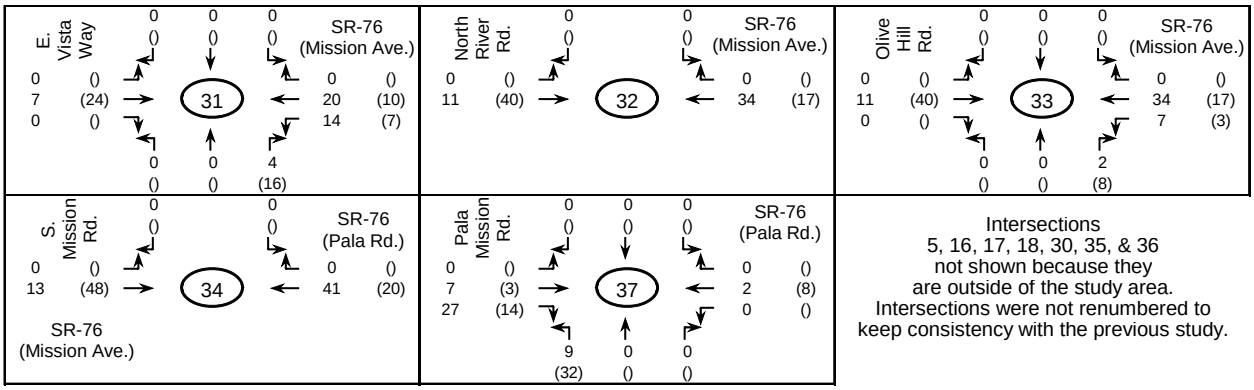


Figure 11c: Near-Term Residential, School, and Park Assignment (0% Internal Capture Rate)



3.3.2 Long-Term Distribution and Assignment (30% Internal Capture Rate)

The long-term distribution contains a residential component and a school with park component. The long-term residential distribution incorporates a 30% internal capture rate.

The school and park distributions and assignments remain unchanged between near-term and long-term conditions, except for access at the school/park (intersection #27). Under near-term conditions (with the basis that only Meadowood is developed), intersection #27 is analyzed with full access because Horse Ranch Creek Road would not have the full volume of traffic from all of the other proposed developments. Under long-term conditions, intersection #27 is analyzed with the minor leg having only right-in/right-out access because of unacceptable LOS with the cumulative volumes.

This long-term scenario assumes the extension of Pala Mesa Drive to Gird Road. The SANDAG Series 11 Select Zone Assignment documented a 1% distribution to/from Pala Mesa Drive/Gird Road intersection along the Pala Mesa Drive extension. The traffic assignment based on a 1% distribution generates approximately 75 daily trips and approximately 1 peak hour directional trip, which are less than the thresholds required for the analysis of Pala Mesa Drive/Gird Road. Therefore, the intersection of Pala Mesa Drive/Gird Road was not included.

The long-term residential distribution is shown in **Figures 12a, 12b, and 12c** with the assignment shown in **Figures 13a, 13b, and 13c**. The long-term school and park distribution is shown in **Figure 14** with the assignment shown in **Figure 15**. The combined long-term residential, school, and park assignments are shown in **Figure 16a, 16b, and 16c**.

Figure 12a: Long-Term Residential Distribution (30% Internal Capture Rate)

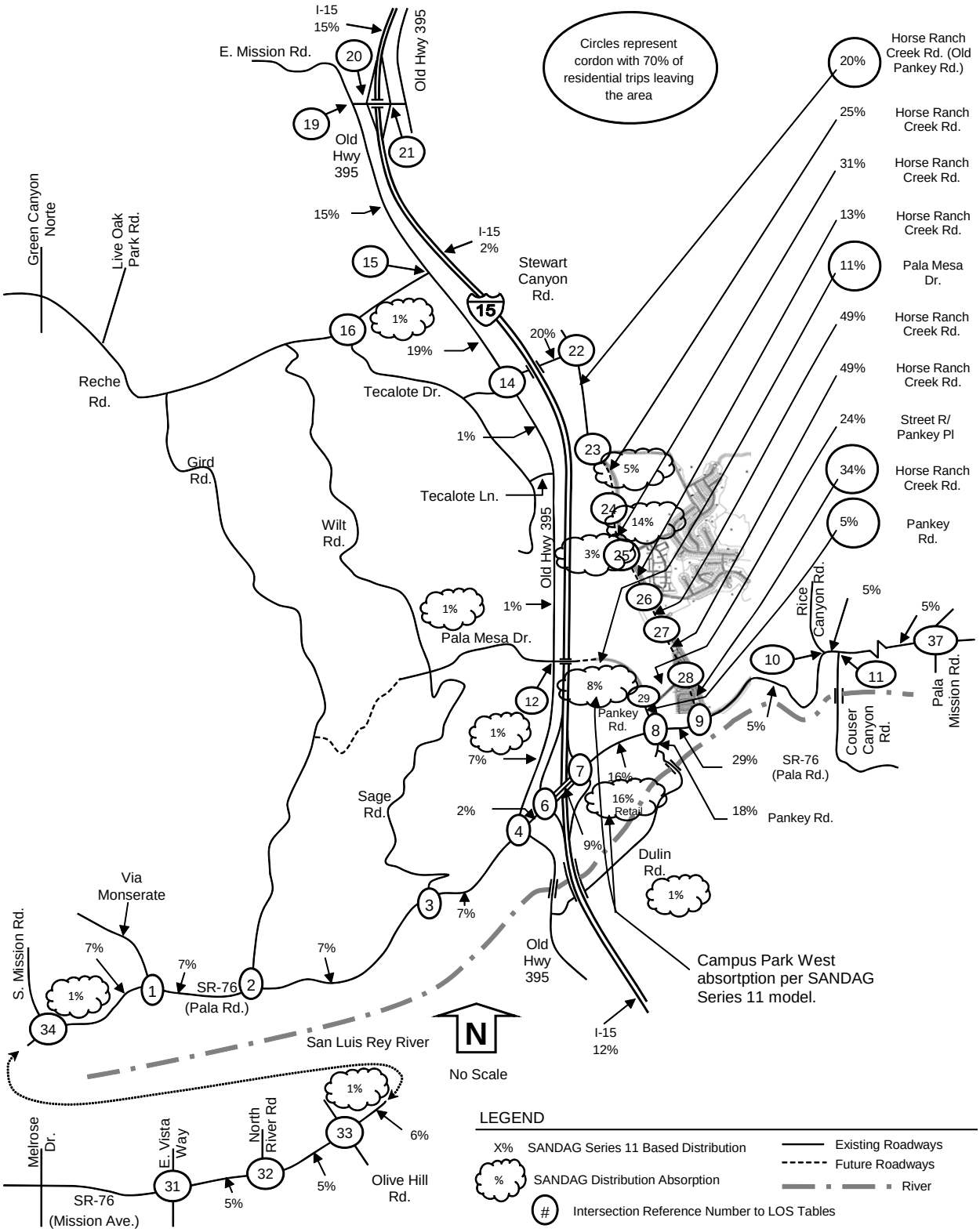


Figure 12b: Long-Term Residential Distribution (30% Internal Capture Rate)

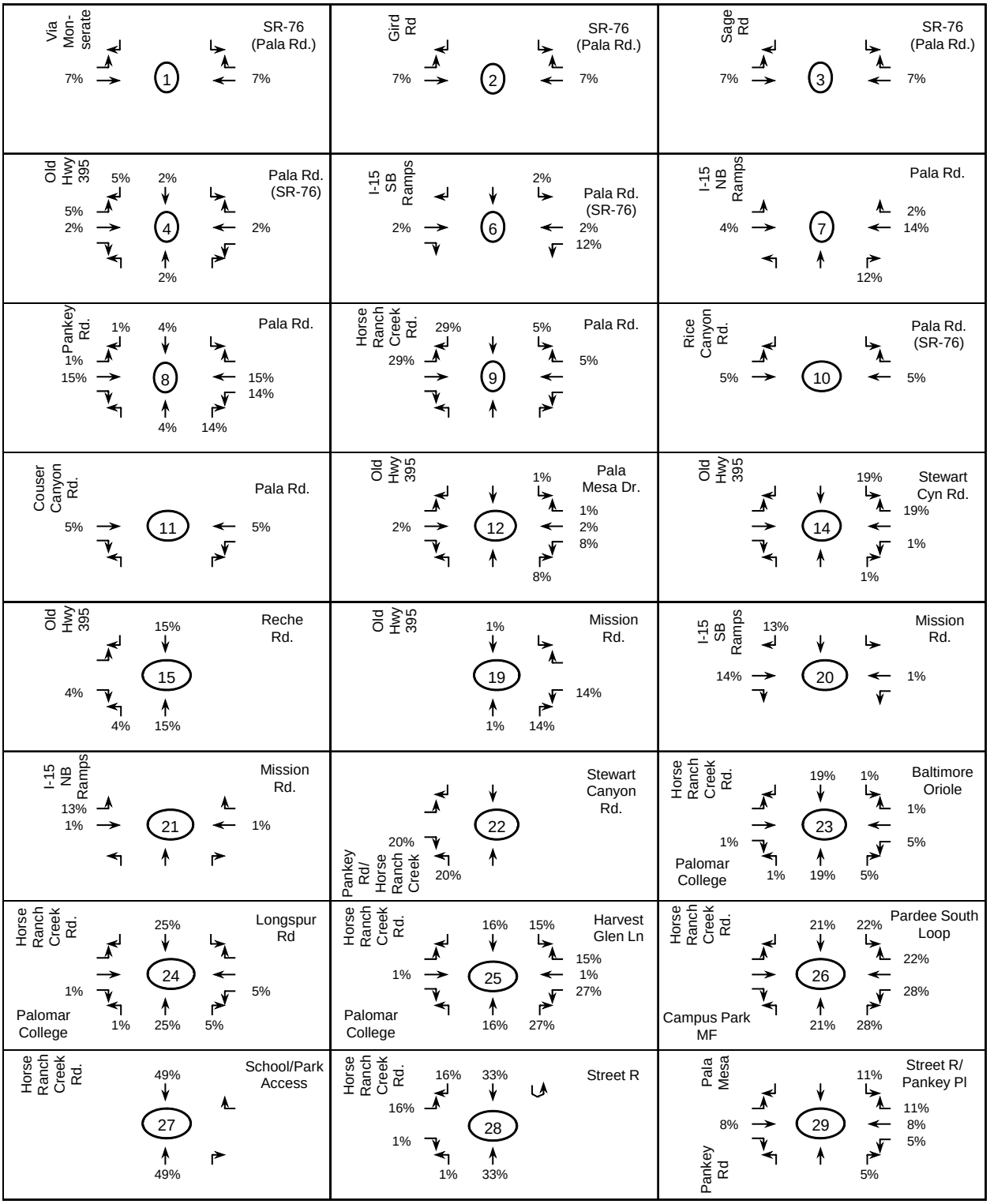
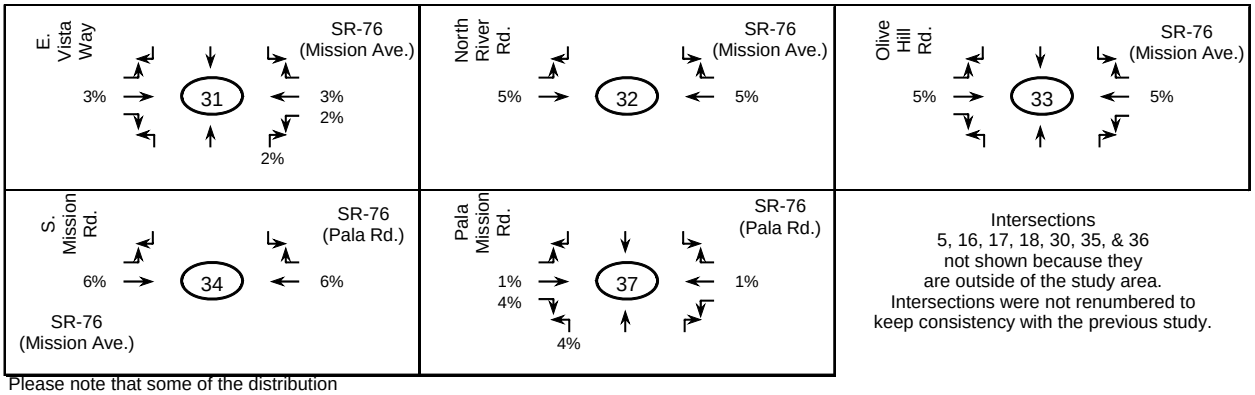


Figure 12c: Long-Term Residential Distribution (30% Internal Capture Rate)



Please note that some of the distribution percentages on the internal intersections (#23-29) reflect both inbound and outbound percentages; therefore, the assignment will be a mix of inbound and outbound traffic.

Intersections 5, 16, 17, 18, 30, 35, & 36 not shown because they are outside of the study area. Intersections were not renumbered to keep consistency with the previous study.

Figure 13a: Long-Term Residential Assignment (30% Internal Capture Rate)

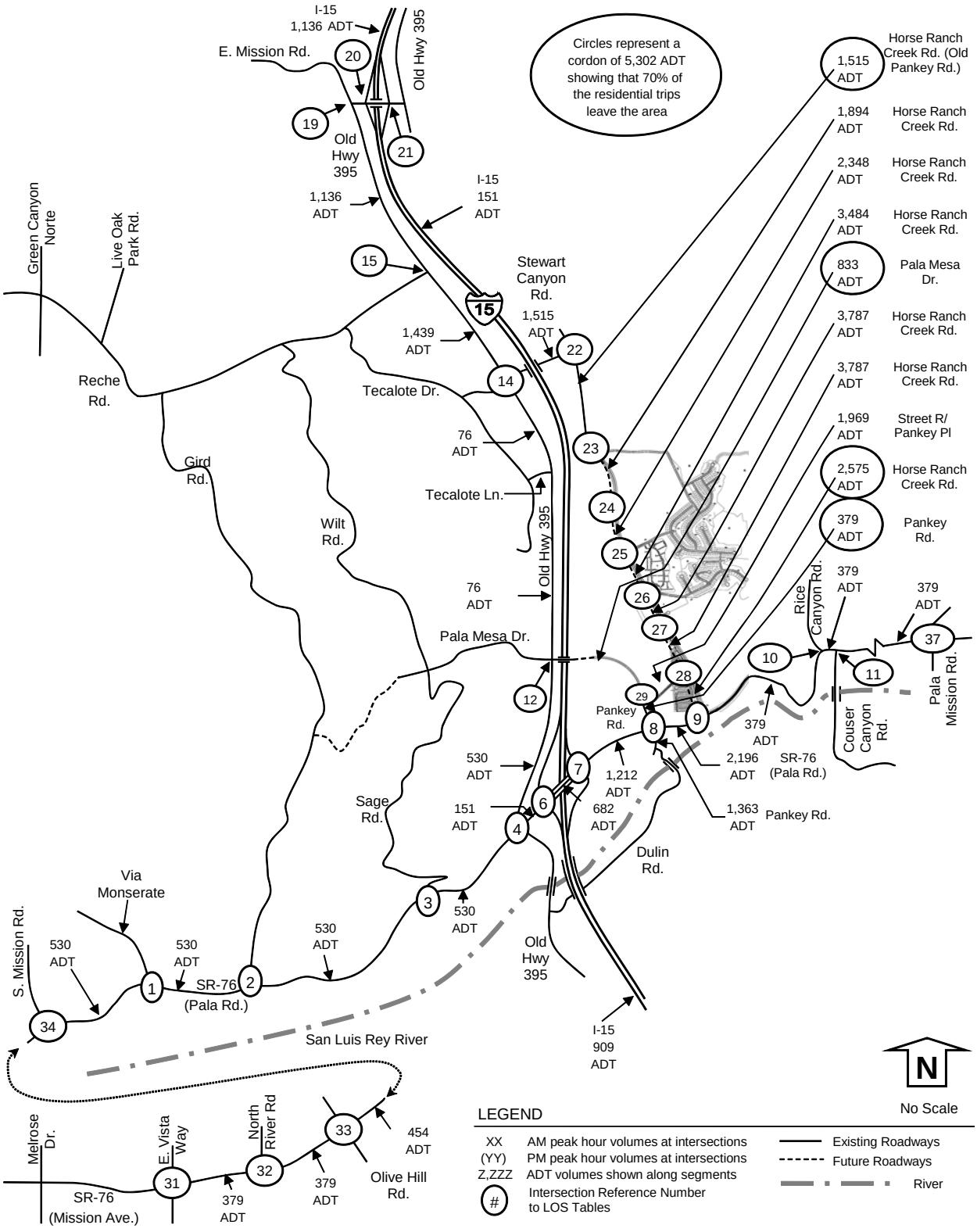


Figure 13b: Long-Term Residential Assignment (30% Internal Capture Rate)

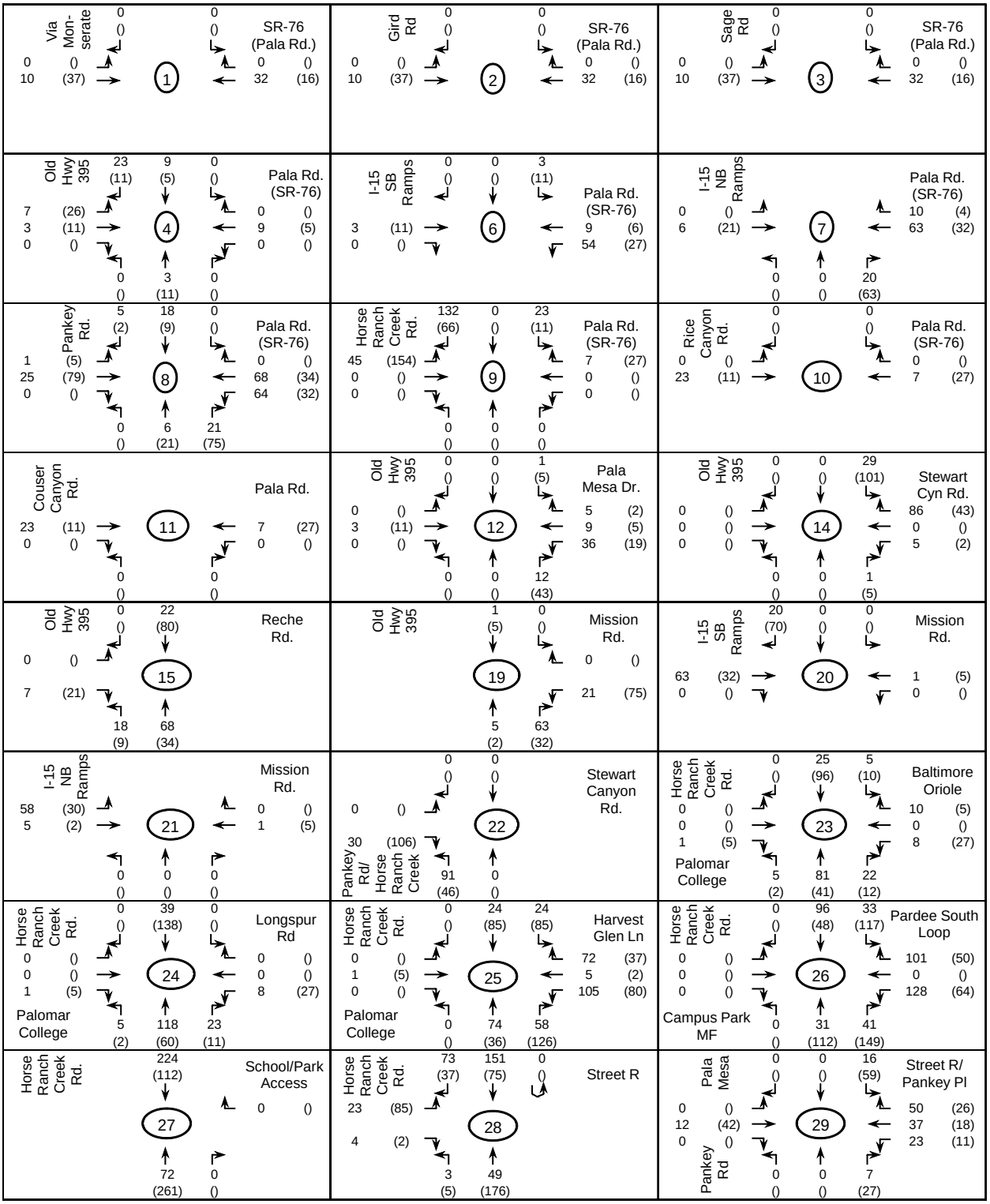


Figure 13c: Long-Term Residential Assignment (30% Internal Capture Rate)

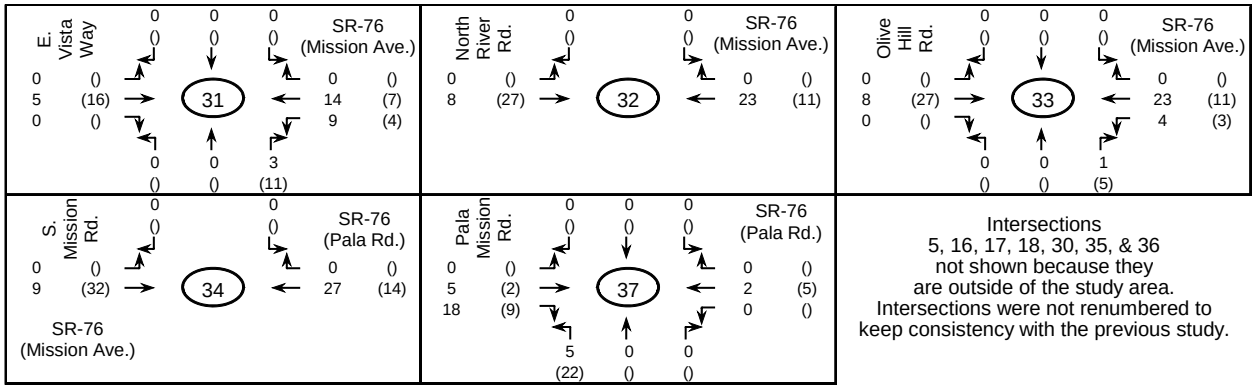


Figure 14: Long-Term School and Park Distribution (All Internal Traffic)

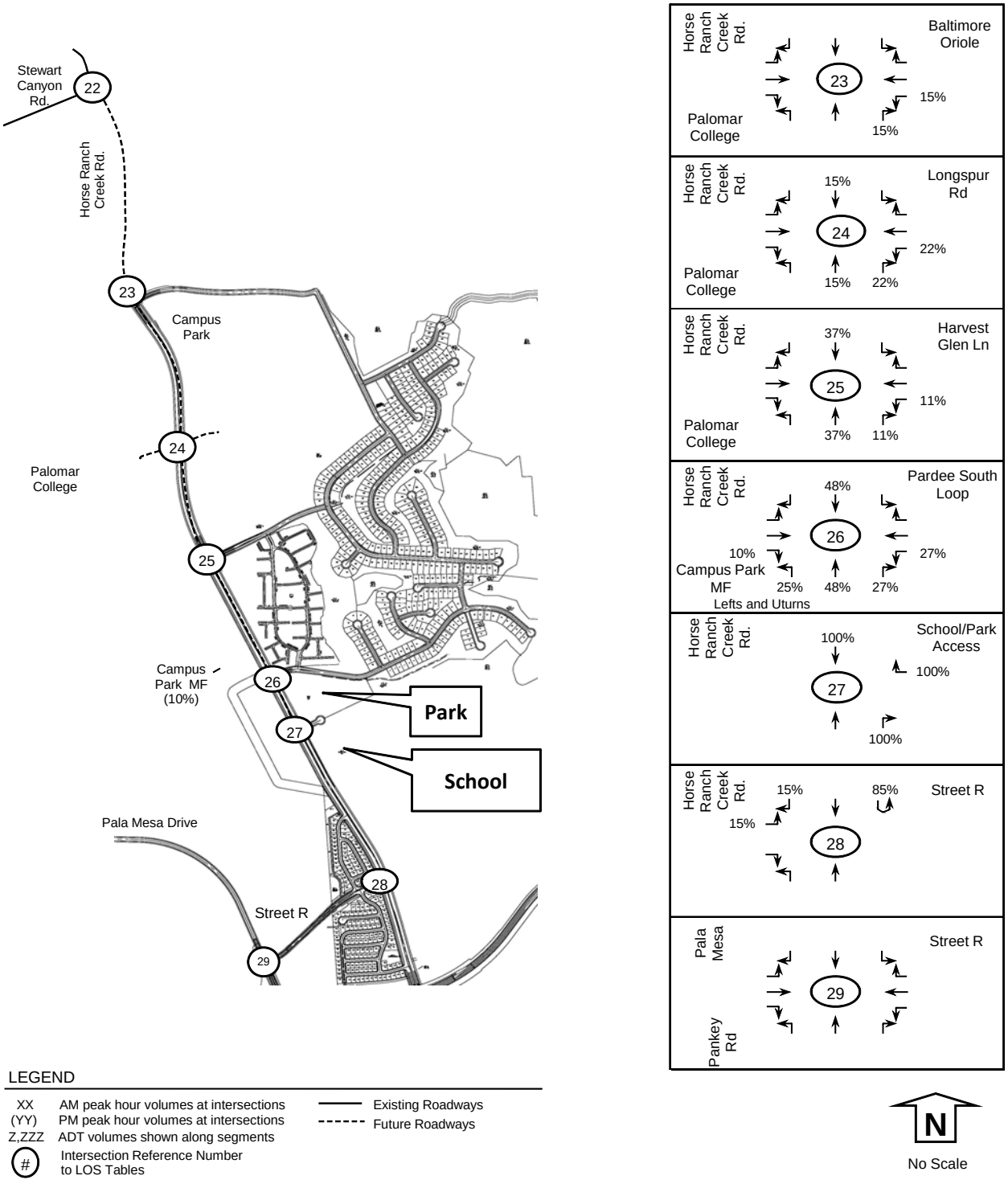


Figure 15: Long-Term School and Park Assignment (All Internal Traffic)

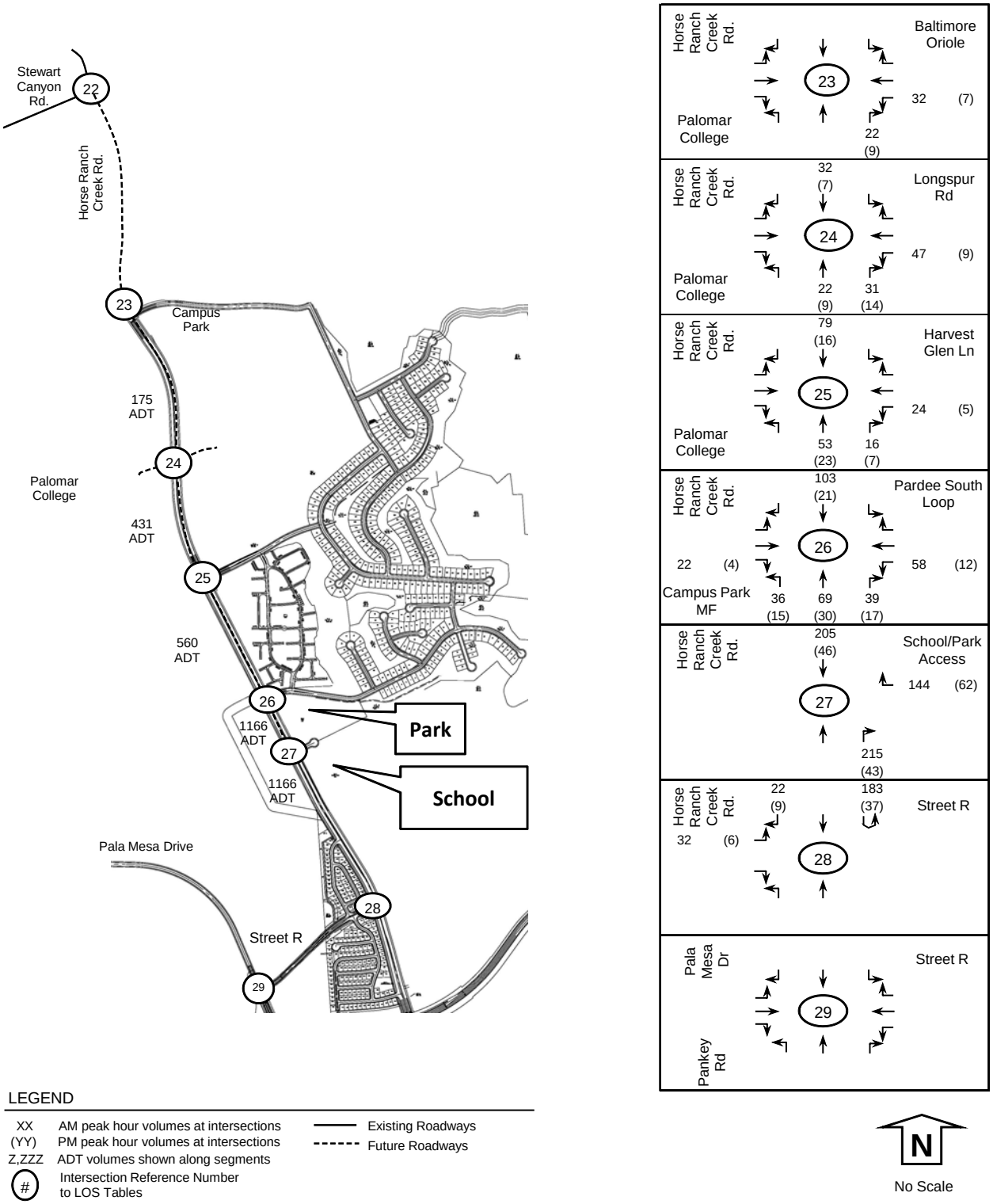


Figure 16a: Long-Term Residential, School, and Park Assignment (30% Internal Capture Rate)

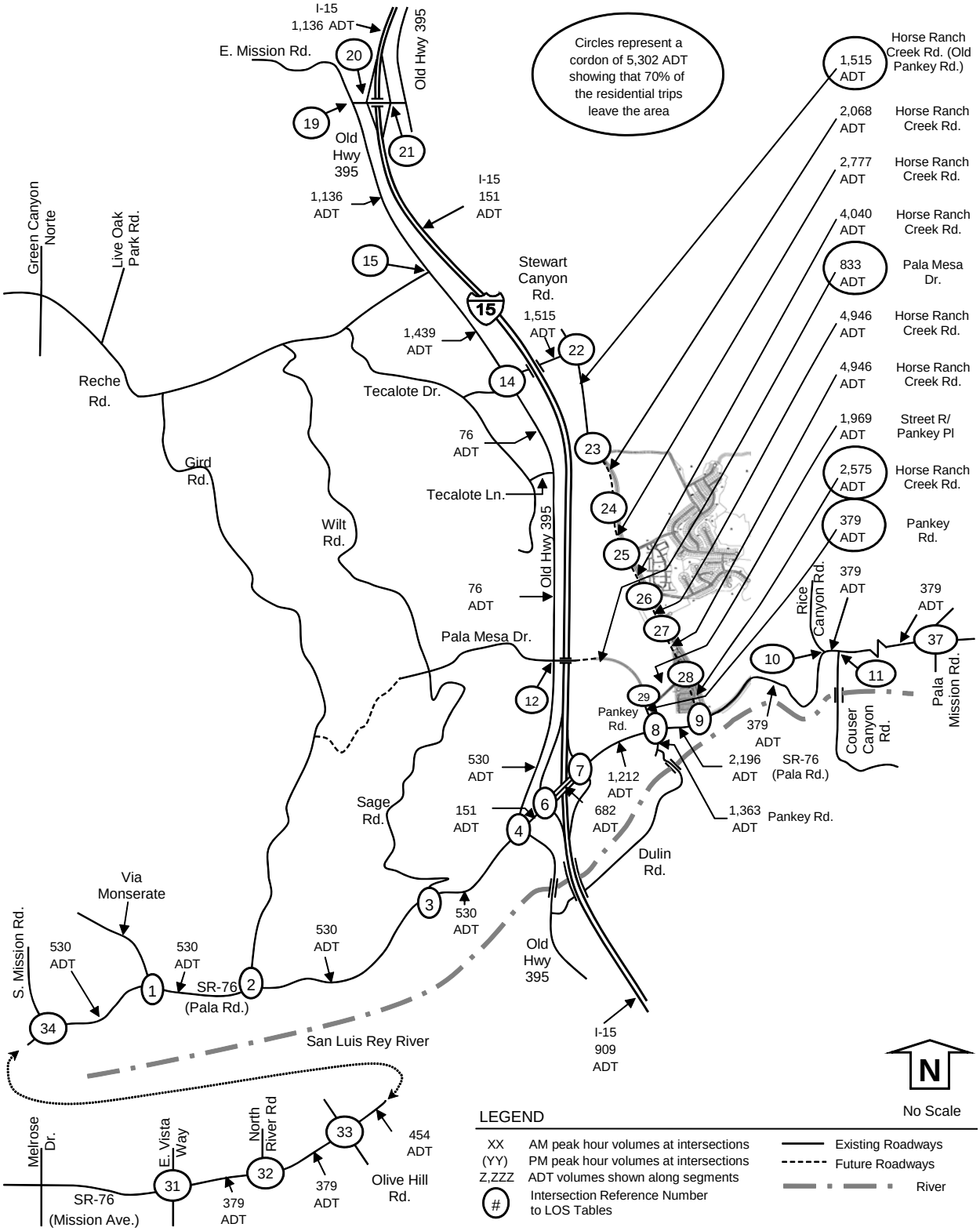


Figure 16b: Long-Term Residential, School, and Park Assignment (30% Internal Capture Rate)

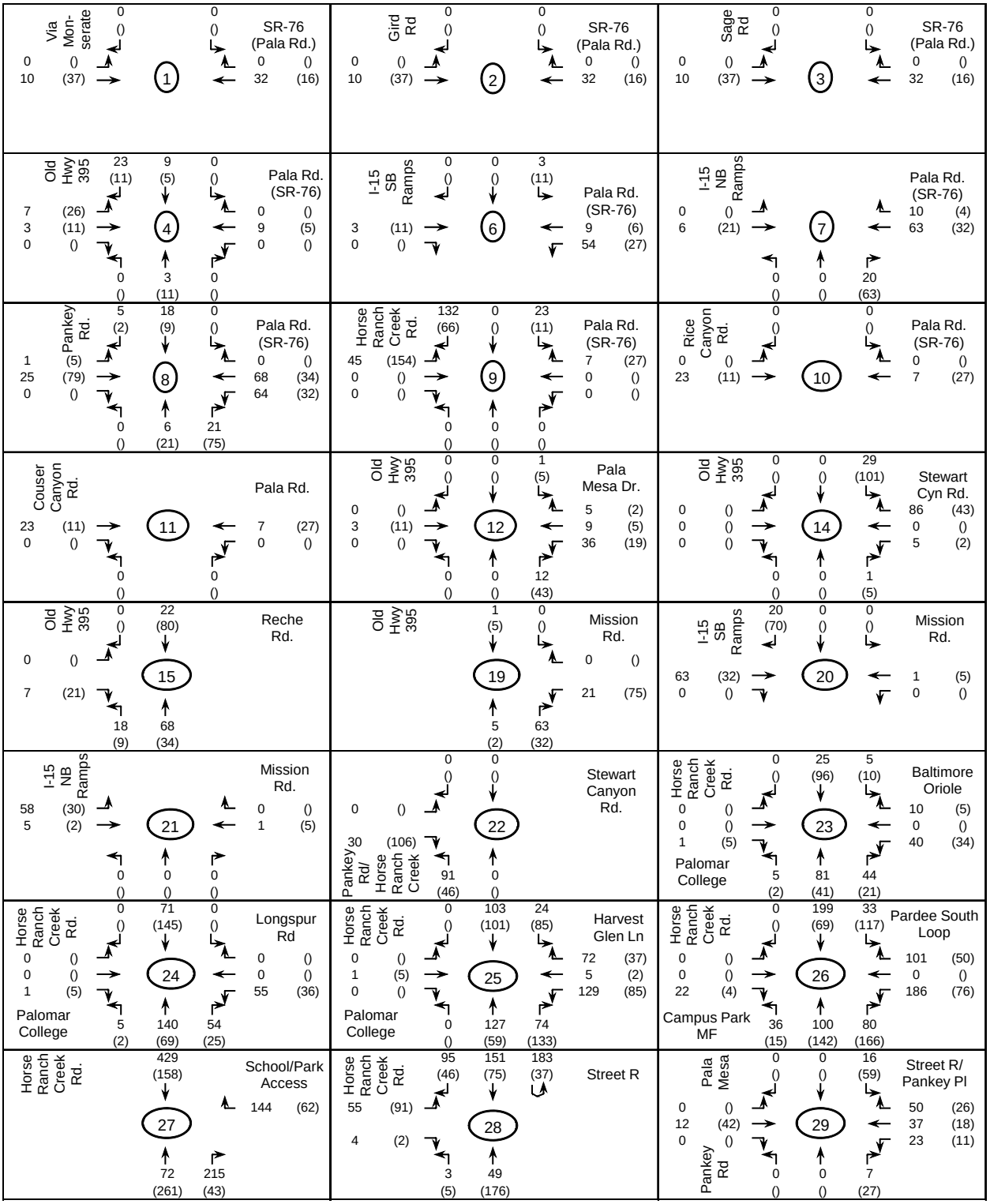
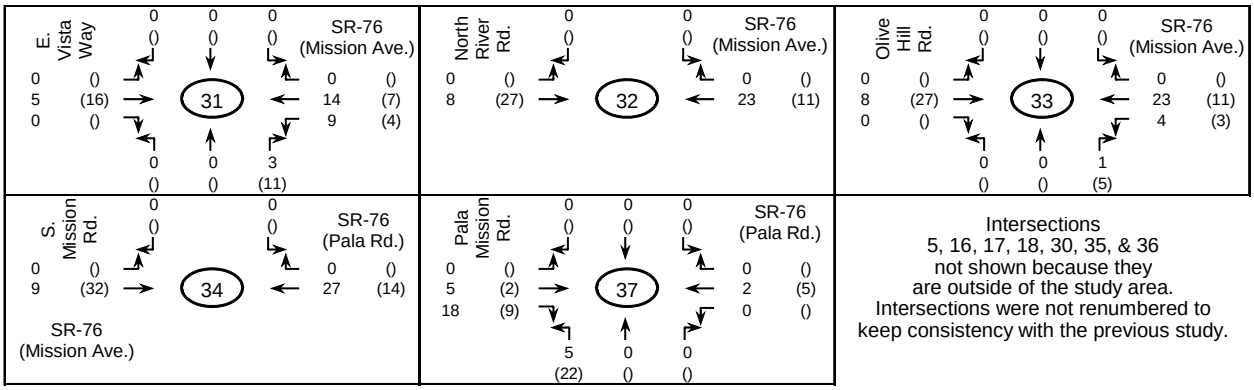


Figure 16c: Long-Term Residential, School, and Park Assignment (30% Internal Capture Rate)



3.4 Existing + Project Conditions

This section will summarize the analysis for the addition of project traffic onto the existing background traffic for AM, PM and ADT conditions. The near-term project assignment is used in this scenario. The traffic analysis criteria are the same as outlined in Section 2.1.

This scenario is considered to be a conservative analysis in that no internal capture rate is applied to account for the time period when the residential is constructed and occupied just before the surrounding proposed commercial developments are to be constructed.

If the Meadowood applicant is first to proceed (between Campus Park and Palomar College), then the applicant will construct the following: Horse Ranch Creek Road from SR-76 to the southern terminus of Pankey Road located south of Stewart Canyon Road; Pala Mesa Drive from Old Highway 395 to SR-76; Street R (AKA Pankey Place) from Pala Mesa Drive to Horse Ranch Creek Road, and intersections #9, 23, 25, 26, 27, 28, and 29 (additional details in Section 5.4). Additionally, SR-76 from I-15 easterly a distance of approximately 1.4 miles is currently being widened from 2 to 4 lanes. Because this improvement is anticipated to be completed before Meadowood will reach occupancy, SR-76 from I-15 to Horse Ranch Creek Road was analyzed as 4 lanes under existing + project conditions. The proposed improvements by the applicant if first to proceed, as used in this existing + project analysis scenario are shown in **Figures 17a, 17b, and 17c**.

The peak hour intersection volumes and daily traffic volumes for this scenario of existing + project are shown in **Figures 18a, 18b, and 18c**. Please note that the study area is based on the County of San Diego criteria of where the project will add 50 or more peak-hour trips in either direction to the existing roadway traffic. This means that intersections 10, 11, 31, 32, 33, 34, 37, and segments of SR-76 from E. Vista Way to S. Mission Road, SR-76 from Horse Ranch Creek Road to Pala Mission Road, and Old Highway 395 from Stewart Canyon to Pala Mesa Drive, are not analyzed under existing + project conditions because the project will add less than 50 peak-hour trips in either direction to these intersections and segments. However, these aforementioned intersections and segments are analyzed under cumulative conditions.

The LOS calculated for the study intersections, street segments, state route segments, and freeway segments are shown in **Tables 14, 15, 16a, 16b, and 17**, respectively.

The applicant proposes to construct Horse Ranch Creek Road per General Plan Update Circulation Element "Boulevard" standards and has received approval of a request for a modification to a road standard. Therefore, the segment operations shown in Table 12 reflect a Boulevard threshold capacity for Horse Ranch Creek Road with analysis as either under capacity or over capacity. The operation capacity is limited to this under or over capacity because the General Plan Update Circulation Element has yet to be adopted. Horse Ranch Creek Road will create a new intersection with SR-76 at station 984+67 $\pm$ to which Caltrans has agreed with the proposed location and has indicated such in a letter dated January 11, 2007. A copy of the proposed General Plan Update Circulation Element Standards for a Boulevard, a copy of the Request for a Modification to a Road Standard for Horse Ranch Creek Road, and a copy of Caltrans letter accepting the Horse Ranch Creek Road location are all included in **Appendix J**.

The northern portion of Horse Ranch Creek Road will connect to and transition from a Light Collector to a Boulevard at the intersection of Horse Ranch Creek Road and Baltimore Oriole (intersection #23). The geometric transition details are included on the Vesting Tentative Map; however, the overall transition works by restricting the northbound and southbound travel to one lane in each direction with as needed turn lanes. This intersection transition is shown at the end of Appendix J.

Figure 17a: Existing + Project Roadway Conditions

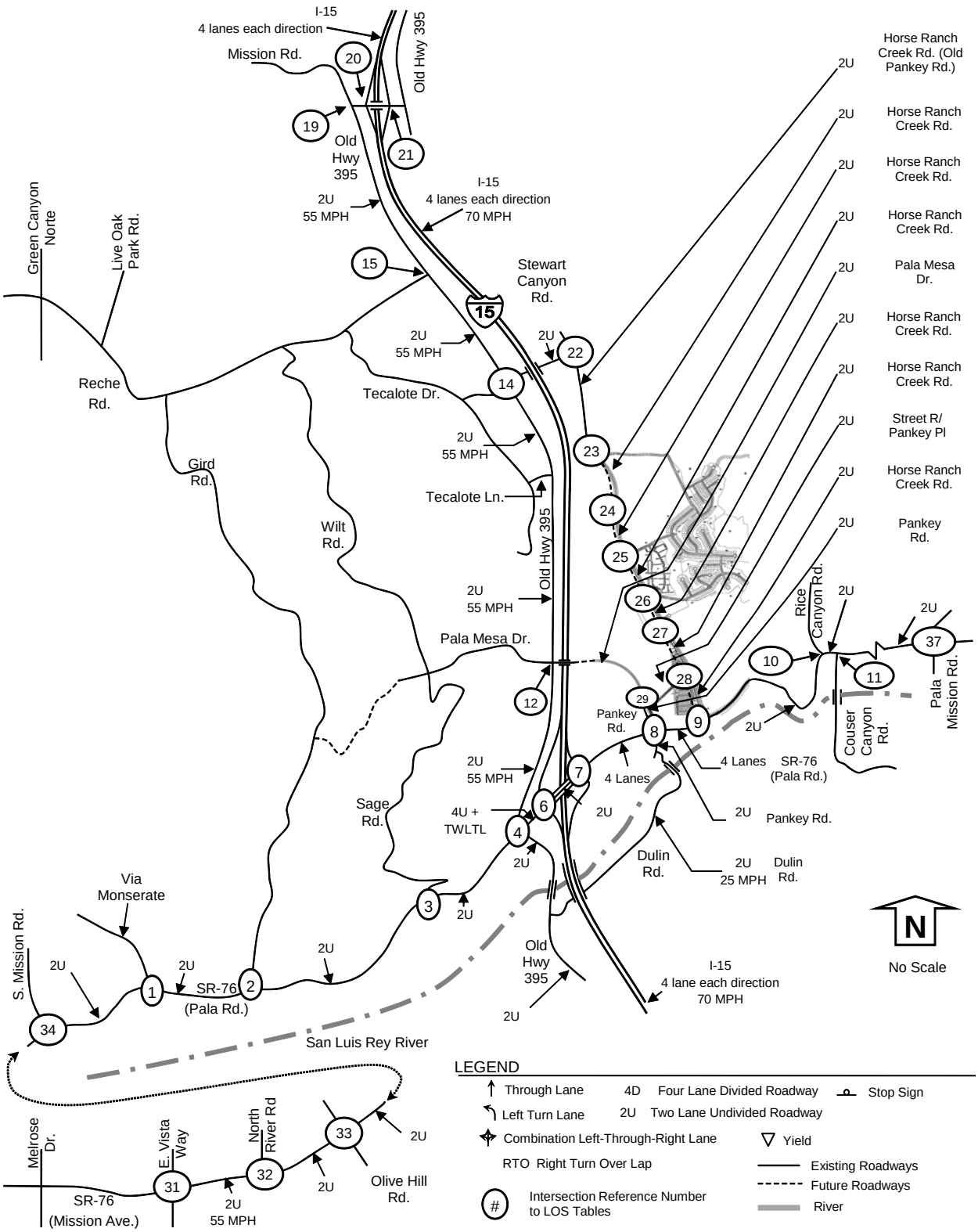


Figure 17b: Existing + Project Roadway Conditions

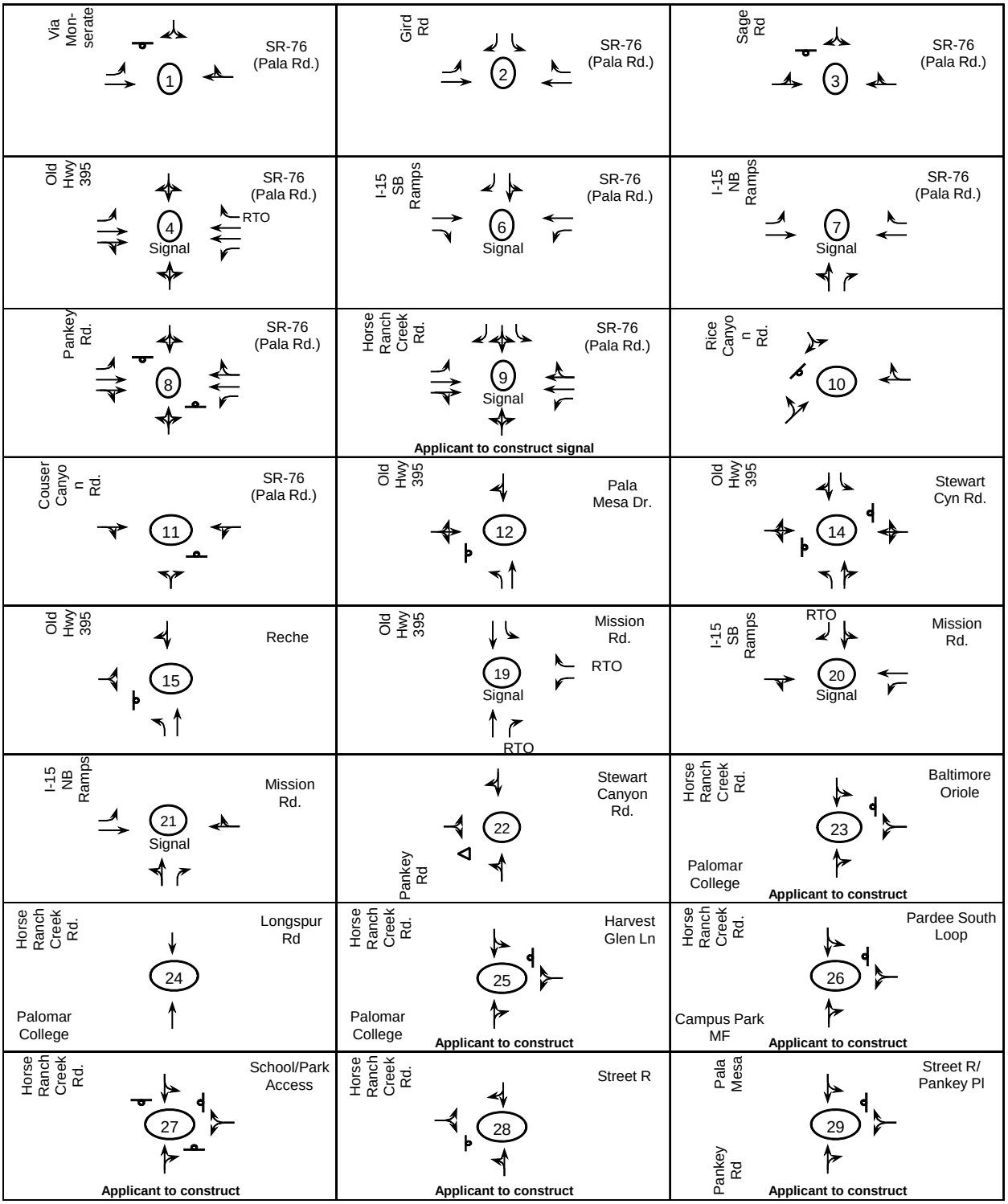


Figure 17c: Existing + Project Roadway Conditions

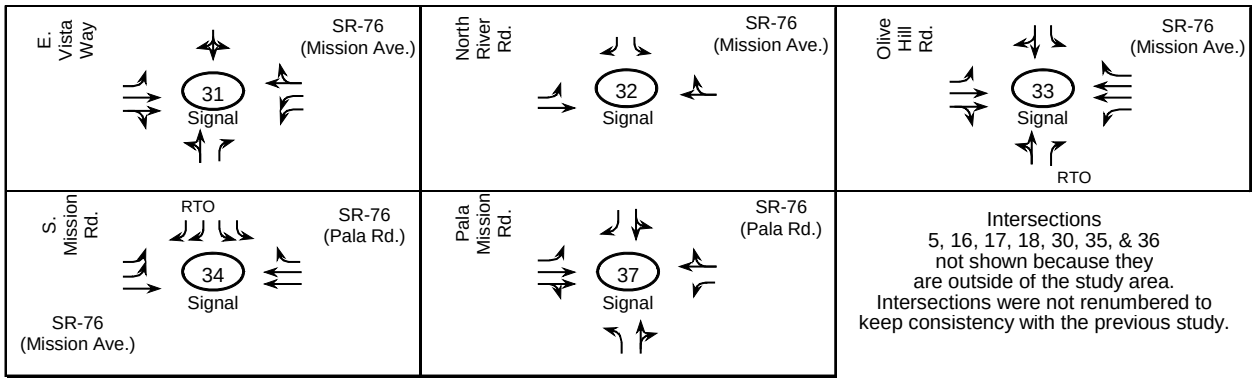


Figure 18a: Existing + Project Volumes (0% internal capture rate)

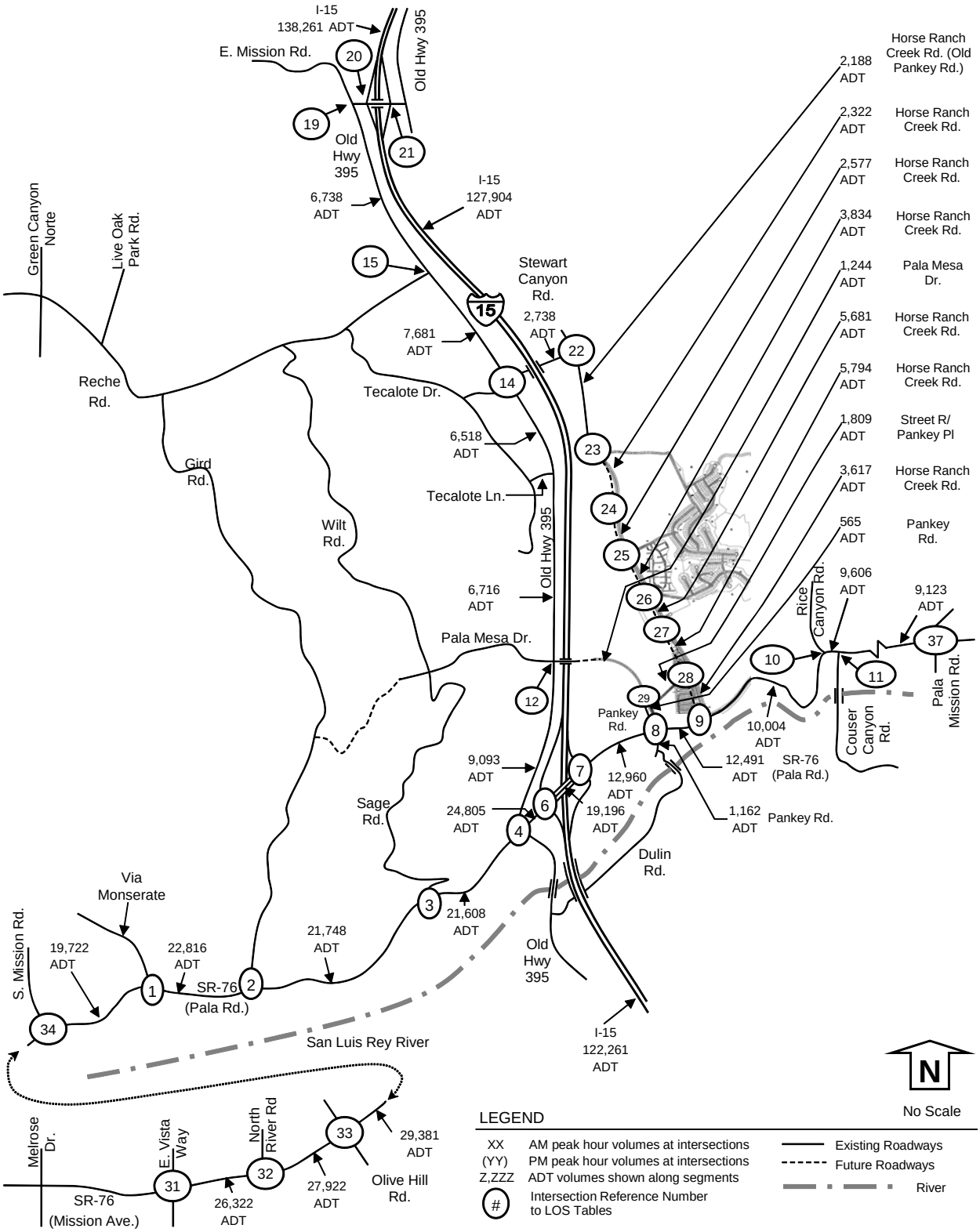


Figure 18b: Existing + Project Volumes (0% internal capture rate)

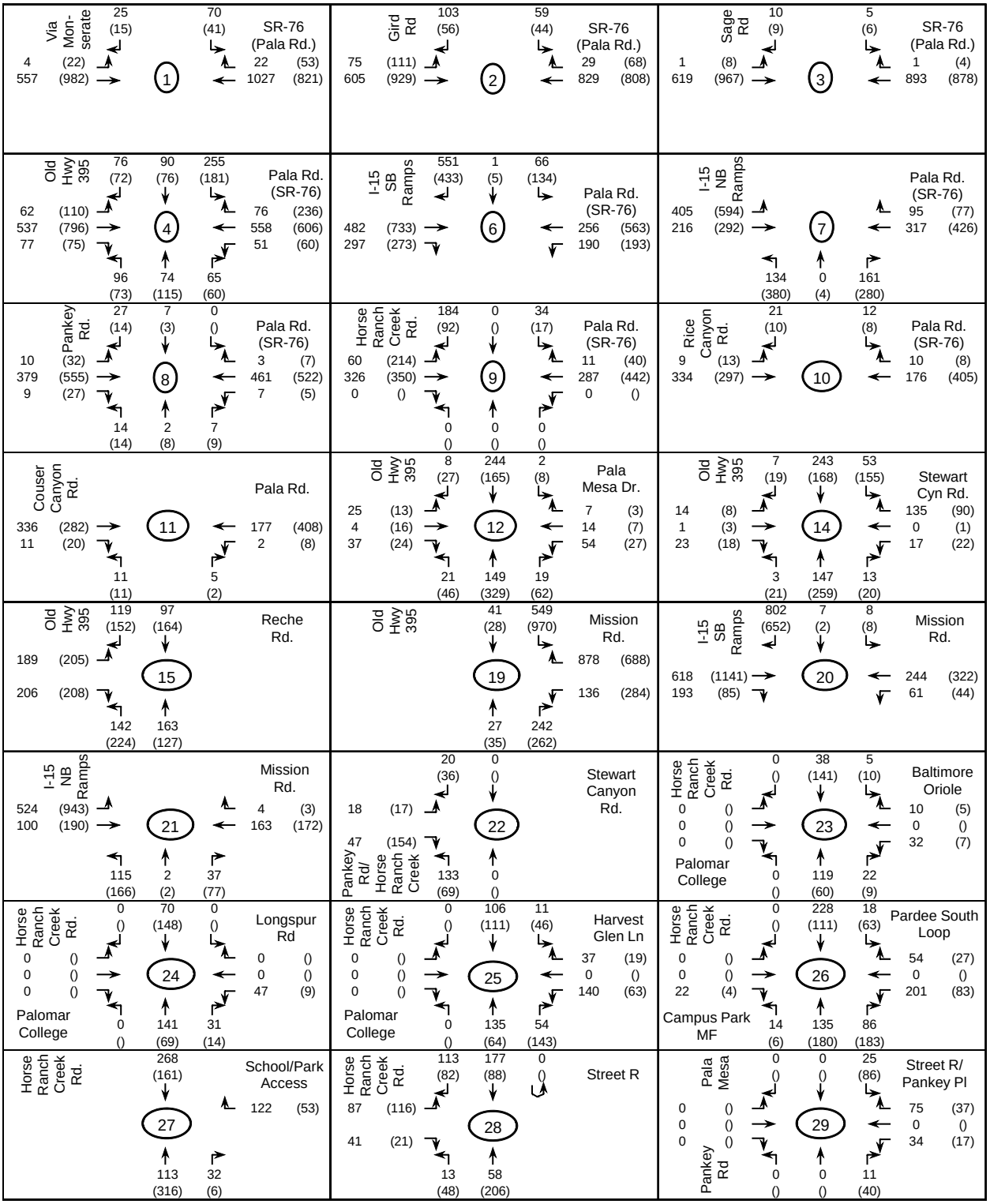


Figure 18c: Existing + Project Volumes (0% internal capture rate)

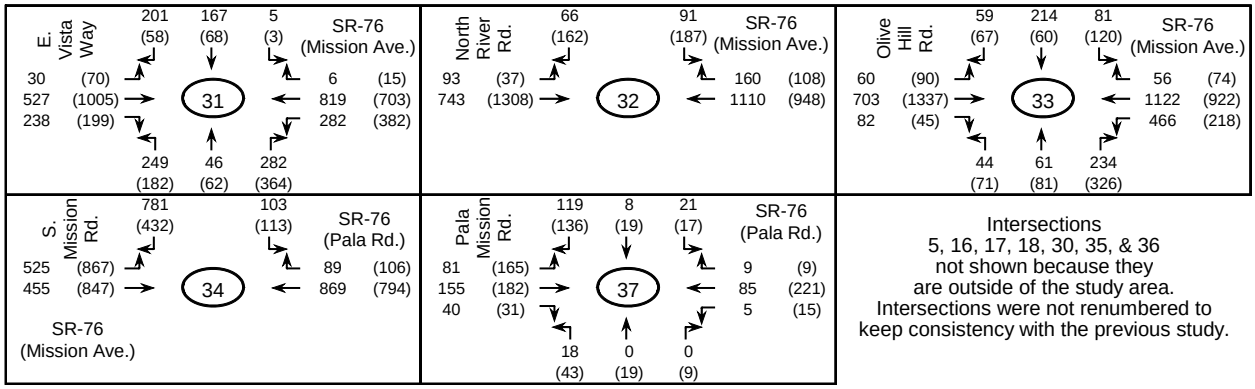


TABLE 14: EXISTING + PROJECT INTERSECTION LEVEL OF SERVICE

Intersection & (Analysis)[1]	Move-ment	Peak Hour	Existing		Existing + Project				County Sig[6]	CMP Sig[7]
			Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delta[4]	CM Vol[5]		
1) SR-76 (Pala Rd) at	SB LR	AM	86.1	**F**	106.2	**F**	NA	0	No	NA
Via Monserate (U)	SB LR	PM	91.4	**F**	113.4	**F**	NA	0	No	NA
	All	AM	5.0	A	5.9	A	0.9	NA	NA	No
	All	PM	2.9	A	3.4	A	0.5	NA	NA	No
2) SR-76 (Pala Rd) at	All	AM	12.9	B	13.7	B	0.8	NA	No	No
Gird Rd (S)	All	PM	12.6	B	13.0	B	0.4	NA	No	No
3) SR-76 (Pala Rd) at	SB LR	AM	22.6	C	24.2	C	NA	0	No	NA
Sage Rd (U)	SB LR	PM	33.0	D	36.3	**E**	NA	0	No	NA
	All	AM	0.2	A	0.3	A	0.1	NA	NA	No
	All	PM	0.4	A	0.5	A	0.1	NA	NA	No
4) SR-76 (Pala Rd) at	All	AM	29.7	C	33.2	C	3.5	NA	No	No
Old Hwy 395 (S)	All	PM	30.2	C	33.5	C	3.3	NA	No	No
6) SR-76 (Pala Rd) at	All	AM	27.5	C	30.1	C	2.6	NA	No	No
I-15 SB Ramps (S)	All	PM	26.4	C	26.9	C	0.5	NA	No	No
7) SR-76 (Pala Rd) at	All	AM	22.4	C	29.2	C	6.8	NA	No	No
I-15 NB Ramps (S)	All	PM	43.6	D	49.4	D	5.8	NA	No	No
8) SR-76 (Pala Rd) at	NB LTR	AM	12.2	B	15.7	C	NA	4	No	NA
Pankey Road (U)	NB LTR	PM	14.6	B	22.8	C	NA	16	No	NA
	SB LTR	AM	0.0	A	12.1	B	NA	34	No	NA
	SB LTR	PM	0.0	A	13.3	B	NA	17	No	NA
9) SR-76 (Pala Rd) at	All	AM	DNE	NA	12.8	B	NA	NA	No	No
Horse Ranch Creek Rd (U)	All	PM	DNE	NA	16.4	B	NA	NA	No	No
12) Old Highway 395 at	EB LTR	AM	11.0	B	11.7	B	NA	4	No	NA
Pala Mesa Dr (U)	EB LTR	PM	11.1	B	13.5	B	NA	16	No	NA
East leg completed	WB LTR	AM	DNE	NA	14.4	B	NA	75	No	NA
with project	WB LTR	PM	DNE	NA	17.3	C	NA	37	No	NA
14) Old Highway 395 at	WB LTR	AM	10.8	B	10.8	B	NA	129	No	No
Stewart Canyon Road (U)	WB LTR	PM	11.9	B	13.8	B	NA	65	No	No
15) Old Highway 395 at	EB LR	AM	18.4	C	28.7	D	NA	10	No	No
Reche Road (U)	EB LR	PM	35.9	**E**	105.5	**F**	NA	32	**Yes**	No
	All	AM	10.6	B	13.6	B	3.0	NA	NA	No
	All	PM	17.6	B	42.1	**E**	24.5	NA	NA	**Yes**
19) Mission Road at	SB L	AM	12.2	B	13.3	B	1.1	NA	No	No
Old Highway 395 (S)	SB L	PM	23.0	C	34.1	C	11.1	NA	No	No
20) Mission Road at	SB LTR	AM	20.6	C	28.7	C	8.1	NA	No	No
I-15 SB Ramps (S)	SB LTR	PM	17.8	B	27.4	C	9.6	NA	No	No
21) Mission Road at	All	AM	17.2	B	18.7	B	1.5	NA	No	No
I-15 NB Ramps (S)	All	PM	37.5	D	42.1	D	4.6	NA	No	No
22) Stewart Canyon Rd at	EB LR	AM	8.7	A	9.3	A	NA	43	No	No
HRCR/Pankey Road (U)	EB LR	PM	8.7	A	9.3	A	NA	151	No	No
23) Horse Ranch Crk Rd at	WB LR	AM	DNE	NA	9.6	A	NA	32	No	No
Baltimore Oriole (U)	WB LR	PM	DNE	NA	9.4	A	NA	11	No	No
25) Horse Ranch Crk Rd at	WB LR	AM	DNE	NA	11.8	B	NA	177	No	No
Harvest Glen Ln (U)	WB LR	PM	DNE	NA	11.2	B	NA	82	No	No
26) Horse Ranch Crk Rd at	WB LR	AM	DNE	NA	16.0	C	NA	255	No	No
Pardee South Loop (U)	WB LR	PM	DNE	NA	13.8	B	NA	110	No	No
27) Horse Ranch Crk Rd at	All-Way	AM	DNE	NA	12.8	B	NA	144	No	No
School/Park Access (U)	All-Way	PM	DNE	NA	9.6	A	NA	62	No	No
28) Horse Ranch Crk Rd	EB LR	AM	DNE	NA	11.4	B	NA	128	No	No
at Street R (U)	EB LR	PM	DNE	NA	13.3	B	NA	137	No	No
29) Pankey/Pala Mesa Dr	WB LR	AM	DNE	NA	8.9	A	NA	109	No	No
at Street R (U)	WB LR	PM	DNE	NA	9.1	A	NA	54	No	No

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized 2) Delay - HCM Control Delay in seconds. 3) LOS: Level of Service. 4) Delta is the increase in delay from project. 5) CM Vol: Critical Movement Volume used to show project volumes on the critical movement. 6) County Sig: is the project have a calculated impact based on the critical volume (Yes or No). 7) CMP Sig: Congention Mangement Program significant impact based on CMP criteria (Yes or No). DNE: Does Not Exist. NA: Not Applicable

TABLE 15: EXISTING + PROJECT SEGMENT ADT VOLUMES AND LEVEL OF SERVICE

Segment	Sept 2005 Circulation Element Class.	Existing					Project	Existing + Project					County Sig	CMP Sig
		Daily Volume	# of Lanes	LOS E Capacity	V/C	LOS	Daily Volume	Daily Volume	LOS E Capacity	V/C	LOS	Change in V/C	Impact?	Impact?
Old Highway 395														
East Mission Road to Reche Road	Collector	5,155	2	16,200	0.318	C	1,583	6,738	16,200	0.416	C	0.098	No	No
Reche Road to Stewart Canyon Road	Collector	5,646	2	16,200	0.349	C	2,035	7,681	16,200	0.474	D	0.126	No	No
Pala Mesa Drive to SR-76 (Pala Road)	Collector	8,302	2	16,200	0.512	D	791	9,093	16,200	0.561	D	0.049	No	No
Stewart Canyon Road														
Old Hwy 395 to Horse Ranch Creek Rd	Collector	590	2	16,200	0.036	A	2,148	2,738	16,200	0.169	B	0.133	No	No
Pankey Road														
Street R/Pankey Place to SR-76 (Pala Rd)	Light Collector	0	2	16,200	0.000	A	565	565	16,200	0.035	A	0.035	No	No
Horse Ranch Creek Road														
Stewart Canyon Rd to Baltimore Oriole (#23)	Light Collector	40	2	16,200	0.002	A	2,148	2,188	16,200	0.135	B	0.135	No	No
Baltimore Oriole (#23) to Longspur Rd (#24)	Light Collector	0	2	16,200	0.000	A	2,322	2,322	16,200	0.143	B	0.143	No	No
Longspur Rd (#24) to Harvest Glen Ln (#25)	Light Collector	0	2	16,200	0.000	A	2,577	2,577	16,200	0.159	B	0.159	No	No
Harvest Glen Ln (#25) to Intersection (#26)	Light Collector	0	2	16,200	0.000	A	3,834	3,834	16,200	0.237	B	0.237	No	No
Intersection (#26) to Park/School (#27)	Light Collector	0	2	16,200	0.000	A	5,681	5,681	16,200	0.351	C	0.351	No	No
Park/Sch (#27) to Street R/Pankey Pl (#28)	Light Collector	0	2	16,200	0.000	A	5,794	5,794	16,200	0.358	C	0.358	No	No
Street R/Pankey Pl (#28) to SR-76 (Pala Rd)	Light Collector	0	2	16,200	0.000	A	3,617	3,617	16,200	0.223	B	0.223	No	No
Pala Mesa Drive														
Old Highway 395 to Street R/Pankey Pl	Light Collector	0	2	16,200	0.000	A	1,244	1,244	16,200	0.077	A	0.077	No	No
Street R/Pankey Place														
Pala Mesa/Pankey to Horse Ranch Creek Rd	Light Collector	0	2	16,200	0.000	A	1,809	1,809	16,200	0.112	A	0.112	No	No

Notes:Classification (Sept 2005 Circulation Element). Daily volume is a 24 hour volume. LOS: Level of Service. V/C: Volume to Capacity ratio.
Daily volume is a 24 hour volume. LOS: Level of Service. V/C: Volume to Capacity ratio.

TABLE 16A: EXISTING + PROJECT STATE ROUTE VOLUMES AND LEVEL OF SERVICE (AM)

State Route 76	Lanes in	AM (Eastbound)					Project				Change In		AM (Westbound)					Project			Change In		v/c	
Study Limits	each dir	E vol	Dir	Cap	v/c	LOS	Vol	E+P	v/c	LOS	v/c	Sig	Vol	Dir	Cap	v/c	LOS	Vol	E+P	v/c	Sig	Delta	Sig
Via Monserate to Gird Rd	1	808	EB	950	0.85	D	16	824	0.87	**E**	0.02	**Yes**	895	WB	950	0.94	**E**	48	943	0.99	**E**	0.05	**Yes**
Gird Rd to Sage Rd	1	740	EB	950	0.78	D	16	756	0.80	D	0.02	No	542	WB	950	0.57	C	48	590	0.62	C	0.05	No
Sage Rd to Old Hwy 395	1	760	EB	950	0.80	D	16	776	0.82	D	0.02	No	534	WB	950	0.56	C	48	582	0.61	C	0.05	No
Old Hwy 395 to I-15 SB Ramps	2	1507	EB	2050	0.74	D	4	1511	0.74	D	0.00	No	665	WB	2028	0.33	B	14	679	0.33	B	0.01	No
I-15 SB Ramps to I-15 NB Ramps	1	844	EB	950	0.89	**E**	22	866	0.91	**E**	0.02	**Yes**	539	WB	950	0.57	C	150	689	0.73	D	0.16	No
I-15 NB Ramps to Pankey Rd	2	559	EB	3100	0.18	A	67	626	0.20	A	0.02	No	606	WB	3030	0.20	A	204	810	0.27	A	0.07	No
Pankey Rd to Horse Ranch Creek Rd	2	589	EB	1806	0.33	B	60	649	0.36	B	0.03	No	540	WB	2028	0.27	A	184	724	0.36	B	0.09	No

Source: SANDAG Hwycov 2007. Notes: Dir = Direction. Vol = Volume. Cap = Capacity. v/c = volume to capacity ratio. LOS = Level of Service.

TABLE 16B: EXISTING + PROJECT STATE ROUTE VOLUMES AND LEVEL OF SERVICE (PM)

State Route 76	Lanes in	PM (Eastbound)					Project				Change In			PM (Westbound)					Project			Change In		
Study Limits	each dir	E Vol	Dir	Cap	v/c	LOS	Vol	E+P	v/c	LOS	v/c	Sig	E Vol	Dir	Cap	v/c	LOS	Vol	E+P	v/c	LOS	v/c	Sig
Via Monserate to Gird Rd	1	1077	EB	950	1.13	**F**	55	1132	1.19	**F**	0.06	**Yes**	786	WB	950	0.83	D	24	810	0.85	D	0.03	No
Gird Rd to Sage Rd	1	645	EB	950	0.68	C	55	700	0.74	D	0.06	No	742	WB	950	0.78	D	24	766	0.81	D	0.03	No
Sage Rd to Old Hwy 395	1	638	EB	950	0.67	C	55	693	0.73	D	0.06	No	768	WB	950	0.81	D	24	792	0.83	D	0.03	No
Old Hwy 395 to I-15 SB Ramps	2	816	EB	2050	0.40	B	16	832	0.41	B	0.01	No	1258	WB	2028	0.62	C	7	1265	0.62	C	0.00	No
I-15 SB Ramps to I-15 NB Ramps	1	718	EB	950	0.76	D	79	797	0.84	D	0.08	No	1153	WB	950	1.21	**F**	75	1228	1.29	**F**	0.08	**Yes**
I-15 NB Ramps to Pankey Rd	2	696	EB	3100	0.22	A	238	934	0.30	A	0.08	No	820	WB	3030	0.27	A	102	922	0.30	A	0.03	No
Pankey Rd to Horse Ranch Creek Rd	2	631	EB	1806	0.35	B	214	845	0.47	B	0.12	No	897	WB	2028	0.44	B	92	989	0.49	B	0.05	No

Source: SANDAG Hwycov 2007. Notes: Dir = Direction. Vol = Volume. Cap = Capacity. v/c = volume to capacity ratio. LOS = Level of Service.

TABLE 17: EXISTING + PROJECT FREEWAY VOLUMES AND LEVEL OF SERVICE

Freeway	I-15				I-15				I-15			
Segment	Rainbow Valley Blvd to Mission Rd				Mission Rd to SR-76 (Pala Rd)				SR-76 to Escondido Hwy (Old 395)			
Existing (Year 2006)												
ADT	136,000				127,000				120,000			
Peak Hour	A M		P M		A M		P M		A M		P M	
Direction	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
Number of Lanes	4	4	4	4	4	4	4	4	4	4	4	4
Capacity (1)	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400
K Factor (2)	0.0619	0.0619	0.0738	0.0738	0.0619	0.0619	0.0738	0.0738	0.059	0.059	0.0723	0.0723
D Factor (3)	0.1653	0.8347	0.6398	0.3602	0.1653	0.8347	0.6398	0.3602	0.1989	0.8011	0.6955	0.3045
Truck Factor (4)	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.8977	0.8977	0.8977	0.8977
Peak Hour Volume	1,515	7,650	6,991	3,936	1,415	7,143	6,528	3,675	1,569	6,318	6,722	2,943
Volume to Capacity	0.161	0.814	0.744	0.419	0.150	0.760	0.694	0.391	0.167	0.672	0.715	0.313
LOS	A	D	C	A	A	C	C	A	A	C	C	A
Project Pk Hr Vol	136	45	69	158	54	18	27	63	45	136	159	68
Existing + Project												
Peak Hour Volume	1,651	7,695	7,060	4,094	1,469	7,161	6,555	3,738	1,614	6,454	6,881	3,011
Volume to Capacity	0.176	0.819	0.751	0.435	0.156	0.762	0.697	0.398	0.172	0.687	0.732	0.320
LOS	A	D	C	B	A	C	C	A	A	C	C	A
Increase in V/C	0.014	0.005	0.007	0.017	0.006	0.002	0.003	0.007	0.005	0.014	0.017	0.007
Direct Impact?	No	No	No	No	No	No	No	No	No	No	No	No
CMP Impact?	No	No	No	No	No	No	No	No	No	No	No	No

Notes: (1) Capacity of 2,350 passenger cars per hour per lane (pcphpl) from Caltrans' Guide for the Preparation of Traffic Impact Studies, Dec 2002. (2) Latest K factor from Caltrans (based on 2005 data), which is the percentage of Annual Average Daily Traffic (AADT) in both directions. (3) Latest D factor from Caltrans (based on 2005 data), which when multiplied by K and ADT will provide peak hour volume. (4) Latest truck factor from Caltrans (based on 2000 data). CMP: Congestion Management Program impact.

Under existing + project conditions, direct impacts are calculated based on the County of San Diego significance criteria at the following three locations:

1) Intersection of Old Highway 395 / Reche Road (LOS F PM)
2) State Route 76 from Via Monserate to Gird Rd (LOS E AM and LOS F PM)
3) State Route 76 from I-15 SB Ramp to I-15 NB Ramp (LOS E AM & LOS F PM)

Existing + project LOS calculations are included in **Appendix K.**

3.5 Cumulative Conditions

This section will document the existing + cumulative conditions.

3.5.1 Cumulative Projects

Cumulative projects were accounted for through a general plan summary approach where SANDAG provided a Series 10 Year 2030 model that included all cumulative projects that are consistent with the current land use plan, all inconsistent cumulative projects that will require a variance such as a General Plan Amendment, and all Casino projects that have been submitted to the County. This cumulative traffic model approach is currently being utilized by the County for the GP Update.

In addition to the aforementioned approach, a review of San Diego County records was conducted where ninety five (95) nearby cumulative projects were identified, which are anticipated to generate traffic and use identical roadways as the project. The criteria for identifying the cumulative projects are included below with a list of the cumulative projects included in **Table 18.**

1) Geographic boundary based on proximity to study roadways and to roadways that will feed toward or away from our project location (i.e. radius around project site and buffer around adjacent transportation corridors). The buffer was applied to SR-76 from Olive Hill Road to just past Cole Grade Road and to Old Highway 395 from approximately the Rainbow area down to the Bonsall area.
2) Reviewed available cumulative projects within this study area. Withdrawn or denied cumulative projects were removed.
3) These cumulative projects are considered to be cumulatively considerable from a CEQA stand point as they represent major projects contributing to the traffic study boundary. This includes TPMs within the study boundary to provide a comprehensive approach.
4) Casino projects that are not listed in the DPLU/DPW cumulative traffic binders were researched and included.
5) Non daily traffic generators were excluded (i.e. cell sites).
6) Projects requiring GPAs (i.e. Meadowood, Campus Park West, Warner Ranch, Pala Mesa Resort) and Casino projects were confirmed as being included in the Cumulative Map model by reviewing the list of inconsistent and Casino projects included in **Appendix L**.

TABLE 18: CUMULATIVE PROJECTS

#	Project Reference	Project Name	Location	Area (acres)	Proposed Improvements
1	TM 5338 GPA 03-004	Campus Park	Just north of SR 76, 0.25 mile east of I-15	417	Mixed-use development, including: 521 single family dwelling units, 555 multi-family dwelling units, a town center (retail) of 61,200 square feet, an office building with 157,000 square feet, a sports complex of 5.2 acres and a small neighborhood park.

#	Project Reference	Project Name	Location	Area (acres)	Proposed Improvements
2	TM 5424, S 05-014, SPA 05-001 GPA 05-003 REZ 05-005	Campus Park West	Northeast quadrant of I-15 and SR 76	118.5	Mixed-use development including approximately 395 MFR units, 110,000 s.f. General Commercial, 10 acres Highway Commercial and 300,000 s.f. Office Professional. Located mostly north of SR-76 with a portion south of SR-76.
3	TM 5187 RPL[11] SPA 99-005 MUP 99-020 REZ 99-020 MUP/REZ 04-024	Pala Mesa Highlands	West of Old Highway 395 between Pala Mesa Drive and Via Belamonte	84.6	Maximum of 130 SFR. Density 1.6 DU/acre. Lot sizes vary from 5,500 s.f. to 23,500 s.f., two parks totaling 4.3 acres, trails, 36.5 acres of open space. SPA to allow clustering.
4	TM 4729 RPL[3] TE	Tedder TM	South side of Pala Mesa Drive, west of I-15 and east of Daisy Lane	29.5	Split lot into 13 SFR lots, ranging in size from 1.0 to 6.43 acres net.
5	TPM 20830	Hukari subdivision	Northern terminus of Mountain View Road and West Lilac Road on west side of Bonsall	30	Minor residential subdivision with road improvements. 4 SFR lots plus one remainder lot (3.4 to 7.7 net acres each).
6	TM 5532 S 07-012	Fallbrook Ranch	East of Old Highway 395 and Sterling View Drive (at Mission Road), Fallbrook		11 SFR lots
7	MUP 03-127	Los Willows Inn and Spa	532 Stewart Canyon Road		Add additional units to a Bed and Breakfast
8	TPM 20411	Reeve TPM	2987 Sumac Road, Fallbrook	8.8	Minor residential subdivision. 3 SFR lots (2-acres minimum).
9	TPM 20491	Evans TPM	West side of Sage Road between Sumac Road and Pala Road, Fallbrook	4.10	Minor subdivision into 2 residential/ agricultural parcels (2.00 and 2.10 acres). Private septic system.
10	TPM 20841	Bridge Pac West I TPM	3321 Sage Road, Fallbrook	15.90	Minor residential subdivision. 4 SFR lots plus one remainder lot (2.04, 2.08, 2.12, 2.14 and remainder 7.08 net acres each).

#	Project Reference	Project Name	Location	Area (acres)	Proposed Improvements
11	SPA 03-005 R 00-000 MUP 00-000 P 74-120W[1] P 74-121M[10]; MUP 03-006; MUP 04-005	Pala Mesa Resort	2001 Old Highway 395 at Tecalote Lane, north of SR 76 and immediately west of I-15, Fallbrook	181.2	Specific Plan Amendment for modification and construction of new recreation and resort-related facilities. Addition of 186 resort rooms and wedding facility. Expansion of resort by 6 acres.
12	TPM 20431 S 98-006	Lung TPM	Citrus Drive and Calle Canonero, Fallbrook	10.7	Minor residential subdivision. 2 SFR lots (6.7 and 4.0 acres)
13	TPM 20440	Chipman TPM	East side of Citrus Lane between Peony Drive and Dos Ninos, Fallbrook	13.54	Minor residential subdivision. 4 SFR lots plus one remainder lot, ranging from 2.13 to 2.85 net acres each and remainder 4.00 net acres. Septic system.
14	TPM 20484	Bierman TPM	4065 Calle Canonero, Fallbrook, south of Vern Drive and west of Lorita Lane	9.91	Minor residential subdivision. 4 SFR lots, ranging from 2.01 to 2.19 net acres each. Septic system.
15	S 04-026	Cooke Residence	3974 Citrus Drive between Wilt Road and Vern Drive	N/A	4,723 s.f. SFR
16	TPM 20581	Treister TPM	Donut-shaped parcel surrounding 401 Ranger Road, Fallbrook	21.81	Minor residential subdivision. 4 SFR lots plus one remainder lot.
17	TPM 20793 03-02-068	Mission Ridge Road TPM	235 Mission Ridge Road east of I-15 off Mission Road, Fallbrook	19.55	Minor residential subdivision. 4 SFR lots.
18	TM 5413	Rancho Alegre TPM	West side of Ranger Road approx. 0.4 mile north of Reche Road	70	Part of 116-acre subdivision (33 lots). This project consists of 20 lots in the eastern portion of property and proposes a different street alignment, grading, and lot arrangement.
19	TPM 20853	Rarick TPM	3261 Reche Road, Fallbrook	8.77	Minor residential subdivision. 4 SFR lots (ranging from 2.02 to 2.25 acres each). Septic system.

#	Project Reference	Project Name	Location	Area (acres)	Proposed Improvements
20	TPM 20936	Fernandez TPM	3838 Foxglove Lane, Fallbrook	10.4	Minor residential subdivision. 4 SFR lots. Minimum lot size 2 acres. 2 existing SFR on site.
21	TPM 20944	Rabuchin TPM	4065 Calle Canonero, Fallbrook	9.91	Subdivision of 2 lots into 4 SFR lots. Existing SFR on site
22	NA	Pala Casino	Pala Road and Pala Mission Road	TBD	187,300 s.f. casino, hotel, theater.
23	MUP 87-021 RPL[2] REZ P87-001 RPL[2]	Rosemary's Mountain/ Palomar Aggregates Quarry	North side of SR 76, 1.25 miles east of I-15	96.4	Aggregate rock quarry and processing plants for concrete and asphalt. Approximately 22 million tons of rock would be mined over 20 years. Realignment of SR 76 from Project site west to I-15. Reclamation Plan to designate lower portion of site as water storage reservoir after completion of mining activities.
24	TPM 20542	Patapoff Minor Residential Subdivision	Southern end of Rainbow Hills Road	59.1	Subdivide property into four parcels of 4.3 acres, 4.2 acres, 9.6 acres, 8acres, and a 33-acre parcel
25	TM 5321	Prominence at Pala	Pala Del Norte Road. 1/3 mile north of SR-76 and approximately two miles west of the Pala Indian Reservation	346.6	Subdivide the property into 30 SFR and two open space lots ranging in size from 4 to 96 acres
26	NA	Palomar College North Education Center District Master Plan	East side of I-15 between Pankey Road and Pala Mesa Heights Drive	85	New Community College campus to serve approximately 12,000 students, to include classroom and administration buildings, parking, open space, athletic fields, and off-site road, water and sewer improvements.
27	NA	Caltrans Realignment of SR 76	From I-15 to west of Rice Canyon Road	NA	Realignment and widening of roadway, improvements to northbound I-15 on- and off-Ramp.

#	Project Reference	Project Name	Location	Area (acres)	Proposed Improvements
28	NA	San Luis Rey Municipal Water District (SLRMWD) Water, Wastewater and Recycled Water Master Plan	SLRMWD service area and vicinity, north and south of SR-76 between I-15 and Pala Temecula Road	Over 3,000	Exploration of pipeline and water storage options.
29	TM 5231		Canonita Drive and Old Hwy 395, Fallbrook	30.48	39 condo units
30	TM 5276		Aqueduct Road and Via Urner, Bonsall	12.8	8 SFR lots
31	TM 5346		Old Hwy 395 and Via Urner, Bonsall	38.4	9 SFR lots
32	TM 5410	Marquart Ranch	West Lilac Road and Mesa Lilac Road, Bonsall	44.2	9 SFR lots. Includes improvements to West Lilac Road and Mesa Lilac Road, and drainage improvements.
33	TM 5449	Fallbrook Oaks	Reche Road and Ranger Road, Fallbrook	26	19 SFR lots
34	TM 5469	Ridge Creek Drive	Ridge Creek east of Live Oak Park Road and Ridge Drive, Fallbrook	30.4	14 SFR lots
35	TM 5499	Club Estates	SR 76 east of Cole Grade Road at Pauma Valley Drive	48.3	31 SFR lots
36	TM 5540; MUP 07-007	Oak Tree Ranch TM	15560 Spring Valley Road	9.95	24 SFR
37	TM 5545	Turnbull TM	32979 Temet Drive	22.9	17 lots
38	TPM 20913	Wexler TPM		2.54	4 lots
39	TM 5223 MUP 00-030	Shadow Run Ranch	Shadow Run Ranch, SR-76 and Adams Drive, Pala	263	54 SFR lots and 2 open space lots. MUP filed concurrently for Planned Residential Development that would cluster residential development on minimum 2-acre lots.
40	TPM 20896	Diana Acres	Adams Drive off SR-76, Pauma Valley		3 lots
41	TPM 20804	Hunter Subdivsion	15550 Adams Drive	7.5	3 lots

#	Project Reference	Project Name	Location	Area (acres)	Proposed Improvements
42	TPM 20538	Burge TPM	34487 Citracado Drive, Pala	12.58	4 lots plus remainder
43	MUP 99-001	Pauma Valley Packing Company	34188 Hampton Road	4.14	Packing and processing
44	TM 5223; MUP 00-030	Shadow Run Ranch/Schoepe-Pauma TM	15040 Adams Drive	263.17	13 lots
45	TM 5508	Warner Ranch	Pala-Pauma	513	732 SFR lots, 168 condo units, community park, fire station lot
46	CASINO	Pauma Casino and Hotel	Approximately 11 miles east of I-15 along SR-76		400 room hotel and 171,000 s.f. casino
47	TPM 20451	De Jong/Pala Minor Subdivision	Canonita Drive between I-15 and Tecalote Drive	5.62	Minor residential subdivision. 3 SFR lots (1.03, 2.06 and 2.31 net acres each).
48	TPM 20800	Crossroads Investors Minor Subdivision	Ranger Road, Fallbrook	15.5	Minor residential subdivision. 4 SFR lots plus one remainder lot. Existing SFR and grove on site
49	TM 5217/5225/5227/5228 MUP 00-027	Chaffin/Red Mountain Ranch Subdivisions	Rainbow Glen Road and Red Mountain Dam Road, Fallbrook	455.9	TM 5217: Residential development with 29 SFR lots (2.28 to 18.33 acres) and 2 biological open space zones. TM 5225: 55 acres divided into 6 SFR lots (8.1 to 13.9 acres). TM 5227: 44.5 acres divided into 4 SFR lots (8.08 to 13.71 acres each).TM 5228: 19.1 acres divided into 2 lots (8.4 and 10.7 acres).
50	TPM 20505	John Collins TPM	Margarita in Fallbrook	8.29	2 lots
51	TPM 21085	Brannon Trust TPM Remai	411 Yucca Road, Fallbrook		4+ lots
52	TPM 20976	Dien N Do TPM	405 Ranger Road		4+ lots
53	TPM 20373	Tim Rosa TPM	2973 Los Alisos Drive	13	4 lots plus remainder
54	TPM 20427	Leising TPM	1246 Via Vista	10.83	4 lots
55	TPM 20434	Atteberry TPM	1166 Sierra Bonita	9	3 lots
56	TPM 20980	Johnson TPM	3035 Trelawney Lane		2 lots
57	TPM 20381	Chipman TPM	Camino Zasa, Fallbrook	24.5	4 lots plus remainder

#	Project Reference	Project Name	Location	Area (acres)	Proposed Improvements
58	TPM 21047	American Lotus Bhuddist Association TPM	Reche Road at Rabbit Hill, Fallbrook		4 lots plus remainder lot
59	TM 5547	Reche Road TM	3129 Reche Road, Bonsall	33.5	12 SFR lots
60	TM 5158; RPL3	Palisades Estates	3880 Dos Niños Road/Elevado Road	408.4	51 lots
61	TPM 19742	Dion TPM and time extension	3562 Canonita Drive	7.5	2 lots
62	TPM 20476	Patricia Daniels TPM	3609 Canonita Road, Fallbrook	13.2	4 lots plus remainder
63	TPM 20443	Cameron Subdivision	2644 Vista de Palomar, Fallbrook. North side of Vista de Palomar between Post Hill and Via Rancheros	11.31	Minor residential subdivision. 3 SFR lots (2.22, 2.44 and 6.37 acres each). Septic system.
64	TPM 20473	Tesla Gray TPM	East end of Vista de Palomar, and north end of Old Post Road, Fallbrook	28.91	Minor residential subdivision. 4 SFR lots plus one remainder lot. Future development of 5 SFR
65	TPM 20592	Aspel TPM	3107 Old Post Road, Fallbrook	7.32	Minor residential subdivision. 2 SFR lots (2.09 and 5.20 acres each).
66	TPM 20317	James Patapoff TPM	2639 Via Alicia, Fallbrook	16.8	Subdivision of 16.8 acres into 4 lots plus a remainder lot
67	TPM 20503	Yew Tree Spring Water Corporation	3573 Diego Estates Drive, Fallbrook	7.48	3 residential lots
68	TPM 20610	Haugh, Granger TPM	Fallbrook	12.94	4 lots
69	TPM 20614; RPL1	Brown, Lee & Karen, TPM	3850 Gird Road	6.46	3 lots
70	TPM 20648	Pepper Drive TPM	3926 Flowerwood Lane	1.39	4 residential lots
71	TM 4971	Surf Properties TM	3545 Vista Corona	46.89	15 lots
72	TM 4908	Brook Hills TM	4061 La Cañada Road, Fallbrook	96.71	35 lots
73	MUP 02-011	Latter-Day Saints/Via Monserate	Fallbrook	7.96	17,000 sq. ft. church and meeting rooms

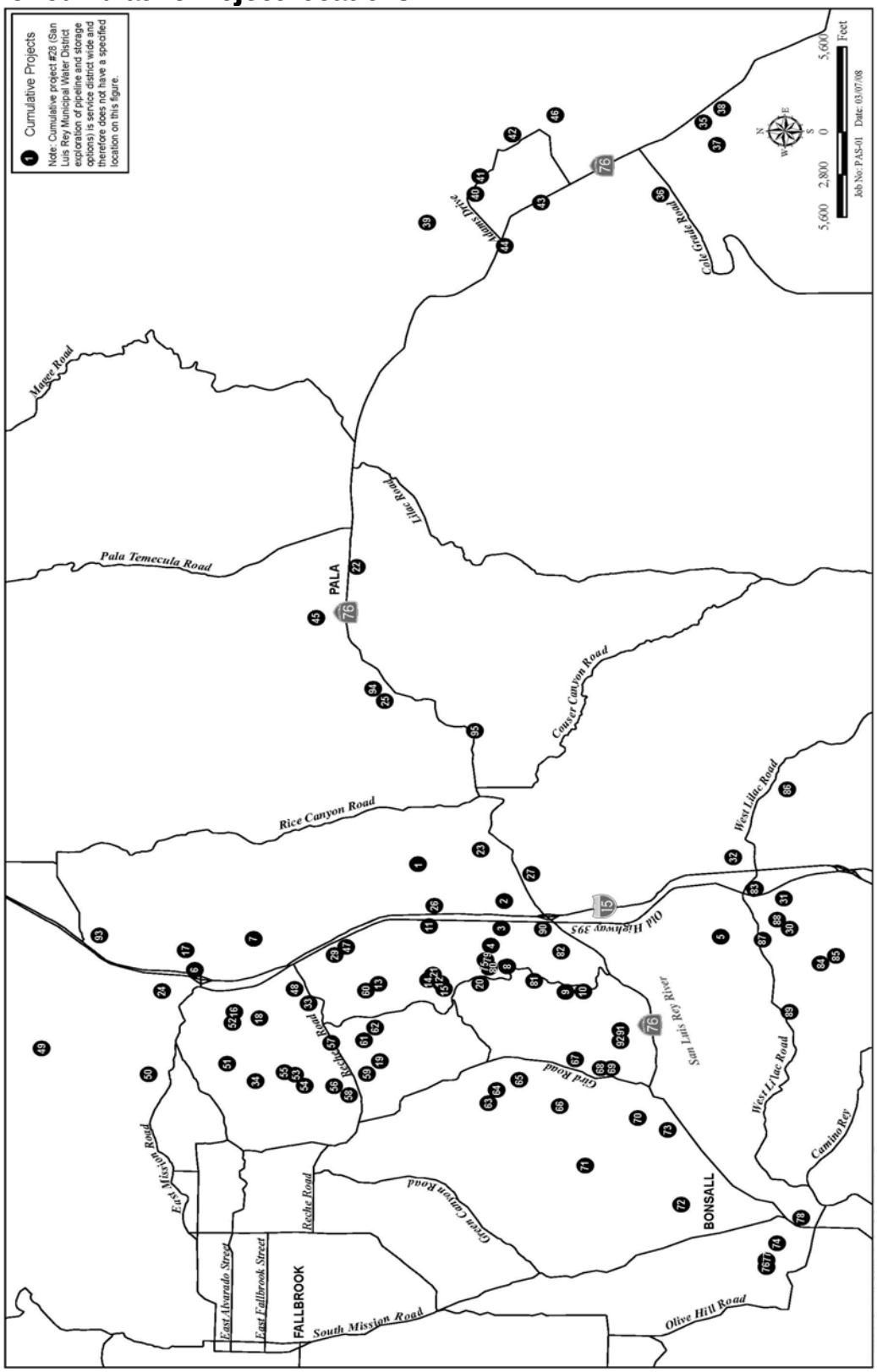
#	Project Reference	Project Name	Location	Area (acres)	Proposed Improvements
74	TM 4976; RPL4	Leeds and Strausss TM	North side of Olive Hill Road, near intersection with SR-76, Bonsall	45.76	17 SFR lots – TM time extension until 09/13/2009
75	TM 5398	Murray Davidson	3956 Pala Mesa Road, Bonsall	4.28	7 lots
76	TPM 20173	Shamrock Partners TPM	Shamrock Road, Bonsall	10	3 lots
77	TPM 20851	Crook TPM	32179 Shamrock Road		5 lots
78	TPM 20729	Tabata Bonsall TPM RPL1	5546 Mission Road	33.75	4 lots
79	TPM 20874	Berezousky TPM (311 Same as one in original latch)	4040 Pala Mesa Drive, Fallbrook	3.11	Subdivision of 3.11 acre into 4 residential lots. Existing SFR on site
80	TPM 20932	Murray Davidson TPM	3956 Pala Mesa Road, Fallbrook		Subdivision of 1 lot into 4 SFR lots plus a remainder lot
81	TPM 21076	Sumac TPM	3111 Sumac Road		4 lots
82	S 03-024	Janikowski SFR	9686 Pala Road (SR 76), Fallbrook, on north side of SR 76	5.12	3,200 s.f. SFR
83	TPM 19827	Kratochvid TPM; expired map	Old Highway 395	12.3	4 lots
84	TPM 20319	Kohl TPM	7641 Mount Ararat Way, Bonsall	9.71	4 lots plus remainder
85	TPM 20541	Woodhead TPM	Mt. Ararat Way, Bonsall	12.54	4 lots plus remainder
86	TPM 20596	Rockefeller TPM	9590 Lilac Way, VC	5	2 lots
87	TPM 20763	McNulty TPM	32171 Dos Niñas	5.19	2 lots
88	TPM 20799	Stehly Caminito Quieto TPM	32009 Camto Quieto at West Lilac Road	11.69	4 lots
89	TPM 20845	Sanders TPM	West Lilac Road, 1.25 miles west of Old Highway 395		4 lots plus remainder lot

#	Project Reference	Project Name	Location	Area (acres)	Proposed Improvements
90	S 02-061	Pala Shopping Center	On Old Highway 395 just northwest of the intersection of I-15 and SR 76	3.88	Addition of 5 commercial buildings to an existing commercial site with grocery store.
91	TM 5489	Monserate TM	3624 Monserate Hill Road	24.6	7 SFR
92	TPM 21075	Dimitri, Diffendale, and Kirk TPM	Monserate Hill Road and Monserate Place		4 lots
93	TPM 20994	Madrigal TPM	1055 Rainbow Valley Boulevard near Old Hwy 395		3 lots
94	MUP 07-009	Singh Power Plant	4 miles NE of I-15 on Pala Del Norte Road, north of SR 76	8.5	Power Generation facility
95	37-AA-0032	Gregory Landfill	Approximately 3.5 miles east of I-15 on SR-76	1,770	Landfill site for solid waste

TM = Tentative Map; S = Site Plan; REZ = Rezone; MUP = Major Use Permit; TPM = Tentative Parcel Map; ZAP = Minor Use Permit; RPL = Replacement Map; MFR = multi-family residential; SFR = single-family residential
NA = Not available

The individual cumulative project locations are shown on **Figure 19.** The higher plot volumes from the SANDAG Series 10 Year 2030 cumulative map and Series 11 model were used for the analysis (volume comparison tables and plot volumes are included at the end of **Appendix L)**. Manual adjustments were made to the traffic model output along Horse Ranch Creek Road, Pala Mesa Drive, and Pankey Place/Street R based on detailed driveway locations and residential connector streets for Meadowood, Campus Park, and Palomar College instead of relying on the traffic models limited number of centroid connectors that can concentrate segment volumes. The combined cumulative project volumes are shown on **Figures 20a, 20b, & 20c.**

Figure 19: Cumulative Project Locations



Source: Helix

Figure 20a: Cumulative Project Volumes

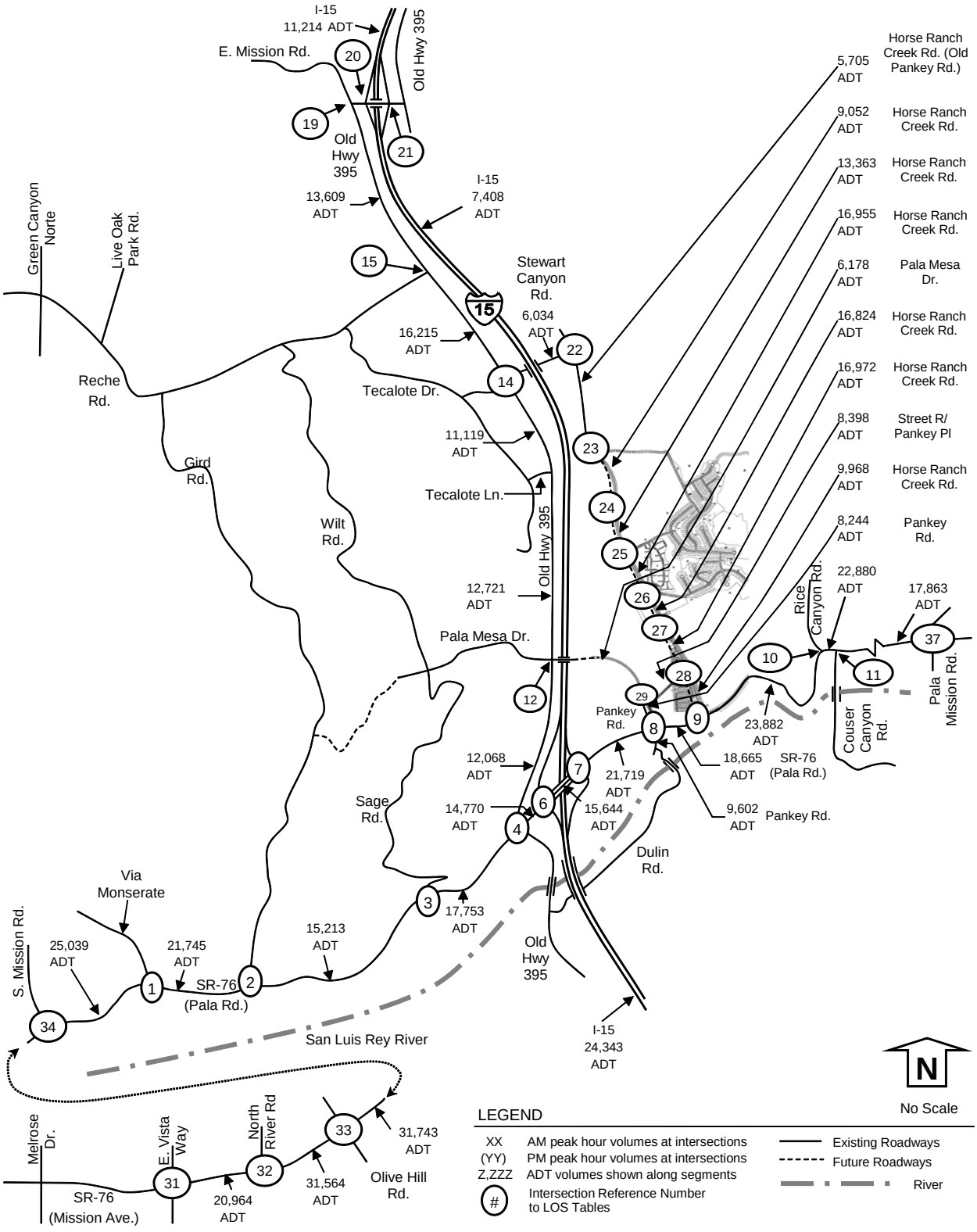


Figure 20b: Cumulative Project Volumes

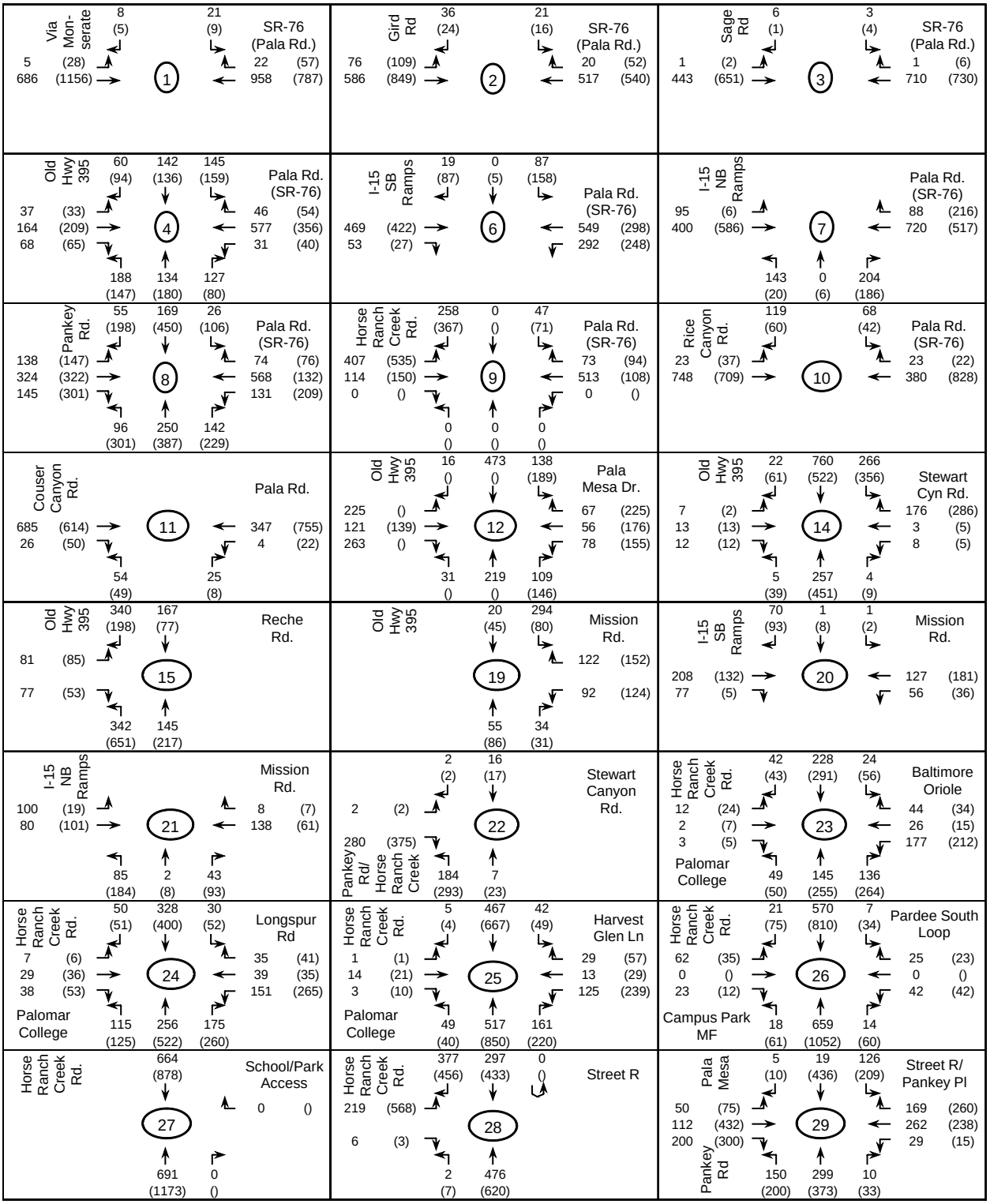
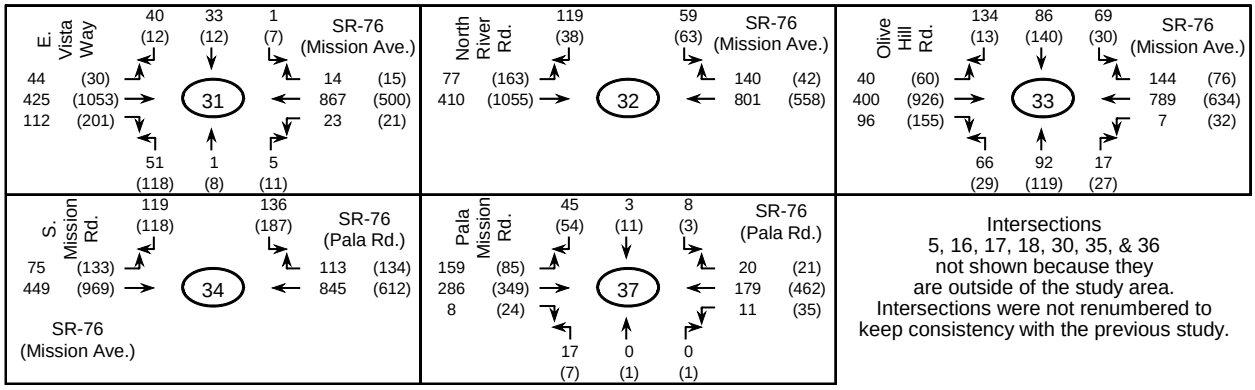


Figure 20c: Cumulative Project Volumes



3.5.2 Existing + Cumulative Conditions Analysis

The existing + cumulative traffic conditions were determined by adding the SANDAG Series 10 cumulative traffic volumes onto existing traffic. The previously described 95 cumulative projects are included in the SANDAG Series 10 cumulative traffic model.

Roadway improvements already under construction (widening of SR-76 from 2 to 4 lanes by the Granite Construction Company – pictures at the end of Appendix B) or roadway improvements needed to achieve access to the project (Horse Ranch Creek Road, Pala Mesa Drive, Street R and all associated internal intersections) were incorporated into the analysis. The configurations are shown in **Figures 21a and 21b**. Other roadway improvements are planned by the Pala Tribe and Caltrans; however, these improvements were not incorporated into the analysis. Documents describing the planned improvements by other cumulative project applicants are included in **Appendix M**. The other cumulative project improvements not included in this analysis include (with a brief summary of the improvement):

1) Pala Tribe (various improvements along SR-76)
2) Palomar College (Horse Ranch Creek Road and other off-site improvements)
3) Caltrans SR-76 Middle Project (widen SR-76 to 4 lanes from Melrose Dr to S. Mission Rd)
4) Caltrans SR-76 East Project (widen SR-76 to 4 lanes from S. Mission Rd to I-15 NB Ramp)

Unknown improvements from other cumulative projects that will generate significant amounts of traffic are also not included. The other significant cumulative projects include (with cumulative project reference):

1) Campus Park (#1)
2) Campus Park West (#2)
3) Pala Mesa Resort (#11)
4) Palomar College (#26)
5) Warner Ranch (#45)
6) Pauma Tribe (#46)
7) Pala Shopping Center (#90)
8) Gregory Landfill (#95)

Of significant importance is that this analysis includes all of the known cumulative project traffic but does not include the necessary roadway mitigation measures required to support all of the other cumulative projects. Based on the size of some of the other cumulative projects, significant roadway improvements would most likely be forthcoming to satisfy CEQA requirements.

The peak hour intersection volumes and daily traffic volumes for this scenario of existing + cumulative projects are shown in **Figures 22a, 22b, and 22c**. The LOS calculated for the intersections, street segments, state route segments, and freeway segments are shown in **Tables 19, 20, 21, and 22**, respectively.

Figure 21a: Existing + Cumulative Planned Roadway Improvements

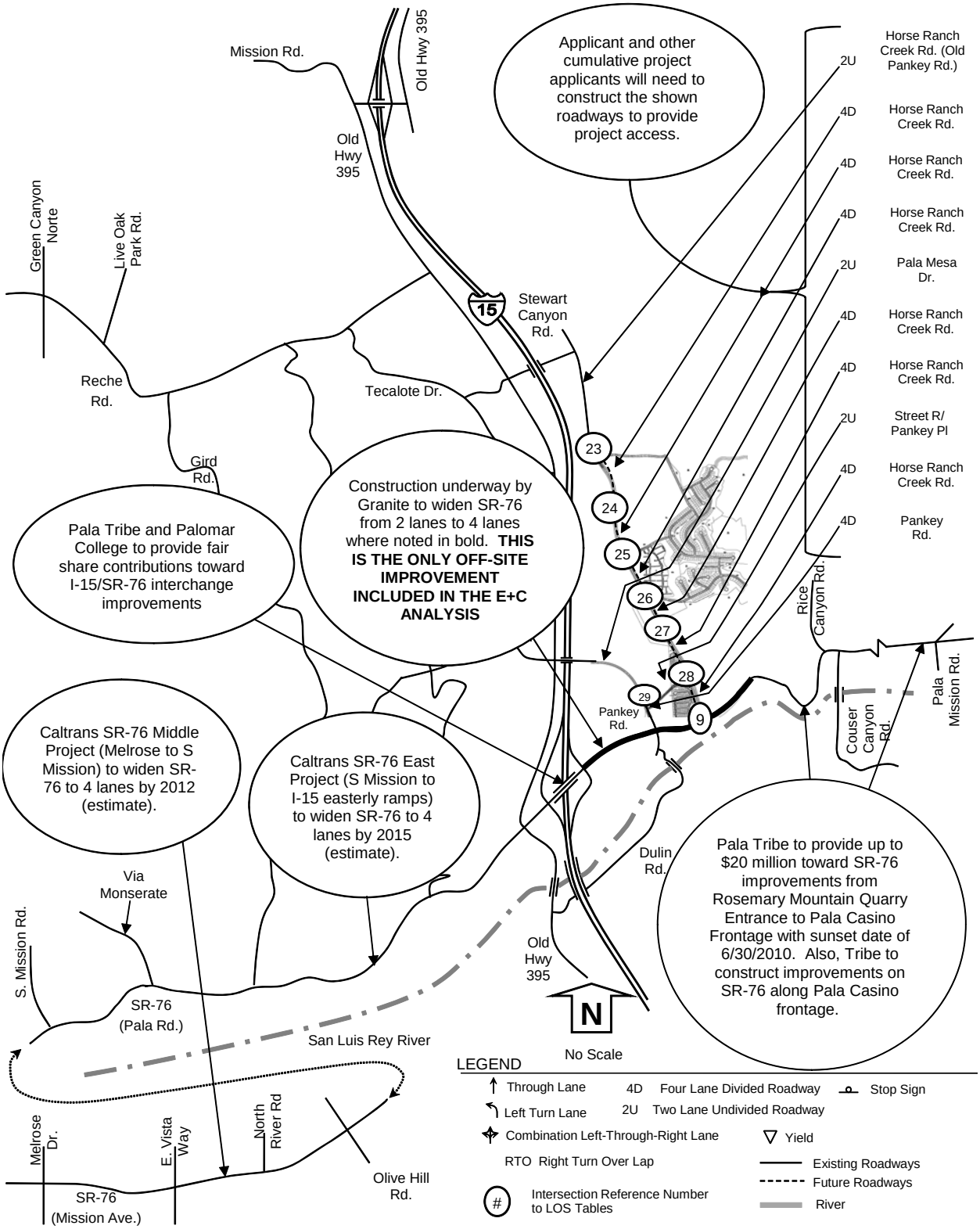


Figure 21b: Existing + Cumulative Planned Roadway Improvements

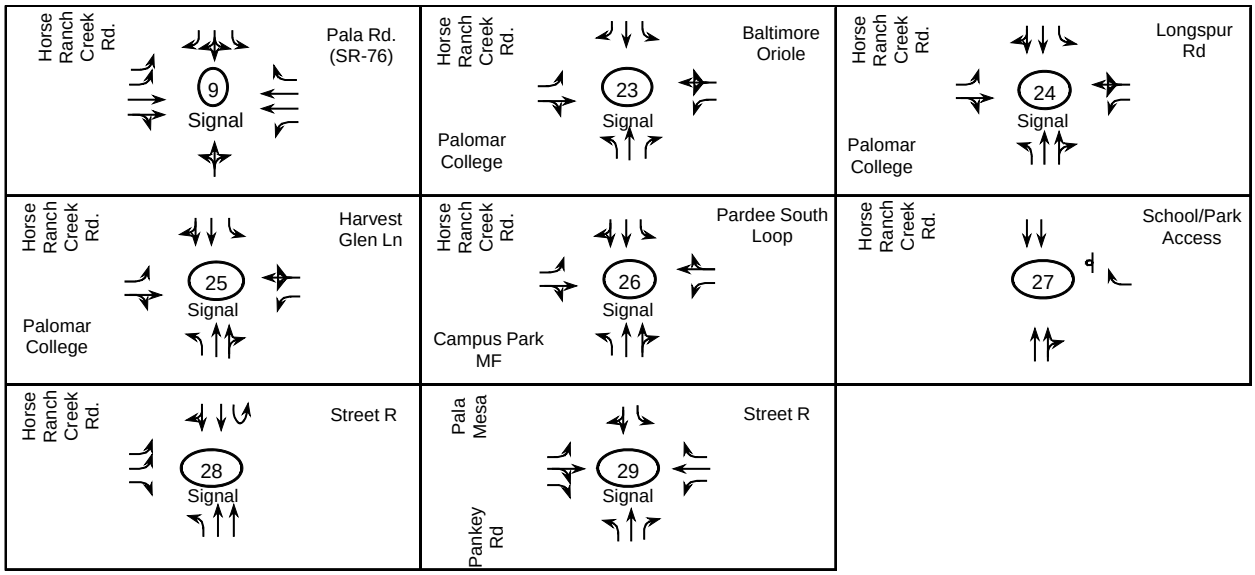


Figure 22a: Existing + Cumulative Volumes

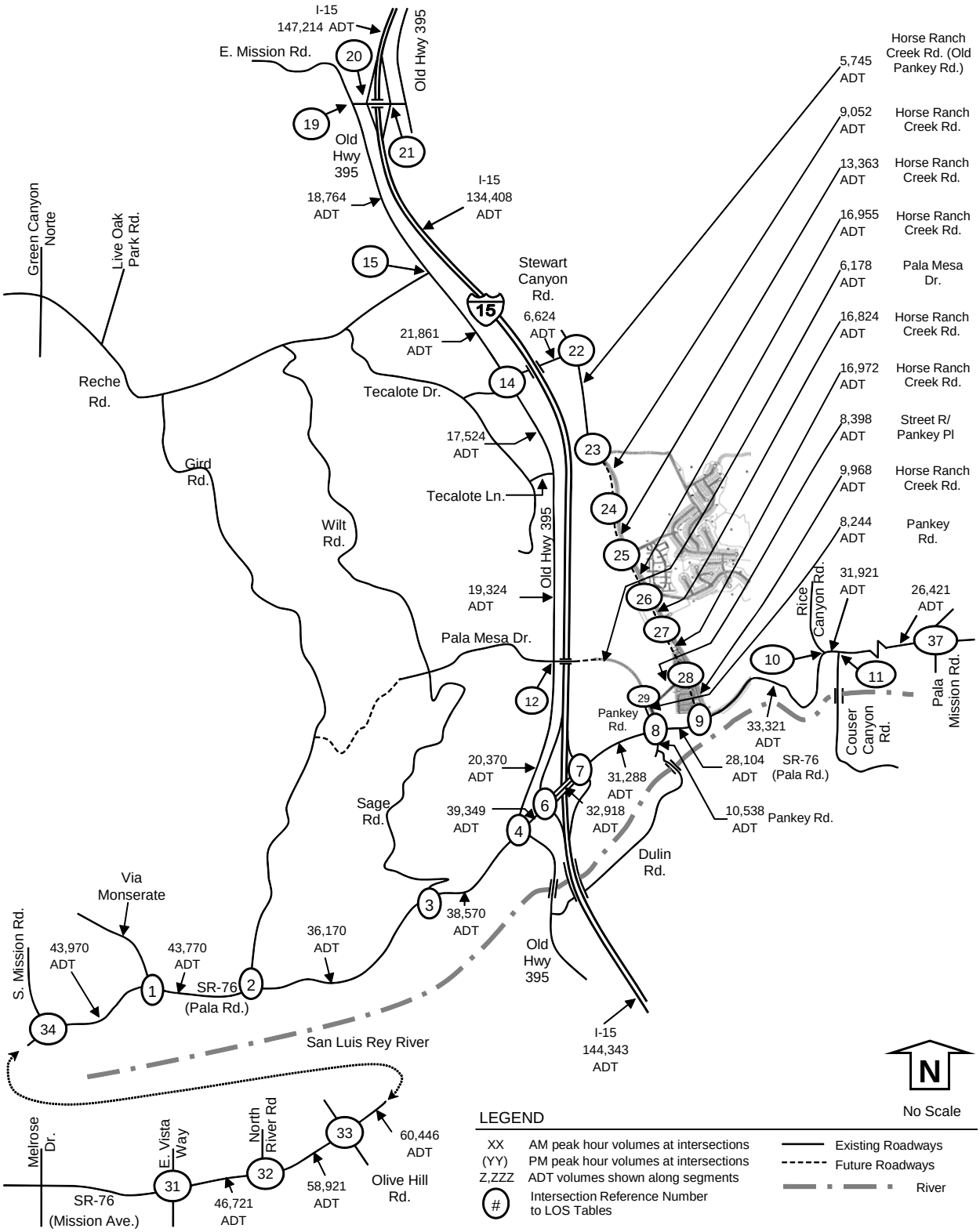


Figure 22b: Existing + Cumulative Volumes

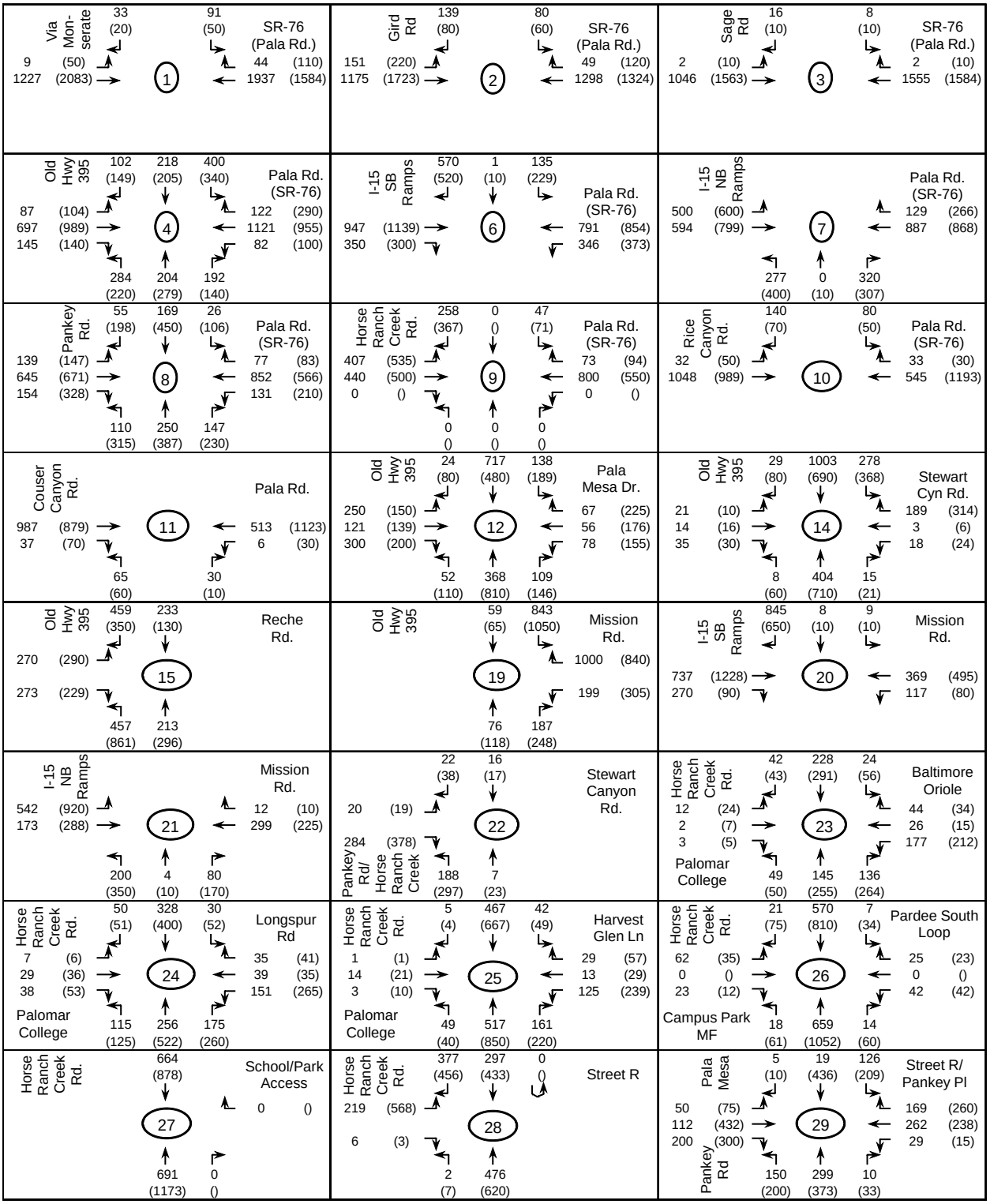


Figure 22c: Existing + Cumulative Volumes

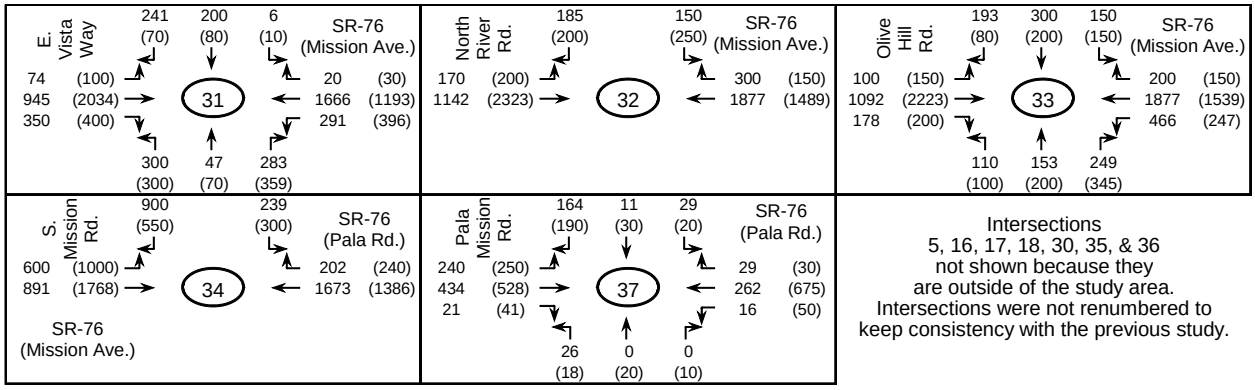


TABLE 19: EXISTING + CUMULATIVE INTERSECTION LEVEL OF SERVICE

Intersection and (Analysis)[1]	Movement	Peak Hour	Existing + Cumulative Delay[2]	Existing + Cumulative LOS[3]
1) SR-76 (Pala Rd) at	SB LR	AM	>500	**F**
Via Monserate (U)	SB LR	PM	>500	**F**
	All	AM	>500	**F**
	All	PM	>500	**F**
2) SR-76 (Pala Rd) at	All	AM	53.4	D
Gird Rd (S)	All	PM	110.3	**F**
3) SR-76 (Pala Rd) at	SB LR	AM	38.5	**E**
Sage Rd (U)	SB LR	PM	38.4	**E**
	All	AM	>500	**F**
	All	PM	>500	**F**
4) SR-76 (Pala Rd) at	All	AM	257.8	**F**
Old Hwy 395 (S)	All	PM	252.1	**F**
6) SR-76 (Pala Rd) at	All	AM	96.5	**F**
I-15 SB Ramps (S)	All	PM	133.2	**F**
7) SR-76 (Pala Rd) at	All	AM	77.3	**E**
I-15 NB Ramps (S)	All	PM	118.0	**F**
8) SR-76 (Pala Rd) at	NB LTR	AM	>500	**F**
Pankey Road (U)	NB LTR	PM	>500	**F**
	SB LTR	AM	>500	**F**
	SB LTR	PM	>500	**F**
9) SR-76 (Pala Rd) at	Future	AM	19.1	B
Horse Ranch Creek Rd (U)	Intersection	PM	19.1	B
10) SR-76 (Pala Rd) at	SB LR	AM	191.8	**F**
Rice Canyon Road (U)	SB LR	PM	>500	**F**
11) SR-76 (Pala Rd) at	NB LR	AM	78.5	**F**
Couser Canyon Road (U)	NB LR	PM	385.8	**F**
12) Old Highway 395 at	EB LR	AM	>500	**F**
Pala Mesa Dr (U)	EB LR	PM	>500	**F**
14) Old Highway 395 at	WB LTR	AM	>500	**F**
Stewart Canyon Road (U)	WB LTR	PM	>500	**F**
15) Old Highway 395 at	EB LR	AM	>500	**F**
Reche Road (U)	EB LR	PM	>500	**F**
	All	AM	>500	**F**
	All	PM	>500	**F**
19) Mission Road at	SB L	AM	49.0	D
Old Highway 395 (S)	SB L	PM	106.3	**F**
20) Mission Road at	SB LTR	AM	71.6	**E**
I-15 SB Ramps (S)	SB LTR	PM	63.0	**E**
21) Mission Road at	All	AM	28.6	C
I-15 NB Ramps (S)	All	PM	87.3	**F**
22) Stewart Canyon Rd at	EB LR	AM	10.5	B
HRCR/Pankey Road (U)	EB LR	PM	11.9	B
23) Horse Ranch Crk Rd at	WB LR	AM	16.1	B
Baltimore Oriole (S)	WB LR	PM	17.4	B
24) Horse Ranch Crk Rd at	All	AM	21.3	C
Longspur Rd (S)	All	PM	23.6	C
25) Horse Ranch Crk Rd at	WB LR	AM	13.0	B
Harvest Glen Ln (S)	WB LR	PM	17.1	B
26) Horse Ranch Crk Rd at	WB LR	AM	9.9	A
Pardee South Loop (S)	WB LR	PM	11.8	B
27) Horse Ranch Crk Rd at	All-Way	AM	0.0	A
School/Park Access (U)	All-Way	PM	0.0	A
28) Horse Ranch Crk Rd	EB LR	AM	6.8	A
at Street R (S)	EB LR	PM	10.3	B
29) Pankey/Pala Mesa Dr	WB LR	AM	24.8	C
at Street R (S)	WB LR	PM	36.3	D
31) SR-76 (Mission Ave) at	All	AM	277.9	**F**
E. Vista Way (S)	All	PM	257.7	**F**
32) SR-76 (Mission Ave) at	All	AM	310.8	**F**
North River Rd (S)	All	PM	261.0	**F**
33) SR-76 (Mission Ave) at	All	AM	270.0	**F**
Olive Hill Rd (S)	All	PM	179.4	**F**
34) SR-76 (Mission Ave) at	All	AM	58.1	**E**
S. Mission Rd (S)	All	PM	83.5	**F**
37) SR-76 (Pala Rd.) at	All	AM	31.1	C
Pala Mission Rd. (S)	All	PM	42.3	D

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized 2) Delay - HCM Control Delay in seconds. 3) LOS: Level of Service.

TABLE 20: EXISTING + CUMULATIVE SEGMENT ADT VOLUMES AND LEVEL OF SERVICE

Segment	Sept 2005 Circulation Element Class. (proposed)	Existing # of Lanes [Proposed by Other Projects]	Existing + Cumulative			
			Daily Volume	LOS E Capacity	V/C	LOS
Old Highway 395						
East Mission Road to Reche Road	Collector	2	18,317	16,200	1.13	**F**
Reche Road to Stewart Canyon Road	Collector	2	21,265	16,200	1.31	**F**
Pala Mesa Drive to SR-76 (Pala Road)	Collector	2	20,109	16,200	1.24	**F**
Stewart Canyon Road						
Old Hwy 395 to Horse Ranch Creek Rd	Collector	2	6,624	16,200	0.41	C
Pankey Road						
Street R/Pankey Place to SR-76 (Pala Rd)	(Collector)	[Pappas 4 lanes]	8,244	34,200	0.24	A
SR-76 (Pala Road) to Shearer Crossing	Light Collector	2	7,657	16,200	0.47	D
Horse Ranch Creek Road						
Stewart Canyon Rd to Baltimore Oriole (#23)	Light Collector	2	5,745	16,200	0.35	C
Baltimore Oriole (#23) to Longspur Rd (#24)	(Boulevard 4.2A)	[PPP 4 lanes]	9,052	27,000	0.34	Un
Longspur Rd (#24) to Harvest Glen Ln (#25)	(Boulevard 4.2A)	[PPP 4 lanes]	13,363	27,000	0.49	Un
Harvest Glen Ln (#25) to Intersection (#26)	(Boulevard 4.2A)	[PPP 4 lanes]	16,955	27,000	0.63	Un
Intersection (#26) to Park/School (#27)	(Boulevard 4.2A)	[PPP 4 lanes]	16,824	27,000	0.62	Un
Park/Sch (#27) to Street R/Pankey Pl (#28)	(Boulevard 4.2A)	[PPP 4 lanes]	16,972	27,000	0.63	Un
Street R/Pankey Pl (#28) to SR-76 (Pala Rd)	(Boulevard 4.2A)	[PPP 4 lanes]	9,968	27,000	0.37	Un
Pala Mesa Drive						
Old Highway 395 to Street R/Pankey Pl	(Light Collector)	2	6,178	16,200	0.38	C
Street R/Pankey Place						
Pala Mesa/Pankey to Horse Ranch Creek Rd	(Light Collector)	2	8,398	16,200	0.52	D

Notes: (proposed GP classification). [proposed party to implement improvement. PPP = Pardee, Passerelle, and Palomar] [Granite 4 lanes until their driveway] LOS: Level of Service. V/C: Volume to Capacity ratio. Daily volumes is a 24 hour volume. LOS for proposed classification is classification is identiified as "Un" as under capacity and "Ov" for over capacity.

TABLE 21: EXISTING + CUMULATIVE STATE ROUTE VOLUMES AND LEVEL OF SERVICE

State Route 76	Lanes in	E+C	AM (Eastbound)					AM (Westbound)					PM (Eastbound)					PM (Westbound)				
Study Limits (cumulative)	each dir	Vol	Dir	Cap	v/c	LOS	E+C Vol	Dir	Cap	v/c	LOS	E+C Vol	Dir	Cap	v/c	LOS	E+C Vol	Dir	Cap	v/c	LOS
E. Vista Way to North River Rd	1	1176	EB	950	1.24	**F**	1950	WB	950	2.05	**F**	2019	EB	950	2.13	**F**	1402	WB	950	1.48	**F**
North River Rd to Olive Hill Rd	1	1380	EB	950	1.45	**F**	2387	WB	950	2.51	**F**	2553	EB	950	2.69	**F**	1594	WB	950	1.68	**F**
Olive Hill Rd to S Mission Rd	1	1485	EB	950	1.56	**F**	2526	WB	950	2.66	**F**	2528	EB	950	2.66	**F**	1831	WB	950	1.93	**F**
S Mission Rd to Via Monserate	1	1079	EB	950	1.14	**F**	1692	WB	950	1.78	**F**	2225	EB	950	2.34	**F**	1481	WB	950	1.56	**F**
Via Monserate to Gird Rd	1	1124	EB	950	1.18	**F**	1748	WB	950	1.84	**F**	2022	EB	950	2.13	**F**	1337	WB	950	1.41	**F**
Gird Rd to Sage Rd	1	1115	EB	950	1.17	**F**	1291	WB	950	1.36	**F**	1345	EB	950	1.42	**F**	1212	WB	950	1.28	**F**
Sage Rd to Old Hwy 395	1	1202	EB	950	1.27	**F**	1313	WB	950	1.38	**F**	1468	EB	950	1.55	**F**	1424	WB	950	1.50	**F**
Old Hwy 395 to I-15 SB Ramps	2	1339	EB	2050	0.65	C	1251	WB	2028	0.62	C	1470	EB	2050	0.72	D	1524	WB	2028	0.75	D
I-15 SB Ramps to I-15 NB Ramps	1	1000	EB	950	1.05	**F**	844	WB	950	0.89	**E**	1278	EB	950	1.35	**F**	1210	WB	950	1.27	**F**
I-15 NB Ramps to Pankey Rd	2	775	EB	3100	0.25	A	841	WB	3030	0.28	A	1211	EB	3100	0.39	B	960	WB	3030	0.32	B
Pankey Rd to Horse Ranch Creek Rd	2	544	EB	1806	0.30	A	1000	WB	2028	0.49	B	1066	EB	1806	0.59	C	1265	WB	2028	0.62	C
Horse Ranch Creek Rd to Rice Cyn	1	570	EB	950	0.60	C	1173	WB	950	1.23	**F**	1263	EB	950	1.33	**F**	1317	WB	950	1.39	**F**
Rice Cyn to Couser Cyn	1	1690	EB	950	1.78	**F**	829	WB	950	0.87	**E**	1015	EB	950	1.07	**F**	1303	WB	950	1.37	**F**
Couser Cyn to Pala Mission Rd	1	823	EB	950	0.87	**E**	667	WB	950	0.70	C	831	EB	950	0.87	**E**	1211	WB	950	1.27	**F**

Source: SANDAG Year 2030 Cumulative Map. Notes: Dir = Direction. Vol = Volume. Cap = Capacity. v/c = volume to capacity ratio. LOS = Level of Service. E: Existing. C: Cumulative

TABLE 22: EXISTING + CUMULATIVE FREEWAY VOLUMES AND LEVEL OF SERVICE

Freeway	I-15				I-15				I-15			
Segment	Rainbow Valley Blvd to Mission Rd				Mission Rd to SR-76 (Pala Rd)				SR-76 to Escondido Hwy (Old 395)			
Existing (Year 2006)												
ADT	136,000				127,000				120,000			
Peak Hour	A M		P M		A M		P M		A M		P M	
Direction	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
Number of Lanes	4	4	4	4	4	4	4	4	4	4	4	4
Capacity (1)	9400	9400	9400	9400	9400	9400	9400	9400	9400	9400	9400	9400
K Factor (2)	0.0619	0.0619	0.0738	0.0738	0.0619	0.0619	0.0738	0.0738	0.059	0.059	0.0723	0.0723
D Factor (3)	0.1653	0.8347	0.6398	0.3602	0.1653	0.8347	0.6398	0.3602	0.1989	0.8011	0.6955	0.3045
Truck Factor (4)	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.8977	0.8977	0.8977	0.8977
Peak Hour Volume	1514.87	7649.51	6990.58	3935.61	1414.62	7143.29	6527.97	3675.17	1568.69	6318.13	6721.8	2942.9
Volume to Capacity	0.16116	0.81378	0.74368	0.41868	0.15049	0.75992	0.69446	0.39098	0.16688	0.67214	0.71508	0.31307
LOS	A	D	C	A	A	C	C	A	A	C	C	A
Cumulative Pk Hr Vol	337	340	472	542	201	253	351	321	736	974	1340	906
Existing+Cumulative												
Peak Hour Volume	1851.87	7989.51	7462.58	4477.61	1615.62	7396.29	6878.97	3996.17	2304.69	7292.13	8061.8	3848.9
Volume to Capacity	0.19701	0.84995	0.79389	0.47634	0.17187	0.78684	0.7318	0.42512	0.24518	0.77576	0.85764	0.40946
LOS	A	D	C	B	A	C	C	B	A	C	D	A

Notes: (1) Capacity of 2,350 passenger cars per hour per lane (pcphpl) from Caltrans' Guide for the Preparation of Traffic Impact Studies, Dec 2002. (2) Latest K factor from Caltrans (based on 2005 data), which is the percentage of Annual Average Daily Traffic (AADT) in both directions. (3) Latest D factor from Caltrans (based on 2005 data), which when multiplied by K and ADT will provide peak hour volume. (4) Latest truck factor from Caltrans (based on 2000 data).

Under existing + cumulative conditions, all study intersections and roadways were calculated to operate at LOS D with the exception of:

Intersections:

1) Intersection of SR-76 (Pala Rd) / Via Monserate (LOS F AM & PM)
2) Intersection of SR-76 (Pala Rd) / Gird Road (LOS F PM)
3) Intersection of SR-76 (Pala Rd) / Sage Road (LOS F AM & PM)
4) Intersection of SR-76 (Pala Rd) / Old Highway 395 (LOS F AM &PM)
5) Intersection of SR-76 (Pala Rd) / I-15 SB Ramp (LOS F AM & PM)
6) Intersection of SR-76 (Pala Rd) / I-15 NB Ramp (LOS E AM & LOS F PM)
7) Intersection of SR-76 (Pala Rd) / Pankey Road (LOS F AM & PM)
8) Intersection of SR-76 (Pala Rd) / Rice Canyon Road (LOS F AM & PM)
9) Intersection of SR-76 (Pala Rd) / Couser Canyon Road (LOS F AM & PM)
10) Intersection of Old Highway 395 / Pala Mesa Drive (LOS F AM & PM)
11) Intersection of Old Highway 395 / Stewart Canyon Road (LOS F AM & PM)
12) Intersection of Old Highway 395 / Reche Road (LOS F AM & PM)
13) Intersection of Mission Road / Old Highway 395 (LOS F PM)
14) Intersection of Mission Road / I-15 Southbound Ramp (LOS E AM & PM)
15) Intersection of Mission Road / I-15 Northbound Ramp (LOS F PM)
16) Intersection of SR-76 (Mission Ave) / E Vista Way (LOS F AM & PM)
17) Intersection of SR-76 (Mission Ave) / North River Road (LOS F AM & PM)
18) Intersection of SR-76 (Mission Ave) / Olive Hill Road (LOS F AM & PM)
19) Intersection of SR-76 (Mission Ave) / S Mission Road (LOS E AM & LOS F PM)

Segments:

1) Segment of Old Highway 395 from E Mission Rd to Reche Rd (LOS F)
2) Segment of Old Highway 395 from Reche Rd to Stewart Canyon Rd (LOS F)
3) Segment of Old Highway 395 from Pala Mesa Dr to SR-76 (LOS F)

State Route Segments:

1) State Route 76 from E Vista Way to North River Road (LOS F AM & PM)

2) State Route 76 from North River Road to Olive Hill Road (LOS F AM & PM)
3) State Route 76 from Olive Hill Road to S Mission Road (LOS F AM & PM)
4) State Route 76 from S Mission Road to Via Monserate (LOS F AM & PM)
5) State Route 76 from Via Monserate to Gird Road (LOS F AM & PM)
6) State Route 76 from Gird Road to Sage Road (LOS F AM & PM)
7) State Route 76 from Sage Road to Old Highway 395 (LOS F AM & PM)
8) State Route 76 from I-15 SB Ramp to I-15 NB Ramp (LOS F AM & PM)
9) State Route 76 from Horse Ranch Creek Road to Rice Canyon Road (LOS F AM & PM)
10) State Route 76 from Rice Canyon Road to Couser Canyon Road (LOS F AM & PM)
11) State Route 76 from Couser Canyon Road to Pala Mission Road (LOS E AM & LOS F PM)

Existing + cumulative LOS calculations are included in **Appendix N.**

3.6 Existing + Cumulative + Project Conditions

This scenario accounts for the addition of project traffic onto existing + cumulative traffic for AM, PM and ADT conditions. The peak hour intersection volumes and daily traffic volumes for this scenario of existing + cumulative + project conditions are shown in **Figures 23a, 23b, and 23c**.

The LOS calculated for the intersections, street segments, state route segments, and freeway segments are shown in **Tables 23, 24, 25a, 25b, and 26**, respectively.

Under existing + cumulative + project conditions, all study intersections and roadways were calculated to operate at LOS D with the exception of the following to which the project is calculated to have a cumulative impact:

Intersections:

1) Intersection of SR-76 (Pala Rd) / Via Monserate (LOS F AM & PM)
2) Intersection of SR-76 (Pala Rd) / Gird Road (LOS F PM)
3) Intersection of SR-76 (Pala Rd) / Sage Road (LOS F AM & PM)
4) Intersection of SR-76 (Pala Rd) / Old Highway 395 (LOS F AM &PM)
5) Intersection of SR-76 (Pala Rd) / I-15 SB Ramp (LOS F AM & PM)
6) Intersection of SR-76 (Pala Rd) / I-15 NB Ramp (LOS E AM & LOS F PM)
7) Intersection of SR-76 (Pala Rd) / Pankey Road (LOS F AM & PM)
8) Intersection of SR-76 (Pala Rd) / Rice Canyon Road (LOS F AM & PM)
9) Intersection of SR-76 (Pala Rd) / Couser Canyon Road (LOS F AM & PM)
10) Intersection of Old Highway 395 / Pala Mesa Drive (LOS F AM & PM)
11) Intersection of Old Highway 395 / Stewart Canyon Road (LOS F AM & PM)
12) Intersection of Old Highway 395 / Reche Road (LOS F AM & PM)
13) Intersection of Mission Road / Old Highway 395 (LOS F PM)
14) Intersection of Mission Road / I-15 Southbound Ramp (LOS E AM & PM)
15) Intersection of Mission Road / I-15 Northbound Ramp (LOS F PM)
16) Intersection of SR-76 (Mission Ave) / E Vista Way (LOS F AM & PM)
17) Intersection of SR-76 (Mission Ave) / North River Road (LOS F AM & PM)
18) Intersection of SR-76 (Mission Ave) / Olive Hill Road (LOS F AM & PM)
19) Intersection of SR-76 (Mission Ave) / S Mission Road (LOS E AM & LOS F PM)

Segments:

1) Segment of Old Highway 395 from E Mission Rd to Reche Rd (LOS F)
2) Segment of Old Highway 395 from Reche Rd to Stewart Canyon Rd (LOS F)
3) Segment of Old Highway 395 from Pala Mesa Dr to SR-76 (LOS F)

State Route Segments:

1) State Route 76 from E Vista Way to North River Road (LOS F AM & PM)
2) State Route 76 from North River Road to Olive Hill Road (LOS F AM & PM)
3) State Route 76 from Olive Hill Road to S Mission Road (LOS F AM & PM)
4) State Route 76 from S Mission Road to Via Monserate (LOS F AM & PM)
5) State Route 76 from Via Monserate to Gird Road (LOS F AM & PM)
6) State Route 76 from Gird Road to Sage Road (LOS F AM & PM)
7) State Route 76 from Sage Road to Old Highway 395 (LOS F AM & PM)
8) State Route 76 from I-15 SB Ramp to I-15 NB Ramp (LOS F AM & PM)

9) State Route 76 from Horse Ranch Creek Road to Rice Canyon Road (LOS F AM & PM)
10) State Route 76 from Rice Canyon Road to Couser Canyon Road (LOS F AM & PM)
11) State Route 76 from Couser Canyon Road to Pala Mission Road (LOS E AM & LOS F PM)

Existing + cumulative + project LOS calculations and SR-76 peak hour volumes are included in **Appendix O.**

Figure 23a: Existing + Cumulative + Project Volumes

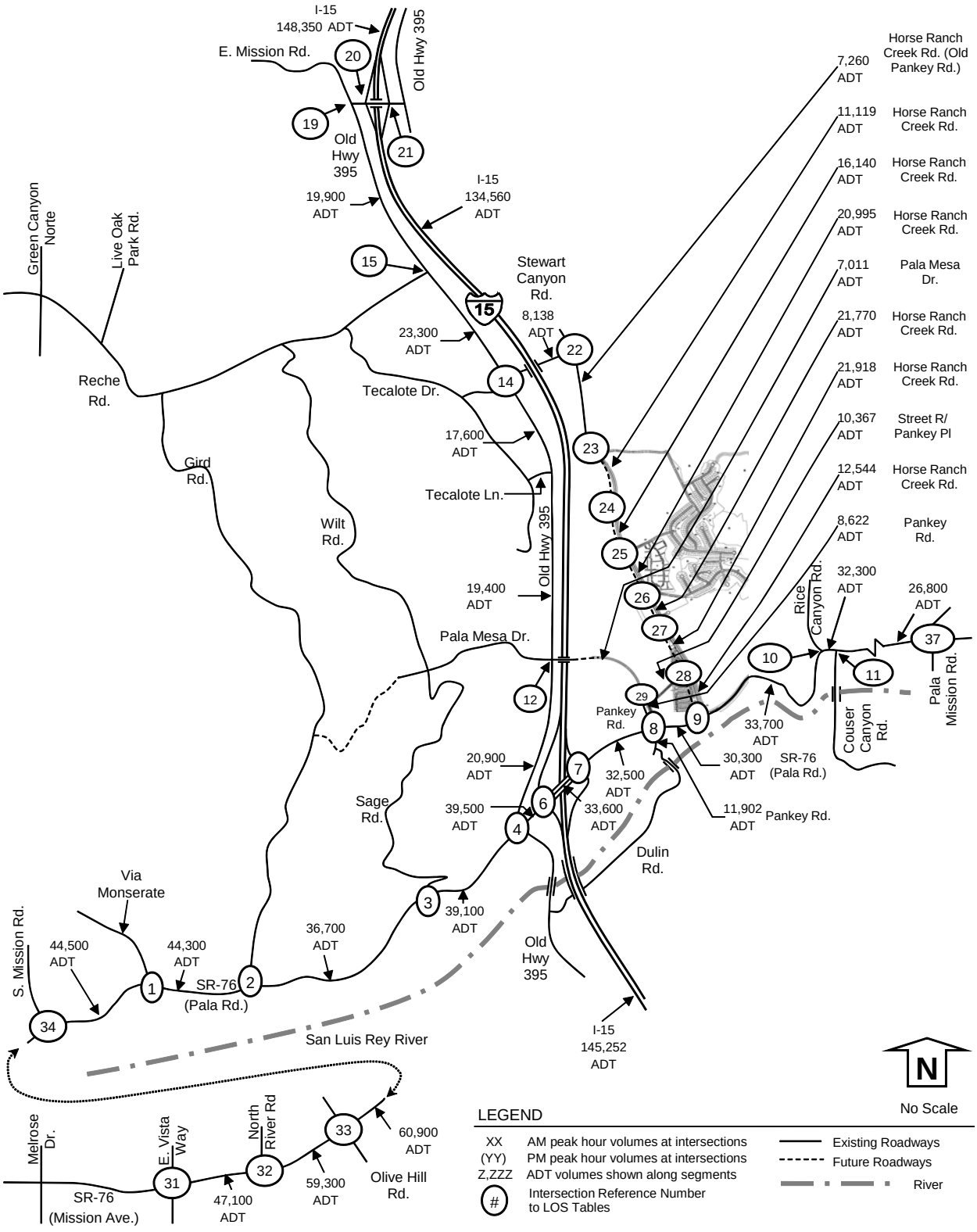


Figure 23b: Existing + Cumulative+ Project Volumes

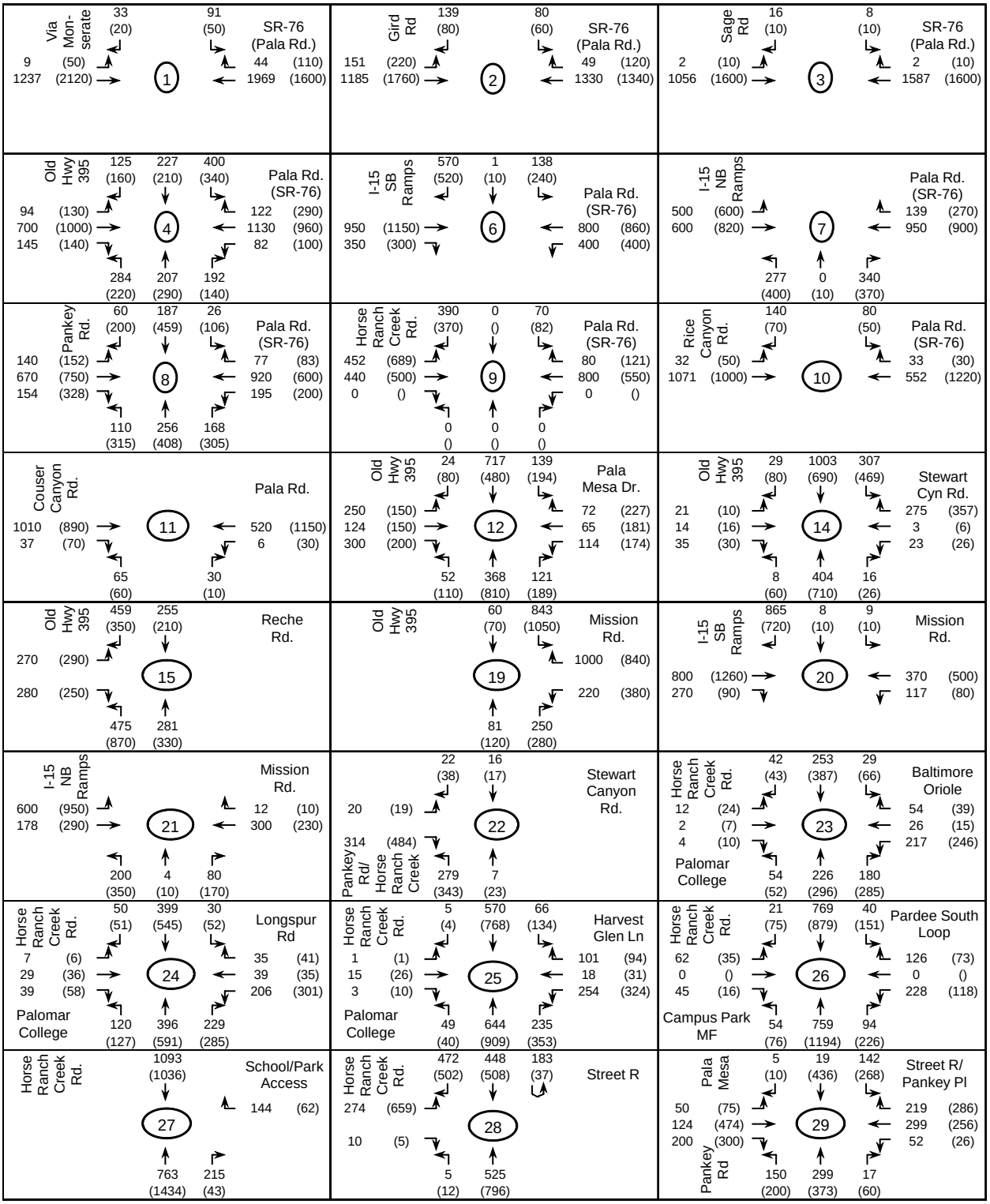


Figure 23c: Existing + Cumulative + Project Volumes

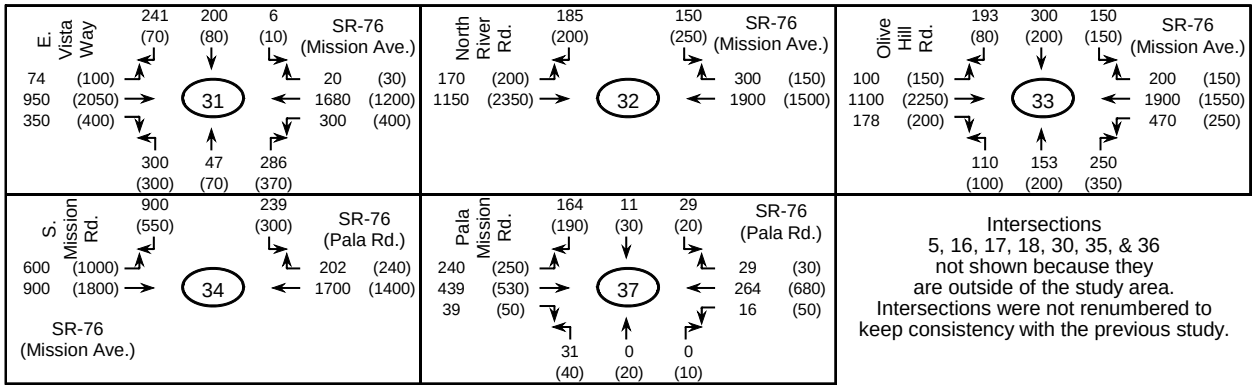


TABLE 23: EXISTING +CUMULATIVE + PROJECT INTERSECTION LEVEL OF SERVICE

Intersection and (Analysis)[1]	Movement	Peak Hour	Existing		Existing + Cumulative + Project			Cumulative Impact?[5]
			Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delta[4]	
1) SR-76 (Pala Rd) at	SB LR	AM	86.1	**F**	>500	**F**	>2.0	**Yes**
Via Monserate (U)	SB LR	PM	91.4	**F**	>500	**F**	>2.0	**Yes**
	All	AM	5.0	A	>500	**F**	>2.0	**Yes**
	All	PM	2.9	A	>500	**F**	>2.0	**Yes**
2) SR-76 (Pala Rd) at	All	AM	12.9	B	59.1	D	46.2	No
Gird Rd (S)	All	PM	12.6	B	118.0	**F**	105.4	**Yes**
3) SR-76 (Pala Rd) at	SB LR	AM	22.6	C	40.4	**E**	17.8	**Yes**
Sage Rd (U)	SB LR	PM	33.0	D	39.3	**E**	6.3	**Yes**
	All	AM	0.2	A	>500	**F**	>2.0	**Yes**
	All	PM	0.4	A	>500	**F**	>2.0	**Yes**
4) SR-76 (Pala Rd) at	All	AM	29.7	C	268.7	**F**	239.0	**Yes**
Old Hwy 395 (S)	All	PM	30.2	C	266.1	**F**	235.9	**Yes**
6) SR-76 (Pala Rd) at	All	AM	27.5	C	107.0	**F**	79.5	**Yes**
I-15 SB Ramps (S)	All	PM	26.4	C	140.1	**F**	113.7	**Yes**
7) SR-76 (Pala Rd) at	All	AM	22.4	C	86.6	**E**	64.2	**Yes**
I-15 NB Ramps (S)	All	PM	43.6	D	121.2	**F**	77.6	**Yes**
8) SR-76 (Pala Rd) at	NB LTR	AM	12.2	B	>500	**F**	>2.0	**Yes**
Pankey Road (U)	NB LTR	PM	14.6	B	>500	**F**	>2.0	**Yes**
	SB LTR	AM	0.0	A	>500	**F**	>2.0	**Yes**
	SB LTR	PM	0.0	A	>500	**F**	>2.0	**Yes**
9) SR-76 (Pala Rd) at	Future	AM	DNE	NA	21.0	B	NA	No
Horse Ranch Creek Rd (U)	Intersection	PM	DNE	NA	22.4	B	NA	No
10) SR-76 (Pala Rd) at	SB LR	AM	10.7	B	211.4	**F**	200.7	**Yes**
Rice Canyon Road (U)	SB LR	PM	12.9	B	>500	**F**	>2.0	**Yes**
11) SR-76 (Pala Rd) at	NB LR	AM	11.9	B	86.2	**F**	74.3	**Yes**
Couser Canyon Road (U)	NB LR	PM	14.2	B	427.4	**F**	413.2	**Yes**
12) Old Highway 395 at	EB LTR	AM	11.0	B	>500	**F**	>2.0	**Yes**
Pala Mesa Dr (U)	EB LTR	PM	11.1	B	>500	**F**	>2.0	**Yes**
14) Old Highway 395 at	WB LTR	AM	10.8	B	>500	**F**	>2.0	**Yes**
Stewart Canyon Road (U)	WB LTR	PM	11.9	B	>500	**F**	>2.0	**Yes**
15) Old Highway 395 at	EB LR	AM	18.4	C	>500	**F**	>2.0	**Yes**
Reche Road (U)	EB LR	PM	35.9	**E**	>500	**F**	>2.0	**Yes**
	All	AM	10.6	B	>500	**F**	>2.0	**Yes**
	All	PM	17.6	B	>500	**F**	>2.0	**Yes**
19) Mission Road at	SB L	AM	12.2	B	54.8	D	42.6	No
Old Highway 395 (S)	SB L	PM	23.0	C	113.0	**F**	90.0	**Yes**
20) Mission Road at	SB LTR	AM	20.6	C	75.6	**E**	55.0	**Yes**
I-15 SB Ramps (S)	SB LTR	PM	17.8	B	87.5	**E**	69.7	**Yes**
21) Mission Road at	All	AM	17.2	B	31.8	C	14.6	No
I-15 NB Ramps (S)	All	PM	37.5	D	95.8	**F**	58.3	**Yes**
22) Stewart Canyon Rd at	EB LR	AM	8.7	A	11.1	B	NA	No
HRCR/Pankey Road (U)	EB LR	PM	8.7	A	13.7	B	NA	No
23) Horse Ranch Crk Rd at	WB LR	AM	DNE	NA	17.8	B	NA	No
Baltimore Oriole (S)	WB LR	PM	DNE	NA	17.7	B	NA	No
24) Horse Ranch Crk Rd at	All	AM	DNE	NA	21.4	C	NA	No
Longspur Rd (S)	All	PM	DNE	NA	24.2	C	NA	No
25) Horse Ranch Crk Rd at	WB LR	AM	DNE	NA	17.7	B	NA	No
Harvest Glen Ln (S)	WB LR	PM	DNE	NA	26.0	B	NA	No
26) Horse Ranch Crk Rd at	WB LR	AM	DNE	NA	17.6	A	NA	No
Pardee South Loop (S)	WB LR	PM	DNE	NA	24.6	B	NA	No
27) Horse Ranch Crk Rd at	All-Way	AM	DNE	NA	15.2	A	NA	No
School/Park Access (U)	All-Way	PM	DNE	NA	18.1	A	NA	No
28) Horse Ranch Crk Rd	EB LR	AM	DNE	NA	7.8	A	NA	No
at Street R (S)	EB LR	PM	DNE	NA	12.2	B	NA	No
29) Pankey/Pala Mesa Dr	WB LR	AM	DNE	NA	24.8	C	NA	No
at Street R (S)	WB LR	PM	DNE	NA	43.3	D	NA	No
31) SR-76 (Mission Ave) at	All	AM	60.9	**E**	282.1	**F**	221.2	**Yes**
E. Vista Way (S)	All	PM	48.4	D	261.1	**F**	212.7	**Yes**
32) SR-76 (Mission Ave) at	All	AM	61.7	**E**	317.1	**F**	255.4	**Yes**
North River Rd (S)	All	PM	29.7	C	267.3	**F**	237.6	**Yes**
33) SR-76 (Mission Ave) at	All	AM	53.8	D	275.6	**F**	221.8	**Yes**
Olive Hill Rd (S)	All	PM	52.9	D	184.1	**F**	131.2	**Yes**
34) SR-76 (Mission Ave) at	All	AM	18.9	B	61.4	**E**	42.5	**Yes**
S. Mission Rd (S)	All	PM	21.5	C	88.0	**F**	66.5	**Yes**
37) SR-76 (Pala Rd.) at	All	AM	29.3	C	32.4	C	3.1	No
Pala Mission Rd. (S)	All	PM	32.4	C	42.6	D	10.2	No

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized 2) Delay - HCM Control Delay in seconds. 3) LOS: Level of Service. 4) Delta is the increase in delay from cumulative and project traffic. 5) Cumulative impact due to project traffic and other cumulative traffic exceeding the allowable delta (yes or no). DNE: Does Not Exist. NA: Not Applicable

TABLE 24: EXISTING + CUMULATIVE + PROJECT SEGMENT ADT VOLUMES AND LEVEL OF SERVICE

Segment	Classification (as proposed)	Existing				Cumulative	Project	Existing + Cumulative + Project				
		Daily Volume	LOS E Capacity	V/C	LOS	Daily Volumes	Daily Volumes	Daily Volume	LOS E Capacity	V/C	LOS	Cumulative Impact?
Old Highway 395												
East Mission Road to Reche Road	Collector	5,155	16,200	0.32	C	13,609	1,136	19,900	16,200	1.23	**F**	**Yes**
Reche Road to Stewart Canyon Road	Collector	5,646	16,200	0.35	C	16,215	1,439	23,300	16,200	1.44	**F**	**Yes**
Pala Mesa Drive to SR-76 (Pala Road)	Collector	6,405	16,200	0.40	C	11,119	76	17,600	16,200	1.09	**F**	**Yes**
Stewart Canyon Road												
Old Hwy 395 to Horse Ranch Creek Rd	Collector	590	16,200	0.04	A	6,034	1,515	8,138	16,200	0.50	D	No
Pankey Road												
Street R/Pankey Place to SR-76 (Pala Rd)	Light Collector	0	34,200	0.00	A	8,244	379	8,622	34,200	0.25	D	No
Horse Ranch Creek Road												
Stewart Canyon Rd to Baltimore Oriole (#23)	Light Collector	40	16,200	0.00	A	5,705	1,515	7,260	16,200	0.45	D	No
Baltimore Oriole (#23) to Longspur Rd (#24)	(Boulevard 4.2A)	0	27,000	0.00	Un	9,052	2,068	11,119	27,000	0.41	Un	No
Longspur Rd (#24) to Harvest Glen Ln (#25)	(Boulevard 4.2A)	0	27,000	0.00	Un	13,363	2,777	16,140	27,000	0.60	Un	No
Harvest Glen Ln (#25) to Intersection (#26)	(Boulevard 4.2A)	0	27,000	0.00	Un	16,955	4,040	20,995	27,000	0.78	Un	No
Intersection (#26) to Park/School (#27)	(Boulevard 4.2A)	0	27,000	0.00	Un	16,824	4,946	21,770	27,000	0.81	Un	No
Park/Sch (#27) to Street R/Pankey Pl (#28)	(Boulevard 4.2A)	0	27,000	0.00	Un	16,972	4,946	21,918	27,000	0.81	Un	No
Street R/Pankey Pl (#28) to SR-76 (Pala Rd)	(Boulevard 4.2A)	0	27,000	0.00	Un	9,968	2,575	12,544	27,000	0.46	Un	No
Pala Mesa Drive												
Old Highway 395 to Street R/Pankey Pl	Light Collector	0	16,200	0.00	A	6,178	833	7,011	16,200	0.43	C	No
Street R/Pankey Place												
Pala Mesa/Pankey to Horse Ranch Creek Rd	Light Collector	0	16,200	0.00	0	8,398	1,969	10,367	16,200	0.64	D	No

Notes: Existing Classification Sept 2005 Circulation Element. Proposed classification = GP Update Circulation Element.
Un = Under Capacity. Daily volume is a 24 hour volume. LOS: Level of Service. V/C: Volume to Capacity ratio.

TABLE 25A: EXISTING + CUMULATIVE + PROJECT STATE ROUTE VOLUMES AND LEVEL OF SERVICE (AM)

State Route 76	Lanes in	E	AM (Eastbound)				C+P	E+C+P			v/c	Cumulative	E	AM (Westbound)				C+P	E+C+P			v/c	Cumulative
Study Limits	each dir	Vol	Dir	Cap	v/c	LOS	Vol	Vol	v/c	LOS	Delta	Impact?	Vol	Dir	Cap	v/c	LOS	Vol	Vol	v/c	Sig	Delta	Impact?
E. Vista Way to North River Rd	1	718	EB	950	0.76	D	469	1187	1.25	**F**	0.49	**Yes**	1040	WB	950	1.09	**F**	944	1984	2.09	**F**	0.99	**Yes**
North River Rd to Olive Hill Rd	1	852	EB	950	0.90	**E**	539	1391	1.46	**F**	0.57	**Yes**	1200	WB	950	1.26	**F**	1221	2421	2.55	**F**	1.29	**Yes**
Olive Hill Rd to S Mission Rd	1	1031	EB	950	1.09	**F**	467	1498	1.58	**F**	0.49	**Yes**	1245	WB	950	1.31	**F**	1322	2567	2.70	**F**	1.39	**Yes**
S Mission Rd to Via Monserate	1	745	EB	950	0.78	D	347	1092	1.15	**F**	0.37	**Yes**	901	WB	950	0.95	**E**	832	1733	1.82	**F**	0.88	**Yes**
Via Monserate to Gird Rd	1	808	EB	950	0.85	D	332	1140	1.20	**F**	0.35	**Yes**	895	WB	950	0.94	**E**	901	1796	1.89	**F**	0.95	**Yes**
Gird Rd to Sage Rd	1	740	EB	950	0.78	D	391	1131	1.19	**F**	0.41	**Yes**	542	WB	950	0.57	C	797	1339	1.41	**F**	0.84	**Yes**
Sage Rd to Old Hwy 395	1	760	EB	950	0.80	D	458	1218	1.28	**F**	0.48	**Yes**	534	WB	950	0.56	C	827	1361	1.43	**F**	0.87	**Yes**
Old Hwy 395 to I-15 SB Ramps	2	1507	EB	2050	0.74	D	93	1600	0.78	D	0.05	No	665	WB	2028	0.33	B	600	1265	0.62	C	0.30	No
I-15 SB Ramps to I-15 NB Ramps	1	844	EB	950	0.89	**E**	178	1022	1.08	**F**	0.19	**Yes**	539	WB	950	0.57	C	455	994	1.05	**F**	0.48	**Yes**
I-15 NB Ramps to Pankey Rd	2	559	EB	3100	0.18	A	283	842	0.27	A	0.09	No	606	WB	3030	0.20	A	439	1045	0.34	B	0.14	No
Pankey Rd to Horse Ranch Creek Rd	2	589	EB	1806	0.33	B	15	604	0.33	B	0.01	No	540	WB	2028	0.27	A	644	1184	0.58	C	0.32	No
Horse Ranch Creek Rd to Rice Cyn	1	588	EB	950	0.62	C	16	604	0.64	C	0.02	No	539	WB	950	0.57	C	645	1184	1.25	**F**	0.68	**Yes**
Rice Cyn to Couser Cyn	1	589	EB	950	0.62	C	1135	1724	1.81	**F**	1.19	**Yes**	540	WB	950	0.57	C	300	840	0.88	**E**	0.32	**Yes**
Couser Cyn to Pala Mission Rd	1	634	EB	950	0.67	C	223	857	0.90	**E**	0.23	**Yes**	357	WB	950	0.38	B	321	678	0.71	D	0.34	No

Source: SANDAG Year 2030 Cumulative Map. Notes: Dir = Direction. Vol = Volume. Cap = Capacity. v/c = volume to capacity ratio. LOS = Level of Service. E: Existing. C: Cumulative. P: Project.

TABLE 25B: EXISTING + CUMULATIVE + PROJECT STATE ROUTE VOLUMES AND LEVEL OF SERVICE (PM)

State Route 76	Lanes in	E	PM (Eastbound)				C+P	E+C+P			v/c	Cumulative	E	PM (Westbound)				C+P	E+C+P			v/c	Cumulative
Study Limits	each dir	Vol	Dir	Cap	v/c	LOS	Vol	Vol	v/c	LOS	Delta	Impact?	Vol	Dir	Cap	v/c	LOS	Vol	Vol	v/c	Sig	Delta	Impact?
E. Vista Way to North River Rd	1	1107	EB	950	1.17	**F**	952	2059	2.17	**F**	1.00	**Yes**	652	WB	950	0.69	C	767	1419	1.49	**F**	0.81	**Yes**
North River Rd to Olive Hill Rd	1	1176	EB	950	1.24	**F**	1417	2593	2.73	**F**	1.49	**Yes**	781	WB	950	0.82	D	830	1611	1.70	**F**	0.87	**Yes**
Olive Hill Rd to S Mission Rd	1	1457	EB	950	1.53	**F**	1119	2576	2.71	**F**	1.18	**Yes**	1069	WB	950	1.13	**F**	782	1851	1.95	**F**	0.82	**Yes**
S Mission Rd to Via Monserate	1	1064	EB	950	1.12	**F**	1209	2273	2.39	**F**	1.27	**Yes**	618	WB	950	0.65	C	883	1501	1.58	**F**	0.93	**Yes**
Via Monserate to Gird Rd	1	1077	EB	950	1.13	**F**	1000	2077	2.19	**F**	1.05	**Yes**	786	WB	950	0.83	D	575	1361	1.43	**F**	0.61	**Yes**
Gird Rd to Sage Rd	1	645	EB	950	0.68	C	755	1400	1.47	**F**	0.79	**Yes**	742	WB	950	0.78	D	494	1236	1.30	**F**	0.52	**Yes**
Sage Rd to Old Hwy 395	1	638	EB	950	0.67	C	885	1523	1.60	**F**	0.93	**Yes**	768	WB	950	0.81	D	680	1448	1.52	**F**	0.72	**Yes**
Old Hwy 395 to I-15 SB Ramps	2	816	EB	2050	0.40	B	670	1486	0.72	D	0.33	No	1258	WB	2028	0.62	C	273	1531	0.75	D	0.13	No
I-15 SB Ramps to I-15 NB Ramps	1	718	EB	950	0.76	D	639	1357	1.43	**F**	0.67	**Yes**	1153	WB	950	1.21	**F**	132	1285	1.35	**F**	0.14	**Yes**
I-15 NB Ramps to Pankey Rd	2	696	EB	3100	0.22	A	753	1449	0.47	B	0.24	No	820	WB	3030	0.27	A	242	1062	0.35	B	0.08	No
Pankey Rd to Horse Ranch Creek Rd	2	631	EB	1806	0.35	B	649	1280	0.71	C	0.36	No	897	WB	2028	0.44	B	460	1357	0.67	C	0.23	No
Horse Ranch Creek Rd to Rice Cyn	1	631	EB	950	0.66	C	649	1280	1.35	**F**	0.68	**Yes**	897	WB	950	0.94	**E**	460	1357	1.43	**F**	0.48	**Yes**
Rice Cyn to Couser Cyn	1	526	EB	950	0.55	C	506	1032	1.09	**F**	0.53	**Yes**	930	WB	950	0.98	**E**	413	1343	1.41	**F**	0.43	**Yes**
Couser Cyn to Pala Mission Rd	1	434	EB	950	0.46	**B**	414	848	0.89	**E**	0.44	**Yes**	950	WB	950	1.00	**F**	301	1251	1.32	**F**	0.32	**Yes**

Source: SANDAG Year 2030 Cumulative Map. Notes: Dir = Direction. Vol = Volume. Cap = Capacity. v/c = volume to capacity ratio. LOS = Level of Service. E: Existing. C: Cumulative. P: Project.

TABLE 26: EXISTING + CUMULATIVE + PROJECT FREEWAY VOLUMES AND LEVEL OF SERVICE

Freeway	**I-15**				**I-15**				**I-15**			
Segment	Rainbow Valley Blvd to Mission Rd				Mission Rd to SR-76 (Pala Rd)				SR-76 to Escondido Hwy (Old 395)			
Existing (Year 2006)												
ADT	136,000				127,000				120,000			
Peak Hour	A M		P M		A M		P M		A M		P M	
Direction	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
Number of Lanes	4	4	4	4	4	4	4	4	4	4	4	4
Capacity (1)	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400
K Factor (2)	0.0619	0.0619	0.0738	0.0738	0.0619	0.0619	0.0738	0.0738	0.0590	0.0590	0.0723	0.0723
D Factor (3)	0.1653	0.8347	0.6398	0.3602	0.1653	0.8347	0.6398	0.3602	0.1989	0.8011	0.6955	0.3045
Truck Factor (4)	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.8977	0.8977	0.8977	0.8977
Peak Hour Volume	1,515	7,650	6,991	3,936	1,415	7,143	6,528	3,675	1,569	6,318	6,722	2,943
Volume to Capacity	0.161	0.814	0.744	0.419	0.150	0.760	0.694	0.391	0.167	0.672	0.715	0.313
LOS	A	D	C	A	A	C	C	A	A	C	C	A
Project Pk Hr Vol	68	23	34	81	10	3	4	11	20	54	63	27
Existing + Project												
Peak Hour Volume	1,583	7,673	7,025	4,017	1,425	7,146	6,532	3,686	1,589	6,372	6,785	2,970
Volume to Capacity	0.168	0.816	0.747	0.427	0.152	0.760	0.695	0.392	0.169	0.678	0.722	0.316
LOS	A	D	C	B	A	C	C	A	A	C	C	A
Increase in V/C	0.007	0.002	0.004	0.009	0.001	0.000	0.000	0.001	0.002	0.006	0.007	0.003
County Impact?	No	No	No	No	No	No	No	No	No	No	No	No
CMP Impact?	No	No	No	No	No	No	No	No	No	No	No	No
Cumulative Pk Hr Vol	337	340	472	542	201	253	351	321	736	974	1340	906
Existing+Cumulative												
Peak Hour Volume	1,852	7,990	7,463	4,478	1,616	7,396	6,879	3,996	2,305	7,292	8,062	3,849
Volume to Capacity	0.197	0.850	0.794	0.476	0.172	0.787	0.732	0.425	0.245	0.776	0.858	0.409
LOS	A	D	C	B	A	C	C	B	A	C	D	A
Existing+Cumulative+Project												
Peak Hour Volume	1,920	8,013	7,497	4,559	1,626	7,399	6,883	4,007	2,325	7,346	8,125	3,876
Volume to Capacity	0.204	0.852	0.798	0.485	0.173	0.787	0.732	0.426	0.247	0.782	0.864	0.412
LOS	A	D	C	B	A	C	C	B	A	C	D	A
Increase in V/C	0.007	0.002	0.004	0.009	0.001	0.000	0.000	0.001	0.002	0.006	0.007	0.003
Cumulative Impact?	No	No	No	No	No	No	No	No	No	No	No	No

Notes: (1) Capacity of 2,350 passenger cars per hour per lane (pcphpl) from Caltrans' Guide for the Preparation of Traffic Impact Studies, Dec 2002. (2) Latest K factor from Caltrans (based on 2005 data), which is the percentage of Annual Average Daily Traffic (AADT) in both directions. (3) Latest D factor from Caltrans (based on 2005 data), which when multiplied by K and ADT will provide peak hour volume. (4) Latest truck factor from Caltrans (based on 2000 data). CMP: Congestion Management Program impact.

3.7 Horizon Year (2030) Conditions

This section describes the horizon year street system (based on the adopted County Circulation Element) and LOS operations. The SANDAG traffic model included the project, thus the horizon year (2030) volumes have the project traffic removed. A plan to plan analysis is typically conducted to determine if a general plan amendment or rezone would prevent the planned circulation element roadway from operating at its planned level of service under horizon year conditions. The plan to plan analysis was based on:

1) County roadway traffic volumes for the study area were compared between the Series 10 existing general plan model, the Series 10 general plan update model, and the current SANDAG Year 2030 Series 11 model (a comparison table and plot volumes are included in **Appendix P**). The higher volumes between the traffic models were used for County roadways.
2) The proposed project with 19,941 ADT is less intense than the existing plan for the project site with 23,858 ADT as shown previously in Table 13.

The horizon year roadway conditions were based on the County of San Diego adopted Circulation Element. The horizon year traffic models are coded with network and roadway classifications reflecting the respective circulation elements. For the study area under horizon year conditions, the segment of Pala Mesa Drive between Gird Road and Wilt Road is connected. A future new freeway interchange at I-15/Stewart Canyon Road is not coded in the traffic models as the County and SANDAG have not identified a need for this interchange at this time (documentation included in **Appendix Q).** The horizon year segment and intersection configurations are shown in **Figures 24a and 24b**. The study area is based on the extent of where 50 peak hour directional project trips will travel to determine potential impacts.

The horizon year intersection volumes were factored up from existing turn moves based on the increase in ADT for each intersection approach with some volume balancing applied at the freeway interchanges and along SR-76 to match the peak hour flows. The peak hour intersection volumes and daily traffic volumes are shown in **Figures 25a and 25b**.

The LOS calculated for the intersections, street segments, state route segments, and freeway segments are shown in **Tables 27, 28, 29, and 30**, respectively. The freeway segment analysis included a directional split based on SANDAG Series 11 traffic model. The other Caltrans factors were not adjusted for horizon year conditions. A copy of the SANDAG Series 11 splits for I-15 is included in **Appendix R**.

Under horizon year (2030) conditions, all study intersections and roadways were calculated to operate at LOS D with the exception of the following:

1) Freeway segment of I-15 from Rainbow Valley Blvd to Mission Rd (LOS E & F AM & PM)
2) Freeway segment of I-15 from Mission Road to SR-76 (LOS F PM)
3) Freeway segment of I-15 from SR-76 to Escondido Highway (LOS E & F PM)

Horizon year (2030) LOS calculations are included in **Appendix S**.

Figure 24a: Horizon Year (2030) Roadway Conditions

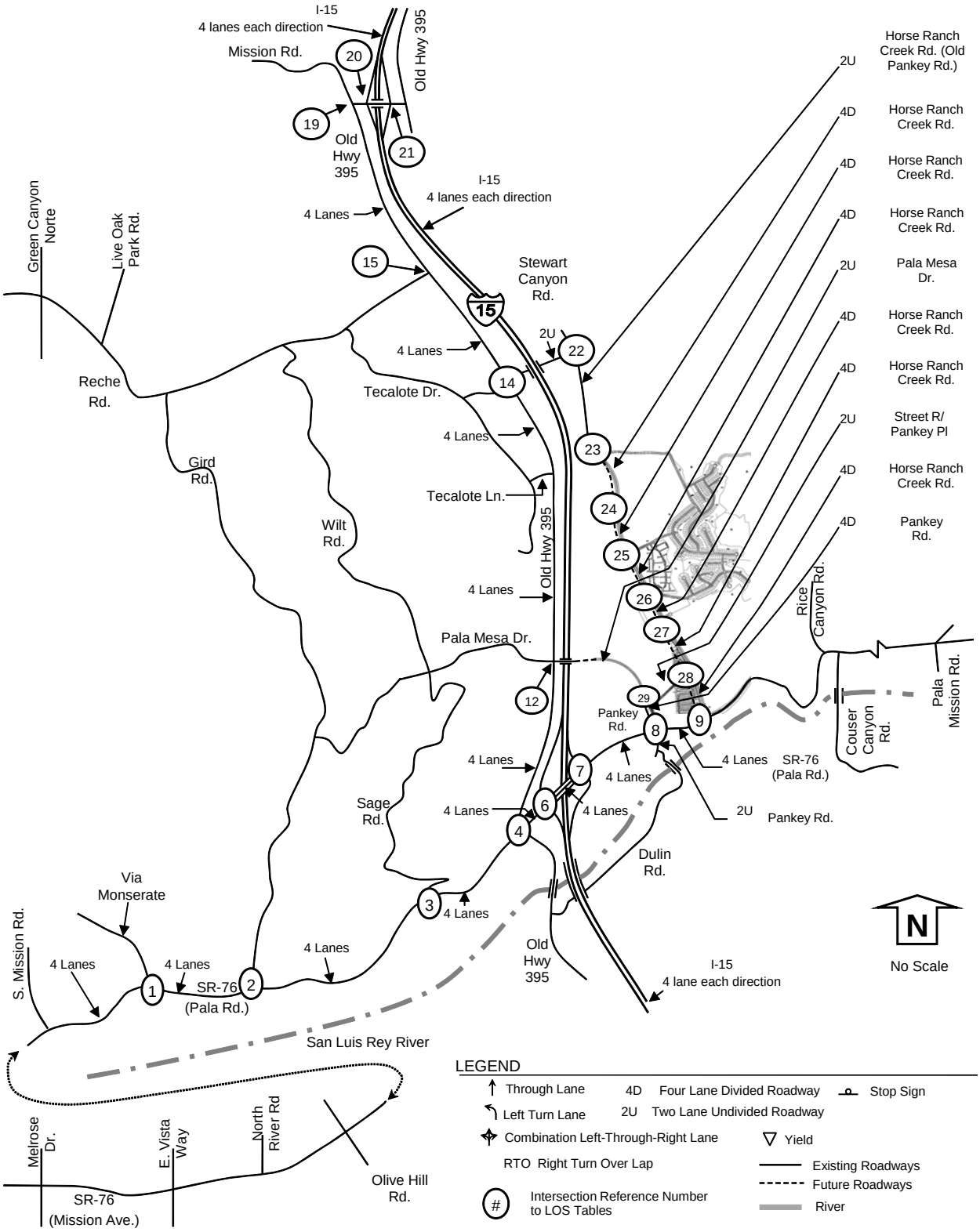


Figure 24b: Horizon Year (2030) Roadway Conditions

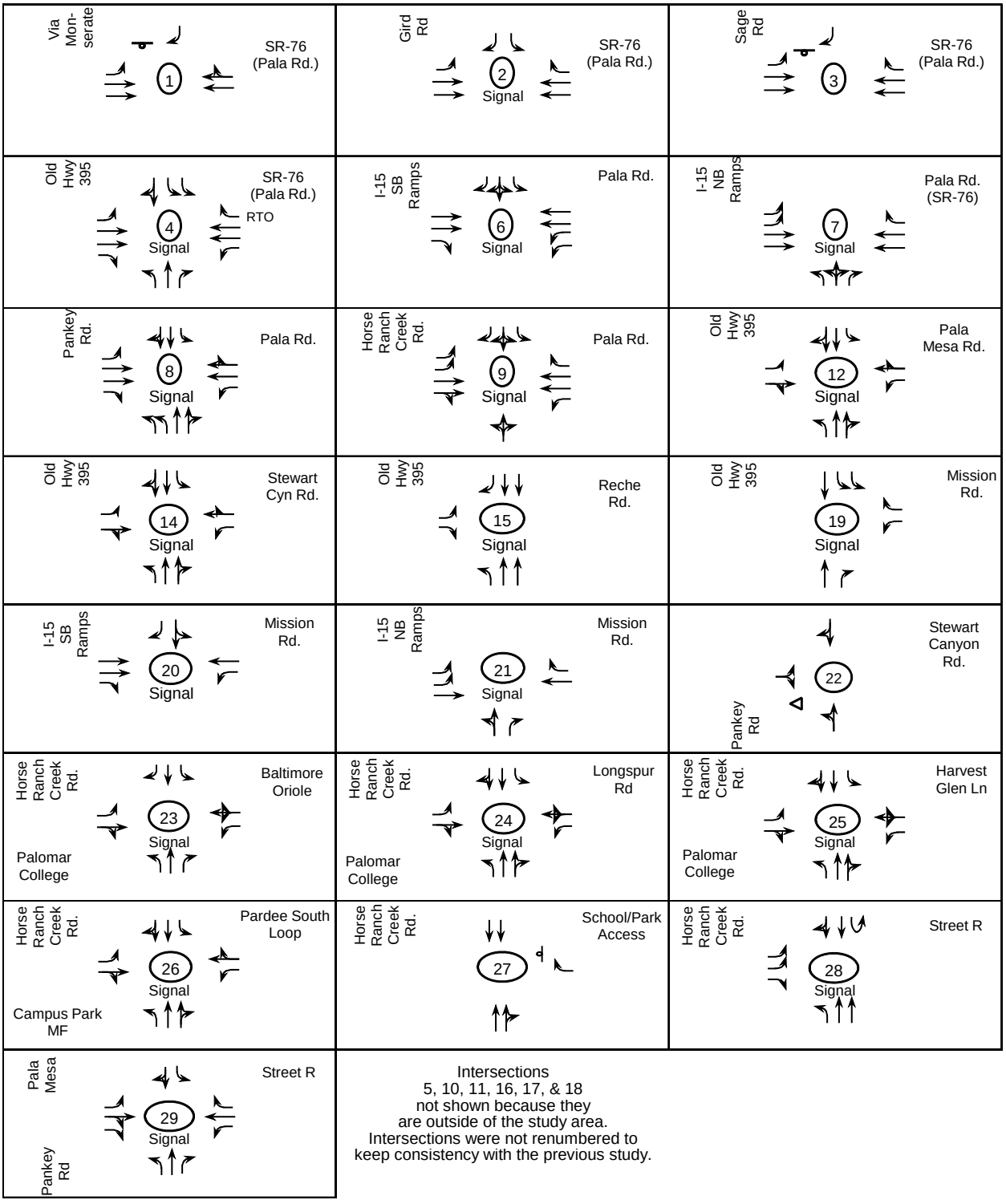


Figure 25a: Horizon Year (2030) Volumes

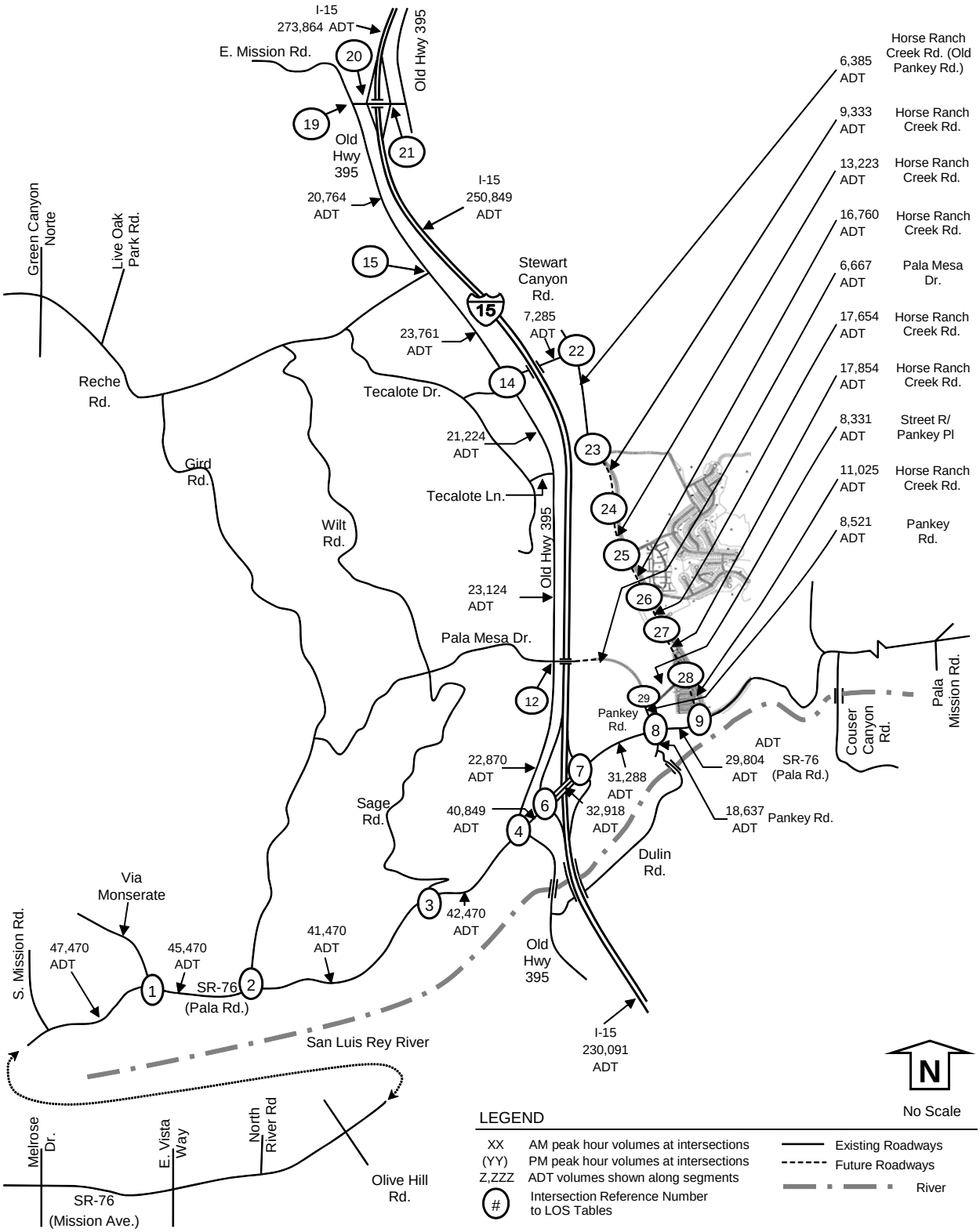


Figure 25b: Horizon Year (2030) Volumes

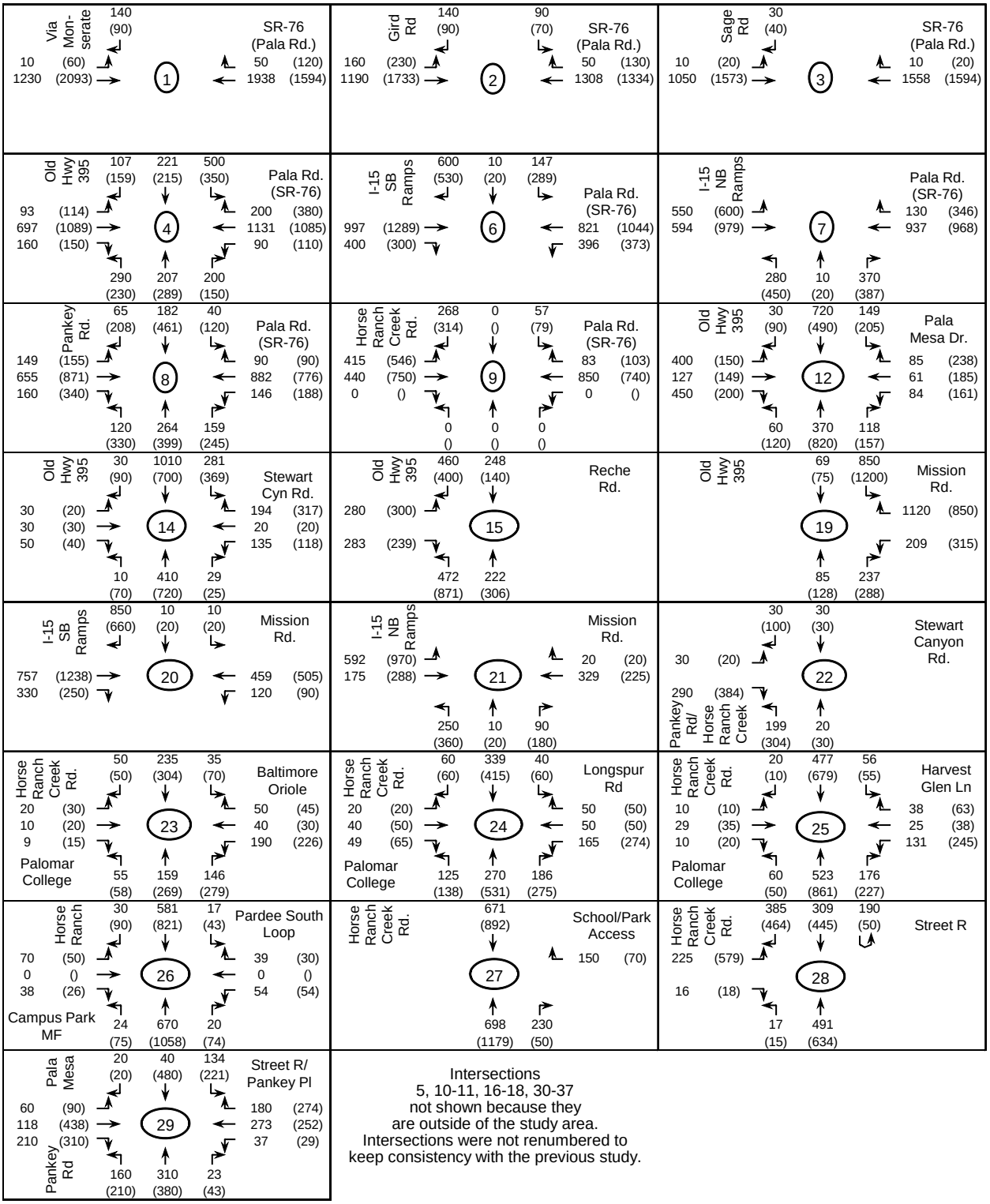


TABLE 27: HORIZON YEAR (2030) INTERSECTION LEVEL OF SERVICE

Intersection and (Analysis)[1]	Movement	Peak Hour	Horizon Year (2030) Delay[2]	LOS[3]
1) SR-76 (Pala Rd) at	SB R	AM	24.7	C
Via Monserate (U)	SB R	PM	19.4	C
2) SR-76 (Pala Rd) at	All	AM	12.4	B
Gird Rd (S)	All	PM	12.9	B
3) SR-76 (Pala Rd) at	SB R	AM	17.2	C
Sage Rd (U)	SB R	PM	17.7	C
4) SR-76 (Pala Rd) at	All	AM	47.8	D
Old Hwy 395 (S)	All	PM	44.8	D
6) SR-76 (Pala Rd) at	All	AM	33.7	C
I-15 SB Ramps (S)	All	PM	33.8	C
7) SR-76 (Pala Rd) at	All	AM	40.8	D
I-15 NB Ramps (S)	All	PM	40.7	D
8) SR-76 (Pala Rd) at	All	AM	25.2	C
Pankey Road (S)	All	PM	42.1	D
9) SR-76 (Pala Rd) at	All	AM	20.0	B
Horse Ranch Creek Rd (S)	All	PM	19.7	B
12) Old Highway 395 at	All	AM	32.5	C
Pala Mesa Dr (S)	All	PM	46.6	D
14) Old Highway 395 at	All	AM	22.3	C
Stewart Canyon Road (S)	All	PM	30.1	C
15) Old Highway 395 at	All	AM	22.8	C
Reche Road (S)	All	PM	48.2	D
19) Mission Road at	All	AM	23.6	C
Old Highway 395 (S)	All	PM	33.2	C
20) Mission Road at	All	AM	35.7	D
I-15 SB Ramps (S)	All	PM	21.6	C
21) Mission Road at	All	AM	22.0	C
I-15 NB Ramps (S)	All	PM	29.7	C
22) Stewart Canyon Rd at	EB LR	AM	11.2	B
HRCR/Pankey Road (U)	EB LR	PM	13.0	B
23) Horse Ranch Crk Rd at	All	AM	17.3	B
Baltimore Oriole (S)	All	PM	19.0	B
24) Horse Ranch Crk Rd at	All	AM	23.0	C
Longspur Rd (S)	All	PM	24.0	C
25) Horse Ranch Crk Rd at	All	AM	19.9	B
Harvest Glen Ln (S)	All	PM	22.5	C
26) Horse Ranch Crk Rd at	All	AM	13.1	B
Pardee South Loop (S)	All	PM	13.6	B
27) Horse Ranch Crk Rd at	WB R	AM	14.8	B
School/Park Access (U)	WB R	PM	15.6	C
28) Horse Ranch Crk Rd	All	AM	11.4	B
at Street R (S)	All	PM	12.8	B
29) Pankey/Pala Mesa Dr	All	AM	26.4	C
at Street R (S)	All	PM	41.2	D

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized 2) Delay - HCM Control Delay in seconds. 3) LOS: Level of Service.

TABLE 28: HORIZON YEAR (2030) SEGMENT ADT VOLUMES AND LEVEL OF SERVICE

Segment	Existing Classification (proposed)	Horizon Year (2030) Daily Volume	LOS E Capacity	V/C	LOS
Old Highway 395					
East Mission Road to Reche Road	Collector	20,764	34,200	0.61	B
Reche Road to Stewart Canyon Road	Collector	23,761	34,200	0.69	C
Pala Mesa Drive to SR-76 (Pala Road)	Collector	21,224	34,200	0.62	B
Stewart Canyon Road					
Old Hwy 395 to Horse Ranch Creek Rd	Collector	7,285	34,200	0.21	A
Pankey Road					
Street R/Pankey Place to SR-76 (Pala Rd)	Light Collector	8,521	34,200	0.25	A
Horse Ranch Creek Road					
Stewart Canyon Rd to Baltimore Oriole (#23)	Light Collector	6,385	16,200	0.39	C
Baltimore Oriole (#23) to Longspur Rd (#24)	(Boulevard 4.2A)	9,333	27,000	0.35	Un
Longspur Rd (#24) to Harvest Glen Ln (#25)	(Boulevard 4.2A)	13,223	27,000	0.49	Un
Harvest Glen Ln (#25) to Intersection (#26)	(Boulevard 4.2A)	16,760	27,000	0.62	Un
Intersection (#26) to Park/School (#27)	(Boulevard 4.2A)	17,654	27,000	0.65	Un
Park/Sch (#27) to Street R/Pankey Pl (#28)	(Boulevard 4.2A)	17,854	27,000	0.66	Un
Street R/Pankey Pl (#28) to SR-76 (Pala Rd)	(Boulevard 4.2A)	11,025	27,000	0.41	Un
Pala Mesa Drive					
Old Highway 395 to Street R/Pankey Pl	Light Collector	6,667	16,200	0.41	C
Street R/Pankey Place					
Pala Mesa/Pankey to Horse Ranch Creek Rd	Light Collector	8,331	16,200	0.51	D

Notes: Existing Classification Sept 2005 Circulation Element. Proposed classification = GP Update Circulation Element.
Un = Under Capacity. Daily volume is a 24 hour volume. LOS: Level of Service. V/C: Volume to Capacity ratio.

TABLE 29: HORIZON YEAR (2030) STATE ROUTE VOLUMES AND LEVEL OF SERVICE (LIMITS BASED ON 50 PK HR TRIPS)

State Route 76	Lanes in	2030	AM (Eastbound)				2030	AM (Westbound)				2030	PM (Eastbound)				2030	PM (Westbound)			
Study Limits	each dir	Vol	Dir	Cap	v/c	LOS	Vol	Dir	Cap	v/c	LOS	Vol	Dir	Cap	v/c	LOS	Vol	Dir	Cap	v/c	LOS
Via Monserate to Gird Rd	2	1124	EB	3300	0.34	B	1768	WB	3162	0.56	C	2022	EB	2912	0.69	C	1337	WB	3300	0.41	B
Gird Rd to Sage Rd	2	1115	EB	3300	0.34	B	1613	WB	2912	0.55	C	1623	EB	3300	0.49	B	1212	WB	2912	0.42	B
Sage Rd to Old Hwy 395	2	1202	EB	1904	0.63	C	1603	WB	3300	0.49	B	1620	EB	1904	0.85	D	1424	WB	3300	0.43	B
Old Hwy 395 to I-15 SB Ramps	2	1339	EB	3030	0.44	B	1251	WB	2028	0.62	C	1470	EB	3030	0.49	B	1524	WB	2028	0.75	D
I-15 SB Ramps to I-15 NB Ramps	2	1000	EB	3030	0.33	B	844	WB	3030	0.28	A	1278	EB	3030	0.42	B	1210	WB	3030	0.40	B
I-15 NB Ramps to Pankey Rd	2	775	EB	3100	0.25	A	841	WB	3030	0.28	A	1211	EB	3100	0.39	B	960	WB	3030	0.32	B
Pankey Rd to Horse Ranch Creek Rd	2	702	EB	1806	0.39	B	1000	WB	1956	0.51	C	1066	EB	1806	0.59	C	1265	WB	2028	0.62	C

Source: SANDAG, higher volumes used btw Series 10 (2030) Cumulative Map and Series 11 (2030) coverage. Notes: Dir = Direction. Vol = Volume. Cap = Capacity.
Study limits based on where 50 peak hour trips will travel, which does not extend west of Via Monserate as shown in Figure 12b (intersection #1).

TABLE 30: HORIZON YEAR (2030) FREEWAY VOLUMES AND LEVEL OF SERVICE

Freeway Segment	I-15 Rainbow Valley Blvd to Mission Rd				I-15 Mission Rd to SR-76 (Pala Rd)				I-15 SR-76 to Escondido Hwy (Old 395)			
SANDAG (Horizon Year)												
ADT	275,000				251,000				231,000			
Peak Hour	A M		P M		A M		P M		A M		P M	
Direction	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
Number of Lanes	4	4	4	4	4	4	4	4	4	4	4	4
Capacity (1)	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400
K Factor (2)	0.0619	0.0619	0.0738	0.0738	0.0619	0.0619	0.0738	0.0738	0.0590	0.0590	0.0723	0.0723
D Factor (3)	0.5064	0.4936	0.5064	0.4936	0.5075	0.4925	0.5075	0.4925	0.4917	0.5083	0.4917	0.5083
Truck Factor (4)	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.8977	0.8977	0.8977	0.8977
Peak Hour Volume	9,384	9,147	11,188	10,905	8,584	8,330	10,234	9,931	7,465	7,717	9,148	9,457
Volume to Capacity	1.00	0.97	1.19	1.16	0.91	0.89	1.09	1.06	0.79	0.82	0.97	1.01
LOS	**F**	**E**	**F**	**F**	D	D	**F**	**F**	C	D	**E**	**F**

Notes: (1) Capacity of 2,350 passenger cars per hour per lane from Caltrans' Guide for the Preparation of Traffic Impact Studies, Dec 2002. (2) Latest K factor from Caltrans (based on 2005 data), which is the percentage of Annual Average Daily Traffic (AADT) in both directions. (3) D factor from SANDAG Series 11 split for year 2030, which when multiplied by K and ADT will provide peak hour volume. (4) Latest truck factor from Caltrans (based on 2000 data).

3.8 Horizon Year (2030) + Project Conditions

This section describes the horizon year (2030) + project conditions for AM, PM, and daily traffic conditions. The study area is based on the extent of where 50 peak hour directional project trips will travel to determine potential impacts. Because the project TAZ has the traffic coded in the traffic model, the horizon year (2030) roadway volumes already have the project volumes embedded. The peak hour intersection volumes and daily traffic volumes are shown in **Figures 26a and 26b**.

The LOS calculated for the intersections, street segments, state route segments, and freeway segments are shown in **Tables 31, 32, 33a, 33b, and 34**, respectively. Horizon year (2030) + project LOS calculations are included in **Appendix T**.

Under horizon year (2030) + project conditions, all study intersections and roadways were calculated to operate at LOS D with the exception of the following:

1) Freeway segment of I-15 from Rainbow Valley Blvd to Mission Road (LOS E & F AM & PM)
2) Freeway segment of I-15 from Mission Road to SR-76 (LOS F PM)
3) Freeway segment of I-15 from SR-76 to Escondido Highway (LOS E & F PM)

Of the aforementioned locations, using the County's significance criteria, no project impacts were calculated because the project traffic does not exceed the significance thresholds.

Figure 26a: Horizon Year (2030) + Project Volumes

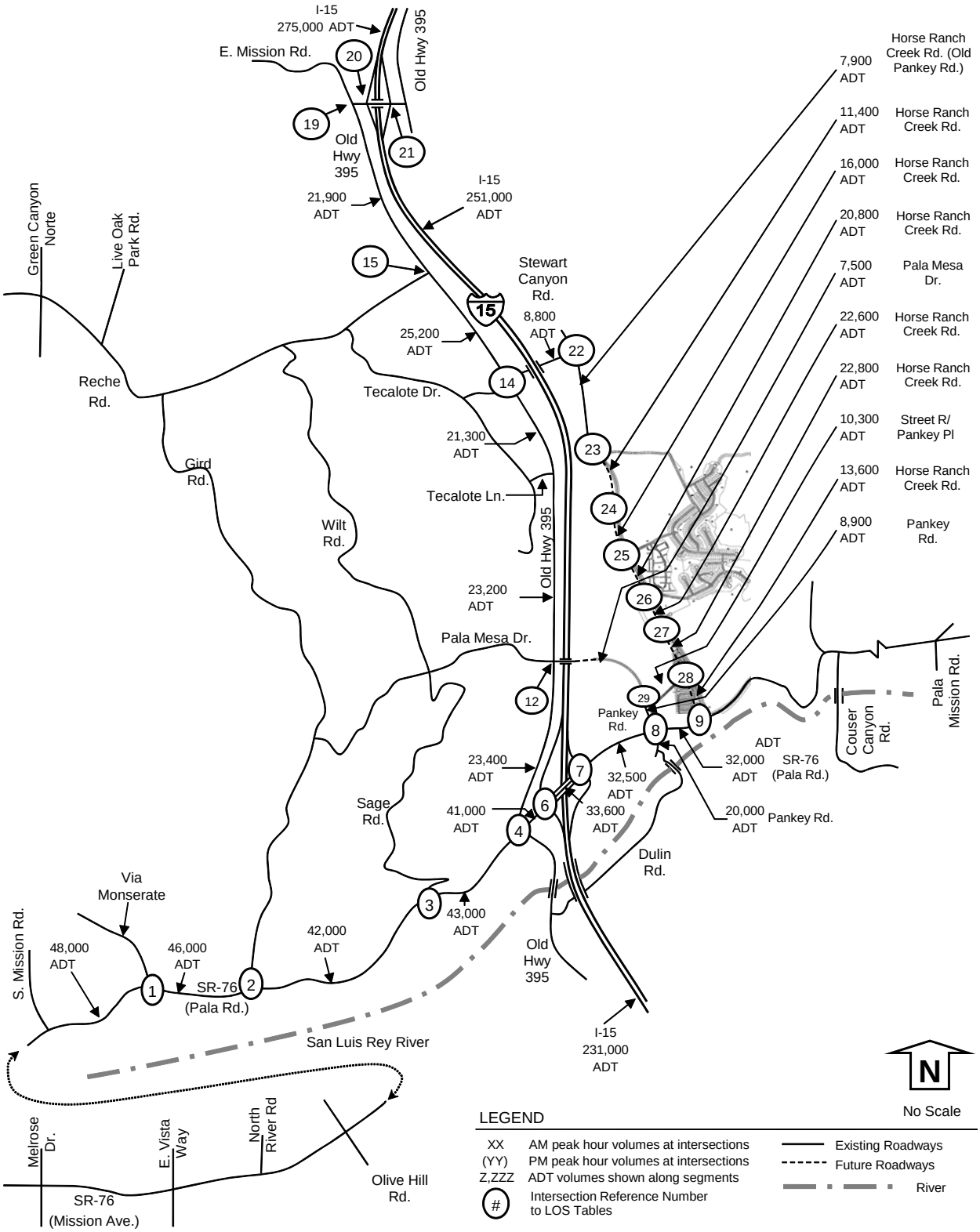
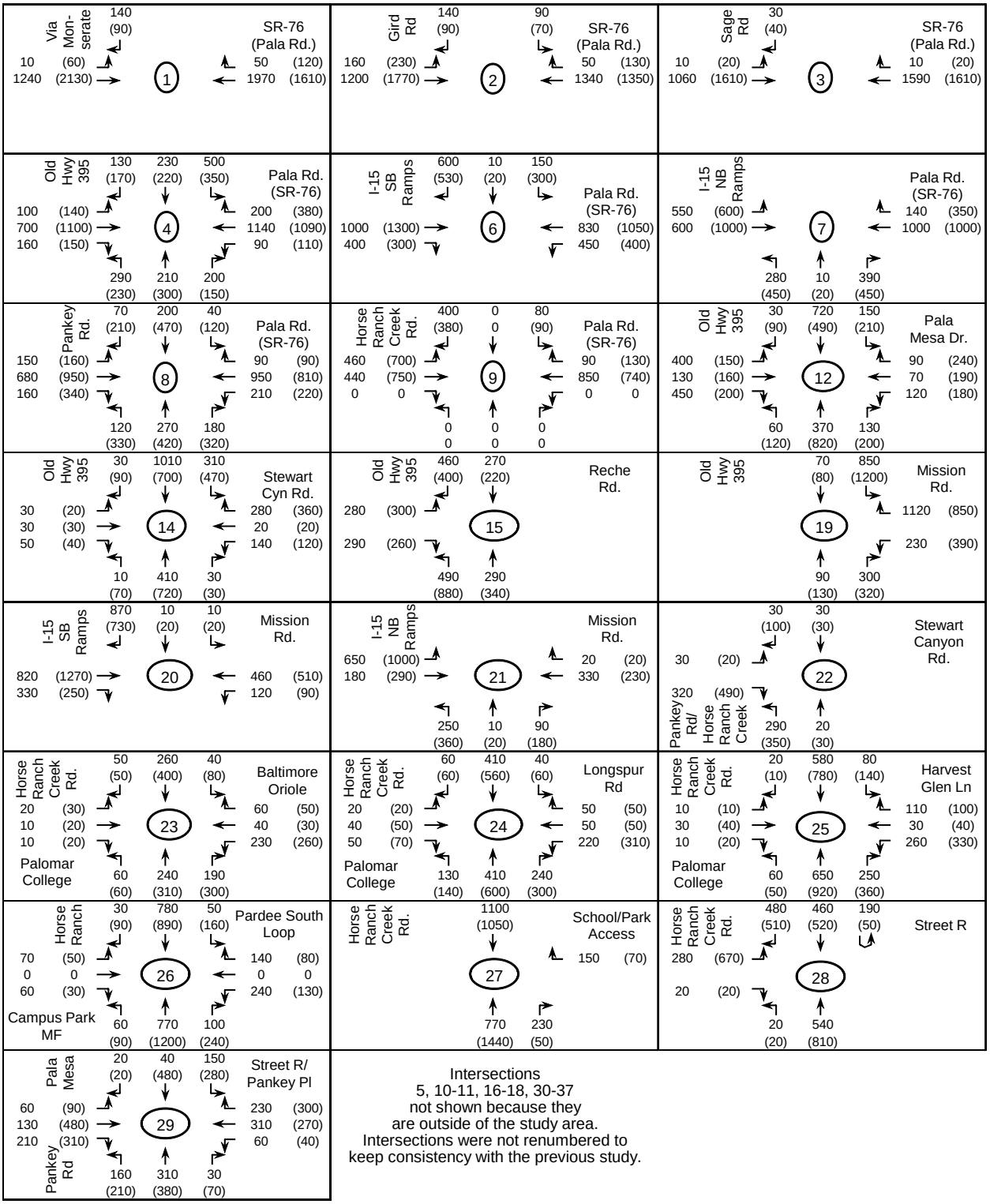


Figure 26b: Horizon Year (2030) + Project Volumes



Intersections
5, 10-11, 16-18, 30-37
not shown because they
are outside of the study area.
Intersections were not renumbered to
keep consistency with the previous study.

TABLE 31: HORIZON YEAR (2030) + PROJECT INTERSECTION LEVEL OF SERVICE

Intersection & (Analysis)[1]	Move-ment	Peak Hour	Horizon Year (2030) Delay[2]	Horizon Year (2030) LOS[3]	Horizon Year (2030) + Project Delay[2]	Horizon Year (2030) + Project LOS[3]	Horizon Year (2030) + Project Delta[4]	Horizon Year (2030) + Project CM Vol[5]	County Sig[6]	CMP Sig[7]
1) SR-76 (Pala Rd) at	SB R	AM	24.7	C	25.3	D	0.6	0	No	No
Via Monserate (U)	SB R	PM	19.4	C	19.7	C	0.3	0	No	No
2) SR-76 (Pala Rd) at	All	AM	12.4	B	12.5	B	0.1	NA	No	No
Gird Rd (S)	All	PM	12.9	B	13.0	B	0.1	NA	No	No
3) SR-76 (Pala Rd) at	SB R	AM	17.2	C	17.6	C	0.4	0	No	No
Sage Rd (U)	SB R	PM	17.7	C	17.9	C	0.2	0	No	No
4) SR-76 (Pala Rd) at	All	AM	47.8	D	51.0	D	3.2	NA	No	No
Old Hwy 395 (S)	All	PM	44.8	D	47.8	D	3.0	NA	No	No
6) SR-76 (Pala Rd) at	All	AM	33.7	C	34.0	C	0.3	NA	No	No
I-15 SB Ramps (S)	All	PM	33.8	C	34.1	C	0.3	NA	No	No
7) SR-76 (Pala Rd) at	All	AM	40.8	D	41.1	D	0.3	NA	No	No
I-15 NB Ramps (S)	All	PM	40.7	D	41.3	D	0.6	NA	No	No
8) SR-76 (Pala Rd) at	All	AM	25.2	C	27.8	C	2.6	NA	No	No
Pankey Road (S)	All	PM	42.1	D	45.4	D	3.3	NA	No	No
9) SR-76 (Pala Rd) at	All	AM	20.0	B	21.8	C	1.8	NA	No	No
Horse Ranch Creek Rd (S)	All	PM	19.7	B	22.9	C	3.2	NA	No	No
12) Old Highway 395 at	All	AM	32.5	C	34.3	C	1.8	NA	No	No
Pala Mesa Dr (S)	All	PM	46.6	D	51.5	D	4.9	NA	No	No
14) Old Highway 395 at	All	AM	22.3	C	22.8	C	0.5	NA	No	No
Stewart Canyon Road (S)	All	PM	30.1	C	40.4	D	10.3	NA	No	No
15) Old Highway 395 at	All	AM	22.8	C	23.3	C	0.5	NA	No	No
Reche Road (S)	All	PM	48.2	D	50.9	D	2.7	NA	No	No
19) Mission Road at	All	AM	23.6	C	27.4	C	3.8	NA	No	No
Old Highway 395 (S)	All	PM	33.2	C	37.8	D	4.6	NA	No	No
20) Mission Road at	All	AM	35.7	D	37.6	D	1.9	NA	No	No
I-15 SB Ramps (S)	All	PM	21.6	C	27.7	C	6.1	NA	No	No
21) Mission Road at	All	AM	22.0	C	23.1	C	1.1	NA	No	No
I-15 NB Ramps (S)	All	PM	29.7	C	31.0	C	1.3	NA	No	No
22) Stewart Canyon Rd at	EB LR	AM	11.2	B	12.2	B	1.0	43	No	No
HRCR/Pankey Road (U)	EB LR	PM	13.0	B	15.5	C	2.5	151	No	No
23) Horse Ranch Crk Rd at	All	AM	17.3	B	17.5	B	0.2	NA	No	No
Baltimore Oriole (S)	All	PM	19.0	B	19.6	B	0.6	NA	No	No
24) Horse Ranch Crk Rd at	All	AM	23.0	C	23.6	C	0.6	NA	No	No
Longspur Rd (S)	All	PM	24.0	C	24.9	C	0.9	NA	No	No
25) Horse Ranch Crk Rd at	All	AM	19.9	B	22.2	C	2.3	NA	No	No
Harvest Glen Ln (S)	All	PM	22.5	C	30.2	C	7.7	NA	No	No
26) Horse Ranch Crk Rd at	All	AM	13.1	B	18.9	B	5.8	NA	No	No
Pardee South Loop (S)	All	PM	13.6	B	27.3	C	13.7	NA	No	No
27) Horse Ranch Crk Rd at	WB R	AM	14.8	B	15.6	C	0.8	144	No	No
School/Park Access (U)	WB R	PM	15.6	C	18.7	C	3.1	62	No	No
28) Horse Ranch Crk Rd	All	AM	11.4	B	11.8	B	0.4	NA	No	No
at Street R (S)	All	PM	12.8	B	15.7	B	2.9	NA	No	No
29) Pankey/Pala Mesa Dr	All	AM	26.4	C	27.0	C	0.6	NA	No	No
at Street R (S)	All	PM	41.2	D	48.0	D	6.8	NA	No	No

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized 2) Delay - HCM Control Delay in seconds. 3) LOS: Level of Service. 4) Delta is the increase in delay from project. 5) CM Vol: Critical Movement Volume used to show project volumes on the critical movement. 6) County Sig: is the project have a calculated impact based on the critical volume (Yes or No). 7) CMP Sig: Congention Mangement Program significant impact based on CMP criteria (Yes or No). DNE: Does Not Exist. NA: Not Applicable.

TABLE 32: HORIZON YEAR (2030) + PROJECT SEGMENT ADT VOLUMES AND LEVEL OF SERVICE

Segment	Existing Classification (proposed)	Horizon Year (2030) Daily Volume	LOS E Capacity	V/C	LOS	Project Daily Volumes	Horizon Year (2030) + Project Daily Volume	LOS E Capacity	V/C	LOS	Impact?	Change in V/C	CMP Impact?
Old Highway 395													
East Mission Road to Reche Road	Collector	20,764	34,200	0.61	B	1,136	21,900	34,200	0.64	B	No	0.03	No
Reche Road to Stewart Canyon Road	Collector	23,761	34,200	0.69	C	1,439	25,200	34,200	0.74	C	No	0.04	No
Pala Mesa Drive to SR-76 (Pala Road)	Collector	21,224	34,200	0.62	B	76	21,300	34,200	0.62	B	No	0.00	No
Stewart Canyon Road													
Old Hwy 395 to Horse Ranch Creek Rd	Collector	7,285	34,200	0.21	A	1,515	8,800	34,200	0.26	A	No	0.04	No
Pankey Road													
Street R/Pankey Place to SR-76 (Pala Rd)	Light Collector	8,521	34,200	0.25	A	379	8,900	34,200	0.26	A	No	0.01	No
Horse Ranch Creek Road													
Stewart Canyon Rd to Baltimore Oriole (#23)	Light Collector	6,385	16,200	0.39	C	1,515	7,900	16,200	0.49	D	No	0.09	No
Baltimore Oriole (#23) to Longspur Rd (#24)	(Boulevard 4.2A)	9,333	27,000	0.35	Un	2,068	11,400	27,000	0.42	Un	No	0.08	No
Longspur Rd (#24) to Harvest Glen Ln (#25)	(Boulevard 4.2A)	13,223	27,000	0.49	Un	2,777	16,000	27,000	0.59	Un	No	0.10	No
Harvest Glen Ln (#25) to Intersection (#26)	(Boulevard 4.2A)	16,760	27,000	0.62	Un	4,040	20,800	27,000	0.77	Un	No	0.15	No
Intersection (#26) to Park/School (#27)	(Boulevard 4.2A)	17,654	27,000	0.65	Un	4,946	22,600	27,000	0.84	Un	No	0.18	No
Park/Sch (#27) to Street R/Pankey Pl (#28)	(Boulevard 4.2A)	17,854	27,000	0.66	Un	4,946	22,800	27,000	0.84	Un	No	0.18	No
Street R/Pankey Pl (#28) to SR-76 (Pala Rd)	(Boulevard 4.2A)	11,025	27,000	0.41	Un	2,575	13,600	27,000	0.50	Un	No	0.10	No
Pala Mesa Drive													
Old Highway 395 to Street R/Pankey Pl	Light Collector	6,667	16,200	0.41	C	151	7,500	16,200	0.46	D	No	0.05	No
Street R/Pankey Place													
Pala Mesa/Pankey to Horse Ranch Creek Rd	Light Collector	8,331	16,200	0.51	D	1,969	10,300	16,200	0.64	D	No	0.12	No

Notes: (proposed GP Update classification). LOS: Level of Service. V/C: Volume to Capacity ratio. Daily volumes is a 24 hour volume.
Horse Ranch Creek Road LOS for proposed classification per GP Update is noted as "Un" as under capacity and "Ov" for over capacity.

TABLE 33A: HORIZON YEAR (2030) + PROJECT STATE ROUTE VOLUMES AND LEVEL OF SERVICE (AM)

State Route 76 Study Limits	Lanes in each dir	2030 Vol	AM (Eastbound) Dir	Cap	v/c	LOS	P Vol	2030+P Vol	v/c	LOS	v/c Delta	Impact?	2030 Vol	AM (Westbound) Dir	Cap	v/c	LOS	P Vol	2030+P Vol	v/c	LOS	v/c Delta	Impact?
Via Monserate to Gird Rd	2	1124	EB	3300	0.34	B	16	1140	0.35	B	0.00	No	1768	WB	3162	0.56	C	48	1816	0.57	C	0.02	No
Gird Rd to Sage Rd	2	1115	EB	3300	0.34	B	16	1131	0.34	B	0.00	No	1613	WB	3300	0.49	B	48	1661	0.50	B	0.01	No
Sage Rd to Old Hwy 395	2	1202	EB	1904	0.63	C	16	1218	0.64	C	0.01	No	1603	WB	3300	0.49	B	48	1651	0.50	B	0.01	No
Old Hwy 395 to I-15 SB Ramps	2	1339	EB	3030	0.44	B	4	1343	0.44	B	0.00	No	1251	WB	2028	0.62	C	14	1265	0.62	C	0.01	No
I-15 SB Ramps to I-15 NB Ramps	2	1000	EB	3030	0.33	B	22	1022	0.34	B	0.01	No	844	WB	3030	0.28	A	150	994	0.33	B	0.05	No
I-15 NB Ramps to Pankey Rd	2	775	EB	3100	0.25	A	67	842	0.27	A	0.02	No	841	WB	3030	0.28	A	204	1045	0.34	B	0.07	No
Pankey Rd to Horse Ranch Creek Rd	2	702	EB	1806	0.39	B	60	762	0.42	B	0.03	No	1000	WB	1956	0.51	C	184	1184	0.61	C	0.09	No

Source: SANDAG, higher volumes used btw Series 10 (2030) Cumulative Map and Series 11 (2030) coverage. Notes: Dir = Direction. Vol = Volume. Cap = Capacity.
Study limits based on where 50 peak hour trips will travel, which does not extend west of Via Monserate as shown in Figure 12b (intersection #1).

TABLE 33B: HORIZON YEAR (2030) + PROJECT STATE ROUTE VOLUMES AND LEVEL OF SERVICE (PM)

State Route 76 Study Limits	Lanes in each dir	2030 Vol	PM (Eastbound) Dir	Cap	v/c	LOS	P Vol	2030+P Vol	v/c	LOS	v/c Delta	Impact?	2030 Vol	PM (Westbound) Dir	Cap	v/c	LOS	P Vol	2030+P Vol	v/c	LOS	v/c Delta	Impact?
Via Monserate to Gird Rd	2	2022	EB	2912	0.69	C	55	2077	0.71	D	0.02	No	1337	WB	3300	0.41	B	24	1361	0.41	B	0.01	No
Gird Rd to Sage Rd	2	1623	EB	3300	0.49	B	55	1678	0.51	B	0.02	No	1212	WB	2912	0.42	B	24	1236	0.42	B	0.01	No
Sage Rd to Old Hwy 395	2	1620	EB	2300	0.70	C	55	1675	0.73	D	0.02	No	1424	WB	3300	0.43	B	24	1448	0.44	B	0.01	No
Old Hwy 395 to I-15 SB Ramps	2	1470	EB	3030	0.49	B	16	1486	0.49	B	0.01	No	1524	WB	2028	0.75	D	7	1531	0.75	D	0.00	No
I-15 SB Ramps to I-15 NB Ramps	2	1278	EB	3030	0.42	B	79	1357	0.45	B	0.03	No	1210	WB	3030	0.40	B	75	1285	0.42	B	0.02	No
I-15 NB Ramps to Pankey Rd	2	1211	EB	3100	0.39	B	238	1449	0.47	B	0.08	No	960	WB	3030	0.32	B	102	1062	0.35	B	0.03	No
Pankey Rd to Horse Ranch Creek Rd	2	1066	EB	1806	0.59	C	214	1280	0.71	C	0.12	No	1265	WB	2028	0.62	C	92	1357	0.67	C	0.05	No

Source: SANDAG, higher volumes used btw Series 10 (2030) Cumulative Map and Series 11 (2030) coverage. Notes: Dir = Direction. Vol = Volume. Cap = Capacity.
Study limits based on where 50 peak hour trips will travel, which does not extend west of Via Monserate as shown in Figure 12b (intersection #1).

TABLE 34: HORIZON YEAR (2030) + PROJECT FREEWAY VOLUMES AND LEVEL OF SERVICE

Freeway Segment	I-15 Rainbow Valley Blvd to Mission Rd				I-15 Mission Rd to SR-76 (Pala Rd)				I-15 SR-76 to Escondido Hwy (Old 395)			
SANDAG (Horizon Year)												
ADT	275,000				251,000				231,000			
Peak Hour	A M		P M		A M		P M		A M		P M	
Direction	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
Number of Lanes	4	4	4	4	4	4	4	4	4	4	4	4
Capacity (1)	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400
K Factor (2)	0.0619	0.0619	0.0738	0.0738	0.0619	0.0619	0.0738	0.0738	0.0590	0.0590	0.0723	0.0723
D Factor (3)	0.5064	0.4936	0.5064	0.4936	0.5075	0.4925	0.5075	0.4925	0.4917	0.5083	0.4917	0.5083
Truck Factor (4)	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.9186	0.8977	0.8977	0.8977	0.8977
Peak Hour Volume	9,384	9,147	11,188	10,905	8,584	8,330	10,234	9,931	7,465	7,717	9,148	9,457
Volume to Capacity	1.00	0.97	1.19	1.16	0.91	0.89	1.09	1.06	0.79	0.82	0.97	1.01
LOS	**F**	**E**	**F**	**F**	D	D	**F**	**F**	C	D	**E**	**F**
Project Pk Hr Vol	68	23	34	136	10	3	4	11	20	54	63	27
SANDAG (Horizon Year + Project)												
Peak Hour Volume	9,452	9,170	11,222	11,041	8,594	8,333	10,238	9,942	7,485	7,771	9,211	9,484
Volume to Capacity	1.01	0.98	1.19	1.17	0.91	0.89	1.09	1.06	0.80	0.83	0.97	1.01
LOS	**F**	**E**	**F**	**F**	D	D	**F**	**F**	C	D	**E**	**F**
Increase in V/C	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
County Impact?	No	No	No	No	No	No	No	No	No	No	No	No
CMP Impact?	No	No	No	No	No	No	No	No	No	No	No	No

Notes: (1) Capacity of 2,350 passenger cars per hour per lane from Caltrans' Guide for the Preparation of Traffic Impact Studies, Dec 2002. (2) Latest K factor from Caltrans (based on 2005 data), which is the percentage of Annual Average Daily Traffic (AADT) in both directions. (3) D factor from SANDAG Series 11 split for year 2030, which when multiplied by K and ADT will provide peak hour volume. (4) Latest truck factor from Caltrans (based on 2000 data). CMP: Congestion Management Program.

3.9 Ramps

Per Caltrans' personnel, on-ramp meters are typically installed if demand warrants metering based on actual conditions. Thus, an on-ramp metering analysis was not done as part of this traffic study.

3.10 Congestion Management Plan

To meet the CMP analysis requirements, a computerized traffic model was utilized and the CMP thresholds were applied to the study elements and shown in the appropriate LOS tables.

3.11 Hazards Due To An Existing Transportation Design Feature

This section documents how the project will interface with the exiting roadway network.

3.11.1 Project Driveway Corner Sight Distance Analysis

Rick Engineering will submit to the County of San Diego under separate cover sight distance triangles for the required intersections as related to driveway corner sight distance requirements. A reduced set of the sight distance triangles are included in **Appendix U**.

3.11.2 Project Driveway Spacing Analysis

A copy of a County of San Diego approved request for a modification to a road standard for the project as related to driveway spacing requirements is included in **Appendix V**.

3.11.3 Project Landscaping Along Right-of-Way

The landscaping plan will be evaluated for safety under separate cover; however, a copy of the landscaping plan is included in **Appendix W** (Per Section 4.6.3). An encroachment permit will be sought for landscaping within the Caltrans right-of-way..

3.12 Hazards To Pedestrians or Bicyclists

Any required improvements will be constructed to maintain existing conditions or meet County standards as they relate to pedestrians and bicyclists. New trails for pedestrians and bicyclists are proposed throughout the development. A trails graphic is included in **Appendix X**.

The intersection calculations incorporate potential pedestrian calls to cross an intersection. A pedestrian call includes a single person, group of people, or persons with a horse or other domesticated animal crossing an intersection.

3.13 Parking Capacity

The parking for the various components of the project shall be identified on the project plans and will meet DPLU requirements.

3.14 Alternative Transportation

The northeast quadrant of I-15 and SR 76, in which the Meadowood project is situated, has been identified by the SANDAG Smart Growth Concept Map as a potential Special Use Center smart growth area. Potential smart growth areas are locations where smart growth development could occur if local land use plans are changed and/or if the SANDAG 2030 Regional Transportation Plan (RTP) is modified to include adequate levels of planned transit service. Each smart growth place type is associated with certain housing and employment density targets and transit service thresholds.

A Special Use Center is identified as an area where employment opportunities consist primarily of medical or educational facilities; that features low-, mid- and high-rise buildings; is dominated by one non-residential land use; and that draws from throughout the region/subregion. The minimum transit service characteristics associated with a Special Use Center is light rail/rapid bus. According to the 2030 RTP, the northeast quadrant of I-15 and SR 76 is planned for Bus

Rapid Transit (BRT) and High Frequency Local bus service, both to be phased in by 2020.

Additionally, the Draft County of San Diego General Plan Update Land Use Map designates the portions of the Meadowood Specific Plan Area planned for development as Village Residential. The Village category identifies areas where a higher intensity and a wide range of land uses are established or have been planned. Typically, Village areas function as the center of community planning areas and contain the highest population and development densities. A subcategory of the Village classification, transit nodes include sites within walking distance of future rapid transit stations. Served by either express bus or rail service, Transit Node areas are planned as diverse, mixed-use areas with a range of residential, retail, and where appropriate, employment-generating land uses (e.g., office/professional or light industrial) as well as parks and civic spaces.

The project applicant will work with applicable transit authorities to promote transit service with bus turnouts serving the proposed project. Meadowood in combination with Palomar College, Campus Park, and Campus Park West will create the ideal General Plan Update transit area – a mixed-use development of residential, retail, office, park, and higher education uses with proximity to a higher density population. Transit service, including bus turn-outs, is planned along Horse Ranch Creek Road. Meadowood proposes to locate high density housing closer to the transit service. In addition, project trails and pathways will provide easy accessibility for all residents of Meadowood.

3.15 Project Access and On-Site Circulation

On-site circulation is proposed by several new roadways as shown on the vested tentative map/grading plans. A reduced set of plans showing the proposed roadway striping is included in **Appendix Y**. All project roadway designs will be submitted under separate cover to meet County safety standards. Horse Ranch Creek Road shall be designed per General Plan Update Boulevard Standards. Pala Mesa Road and Pankey Place/Street R will be designed per current adopted County standards. The proposed internal roads and cul-de-sac streets would provide efficient on-site circulation and logical connections to Horse Ranch Creek Road. All internal streets would be constructed with streetlights and standard curbs and gutters and are designed to accommodate anticipated long-term traffic volumes. On-street parking would be permitted along both sides of all proposed internal streets. Parking would not be permitted along Horse Ranch Creek Road, Pala Mesa Drive, and Street R (aka Pankey Place).

4.0 Impact Summary

4.1 Impact Summary Table

The project is calculated to have direct and cumulative impacts based on the County of San Diego and Congestion Management Plan (CMP) significance criteria. There are several intersections and roadway segments that will be constructed by the applicant for access to the project site. Because these intersections and roadway segments currently do not exist, they could not be analyzed and identified as an impacted location. Therefore, these proposed intersections and roadway segments needed for access to the project site are described in Section 5. The direct and cumulative impact findings are summarized below in **Table 35**.

TABLE 35: IMPACT SUMMARY TABLE

Facility	Direct Impacts	Cumulative Impacts
Intersections	1) Old Hwy 395/Reche Road	1) SR-76/Via Monserate 2) SR-76/Gird Road 3) SR-76/Sage Road 4) SR-76/Old Hwy 395 5) SR-76/I-15 SB Ramp 6) SR-76/I-15 NB Ramp 7) SR-76/Pankey Road 8) SR-76/Rice Canyon Road 9) SR-76/Couser Canyon Road 10) Old Hwy 395/Pala Mesa Dr 11) Old Hwy 395/Stewart Canyon Road 12) Old Hwy 395/Reche Road 13) Mission Rd at Old Hwy 395 14) Mission Road at I-15 SB Ramp 15) Mission Road at I-15 NB Ramp 16) SR-76/E Vista Way 17) SR-76/North River Road 18) SR-76/Olive Hill Road 19) SR-76/S Mission Road
Segments and State Routes	1) SR-76 (Via Monserate to Gird Rd) 2) SR-76 (I-15 NB Ramp to I-15 SB Ramp)	1) Old Hwy 395 (E Mission Rd to Reche Rd) 2) Old Hwy 395 (Reche Rd to Stewart Cyn) 3) Old Hwy 395 (Pala Mesa Dr to SR-76) 4) SR-76 (E Vista Way to North River Rd) 5) SR-76 (North River Rd to Olive Hill Rd) 6) SR-76 (Olive Hill Rd to S Mission Rd) 7) SR-76 (S Mission Rd to Via Monserate) 8) SR-76 (Via Monserate to Gird Rd) 9) SR-76 (Gird Rd to Sage Rd) 10) SR-76 (Sage Rd to Old Hwy 395) 11) SR-76 (I-15 SB Ramp to I-15 NB Ramp) 12) SR-76 (Horse Ranch Creek Rd to Rice Cyn) 13) SR-76 (Rice Cyn to Couser Cyn Rd) 14) SR-76 (Couser Cyn Rd to Pala Mission Rd)
Freeways	None	None
Ramps	None	None
Horse Ranch Creek Road Classification Change	Copy of a Modification to Road Standard Request is included in the Appendix	Copy of a Modification to Road Standard Request is included in the Appendix

4.2 Road Segments

4.2.1 Guidelines for the Determination of Significance

Based on the *County of San Diego Guidelines for Determining Significance*, December 5, 2007, a project may have a direct and or cumulative impact if the significance criteria are exceeded as shown in **Table 36**.

TABLE 36: COUNTY OF SAN DIEGO SIGNIFICANT TRAFFIC IMPACT THRESHOLDS – ROAD SEGMENTS

Measures of Significant Project Impacts to Congestion Allowable Increases on Congested Roads			
	Road Segments		
Operations	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

Source: County of San Diego *Guidelines for Determining Significance* Table 1 from page 9.

A direct impact would occur when the significance criteria is exceeded. If the proposed project exceeds the values provided in the above table, then the individually proposed project would result in a direct traffic impact. Specific improvements to mitigate direct impacts must be identified.

A cumulative impact would occur when two conditions are met: 1) will build-out of all near-term projects result in a cumulative traffic impact and 2) does the amount of traffic generated by the individual proposed project contribute (even in a small part) to that cumulative impact. Both conditions must be met for an individual project to result in a cumulative traffic impact. If the traffic generated from all the near-term projects (cumulative projects) would result in a cumulative traffic impact then condition one is met. If the total amount of traffic generated exceeds the values provided in the above table, then condition two is met and the individually proposed project would result in a cumulative traffic impact. Fair-share contributions toward cumulative impacts may only be provided when a specific project and schedule for completion of the project has been identified.

The *County of San Diego Guidelines for Determining Significance*, dated December 5, 2007 includes a summary of how a project's potential traffic impact would be perceptible to the average driver on roadway segments:

> "Based on these criteria [Table above], an impact from new development on an LOS E road would be reached when the increase in average daily trips (ADT) on a two-lane road exceeds 200 ADT. Using SANDAG's "Brief Guide for Vehicular Traffic Generation Rates for the San Diego Region" for most discretionary projects this would generate less than 25 peak hour trips. On average, during peak hour conditions, this would be only one additional car every 2.4 minutes. Therefore, the addition of 200 ADT, in most cases, would result in changes to traffic flow that would not be noticeable to the average driver and therefore would not constitute a significant impact on the roadway. Significance criteria were also established for four-lane and six-lane roads operating at LOS E and are based upon the above 24 hour ADT significance criterion established for two-lane roads. The two-lane road criterion was doubled to determine impacts to four-lane roads and tripled to determine impacts to six-lane roads. This was considered to be conservative

since the 24 hour per lane road capacity for a 4-lane road is more than double that of a two-lane road and the per lane capacity of a six-lane road is more than triple that of the two-lane road. For LOS E roads, the additional significance criteria are 400 ADT for a four-lane road and 600 ADT for a six-lane road. Similar to criterion for two-lane road, the 400 ADT for a 4-lane road and 600 ADT for a 6-lane road criteria would generate less than 25 per lane peak hour trips for most discretionary projects. On average, during peak hour conditions, this would be only one additional car per lane every 2.4 minutes. The addition of 200 ADT per lane (400 ADT for a 4 lane road or 600 for a 6-lane road), in most cases, would result in changes to traffic flow that would not be noticeable to the average driver and therefore would not constitute a significant impact on the roadway…"

"The second significance criteria listed in [Table above] addresses roadways presently operating at LOS F. Under LOS F congested conditions, small changes and disruptions to the traffic flow on County Circulation Element Road can have a greater effect on traffic operations when compared to other LOS conditions. In order to better account for potential effects of increased traffic on LOS F road more stringent significance criteria was established when compared to that for LOS E. Based on this guidance, an impact from new development on an LOS F road would be reached when the increase in average daily trips (ADT) on a two-lane road exceeds 100. Again, using SANDAG's "Brief Guide for Vehicular Traffic Generation Rates for the San Diego Region" for most discretionary projects this would generate less than 12.5 peak hour trips. On average, during peak hour conditions, this would be only one additional car every 4.8 minutes. The addition of 100 ADT, in most cases, would not be noticeable to the average driver and therefore would not constitute a significant impact on the roadway. The same approach used to determine significance criteria for four-lane and six-lane roads operating at LOS E was used to determine appropriate significance criteria for four-lane and six-lane road operating at LOS F. Based on this approach, the significance criteria for a four-lane road (200 ADT) and for a six-lane road (300 ADT) would generate less than 12.5 per lane peak hour trips for most discretionary projects. On average, during peak hour conditions, this would be only one additional car per lane every 4.8 minutes. The addition of 100 per lane ADT (200 ADT for a 4-lane and 300 ADT for a 6-lane road) would, in most cases, not be noticeable to the average driver and therefore would not constitute a significant impact on the roadway. In summary, under extremely congested LOS F conditions, small changes and disruptions to the traffic flow can significantly affect traffic operations and additional project traffic can increase the likelihood or frequency of these events. Therefore, the LOS F ADT significance criteria was set at 100 ADT (50% of the LOS E threshold) to provide a higher level of assurance that the traffic allowed under the threshold would not significantly impact traffic operation on the road segment."

4.2.2 Significance of Impacts Prior to Mitigation

Without mitigation the calculated direct and cumulative impacts would cause delays beyond the amounts listed as allowable per the significance criteria.

4.3 Intersections (Signalized & Un-signalized)

4.3.1 Guidelines for the Determination of Significance

Based on the *County of San Diego County Guidelines for Determining Significance*, December 5, 2007, a project may have a direct and or cumulative impact if the significance criteria are exceeded as shown in **Table 37**.

TABLE 37: COUNTY OF SAN DIEGO SIGNIFICANT TRAFFIC IMPACT THRESHOLDS - INTERSECTIONS

Measures of Significant Project Impacts to Congestion Allowable Increases on Congested Intersections		
	Intersections	
Operations	Signalized	Un-signalized
LOS E	Delay of 2 seconds	20 peak hour trips on a critical movement
LOS F	Delay of 1 second, or 5 peak hour trips on a critical movement	5 peak hour trips on a critical movement

Source: County of San Diego *Guidelines for Determining Significance* Table 1 from page 9. Note: A critical movement is one that is experiencing excessive queues.

A direct impact would occur when the significance criteria is exceeded. If the proposed project exceeds the values provided in the above table, then the individually proposed project would result in a direct traffic impact. Specific improvements to mitigate direct impacts must be identified.

A cumulative impact would occur when two conditions are met: 1) will build-out of all near-term projects result in a cumulative traffic impact and 2) does the amount of traffic generated by the individual proposed project contribute (even in a small part) to that cumulative impact. Both conditions must be met for an individual project to result in a cumulative traffic impact. If the traffic generated from all the near-term projects (cumulative projects) would result in a cumulative traffic impact then condition one is met. If the total amount of traffic generated exceeds the values provided in the above table, then condition two is met and the individually proposed project would result in a cumulative traffic impact. Fair-share contributions toward cumulative impacts may only be provided when a specific project and schedule for completion of the project has been identified.

The *County of San Diego Guidelines for Determining Significance*, dated December 5, 2007 includes a summary of how a project's potential traffic impact would be perceptible to the average driver at intersection:

> "The significance criterion for signalized intersections listed in [Table above] allows an increase in the overall delay at an intersection operating at LOS E of two seconds. This is consistent with the capacity threshold contained in the SANDAG' CMP and guidelines established by the City of San Diego. A delay of two seconds is a small fraction of the typical cycle length for a signalized intersection that ranges between 60 and 120 seconds. The likelihood of increased queues forming does due to the additional two seconds of delay is low. Therefore, an increased wait time of two seconds, on average, would result in changes to traffic flow that would not be noticeable to the average driver. Therefore the significance guideline for intersections operating at LOS E is two seconds."

"The primary significance criterion for signalized intersections operating at LOS F conditions was based upon increased delay at the intersection. Under LOS F congested conditions, small changes and disruptions to the traffic flow to signalized intersection can have a greater effect on overall intersection operations when compared to other LOS conditions. In order to better account for potential effects of increased traffic at signalized intersections operating at LOS F, a more stringent guideline was established when compared to signalized intersection operating at LOS E. A significance guideline of an increased delay of 1 second was established for signalized intersections operating at LOS F. An increase in the overall delay at an intersection of one second, on average, would result in changes to traffic flow that would not be noticeable to the average driver. Therefore the significance guideline for intersections operating at LOS F is 1 second."

"Signalized intersections operating at LOS F also have the potential for substantial queuing at specific turning movements that may detrimentally effect overall intersection and/or road segment operations. Thus, an increase of peak hour trips to a critical move was also established as a secondary significance criterion for signalized intersections. A critical movement would be a movement or a lane at an intersection that is experiencing queuing or substantial delay and is affecting the overall operation of the intersection. The increase in peak hour trips to a critical move is a measurement of how many cars can be added to an existing queue. The addition of five trips (peak hour) per critical movement will normally be considered a significant impact. This significance criterion was selected because the five additional trips spread out over the peak hour would not significantly increase the length of an existing queue and would not be noticeable to the average driver (one trip every 12 minutes or 720 seconds). For LOS E intersections, the 5 peak hour trips to a critical movement would not be noticeable to the average driver since the one additional trip during the 12 minute interval on average would clear the traffic signal cycles well within the 12 minute period. It should also be noted that if the 5 additional peak hour trips arrived at the same time these trips would also clear the traffic cycle and existing queue lengths would be re-established."

"The significance guidelines for unsignalized intersections identify a minimum number of trips added to a critical movement at an unsignalized intersection. Since the operations of unsignalized intersections under congested conditions are heavily influenced by traffic volume increases on critical moves, the significance guidelines for unsignalized intersections were based upon the number of trips added to a critical movement. This guideline directly relates to the number of vehicles that can be added to an existing queue that forms at the intersection. A significance criteria of twenty trips (peak hour) per critical movement was used for LOS E conditions. Although delays drivers experience under LOS E conditions may be noticeable, they are not yet considered unacceptable. The twenty trips spread out over the peak hour would not likely cause the intersection delay or existing queue lengths to become unacceptable. The twenty trips (peak hour) would not be noticeable to the average driver. A significance guideline of five trips (peak hour) per critical movement was used for LOS F conditions. The five trips spread out over the peak hour would not significantly increase the length of an existing queue and would not be noticeable to the average driver."

"The operations of unsignalized intersections under congested conditions are heavily

influenced by traffic volumes increases on critical moves. Therefore, the significance guidelines for unsignalized intersections are based upon the number of peak hour trips added to a critical movement at that intersection. This guideline examines the number of vehicles that may be added to an existing queue that forms at the intersection by the additional traffic generated by a project. In LOS E situations, the delays that drivers experience are noticeable, but are not considered excessive. A peak hour increase of twenty trips to the critical movement of an unsignalized intersection would be, on average, one additional car every 3.0 minutes or 180 seconds. Assuming the average wait time for a vehicle in the critical movement queue is less than 3.0 minutes, which is typical for LOS E conditions, this would not be noticeable to the average driver and would not be considered a significant impact."

"For LOS F conditions, a significance threshold of five trips (peak hour) per critical movement was used. The five trips spread out over the peak hour would not significantly increase the length of an existing queue and would not be noticeable to the average driver. Five trips spread out over an hour would be one car every 12 minutes. This typically exceeds the average wait time in the queue and would not be noticeable to the average driver."

4.3.2 Significance of Impacts Prior to Mitigation

Without mitigation the calculated direct and cumulative impacts would cause delays beyond the amounts listed as allowable per the significance criteria.

4.4 Ramps

Per Caltrans' personnel, on-ramp meters are typically installed if demand warrants metering based on actual conditions. Thus, an on-ramp metering analysis was not done as part of this traffic study.

4.5 Congestion Management Plan

To meet the CMP analysis requirements, a computerized traffic model was utilized and the CMP thresholds were applied to the study elements and shown in the appropriate LOS tables.

4.6 Hazards Due To An Existing Transportation Design Feature

This section documents how the project will interface with the exiting roadway network.

4.6.1 Project Driveway Corner Sight Distance Analysis

Rick Engineering will submit to the County of San Diego under separate cover sight distance triangles for the required intersections as related to driveway corner sight distance requirements. A reduced set of the sight distance triangles are included in **Appendix U**.

4.6.2 Project Driveway Spacing Analysis

A copy of a County of San Diego approved request for a modification to a road standard for the project as related to driveway spacing requirements is included in **Appendix V**.

4.6.3 Project Landscaping Along Right-of-Way

The landscaping plan will be evaluated for safety under separate cover; however, a copy of the landscaping plan is included in **Appendix W**.

4.7 Hazards To Pedestrians or Bicyclists

Any required improvements will be constructed to maintain existing conditions or meet County standards as they relate to pedestrians and bicyclists. New trails for pedestrians and bicyclists are proposed throughout the development. A trails graphic is included in **Appendix X**.

The intersection calculations incorporate potential pedestrian calls to cross an intersection. A pedestrian call includes a single person, group of people, or persons with a horse or other domesticated animal crossing an intersection.

4.8 Parking Capacity

The parking for the various components of the project shall be identified on the project plans and will meet DPLU requirements.

4.9 Alternative Transportation

The northeast quadrant of I-15 and SR 76, in which the Meadowood project is situated, has been identified by the SANDAG Smart Growth Concept Map as a potential Special Use Center smart growth area. Potential smart growth areas are locations where smart growth development could occur if local land use plans are changed and/or if the SANDAG 2030 Regional Transportation Plan (RTP) is modified to include adequate levels of planned transit service. Each smart growth place type is associated with certain housing and employment density targets and transit service thresholds.

A Special Use Center is identified as an area where employment opportunities consist primarily of medical or educational facilities; that features low-, mid- and high-rise buildings; is dominated by one non-residential land use; and that draws from throughout the region/subregion. The minimum transit service characteristics associated with a Special Use Center is light rail/rapid bus. According to the 2030 RTP, the northeast quadrant of I-15 and SR 76 is planned for Bus Rapid Transit (BRT) and High Frequency Local bus service, both to be phased in by 2020.

Additionally, the Draft County of San Diego General Plan Update Land Use Map designates the portions of the Meadowood Specific Plan Area planned for development as Village Residential. The Village category identifies areas where a higher intensity and a wide range of land uses are established or have been planned. Typically, Village areas function as the center of community

planning areas and contain the highest population and development densities. A subcategory of the Village classification, transit nodes include sites within walking distance of future rapid transit stations. Served by either express bus or rail service, Transit Node areas are planned as diverse, mixed-use areas with a range of residential, retail, and where appropriate, employment-generating land uses (e.g., office/professional or light industrial) as well as parks and civic spaces.

The project applicant will work with applicable transit authorities to promote transit service with bus turnouts serving the proposed project. Meadowood in combination with Palomar College, Campus Park, and Campus Park West will create the ideal General Plan Update transit area – a mixed-use development of residential, retail, office, park, and higher education uses with proximity to a higher density population. Transit service, including bus turn-outs, is planned along Horse Ranch Creek Road. Meadowood proposes to locate high density housing closer to the transit service. In addition, project trails and pathways will provide easy accessibility for all residents of Meadowood.

4.10 Project Access and On-Site Circulation

On-site circulation is proposed by several new roadways as shown on the vested tentative maps/grading plans. A reduced set of plans showing the proposed roadway striping is included in **Appendix Y**. All project roadway designs will be submitted under separate cover to meet County safety standards. Horse Ranch Creek Road shall be designed per General Plan Update Boulevard Standards. Pala Mesa Road and Pankey Place/Street R will be designed per current adopted County standards. The proposed internal roads and cul-de-sac streets would provide efficient on-site circulation and logical connections to Horse Ranch Creek Road. All internal streets would be constructed with streetlights and standard curbs and gutters and are designed to accommodate anticipated long-term traffic volumes. On-street parking would be permitted along both sides of all proposed internal streets. Parking would not be permitted along Horse Ranch Creek Road, Pala Mesa Drive, and Street R (aka Pankey Place).

4.10.1 Project Driveway Corner Sight Distance Analysis

Rick Engineering will submit to the County of San Diego under separate cover sight distance triangles for the required intersection as related to driveway corner sight distance requirements. A reduced set of the sight distance triangles are included in **Appendix U**.

4.10.2 Project Driveway Spacing Analysis

A copy of a County of San Diego approved request for a modification to a road standard for the project as related to driveway spacing requirements is included in **Appendix V**.

5.0 Summary of Project Impacts, Mitigation and Design Features

The project is calculated to have direct and cumulative impacts based on the County of San Diego and Congestion Management Program significance criteria. The project applicant proposes to construct intersections and roadways to facilitate access to and through the project site.

This section describes the mitigation measures required to bring the calculated impacts to below a level of significance, and lists the intersections and roadways proposed for construction as part of the project. Additionally, the existing widening of SR-76 east of I-15 is described in this section because the additional capacity based on the widening was accounted for in the analysis.

5.1 Direct Project Impacts and Recommended Mitigation Measures

The project is calculated to have direct impacts at one intersection and along two state route segments.

The direct impact at the intersection of Old Highway 395/Reche Road is calculated to operate at acceptable levels of service with the recommended mitigation of a traffic signal, which meets Planning Warrant Condition A. The intersection LOS operations without and with the proposed traffic signal are shown in **Table 38** (LOS calculations and signal warrant included in **Appendix Z**).

TABLE 38: DIRECT IMPACT INTERSECTION OPERATIONS WITH RECOMMENDED MITIGATION MESURES

Intersection & (Analysis)[1]	Move-ment	Peak Hour	Existing		Existing + Project				County Sig[6]	CMP Sig[7]
			Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delta[4]	CM Vol[5]		
15) Old Highway 395 at	EB LR	AM	18.4	C	28.7	D	NA	10	No	No
Reche Road (U)	EB LR	PM	35.9	**E**	105.5	**F**	NA	32	**Yes**	No
	All	AM	10.6	B	13.6	B	3.0	NA	NA	No
	All	PM	17.6	B	42.1	**E**	24.5	NA	NA	**Yes**
With Mitigation of installing a traffic signal with no additional lanes (mitigates the impact as shown below with acceptable LOS)										
15) Old Highway 395 at	All	AM	15.1	B	16.9	B	1.8	NA	No	No
Reche Road (S)	All	PM	18.5	B	24.5	C	6.0	NA	No	No

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized 2) Delay - HCM Control Delay in seconds. 3) LOS: Level of Service. 4) Delta is the increase in delay from project. 5) CM Vol: Critical Movement Volume used to show project volumes on the critical movement. 6) County Sig: is the project have a calculated impact based on the critical volume (Yes or No). 7) CMP Sig: Congention Mangement Program significant impact based on CMP criteria (Yes or No).

Direct impacts to the SR-76 segments from Via Monserate to Gird Road and from I-15 NB Ramp to I-15 SB Ramp would be mitigated through the widening from 2 to 4 lanes as part of the Caltrans SR-76 East Project. Since the timing of these improvements by Caltrans is not assured at this time, a significant direct impact would occur if the Meadowood project were to proceed in advance of this mitigation. Under these circumstances, the applicant would be responsible for making a fair share contribution toward these improvements to mitigate this impact. The levels of service without and with the Caltrans widening are shown in **Table 39**.

TABLE 39: DIRECT IMPACT STATE ROUTE SEGMENT OPERATIONS WITH RECOMMENDED MITIGATION MESURES

State Route 76	Lanes in	AM (Eastbound)					Project				Change In			AM (Westbound)					Project				Change In		v/c	
Study Limits	each dir	E vol	Dir	Cap	v/c	LOS	Vol	E+P	v/c	LOS	v/c	Sig		Vol	Dir	Cap	v/c	LOS	Vol	E+P	v/c	Sig	LOS	v/c	Delta	Sig
Via Monserate to Gird Rd	1	808	EB	950	0.85	D	16	824	0.87	E	0.02	**Yes**		895	WB	950	0.94	**E**	48	943	0.99	E	0.05	**Yes**		
I-15 SB Ramps to I-15 NB Ramps	1	844	EB	950	0.89	**E**	22	866	0.91	E	0.02	**Yes**		539	WB	950	0.57	C	150	689	0.73	D	0.16	No		
With Mitigation of an additional one travel lane in each direction as part of the Caltrans SR-76 East project.																										
Via Monserate to Gird Rd	2	808	EB	3300	0.24	A	16	824	0.25	A	0.00	No		895	WB	3164	0.28	A	48	943	0.30	A	0.02	No		
I-15 SB Ramps to I-15 NB Ramps	2	844	EB	3030	0.28	A	22	866	0.29	A	0.01	No		539	WB	3030	0.18	A	150	689	0.23	A	0.05	No		

		PM (Eastbound)					Project				Change In			PM (Westbound)					Project				Change In		
		E Vol	Dir	Cap	v/c	LOS	Vol	E+P	v/c	LOS	v/c	Sig		E Vol	Dir	Cap	v/c	LOS	Vol	E+P	v/c	LOS	v/c	Sig	
Via Monserate to Gird Rd	1	1077	EB	950	1.13	**F**	55	1132	1.19	F	0.06	**Yes**		786	WB	950	0.83	D	24	810	0.85	D	0.03	No	
I-15 SB Ramps to I-15 NB Ramps	1	718	EB	950	0.76	D	79	797	0.84	D	0.08	No		1153	WB	950	1.21	F	75	1228	1.29	F	0.08	Yes	
With Mitigation of an additional one travel lane in each direction as part of the Caltrans SR-76 East project.																									
Via Monserate to Gird Rd	2	1077	EB	2912	0.37	B	55	1132	0.39	B	0.02	No		786	WB	3300	0.24	A	24	810	0.25	A	0.01	No	
I-15 SB Ramps to I-15 NB Ramps	2	718	EB	3030	0.24	A	79	797	0.26	A	0.03	No		1153	WB	3030	0.38	B	75	1228	0.41	B	0.02	No	

Source: SANDAG Hwycov 2007. Notes: Dir = Direction. Vol = Volume. Cap = Capacity. v/c = volume to capacity ratio. LOS = Level of Service.

5.2 Cumulative Project Impacts and Recommended Mitigation Measures

The project is calculated to have cumulative impacts at 19 intersections, on 3 roadway segments, and along 11 state route segments.

The cumulative intersection impacts are calculated to operate at acceptable levels of service with intersection improvements identified in the Caltrans SR-76 Middle Project, and through anticipated intersection improvements as part of TIF or Caltrans SR-76 East Project as shown in **Table 40** with proposed intersection lane configurations shown in **Figure 27**.

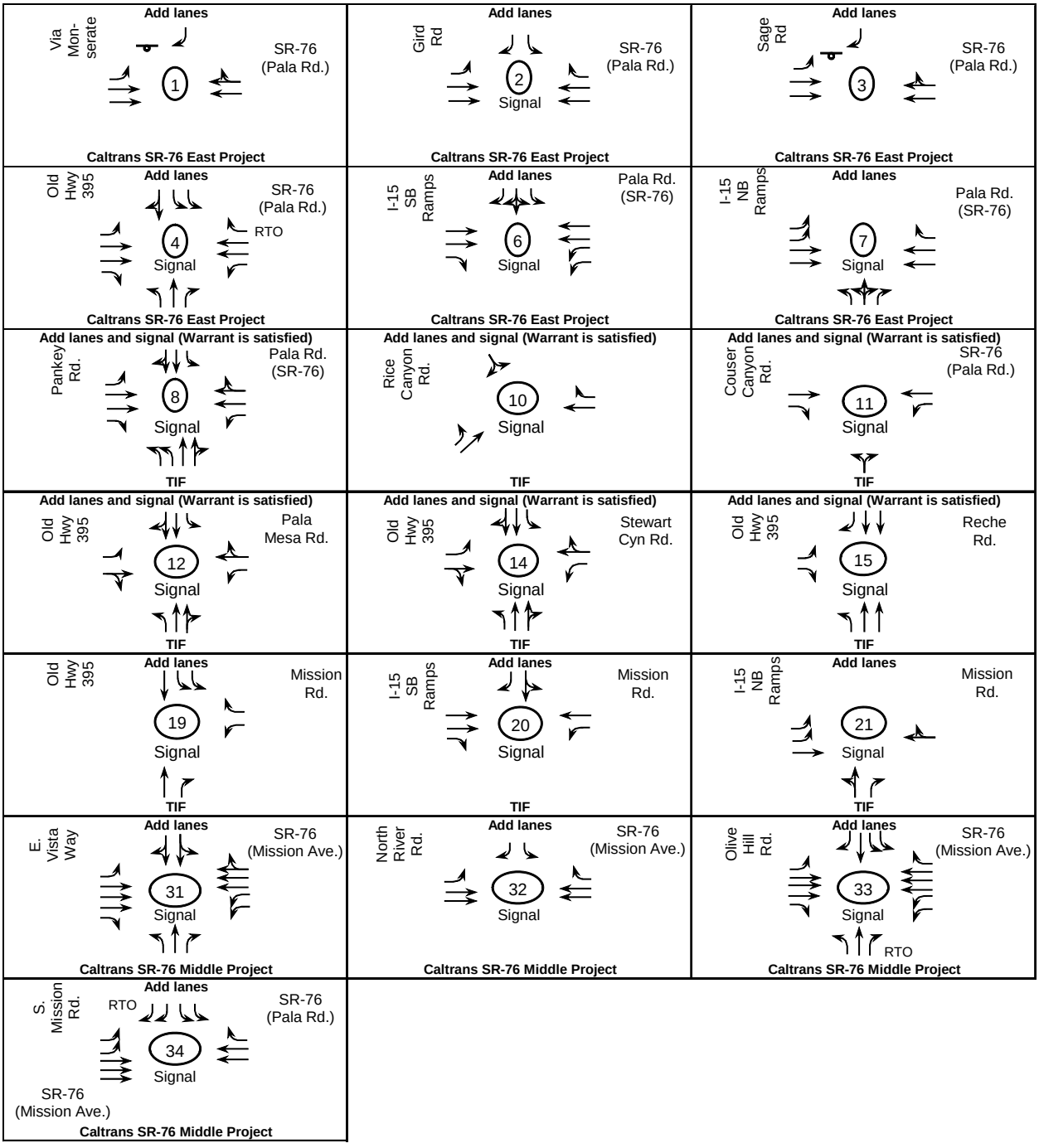
The Caltrans SR-76 Middle Project intersection improvement configurations, the signal warrant calculations for the proposed signalizations, and intersection LOS calculations are included in **Appendix AA**.

TABLE 40: CUMULATIVE IMPACT INTERSECTION OPERATIONS WITH RECOMMENDED MITIGATION MEASURES

Intersection & (Analysis)[1]	Movement	Peak Hour	Existing+Cumulative+Project					Cumulative Impact?
			Without Mitigation		Mitigation	With Mitigation		
			Delay[2]	LOS[3]	(See Fig 26)	Delay[2]	LOS[3]	
1) SR-76 (Pala Rd) at	SB LR	AM	>500	**F**		31.1	D	No
Via Monserate (U)	SB LR	PM	>500	**F**	Add	22.3	C	No
	All	AM	>500	**F**	lanes	0.8	C	No
	All	PM	>500	**F**		0.6	B	No
2) SR-76 (Pala Rd) at	All	AM	59.1	D	Add	11.8	B	No
Gird Rd (S)	All	PM	118.0	**F**	lanes	15.0	B	No
3) SR-76 (Pala Rd) at	SB LR	AM	40.2	**E**		17.6	C	No
Sage Rd (U)	SB LR	PM	39.3	**E**	Add	17.7	C	No
	All	AM	>500	**F**	lanes	0.2	A	No
	All	PM	>500	**F**		0.2	A	No
4) SR-76 (Pala Rd) at	All	AM	268.7	**F**	Add	44.1	D	No
Old Hwy 395 (S)	All	PM	266.1	**F**	lanes	40.5	D	No
6) SR-76 (Pala Rd) at	All	AM	107.0	**F**	Add	25.3	C	No
I-15 SB Ramps (S)	All	PM	140.1	**F**	lanes	26.3	C	No
7) SR-76 (Pala Rd) at	All	AM	86.6	**E**	Add	29.1	C	No
I-15 NB Ramps (S)	All	PM	121.2	**F**	lanes	29.9	C	No
8) SR-76 (Pala Rd) at	NB LTR	AM	>500	**F**	Install			
Pankey Road (U)	NB LTR	PM	>500	**F**	AM	24.4	C	No
	SB LTR	AM	>500	**F**	PM	38.3	D	No
	SB LTR	PM	>500	**F**	Traffic Signal			
10) SR-76 (Pala Rd) at	SB LR	AM	211.4	**F**	Install	15.1	B	No
Rice Canyon Road (U)	SB LR	PM	>500	**F**	Traffic Signal	22.0	C	No
11) SR-76 (Pala Rd) at	NB LR	AM	86.2	**F**	Install	13.9	B	No
Couser Canyon Road (U)	NB LR	PM	427.4	**F**	Traffic Signal	15.4	B	No
12) Old Highway 395 at	EB LR	AM	>500	**F**	Install	29.9	C	No
Pala Mesa Dr (U)	EB LR	PM	>500	**F**	Traffic Signal	47.1	D	No
14) Old Highway 395 at	WB LTR	AM	>500	**F**	Install	17.4	B	No
Stewart Canyon Road (U)	WB LTR	PM	>500	**F**	Traffic Signal	26.4	C	No
15) Old Highway 395 at	EB LR	AM	>500	**F**	Install			
Reche Road (U)	EB LR	PM	>500	**F**	AM	23.3	C	No
	All	AM	>500	**F**	PM	46.7	D	No
	All	PM	>500	**F**	Traffic Signal			
19) Mission Road at	SB L	AM	54.8	D	Add	26.0	C	No
Old Highway 395 (S)	SB L	PM	113.0	**F**	lanes	32.0	C	No
20) Mission Road at	SB LTR	AM	75.6	**E**	Add	30.3	C	No
I-15 SB Ramps (S)	SB LTR	PM	87.5	**E**	lanes	22.9	C	No
21) Mission Road at	All	AM	31.8	C	Add	18.2	B	No
I-15 NB Ramps (S)	All	PM	95.8	**F**	lanes	25.9	C	No
31) SR-76 (Mission Ave) at	All	AM	282.1	**F**	Add	39.8	D	No
E. Vista Way (S)	All	PM	261.1	**F**	lanes	53.5	D	No
32) SR-76 (Mission Ave) at	All	AM	317.1	**F**	Add	28.2	C	No
North River Rd (S)	All	PM	267.3	**F**	lanes	29.3	C	No
33) SR-76 (Mission Ave) at	All	AM	275.6	**F**	Add	44.5	D	No
Olive Hill Rd (S)	All	PM	184.1	**F**	lanes	45.2	D	No
34) SR-76 (Mission Ave) at	All	AM	61.4	**E**	Add	41.3	D	No
S. Mission Rd (S)	All	PM	88.0	**F**	lanes	36.2	D	No

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized 2) Delay - HCM Average Delay in seconds. 3) LOS: Level of Service.

Figure 27: Intersection Mitigation Measures for Cumulative Impacts



The cumulative segment impacts on Old Highway 395 are calculated to operate at acceptable levels of service with widening from 2 to 4 lanes as identified in the TIF program or as part of the current circulation element classification. The LOS with the widening from 2 to 4 lanes is shown in **Table 41**.

TABLE 41: CUMULATIVE IMPACT SEGMENT OPERATIONS WITH RECOMMENDED MITIGATION MEASURES

Segment	As built	Existing + Cumulative + Project				TIF mitigation (higher btw TIF & Circ Elem)	Existing + Cumulative + Project			
		Daily Volume	LOS E Capacity	V/C	LOS		Daily Volume	LOS E Capacity	V/C	LOS
Old Highway 395										
East Mission Road to Reche Road	2 lanes	19,900	16,200	1.23	**F**	Collector	19,900	34,200	0.58	B
Reche Road to Stewart Canyon Road	2 lanes	23,300	16,200	1.44	**F**	Collector	23,300	34,200	0.68	C
Pala Mesa Drive to SR-76 (Pala Road)	2 lanes	17,600	16,200	1.09	**F**	Collector	17,600	34,200	0.51	B

Daily volume is a 24 hour volume. LOS: Level of Service. V/C: Volume to Capacity ratio.

The cumulative state route segment impacts are calculated to operate at acceptable levels of service with mitigation measures of widening from 2 to 4 lanes that are currently planned as part of the TransNet SR-76 widening project and the TIF program, and then eventual (unknown future date) widening to 6 lanes to match the current circulation element. SR-76 from E Vista Way to S Mission Road has a current circulation element classification of Expressway (6 lane divided roadway) and when analyzed as such it is calculated to operate at acceptable levels of service. The TIF program provides a revenue program to address forecasted deficiencies; therefore, contribution to the TIF will provide sufficient mitigation for cumulative impacts to SR-76. The peak hour state route calculations are shown below in **Tables 42a and 42b** representing the current planned improvements while the County circulation element classification ADT calculations are shown in **Table 43** for the eventual improvements to match the circulation element classification (ADT volumes for SR-76 obtained from the Series 10 Cumulative Map traffic model and included in Appendix AA).

TABLE 42A: CUMULATIVE IMPACT STATE ROUTE SEGMENT OPERATIONS WITH RECOMMENDED MITIGATION MEASURES OF 2 LANES IN EACH DIRECTION (AM)

State Route 76	Lanes in	E	AM (Eastbound)				C+P	E+C+P			v/c	Cumulative	E	AM (Westbound)				C+P	E+C+P			v/c	Cumulative
Study Limits	each dir	Vol	Dir	Cap	v/c	LOS	Vol	Vol	v/c	LOS	Delta	Impact?	Vol	Dir	Cap	v/c	LOS	Vol	Vol	v/c	Sig	Delta	Impact?
E. Vista Way to North River Rd	2	718	EB	2122	0.34	B	469	1187	0.56	C	0.22	No	1040	WB	1904	0.55	C	944	1984	1.04	**F**	0.50	**Yes*** **
North River Rd to Olive Hill Rd	2	852	EB	1904	0.45	B	539	1391	0.73	D	0.28	No	1200	WB	2122	0.57	C	1221	2421	1.14	**F**	0.58	**Yes*** **
Olive Hill Rd to S Mission Rd	2	1031	EB	2122	0.49	B	467	1498	0.71	C	0.22	No	1245	WB	1904	0.65	C	1322	2567	1.35	**F**	0.69	**Yes*** **
S Mission Rd to Via Monserate	2	745	EB	3164	0.24	A	347	1092	0.35	B	0.11	No	901	WB	2122	0.42	B	832	1733	0.82	D	0.39	No
Via Monserate to Gird Rd	2	808	EB	3300	0.24	A	332	1140	0.35	B	0.10	No	895	WB	3164	0.28	A	901	1796	0.57	C	0.28	No
Gird Rd to Sage Rd	2	740	EB	3300	0.22	A	391	1131	0.34	B	0.12	No	542	WB	2912	0.19	A	797	1339	0.46	B	0.27	No
Sage Rd to Old Hwy 395	2	760	EB	1904	0.40	B	458	1218	0.64	C	0.24	No	534	WB	3300	0.16	A	827	1361	0.41	B	0.25	No
Old Hwy 395 to I-15 SB Ramps	2	1507	EB	3030	0.50	B	93	1600	0.53	C	0.03	No	665	WB	2028	0.33	B	600	1265	0.62	C	0.30	No
I-15 SB Ramps to I-15 NB Ramps	2	844	EB	3030	0.28	A	178	1022	0.34	B	0.06	No	539	WB	3030	0.18	A	455	994	0.33	B	0.15	No
I-15 NB Ramps to Pankey Rd	2	559	EB	3100	0.18	A	283	842	0.27	A	0.09	No	606	WB	3030	0.20	A	439	1045	0.34	B	0.14	No
Pankey Rd to Horse Ranch Creek Rd	2	589	EB	1806	0.33	B	15	604	0.33	B	0.01	No	540	WB	1956	0.28	A	644	1184	0.61	C	0.33	No
Horse Ranch Creek Rd to Rice Cyn	2*	588	EB	1806	0.33	B	16	604	0.33	B	0.01	No	539	WB	1956	0.28	A	645	1184	0.61	C	0.33	No
Rice Cyn to Couser Cyn	2*	589	EB	3100	0.19	A	1135	1724	0.56	C	0.37	No	540	WB	2382	0.23	A	300	840	0.35	B	0.13	No
Couser Cyn to Pala Mission Rd	2**	634	EB	1900	0.33	B	223	857	0.45	B	0.12	No	357	WB	1900	0.19	A	321	678	0.36	B	0.17	No

Source: SANDAG Year 2030 Cumulative Map. Notes: Dir = Direction. Vol = Volume. Cap = Capacity. v/c = volume to capacity ratio. LOS = Level of Service. E: Existing. C: Cumulative. P: Project. *Mitigation of 2 lanes consistent with current circulation element (capacity from SANDAG coverage). **Mit consistent with current circulation element, capacity of 2 lanes based on doubling existing capacity of 950.
*** Cumulative impact mitigated when analyzed under current circulation element classification of Expressway (6 lane divided roadway).

TABLE 42B: CUMULATIVE IMPACT STATE ROUTE SEGMENT OPERATIONS WITH RECOMMENDED MITIGATION MEASURES OF TWO LANES IN EACH DIRECTION (PM)

State Route 76	Lanes in	E	PM (Eastbound)				C+P	E+C+P			v/c	Cumulative	E	PM (Westbound)				C+P	E+C+P			v/c	Cumulative
Study Limits	each dir	Vol	Dir	Cap	v/c	LOS	Vol	Vol	v/c	LOS	Delta	Impact?	Vol	Dir	Cap	v/c	LOS	Vol	Vol	v/c	Sig	Delta	Impact?
E. Vista Way to North River Rd	2	1107	EB	2122	0.52	C	952	2059	0.97	E	0.45	Yes***	652	WB	1904	0.34	B	767	1419	0.75	D	0.40	No
North River Rd to Olive Hill Rd	2	1176	EB	1904	0.62	C	1417	2593	1.36	F	0.74	Yes***	781	WB	2122	0.37	B	830	1611	0.76	D	0.39	No
Olive Hill Rd to S Mission Rd	2	1457	EB	2122	0.69	C	1119	2576	1.21	F	0.53	Yes***	1069	WB	1904	0.56	C	782	1851	0.97	E	0.41	Yes***
S Mission Rd to Via Monserate	2	1064	EB	3300	0.32	B	1209	2273	0.69	C	0.37	No	618	WB	2122	0.29	A	883	1501	0.71	C	0.42	No
Via Monserate to Gird Rd	2	1077	EB	2912	0.37	B	1000	2077	0.71	D	0.34	No	786	WB	3300	0.24	A	575	1361	0.41	B	0.17	No
Gird Rd to Sage Rd	2	645	EB	3300	0.20	A	755	1400	0.42	B	0.23	No	742	WB	2912	0.25	A	494	1236	0.42	B	0.17	No
Sage Rd to Old Hwy 395	2	638	EB	1904	0.34	B	885	1523	0.80	D	0.46	No	768	WB	3300	0.23	A	680	1448	0.44	B	0.21	No
Old Hwy 395 to I-15 SB Ramps	2	816	EB	3030	0.27	A	670	1486	0.49	B	0.22	No	1258	WB	2028	0.62	C	273	1531	0.75	D	0.13	No
I-15 SB Ramps to I-15 NB Ramps	2	718	EB	3030	0.24	A	639	1357	0.45	B	0.21	No	1153	WB	3030	0.38	B	132	1285	0.42	B	0.04	No
I-15 NB Ramps to Pankey Rd	2	696	EB	3100	0.22	A	753	1449	0.47	B	0.24	No	820	WB	3030	0.27	A	242	1062	0.35	B	0.08	No
Pankey Rd to Horse Ranch Creek Rd	2	631	EB	1806	0.35	B	649	1280	0.71	C	0.36	No	897	WB	2028	0.44	B	460	1357	0.67	C	0.23	No
Horse Ranch Creek Rd to Rice Cyn	2*	631	EB	1806	0.35	B	649	1280	0.71	C	0.36	No	897	WB	2028	0.44	B	460	1357	0.67	C	0.23	No
Rice Cyn to Couser Cyn	2*	526	EB	3100	0.17	A	506	1032	0.33	B	0.16	No	930	WB	2382	0.39	B	413	1343	0.56	C	0.17	No
Couser Cyn to Pala Mission Rd	2**	434	EB	1900	0.23	A	414	848	0.45	B	0.22	No	950	WB	1900	0.50	B	301	1251	0.66	C	0.16	No

Source: SANDAG Year 2030 Cumulative Map. Notes: Dir = Direction. Vol = Volume. Cap = Capacity. v/c = volume to capacity ratio. LOS = Level of Service. E: Existing. C: Cumulative. P: Project. *Mitigation of 2 lanes consistent with current circulation element (capacity from SANDAG coverage). **Mit consistent with current circulation element, capacity of 2 lanes based on doubling existing capacity of 950.
*** Cumulative impact mitigated when analyzed under current circulation element classification of Expressway (6 lane divided roadway).

TABLE 43: CUMULATIVE IMPACT STATE ROUTE SEGMENT OPERATIONS WITH CIRCULATION ELEMENT MITIGATION

State Route	Classification	Existing + Cumulative + Project				
		Daily Volume	LOS E Capacity	V/C	LOS	Cumulative Impact?
SR76 (from E Vista Way to North River Rd)	Expressway (6D)	47,108	108,000	0.44	B	No
SR76 (from North River Rd to Olive Hill Rd)	Expressway (6D)	59,327	108,000	0.55	C	No
SR76 (from Olive Hill Rd to S Mission Rd)	Expressway (6D)	60,858	108,000	0.56	C	No

LOS: Level of Service. V/C: Volume to Capacity ratio. Daily volumes is a 24 hour volume. 6D: 6 lane divided roadway

To mitigate the cumulative impacts, the project applicant proposes to pay into the Transportation Impact Fee (TIF) program.

The County of San Diego has developed an overall programmatic solution that addresses existing and projected future road deficiencies in the unincorporated portion of San Diego County. This program includes the adoption of a TIF program to fund improvements to roadways necessary to mitigate potential cumulative impacts caused by traffic from future development. Based on SANDAG regional growth and land use forecasts, the SANDAG Regional Transportation Model was utilized to analyze projected build-out (year 2030) development conditions on the existing circulation element roadway network throughout the unincorporated area of the County. Based on the results of the traffic modeling, funding necessary to construct transportation facilities that will mitigate cumulative impacts from new development was identified. Existing roadway deficiencies will be corrected through improvement projects funded by other public funding sources, such as TransNet, gas tax, and grants. Potential cumulative impacts to the region's freeways have been addressed in SANDAG's Regional Transportation Plan (RTP). This plan, which considers freeway buildout over the next 30 years, will use funds from TransNET, state, and federal funding to improve freeways to projected level of service objectives in the RTP.

The proposed project generates 8,740 ADT. These trips will be distributed on circulation element roadways in the County that were analyzed by the TIF program, some of which currently or are projected to operate at inadequate levels of service. These project trips, therefore, contribute to a potential significant cumulative impact and mitigation is required. The potential growth represented by this project was included in the growth projections upon which the TIF project is based. Therefore, payment of the TIF, which will be required at issuance of building permits, in combination with other components of the program described above, will mitigate potential cumulative impacts to less than significant. The applicant will request TIF credit for all allowable associated costs of roadway improvements that the client will construct to roadways listed in the

January 2008 TIF update. An email from County staff documenting that cumulative impacts occurring to roadway segments and intersections located within the Fallbrook community can be fully mitigated by payment into the County's TIF Program is included in **Appendix BB**.

5.3 Horizon Year Impacts

No horizon year impacts were calculated because the project traffic does not exceed the allowable significance thresholds.

5.4 Project Features

As part of the project, the applicant proposes to construct the following improvements:

1) Intersection of SR-76 at Horse Ranch Creek Road. If applicant precedes the other planned cumulative projects (i.e. Palomar College, Campus Park), then the applicant will construct the intersection and traffic signal. If applicant succeeds the other planned cumulative projects (i.e. Palomar College, Campus Park), then the applicant will construct a second left turn lane from eastbound SR-76 to northbound Horse Ranch Creek Road creating dual left turn lanes.

2) Six internal intersections (reference numbers 23, 25, 26, 27, 28, and 29). If applicant precedes the other planned cumulative projects (i.e. Palomar College, Campus Park), then the applicant will construct the internal intersection with the required traffic control based on project volumes (i.e. warrant based intersection control - stop control with less volumes and traffic signal if warranted). If applicant succeeds the other planned cumulative projects (i.e. Palomar College, Campus Park), then the applicant will either expand the intersection as needed for acceptable LOS and or install a traffic signal if warranted.

3) Roadway segment of Horse Ranch Creek Road from SR-76 to the southern terminus of Pankey Road south of Stewart Canyon Road. If applicant precedes the other planned cumulative projects (i.e. Palomar College, Campus Park), then the applicant will construct Horse Ranch Creek Road with 2 lanes. If applicant succeeds the other planned cumulative projects (i.e. Palomar College, Campus Park), then the applicant will widen the existing 2 lane roadway to a 4 lane roadway per GP Update Boulevard Standards.

4) Roadway segment of Street R from Pala Mesa Drive to Horse Ranch Creek Road. If applicant precedes the other planned cumulative projects (i.e. Palomar College, Campus Park), then the applicant will construct Street R from Pala Mesa Drive to Horse Ranch Creek Road with 2 lanes. If applicant succeeds the other planned cumulative projects (i.e. Palomar College, Campus Park), then the applicant will not be required to construct this roadway segment.

5) Roadway segment of Pala Mesa Drive from Old Highway 395 to Street R. If applicant precedes the other planned cumulative projects (i.e. Palomar College, Campus Park),

then the applicant will construct Pala Mesa Drive with 2 lanes. If applicant succeeds the other planned cumulative projects (i.e. Palomar College, Campus Park), then the applicant will not be required to construct this roadway segment.

6) Roadway segment of Pala Mesa Drive from Street R to SR-76. If applicant precedes the other planned cumulative projects (i.e. Palomar College, Campus Park), then the applicant will construct Pala Mesa Drive with 2 lanes. If applicant succeeds the other planned cumulative projects (i.e. Palomar College, Campus Park), then the applicant will widen the existing 2 lanes to a 4 lane roadway.

5.5 Improvements by Others

SR-76 is currently being widened from 2 to 4 lanes from the I-15 NB Ramp easterly a distance of approximately 1.4 miles. Since this widening is in the construction stage, the capacity of the completed improvement was incorporated in the analysis. If this widening is not completed before Meadowood occupancy, then Meadowood would have a direct impact on SR-76 from the I-15 NB Ramp to Horse Ranch Creek Road.

Improvements by others (i.e. Caltrans, Palomar College, Pauma Tribe, or Pala Tribe) were not incorporated into the analysis for additional roadway capacity.

5.6 Direct Mitigation, Cumulative Mitigation, and Project Feature Summary

The proposed mitigation for the direct and cumulative impacts, responsible party for the mitigation, significance after mitigation, project features, and other improvements currently being constructed are summarized below in **Table 44** and shown graphically in **Figure 28**.

TABLE 44: SUMMARY OF DIRECT AND CUMULATIVE IMPACTS, PROJECT FEATURES, OTHER IMPROVEMENTS

Impact, Project Feature, or Other Improvement	Proposed Mitigation	Responsible Party	Significance After Mitigation
Direct Impacts			
1) INTERSECTION: Old Highway 395 at Reche Rd (#15)	Construct traffic signal with lane configuration as shown in the next Figure	First applicant in time to construct the identified improvement	Direct impact mitigated to below a level of significance
2) STATE ROUTE: 76 (Via Monserate to Gird Road)	Widen SR-76 from 2 to 4 lanes.	Caltrans SR-76 East Project	Direct impact mitigated to below a level of significance with Caltrans project(1)
3) STATE ROUTE: 76 (I-15 NB Ramp to I-15 SB Ramp)	Widen SR-76 from 2 to 4 lanes.	Caltrans SR-76 East Project	Direct impact mitigated to below a level of significance with Caltrans project(1)
Cumulative Impacts			
1) INTERSECTION: SR-76 at Via Monserate	Add lanes as shown in the next Figure	TIF(2)	Cumulative impact mitigated to below a level of significance
2) INTERSECTION: SR-76 at Gird Road	Add lanes as shown in the next Figure	TIF(2)	Cumulative impact mitigated to below a level of significance

Impact, Project Feature, or Other Improvement	Proposed Mitigation	Responsible Party	Significance After Mitigation
3) INTERSECTION: SR-76 at Sage Road	Add lanes as shown in the next Figure	TIF(2)	Cumulative impact mitigated to below a level of significance
4) INTERSECTION: SR-76 at Old Hwy 395	Add lanes as shown in the next Figure	TIF(2)	Cumulative impact mitigated to below a level of significance
5) INTERSECTION: SR-76 at I-15 SB Ramp	Add lanes as shown in the next Figure	TIF(2)	Cumulative impact mitigated to below a level of significance
6) INTERSECTION: SR-76 at I-15 NB Ramp	Add lanes as shown in the next Figure	TIF(2)	Cumulative impact mitigated to below a level of significance
7) INTERSECTION: SR-76 at Pankey Road	Install traffic signal and add lanes as shown in the next Figure	TIF(2)	Cumulative impact mitigated to below a level of significance
8) INTERSECTION: SR-76 at Rice Canyon Road	Install traffic signal and add lanes as shown in the next Figure	TIF(2)	Cumulative impact mitigated to below a level of significance
9) INTERSECTION: SR-76 at Couser Canyon Road	Install traffic signal and add lanes as shown in the next Figure	TIF(2)	Cumulative impact mitigated to below a level of significance
10) INTERSECTION: Old Highway 395 at Pala Mesa Drive	Install traffic signal and add lanes as shown in the next Figure	TIF(2)	Cumulative impact mitigated to below a level of significance
11) INTERSECTION: Old Highway 395 at Stewart Canyon Road	Install traffic signal and add lanes as shown in the next Figure	TIF(2)	Cumulative impact mitigated to below a level of significance
12) INTERSECTION: Old Highway 395 at Reche Road	Install traffic signal and add lanes as shown in the next Figure	TIF(2)	Cumulative impact mitigated to below a level of significance
13) INTERSECTION: Old Highway 395 at E Mission Road	Add lanes as shown in the next Figure	TIF(2)	Cumulative impact mitigated to below a level of significance
14) INTERSECTION: Mission Road at I-15 SB Ramp	Add lanes as shown in the next Figure	TIF(2)	Cumulative impact mitigated to below a level of significance
15) INTERSECTION: Mission Road at I-15 NB Ramp	Add lanes as shown in the next Figure	TIF(2)	Cumulative impact mitigated to below a level of significance
16) INTERSECTION: SR-76 at E. Vista Way	Add lanes as shown in the next Figure	TIF(2)	Cumulative impact mitigated to below a level of significance
17) INTERSECTION: SR-76 at North River Road	Add lanes as shown in the next Figure	TIF(2)	Cumulative impact mitigated to below a level of significance
18) INTERSECTION: SR-76 at Olive Hill Road	Add lanes as shown in the next Figure	TIF(2)	Cumulative impact mitigated to below a level of significance
19) INTERSECTION: SR-76 at S. Mission Road	Add lanes as shown in the next Figure	TIF(2)	Cumulative impact mitigated to below a level of significance
Cumulative Impacts Continued (Segments)			
1) SEGMENT: Old Highway 395 (E Mission Rd to Reche Rd)	Widen Roadway to Collector (2 additional lanes)	TIF(2)	Cumulative impact mitigated to below a level of significance
2) SEGMENT: Old Highway 395 (Reche Rd to Stewart Canyon Rd)	Widen Roadway to a Collector (2 additional lanes)	TIF(2)	Cumulative impact mitigated to below a level of significance

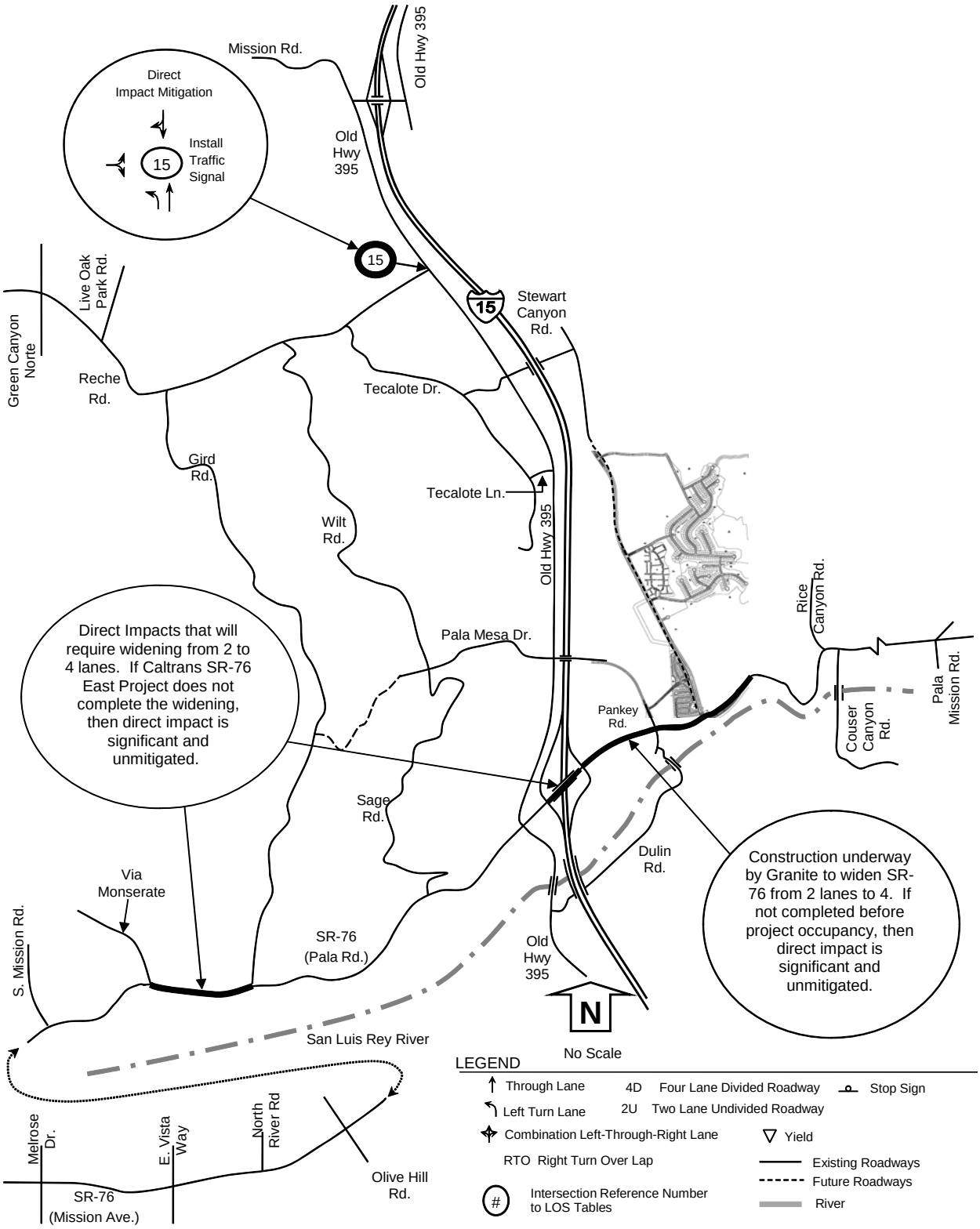
Impact, Project Feature, or Other Improvement	Proposed Mitigation	Responsible Party	Significance After Mitigation
3) SEGMENT: Old Highway 395 (E Mission Rd to Reche Rd)	Widen Roadway to Collector (2 additional lanes)	TIF(2)	Cumulative impact mitigated to below a level of significance
Cumulative Impacts Continued (State Routes)			
1) STATE ROUTE: 76 (E Vista Way to North River Road)	Widen SR-76 from 2 to 6 lanes.	TIF(2)	Cumulative impact mitigated to below a level of significance
2) STATE ROUTE: 76 (North River Road to Olive Hill Road)	Widen SR-76 from 2 to 6 lanes.	TIF(2)	Cumulative impact mitigated to below a level of significance
3) STATE ROUTE: 76 (Olive Hill Road to S Mission Road)	Widen SR-76 from 2 to 6 lanes.	TIF(2)	Cumulative impact mitigated to below a level of significance
4) STATE ROUTE: 76 (S Mission Road to Via Monserate)	Widen SR-76 from 2 to 4 lanes.	TIF(2)	Cumulative impact mitigated to below a level of significance
5) STATE ROUTE: 76 (Via Monserate to Gird Road)	Widen SR-76 from 2 to 4 lanes.	TIF(2)	Cumulative impact mitigated to below a level of significance
6) STATE ROUTE: 76 (Gird Road to Sage Road)	Widen SR-76 from 2 to 4 lanes.	TIF(2)	Cumulative impact mitigated to below a level of significance
7) STATE ROUTE: 76 (Sage Road to Old Highway 395)	Widen SR-76 from 2 to 4 lanes.	TIF(2)	Cumulative impact mitigated to below a level of significance
8) STATE ROUTE: 76 (I-15 SB Ramp to I-15 NB Ramp)	Widen SR-76 from 2 to 4 lanes.	TIF(2)	Cumulative impact mitigated to below a level of significance
9) STATE ROUTE: 76 (Horse Ranch Creek Road to Rice Canyon Road)	Widen SR-76 from 2 to 4 lanes.	TIF(2)	Cumulative impact mitigated to below a level of significance
10) STATE ROUTE: 76 (Rice Canyon Road to Couser Canyon Road)	Widen SR-76 from 2 to 4 lanes.	TIF(2)	Cumulative impact mitigated to below a level of significance
11) STATE ROUTE: 76 (Couser Canyon Road to Pala Mission Road)	Widen SR-76 from 2 to 4 lanes.	TIF(3)	Cumulative impact mitigated to below a level of significance
Project Features			
1) INTERSECTION: SR-76 at Horse Ranch Creek Road	Construct traffic signal with lane configuration as shown in the next Figure	First applicant to proceed between Meadowood, Palomar College, and Campus Park	LOS C or better with proposed project feature
2) INTERSECTIONS: Six internal intersections (#23, 24, 25, 26, 27, 28 and 29) along Horse Ranch Creek Road and Street R (3)	Construct traffic signals with lane configuration as shown in the next Figure	First applicant to proceed between Meadowood, Palomar College, and Campus Park	LOS C or better with proposed project feature
3) SEGMENT: Horse Ranch Creek Road from SR-76 to southern terminus of Pankey Road south of Stewart Canyon Road	Construct 2 lane roadway	First applicant to proceed between Meadowood, Palomar College, and Campus Park	LOS C or better with proposed project feature
4) SEGMENT: Street R from Pala Mesa Drive to Horse Ranch Creek Road	Construct 2 lane roadway	First applicant to proceed between Meadowood, Palomar College, and Campus Park	LOS C or better with proposed project feature

Impact, Project Feature, or Other Improvement	Proposed Mitigation	Responsible Party	Significance After Mitigation
5) SEGMENT: Pala Mesa Drive from Old Highway 395 to Street R	Construct 2 lane roadway	First applicant to proceed between Meadowood, Palomar College, and Campus Park	LOS C or better with proposed project feature
6) SEGMENT: Pala Mesa Drive from Street R to SR-76	Construct 2 lane roadway	First applicant to proceed between Meadowood, Palomar College, and Campus Park	LOS C or better with proposed project feature
Improvements by others			
1) STATE ROUTE: 76 from I-15 NB Ramp easterly a distance of approximately 1.4 miles	Widen from 2 to 4 lanes	Under Construction by Granite Construction Company	Acceptable LOS with this improvement through Horizon Year (2030)

Notes: (1) If the Caltrans SR-76 Middle project or SR-76 East project is completed prior to occupancy of the first residential unit within Meadowood, the direct Meadowood project impacts to the completed Caltrans project would be fully mitigated. If the first residential unit within Meadowood is occupied prior to completion of the Caltrans SR-76 Middle project or SR-76 East project, the applicant would be responsible for making its fair share contribution toward the uncompleted Caltrans project to mitigate the Meadowood direct project impact(s). Overrides would also have to be made for Meadowood to proceed prior to completion of the SR-76 Middle project or SR-76 East project. (2) The TIF program provides a comprehensive facility financing fee program that addresses forecasted deficiencies to SR-76 and other public street facilities. Applicant's contribution to the TIF will fully mitigate the Meadowood project cumulative impacts to SR-76 and other public street facilities. (3) For cumulative segment impacts to SR-76, east of Couser Canyon Road: The TIF Program mitigates for cumulative impacts on SR-76, west of Couser Canyon Road. Improvements to that segment, paid for by the TIF Program, will increase the operational efficiency of SR-76, west of Couser Canyon Road, and these improvements will provide improved operational characteristics on SR-76, east of Couser Canyon Road.

The project applicant in some combination with Campus Park and Palomar College propose to signalize the interior intersections along Horse Ranch Creek Road (# 23, 24, 25, 26, and 28) – all of which meet signal warrants. The MUTCD warrant calculations are included in **Appendix CC.**

Figure 28: Direct Impact Recommended Mitigation Measures



6.0 References

County of San Diego. December 5, 2007. *County of San Diego Guidelines for Determining Significance.*

San Diego Association of Governments (SANDAG). April 2002. *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*.

Trafficware Corporation, 2003. Synchro 6.0 computer software (build 612).

Transportation Research Board National Research Council Washington, D.C. 2000. *Highway Capacity Manual 2000*. CD ROM.

7.0 List of Preparers and Persons and Organizations Contacted

7.1 List of Preparers

Justin Rasas, P.E. (RCE 60690), LOS Engineering, Inc. Primary Author

Gaile Rasas, LOS Engineering, Inc. Support Engineer

7.2 Organizations Contacted

Helix Environmental Planning Inc. – Lisa Capper

Pardee Homes – Jimmy Ayala, Karen Kosup

Recon – Bobbi Herdes, Lee Sherwood

Rick Engineering, Inc. – Karen Van Ert, Mike While

Seltzer, Caplan, McMahon, Vitek – Thomas Steinke

Turning Point Traffic Service (data collection) – Mike Stutz