Appendix M:
Traffic Impact Analysis

M.1 - Traffic Impact Analysis, October 28, 2009

Traffic Impact Analysis

Diamond Springs Parkway
Diamond Springs, California

Final
October 28, 2009

Prepared for:

El Dorado County, California

Prepared by:

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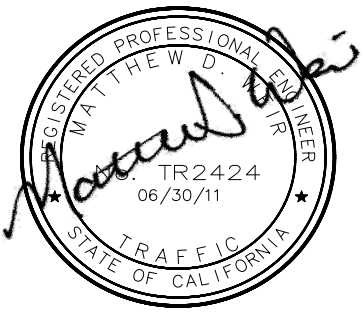

EXECUTIVE SUMMARY

This report documents the results of a traffic impact analysis completed for the proposed Diamond Springs Parkway project in Diamond Springs, California (the "proposed project" or "project"). The proposed project consists of the construction of a new arterial roadway between Missouri Flat Road and Diamond Road (SR-49), north of Pleasant Valley Road (SR-49). The proposed project will initially be built with one travel lane in each direction, and is expected to be expanded to four lanes in the future. The project also consists of related improvements to the segment of Diamond Road (SR-49) between Pleasant Valley Road and the proposed project.

The purpose of this impact analysis is to identify potential environmental impacts to transportation facilities as required by the California Environmental Quality Act (CEQA), as well as other traffic operations parameters. This study was performed in accordance with the El Dorado County Department of Transportation's *Traffic Impact Study Protocols and Procedures* except as noted. The following facilities are included in this analysis:

Intersections

1. Missouri Flat Road at Plaza Drive
2. Missouri Flat Road at US-50 Westbound Ramps
3. Missouri Flat Road at US-50 Eastbound Ramps
4. Missouri Flat Road at Mother Lode Drive
5. Missouri Flat Road at Forni Road
6. Missouri Flat Road at Golden Center Drive
7. Diamond Springs Parkway at Missouri Flat Road (Future)
8. Diamond Springs Parkway at Throwita Way (Future)
9. Diamond Springs Parkway at Diamond Road (SR-49) (Future)
10. Diamond Road (SR-49) at Truck Street
11. Diamond Road (SR-49) at Bradley Drive
12. Diamond Road (SR-49) at Lime Kiln Road/Black Rice Road
13. Diamond Road (SR-49) at Pleasant Valley Road
14. Pleasant Valley Road (SR-49) at Missouri Flat Road
15. Pleasant Valley Road (SR-49) at China Garden Road
16. Pleasant Valley Road at Racquet Way
17. Missouri Flat Road at China Garden Road

Roadway Segments

1. Missouri Flat Road south of Halyard Lane
2. Missouri Flat Road south of China Garden Road
3. Pleasant Valley Road east of Missouri Flat Road
4. Pleasant Valley Road east of SR-49
5. Pleasant Valley Road west of Missouri Flat Road
6. SR-49 north of Pleasant Valley Road
7. SR-49 north of Truck Street
8. Diamond Springs Parkway, east of Missouri Flat Road

A Level of Service (LOS) analysis was conducted for the study facilities for the weekday AM and PM peak-hours for the following scenarios:

A. Existing (2010) Conditions
B. Existing (2010) plus Proposed Project Conditions
C. Interim (2020) Conditions
D. Interim (2020) plus Proposed Project Conditions
E. Cumulative (2030) Conditions
F. Cumulative (2030) plus Proposed Project Conditions

Significant findings of this study include:

- The project will divert traffic from SR-49 through Diamond Springs, and from Missouri Flat Road, north of Pleasant Valley Road, to Diamond Road (SR-49) and the proposed project.

- The proposed project will significantly reduce traffic on the segment of SR-49 between Missouri Flat Road and Diamond Road (SR-49). This roadway segment currently operates at LOS F.

- Per Caltrans' direction for the Year 2030 scenarios, more emphasis (than the Year 2010 scenarios) was placed on balancing study intersection volumes with the adjacent segment volumes. Although this approach was intended to minimize the effect of uncertainty associated with future land uses changes in the project area, it was determined to result in potentially artificially inflated volumes (in particular cross-street/minor volumes) and subsequent impact mitigations. The effect of this conservative approach was most noticeable along the Diamond Road (SR-49) corridor between Diamond Springs Parkway and Pleasant Valley Road (SR-49).

- The proposed project will result in an impact on the roadway segment of Diamond Road (SR-49), north of Pleasant Valley Road. Consistent with the County's *General Plan*, the impact on this roadway segment can be mitigated by upgrading the roadway to a Four-Lane, Multilane Highway for Year 2030 conditions. This impact can be mitigated to be less than significant.

- The proposed project will result in an impact on the roadway segment of Diamond Road (SR-49), north of Truck Street. Consistent with the County's *General Plan*, the impact on this roadway segment can be mitigated by upgrading the roadway to a Major 2-Lane Highway for Year 2030 conditions. This impact can be mitigated to be less than significant.

- The proposed project will result in an impact on the roadway segment of Diamond Springs Parkway, east of Missouri Flat Road. Consistent with the County's *General Plan*, the impact on this roadway segment can be mitigated by upgrading the roadway to a Divided, Four Lane Arterial for Year 2030 conditions. This impact can be mitigated to be less than significant.

- The addition of the proposed project results in a significant impact for one or more analysis scenarios at the following intersections: Diamond Springs Parkway @ Missouri Flat Road, Diamond Springs Parkway @ Throwita Way, Diamond Road (SR-49) @ Lime Kiln Road/Black Rice Road, and Diamond Road (SR-49) @ Pleasant Valley Road.

    - Diamond Springs Parkway @ Missouri Flat Road – The significant impact at this intersection for Interim (2020), and Cumulative (2030) Conditions can be mitigated with the addition of a northbound left-turn lane. This impact can be mitigated to be less than significant.
    - Diamond Springs Parkway @ Throwita Way – The significant impact at this intersection for Interim (2020) Conditions can be mitigated with the implementation of coordinated signal timings. The Cumulative (2030) Conditions impact is mitigated by the four-lane roadway segment mitigation. This impact can be mitigated to be less than significant.
    - Diamond Road (SR-49) @ Lime Kiln Road/Black Rice Road – The significant impact at this intersection for Existing (2010), Interim (2020), and Cumulative (2030) Conditions can be mitigated with the restriction of the left-turns and through movements out of both Lime Kiln Road and Black Rice Road. This impact can be mitigated to be less than significant.
    - Diamond Road (SR-49) @ Pleasant Valley Road – The significant impact at this intersection for Existing (2010) Conditions can be mitigated by optimizing the signal timing and allocation of green-time. Interim (2020) and Cumulative (2030) Conditions can be mitigated by the addition of an additional southbound left-turn lane. As a result, this impact can be mitigated to be less than significant.

- The peak-hour signal warrant is satisfied at the following intersections for one or more analysis scenario:
    - Diamond Road (SR-49) @ Lime Kiln Road/Black Rice Road (Years 2010, 2020, and 2030)
    - Pleasant Valley Road @ China Garden Road (Years 2010, 2020 and 2030)
    - Missouri Flat Road @ China Garden Road (Years 2010, 2020, and 2030)

- The 95th percentile queue lengths are expected to exceed available storage, both with and without the proposed project, for seven (7) of the twenty (20) selected locations. Improvements have been identified to accommodate anticipated vehicle queues.

- According to the County's 2007 *Accident Location Study*, one (1) study area site (i.e., intersections and roadway segments) in the vicinity of the proposed project was "previously identified, and [is] currently scheduled for improvement. It is anticipated that, upon completion, [this] improvement will substantially reduce the number of accidents."

Project mitigation measures are summarized in Table ES-1.

Table ES-1 – Mitigations Summary Matrix

#	Intersection / Roadway Segment	Scenario	Mitigation Type	Mitigation Measure
I7	Diamond Springs Pkwy @ Missouri Flat Rd	2010 + PP	LOS	None
			Queuing	Add additional WBTH lane (525-feet), add additional NBLT Lane (325-feet) and extend WBLT to 325-feet
		2020 + PP	LOS	Add additional NBLT lane
			Queuing	No additional mitigations from 2010 + PP (Queuing)
		2030 + PP	LOS	Add additional WBTH lane to 2020 + PP (LOS)
			Queuing	No additional mitigations from 2010 + PP (Queuing)
I8	Diamond Springs Pkwy @ Throwita Way	2010 + PP	LOS	None
			Queuing	Add additional WBTH lane (SR-49 through Throwita)
		2020 + PP	LOS	Impliment coordinated signal timings
			Queuing	No additional mitigations from 2010 + PP (Queuing)
		2030 + PP	LOS	Add additional EBTH and WBTH lane (per Roadway Segment LOS)
			Queuing	Extend EBLT to 175-feet
I9	Diamond Springs Pkwy @ Diamond Rd (SR-49)	2010 + PP	LOS	Add provision to allow NB U-Turn
			Queuing	Extend NB dual lefts to 350-feet
		2020 + PP	LOS	No additional mitigations from 2010 + PP (LOS)
			Queuing	No additional mitigations from 2010 + PP (Queuing)
		2030 + PP	LOS	No additional mitigations from 2010 + PP (LOS)
			Queuing	No additional mitigations from 2010 + PP (Queuing)
I12	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd	2010 + PP	LOS	Restrict EB/WB LT and TH (no traffic signal control)
			Queuing	No additional mitigations from 2010 + PP (LOS)
		2020 + PP	LOS	No additional mitigations from 2010 + PP
			Queuing	
		2030 + PP	LOS	No additional mitigations from 2010 + PP
			Queuing	
I13	Diamond Rd (SR-49) @ Pleasant Valley Rd	2010 + PP	LOS	Add provision to allow SB U-Turn
			Queuing	Add additional SBLT lane (525-feet) and optimize signal timing
		2020 + PP	LOS	Add additional SBLT lane and optimize signal timing
			Queuing	No additional mitigations from 2010 + PP (Queuing)
		2030 + PP	LOS	Optimize signal timing in addition of 2020 + PP (LOS)
			Queuing	No additional mitigations from 2010 + PP (Queuing)
R6	SR-49 north of Pleasant Valley Road	2010 + PP	LOS	None
			Queuing	None
		2020 + PP	LOS	None
			Queuing	None
		2030 + PP	LOS	Upgrade to Four-Lane, Multilane Highway
			Queuing	None
R7	SR-49 north of Truck Street	2010 + PP	LOS	None
			Queuing	None
		2020 + PP	LOS	None
			Queuing	None
		2030 + PP	LOS	Upgrade to Major Two-Lane Highway
			Queuing	None
R8	Diamond Springs Parkway east of Missouri Flat Road	2010 + PP	LOS	None
			Queuing	None
		2020 + PP	LOS	None
			Queuing	None
		2030 + PP	LOS	Upgrade to Divided, Four-Lane Arterial
			Queuing	None

Note: Each mitigation type (LOS and Queuing) builds on its respective previous mitigation measures.

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INTRODUCTION

This report documents the results of a traffic impact analysis completed for the proposed Diamond Springs Parkway project in Diamond Springs, California (the "proposed project" or "project"). The proposed project includes the construction of a new roadway facility connecting Missouri Flat Road with State Route 49 (SR-49). The purpose of this impact analysis is to identify potential environmental impacts to transportation facilities as required by the California Environmental Quality Act (CEQA) as well as other traffic operations parameters. This study was performed in accordance with the El Dorado County Department of Transportation's *Traffic Impact Study Protocols and Procedures* except where noted.

The remaining sections of this report document the proposed project, analysis methodologies, impacts and mitigation, and general study conclusions.

PROJECT DESCRIPTION

The proposed project consists of the construction of a new arterial roadway connection between Missouri Flat Road and SR-49, north of Pleasant Valley Road (SR-49). The project will initially be built with one travel lane in each direction, and is expected to be expanded to four lanes in the future. The proposed project also consists of related improvements to Diamond Road (SR-49), north of Pleasant Valley Road. The project location is shown in Figure 1 and the preliminary roadway geometry is shown in Figure 2. The following facilities are included in this analysis:

Intersections

1. Missouri Flat Road at Plaza Drive
2. Missouri Flat Road at US-50 Westbound Ramps
3. Missouri Flat Road at US-50 Eastbound Ramps
4. Missouri Flat Road at Mother Lode Drive
5. Missouri Flat Road at Forni Road
6. Missouri Flat Road at Golden Center Drive
7. Diamond Springs Parkway at Missouri Flat Road (constructed with proposed project)
8. Diamond Springs Parkway at Throwita Way (constructed with proposed project)
9. Diamond Springs Parkway at Diamond Road (SR-49) (constructed with proposed project)
10. Diamond Road (SR-49) at Truck Street
11. Diamond Road (SR-49) at Bradley Drive
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Roadway Segments

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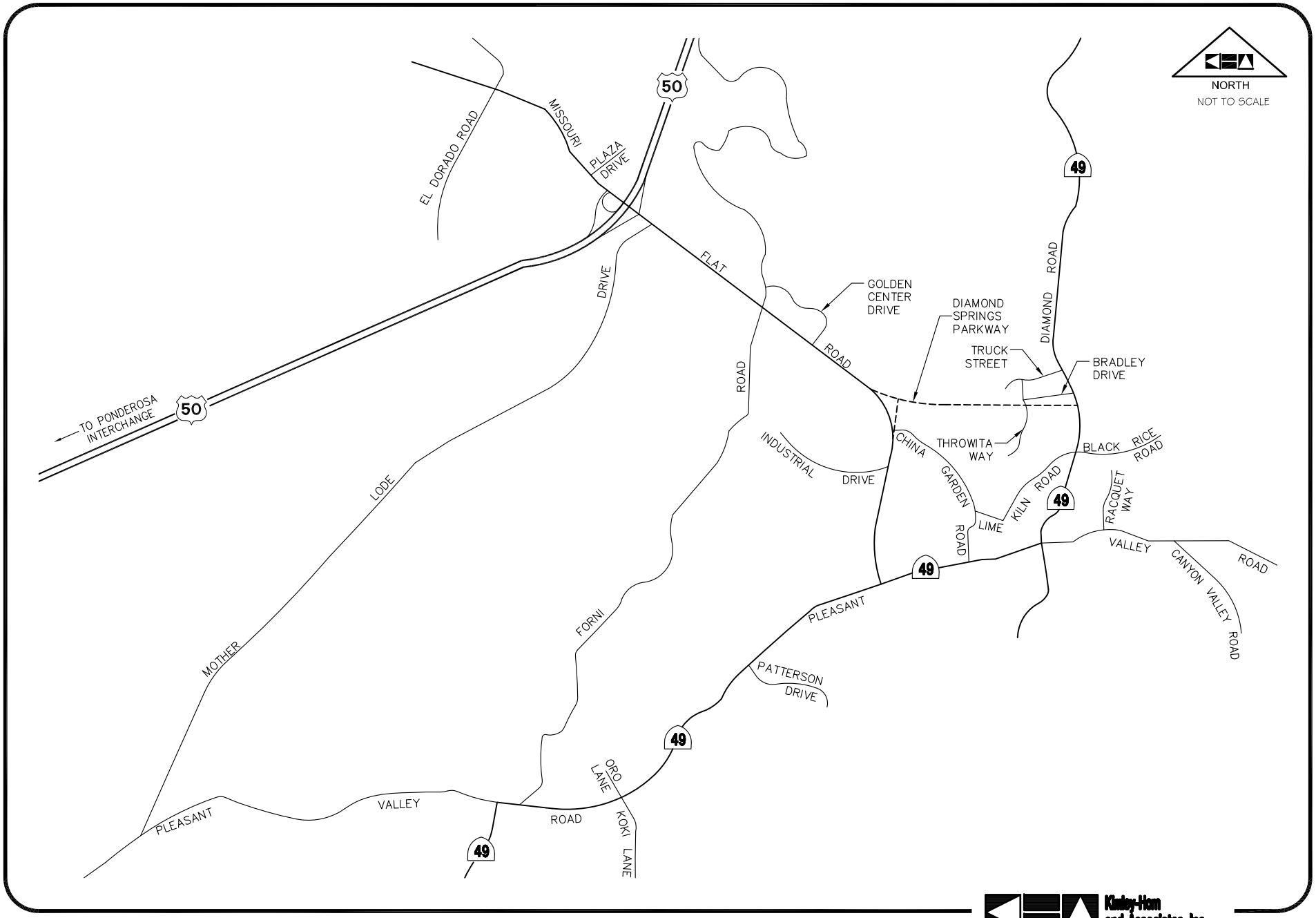
7. SR-49 north of Truck Street
8. Diamond Springs Parkway, east of Missouri Flat Road

Figure 3 illustrates the study facilities, existing traffic control, and existing lane configurations.



Kimley-Horn and Associates, Inc.

FIGURE 1

PROJECT VICINITY MAP

DIAMOND SRPINGS PARKWAY

EL DORADO COUNTY, CA

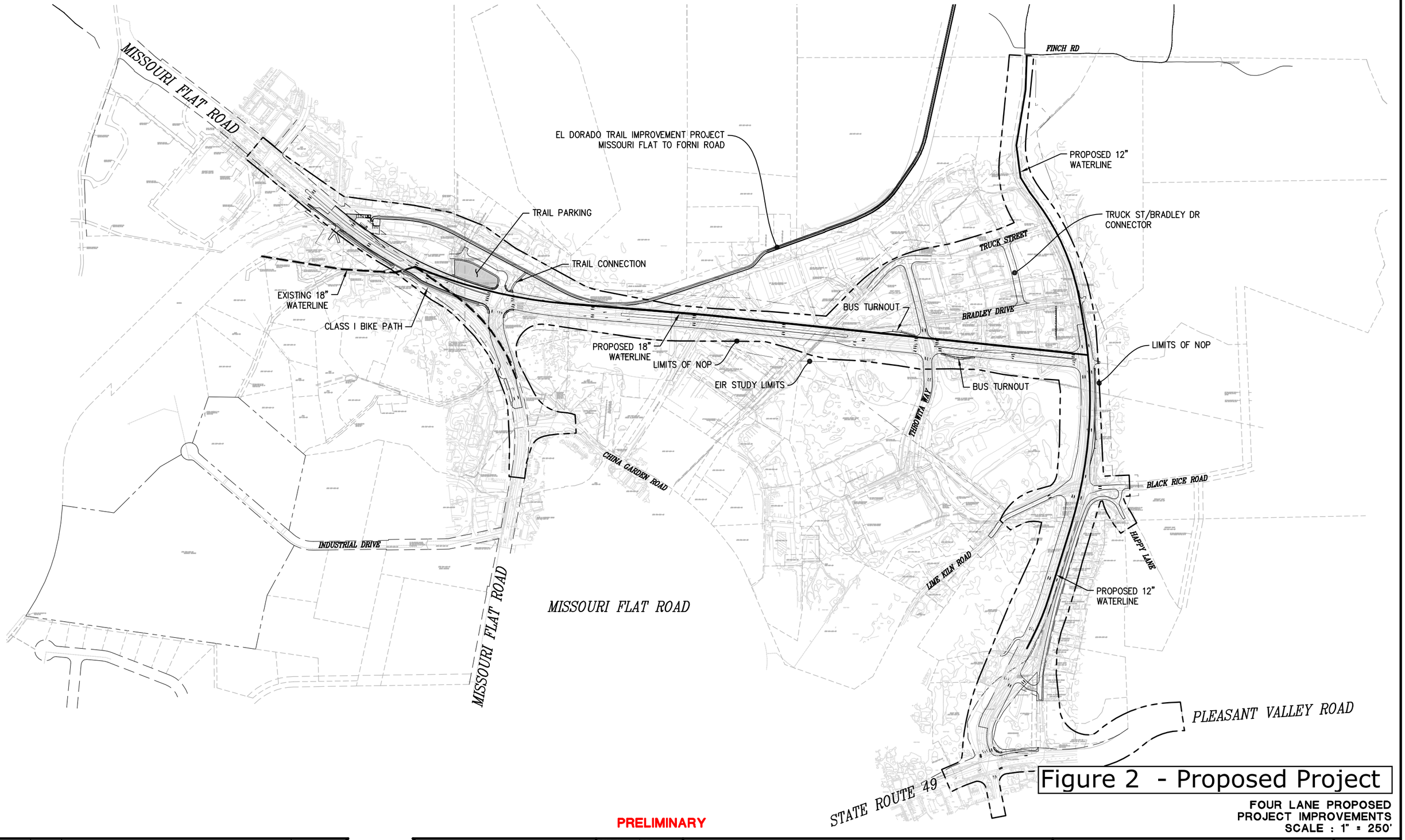


Figure 2 - Proposed Project

FOUR LANE PROPOSED
PROJECT IMPROVEMENTS
SCALE : 1" = 250'

PRELIMINARY

REVISION			
NUMBER	DATE	DESCRIPTION	BY

PREPARED UNDER THE SUPERVISION OF :

REGISTERED CIVIL ENGINEER

DATE:

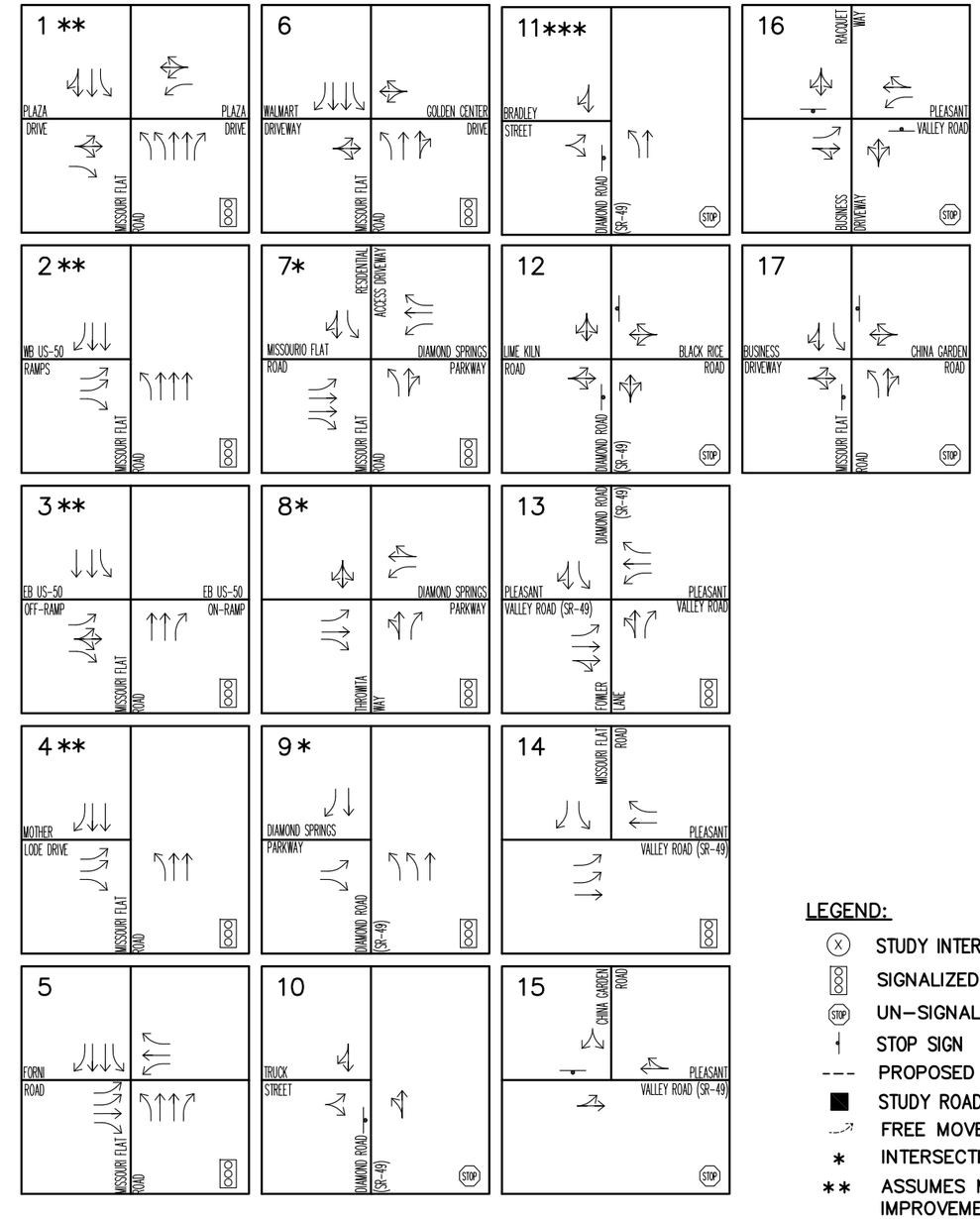
DESIGNED:	DRAWN: ARB
CHECKED: JPM	DATE: 10/21/09
ROAD NUMBER:	

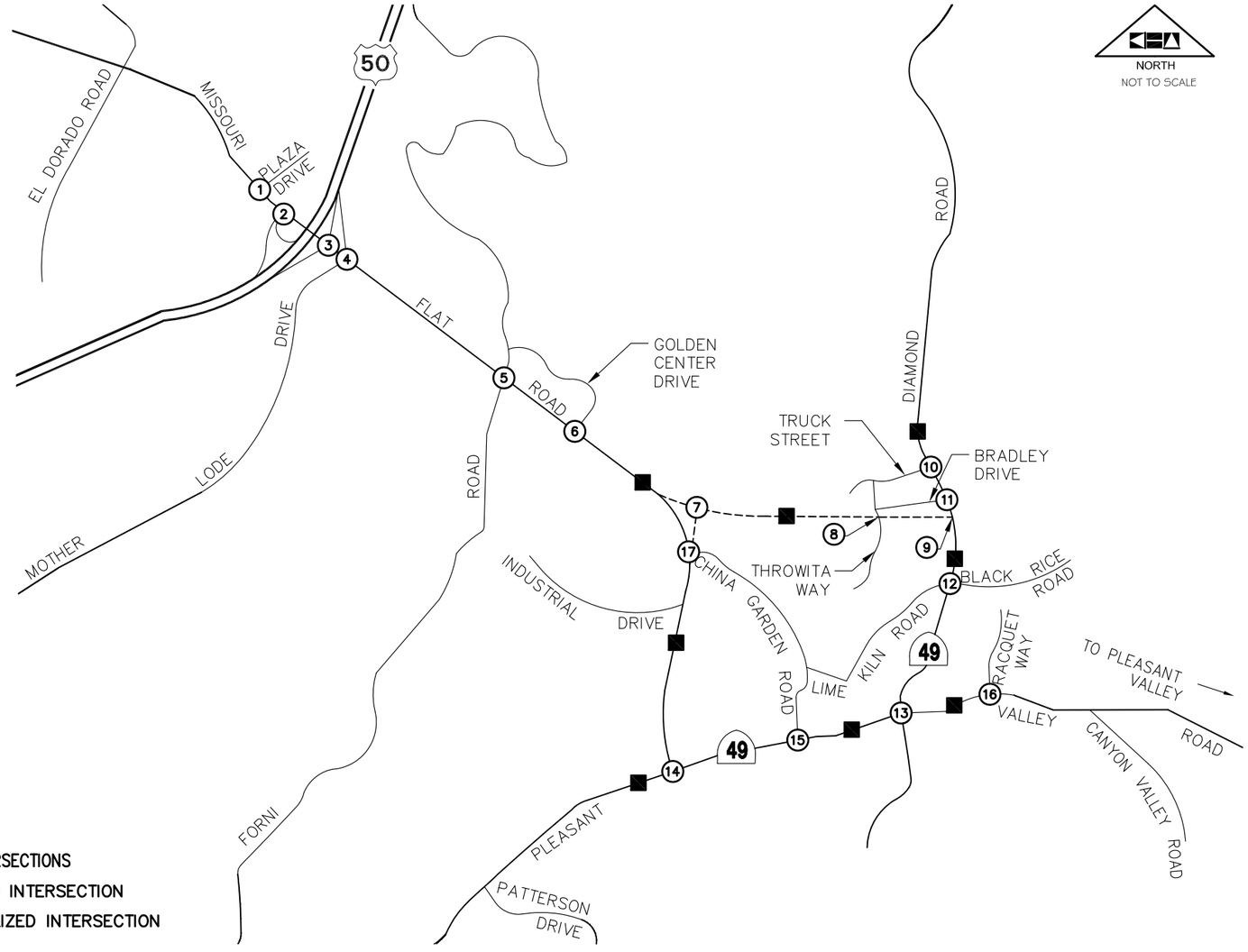
EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION

DIAMOND SPRINGS
PARKWAY

SHEET
EX 3-5a
1 OF 2
W.O. No. 72334

FOR REDUCED PLANS
0 1 2
ORIGINAL SCALE IS IN INCHES
Drawing name: C:\Civil 3D Projects\72334 Diamond Springs Pkwy\CADD Files\Exhibits\Environmental\Exhibit 3-5.dwg Layout Tab: Exhibit 3-5a Oct 26,2009 - 10:27am Abishop





LEGEND:

- (X) STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- (STOP) UN-SIGNALIZED INTERSECTION
- STOP SIGN
- --- PROPOSED ROADWAY
- ■ STUDY ROADWAY SEGMENT
- FREE MOVEMENT
- * INTERSECTION FOR PLUS PROJECT SCENARIOS ONLY
- ** ASSUMES MISSOURI FLAT INTERCHANGE PHASE 1A IMPROVEMENTS ARE IN PLACE
- *** LEFT TURNS RESTRICTED WITH THE ADDITION OF THE PROPOSED PROJECT.

Kimley-Horn and Associates, Inc.

FIGURE 3

PROJECT LOCATION, STUDY INTERSECTIONS, AND EXISTING LANE GEOMETRY

DIAMOND SRPINGS PARKWAY
EL DORADO COUNTY, CA

PROJECT AREA ROADWAYS

The following are descriptions of the primary roadways in the vicinity of the project.

US Route 50 (US-50) is an east-west freeway located north of the project site. Generally, US-50 serves all of El Dorado County's major population centers and provides connections to Sacramento County to the west and the State of Nevada to the east. Primary access to the project site from US-50 is provided at the Missouri Flat Road interchange. At the time of this study, the US-50 interchange with Missouri Flat Road was under construction to reconstruct the interchange configuration. The analysis scenarios included in this evaluation include discussions regarding the assumed status of the modifications to this interchange for each scenario. Within the general project area, US-50 currently serves approximately 55,000 vehicles per day[1] (vpd) with two travel lanes in each direction.

The interchange reconstruction will occur in multiple phases with the first two phases (Phase 1A and Phase 1B) anticipated to be completed by 2010 and 2020, respectively. Phase 1A includes widening the US-50 overcrossing, widening of Missouri Flat Road and Mother Lode Drive, and modifying the US-50 off-ramps. Phase 1B will modify the eastbound on-ramp and reconfigure the westbound ramps to eliminate the loop off-ramp. Phase 2 will result in the interchange being reconfigured to be a single-point urban interchange. Per the assumptions letter previously submitted to the County[2], this study assumes the Phase 1A[3] improvements will be in place for the Existing (2010) analysis scenarios, Phase 1B[3] improvements will be in place for the Interim (2020) Conditions, and the Phase 2 improvements will be in place for the Cumulative (2030) Conditions.

State Route 49 (SR-49) is a two-lane State highway located at the eastern terminus of the proposed project. SR-49 is named Diamond Road between the City of Placerville to the north, and Pleasant Valley Road to the south of the proposed project. SR-49 shares the Pleasant Valley Road alignment to the west of the project area. In the vicinity of the proposed project, SR-49 serves approximately 6,200 vpd[4].

Missouri Flat Road is generally a north-south arterial roadway that provides a connection between SR-49 and US-50, and is located at the western terminus of the proposed project. In the immediate vicinity of the project site, this roadway provides one travel lane in each direction. Missouri Flat Road expands to provide two lanes in each direction between Golden Center Drive and US-50. The portion of the roadway in the area of the US-50 interchange is being reconstructed with the improvements to the interchange. Missouri Flat Road accommodates approximately 23,100 vpd[5] near the project site.

Pleasant Valley Road is generally an east-west collector roadway located south of the proposed project that provides a connection between Mother Lode Drive and Diamond Road (SR-49). Pleasant Valley Road becomes State Route-49 between the Town of El Dorado and Diamond Road. In the vicinity of the proposed project, Pleasant Valley Road accommodates approximately 19,100 vpd[6] with one lane in each direction.

China Garden Road is a minor, two-lane roadway that connects Missouri Flat Road with Pleasant Valley Road (SR-49) south of the project site.

[1] Caltrans Traffic and Vehicle Data Systems Unit, http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2006all.htm.
[2] *Diamond Springs Parkway – Traffic Analysis Assumptions*, Kimley-Horn and Associates, Inc., December 19, 2007.
[3] *Missouri Flat Road Phase 1A & 1B Improvements*, El Dorado County Department of Transportation, November 29, 2005.
[4] Caltrans Traffic and Vehicle Data Systems Unit, http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2006all.htm.
[5] El Dorado County, Department of Transportation, http://www.co.el-dorado.ca.us/DOT/trafficcounts.asp.
[6] Kimley-Horn and Associates, Inc., April 2008.

ASSESSMENT OF PROPOSED PROJECT

The proposed project includes only construction of a new roadway facility. Therefore, the proposed project, itself, will not generate new traffic but will result in modified traffic patterns in the general project area. The addition of the proposed project to the roadway network is anticipated to result in a diversion of traffic from Pleasant Valley Road (SR-49), between Missouri Flat Road and Diamond Road (SR-49), to Diamond Road (SR-49) and the proposed project. As a result of the addition of the project, traffic volumes on Missouri Flat Road, between Pleasant Valley Road and the proposed project, and on Pleasant Valley Road, between Missouri Flat Road and Diamond Road, will decrease. In contrast, traffic on Diamond Road (SR-49), between Pleasant Valley Road and the proposed project, will increase as a result of the proposed project.

TRAFFIC IMPACT ANALYSIS METHODOLOGY

Analysis of significant environmental impacts to transportation facilities is based on the concept of Level of Service (LOS). The LOS of a facility is a qualitative measure used to describe operational conditions. LOS ranges from A (best), which represents minimal delay, to F (worst), which represents heavy delay and a facility that is operating at or near its functional capacity. Intersection LOS for this study was determined using methods defined in the *Highway Capacity Manual, 2000* (HCM) using appropriate traffic analysis software.

Intersections

The HCM includes procedures for analyzing two-way stop controlled (TWSC), all-way stop controlled (AWSC), and signalized intersections. The TWSC procedure defines LOS as a function of average control delay for each minor street approach movement. Conversely, the AWSC and signalized intersection procedures define LOS as a function of average control delay for the intersection as a whole. Table 1 presents intersection LOS definitions as defined in the HCM.

Table 1 – Intersection Level of Service Criteria

Level of Service (LOS)	Un-Signalized	Signalized
	Average Control Delay* (sec/veh)	Control Delay per Vehicle (sec/veh)
A	≤ 10	≤ 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
* Applied to the worst lane/lane group(s) for TWSC

For future scenarios and locations where existing signal timing was unavailable since (i.e. US-50/Missouri Flat Interchange and intersections on the proposed project), the cycle lengths and allocation of green time was optimized using *Synchro v.7* software. Furthermore, this study reports analysis of the peak 15 minute period of each peak hour.

For this study, the eastbound and westbound off-ramp intersections at the US-50 interchange, as well as the intersections of Missouri Flat Road with Plaza Drive and Mother Lode Drive, are assumed to be coordinated. All other signals were assumed to be uncoordinated. Based on previous discussions with Caltrans staff, the timing at existing signals was not optimized with the addition of the proposed project.

It should be noted that this study conservatively assumes a saturation flow rate of 1,700 vph, and a peak-hour flow rate of 0.90 for all analysis scenarios. In addition, the following assumptions were assumed for the heavy vehicle percentages:

- All Caltrans intersection approaches: 2010: 6%, 2020: 5%, 2030: 3%
- County roads serving industrial uses: same as Caltrans' approaches
- County roads not serving industrial uses: 2% for all years

These assumptions result in higher intersection delays than would be calculated using the County's standard assumptions for the above parameters.

Roadway Segments

Roadway segment LOS definitions are based on *El Dorado County Plan EIR, Traffic and Circulation, May 2003*. Table 2 presents the applicable roadway segment LOS definitions.

Table 2 – Roadway Segment Level of Service Criteria

Operational Class	Peak-Hour LOS Capacity Threshold (vehicles per hour)				
	A	B	C	D	E
Minor Two-Lane Highway	90	200	680	1,410	1,740
Major Two-Lane Highway	120	290	790	1,600	2,050
Four-Lane, Multilane Highway	1,070	1,760	2,530	3,280	3,650
Two-Lane Arterial	-	-	970	1,760	1,870
Four Lane Arterial, Undivided	-	-	1,750	2,740	2,890
Four Lane Arterial, Divided	-	-	1,920	3,540	3,740
Source: Adapted from *El Dorado County General Plan EIR*					

For this analysis, the PM peak-hour traffic volumes were considered when determining the LOS of the roadway segments because the PM peak-hour is typically the highest volume of traffic during the typical weekday.

Analysis Scenarios

The analysis scenarios for this study were selected based on Caltrans' requirements due to the project intersecting SR-49. These requirements require evaluation of the project's opening day, which is assumed to be 2010. Caltrans also requires evaluation of the project after a 10-year and 20-year design life.

The LOS analysis was conducted for the study facilities for the weekday AM and PM peak-hours for the following scenarios:

A. Existing (2010) Conditions
B. Existing (2010) plus Proposed Project Conditions
C. Interim (2020) Conditions
D. Interim (2020) plus Proposed Project Conditions
E. Cumulative (2030) Conditions
F. Cumulative (2030) plus Proposed Project Conditions

Traffic Volume Development

Traffic volumes used in this analysis were developed in consultation with the County and Caltrans, and were subsequently accepted by both agencies. The following is a summary of the methodology used to determine analysis volumes for the proposed project:

a. Year 2007 Peak-Hour Intersection Turn Movement Volumes

Traffic volumes representing year 2007 conditions were compiled from a variety of sources as permitted by County procedures. These sources include a representative of the County[7], County staff[8], and new AM and PM peak period traffic counts performed for five (5) of the study intersections in December 2007 and January 2008. These new counts were conducted between the hours of 6:30 a.m. – 9:30 a.m., and 3:30 p.m. to 6:30 p.m. New 24-hour roadway segment traffic counts were conducted in December 2007 and January 2008. Consistent with County procedures, traffic volumes that were not collected in 2007 were increased to represent 2007 conditions using a straight line growth rate to year 2025 projected model volumes.

b. Year 2007 plus Project Roadway Segment Volumes

Development of intersection and roadway segment volumes with the addition of the proposed project required predicting a change of area traffic patterns. Year 2007 plus Project volumes were derived by applying a negative growth rate to Year 2025 plus Project volumes. The growth rate was derived using roadway segment volumes for 2007 No Project volumes and Year 2025 No Project volumes obtained from the County's travel demand model.

In general, year 2025 volumes, both with and without the project, were derived by modifying the roadway network in the County's travel demand model[9]. In several cases, the 2025 volumes obtained from the model were increased because the actual 2007 volumes in the model were higher than would have been predicted by the 2025 model output. This approach results in a more conservative analysis of future conditions.

Growth rates resulting from the 2007 No Project volumes and 2025 No Project volumes were then calculated for each study area roadway segment, except for the proposed project. These growth rates were then refined based on input from the County and Caltrans. The growth rates were then applied to the Year 2025 No Project segment volumes to obtain Year 2007 No Project segment volumes.

For the proposed project, an average growth rate was calculated from the following four roadways:

- Missouri Flat Road, south of Halyard Lane
- Pleasant Valley Road, west of Missouri Flat Road
- Pleasant Valley Road, east of SR-49 (Diamond Road)
- SR-49, north of Truck Street

These segments were selected for two primary reasons. First, growth on these segments represents a broad area around the project site. Second, traffic volumes on these segments are relatively unaffected by the construction of the proposed project.

c. Year 2030 Roadway Segment Volumes

Year 2030 roadway segment volumes were derived by applying a linear growth rates to year 2025 volumes. The growth rates were determined from year 1998 (no project) and year 2025 No Project traffic model output. The growth rate was then applied to year 2025 No Project and Year 2025 Plus Project traffic volumes to determine Year 2030 No Project and Year 2030 Plus Project volumes, respectively. As noted for the Year 2007 Plus Project volumes, a growth rate was calculated for each study segment except the proposed project. The growth rate for the proposed project is the average of the rates for the four segments noted for Year 2007 Plus Project roadway segment volumes.

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[7] Dowling Associates, Inc., ftp://ftp.dowlinginc.com.

[8] Email from Jennifer Maxwell, El Dorado County DOT, September 17, 2008.

[9] First, a link of the "MF Connector" east of SR-49 was removed from the network in the model to determine Year 2025 Plus Project volumes. Second, in addition to the link east of SR-49 being removed, the link of the "MF Connector" (Diamond Springs Parkway) between Missouri Flat Road and SR-49 was also removed to determine Year 2025 No Project volumes.

d. Year 2010 and Year 2020 Roadway Segment Volumes
Year 2010 and year 2020 volumes were derived from a linear growth rate calculated from year 2007 and year 2030 roadway segment traffic volumes. The growth rates for each existing roadway were calculated based on volumes for those roadways, except for three segments of SR-49 (Pleasant Valley east and west of Missouri Flat Road, and Diamond Road north of Pleasant Valley Road). The rates for those segments were increased to more closely reflect rates based on the 1998 and 2025 model outputs. Volumes for the proposed project were determined using a growth rate that is the average of the four roadways listed for Year 2007 Plus Project volumes. The growth rates were then applied to year 2007 volumes to derive year 2010 and year 2020 volumes.

e. *Year 2010 PM Peak-Hour Intersection Turn Movement Volumes*
Year 2010 No Project and Year 2010 Plus Project intersection turn movement volumes were determined based on several factors. These factors included the roadway segment volumes, locations of driveways between intersections, and the effect of the proposed project on traffic circulation. Turn movement volumes for the intersections at and near the US-50 interchange with Missouri Flat Road (intersections between and including Plaza Drive and Mother Lode Drive) were obtained from the County[10]. At locations where there are driveways between adjacent intersections, the volumes at those intersections were adjusted to reasonably approximate the effect of the driveways. In some cases, the intersection volumes were adjusted to approximate the volume of the adjacent roadway segments. This method of balancing the volumes, as well as the resulting 2010 volumes, was accepted by the County and Caltrans.

f. Year 2030 PM Peak-Hour Intersection Turn Movement Volumes
Year 2030 No Project and Year 2030 Plus Project intersection turn movement volumes were determined in a manner similar to that used for the Year 2010 intersection volumes. However, as directed by Caltrans for the 2030 volumes, more emphasis was placed on balancing the intersection volumes with the adjacent segment volumes. Although this assumption minimizes the effect of uncertainty associated with future land uses changes in the project area, it was determined to result in potentially artificially inflated volumes and subsequent impact mitigations. For the intersections at and near the Missouri Flat Road interchange with US-50 (intersections between and including Plaza Drive and Mother Lode Drive), year 2030 volumes were calculated using a growth rated derived from the year 1998 and year 2025 outputs from the County's travel demand model. That growth rate was then applied to the year 2010 turn movement volumes at those intersections.

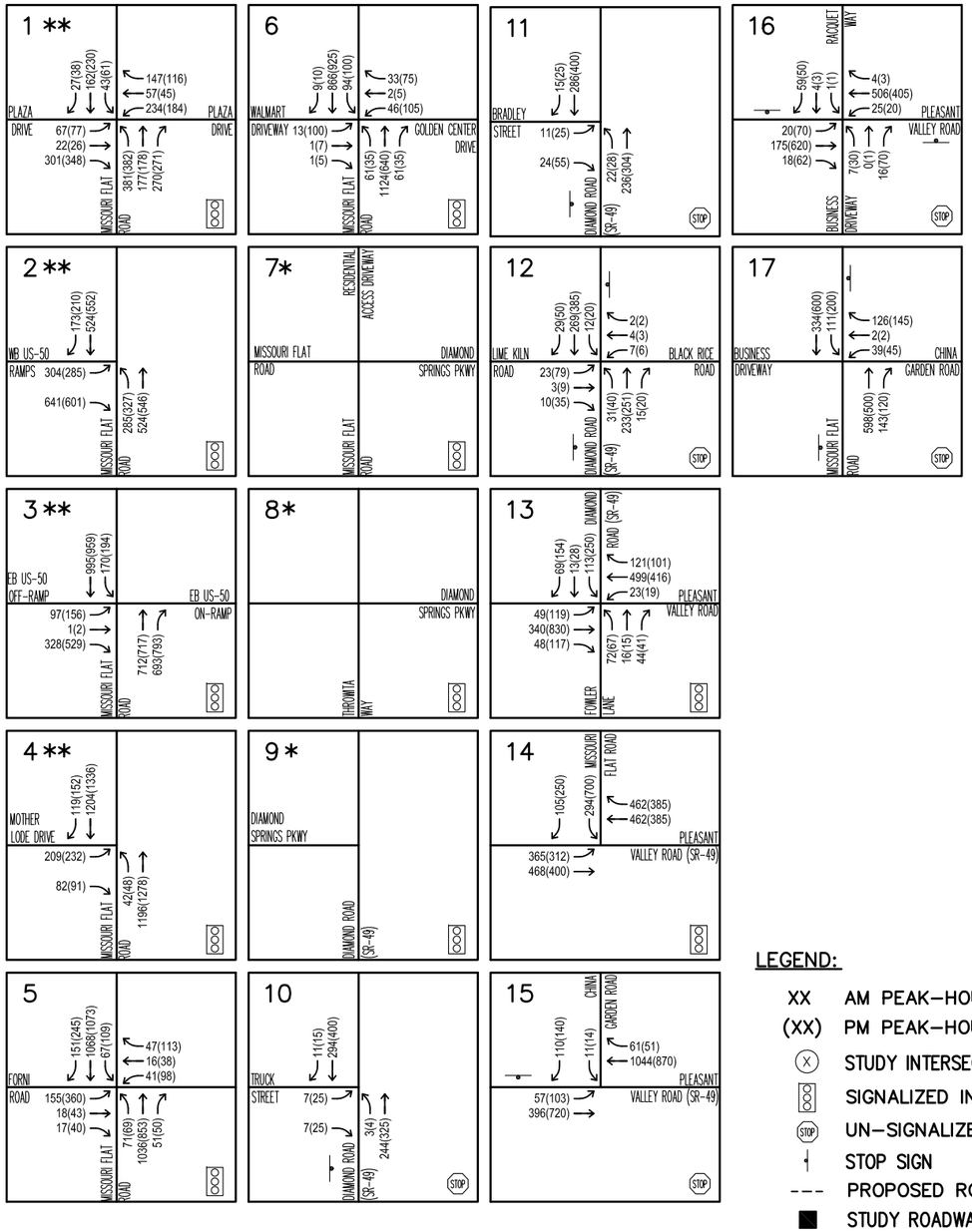
g. Year 2020 PM Peak-Hour Intersection Turn Movement Volumes
Year 2020 No Project and Year 2020 Plus Project intersection volumes were calculated assuming a straight line growth rate between the Year 2010 intersection volumes and the Year 2030 intersection volumes.

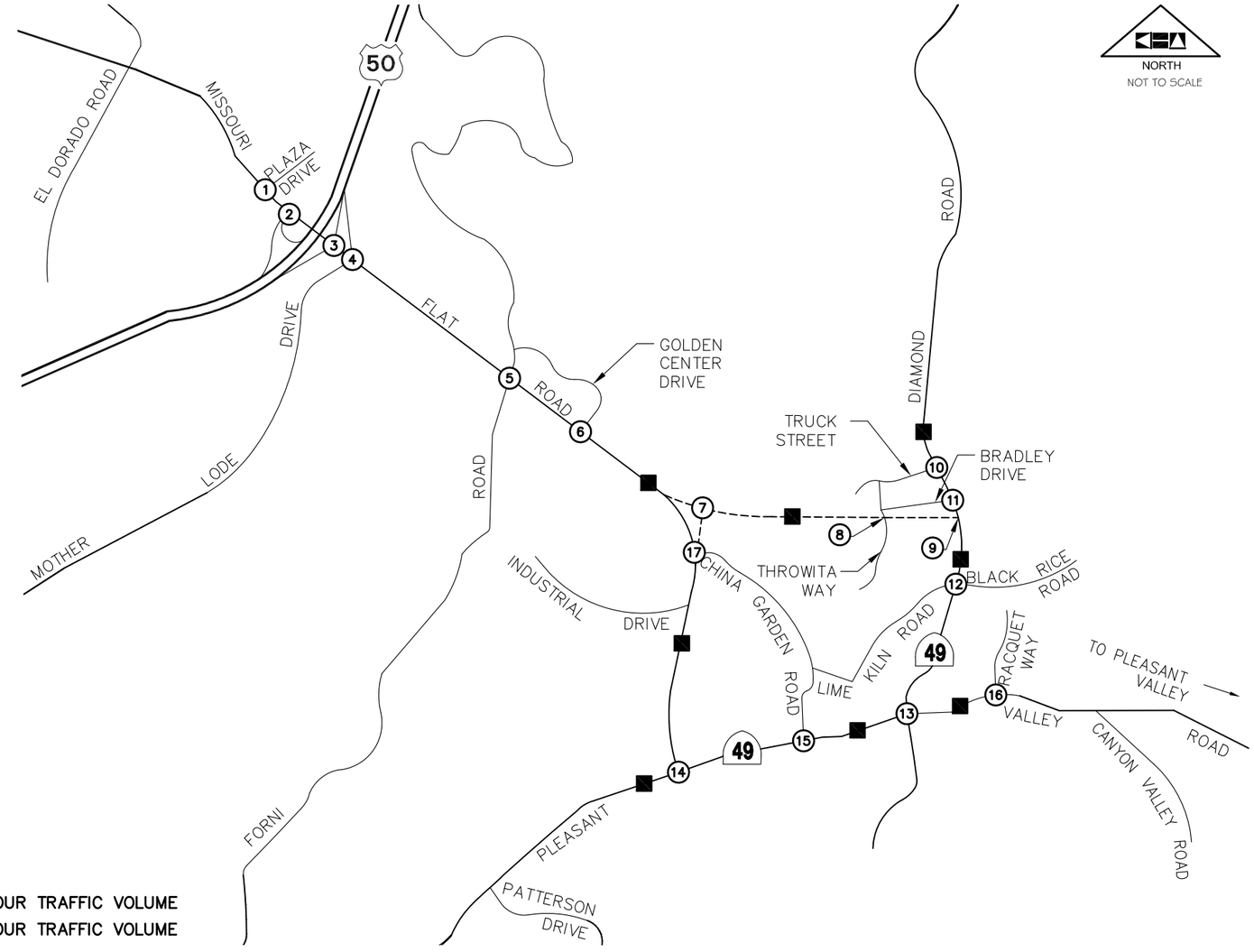
h. *AM Peak-Hour Turn Movement Volumes*
The AM peak-hour turn movement volumes for the year 2010, year 2020, and year 2030 conditions were calculated by applying a factor to the corresponding PM peak hour turn movement volumes. This factor was determined based by considering the existing 2007 traffic volumes and the anticipated effects of the proposed project.

EXISTING (2010) CONDITIONS

Utilizing the previously defined Existing (2010) volumes, levels of service were determined at the study facilities for this analysis scenario. The existing AM and PM peak-hour turn movement volumes are presented in Figure 4, and the traffic count data sheets are provided in Appendix A. Analysis worksheets for this scenario are provided in Appendix B.

[10] Email from Jennifer Maxwell, El Dorado County DOT, September 17, 2008.





LEGEND:

XX	AM PEAK–HOUR TRAFFIC VOLUME
(XX)	PM PEAK–HOUR TRAFFIC VOLUME
(X)	STUDY INTERSECTIONS
	SIGNALIZED INTERSECTION
STOP	UN–SIGNALIZED INTERSECTION
	STOP SIGN
---	PROPOSED ROADWAY
■	STUDY ROADWAY SEGMENT
*	INTERSECTION FOR PLUS PROJECT SCENARIOS ONLY
**	ASSUMES MISSOURI FLAT INTERCHANGE PHASE 1A IMPROVEMENTS ARE IN PLACE

Kimley-Horn and Associates, Inc.

FIGURE 4

EXISTING (2010) PEAK–HOUR TRAFFIC VOLUMES

DIAMOND SRPINGS PARKWAY
EL DORADO COUNTY, CA

Intersections
Table 3 presents the peak-hour intersection operating conditions for this analysis scenario.

Table 3 – Existing (2010) Intersection Levels of Service

#	Intersection	Traffic Control	AM Peak-Hour		PM Peak-Hour	
			Delay (seconds)	LOS	Delay (seconds)	LOS
1	Missouri Flat Rd @ Plaza Dr	Signal	28.6	C	30.2	C
2	Missouri Flat Rd @ US-50 WB Ramps	Signal	18.0	B	20.1	C
3	Missouri Flat Rd @ US-50 EB Ramps	Signal	13.2	B	21.7	C
4	Missouri Flat Rd @ Mother Lode Dr	Signal	10.1	B	12.3	B
5	Missouri Flat Rd @ Forni Rd	Signal	16.3	B	26.8	C
6	Missouri Flat Rd @ Golden Center Dr	Signal	12.0	B	16.6	B
7	Diamond Springs Pkwy @ Missouri Flat Rd	*To be constructed with Proposed Project*				
8	Diamond Springs Pkwy @ Throwita Way	*To be constructed with Proposed Project*				
9	Diamond Springs Pkwy @ Diamond Rd (SR-49)	*To be constructed with Proposed Project*				
10	Diamond Rd (SR-49) @ Truck St	TWSC*	11.8 (EB)	B	14.6 (EB)	B
11	Diamond Rd (SR-49) @ Bradley Dr	TWSC*	11.6 (EB)	B	14.6 (EB)	B
12	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd	TWSC*	15.1 (WB)	C	26.9 (EB)	D
13	Diamond Rd (SR-49) @ Pleasant Valley Rd	Signal	21.2	C	29.3	C
14	Pleasant Valley Rd (SR-49) @ Missouri Flat Rd	Signal	20.8	C	53.8	D
15	Pleasant Valley Rd (SR-49) @ China Garden Rd	TWSC*	56.0 (SB)	F	71.1 (SB)	F
16	Pleasant Valley Rd @ Racquet Way	TWSC*	13.1 (SB)	B	19.5 (NB)	C
17	Missouri Flat Rd @ China Garden Rd	TWSC*	23.3 (WB)	C	31.6 (WB)	D

* Control delay for worst minor approach (worst minor movement) for TWSC.

As indicated in Table 3, the study intersections operate from LOS B to LOS F during the AM and PM peak-hours.

Roadway Segments
Table 4 presents the peak-hour roadway segment operating conditions for this analysis scenario.

Table 4 – Existing (2010) Roadway Segment Levels of Service

#	Roadway Segment	Roadway Classification	PM Peak-Hour	
			Volume (vph)	LOS
1	Missouri Flat Road south of Halyard Lane	2 Lane Arterial	1,271	D
2	Missouri Flat Road south of China Garden Road	2 Lane Arterial	1,647	D
3	Pleasant Valley Road west of Missouri Flat Road	Minor 2 Lane Hwy	1,347	D
4	Pleasant Valley Road east of Missouri Flat Road	Minor 2 Lane Hwy	1,833	F
5	Pleasant Valley Road east of Diamond Road (SR-49)	Minor 2 Lane Hwy	1,237	D
6	SR-49 north of Pleasant Valley Road	Minor 2 Lane Hwy	697	D
7	SR-49 north of Truck Street	Minor 2 Lane Hwy	856	D
8	Diamond Springs Parkway east of Missouri Flat Road	2 Lane Arterial	N/A	

As indicated in Table 4, the study roadway segments operate at LOS D or LOS F during the PM peak-hour.

EXISTING (2010) PLUS PROPOSED PROJECT CONDITIONS

Utilizing the previously defined Existing (2010) plus Proposed Project volumes, levels of service were determined at the study facilities with the addition of the proposed project. As indicated in Figure 3, for this and all subsequent "plus project" scenarios, left-turns are restricted at the Diamond Road (SR-49) intersection with Bradley Drive to facilitate the anticipated operations at the adjacent, new intersection with Diamond Springs Parkway. The AM and PM peak-hour turn movement volumes for this analysis scenario are presented in Figure 5. Analysis worksheets for this scenario are provided in Appendix C.

Intersections
Table 5 presents the peak-hour intersection operating conditions for this analysis scenario. As indicated in Table 5, the study intersections operate from LOS B to LOS F during the AM and PM peak-hours.

It should be noted the construction of the Proposed Project is not expected to change traffic volumes at a number of existing intersections.

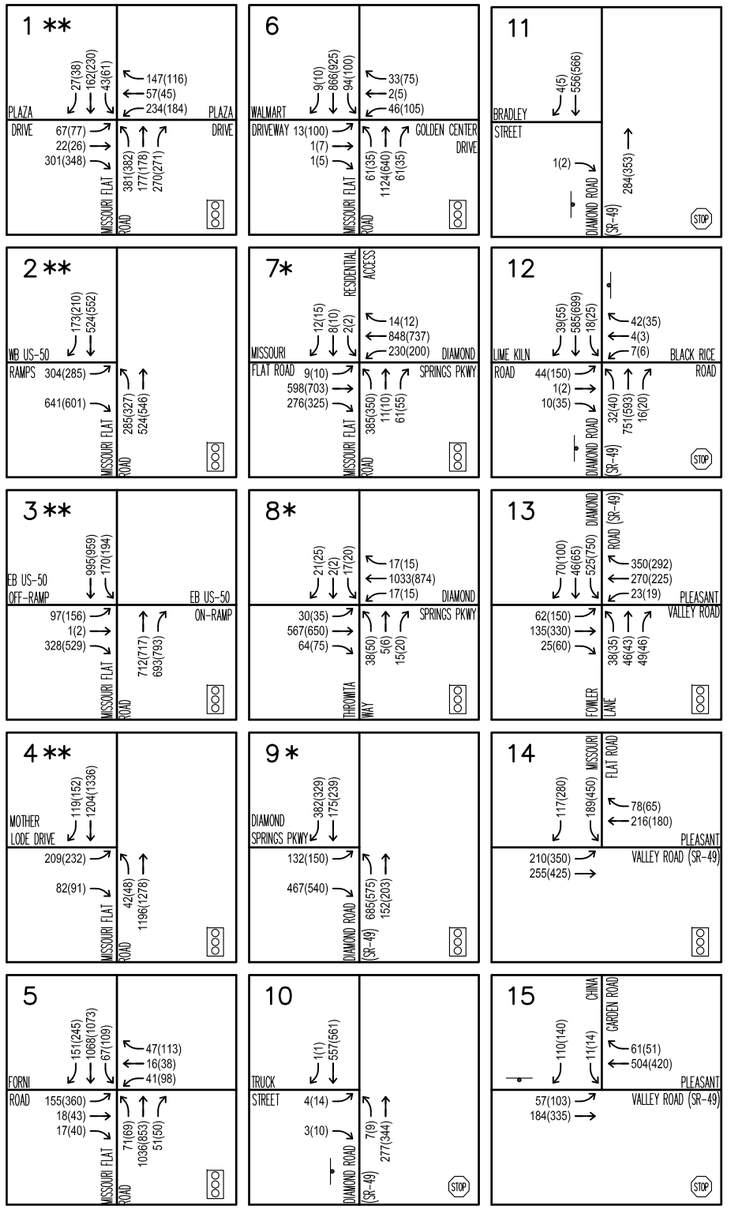
Roadway Segments
Table 6 presents the peak-hour roadway segment operating conditions for this analysis scenario. As indicated in Table 6, the study roadway segments operate from LOS C to LOS F during the PM peak-hour.

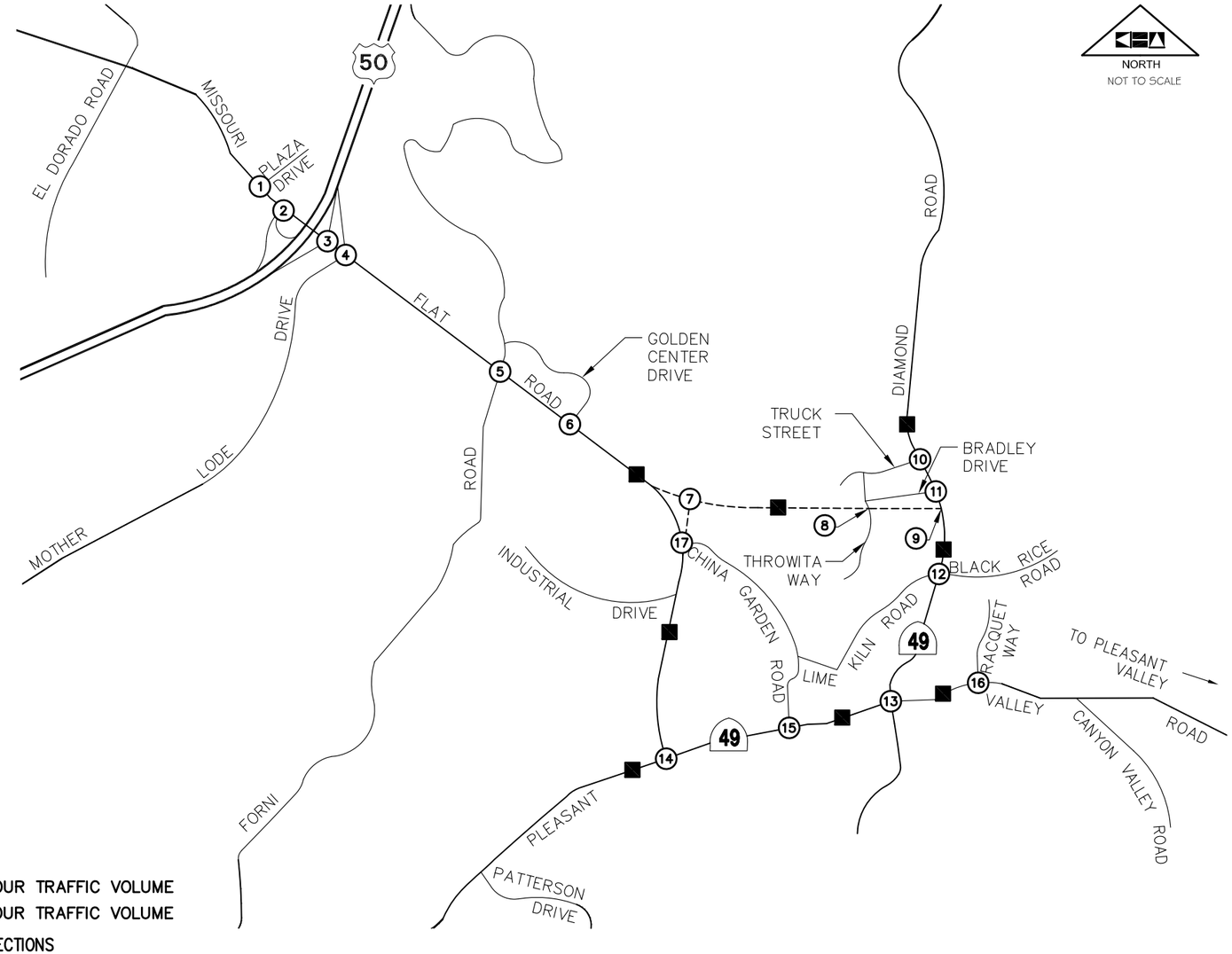
INTERIM (2020) CONDITIONS

For this scenario, Phase 1B of the Missouri Flat Road interchange at US-50 is assumed to be completed. The reconfigured interchange (Phase 1B) is shown is Figure 6. For this and later scenarios, additional traffic from the Traffic Analysis Zone (TAZ) 186 was also added to the network. TAZ 186 is located north of US-50 and a proposed development in this TAZ has been found to generate more trips than the model output assumes. The additional traffic from TAZ 186 was added to the previously defined Interim (2020) volumes, and levels of service were determined at the study facilities. The AM and PM peak-hour turn movement volumes for this analysis scenario are presented in Figure 7. Analysis worksheets for this scenario are provided in Appendix D.

Intersections
Table 7 presents the peak-hour intersection operating conditions for this analysis scenario. As indicated in Table 7, the study intersections operate from LOS B to LOS F during the AM and PM peak-hours.

Roadway Segments
Table 8 presents the peak-hour roadway segment operating conditions for this analysis scenario. As indicated in Table 8, the study roadway segments operate from LOS D to LOS F during the PM peak-hour.





LEGEND:

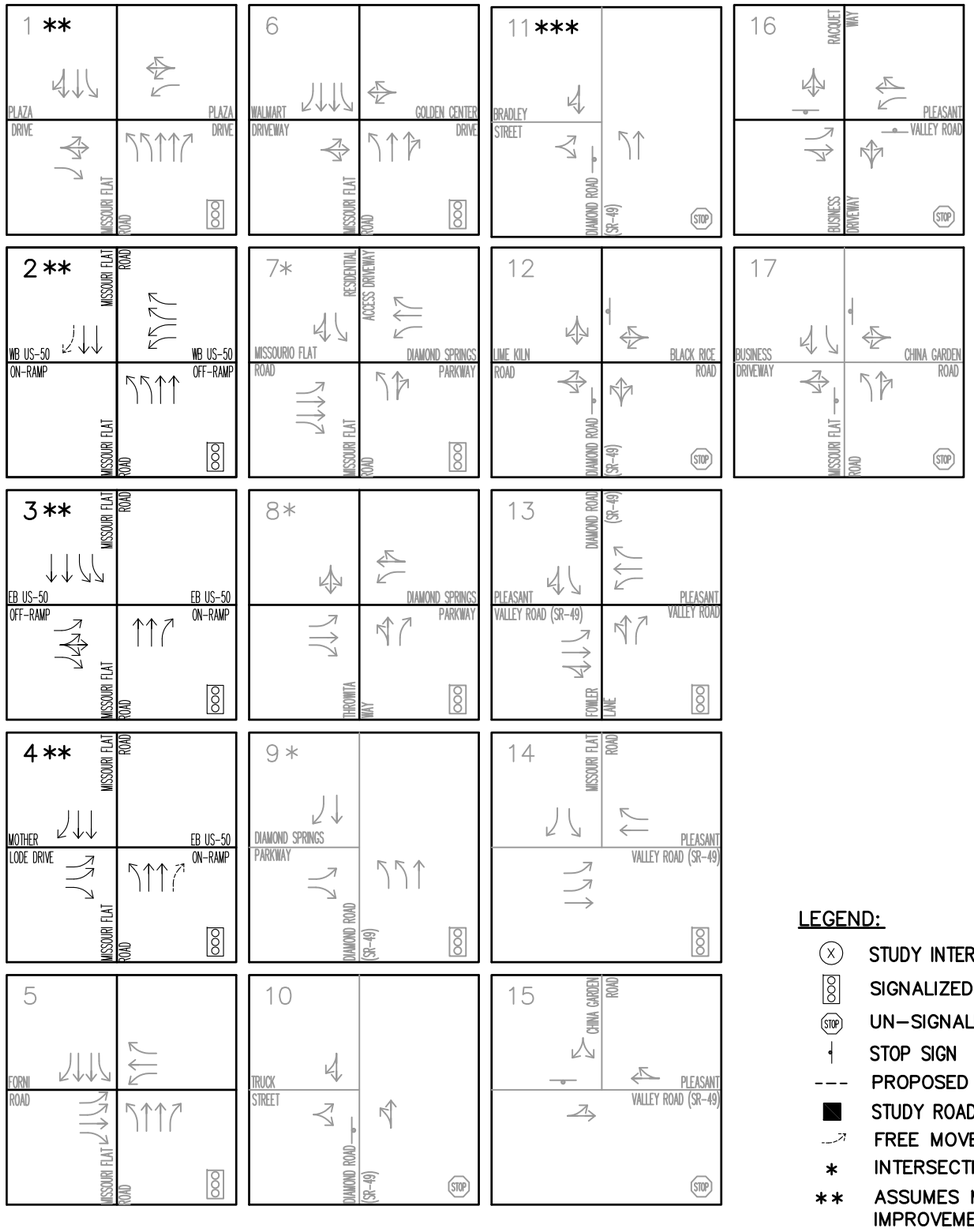
- XX AM PEAK–HOUR TRAFFIC VOLUME
- (XX) PM PEAK–HOUR TRAFFIC VOLUME
- (X) STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP UN–SIGNALIZED INTERSECTION
- STOP SIGN
- --- PROPOSED ROADWAY
- ■ STUDY ROADWAY SEGMENT
- * INTERSECTION FOR PLUS PROJECT SCENARIOS ONLY
- ** ASSUMES MISSOURI FLAT INTERCHANGE PHASE 1A IMPROVEMENTS ARE IN PLACE

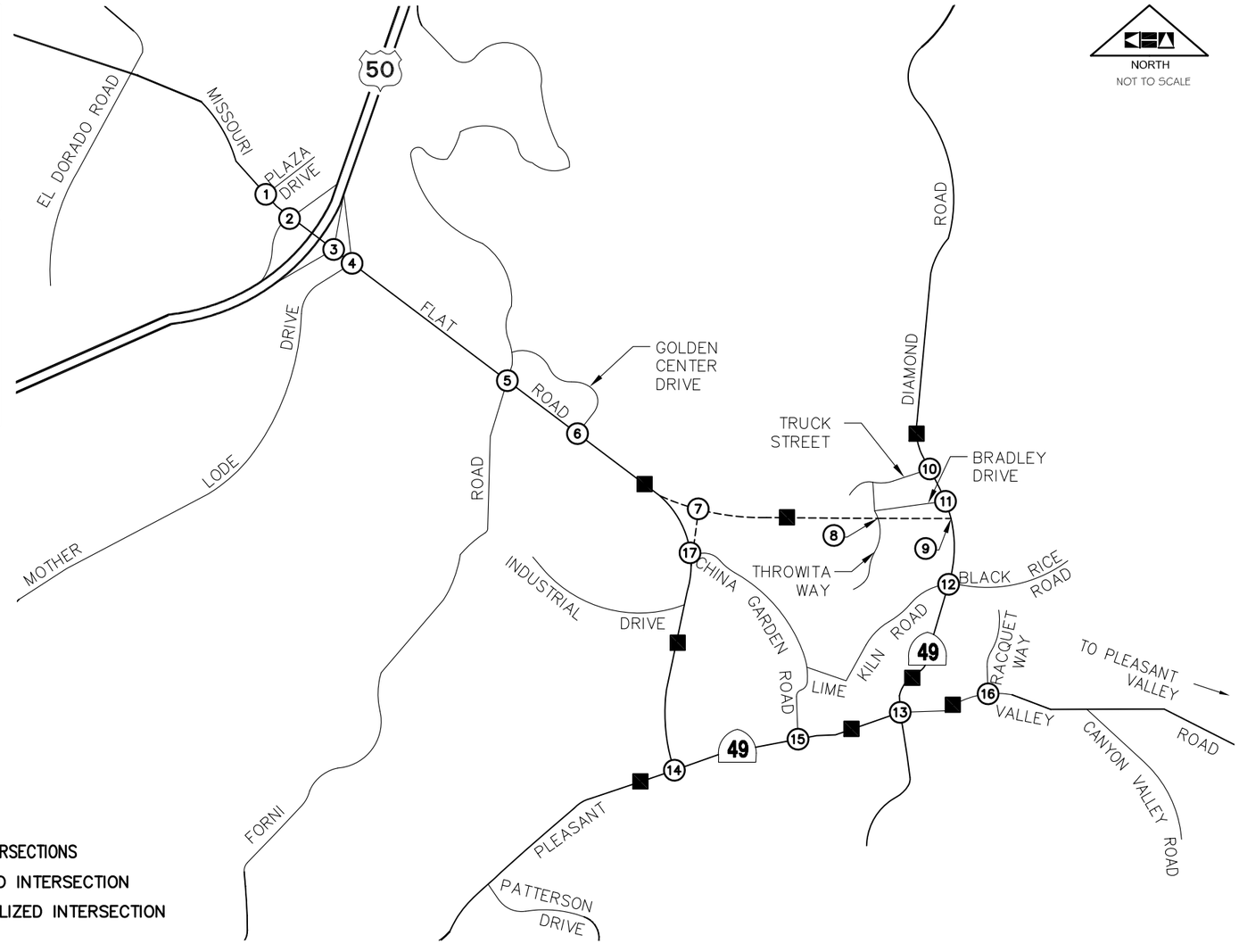
Kimley-Horn and Associates, Inc.

FIGURE 5

EXISTING (2010) PLUS PROPOSED PROJECT PEAK–HOUR TRAFFIC VOLUMES

DIAMOND SRPINGS PARKWAY
EL DORADO COUNTY, CA





LEGEND:

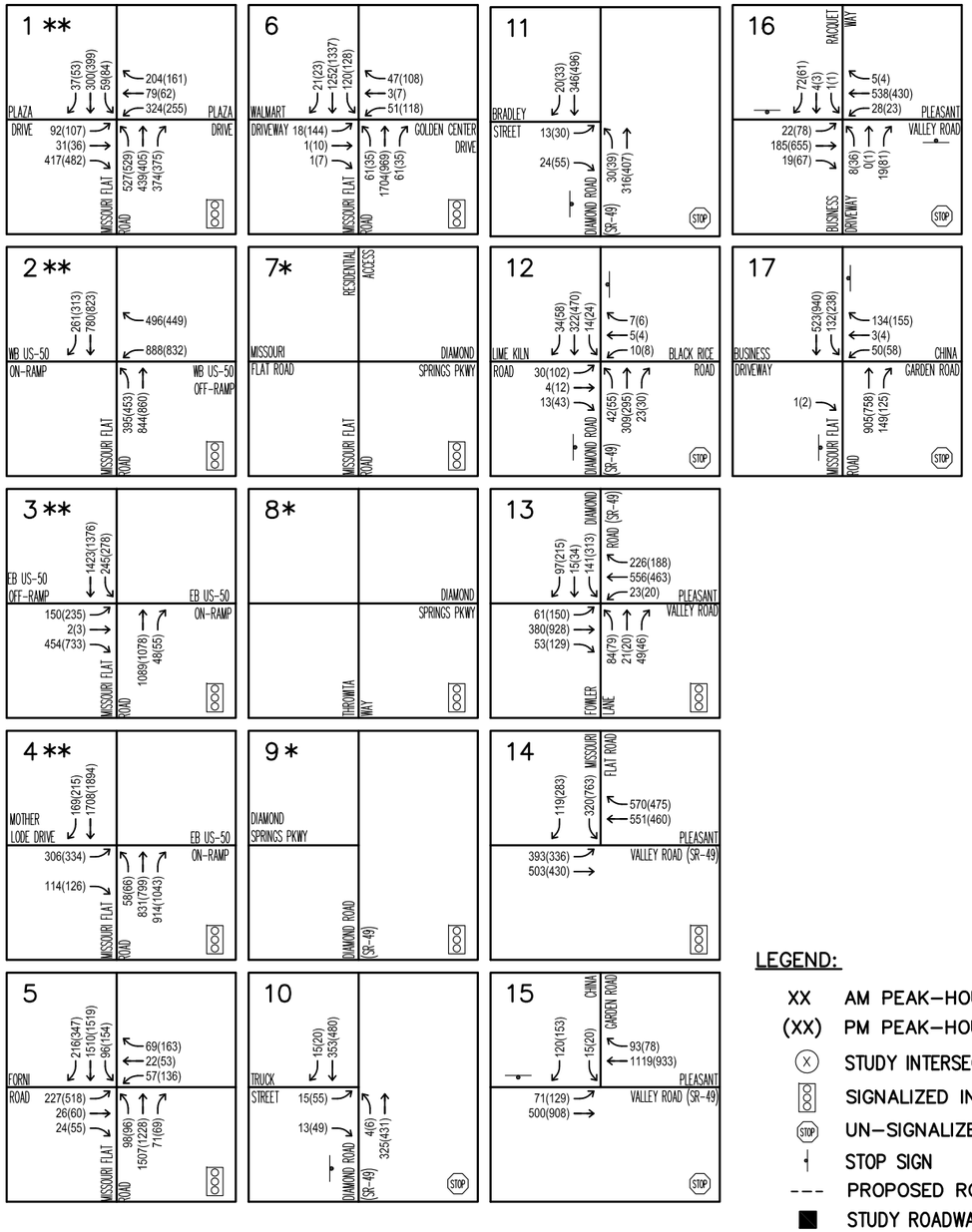
- (X) STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- (STOP) UN-SIGNALIZED INTERSECTION
- STOP SIGN
- --- PROPOSED ROADWAY
- STUDY ROADWAY SEGMENT
- FREE MOVEMENT
- * INTERSECTION FOR PLUS PROJECT SCENARIOS ONLY
- ** ASSUMES MISSOURI FLAT INTERCHANGE PHASE 1B IMPROVEMENTS ARE IN PLACE
- *** LEFT TURNS RESTRICTED WITH THE ADDITION OF THE PROPOSED PROJECT.

Kimley-Horn and Associates, Inc.

FIGURE 6

INTERIM (2020) INTERSECTION CONFIGURATIONS

DIAMOND SRPINGS PARKWAY
EL DORADO COUNTY, CA



LEGEND:

- XX AM PEAK–HOUR TRAFFIC VOLUME
- (XX) PM PEAK–HOUR TRAFFIC VOLUME
- (X) STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- UN–SIGNALIZED INTERSECTION
- STOP SIGN
- --- PROPOSED ROADWAY
- ■ STUDY ROADWAY SEGMENT
- * INTERSECTION FOR PLUS PROJECT SCENARIOS ONLY
- ** ASSUMES MISSOURI FLAT INTERCHANGE PHASE 1B IMPROVEMENTS ARE IN PLACE

Kimley-Horn and Associates, Inc.

FIGURE 7

INTERIM (2020) PEAK–HOUR TRAFFIC VOLUMES

DIAMOND SRPINGS PARKWAY
EL DORADO COUNTY, CA

Table 5 – Existing (2010) and Existing (2010) plus Proposed Project Intersection Levels of Service

#	Intersection	Traffic Control	Analysis Scenario[+]	AM Peak-Hour		PM Peak-Hour	
				Delay (seconds)	LOS	Delay (seconds)	LOS
1	Missouri Flat Rd @ Plaza Dr	Signal	Ex.	28.6	C	30.2	C
			Ex. + PP	28.6	C	30.2	C
2	Missouri Flat Rd @ US-50 WB Ramps	Signal	Ex.	18.0	B	20.1	C
			Ex. + PP	18.0	B	20.1	C
3	Missouri Flat Rd @ US-50 EB Ramps	Signal	Ex.	13.2	B	21.7	C
			Ex. + PP	13.2	B	21.7	C
4	Missouri Flat Rd @ Mother Lode Dr	Signal	Ex.	10.1	B	12.3	B
			Ex. + PP	10.1	B	12.3	B
5	Missouri Flat Rd @ Forni Rd	Signal	Ex.	16.3	B	26.8	C
			Ex. + PP	16.3	B	26.8	C
6	Missouri Flat Rd @ Golden Center Dr	Signal	Ex.	12.0	B	16.6	B
			Ex. + PP	12.0	B	16.6	B
7	Diamond Springs Pkwy @ Missouri Flat Rd	Signal	Ex.	N/A			
			Ex. + PP	54.9	D	39.7	D
8	Diamond Springs Pkwy @ Throwita Way	Signal	Ex.	N/A			
			Ex. + PP	45.4	D	26.3	C
9	Diamond Springs Pkwy @ Diamond Rd (SR-49)	Signal	Ex.	N/A			
			Ex. + PP	15.6	B	16.2	B
10	Diamond Rd (SR-49) @ Truck St	TWSC[*]	Ex.	11.8 (EB)	B	14.6 (EB)	B
			Ex. + PP	15.7 (EB)	C	17.5 (EB)	C
11	Diamond Rd (SR-49) @ Bradley Dr	TWSC[*]	Ex.	11.6 (EB)	B	14.6 (EB)	B
			Ex. + PP[**]	12.5 (EB)	B	12.6 (EB)	B
12	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd	TWSC[*]	Ex.	15.1 (WB)	C	26.9 (EB)	D
			Ex. + PP	199.6 (EB)	F	>200 (EB)	F
13	Diamond Rd (SR-49) @ Pleasant Valley Rd	Signal	Ex.	21.2	C	29.3	C
			Ex. + PP	49.2	D	155.9	F
14	Pleasant Valley Rd (SR-49) @ Missouri Flat Rd	Signal	Ex.	20.8	C	53.8	D
			Ex. + PP	10.4	B	19.3	B
15	Pleasant Valley Rd (SR-49) @ China Garden Rd	TWSC[*]	Ex.	56.0 (SB)	F	71.1 (SB)	F
			Ex. + PP	15.7 (SB)	C	16.0 (SB)	C
16	Pleasant Valley Rd @ Racquet Way	TWSC[*]	Ex.	13.1 (SB)	B	19.5 (NB)	C
			Ex. + PP	12.7 (SB)	B	19.3 (NB)	C
17	Missouri Flat Rd @ China Garden Rd	TWSC[*]	Ex.	23.3 (WB)	C	31.6 (WB)	D
			Ex. + PP	14.7 (WB)	B	16.8 (WB)	C

[+] Ex. = Existing (2010), Ex. + PP = Existing (2010) plus Proposed Project
[*] Control delay for worst minor approach (worst minor movement)
[**] Access converted to right-in/right-out with the addition of the Proposed Project.
Shaded cells indicate significant impact as defined by the County or Caltrans.

Table 6 – Existing (2010) and Existing (2010) plus Proposed Project
Roadway Segment Levels of Service

#	Roadway Segment	Roadway Classification	Analysis Scenario[+]	PM Peak-Hour	
				Volume (vph)	LOS
1	Missouri Flat Road south of Halyard Lane	2 Lane Arterial	Ex.	1,271	D
		4 Lane Art. (Div)	Ex. + PP	1,897	C
2	Missouri Flat Road south of China Garden Road	2 Lane Arterial	Ex.	1,647	D
			Ex. + PP	1,197	D
3	Pleasant Valley Road west of Missouri Flat Road	Minor 2 Lane Hwy	Ex.	1,347	D
			Ex. + PP	1,341	D
4	Pleasant Valley Road east of Missouri Flat Road	Minor 2 Lane Hwy	Ex.	1,833	F
			Ex. + PP	998	D
5	Pleasant Valley Road east of Diamond Road (SR-49)	Minor 2 Lane Hwy	Ex.	1,237	D
			Ex. + PP	1,193	D
6	SR-49 north of Pleasant Valley Road	Minor 2 Lane Hwy	Ex.	697	D
			Ex. + PP	1,063	D
7	SR-49 north of Truck Street	Minor 2 Lane Hwy	Ex.	856	D
			Ex. + PP	921	D
8	Diamond Springs Parkway east of Missouri Flat Road	Two Lane Arterial, Divided	Ex.	N/A	
			Ex. + PP	1,375	D

[+] Ex. = Existing (2010), Ex. + PP = Existing (2010) plus Proposed Project

Table 7 – Interim (2020) Intersection Levels of Service

#	Intersection	Traffic Control	AM Peak-Hour		PM Peak-Hour	
			Delay (seconds)	LOS	Delay (seconds)	LOS
1	Missouri Flat Rd @ Plaza Dr	Signal	38.3	D	42.5	D
2	Missouri Flat Rd @ US-50 WB Ramps	Signal	27.6	C	28.4	C
3	Missouri Flat Rd @ US-50 EB Ramps	Signal	22.6	C	34.8	C
4	Missouri Flat Rd @ Mother Lode Dr	Signal	16.4	B	31.4	C
5	Missouri Flat Rd @ Forni Rd	Signal	29.7	C	53.8	D
6	Missouri Flat Rd @ Golden Center Dr	Signal	21.0	C	23.9	C
7	Diamond Springs Pkwy @ Missouri Flat Rd	*To be constructed with Proposed Project*				
8	Diamond Springs Pkwy @ Throwita Way	*To be constructed with Proposed Project*				
9	Diamond Springs Pkwy @ Diamond Rd (SR-49)	*To be constructed with Proposed Project*				
10	Diamond Rd (SR-49) @ Truck St	TWSC[*]	13.5 (EB)	B	21.3	C
11	Diamond Rd (SR-49) @ Bradley Dr	TWSC[*]	13.1 (EB)	B	19.1	C
12	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice	TWSC[*]	19.2 (EB)	C	71.3 (EB)	F
13	Diamond Rd (SR-49) @ Pleasant Valley Rd	Signal	22.2	C	34.9	C
14	Pleasant Valley Rd (SR-49) @ Missouri Flat Rd	Signal	24.5	C	61.0	E
15	Pleasant Valley Rd (SR-49) @ China Garden Rd	TWSC[*]	124.7 (SB)	F	279.7	F
16	Pleasant Valley Rd @ Racquet Way	TWSC[*]	13.8 (SB)	B	23.4 (NB)	C
17	Missouri Flat Rd @ China Garden Rd	TWSC[*]	78.2 (WB)	F	246.1 (WB)	F

[*] Control delay for worst minor approach (worst minor movement) for TWSC.

Table 8 – Interim (2020) Roadway Segment Levels of Service

#	Roadway Segment	Roadway Classification	PM Peak-Hour	
			Volume (vph)	LOS
1	Missouri Flat Road south of Halyard Lane	2 Lane Arterial	1,692	D
2	Missouri Flat Road south of China Garden Road	2 Lane Arterial	1,902	F
3	Pleasant Valley Road west of Missouri Flat Road	Minor 2 Lane Hwy	1,505	E
4	Pleasant Valley Road east of Missouri Flat Road	Minor 2 Lane Hwy	2,091	F
5	Pleasant Valley Road east of Diamond Road (SR-49)	Minor 2 Lane Hwy	1,392	D
6	SR-49 north of Pleasant Valley Road	Minor 2 Lane Hwy	1042	D
7	SR-49 north of Truck Street	Minor 2 Lane Hwy	1,135	D
8	Diamond Springs Parkway east of Missouri Flat Road	Two Lane Arterial, Divided	N/A	

INTERIM (2020) PLUS PROPOSED PROJECT CONDITIONS

Utilizing the previously defined Interim (2020) plus Proposed Project volumes, levels of service were determined at the study facilities with the addition of the proposed project. The AM and PM peak-hour turn movement volumes for this analysis scenario are presented in Figure 8. Analysis worksheets for this scenario are provided in Appendix E.

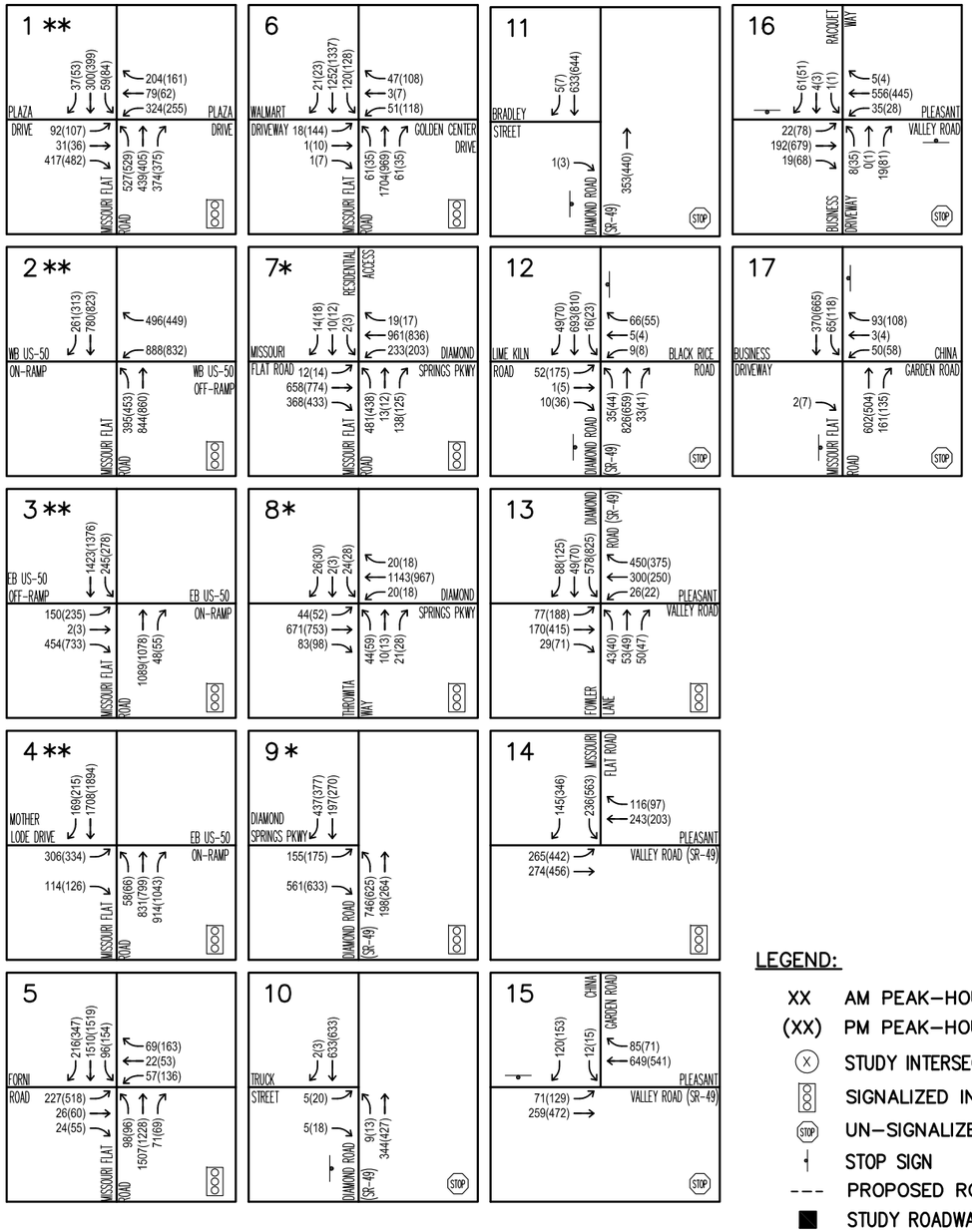
Intersections
Table 9 presents the peak-hour intersection operating conditions for this analysis scenario. As indicated in Table 9, the study intersections operate from LOS B to LOS F during the AM and PM peak-hours.

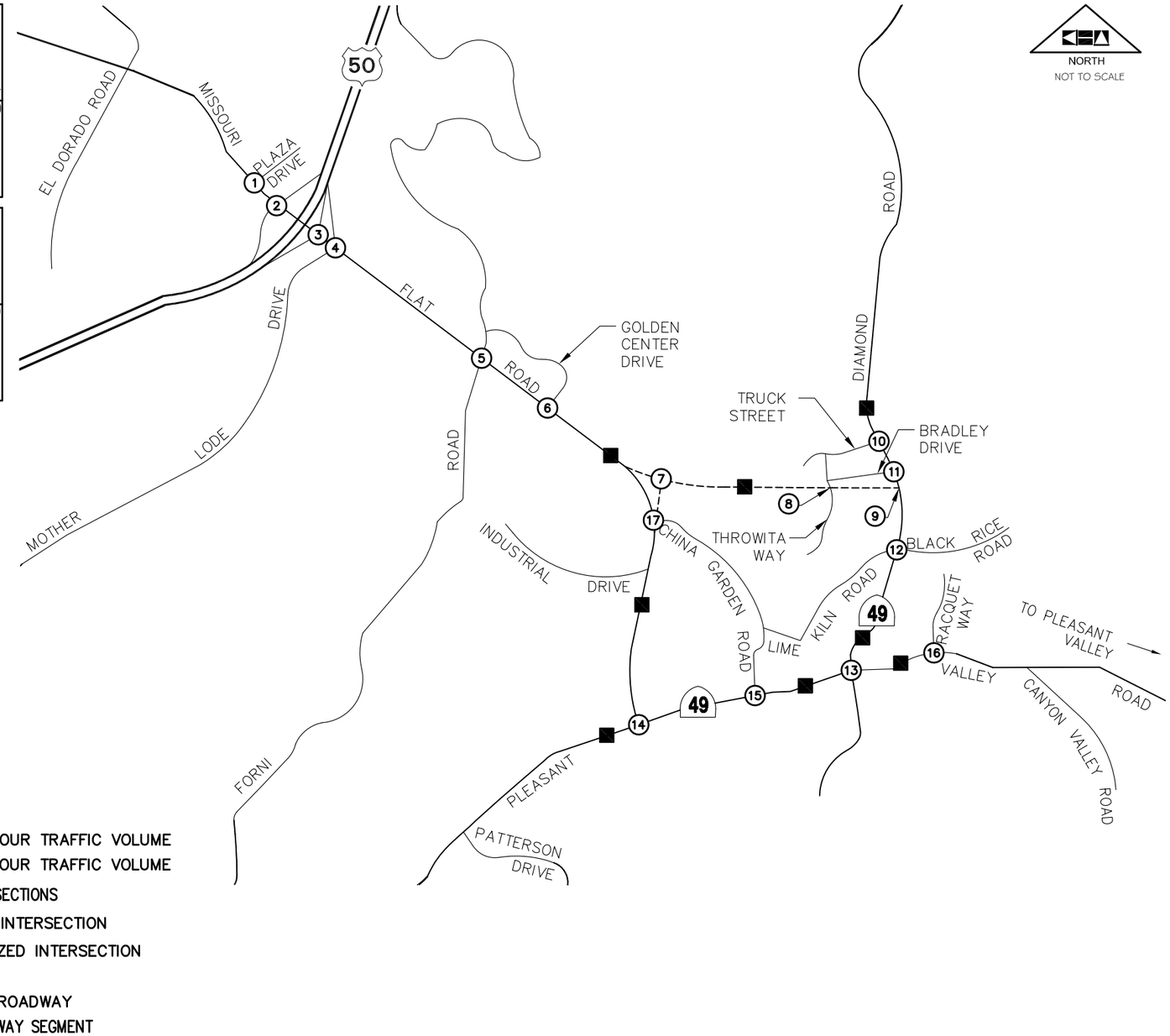
Roadway Segments
Table 10 presents the peak-hour roadway segment operating conditions for this analysis scenario. As indicated in Table 10, the study roadway segments operate from LOS D to LOS F during the PM peak-hour.

CUMULATIVE (2030) CONDITIONS

For this scenario, phase 2 of the Missouri Flat Road interchange at US-50 is assumed to be completed. Phase 2 of the interchange improvements will result in construction of a single point urban interchange (SPUI). The SPUI will result in the removal of the signal at each of the east- and westbound off-ramp intersections. The off-ramp signals will be replaced by one centralized signal. Lane geometry for the reconfigured interchange is shown in Figure 9. For this scenario, additional traffic from the Traffic Analysis Zone (TAZ) 186 was again added to the previously defined Cumulative (2030) volumes, levels of service were determined at the study facilities.

The AM and PM peak-hour turn movement volumes for this scenario are presented in Figure 10. Analysis worksheets for this scenario are provided in Appendix F.





LEGEND:

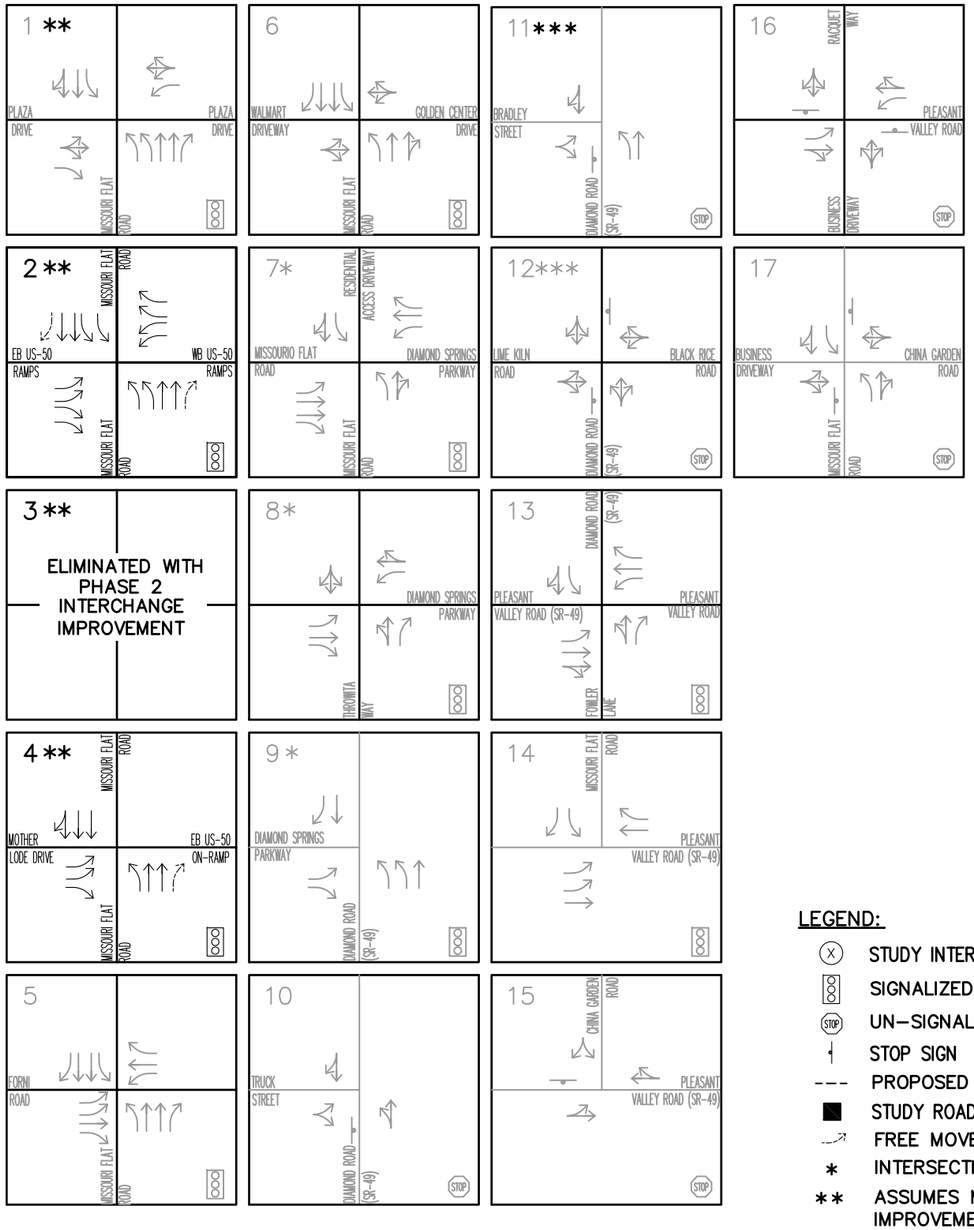
- XX AM PEAK–HOUR TRAFFIC VOLUME
- (XX) PM PEAK–HOUR TRAFFIC VOLUME
- (X) STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP UN–SIGNALIZED INTERSECTION
- STOP SIGN
- --- PROPOSED ROADWAY
- ■ STUDY ROADWAY SEGMENT
- * INTERSECTION FOR PLUS PROJECT SCENARIOS ONLY
- ** ASSUMES MISSOURI FLAT INTERCHANGE PHASE 1B IMPROVEMENTS ARE IN PLACE

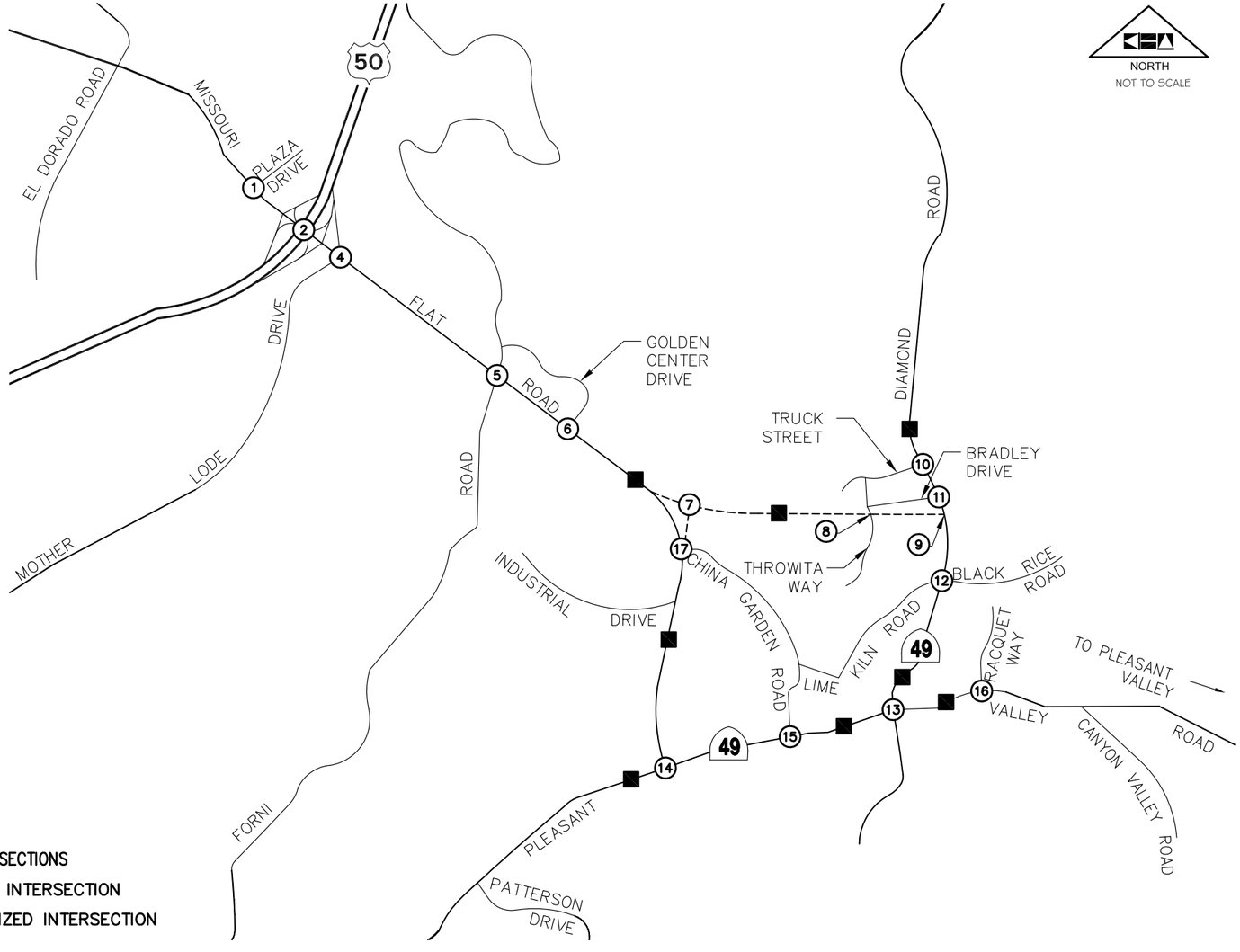
Kimley-Horn and Associates, Inc.

FIGURE 8

INTERIM (2020) PLUS PROPOSED PROJECT PEAK–HOUR TRAFFIC VOLUMES

DIAMOND SRPINGS PARKWAY
EL DORADO COUNTY, CA





LEGEND:

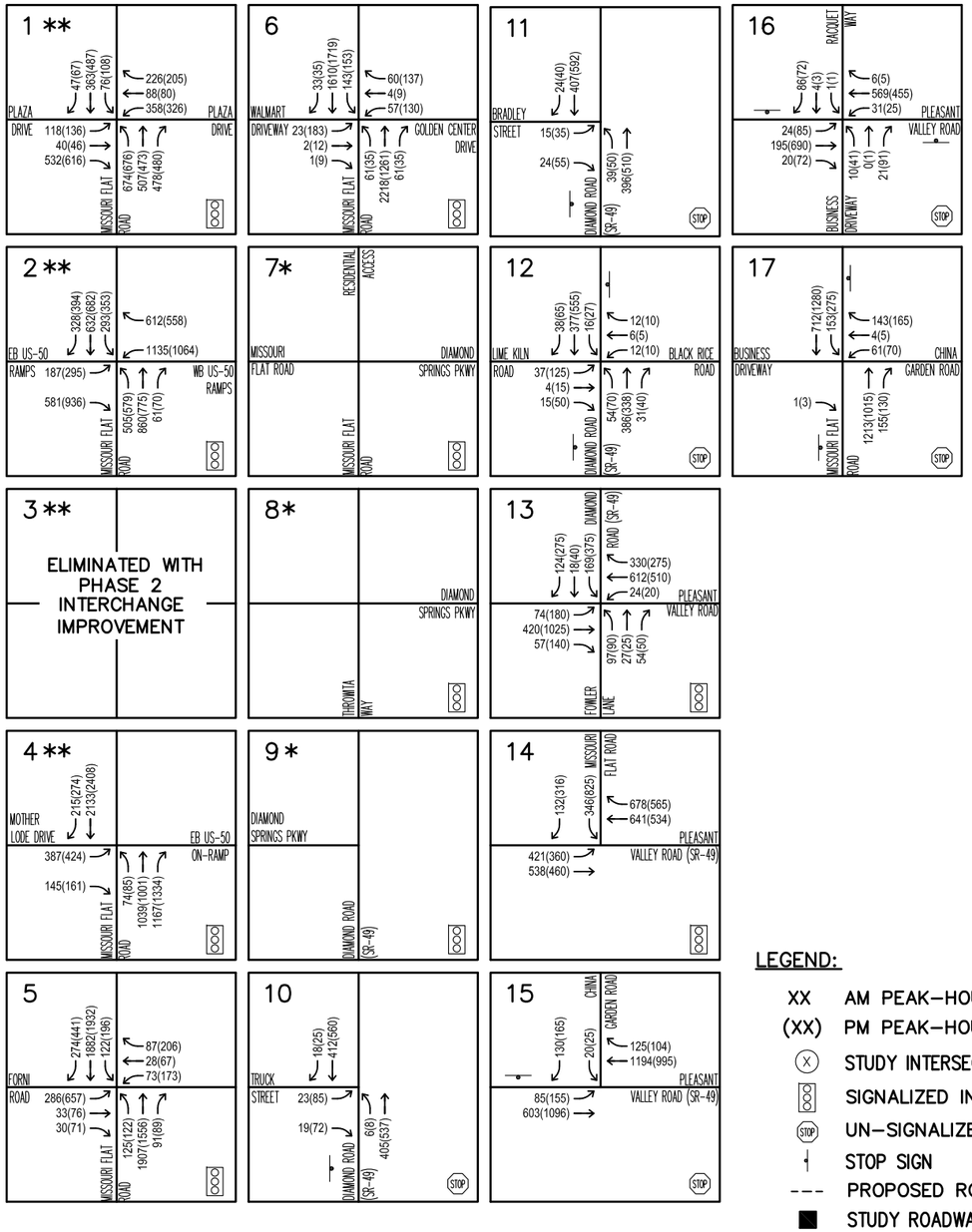
- (X) STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- (STOP) UN-SIGNALIZED INTERSECTION
- STOP SIGN
- --- PROPOSED ROADWAY
- ■ STUDY ROADWAY SEGMENT
- FREE MOVEMENT
- * INTERSECTION FOR PLUS PROJECT SCENARIOS ONLY
- ** ASSUMES MISSOURI FLAT INTERCHANGE PHASE 2 IMPROVEMENTS ARE IN PLACE
- *** LEFT TURNS RESTRICTED WITH THE ADDITION OF THE PROPOSED PROJECT.

Kimley-Horn and Associates, Inc.

FIGURE 9

CUMULATIVE (2030) INTERSECTION CONFIGURATIONS

DIAMOND SRPINGS PARKWAY
EL DORADO COUNTY, CA



LEGEND:

- XX AM PEAK-HOUR TRAFFIC VOLUME
- (XX) PM PEAK-HOUR TRAFFIC VOLUME
- (X) STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- UN-SIGNALIZED INTERSECTION
- STOP SIGN
- --- PROPOSED ROADWAY
- ■ STUDY ROADWAY SEGMENT
- * INTERSECTION FOR PLUS PROJECT SCENARIOS ONLY
- ** ASSUMES MISSOURI FLAT INTERCHANGE PHASE 2 IMPROVEMENTS ARE IN PLACE

Kimley-Horn and Associates, Inc.

FIGURE 10

CUMULATIVE (2030) PEAK-HOUR TRAFFIC VOLUMES

DIAMOND SRPINGS PARKWAY
EL DORADO COUNTY, CA

Table 9 – Interim (2020) and Interim (2020) plus Proposed Project Intersection Levels of Service

#	Intersection	Traffic Control	Analysis Scenario[+]	AM Peak-Hour		PM Peak-Hour	
				Delay (seconds)	LOS	Delay (seconds)	LOS
1	Missouri Flat Rd @ Plaza Dr	Signal	Interim	38.3	D	42.5	D
			Int. + PP	38.3	D	42.5	D
2	Missouri Flat Rd @ US-50 WB Ramps	Signal	Interim	27.6	C	28.4	C
			Int. + PP	27.6	C	28.4	C
3	Missouri Flat Rd @ US-50 EB Ramps	Signal	Interim	22.6	C	34.8	C
			Int. + PP	22.6	C	34.8	C
4	Missouri Flat Rd @ Mother Lode Dr	Signal	Interim	16.4	B	31.4	C
			Int. + PP	16.4	B	31.4	C
5	Missouri Flat Rd @ Forni Rd	Signal	Interim	29.7	C	53.8	D
			Int. + PP	29.7	C	53.8	D
6	Missouri Flat Rd @ Golden Center Dr	Signal	Interim	21.0	C	23.9	C
			Int. + PP	21.0	C	23.9	C
7	Diamond Springs Pkwy @ Missouri Flat Rd	Signal	Interim	N/A			
			Int. + PP	95.5	F	65.8	E
8	Diamond Springs Pkwy @ Throwita Way	Signal	Interim	N/A			
			Int. + PP	97.5	F	44.7	D
9	Diamond Springs Pkwy @ Diamond Rd (SR-49)	Signal	Interim	N/A			
			Int. + PP	17.4	B	18.8	B
10	Diamond Rd (SR-49) @ Truck St	TWSC[*]	Interim	13.5 (EB)	B	21.3 (EB)	C
			Int. + PP	17.6 (EB)	C	21.2 (EB)	C
11	Diamond Rd (SR-49) @ Bradley Dr	TWSC[*]	Interim	13.1 (EB)	B	19.1(EB)	C
			Int. + PP	13.4 (EB)	B	13.6 (EB)	C
12	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd	TWSC[*]	Interim	19.2 (EB)	C	71.3 (EB)	F
			Int. + PP	747.3 (EB)	F	>200 (EB)	F
13	Diamond Rd (SR-49) @ Pleasant Valley Rd	Signal	Interim	22.2	C	34.9	C
			Int. + PP	70.6	E	165.5	F
14	Pleasant Valley Rd (SR-49) @ Missouri Flat Rd	Signal	Interim	24.5	C	61.0	E
			Int. + PP	11.5	B	25.9	C
15	Pleasant Valley Rd (SR-49) @ China Garden Rd	TWSC[*]	Interim	124.7 (SB)	F	279.7 (SB)	F
			Int. + PP	21.6 (SB)	C	23.6 (SB)	C
16	Pleasant Valley Rd @ Racquet Way	TWSC[*]	Interim	13.8 (SB)	B	23.4 (NB)	C
			Int. + PP	13.9 (SB)	B	24.6 (NB)	C
17	Missouri Flat Rd @ China Garden Rd	TWSC[*]	Interim	78.2 (WB)	F	246.1 (WB)	F
			Int. + PP	22.1 (WB)	C	29.0 (WB)	D

[+] Interim = Interim (2020), Int. + PP = Interim (2020) plus Proposed Project
[*] Control delay for worst minor approach (worst minor movement)
Shaded cells indicate significant impact as defined by the County or Caltrans.

Table 10 – Interim (2020) and Interim (2020) plus Proposed Project Roadway Segment Levels of Service

#	Roadway Segment	Roadway Classification	Analysis Scenario[+]	PM Peak-Hour	
				Volume (vph)	LOS
1	Missouri Flat Road south of Halyard Lane	2 Lane Arterial	Interim	1,692	D
		4 Lane Art. (Div)	Int. + PP	2,318	D
2	Missouri Flat Road south of China Garden Road	2 Lane Arterial	Interim	1,902	F
			Int. + PP	1,452	E
3	Pleasant Valley Road west of Missouri Flat Road	Minor 2 Lane Hwy	Interim	1,505	E
			Int. + PP	1,499	E
4	Pleasant Valley Road east of Missouri Flat Road	Minor 2 Lane Hwy	Interim	2,091	F
			Int. + PP	1,256	D
5	Pleasant Valley Road east of Diamond Road (SR-49)	Minor 2 Lane Hwy	Interim	1,392	D
			Int. + PP	1,348	D
6	SR-49 north of Pleasant Valley Road	Minor 2 Lane Hwy	Interim	1,042	D
			Int. + PP	1,408	D
7	SR-49 north of Truck Street	Minor 2 Lane Hwy	Interim	1,135	D
			Int. + PP	1,200	D
8	Diamond Springs Parkway east of Missouri Flat Road	Two Lane Arterial, Divided	Interim	N/A	
			Int. + PP	1,628	D

[+] Interim = Interim (2020), Int. + PP = Interim (2020) plus Proposed Project

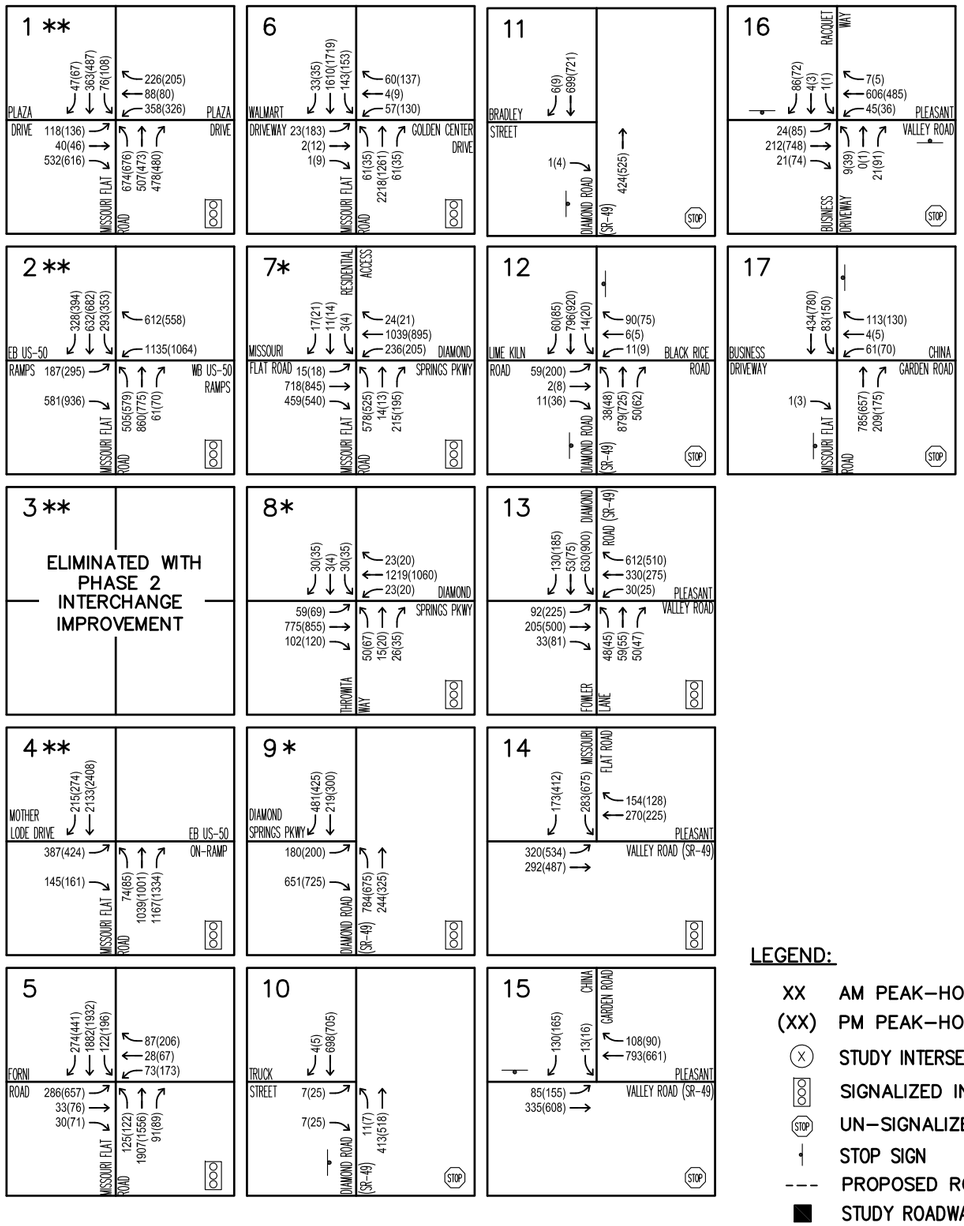
Intersections
Table 11 presents the peak-hour intersection operating conditions for this analysis scenario. As indicated in Table 11, the study intersections operate from LOS B to LOS F during the AM and PM peak-hours.

Roadway Segments
Table 12 presents the peak-hour roadway segment operating conditions for this analysis scenario. As indicated in Table 12, the study roadway segments operate from LOS D to LOS F during the PM peak-hour.

CUMULATIVE (2030) PLUS PROPOSED PROJECT CONDITIONS

Utilizing the previously defined Cumulative (2030) plus Proposed Project volumes, levels of service were determined at the study facilities with the addition of the proposed project. The AM and PM peak-hour turn movement volumes for this analysis scenario are presented in Figure 11. Analysis worksheets for this scenario are provided in Appendix G.

Intersections
Table 13 presents the peak-hour intersection operating conditions for this analysis scenario. As indicated in Table 13, the study intersections operate from LOS B to LOS F during the AM and PM peak-hours.



LEGEND:

- XX AM PEAK-HOUR TRAFFIC VOLUME
- (XX) PM PEAK-HOUR TRAFFIC VOLUME
- (X) STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP UN-SIGNALIZED INTERSECTION
- STOP SIGN
- --- PROPOSED ROADWAY
- ■ STUDY ROADWAY SEGMENT
- * INTERSECTION FOR PLUS PROJECT SCENARIOS ONLY
- ** ASSUMES MISSOURI FLAT INTERCHANGE PHASE 2 IMPROVEMENTS ARE IN PLACE

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FIGURE 11

CUMULATIVE (2030) PLUS PROPOSED PROJECT PEAK-HOUR TRAFFIC VOLUMES

DIAMOND SRPINGS PARKWAY
EL DORADO COUNTY, CA

Table 11 – Cumulative (2030) Intersection Levels of Service

#	Intersection	Traffic Control	AM Peak-Hour		PM Peak-Hour	
			Delay (seconds)	LOS	Delay (seconds)	LOS
1	Missouri Flat Rd @ Plaza Dr	Signal	59.0	E	78.2	E
2	Missouri Flat Rd @ US-50 EB/WB Ramps	Signal	95.2	F	102.4	F
3	Missouri Flat Rd @ US-50 EB Ramps	*Intersection Eliminated with Phase 2 of Interchange*				
4	Missouri Flat Rd @ Mother Lode Dr	Signal	15.8	B	57.7	E
5	Missouri Flat Rd @ Forni Rd	Signal	126.1	F	147.5	F
6	Missouri Flat Rd @ Golden Center Dr	Signal	75.5	E	49.3	D
7	Diamond Springs Pkwy @ Missouri Flat Rd	*To be constructed with Proposed Project*				
8	Diamond Springs Pkwy @ Throwita Way	*To be constructed with Proposed Project*				
9	Diamond Springs Pkwy @ Diamond Rd (SR-49)	*To be constructed with Proposed Project*				
10	Diamond Rd (SR-49) @ Truck St	TWSC*	15.8 (EB)	C	43.1 (EB)	E
11	Diamond Rd (SR-49) @ Bradley Dr	TWSC*	15.1 (EB)	C	28.4 (EB)	D
12	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd	TWSC*	26.8 (EB)	D	302.0 (EB)	F
13	Diamond Rd (SR-49) @ Pleasant Valley Rd	Signal	27.3	C	46.5	D
14	Pleasant Valley Rd (SR-49) @ Missouri Flat Rd	Signal	32.5	C	83.9	F
15	Pleasant Valley Rd (SR-49) @ China Garden Rd	TWSC*	313.6 (SB)	F	802.3 (SB)	F
16	Pleasant Valley Rd @ Racquet Way	TWSC*	14.7 (SB)	B	29.2 (NB)	D
17	Missouri Flat Rd @ China Garden Rd	TWSC*	372.7 (WB)	F	>200 (WB)	F

* Control delay for worst minor approach (worst minor movement) for TWSC.

Table 12 – Cumulative (2030) Roadway Segment Levels of Service

#	Roadway Segment	Roadway Classification	PM Peak-Hour	
			Volume (vph)	LOS
1	Missouri Flat Road south of Halyard Lane	2 Lane Arterial	2,113	F
2	Missouri Flat Road south of China Garden Road	2 Lane Arterial	2,157	F
3	Pleasant Valley Road west of Missouri Flat Road	Minor 2 Lane Hwy	1,664	E
4	Pleasant Valley Road east of Missouri Flat Road	Minor 2 Lane Hwy	2,350	F
5	Pleasant Valley Road east of Diamond Road (SR-49)	Minor 2 Lane Hwy	1,559	E
6	SR-49 north of Pleasant Valley Road	Minor 2 Lane Hwy	1,236	D
7	SR-49 north of Truck Street	Minor 2 Lane Hwy	1,307	D
8	Diamond Springs Parkway east of Missouri Flat Road	Four Lane Arterial, Divided	N/A	

Table 13 – Cumulative (2030) and Cumulative (2030) plus Proposed Project Intersection Levels of Service

#	Intersection	Traffic Control	Analysis Scenario[+]	AM Peak-Hour		PM Peak-Hour	
				Delay (seconds)	LOS	Delay (seconds)	LOS
1	Missouri Flat Rd @ Plaza Dr	Signal	Cum	59.0	E	78.2	E
			Cum + PP	59.0	E	78.2	E
2	Missouri Flat Rd @ US-50 EB/WB Ramps	Signal	Cum	95.2	F	102.4	F
			Cum + PP	95.2	F	102.4	F
3	Missouri Flat Rd @ US-50 EB Ramps	Signal	Cum	*Intersection Eliminated with Phase 2 of Interchange*			
			Cum + PP				
4	Missouri Flat Rd @ Mother Lode Dr	Signal	Cum	15.8	B	57.7	E
			Cum + PP	15.8	B	57.7	E
5	Missouri Flat Rd @ Forni Rd	Signal	Cum	126.1	F	147.5	F
			Cum + PP	126.1	F	147.5	F
6	Missouri Flat Rd @ Golden Center Dr	Signal	Cum	75.5	E	49.3	D
			Cum + PP	75.5	E	49.3	D
7	Diamond Springs Pkwy @ Missouri Flat Rd	Signal	Cum	N/A			
			Cum + PP	132.8	F	90.5	F
8	Diamond Springs Pkwy @ Throwita Way	Signal	Cum	N/A			
			Cum + PP	110.9	F	74.3	E
9	Diamond Springs Pkwy @ Diamond Rd (SR-49)	Signal	Cum	N/A			
			Cum + PP	19.4	B	21.9	C
10	Diamond Rd (SR-49) @ Truck St	TWSC[*]	Cum	15.8 (EB)	C	43.1 (EB)	E
			Cum + PP	20.3 (EB)	C	27.1 (EB)	D
11	Diamond Rd (SR-49) @ Bradley Dr	TWSC[*]	Cum	15.1 (EB)	C	28.4 (EB)	D
			Cum + PP	14.2 (EB)	B	14.6 (EB)	B
12	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd	TWSC[*]	Cum	26.8 (EB)	D	302.0 (EB)	F
			Cum + PP	>200 (EB)	F	>200 (EB)	F
13	Diamond Rd (SR-49) @ Pleasant Valley Rd	Signal	Cum	27.3	C	46.5	D
			Cum + PP	99.0	F	171.7	F
14	Pleasant Valley Rd (SR-49) @ Missouri Flat Rd	Signal	Cum	32.5	C	83.9	F
			Cum + PP	13.6	B	72.1	E
15	Pleasant Valley Rd (SR-49) @ China Garden Rd	TWSC[*]	Cum	313.6 (SB)	F	802.3 (SB)	F
			Cum + PP	34.5 (SB)	D	46.2 (SB)	E
16	Pleasant Valley Rd @ Racquet Way	TWSC[*]	Cum	14.7 (SB)	B	29.2 (NB)	D
			Cum + PP	15.4 (SB)	C	34.3 (NB)	D
17	Missouri Flat Rd @ China Garden Rd	TWSC[*]	Cum	372.7 (WB)	F	>200 (WB)	F
			Cum + PP	45.9 (WB)	E	82.9 (WB)	F

[+] Cum = Cumulative (2030), Cum + PP = Cumulative (2030) plus Proposed Project
[*] Control delay for worst minor approach (worst minor movement).
Shaded cells indicate significant impact as defined by the County or Caltrans.

Roadway Segments

Table 14 presents the peak-hour roadway segment operating conditions for this analysis scenario. As indicated in Table 14, the study roadway segments operate from LOS D to LOS F during the PM peak-hour.

Table 14 – Cumulative (2030) and Cumulative (2030) plus Proposed Project
Roadway Segment Levels of Service

#	Roadway Segment	Roadway Classification	Analysis Scenario[+]	PM Peak-Hour	
				Volume (vph)	LOS
1	Missouri Flat Road south of Halyard Lane	2 Lane Arterial	Cum	2,113	F
		4 Lane Art. (Div)	Cum + PP	2,739	D
2	Missouri Flat Road south of China Garden Road	2 Lane Arterial	Cum	2,157	F
			Cum + PP	1,707	D
3	Pleasant Valley Road west of Missouri Flat Road	Minor 2 Lane Hwy	Cum	1,664	E
			Cum + PP	1,658	E
4	Pleasant Valley Road east of Missouri Flat Road	Minor 2 Lane Hwy	Cum	2,350	F
			Cum + PP	1,515	E
5	Pleasant Valley Road east of Diamond Road (SR-49)	Minor 2 Lane Hwy	Cum	1,559	E
			Cum + PP	1,503	E
6	SR-49 north of Pleasant Valley Road	Minor 2 Lane Hwy	Cum	1,236	D
			Cum + PP	1,752	F
7	SR-49 north of Truck Street	Minor 2 Lane Hwy	Cum	1,307	D
			Cum + PP	1,478	E
8	Diamond Springs Parkway east of Missouri Flat Road	Two Lane Arterial, Divided	Cum	N/A	
			Cum + PP	1,858	F[++]

[+] Cum = Cumulative (2030), Cum + PP = Cumulative (2030) plus Proposed Project
[++] LOS F threshold is > 1,870 vph (per Table 2). Because anticipated volume is only 12 vph below critical threshold, LOS has been classified as F instead of E.
Shaded cells indicate significant impact as defined by the County or Caltrans.

IMPACTS AND MITIGATION

Standards of Significance

Project impacts were determined by comparing conditions with the proposed project to those without the project. Impacts for intersections are created when traffic from the proposed project forces the LOS to fall below a specific threshold. Intersections included in this study that are not part of the US-50 interchange and are not located on SR-49 are within County jurisdiction and are subject to County LOS requirements. Intersections included in this study that are on SR-49 or are within the Missouri Flat Road interchange at US-50 interchange fall under Caltrans' jurisdiction and are under Caltrans' LOS requirements. Roadway segments included in this study, including those on SR-49, are subject to County LOS requirements.

The County's standards[11] specify the following:

> "Level of Service (LOS) for County-maintained roads and State highways within the unincorporated areas of the County *shall not be worse than LOS E in the Community Regions*." (El Dorado County General Plan Policy TC-Xd) The proposed project is located within the El Dorado/Diamond Springs Community Region.
>
> "If a project causes the peak-hour level of service…on a County road or State highway that would otherwise meet the County standards (without the project) to exceed the [given] values, then the impact shall be considered significant."

[11] *Traffic Impact Study Protocols and Procedures*, El Dorado County Department of Transportation, November 2005.

> "If any county road or state highway fails to meet the [given] standards for peak hour level of service…under existing conditions, and the project will 'significantly worsen' conditions on the road or highway, then the impact shall be considered significant." According to General Plan Policy TC-Xe[12], 'significantly worsen' is defined as "a 2 percent increase in traffic during the a.m. peak hour, p.m. peak hour, or daily, or the addition of 100 or more daily trips, or the addition of 10 or more trips during the a.m. peak hour or the p.m. peak hour."

The Caltrans District 3 standard of significance was applied to intersections on SR-49 and at the Missouri Flat Road Interchange. The following LOS requirement was used for Caltrans facilities:

> "The District 3 standard for average delay at signalized intersections, in most areas, is LOS D on an hourly basis, or LOS E for the peak 15 minutes. For all-way stop intersections and roundabouts, this standard should be used for each approach. Queue lengths on each approach must also be considered for all intersection analyses. For signals in high speed areas, the standard is LOS C on an hourly basis, or LOS D for the peak 15 minutes.[13]"

Due to the location of SR-49 in the vicinity of the project area, the roadway is not considered to be a high speed facility. SR-49 within the Diamond Springs area has a posted speed of 25 mph west of Diamond Road, and SR-49 is in mountainous terrain with numerous turns and changes in elevation north of Pleasant Valley Road.

Impacts and Mitigation

Existing (2010) plus Proposed Project Conditions

Intersections

Impacts:

I1. *Diamond Road (SR-49) @ Lime Kiln Road/Black Rice Road*
As shown in Table 5, the addition of the project causes the intersection to operate below Caltrans' target LOS during the AM and PM peak-hours. ***This is a significant impact.***

I2. *Diamond Road (SR-49) @ Pleasant Valley Road*
As shown in Table 5, the addition of the project causes the intersection to operate below Caltrans' target LOS during the PM peak-hour. ***This is a significant impact.***

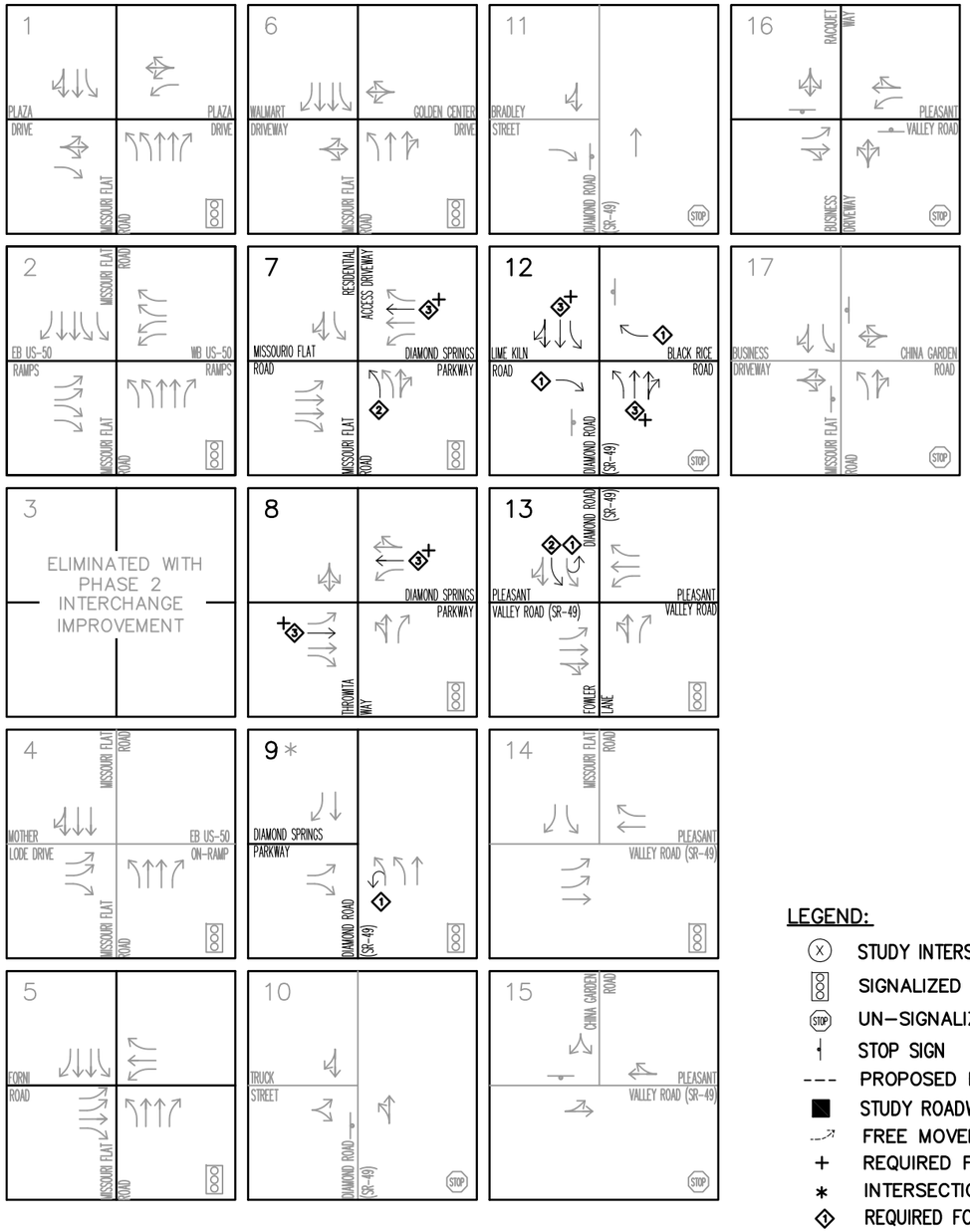
Mitigation:

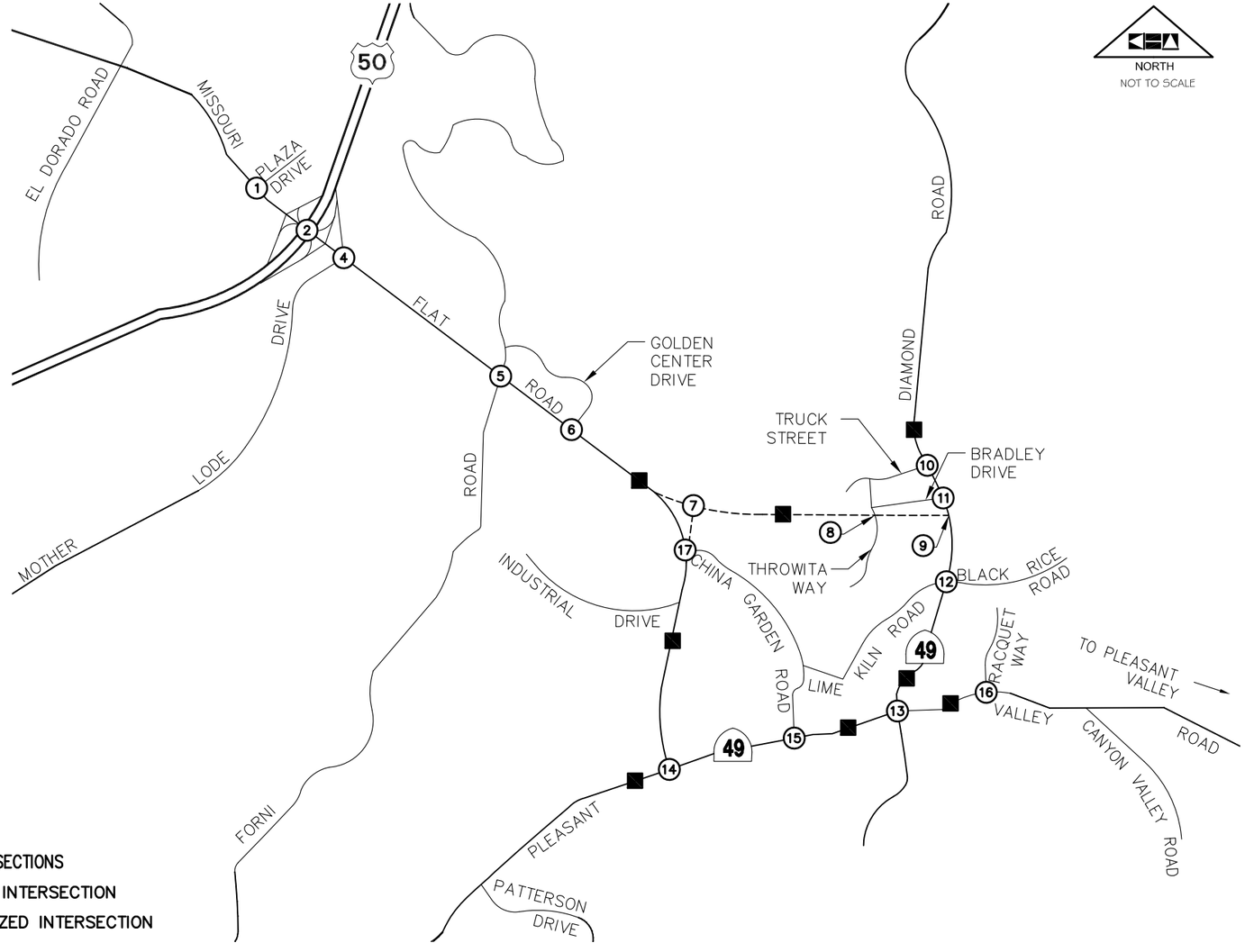
M1. *Diamond Road (SR-49) @ Lime Kiln Road/Black Rice Road*
The significant impact at this intersection during the AM and PM peak-hours is mitigated with the restriction of left-turns and through movements out of both Lime Kiln Road and Black Rice Road. To accommodate the restricted left-turning vehicles, northbound u-turns at Diamond Springs Parkway and Diamond Road (SR-49), as well as, southbound u-turns at Diamond Road (SR-49) and Pleasant Valley Road should be provided. The restriction of the left-turns will require rerouting of traffic. For the purposes of this analysis, it is assumed that the vehicle rerouting will be as follows:

Eastbound Lime Kiln Road Thru and Left:
- 50% assumed to use China Garden Road
- 25% assumed to make a u-turn at SR-49/Pleasant Valley
- 25% assumed to make right-turn at SR-49/Pleasant Valley

Westbound Black Rice Road Thru and Left:
- 100% assumed to make u-turn at Diamond Springs Parkway/SR-49

[12] *El Dorado County General Plan, Transportation and Circulation Element*, July 2004.
[13] Email from Teresa Limon, CalTrans, to Jennifer Maxwell, El Dorado County DOT, September 3, 2008.





LEGEND:

- (X) STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- (STOP) UN-SIGNALIZED INTERSECTION
- STOP SIGN
- --- PROPOSED ROADWAY
- ■ STUDY ROADWAY SEGMENT
- FREE MOVEMENT
- \+ REQUIRED FOR ROADWAY LOS MITIGATION
- * INTERSECTION FOR PLUS PROJECT SCENARIOS ONLY
- ① REQUIRED FOR 2010 IMPROVEMENTS
- ② REQUIRED FOR 2020 IMPROVEMENTS
- ③ REQUIRED FOR 2030 IMPROVEMENTS

NOTE: DARK LANES INDICATE MODIFICATIONS

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FIGURE 12

LANE GEOMETRIES WITH LOS MITIGATION

DIAMOND SRPINGS PARKWAY
EL DORADO COUNTY, CA

The modified lane geometries are presented in Figure 12. As shown in Table 15, the turn restrictions at this intersection result in LOS C during the AM and PM peak-hours. Therefore, ***this impact is less than significant.***

Table 15 – Diamond Road (SR-49) @ Lime Kiln Road Mitigation – Existing (2010) plus Proposed Project Peak-Hour

Intersection	Existing (2010) plus Proposed Project			Existing (2010) plus Proposed Project (Mitigated)		
	Traffic Control	Delay* (seconds)	LOS	Traffic Control	Delay* (seconds)	LOS
Diamond Rd. @ Lime Kiln Rd./Black Rice Rd	TWSC	199.6 (EB) / >200 (EB)	F / F	TWSC	17.1 (WB) / 19.5 (EB)	C / C

Note: Results are presented in **AM / PM peak-hour** format.
* Control delay and LOS for worst minor approach (worst minor movement).

The analysis worksheets for this mitigation, as well as all other effected intersections, are provided in Appendix H. Furthermore, as shown in Figure 12, provisions are required at intersections #9 and #13 to accommodate the u-turn movements resulting from this mitigation.

M2. *Diamond Road (SR-49) @ Pleasant Valley Road*
The significant impact at this intersection during the PM peak-hour is mitigated by allowing southbound u-turns and optimizing the traffic signal timing. As shown in Table 16, this mitigation measure results in LOS E during the PM peak-hour, therefore, ***this impact is less than significant.***

Table 16 – Diamond Road (SR-49) @ Pleasant Valley Road Mitigation – Existing (2010) plus Proposed Project PM Peak-Hour

Intersection	Existing (2010) plus Proposed Project		Existing (2010) plus Proposed Project (Mitigated)	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Diamond Rd (SR-49) @ Pleasant Valley Rd	155.9	F	66.3	E

The analysis worksheets for this mitigation are provided in Appendix H.

Roadway Segments

Impact:
I3. As shown in Table 6, the proposed project does not cause the study roadway segments that operate at LOS E or better (LOS D or better for Caltrans) without the proposed project to operate at LOS F (LOS E or LOS F for Caltrans), or worsen any roadway segment operating at LOS F (LOS E or LOS F for Caltrans) without the proposed project. In addition, the proposed project improves operations on a number of existing roadways. Therefore, the project's impacts at study roadway segments are considered to be ***less than significant.***

Mitigation:
M3. None Required.

Interim (2020) plus Proposed Project Conditions

Intersections

Impacts:

I4. *Diamond Springs Parkway @ Missouri Flat Road*
As shown in Table 9, the addition of the project causes the intersection to operate at LOS F with the proposed lane configuration during the AM peak-hour. ***This is a significant impact.***

I5. *Diamond Springs Parkway @ Throwita Way*
As shown in Table 9, this intersection operates at LOS F with the addition of the proposed during the AM peak-hour. ***This is a significant impact.***

I6. *Diamond Road (SR-49) @ Lime Kiln Road/Black Rice Road*
As shown in Table 9, the addition of the project causes the intersection to operate below Caltrans' target LOS during the AM peak-hour. Furthermore, the addition of the project causes the intersection, which operates below Caltrans target LOS during the PM peak-hour, to increase in delay. ***This is a significant impact.***

I7. *Diamond Road (SR-49) @ Pleasant Valley Road*
As shown in Table 9, the addition of the project causes the intersection to operate below Caltrans' target LOS during the PM peak-hour. ***This is a significant impact.***

Mitigation:

M4. *Diamond Springs Parkway @ Missouri Flat Road*
The significant impact at this intersection during the AM peak-hour is mitigated with the addition of a northbound left-turn lane. The modified lane geometries are presented in Figure 12. As shown in Table 17, this mitigation measure results in the intersection operating at LOS D during the AM peak-hour, therefore, ***this impact is less than significant***.

Table 17 – Diamond Spring Pkwy @ Missouri Flat Road Mitigation – Interim (2020) plus Proposed Project AM Peak-Hour

Intersection	Interim (2020) plus Proposed Project		Interim (2020) plus Proposed Project (Mitigated)	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Diamond Springs Pkwy @ Missouri Flat Road	95.5	F	51.9	D

The analysis worksheets for this mitigation are provided in Appendix H.

M5. *Diamond Springs Parkway @ Throwita Way*
The significant impact at this intersection during the AM peak-hour is mitigated with the addition of coordinated signal timing. As shown in Table 18, this mitigation measure results in the intersection operating at LOS D during the AM peak-hour, therefore, ***this impact is less than significant***.

Table 18 – Diamond Spring Pkwy @ Throwita Way Mitigation –
Interim (2020) plus Proposed Project AM Peak-Hour

Intersection	Interim (2020) plus Proposed Project		Interim (2020) plus Proposed Project (Mitigated)	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Diamond Springs Pkwy @ Throwita Way	97.5	F	52.9	D

The analysis worksheets for this mitigation are provided in Appendix H.

M6. Diamond Road (SR-49) @ Lime Kiln Road/Black Rice Road

The significant impact at this intersection during the AM and PM peak-hours is mitigated with the restriction of left-turns and through movements out of both Lime Kiln Road and Black Rice Road. As shown in Table 19, the turn restrictions at this intersection result in LOS C and LOS D during the AM and PM peak-hours respectively. Therefore, ***this impact is less than significant***.

Table 19 – Diamond Road (SR-49) @ Lime Kiln Road Mitigation –
Interim (2020) plus Proposed Project

Intersection	Interim (2020) plus Proposed Project			Interim (2020) plus Proposed Project (Mitigated)		
	Traffic Control	Delay* (seconds)	LOS	Traffic Control	Delay* (seconds)	LOS
Diamond Rd. @ Lime Kiln Rd./Black Rice Rd	TWSC	747.3 (EB) / >200 (EB)	F / F	Signal	20.9 (WB) / 27.1 (EB)	C / D
Note: Results are presented in **AM / PM peak-hour** format. * Control delay and LOS for worst minor approach (worst minor movement).						

The analysis worksheets for this mitigation, as well as all other effected intersections, are provided in Appendix H. Furthermore, as shown in Figure 12, provisions are required at intersections #9 and #13 to accommodate the u-turn movements resulting from this mitigation.

M7. Diamond Road (SR-49) @ Pleasant Valley Road

The significant impact at this intersection during the PM peak-hour can be mitigated by adding southbound left-turn lane and optimizing the signal cycle length. As shown in Table 20, this mitigation measure results in the intersection operating at LOS C during the PM peak-hour, therefore, ***this impact is less than significant***.

Table 20 – Diamond Road (SR-49) @ Pleasant Valley Road Mitigation –
Interim (2020) plus Proposed Project PM Peak-Hour

Intersection	Interim (2020) plus Proposed Project		Interim (2020) plus Proposed Project (Mitigated)	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Diamond Rd. (SR-49) @ Pleasant Valley Rd.	165.5	F	35.0	C

The analysis worksheets for this mitigation are provided in Appendix H.

Roadway Segments

Impact:

I8. As shown in Table 10, the proposed project does not cause the study roadway segments that operate at LOS E or better (LOS D or better for Caltrans) without the proposed project to operate at LOS F (LOS E or LOS F for Caltrans), or worsen any roadway segment operating at LOS F (LOS E or LOS F for Caltrans) without the proposed project. In addition, the proposed project improves operations on a number of existing roadways. Therefore, the project's impacts at study roadway segments are considered to be ***less than significant.***

Mitigation:

M8. None Required.

Cumulative (2030) plus Proposed Project Conditions

Intersections

Impacts:

I9. *Diamond Springs Parkway @ Missouri Flat Road*
As shown in Table 13, the addition of the project causes the intersection to change from LOS A to LOS F during the AM and PM peak-hours. ***This is a significant impact.***

I10. *Diamond Springs Parkway @ Throwita Way*
As shown in Table 13, this intersection operates at LOS F with the addition of the proposed during the AM peak-hour. ***This is a significant impact.***

I11. *Diamond Road (SR-49) @ Lime Kiln Road/Black Rice Road*
As shown in Table 13, the addition of the project causes the intersection to operate below Caltrans' target LOS during the AM peak-hour. Furthermore, the addition of the project causes the intersection that operates below Caltrans target LOS during the PM peak-hour to increase in delay. ***This is a significant impact.***

I12. *Diamond Road (SR-49) @ Pleasant Valley Road*
As shown in Table 13, the addition of the project causes the intersection to operate below Caltrans' target LOS during the AM and PM peak-hours. ***This is a significant impact.***

Mitigation:

M9. *Diamond Springs Parkway @ Missouri Flat Road*
The significant impact at this intersection during the AM and PM peak-hours is mitigated with the addition of a northbound left-turn lane and a westbound through lane. It is important to note that, per Mitigation Measure 15 (Page 35), Diamond Springs Parkway is required to be widened to a Divided, Four Lane Arterial to satisfy roadway segment LOS. The modified lane geometries are presented in Figure 12. As shown in Table 21, this mitigation measure results in the intersection operating at LOS C during the AM and PM peak-hours; therefore, ***this impact is less than significant***.

Table 21 – Diamond Spring Pkwy @ Missouri Flat Road Mitigation – Cumulative (2030) plus Proposed Project Peak-Hour

Intersection	Cumulative (2030) plus Proposed Project		Cumulative (2030) plus Proposed Project (Mitigated)	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Diamond Springs Pkwy @ Missouri Flat Rd.	132.8 / 90.5	F / F	30.4 / 33.4	C / C
Note: Results are presented in **AM / PM peak-hour** format.				

The analysis worksheets for this mitigation are provided in Appendix H.

M10. *Diamond Springs Parkway @ Throwita Way*
The significant impact at this intersection during the AM peak-hour is mitigated with the addition of eastbound and westbound through lanes. It is important to note that, per Mitigation Measure 15 (Page 35), Diamond Springs Parkway is required to be widened to a Divided, Four Lane Arterial to satisfy roadway segment LOS. As shown in Table 22, this mitigation measure results in the intersection operating at LOS D during the AM peak-hour; therefore, ***this impact is less than significant.***

Table 22 – Diamond Spring Pkwy @ Throwita Way Mitigation – Cumulative (2030) plus Proposed Project AM Peak-Hour

Intersection	Cumulative (2030) plus Proposed Project		Cumulative (2030) plus Proposed Project (Mitigated)	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Diamond Springs Pkwy @ Throwita Way	110.9	F	44.9	D

The analysis worksheets for this mitigation are provided in Appendix H.

M11. Diamond Road (SR-49) @ Lime Kiln Road/Black Rice Road
The significant impact at this intersection during the AM and PM peak-hours is mitigated with the restriction of the left-turns and through movements out of both Lime Kiln Road and Black Rice Road. As shown in Table 23, the turn restrictions at this intersection result in LOS B and LOS C during the AM and PM peak-hours respectively. Therefore, ***this impact is less than significant.***

Table 23 – Diamond Road (SR-49) @ Lime Kiln Road Mitigation – Cumulative (2030) plus Proposed Project

Intersection	Cumulative (2030) plus Proposed Project			Cumulative (2030) plus Proposed Project (Mitigated)		
	Traffic Control	Delay* (seconds)	LOS	Traffic Control	Delay* (seconds)	LOS
Diamond Rd. @ Lime Kiln Rd.	TWSC	>200 (EB) / >200 (EB)	F / F	TWSC	12.5 (EB) / 16.8 (EB)	B / C
Note: Results are presented in **AM / PM peak-hour** format. * Control delay and LOS for worst minor approach (worst minor movement).						

The analysis worksheets for this mitigation, as well as all other effected intersections, are provided in Appendix H. Furthermore, as shown in Figure 12, provisions are required at intersections #9 and #13 to accommodate the u-turn movements resulting from this mitigation.

M12. Diamond Road (SR-49) @ Pleasant Valley Road
The significant impact at this intersection during the AM and PM peak-hours can be mitigated by adding an additional southbound left-turn lane. The modified lane geometries are presented in Figure 12. As shown in Table 24, this mitigation measure results in the intersection operating at LOS C and LOS D during the AM and PM peak-hours respectively; therefore, ***this impact is less than significant.***

The analysis worksheets for this mitigation are provided in Appendix H.

Table 24 – Diamond Road (SR-49) @ Pleasant Valley Road Mitigation – Cumulative (2030) plus Proposed Project PM Peak-Hour

Intersection	Cumulative (2030) plus Proposed Project		Cumulative (2030) plus Proposed Project (Mitigated)	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Diamond Rd. (SR-49) @ Pleasant Valley Rd.	99.0 / 171.7	F / F	32.6 / 43.4	C / D
Note: Results are presented in **AM / PM peak-hour** format.				

Roadway Segments

Impacts:

I13. As shown in Table 14, the proposed project causes the roadway segment of SR-49 north of Pleasant Valley Road, which operates at LOS D without the project, to operate at LOS F with the proposed project under 2030 operating conditions. ***This is a significant impact.***

I14. As shown in Table 14, the proposed project causes the roadway segment of SR-49 north of Truck Street, which operates at LOS D without the project, to operate at LOS E with the proposed project under 2030 operating conditions. ***This is a significant impact.***

I15. As shown in Table 14, the proposed project causes the roadway segment of Diamond Springs Parkway east of Missouri Flat Road to operate at LOS E with the proposed project under 2030 operating conditions. Because the anticipated PM peak-hour volume is only twelve (12) vehicles under the unacceptable LOS F threshold (1,858 vph vs. 1,870 vph threshold), this is considered to be ***a significant impact.***

Mitigation:

M13. To mitigate this impact, the roadway segment should be upgraded to a Four-Lane, Multilane Highway. This improvement is consistent with the County's *General Plan,* and will result in LOS B. Therefore, this impact is ***less than significant***.

M14. To mitigate this impact, the roadway segment should be upgraded to a Major Two-Lane Highway. This improvements is consistent with the County's *General Plan*, and will result in LOS D. Therefore, this impact is ***less than significant***.

M15. To mitigate this impact, the roadway segment should be upgraded to a Divided, Four Lane Arterial. This improvement is consistent with the County's *General Plan*, and will result in LOS C. Therefore, this impact is ***less than significant***.

OTHER CONSIDERATIONS

Peak-Hour Traffic Signal Warrant Evaluation

A planning level assessment of the need for traffic signalization was performed for the study intersections. This evaluation was performed consistent with the peak-hour warrant methodologies noted in Section 4C of the *California Manual on Uniform Traffic Control Devices (CMUTCD)*, dated September 26, 2006. A summary of the peak-hour warrant results are presented in Table 25 through Table 27.

It is important to note that the CMUTCD indicates that "The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal." As such, satisfaction of the peak-hour signal warrant does not, in itself, dictate the necessity for the addition of traffic signal control.

Table 25 – Existing (2010) and Existing (2010) plus Proposed Project Signal Warrant Analysis Results

Analysis Scenario	Study Intersection	Peak-Hour Warrant Satisfied?
Existing (2010) AM	Diamond Rd (SR-49) @ Truck St	No
	Diamond Rd (SR-49) @ Bradley Dr	No
	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd[+]	No
	Pleasant Valley Rd (SR-49) @ China Garden Rd	**Yes**
	Pleasant Valley Rd @ Racquet Way	No
	Missouri Flat Rd @ China Garden Rd	No
Existing (2010) PM	Diamond Rd (SR-49) @ Truck St	No
	Diamond Rd (SR-49) @ Bradley Dr	No
	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd[+]	No
	Pleasant Valley Rd (SR-49) @ China Garden Rd	**Yes**
	Pleasant Valley Rd @ Racquet Way	No
	Missouri Flat Rd @ China Garden Rd	**Yes**
Existing (2010) plus Proposed Project AM	Diamond Rd (SR-49) @ Truck St	No
	Diamond Rd (SR-49) @ Bradley Dr	No
	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd[+]	No
	Pleasant Valley Rd (SR-49) @ China Garden Rd	No
	Pleasant Valley Rd @ Racquet Way	No
	Missouri Flat Rd @ China Garden Rd	No
Existing (2010) plus Proposed Project PM	Diamond Rd (SR-49) @ Truck St	No
	Diamond Rd (SR-49) @ Bradley Dr	No
	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd[+]	**Yes**
	Pleasant Valley Rd (SR-49) @ China Garden Rd	No
	Pleasant Valley Rd @ Racquet Way	No
	Missouri Flat Rd @ China Garden Rd	No

[+] Results are consistent between un-mitigated and mitigated access control conditions.

The peak-hour signal warrant is satisfied for Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd, Pleasant Valley Rd (SR-49) @ China Garden Rd, and Missouri Flat Rd @ China Garden Rd. The addition of the proposed project causes the PM peak-hour signal warrant to be met for the existing (2010) PM peak-hour scenario at the intersection of Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd. The intersections of Pleasant Valley Road with China Garden Road and Missouri Flat Road with China Garden Road meet the peak hour warrant with and without the addition of the proposed project. Detailed results of this analysis are presented in Appendix I.

Intersection Queuing Evaluation

Vehicle queuing for five (5) study intersections was evaluated. For the queuing analysis, the anticipated vehicle queues for critical movements at the intersections were evaluated for the various analysis scenarios. The calculated vehicle queues were then compared to actual or anticipated vehicle storage/segment lengths. Results of the queuing evaluation are presented in Table 28. The table includes the vehicle queues assuming the LOS mitigation measures identified in the "Impacts and Mitigation" section above are implemented. Analysis sheets that include the anticipated vehicle queues are presented in Appendices B-H.

Table 26 – Interim (2020) and Interim (2020) plus Proposed Project Signal Warrant Analysis Results

Analysis Scenario	Study Intersection	Peak-Hour Warrant Satisfied?
Interim (2020) AM	Diamond Rd (SR-49) @ Truck St	No
	Diamond Rd (SR-49) @ Bradley Dr	No
	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd[+]	No
	Pleasant Valley Rd (SR-49) @ China Garden Rd	**Yes**
	Pleasant Valley Rd @ Racquet Way	No
	Missouri Flat Rd @ China Garden Rd	**Yes**
Interim (2020) PM	Diamond Rd (SR-49) @ Truck St	No
	Diamond Rd (SR-49) @ Bradley Dr	No
	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd[+]	No
	Pleasant Valley Rd (SR-49) @ China Garden Rd	**Yes**
	Pleasant Valley Rd @ Racquet Way	No
	Missouri Flat Rd @ China Garden Rd	**Yes**
Interim (2020) plus Proposed Project AM	Diamond Rd (SR-49) @ Truck St	No
	Diamond Rd (SR-49) @ Bradley Dr	No
	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd[+]	No
	Pleasant Valley Rd (SR-49) @ China Garden Rd	No
	Pleasant Valley Rd @ Racquet Way	No
	Missouri Flat Rd @ China Garden Rd	No
Interim (2020) plus Proposed Project PM	Diamond Rd (SR-49) @ Truck St	No
	Diamond Rd (SR-49) @ Bradley Dr	No
	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd[++]	**Yes**
	Pleasant Valley Rd (SR-49) @ China Garden Rd	**Yes**
	Pleasant Valley Rd @ Racquet Way	No
	Missouri Flat Rd @ China Garden Rd	**Yes**

[+] Results are consistent between un-mitigated and mitigated access control conditions.
[++] Mitigated access control conditions do not satisfy the peak-hour warrant.

Table 27 – Cumulative (2030) and Cumulative (2030) plus Proposed Project Signal Warrant Analysis Results

Analysis Scenario	Study Intersection	Peak-Hour Warrant Satisfied?
Cumulative (2030) AM	Diamond Rd (SR-49) @ Truck St	No
	Diamond Rd (SR-49) @ Bradley Dr	No
	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd[+]	No
	Pleasant Valley Rd (SR-49) @ China Garden Rd	**Yes**
	Pleasant Valley Rd @ Racquet Way	No
	Missouri Flat Rd @ China Garden Rd	**Yes**
Cumulative (2030) PM	Diamond Rd (SR-49) @ Truck St	No
	Diamond Rd (SR-49) @ Bradley Dr	No
	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd[+]	**Yes**
	Pleasant Valley Rd (SR-49) @ China Garden Rd	**Yes**
	Pleasant Valley Rd @ Racquet Way	No
	Missouri Flat Rd @ China Garden Rd	**Yes**
Cumulative (2030) plus Proposed Project AM	Diamond Rd (SR-49) @ Truck St	No
	Diamond Rd (SR-49) @ Bradley Dr	No
	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd[+]	**Yes**
	Pleasant Valley Rd (SR-49) @ China Garden Rd	No
	Pleasant Valley Rd @ Racquet Way	No
	Missouri Flat Rd @ China Garden Rd	**Yes**
Cumulative (2030) plus Proposed Project PM	Diamond Rd (SR-49) @ Truck St	No
	Diamond Rd (SR-49) @ Bradley Dr	No
	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd[+]	**Yes**
	Pleasant Valley Rd (SR-49) @ China Garden Rd	**Yes**
	Pleasant Valley Rd @ Racquet Way	No
	Missouri Flat Rd @ China Garden Rd	**Yes**

[+] Results are consistent between un-mitigated and mitigated access control conditions.

Table 28 – Intersection Queuing Evaluation Results for Selected Locations

Intersection / Analysis Scenario	Movement	AM Peak-Hour		PM Peak-Hour	
		Available Storage (ft)	95th % Queue (ft)	Available Storage (ft)	95th % Queue (ft)
DSP @ Missouri Flat Rd	**WBTH**				
Existing (2010) plus Project		2,835*	998	2,835*	830
Interim (2020) plus Project			1,208		1,024
Interim (2020) plus Project (with LOS Mitigation)			1092		778
Cumulative (2030) plus Project			1,360		1,148
Cumulative (2030) plus Project (with LOS Mitigation)			508		368
	WBLT				
Existing (2010) plus Project		150	270	150	253
Interim (2020) plus Project			294		257
Interim (2020) plus Project (with LOS Mitigation)			255		274
Cumulative (2030) plus Project			303		291
Cumulative (2030) plus Project (with LOS Mitigation)			324		323
	NBLT				
Existing (2010) plus Project		150	540	150	492
Interim (2020) plus Project			706		620
Interim (2020) plus Project (with LOS Mitigation)		150+	319	150+	360
Cumulative (2030) plus Project		150	874	150	777
Cumulative (2030) plus Project (with LOS Mitigation)		150+	288	150+	321
DSP @ Throwita Way	**EBLT**				
Existing (2010) plus Project		150	59	150	74
Interim (2020) plus Project			123		114
Interim (2020) plus Project (with LOS Mitigation)			111		123
Cumulative (2030) plus Project			126		179
Cumulative (2030) plus Project (with LOS Mitigation)			80		163
	WBLT				
Existing (2010) plus Project		100	34	100	32
Interim (2020) plus Project			53		37
Interim (2020) plus Project (with LOS Mitigation)			30		30
Cumulative (2030) plus Project			46		50
Cumulative (2030) plus Project (with LOS Mitigation)			30		25
	WBTH				
Existing (2010) plus Project		850*	1,112	850*	910
Interim (2020) plus Project			1,566		1,091
Interim (2020) plus Project (with LOS Mitigation)			1418		974
Cumulative (2030) plus Project			1,452		1,246
Cumulative (2030) plus Project (with LOS Mitigation)			459		283
DSP @ Diamond Rd (SR-49)	**NBTH**				
Existing (2010) plus Project		725*	47	725*	69
Interim (2020) plus Project			68		101
Cumulative (2030) plus Project			94		140
	NBLT				
Existing (2010) plus Project		200+	237	200+	222
Interim (2020) plus Project			293		267
Cumulative (2030) plus Project			376		303
	SBTH				
Existing (2010) plus Project		270*	154	270*	210
Interim (2020) plus Project			178		255
Cumulative (2030) plus Project			204		295

Table 28 – Intersection Queuing Evaluation Results for Selected Locations (Continued)

Intersection / Analysis Scenario	Movement	AM Peak-Hour		PM Peak-Hour	
		Available Storage (ft)	95th % Queue (ft)	Available Storage (ft)	95th % Queue (ft)
DSP @ Diamond Rd (SR-49)	**SBRT**	(Continued)			
Existing (2010) plus Project		270*	77	270*	66
Interim (2020) plus Project			84		74
Cumulative (2030) plus Project			122		352
	EBLT				
Existing (2010) plus Project		850*	129	850*	151
Interim (2020) plus Project			154		183
Cumulative (2030) plus Project			186		208
	EBRT				
Existing (2010) plus Project		850*	41	850*	149
Interim (2020) plus Project			120		309
Cumulative (2030) plus Project			265		496
Diamond Rd (SR-49) @ Lime Kiln Rd	**EBLT**				
Existing (2010)		>500*	8	>500*	57
Existing (2010) plus Project			114		>500
Existing (2010) plus Project (with LOS Mitigation)			7		36
Interim (2020)			15		153
Interim (2020) plus Project			196		>500
Interim (2020) plus Project (with LOS Mitigation)			9		59
Cumulative (2030)			27		351
Cumulative (2030) plus Project			>500		>500
Cumulative (2030) plus Project (with LOS Mitigation)			7		38
	NBLT				
Existing (2010)		200	2	200	3
Existing (2010) plus Project			3		5
Existing (2010) plus Project (with LOS Mitigation)			3		5
Interim (2020)			3		5
Interim (2020) plus Project			4		6
Interim (2020) plus Project (with LOS Mitigation)			4		6
Cumulative (2030)			4		7
Cumulative (2030) plus Project			5		8
Cumulative (2030) plus Project (with LOS Mitigation)			0		7
	NBTH				
Existing (2010)		1,740*	2	1,740*	3
Existing (2010) plus Project			3		5
Existing (2010) plus Project (with LOS Mitigation)			0		0
Interim (2020)			3		5
Interim (2020) plus Project			4		6
Interim (2020) plus Project (with LOS Mitigation)			0		0
Cumulative (2030)			4		7
Cumulative (2030) plus Project			5		8
Cumulative (2030) plus Project (with LOS Mitigation)			0		0

Table 28 – Intersection Queuing Evaluation Results for Selected Locations (continued)

Intersection / Analysis Scenario	Movement	AM Peak-Hour		PM Peak-Hour	
		Available Storage (ft)	95th % Queue (ft)	Available Storage (ft)	95th % Queue (ft)
Diamond Rd (SR-49) @ Lime Kiln Rd	**SBLT**	(Continued)			
Existing (2010)		100	1	100	1
Existing (2010) plus Project			2		2
Existing (2010) plus Project (with LOS Mitigation)			2		2
Interim (2020)			1		2
Interim (2020) plus Project			2		2
Interim (2020) plus Project (with LOS Mitigation)			2		2
Cumulative (2030)			1		2
Cumulative (2030) plus Project			2		2
Cumulative (2030) plus Project (with LOS Mitigation)			2		2
	SBTH				
Existing (2010)		725*	1	725*	1
Existing (2010) plus Project			2		2
Existing (2010) plus Project (with LOS Mitigation)			0		0
Interim (2020)			1		2
Interim (2020) plus Project			2		2
Interim (2020) plus Project (with LOS Mitigation)			0		0
Cumulative (2030)			1		2
Cumulative (2030) plus Project			2		2
Cumulative (2030) plus Project (with LOS Mitigation)			0		0
Diamond Rd (SR-49) @ Pleasant Valley Rd	**EBLT**				
Existing (2010)		180	83	180	165
Existing (2010) plus Project			80		161
Existing (2010) plus Project (with LOS Mitigation)			117		296
Interim (2020)			109		212
Interim (2020) plus Project			124		243
Interim (2020) plus Project (with LOS Mitigation)			113		243
Cumulative (2030)			137		258
Cumulative (2030) plus Project			149		311
Cumulative (2030) plus Project (with LOS Mitigation)			142		300
	SBLT				
Existing (2010)		335	151	335	383
Existing (2010) plus Project			676		1,032
Existing (2010) plus Project (with LOS Mitigation)			521		1044
Interim (2020)			121		339
Interim (2020) plus Project			586		965
Interim (2020) plus Project (with LOS Mitigation)		335+	172	335+	390
Cumulative (2030)		335	164	335	417
Cumulative (2030) plus Project			720		1,099
Cumulative (2030) plus Project (with LOS Mitigation)		335+	192	335+	439
	WBRT				
Existing (2010)		180	52	180	44
Existing (2010) plus Project			65		64
Existing (2010) plus Project (with LOS Mitigation)			71		91
Interim (2020)			39		43
Interim (2020) plus Project			59		65
Interim (2020) plus Project (with LOS Mitigation)			60		77
Cumulative (2030)			62		67
Cumulative (2030) plus Project			76		80
Cumulative (2030) plus Project (with LOS Mitigation)			75		101

Source: *Highway Capacity Manual (HCM) 2000* methodology per Synchro© v7.
+ Dual left-turn lanes, * Intersection approach with available storage length equal to segment length

As presented in Table 28, the addition of the proposed project is anticipated to cause the vehicle queues to exceed the available storage capacity at several locations. In such locations, improvements to decrease the vehicle queues and/or increase the available storage length are recommended. The effects of these improvements are presented in Table 29. Analysis sheets for these conditions are included in Appendix H. The following improvements are recommended to increase vehicle storage and/or decrease vehicle queues and are illustrated in Figure 13:

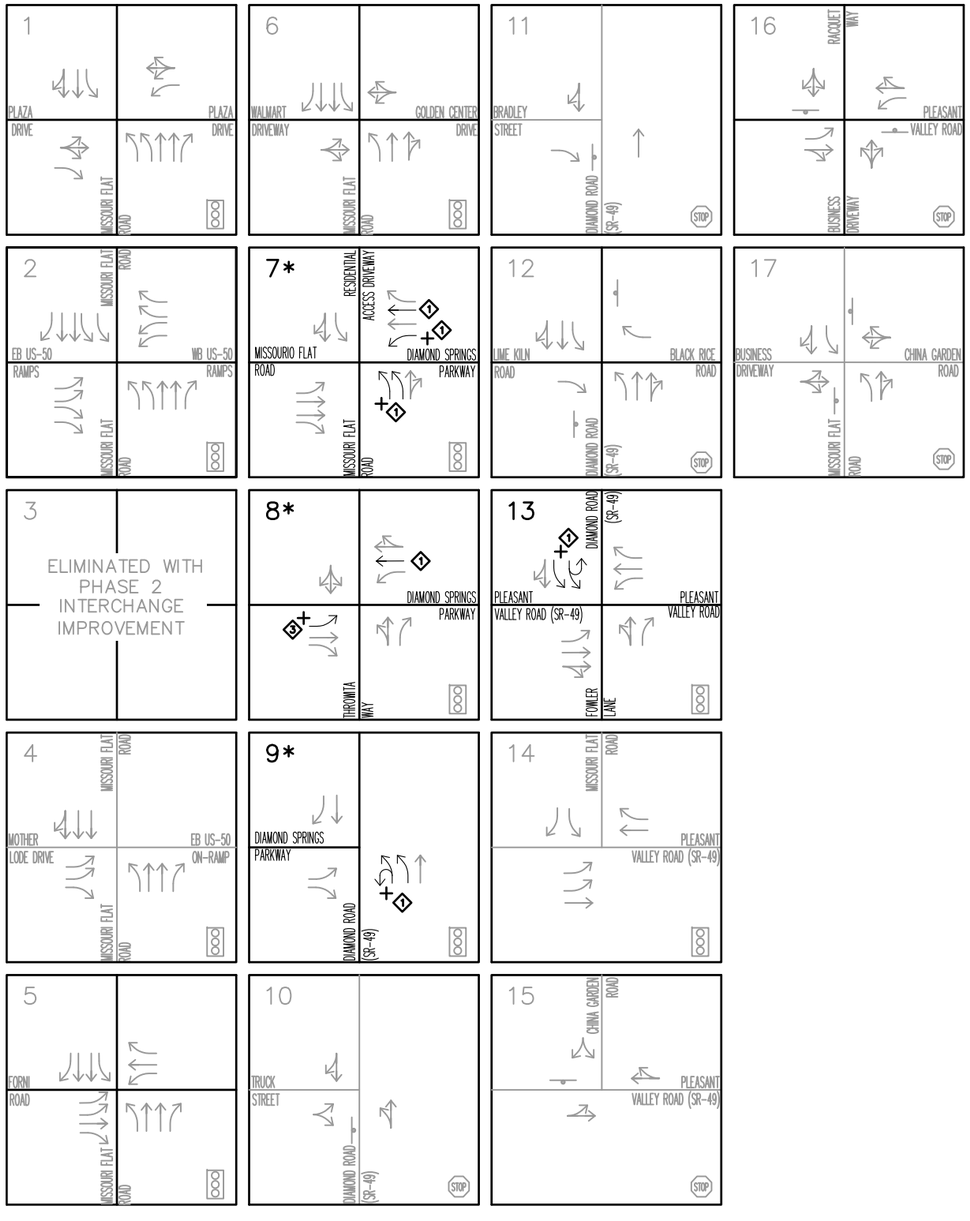
- **Diamond Springs Parkway @ Missouri Flat Road** – The northbound left-turn pockets at this intersection should be extended to 325-feet to accommodate the rerouted traffic from Lime Kiln Road for Year 2020 conditions. An additional westbound through lane should be provided 525-feet east of the intersection to reduce the westbound through queue. In addition, the westbound left-turn pocket should be extended to 325-feet. The effect of these improvements on vehicle queues is shown in Table 29. The modified lane geometries are presented in Figure 13.

- **Diamond Springs Parkway @ Throwita Way** – To accommodate the westbound through queue, an additional westbound through lane should be provided between Diamond Road (SR-49) and Throwita Way. This lane should terminate at a distance west of Throwita Way such that it is useful, and beneficial to through movement operations. These improvements should be implemented with the proposed project. To accommodate the vehicle queue for the eastbound left, the left-turn pocket should be extended to 175-feet. This improvement should be implemented prior to Year 2030. Collectively, these improvements are anticipated to be able to accommodate the traffic volume for all analysis scenarios.

- **Diamond Springs Parkway @ Diamond Road (SR-49)** – The dual northbound left-turn pocket at this location should be extended to a total length of 350-feet to accommodate the u-turns due to the rerouted Black Rice Road traffic. Allowing northbound u-turns will preclude the use of an eastbound right-turn overlap signal phase. Nonetheless, the maximum eastbound right turn queue is less than the segment length.

- **Diamond Road (SR-49) @ Pleasant Valley Road** – To accommodate the queue for the southbound left, a 525-foot dual southbound left turn pocket should be added. It is important to note that the eastbound left-turn queue is anticipated to exceed the available storage by seven (7) feet under Year 2030 conditions. Because storage is measured to the back of striping delineation, it is presumed that the additional 7-feet required can be accommodated within the existing turn pocket bay taper without adversely affecting adjacent traffic flow. These improvements should be implemented with the proposed project.

All proposed mitigations for both LOS and queuing are presented in Table 30. The conceptual ultimate Diamond Springs Parkway and Diamond Road (SR-49) roadway configurations are provided in Appendix J.



NOTE: DARK LANES INDICATE QUEUING MITIGATION MEASURES

LEGEND:

- (X) STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- (STOP) UN-SIGNALIZED INTERSECTION
- STOP SIGN
- --- PROPOSED ROADWAY
- STUDY ROADWAY SEGMENT
- FREE MOVEMENT
- \+ LENGTHEN TURN POCKET
- * INTERSECTION FOR PLUS PROJECT SCENARIOS ONLY
- ① RECOMMENDED FOR 2010 IMPROVEMENTS
- ② RECOMMENDED FOR 2020 IMPROVEMENTS
- ③ RECOMMENDED FOR 2030 IMPROVEMENTS

Kimley-Horn and Associates, Inc.

FIGURE 13

LANE GEOMETRIES WITH QUEUE MITIGATION

DIAMOND SRPINGS PARKWAY
EL DORADO COUNTY, CA

Table 29 – Intersection Queuing Evaluation with Queuing Mitigation

Intersection / Analysis Scenario	Movement	AM Peak-Hour		PM Peak-Hour	
		Storage Provided (ft)	95th % Queue (ft)	Storage Provided (ft)	95th % Queue (ft)
DSP @ Missouri Flat Rd	**WBTH**				
Interim (2020) plus Project (Queue Mitigation)		2,835*	334	2,835*	247
Cumulative (2030) plus Project (Queue Mitigation)			508		368
	WBLT				
Interim (2020) plus Project (Queue Mitigation)		325	276	325	258
Cumulative (2030) plus Project (Queue Mitigation)			324		323
	NBLT				
Interim (2020) plus Project (Queue Mitigation)		325+	277	325+	264
Cumulative (2030) plus Project (Queue Mitigation)			288		321
DSP @ Throwita Way	**EBLT**				
Interim (2020) plus Project (Queue Mitigation)		175	30	175	130
Cumulative (2030) plus Project (Queue Mitigation)			26		163
	WBTH				
Interim (2020) plus Project (Queue Mitigation)		850*	124	850*	113
Cumulative (2030) plus Project (Queue Mitigation)			491		283
DSP @ Diamond Rd (SR-49)	**NBLT**				
Interim (2020) plus Project (Queue Mitigation)		350+	330	350+	225
Cumulative (2030) plus Project (Queue Mitigation)			341		272
	EBRT				
Interim (2020) plus Project (Queue Mitigation)		850*	414	850*	474
Cumulative (2030) plus Project (Queue Mitigation)			578		730
Diamond Rd (SR-49) @ Pleasant Valley Rd	**EBLT**				
Interim (2020) plus Project (Queue Mitigation)		180	74	180	157
Cumulative (2030) plus Project (Queue Mitigation)			85		187
	SBLT				
Interim (2020) plus Project (Queue Mitigation)		525+	187	525+	423
Cumulative (2030) plus Project (Queue Mitigation)			237		505
	WBRT				
Interim (2020) plus Project (Queue Mitigation)		180	68	180	70
Cumulative (2030) plus Project (Queue Mitigation)			93		120

Source: *Highway Capacity Manual (HCM) 2000* methodology per Synchro© v7.
+ Dual left-turn lanes, * Intersection approach with available storage length equal to segment length

Table 30 – Mitigations Summary Matrix

#	Intersection / Roadway Segment	Scenario	Mitigation Type	Mitigation Measure
I7	Diamond Springs Pkwy @ Missouri Flat Rd	2010 + PP	LOS	None
			Queuing	Add additional WBTH lane (525-feet), add additional NBLT Lane (325-feet) and extend WBLT to 325-feet
		2020 + PP	LOS	Add additional NBLT lane
			Queuing	No additional mitigations from 2010 + PP (Queuing)
		2030 + PP	LOS	Add additional WBTH lane to 2020 + PP (LOS)
			Queuing	No additional mitigations from 2010 + PP (Queuing)
I8	Diamond Springs Pkwy @ Throwita Way	2010 + PP	LOS	None
			Queuing	Add additional WBTH lane (SR-49 through Throwita)
		2020 + PP	LOS	Impliment coordinated signal timings
			Queuing	No additional mitigations from 2010 + PP (Queuing)
		2030 + PP	LOS	Add additional EBTH and WBTH lane (per Roadway Segment LOS)
			Queuing	Extend EBLT to 175-feet
I9	Diamond Springs Pkwy @ Diamond Rd (SR-49)	2010 + PP	LOS	Add provision to allow NB U-Turn
			Queuing	Extend NB dual lefts to 350-feet
		2020 + PP	LOS	No additional mitigations from 2010 + PP (LOS)
			Queuing	No additional mitigations from 2010 + PP (Queuing)
		2030 + PP	LOS	No additional mitigations from 2010 + PP (LOS)
			Queuing	No additional mitigations from 2010 + PP (Queuing)
I12	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd	2010 + PP	LOS	Restrict EB/WB LT and TH (no traffic signal control)
			Queuing	No additional mitigations from 2010 + PP (LOS)
		2020 + PP	LOS Queuing	No additional mitigations from 2010 + PP
		2030 + PP	LOS Queuing	No additional mitigations from 2010 + PP
I13	Diamond Rd (SR-49) @ Pleasant Valley Rd	2010 + PP	LOS	Add provision to allow SB U-Turn
			Queuing	Add additional SBLT lane (525-feet) and optimize signal timing
		2020 + PP	LOS	Add additional SBLT lane and optimize signal timing
			Queuing	No additional mitigations from 2010 + PP (Queuing)
		2030 + PP	LOS	Optimize signal timing in addition of 2020 + PP (LOS)
			Queuing	No additional mitigations from 2010 + PP (Queuing)
R6	SR-49 north of Pleasant Valley Road	2010 + PP	LOS	None
			Queuing	None
		2020 + PP	LOS	None
			Queuing	None
		2030 + PP	LOS	Upgrade to Four-Lane, Multilane Highway
			Queuing	None
R7	SR-49 north of Truck Street	2010 + PP	LOS	None
			Queuing	None
		2020 + PP	LOS	None
			Queuing	None
		2030 + PP	LOS	Upgrade to Major Two-Lane Highway
			Queuing	None
R8	Diamond Springs Parkway east of Missouri Flat Road	2010 + PP	LOS	None
			Queuing	None
		2020 + PP	LOS	None
			Queuing	None
		2030 + PP	LOS	Upgrade to Divided, Four-Lane Arterial
			Queuing	None

Note: Each mitigation type (LOS and Queuing) builds on its respective previous mitigation measures.

Preliminary Traffic Safety Evaluation

According to the County's 2007 *Accident Location Study*[14], five (5) study area sites (i.e., intersections and roadway segments) experienced three (3) or more accidents during a three-year period between January 1, 2005, and December 31, 2007. According to the *Study*, these sites were selected for investigation and determination of corrective action(s). Table 31 provides a summary of the study area sites and their selected actions.

Table 31 – Project Area Sites Selected Safety for Investigation

Site #	Location Description	Accident Rate[+]	Identified Action
29	Missouri Flat Rd at El Dorado Road	0.28	None Required
30	Missouri Flat Rd from Plaza Dr to County Rd 2233	2.78	Pending Improvement
31	Missouri Flat Rd in vicinity of Golden Center Dr	0.78	None Required
32	Missouri Flat Rd in vicinity of China Garden Rd	0.77	None Required
33	Missouri Flat Rd in vicinity of Enterprise Dr	0.51	None Required

Source: *Annual Accident Location Study 2007*, County of El Dorado Department of Transportation, March 28, 2008.
[+] # Accidents per Million Vehicles (MV) for single sites (intersections/curves), # Accidents per Million Vehicle Miles (MVM) for roadway sections.

According to the *Study*, one (1) site (30) was "previously identified, and [is] currently scheduled for improvement. It is anticipated that, upon completion, [this] improvement will substantially reduce the number of accidents." Furthermore, the *Study* indicates that the remaining four (4) sites "do not require further review at this time. However, these sites will continue to be monitored and any subsequent increase in the frequency of accidents may necessitate further review and analysis."

As previously discussed, the addition of the proposed project is anticipated to result in modified traffic patterns in the general project area by diverting a portion of Pleasant Valley Road (SR-49) traffic. Other traffic patterns are also anticipated to be affected by the proposed project. As such, the County's on-going monitoring of the four (4) sites indicated above is anticipated to identify subsequent increases in the frequency of accidents at these locations.

Bicycle and Pedestrian Facilities Evaluation

According to Chapter 5 of the *El Dorado County Bicycle Transportation Plan* and preliminary proposed project design plans (Figure 2), Class II Bike Lanes are included in the proposed project. Class II Bike Lanes are currently in place north of the project site, along Missouri Flat Road from approximately Mother Lode Drive to Golden Center Drive. A Class I Bike Path, the El Dorado Trail, is proposed for the Sacramento-Placerville Transportation Corridor (SPTC) Right-of-Way. According to the *Plan*, "the El Dorado Trail concept is for a trail that spans the entire length of El Dorado County from the western county line to the Lake Tahoe Basin." Furthermore, the *Plan* specifies that proposed projects are required to include "pedestrian/bicycle paths connecting to adjacent commercial, research and development, or industrial projects and any schools, parks, or other public facilities."

The project will not result in removal of a bikeway/bike lane or prohibition of implementation of the facilities identified in the *Plan*. The proposed project includes Class II Bike Lanes which connect the project with the proposed adjacent Class I Bike Path and Class II Bike Lanes along Missouri Flat Road. Through these connections to the proposed bike facility network, the project provides continuity with adjacent projects, schools, parks, and other public facilities.

[14] *Annual Accident Location Study 2007*, County of El Dorado Department of Transportation, March 28, 2008.

CONCLUSIONS

Based upon the analysis documented in this report, the following conclusions are offered:

- The project will divert traffic from SR-49 through Diamond Springs, and from Missouri Flat Road, north of Pleasant Valley Road, to Diamond Road (SR-49) and the proposed project.

- The proposed project will significantly reduce traffic on the segment of SR-49 between Missouri Flat Road and Diamond Road (SR-49). This roadway segment currently operates at LOS F.

- Per Caltrans' direction for the Year 2030 scenarios, more emphasis (than the Year 2010 scenarios) was placed on balancing study intersection volumes with the adjacent segment volumes. Although this approach was intended to minimize the effect of uncertainty associated with future land uses changes in the project area, it was determined to result in potentially artificially inflated volumes (in particular cross-street/minor volumes) and subsequent impact mitigations. The effect of this conservative approach was most noticeable along the Diamond Road (SR-49) corridor between Diamond Springs Parkway and Pleasant Valley Road (SR-49).

- The proposed project will result in an impact on the roadway segment of Diamond Road (SR-49), north of Pleasant Valley Road. Consistent with the County's *General Plan*, the impact on this roadway segment can be mitigated by upgrading the roadway to a Four-Lane, Multilane Highway for Year 2030 conditions. This impact can be mitigated to be less than significant.

- The proposed project will result in an impact on the roadway segment of Diamond Road (SR-49), north of Truck Street. Consistent with the County's *General Plan*, the impact on this roadway segment can be mitigated by upgrading the roadway to a Major 2-Lane Highway for Year 2030 conditions. This impact can be mitigated to be less than significant.

- The proposed project will result in an impact on the roadway segment of Diamond Springs Parkway, east of Missouri Flat Road. Consistent with the County's *General Plan*, the impact on this roadway segment can be mitigated by upgrading the roadway to a Divided, Four Lane Arterial for Year 2030 conditions. This impact can be mitigated to be less than significant.

- The addition of the proposed project results in a significant impact for one or more analysis scenarios at the following intersections: Diamond Springs Parkway @ Missouri Flat Road, Diamond Springs Parkway @ Throwita Way, Diamond Road (SR-49) @ Lime Kiln Road/Black Rice Road, and Diamond Road (SR-49) @ Pleasant Valley Road.

    - Diamond Springs Parkway @ Missouri Flat Road – The significant impact at this intersection for Interim (2020), and Cumulative (2030) Conditions can be mitigated with the addition of a northbound left-turn lane. This impact can be mitigated to be less than significant.
    - Diamond Springs Parkway @ Throwita Way – The significant impact at this intersection for Interim (2020) and Cumulative (2030) Conditions can be mitigated with the implementation of coordinated signal timings. This impact can be mitigated to be less than significant.
    - Diamond Road (SR-49) @ Lime Kiln Road/Black Rice Road – The significant impact at this intersection for Existing (2010), Interim (2020), and Cumulative (2030) Conditions can be mitigated with the restriction of the left-turns and through movements out of both Lime Kiln Road and Black Rice Road. This impact can be mitigated to be less than significant.
    - Diamond Road (SR-49) @ Pleasant Valley Road – The significant impact at this intersection for Existing (2010) Conditions can be mitigated by optimizing the signal timing and allocation of green-time. Interim (2020) Conditions and Cumulative (2030) conditions can be mitigated by the addition of a southbound left-turn lane. As a result, this impact can be mitigated to be less than significant.

- The peak-hour signal warrant is satisfied at the following intersections for one or more analysis scenario:
    - Diamond Road (SR-49) @ Lime Kiln Road/Black Rice Road (Years 2010, 2020, and 2030)
    - Pleasant Valley Road @ China Garden Road (Years 2010, 2020 and 2030)
    - Missouri Flat Road @ China Garden Road (Years 2010, 2020, and 2030)

- The 95th percentile queue lengths are expected to exceed available storage, both with and without the proposed project, for seven (7) of the twenty (20) selected locations. Improvements have been identified to accommodate anticipated vehicle queues.

- According to the County's 2007 *Accident Location Study*, one (1) study area site (i.e., intersections and roadway segments) in the vicinity of the proposed project was "previously identified, and [is] currently scheduled for improvement. It is anticipated that, upon completion, [this] improvement will substantially reduce the number of accidents."

Appendices to the Traffic Impact Analysis Document (Draft EIR Appendix M) are available for review at the El Dorado County Department of Transportation.

M.2 - Supplemental Consolidated LOS and Delay Data, May 18, 2010

Kimley-Horn
and Associates, Inc.

May 18, 2010

Ms. Jennifer Maxwell, P.E.
El Dorado County Department of Transportation
4505 Golden Foothill Parkway
El Dorado Hills, CA 95762

Suite 150
11060 White Rock Road
Rancho Cordova, California
95670

Re: Supplemental Consolidated LOS and Delay Data
Diamond Springs Parkway TIA

Dear Ms. Maxwell:

As requested, I am writing to provide supplemental, tabulated Level of Service (LOS) and delay data as documented in the *Diamond Springs Parkway Traffic Impact Analysis*, dated May 6, 2010, as approved by Caltrans. We are providing this consolidated information to simplify the readers' interpretation of the study conclusions. The following tables present the subject data.

Table 1 – Intersection Levels of Service for Queuing Mitigation – Existing (2010) Conditions

#	Intersection	Traffic Control	AM Peak-Hour		PM Peak-Hour	
			Delay (seconds)	LOS	Delay (seconds)	LOS
7	Diamond Springs Pkwy @ Missouri Flat Rd	Signal	22.0	C	24.4	C
8	Diamond Springs Pkwy @ Throwita Way	Signal	10.0	A	15.6	B
9	Diamond Springs Pkwy @ Diamond Rd (SR-49)	Signal	49.4	D	19.0	B
12	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd	TWSC*	17.1 (WB)	C	17.4 (EB)	C
13	Diamond Rd (SR-49) @ Pleasant Valley Rd	Signal	18.8	B	26.0	C
14	Pleasant Valley Rd (SR-49) @ Missouri Flat Rd	Signal	9.7	A	16.3	B
15	Pleasant Valley Rd (SR-49) @ China Garden Rd	TWSC*	16.6 (SB)	C	21.8 (SB)	C
17	Missouri Flat Rd @ China Garden Rd	TWSC*	15.5 (WB)	C	20.0 (WB)	C

* Control delay for worst minor approach (worst minor movement) for TWSC.

Please note that the data shown in Table 1 was not required in the preparation of the approved traffic study. In an effort to assist with consistent data presentation, and to enable effective scenario operating condition comparisons within the project's Environmental Impact Report (EIR), this scenario has been prepared to mimic "opening day" conditions. Because a 10-year design life was assumed in the preparation of the traffic study, mitigations identified in a year 2020 scenario were presumed to be included in the initial project development in 2010 and were, therefore, not specifically evaluated as part of the year 2010 scenarios. As such, it was necessary to "model" the full opening day project with appropriate near term traffic volumes.

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Table 2 – Intersection Levels of Service for Queuing Mitigation – Interim (2020) Conditions

#	Intersection	Traffic Control	AM Peak-Hour		PM Peak-Hour	
			Delay (seconds)	LOS	Delay (seconds)	LOS
7	Diamond Springs Pkwy @ Missouri Flat Rd	Signal	24.8	C	28.2	C
8	Diamond Springs Pkwy @ Throwita Way	Signal	13.0	B	16.8	B
9	Diamond Springs Pkwy @ Diamond Rd (SR-49)	Signal	55.7	E	53.1	D
12	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd	TWSC*	20.9 (WB)	C	21.9 (EB)	C
13	Diamond Rd (SR-49) @ Pleasant Valley Rd	Signal	21.5	C	33.1	C
14	Pleasant Valley Rd (SR-49) @ Missouri Flat Rd	Signal	11.5	B	23.3	C
15	Pleasant Valley Rd (SR-49) @ China Garden Rd	TWSC*	24.4 (SB)	C	55.5 (SB)	F+
17	Missouri Flat Rd @ China Garden Rd	TWSC*	25.5 (WB)	D	53.2 (WB)	F++

* Control delay for worst minor approach (worst minor movement) for TWSC.
+ Intersection operates at LOS F without the addition of the project (279.7 (SB)), and the project reduces traffic volumes through global redistribution of trips. Per County *Protocols*, this is not defined as a Significant Impact and does not require mitigation.
++ Intersection operates at LOS F without the addition of the project (246.1 (WB)), and the project reduces traffic volumes through global redistribution of trips. Per County *Protocols*, this is not defined as a Significant Impact and does not require mitigation.

Table 3 – Intersection Levels of Service for Queuing Mitigation – Cumulative (2030) Conditions

#	Intersection	Traffic Control	AM Peak-Hour		PM Peak-Hour	
			Delay (seconds)	LOS	Delay (seconds)	LOS
7	Diamond Springs Pkwy @ Missouri Flat Rd	Signal	30.4	C	33.3	C
8	Diamond Springs Pkwy @ Throwita Way	Signal	15.7	B	15.4	B
9	Diamond Springs Pkwy @ Diamond Rd (SR-49)	Signal	52.0	D	44.4	D
12	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd	TWSC*	12.3 (EB)	B	14.7 (EB)	B
13	Diamond Rd (SR-49) @ Pleasant Valley Rd	Signal	23.3	C	59.8	E
14	Pleasant Valley Rd (SR-49) @ Missouri Flat Rd	Signal	16.0	B	35.7	D
15	Pleasant Valley Rd (SR-49) @ China Garden Rd	TWSC*	45.5 (SB)	E	252.6 (SB)	F+
17	Missouri Flat Rd @ China Garden Rd	TWSC*	67.6 (WB)	F++	226.7 (WB)	F++

* Control delay for worst minor approach (worst minor movement) for TWSC.
+ Intersection operates at LOS F without the addition of the project (802.3 (SB)), and the project reduces traffic volumes through global redistribution of trips. Per County *Protocols*, this is not defined as a Significant Impact and does not require mitigation.
++ Intersection operates at LOS F without the addition of the project (AM – 372.7 (WB), PM – >1,000 (WB)), and the project reduces traffic volumes through global redistribution of trips. Per County *Protocols*, this is not defined as a Significant Impact and does not require mitigation.

The data presented in Table 2 and Table 3 can be found in Appendix H of the final traffic study.

Please contact me at (916) 859-3617 or via e-mail at matt.weir@kimley-horn.com if you have any questions or require additional information.

Very truly yours,

KIMLEY-HORN AND ASSOCIATES, INC.

Matthew D. Weir, P.E., T.E., PTOE
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