KD Anderson & Associates, Inc.
Transportation Engineers

September 9, 2016

Ms. Natalie Porter
EL DORADO COUNTY DEPT OF TRANSPORTATION
2850 Fairlane Court
Placerville, CA 95667

RE: COMPARISON OF PIEDMONT OAKS AND SHERIFF'S DEPT TRAFFIC STUDIES

Dear Natalie:

Based on our conversation earlier this week I have completed a comparison of the 5-year near term scenario (2019) of the Piedmont Oaks traffic study we completed in 2014 and the 10-year near term (2025) scenario of the Sheriff's Department traffic study we completed in 2015.

The Piedmont Oaks traffic study was completed using the 'old' version of the County Transportation Impact Study Guidelines (TISG) while the Sheriff's Department study used the current guidelines. The Piedmont Oaks study used the old methodology of developing near-term turning movements, using the higher volumes of either the approved / pending projects or the interpolated volumes of the existing and cumulative model forecasts. We understand the previous model, used in the Piedmont Oaks study, had higher cumulative volumes than the current model. The Sheriff's Department report used the County's new model and methodology to determine near term volumes, which includes a straight line interpolation of the baseline and cumulative model results. Both studies used SimTraffic and evaluated the Missouri Flat Road corridor, from US 50 to Pleasant Valley Road, and the Pleasant Valley Road corridor between Missouri Flat Road and SR 49 in El Dorado.

The current model includes the Piedmont Oaks land use. The project is located within Traffic Analysis Zone (TAZ) 365 and is currently zoned R1 and R1-PF-CPO, One Family Residential and Professional Office Commercial districts. 50% of the trips from the project are accounted for along Missouri Flat Road for the near term volumes in the Sheriff's study. This is based on the 2035 model traffic projections and the near term analysis being ten years from the existing conditions (2015).

Comparison of Common Intersections

Table 1 presents the Levels of Service at the nine common intersections analyzed in both studies; a tenth intersection, Missouri Flat Road at Diamond Springs Parkway was analyzed only under future conditions in the Piedmont Oaks study but in both the near term and future conditions in the Sheriff's Department study. In comparing the two studies two intersections, Missouri Flat Road at China Garden Road and Pleasant Valley Road at Forni Road will operate at unacceptable levels of service.

The Piedmont Oaks study identified that the project should pay their fair share of the intersection improvements at Missouri Flat Road / China Garden Road. However, with regard to County Policy TC-Xf, at the time of approval of a tentative map for a single family residential subdivision of five or more parcels that worsens traffic on the County road system, the County shall either condition the project to construct all road improvements necessary to maintain or attain acceptable Levels of Service or ensure the

TABLE 1
PEAK HOUR INTERSECTION LEVELS OF SERVICE COMPARISON

Location	Control	Piedmont Oaks 2019				Sheriff's Dept 2025			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay
1. Missouri Flat Rd / WB US 50 ramps	Signal	C	20.5	C	27.2	B	16.7	B	17.7
2. Missouri Flat Rd / EB US 50 ramps	Signal	B	18.9	C	28.4	B	15.0	C	26.2
3. Missouri Flat Rd / Mother Lode Dr	Signal	B	10.3	B	10.2	B	11.1	B	12.3
4. Missouri Flat Rd / Forni Rd	Signal	C	21.5	C	31.5	C	28.9	D	35.9
5. Missouri Flat Rd / Golden Center Dr	Signal	B	15.8	C	29.7	C	21.4	C	30.4
6. Missouri Flat Rd / Diamond Springs Pkwy	Signal	N/C	N/C	N/C	N/C	B	11.3	B	12.6
7. Missouri Flat Rd / China Garden Rd	EB/WB Stop								
NB Left		◊	◊	◊	◊	(A)	(9.0)	(B)	(10.2)
SB Left		C	18.6	E	42.3	(B)	(10.5)	(A)	(9.3)
EB		(F)	(67.1)	(F)	(67.2)	(E)	(37.6)	(E)	(44.7)
WB		(F)	(60.8)	(F)	(129.5)	(F)	(105.3)	(F)	(107.3)
8. Missouri Flat Rd / Pleasant Valley Rd	Signal	C	22.5	B	14.1	C	25.2	C	33.4
9. Pleasant Valley Rd / SR 49 (West)	AWS	C	18.0	C	22.2	F	51.5	E	39.4
10. Pleasant Valley Rd / Forni Rd	SB Stop								
SB		(F)	(53.5)	C	21.6	(F)	(73.5)	(D)	(26.7)
EB Left		A	6.8	A	6.4	(A)	(9.3)	(A)	(9.0)

N/C – not completed
◊ – no delay reported

KDA

commencement of construction of the necessary road improvements are included in the County's 10-year CIP. The County does not have an identified CIP project for the Missouri Flat / China Garden Road intersection; therefore, the Piedmont Oaks project would be required to install the improvement unless a different project were to construct it first. The Sheriff's Department TIA identified the following mitigation for this intersection:

- The intersection will meet the peak hour signal warrant. Installation of a traffic signal would result in acceptable levels of service at the intersection during both a.m. and p.m. peak periods. A second alternative, also presented in the Sheriff's Department study, included an option to limit China Garden Road and opposing driveway traffic to right turns only. This would also result in acceptable levels of service in the a.m. and p.m. peak hours.

We would anticipate that the County would condition the project to include both alternatives as the potential mitigation measure.

The Pleasant Valley Road / SR 49 (west) intersection and the Pleasant Valley Road / Forni Road intersection will both operate at unacceptable levels of service in 2025; however, the Piedmont Oaks project will generate less than10 peak hour trips through these intersections. Based on General Plan Policy TC-Xe this is not considered significant. Therefore, no fair share contribution would be required.

It is expected that the remaining intersections, which operate at acceptable levels of service in both scenarios, have adequate capacity to accommodate the remaining 50% of traffic from the Piedmont Oaks project. This is based on the reported delays and levels of service of these intersections shown in Table 1.

Piedmont Oaks Intersections

The Piedmont Oaks study also evaluated intersections along Diamond Road and Pleasant Valley Road east of Missouri Flat Road. Table 2 presents the Levels of Service at these remaining seven intersections. An eighth intersection, Missouri Flat Road at Plaza Drive was also included as this intersection was analyzed only in the Piedmont Oaks report.

As we noted earlier, the cumulative model volumes from the new model are lower than the previous model that was used in the Piedmont Oaks study. Using the new model would reduce the traffic volumes at these intersections, however, when accounting for the six year increase from 2019 to 2025 the intersections would likely see an increase in traffic. We have not yet calculated how much traffic would be added to these intersections using the new model. Qualitatively, all intersections except Pleasant Valley Road at Racquet Way would appear to have adequate capacity to accommodate the project traffic based on the 2019 delays and associated levels of service.

In the 2019 plus Project scenario the Pleasant Valley Road / Racquet Way intersection operates with the southbound approach at LOS F. It is possible that this intersection would operate with the southbound approach at LOS F in the a.m. peak hour in the 2025 conditions. Similar to the Missouri Flat Road / China Garden Road intersection the project would be required to improve the intersection to LOS E or better conditions.

TABLE 2
PEAK HOUR INTERSECTION LEVELS OF SERVICE
2019 PLUS PROJECT CONDITIONS – PIEDMONT OAKS

Location	Control	AM Peak Hour		PM Peak Hour	
		LOS	Average Delay	LOS	Average Delay
1. Missouri Flat Rd / Plaza Dr	Signal	B	15.6	C	29.6
2. Pleasant Valley Rd (SR 49) / China Garden Rd	SB Stop				
SB		A	3.4	A	4.5
EB Left		C	15.6	B	14.6
3. Diamond Rd (SR 49) / Pleasant Valley Rd (SR 49)	Signal	D	38.9	C	23.2
4. Pleasant Valley Rd / Racquet Way	NB / SB				
NB	Stop	E	49.5	C	20.8
SB		F	94.1	A	8.1
EB Left		B	11.2	A	5.3
WB Left		B	11.6	B	11.6
5. Diamond Road (SR 49) / Truck St	EB Stop				
NB Left		A	2.4	A	3.3
EB		A	4.3	A	4.5
6. Diamond Road (SR 49) / Bradley Dr	EB Stop				
NB Left		A	2.8	A	3.7
EB		A	3.8	A	5.4
7. Diamond Rd (SR 49) / Lime Kiln Rd – Black Rice Ln	EB / WB				
NB Left	Stop	A	4.2	A	6.5
SB Left		A	1.6	A	4.6
EB		A	6.6	A	8.5
WB		A	4.9	A	9.3
8. Diamond Road (SR 49) / Project Access	WB Stop				
SB Left		A	3.6	A	3.1
WB		A	6.3	A	9.6

The original report noted that a traffic signal would be needed to mitigate this condition. However, the southbound approach consists of a single lane, and the addition of a dedicated right turn lane may improve the approach delay to less than significant. We would suggest the following mitigation for this location:

- The intersection will meet the peak hour signal warrant in the p.m. peak hour. Installation of a traffic signal would result in acceptable levels of service at the intersection during both a.m. and p.m. peak periods. Other alternatives, such as the addition of a southbound right turn only lane, may result in acceptable levels of service in the a.m. and p.m. peak hours.

We would anticipate that the County would condition the project to include this as the potential mitigation measure.

Conclusions

While we have not yet completed a quantitative analysis of the Piedmont Oaks subdivision for 2025 conditions a qualitative assessment comparing the levels of service at the common intersections with the Sheriff's Department traffic study indicates that there is adequate capacity at those intersections to accommodate the additional traffic generated by the Piedmont Oaks subdivision without requiring additional mitigation measures.

At those intersections analyzed only in the Piedmont Oaks traffic study adequate capacity may be available at all intersections to accommodate project traffic under 2025 conditions without requiring additional mitigation measures.

We will be preparing an amendment to the Piedmont Oaks traffic study that will provide an analysis of the near term 2025 and 2025 plus Project scenarios to confirm these suppositions.

Please call me if you have any questions or need additional information.

Sincerely,

KD Anderson & Associates, Inc.

Jonathan Flecker, P.E.
Transportation Engineer

Cc: Mel Pabalinas, El Dorado County
Jim Davies

Sheriff Dept_Piedmont Oaks Comparison 9-9-16.doc

June 9, 2016

Mr. Jim Davies
854 Diablo Road
Danville, CA 95426

RE: QUALITATIVE TRIP GENERATION COMPARISON – PIEDMONT OAKS, EL DORADO COUNTY, CA

Dear Mr. Davies:

KD Anderson & Associates, Inc. has completed a qualitative trip generation assessment for your Piedmont Oaks project in El Dorado County. Based on our conversation the project has been modified from our original report completed in July 2014. The original report included 104 single family residential units and 20,000 square feet of professional office uses. The revised project now includes 107 single family residential uses and 10,000 square feet of professional office uses.

Trip Generation - Original Land Uses

The trip generation for the original project was calculated using trip generation rates published in the *Trip Generation Manual* (Institute of Transportation Engineers, 9th Edition, 2012). Table 1 presents the tip generation rates from the July 2014 report. The applicable trip generation rates yield a total of 1,475 new daily trips, with 135 new trips expected in the a.m. peak hour and 210 new trips generated during the p.m. peak hour.

TABLE 1
TRIP GENERATION – ORIGINAL USES

Land Use	Unit Quantity	Size	Trips Per Unit						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Single Family Residential (LU 210)	Unit	104	10.47	25%	75%	0.79	63%	37%	1.05
General Office (LU 710)	KSF	20.0	19.32	88%	12%	2.64	17%	83%	5.04
Single Family Residential (LU 210)			**1,089**	21	62	**83**	69	40	**109**
General Office (LU 710)			**386**	46	6	**53**	17	84	**101**
Net New Trips			**1,475**	**67**	**68**	**135**	**86**	**124**	**210**

KSF – thousand square feet
Notes – no pass-by trip reduction; numbers may not add up due to rounding

Trip Generation - Proposed Land Uses

The proposed project will increase the number of residential units on the site by three, increasing the total to 107 units. The revised site plan will eliminate Lot 2, which included 10,000 square feet of proposed office space. Table 2 presents the revised trip generation rate, again using the *Trip Generation Manual*. The trip generation rates used in both scenarios were based on fitted curve equations for the proposed land uses. The equations for both uses are at the bottom of Table 2.

TABLE 2
TRIP GENERATION – PROPOSED USES

Land Use	Unit Quantity	Size	Trips Per Unit						
				AM Peak Hour			PM Peak Hour		
			Daily	In	Out	Total	In	Out	Total
Single Family Residential (LU 210)	Unit	107	10.45	25%	75%	0.79	63%	37%	1.04
General Office (LU 710)	KSF	10.0	22.81	88%	12%	3.03	17%	83%	8.97
Single Family Residential (LU 210)			**1,118**	21	63	**85**	70	41	**112**
General Office (LU 710)			**228**	27	4	**30**	15	74	**90**
Net New Trips			**1,346**	**48**	**67**	**115**	**86**	**116**	**201**

Single Family

Daily - T = EXP(0.92*(LN(X))+2.72); AM - T = (0.70*X)+9.74; PM - T = EXP(0.90*(LN(X))+0.51)

General Office Building

Daily - T = EXP(0.76*(LN(X))+3.68); AM - T = EXP(0.80*(LN(X))+1.57); PM - T = (1.12*X)+78.45

KSF – thousand square feet

Notes – no pass-by trip reduction; numbers may not add up due to rounding

Findings

Table 3 displays the peak hour trips that may be generated under original land uses and the proposed land uses. The proposed project is expected to generate 129 fewer daily trips, 20 fewer a.m. peak hour trips and 9 fewer p.m. trips. The proposed project will generate less or equal traffic directionally and would be expected to result in equal or improved levels of service at each of the study intersections.

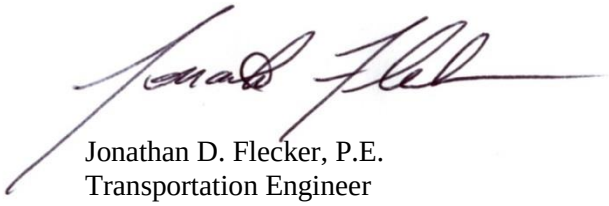
TABLE 3
TRIP GENERATION COMPARISON

Scenario	Daily Trips Generated	AM Trips Generated	PM Trips Generated
Original Land Uses	1,475	135	210
Proposed Land Uses	1,346	115	201
Net Difference	(129)	(20)	(9)

Should you have any questions please free to contact me at (916) 660-1555 or you may reach me via e-mail at jflecker@kdanderson.com.

Sincerely,

KD Anderson & Associates, Inc.



Jonathan D. Flecker, P.E.
Transportation Engineer

TRAFFIC IMPACT ANALYSIS

FOR

PIEDMONT OAK ESTATES
El Dorado County CA

Prepared For:

JIM DAVIES
854 Diablo Road
Danville, CA 94526

Prepared By:

KDAnderson & Associates, Inc.
3853 Taylor Road, Suite G
Loomis, California 95650
(916) 660-1555

December 19, 2014

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TRAFFIC IMPACT ANALYSIS FOR
PIEDMONT OAK ESTATES
El Dorado County CA

TABLE OF CONTENTS

TRAFFIC IMPACT ANALYSIS FOR
PIEDMONT OAK ESTATES
El Dorado County CA

EXECUTIVE SUMMARY

- **Project Description.** The Piedmont Oak Estates project consists of 104 single family residential units and 20,000 square feet of business professional uses. The project is located along the east side of Diamond Road (State Route 49) in El Dorado County. Public access will be provided along Diamond Road and will be the east leg of the future Diamond Springs Parkway / Diamond Road intersection. The project is expected to generate approximately 1,475 new daily trips, with 135 new trips occurring during the a.m. peak hour and 210 new trips generated during the p.m. the p.m. peak hour.

- **Existing Setting.** The study areas addressed traffic conditions at sixteen existing intersections on Missouri Flat Road, Pleasant Valley Road and Diamond Road. Traffic volume data was obtained from the traffic study prepared for the *Diamond Springs / El Dorado Area Mobility and Livable Community Plan (DSEDAMLCP)* and from new counts made in April 2014 and July 2014.

  Level of Service calculations were made using the analysis tools employed for the *DSEDAMLCP (i.e., Synchro-Simtraffic).* All study intersections operate at a Levels of Service that satisfies the County's Minimum Level of Service threshold. None of the un-signalized study intersections carry traffic volumes that meet peak hour signal warrants. No improvement recommendations were identified for existing conditions.

- **Existing Plus Project Impacts.** The operation of the proposed project will increase the volume of traffic on the study area circulation system. However all study intersections will continue to satisfy the County's minimum Level of Service standard and mitigation measures are not required. The following mitigations are made:

  - The project shall contribute its fair share to the cost of regional circulation improvements via the existing countywide traffic impact mitigation (TIM) fee program.
  - Sidewalk should be installed along the curb returns along the east side of Diamond Road as part of Piedmont Oaks development to provide contiguous access between the project site and the Diamond Dorado Center.

  Diamond Road / Project Access intersection: A left turn lane with standard Caltrans transitions on each approach and departure should be constructed along Diamond Road for left turn access into the project site. The left turn lane should be constructed back to back with the left turn lane at Bradley Drive. The left turn lane for the project should be 100' with the left turn lane at Bradley Drive 120' long.

- **Year 2019 Background Conditions.** Year 2019 conditions were identified based on interpolation between current traffic volumes and Year 2035 traffic volume forecasts made for the *DSEDAMLCP*. Two approved / pending projects were added to these traffic volumes. These projects included *The Crossing* and *Willow Creek Retail Center*. The Crossing is located north of the Missouri Flat Road / US 50 interchange while Willow Creek is located in the northwest quadrant of the Missouri Flat Road / Forni Road intersection. One intersection, Missouri Flat Road at China Garden Road will decline below the County's minimum Level of Service standard. Although the County General Plan allows LOS F conditions along Missouri Flat Road between Mother Lode Drive and China Garden Road this does not apply to the intersections. The intersection meets the peak hour traffic signal warrant and signalization of this intersection will improve the operation in the a.m. peak hour to LOS B (18.4 seconds delay).

- **2019 Plus Project Conditions.** The trips generated by the proposed project were superimposed onto the Year 2019 background conditions, and resulting peak hour Levels of Service were calculated. Three intersections will operate below the County's minimum Level of Service standard.

  Missouri Flat Road / China Garden Road intersection: Under project conditions the intersection will continue to operate at LOS F conditions on the eastbound driveway and westbound approach. The project should pay their fair share of signalizing the intersection identified in the 2019 Conditions section. The fair share is project traffic divided by the difference in future and existing volumes. With Diamond Springs Parkway (DSP) being constructed in the future, traffic will shift to DSP, resulting in a net decrease in traffic by 2035 at the Missouri Flat Road / China Garden Road intersection. The fair share methodology was determined using the total volumes at the Missouri Flat Road / DSP intersection as all traffic at this intersection would travel through the Missouri Flat Road / China Garden Road if DSP were not constructed. Using this method the project is responsible for 6.41% of the project cost. With signalization the intersection will operate at LOS B (18.7 seconds) in the a.m. peak hour and LOS C (30.2 seconds) in the p.m. peak hour.

  Pleasant Valley Road / Forni Road intersection: This intersection will operate with the southbound Forni Road approach operating at LOS F in the AM peak hour. The volume portion of the peak hour signal warrant is met in both AM and PM peak hours. A traffic signal is not recommended at this time due to proximity of this intersection to the Pleasant Valley Road / SR-49 South intersection. This intersection is under Caltrans jurisdiction. As noted in the *Diamond Dorado Traffic Impact Analysis* prepared by Farhad & Associates in 2010 Caltrans indicated that a traffic signal should not be installed at this location until the Pleasant Valley Road / Forni Road intersection and the Pleasant Valley Road / SR-49 South intersection is realigned to constitute one intersection. Another possible solution may include a roundabout with the realignment of Pleasant Valley Road with SR 49 and Forni Road. No mitigation is recommended as part of this project.

Pleasant Valley Road / Racquet Way intersection: This intersection will operate with the southbound approach at LOS F in the AM peak hour. Installation of a traffic signal will improve the intersection operation to LOS C (31.4 seconds per vehicle). The project should pay their fair share of the improvement as the intersection will decline to LOS F in the 2035 No Project Condition. Using the Caltrans fair share methodology the project should pay 5.4% of the improvement.

- **Year 2035 Background Conditions.** Year 2035 traffic forecasts were based on the *DSEDAMLCP* traffic volumes and were expanded to account for traffic along the Diamond Springs Parkway Corridor and Diamond Road (SR 49). Traffic volumes not contained in the *DSEDAMLCP* were developed based upon the growth rates identified between Existing and 2035 *DSEDAMLCP* time periods, the *Diamond Springs Parkway EIR Circulation Element and the Diamond Dorado Retail Center EIR Traffic Impact Analysis*. Year 2019 conditions were identified based on interpolation between current traffic volumes and Year 2035 traffic volume forecasts made for the *DSEDAMLCP*.

  Roadways in 2035 are projected to remain with their current lane configurations. The Diamond Springs Parkway, north of China Garden Road will connect Missouri Flat Road to Diamond Road (SR 49) and is projected to be completed by 2035. This roadway will include two through lanes in each direction with turn lanes at key intersections. Missouri Flat Road will become the west and south legs of the Missouri Flat Road / China Garden Road intersection. Missouri Flat Road south of China Garden Road will continue to include one through lane in each direction.

  The Diamond Springs Parkway / Diamond Road intersection will include two left turn lanes and a through lane along the northbound approach, a through lane and a right turn lane along the southbound approach and a left lane and a right lane along the eastbound approach. The intersection will be signalized and was analyzed with the signal in 2035 conditions. As part of this project the Bradley Drive intersection will be modified to right-in, right-out access only. Additionally, the Diamond Road / Lime Kiln Road – Black Rice Lane will be modified to allow right-in, right-out and left-in movements only.

  An intermediate intersection at Throwita Way will be constructed. This intersection will include a left turn lane, two through lanes and a right turn lane for eastbound traffic, a left turn lane, a through lane and a through-right lane for westbound traffic, a single lane for south bound traffic and a right lane and a through-left lane for northbound traffic. The intersection will be signalized and was analyzed as part of the 2035 conditions.

  Four intersections will operate below the County's minimum Level of Service standard.

  Missouri Flat Road / US 50 Eastbound and Westbound Ramp intersections: The westbound US 50 ramp intersections will operate at LOS F conditions in 2035. A single point urban interchange (SPUI) should be considered that will combine the eastbound and westbound ramp intersections into a single intersection along Missouri Flat Road. The

SPUI would consist of two through lanes and two left turn lanes at the intersection with two left lanes and two right turn lane along the eastbound and westbound off-ramps. Implementation of this new interchange will result in LOS D (37.5 seconds per vehicle) operation at the new intersection. The County is currently undertaking the Missouri Flat Area Master Circulation and Funding Plan (MC&FP) Phase II analysis which will provide a mechanism for the County to fund improvements to the U.S. Highway 50/Missouri Flat Road Interchange and adjacent arterials and collector roads.

Pleasant Valley Road/ SR 49 intersection: This intersection will operate at LOS F conditions in the AM peak hour (58.7 seconds per vehicle) and the PM peak hour (70.0 seconds per vehicle). As noted in the *Diamond Dorado Traffic Impact Analysis* prepared by Farhad & Associates in 2010 Caltrans indicated that a traffic signal should not be installed at this location until the Pleasant Valley Road / Forni Road intersection and the Pleasant Valley Road / SR-49 South intersection is realigned to constitute one intersection. Another possible solution may include a roundabout with the realignment of Pleasant Valley Road with SR 49 and Forni Road.

Pleasant Valley Road/ Forni Road intersection: This intersection will operate with the southbound Forni Road approach operating at LOS F in the AM peak hour. The volume portion of the peak hour signal warrant is met in the AM and PM peak hour. A traffic signal is not recommended at this time due to proximity of this intersection to the Pleasant Valley Road / SR-49 South intersection. This intersection is under Caltrans jurisdiction. As noted in the *Diamond Dorado Traffic Impact Analysis* prepared by Farhad & Associates in 2010 Caltrans indicated that a traffic signal should not be installed at this location until the Pleasant Valley Road / Forni Road intersection and the Pleasant Valley Road / SR-49 South intersection is realigned to constitute one intersection. Another possible solution may include a roundabout with the realignment of Pleasant Valley Road with SR 49 and Forni Road.

Pleasant Valley Road/ Racquet Way intersection: The southbound approach of this intersection will operate at LOS F conditions in the AM peak hour (55.8 seconds per vehicle). The intersection meets the traffic volume section of the peak hour signal warrant in the AM peak hour and both delay and volume sections of the warrant in the PM peak hour. Signalization of this intersection will improve the operation to an LOS B condition (19.7 seconds per vehicle) in the AM peak hour.

- **2035 Plus Project Conditions.** The trips generated by the proposed project were superimposed onto the Year 2035 background conditions, and resulting peak hour Levels of Service were calculated. Five intersections will operate below the County's minimum Level of Service standard.

  Missouri Flat Road / US 50 Eastbound and Westbound Ramp intersections: The westbound US 50 ramp intersections will both operate at LOS F conditions in 2035. A single point urban interchange (SPUI) should be considered that will combine both ramp intersections into a single intersection along Missouri Flat Road. The SPUI would

consist of two through lanes and two left turn lanes at the intersection with two left lanes and two right turn lane along the eastbound and westbound off-ramps. Implementation of this new interchange will result in LOS D (38.6 seconds per vehicle) operation at the new intersection.

The County is currently undertaking the Missouri Flat Area Master Circulation and Funding Plan (MC&FP) Phase II analysis which will provide a mechanism for the County to fund improvements to the U.S. Highway 50/Missouri Flat Road Interchange and adjacent arterials and collector roads. Since there is no funding mechanism in place the project should pay their fair share of the improvements.

The project should pay their fair share of the improvement as the intersection will decline to LOS F in the 2035 No Project Condition. Using the Caltrans fair share methodology the project should pay 3.2% of the improvement.

Missouri Flat Road / China Garden Road intersection: Under project conditions the intersection will continue to operate at LOS F conditions on the eastbound driveway and westbound approach. The intersection was identified for signalization in the 2019 scenario. With signalization the intersection will operate at LOS A (9.7 seconds) in the PM peak hour.

Pleasant Valley Road/ SR 49 intersection: This intersection will operate at LOS F conditions in the AM peak hour (55.5 seconds per vehicle) and the PM peak hour (68.7 seconds per vehicle). As noted in the *Diamond Dorado Traffic Impact Analysis* prepared by Farhad & Associates in 2010 Caltrans indicated that a traffic signal should not be installed at this location until the Pleasant Valley Road / Forni Road intersection and the Pleasant Valley Road / SR-49 South intersection is realigned to constitute one intersection. Another possible solution may include a roundabout with the realignment of Pleasant Valley Road with SR 49 and Forni Road. Since there is no defined project at this time there are no mitigations required for the project.

Pleasant Valley Road/ Forni Road intersection: This intersection will operate with the southbound Forni Road approach operating at LOS F in the AM peak hour. The volume portion of the peak hour signal warrant is met in both AM and PM peak hours. A traffic signal is not recommended at this time due to proximity of this intersection to the Pleasant Valley Road / SR-49 South intersection. This intersection is under Caltrans jurisdiction. As noted in the *Diamond Dorado Traffic Impact Analysis* prepared by Farhad & Associates in 2010 Caltrans has indicated that a traffic signal should not be installed at this location until the Pleasant Valley Road / Forni Road intersection and the Pleasant Valley Road / SR-49 South intersection is realigned to constitute one intersection. Another possible solution may include a roundabout with the realignment of Pleasant Valley Road with SR 49 and Forni Road. Since there is no defined project at this time there are no mitigations required for the project.

TRAFFIC IMPACT ANALYSIS FOR
PIEDMONT OAK ESTATES
El Dorado County CA

INTRODUCTION

Study Purpose and Objectives

This study evaluates the traffic impacts associated with the construction of the Piedmont Oak Estates project. The Piedmont Oak Estates project includes construction of 104 single family residential units and 20,000 square feet (sf) of business professional offices. The project is located east of Diamond Road (State Route 49) and north of Black Rice Lane in El Dorado County.

A previous study was completed in 2012 for the site. The scope of this traffic analysis was based on the previous study and was reviewed with the El Dorado County Department of Transportation (DOT) for concurrence of scope parameters. Based on direction from DOT this study addresses the following scenarios:

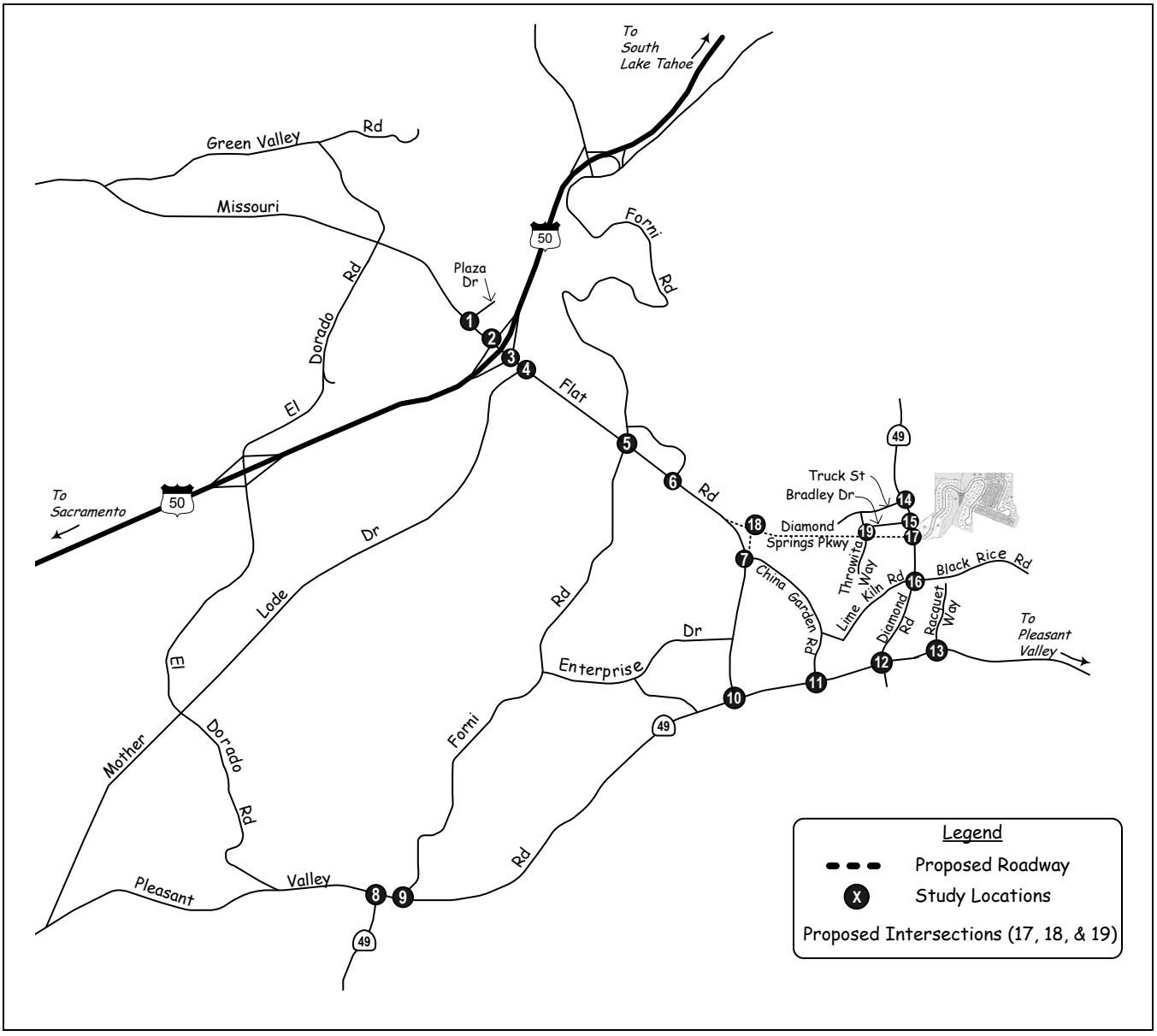
1. Existing (2014) Traffic Conditions
2. Existing (2014) Plus Project Conditions
3. 2019 Traffic Conditions
4. 2019 Plus Project Conditions
5. 2035 Traffic Conditions
6. 2035 Plus Project Conditions

The objective of this study is to identify those roads and street intersections that may be impacted by development of this project based on El Dorado County significance criteria.

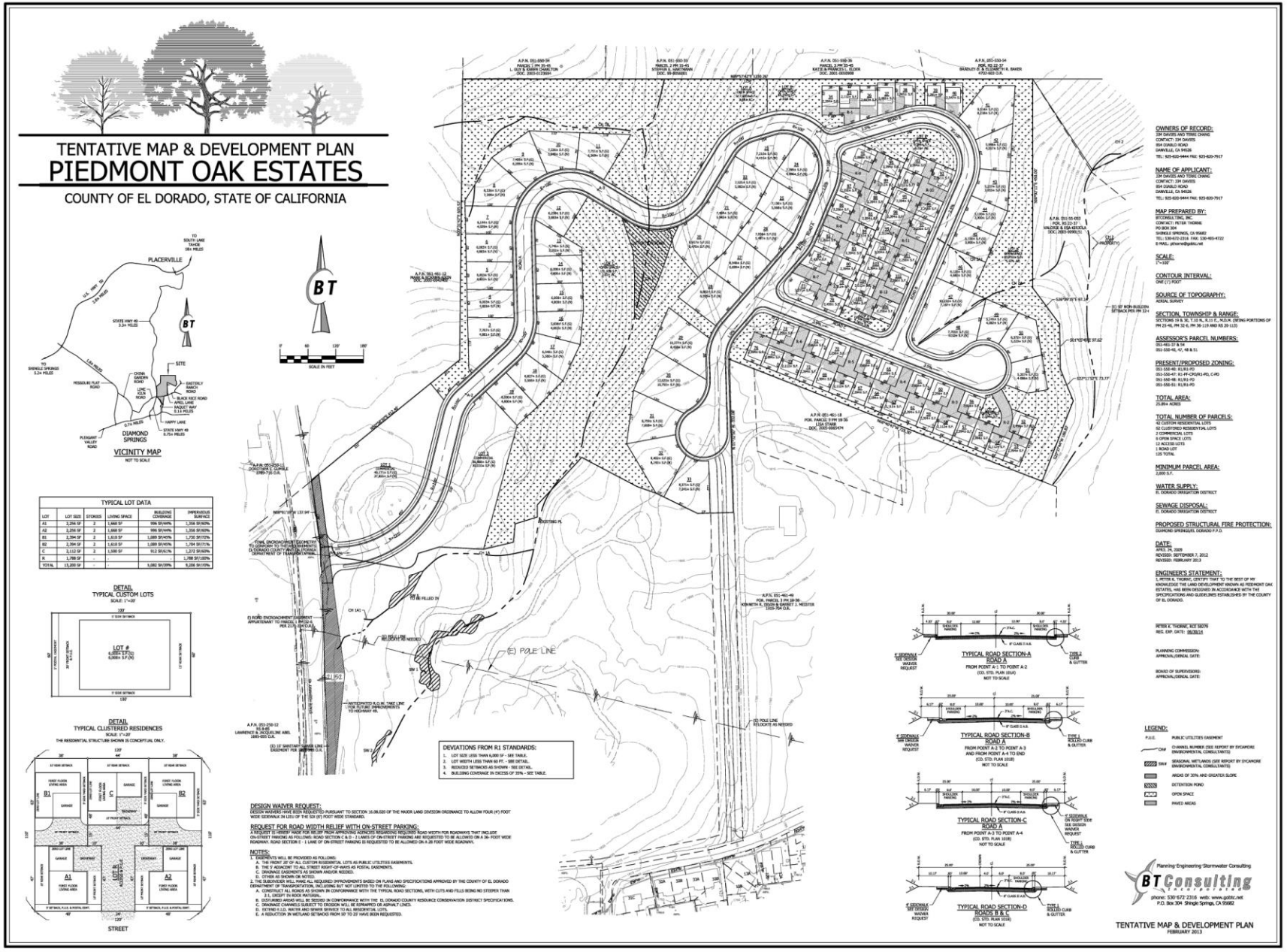
Project Description

The proposed project includes 104 residential lots and 20,000 sf of professional office building space. The project is located east of Diamond Road (SR 49) and north of Black Rice Lane and is shown in Figure 1. Full access will be provided at a new intersection about 750' north of Lime Kiln Road-Black Rice Lane. This intersection will also serve as the eastern terminus to the future Diamond Springs Parkway. Figure 2 illustrates the proposed site plan and the proposed new intersection along Diamond Road.

The project is located within Traffic Analysis Zone (TAZ) 365 and is currently zoned R1 and R1-PF-CPO, One Family Residential and Professional Office Commercial districts. The zoning will be modified for the project to R1-PD and C-PD. These include One Family Residential and Commercial zoning in Planned Developments.



VICINITY MAP / STUDY LOCATIONS


TENTATIVE MAP & DEVELOPMENT PLAN
PIEDMONT OAK ESTATES
COUNTY OF EL DORADO, STATE OF CALIFORNIA
VICINITY MAP
TYPICAL LOT DATA
DETAIL
TYPICAL CUSTOM LOTS
DETAIL
TYPICAL CLUSTERED RESIDENCES
DEVIATIONS FROM R1 STANDARDS:
DESIGN WAIVER REQUEST:
REQUEST FOR ROAD WIDTH RELIEF WITH ON-STREET PARKING:
NOTES:
OWNERS OF RECORD:
NAME OF APPLICANT:
MAP PREPARED BY:
SCALE:
CONTOUR INTERVAL:
SOURCE OF TOPOGRAPHY:
SECTION, TOWNSHIP & RANGE:
ASSESSOR'S PARCEL NUMBERS:
PRESENT/PROPOSED ZONING:
TOTAL AREA:
TOTAL NUMBER OF PARCELS:
MINIMUM PARCEL AREA:
WATER SUPPLY:
SEWAGE DISPOSAL:
PROPOSED STRUCTURAL FIRE PROTECTION:
DATE:
ENGINEER'S STATEMENT:
TYPICAL ROAD SECTION-A ROAD A
TYPICAL ROAD SECTION-B ROAD A
TYPICAL ROAD SECTION-C ROAD A
TYPICAL ROAD SECTION-D ROADS B & E
LEGEND:
BT Consulting
TENTATIVE MAP & DEVELOPMENT PLAN
FEBRUARY 2013

SITE PLAN

EXISTING SETTING

Study Area

This study addresses traffic conditions at sixteen (16) existing intersections along Missouri Flat Road, Pleasant Valley Drive and Diamond Road. Three additional intersections along Diamond Springs Parkway were evaluated under future buildout conditions. The limits of the study area were based on the previous traffic study for the Piedmont Oak Estates Traffic Impact Analysis prepared by AECOM in 2012 and reviewed with El Dorado County DOT and DOT's traffic engineering consultant (Kittelson & Associates [KAI]). The text that follows describes the roadway facilities included in this analysis.

The quality of traffic flow is typically governed by the operation of major intersections and the daily volume of traffic along the roadways. The physical characteristics of the study intersections are described in the text which follows.

Study Area Intersections

The **Missouri Flat Road / Plaza Drive** intersection is located roughly 900 feet south of the project and is the most northerly intersection on a coordinated system of traffic signals at the US 50 intersection. Recent improvements have widened the intersection. Two through lanes are provided in each direction on Missouri Flat Road. The northbound approach includes dual left turn lanes and a separate right turn lane. The Plaza Drive approaches are each two lanes and operate with split phases. The eastbound approach is configured with a lane permitting all movements and a separate right turn lane. The westbound approach is similar but has a separate left turn lane.

The **Missouri Flat Road / Westbound US 50 ramps** intersection is controlled by a coordinated traffic signal. The Missouri Flat Road approaches feature dual northbound left turn lanes and a separate southbound right turn lane. The four lane exit from US 50 is configured with a dual left turn lane and dual right turn lanes.

The **Missouri Flat Road / Eastbound US 50 ramps** intersection is controlled by a coordinated traffic signal. The Missouri Flat Road approaches feature dual southbound left turn lanes and a separate northbound right turn lane. The three lane exit from US 50 is configured with a separate left turn lane and right turn lanes, as well as a combined left, thru and right turn lane.

The **Missouri Flat Road / Mother Lode Drive** intersection is signalized and located roughly 250 feet from the Eastbound US 50 ramps intersection. The Missouri Flat Road approaches have separate left turn and right turn lanes. The eastbound Mother Lode Drive approach has three lanes configured as dual left turns and a separate right turn lane.

The **Missouri Flat Road / Forni Road** intersection is also signalized and located roughly ½ mile south of the Mother Lode Drive intersection. The Missouri Flat Road approaches each include separate left turn and right turn lanes. The Forni Road approaches have separate left turn,

through and right turn lanes, and a second left turn lane has been provided on the eastbound approach.

The **Missouri Flat Road / Golden Center Drive** intersection is located about 1,100 feet south of Forni Road. This signalized intersection includes separate left turn lanes on the Missouri Flat Road approaches and a separate right turn lane on the southbound approach. The Golden Center Drive approaches are single lanes which operate with permitted phasing.

The **Missouri Flat Road / China Garden Road** intersection is located about 2,100 feet south of Golden Center Drive. This unsignalized intersection includes single lanes along Missouri Flat Road with a separate left turn lane on the southbound approach. A CLTL is present on the northbound approach of Missouri Flat Road and north of the southbound left turn lane. The China Garden Road approach consists of a single lane which is stop controlled.

The **Missouri Flat Road / (SR 49) Pleasant Valley Road** intersection is located at the southern end of Missouri Flat Road roughly two miles from the project site. This tee intersection is controlled by an actuated traffic signal. The Pleasant Valley Road approaches have single through lanes in each direction, with dual eastbound left turn lanes and a separate westbound right turn lane. The two lane southbound approach on Missouri Flat Road is configured as separate left turn and right turn lanes, and the right turn "overlaps" the eastbound left turn phase.

The **Pleasant Valley Road (SR 49) / SR-49 South** intersection is located about 2½ miles southwest of the project site. This tee intersection is all-way stop controlled. Eastbound Pleasant Valley Road and northbound SR 49 have single lane approaches while westbound Pleasant Valley Road includes a left turn lane and a through lane.

The **Pleasant Valley Road (SR 49) / Forni Road South** intersection is located about 500' east of the SR-49 South intersection. This tee intersection is stop controlled along Forni Road which intersects Pleasant Valley Road at about a 30° skew to the northeast. All roadway approaches are single lane.

The **Pleasant Valley Road (SR 49) / China Garden Road** intersection is located about ½ mile southwest of the project site. This tee intersection is stop controlled along China Garden Road, and all roadway approaches are single lane.

The **Pleasant Valley Road (SR 49) / Diamond Road (SR 49 North) / Fowler Lane** intersection is located about ¼ mile south of the project site. This intersection is controlled by an actuated traffic signal. The eastbound Pleasant Valley Road approach includes a left turn lane, a through lane and a through-right lane. The westbound Pleasant Valley Road approach includes left turn, through and right turn lanes. The northbound Fowler Lane approach consists of a through-left lane and a right turn lane while the southbound Diamond Road approach includes a left turn lane and a through-right lane. The Pleasant Valley Road approaches provide protected left turn phasing while the Diamond Road and Fowler Lane approaches are split phase.

The **Pleasant Valley Road (SR 49) / Racquet Way** intersection is located about ¼ mile east of the Pleasant Valley Road / Diamond Road intersection. This intersection is stop controlled along Racquet Way to the north and a commercial driveway to the south. The Pleasant Valley Road approaches include left turn lanes and a through-right lane while Racquet Way and the driveway are single lane approaches.

The **Diamond Road / Truck Street** intersection is located about 700' north of the project's north intersection. This tee intersection is stop controlled along Truck Street, and all roadway approaches are single lane.

The **Diamond Road / Bradley Drive** intersection is located about 300' north of the project's north intersection. This tee intersection is stop controlled along Bradley Drive. The southbound Diamond Road approach and the Bradley Drive approach are single lane while the northbound Diamond Road approach consists of a left turn lane and a through lane. With the completion of the Diamond Springs Parkway in the future Bradley Drive will have only right-in, right-out movements.

The **Diamond Road / Lime Kiln Road / Black Rice Lane** intersection will provide emergency vehicle access to the project site. This intersection is stop controlled along Lime Kiln Road and Black Rice Lane. All approaches are single lane.

The **Missouri Flat Road / Diamond Springs Parkway** intersection is a future intersection that is part of the Diamond Springs Parkway project. This intersection when completed will consist of a left turn lane, two through lanes and a right turn lane along the eastbound (Missouri Flat Road) and westbound (Diamond Springs Parkway) approaches. The northbound Missouri Flat Road approach will consist of dual left turn lanes and a through-right lane. The opposing southbound approach will consist of a left turn lane and a through-right lane. This intersection will be signalized.

The **Diamond Springs Parkway / Throwita Way** intersection is a future intersection that will be located about 900' west of the Diamond Road / Diamond Springs Parkway intersection. This intersection will be signal controlled. The June 2010 Diamond Springs Parkway DEIR identifies the lane configuration at this intersection to include left and right turn lanes and two through lanes along Diamond Springs Parkway, a single lane along the southbound Throwita Way approach and a left-through lane and a right turn lane along the northbound Throwita Way approach.

The **Diamond Road / Diamond Springs Parkway** intersection is a future intersection that will provide direct access into the project site. This intersection will be signal controlled. The June 2010 Diamond Springs Parkway DEIR identifies the lane configuration at this intersection to include a left turn lane and a right turn lane along Diamond Springs Parkway, two left turn lanes and a through lane along the northbound Diamond Road approach and a right turn lane and a through lane along the southbound Diamond Road approach.

Analysis Criteria

Level of Service Methodology. *Level of Service Analysis* has been employed to provide a basis for describing existing traffic conditions and for evaluating the significance of project traffic impacts. Level of Service measures the *quality* of traffic flow and is represented by letter designations from "A" to "F", with a grade of "A" referring to the best conditions, and "F" representing the worst conditions. The guidelines and analyses used for this report follow El Dorado County standards.

Local agencies adopt minimum Level of Service standards for their facilities. El Dorado County identifies LOS 'E' as the acceptable Level of Service on roadways and state highways within the unincorporated areas of the County in the Community Regions and LOS D in the Rural Centers and Rural Regions except as specified in the General Plan. Four roadway segments, none of which are part of this study, allow LOS F conditions after 2008. The analysis techniques presented in the *2010 Highway Capacity Manual* were used to calculate Level of Service and to provide a basis for describing existing traffic conditions and evaluating the significance of project traffic impacts.

Various software programs have been developed to assist in calculating intersection Level of Service, and the level of sophistication of each program responds to factors that affect the overall flow of traffic. In this case, Synchro-Simtraffic software was employed in order to account for the effects of closely spaced traffic signals along Missouri Flat Road. The files originally developed for the El Dorado County Transportation Commission's *Diamond Springs and El Dorado Area Mobility and Livable Community Plan (DSEDAMLCP)* were obtained and, in consultation with El Dorado County DOT and KAI, applicable adjustments were made to reflect current geometry and operational characteristics. The simulation results contained herein reflect the average of the mean 10 one-hour simulation runs selected from a 20 run sample. Each run employed a 10 minute seeding period.

The intersection Levels of Service presented in this analysis are based on the weighted average total delay per vehicle for the intersection as a whole at signalized intersections and at locations controlled by all-way stops. The average delay experienced by motorists yielding the right of way is the basis for identification of Level of Service at locations controlled by side street stop signs. Applicable Level of Service thresholds based on average delay are shown in Table 1.

Intersection Level of Service Thresholds of Significance. A traffic impact is considered to be significant under El Dorado County guidelines if the project causes an intersection to change from LOS E to LOS F. Worsening of conditions at facilities already operating at unacceptable levels of service is also considered a significant impact. The County's General Plan Policy TC-Xe defines worsen as any of the following conditions:

a. a 2% increase in traffic during the a.m. peak hour, p.m. peak hour or daily trips, or
b. the addition of 100 or more daily trips, or
c. the addition of 10 or more trips during the a.m. peak hour or the p.m. peak hour.

TABLE 1
LEVEL OF SERVICE DEFINITIONS

Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. Delay ≤ 10.0 sec	Little or no delay. Delay ≤ 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and ≤ 20.0 sec	Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and ≤ 35.0 sec	Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestion of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35.0 sec and ≤ 55.0 sec	Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay > 55.0 sec and ≤ 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. Delay > 80.0 sec	Intersection blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.
Sources: 2010 Highway Capacity Manual, Transportation Research Board (TRB) Special Report 209.			

Intersection Queuing Analysis. The quality of traffic flow can also be affected by queuing at signalized intersections. The lengths of peak period queues were identified and compared to available left lane storage to determine whether spillover from turn lanes would affect the adjoining travel lanes or extend through adjacent intersections. 95th percentile queue lengths have been calculated as a byproduct of the Synchro-Simtraffic simulation. Those locations where the 95th percentile queue exceeds the available storage have also been noted.

Traffic Signal Warrants. The extent to which existing or projected traffic volumes may justify signalization at un-signalized intersections has been determined based on consideration of traffic signal warrant presented in the *Manual of Uniform Traffic Control Devices, 2012.* For this analysis the volume thresholds associated with Warrant 3 (Peak Hour Volume) have been assessed. For this analysis the "rural" criteria have been employed based on speed limits in excess of 40 mph.

Public Transit

The El Dorado County Transit Authority offers local fixed route, regional commuter route, dial-a-ride and para-transit services. The Diamond Springs Route (DS) is about ½ mile from the project site. This route travels along Pleasant Valley Road and loops along Racquet Way. Passengers can use this route to travel to the Missouri Flat Road Transit Center where they can transfer to other routes. The route operates from about 7:00 a.m. to about 6:00 p.m. Monday through Friday at one-hour headways.

The *Western El Dorado County Short and Long Range Transit Plan* has identified the following improvements for transit service in the Diamond Springs area. Short Range improvements include beginning the route schedule at 6:00 a.m., extending the existing weekday route schedule by one hour at the end of the day and instituting Saturday service between 9:00 a.m. and 5:00 p.m. Long Range improvements include revising the route as a result of completion of Diamond Springs Parkway. This will allow the route to be reconfigured to include the Diamond Dorado Shopping Center along Diamond Springs Parkway. This may allow El Dorado Transit to provide a bus stop at or near the project entrance at the Diamond Road / Diamond Springs Parkway intersection.

Bicycle and Pedestrian Facilities

Designated bicycle facilities do not exist in the vicinity of the project. According to the El Dorado County Bicycle Transportation Plan, Class II bike lanes are proposed along Diamond Road from Pleasant Valley Road to Diamond Springs Parkway. In addition, Class II bike facilities are also proposed along Pleasant Valley Road through Diamond Springs and along Diamond Springs Parkway between Diamond Road and Missouri Flat Road. The section of Missouri Flat Road, from about Forni Road to Pleasant Valley Road will also include Class II facilities. This network will provide bicyclists direct routes to and from the Piedmont Oaks site.

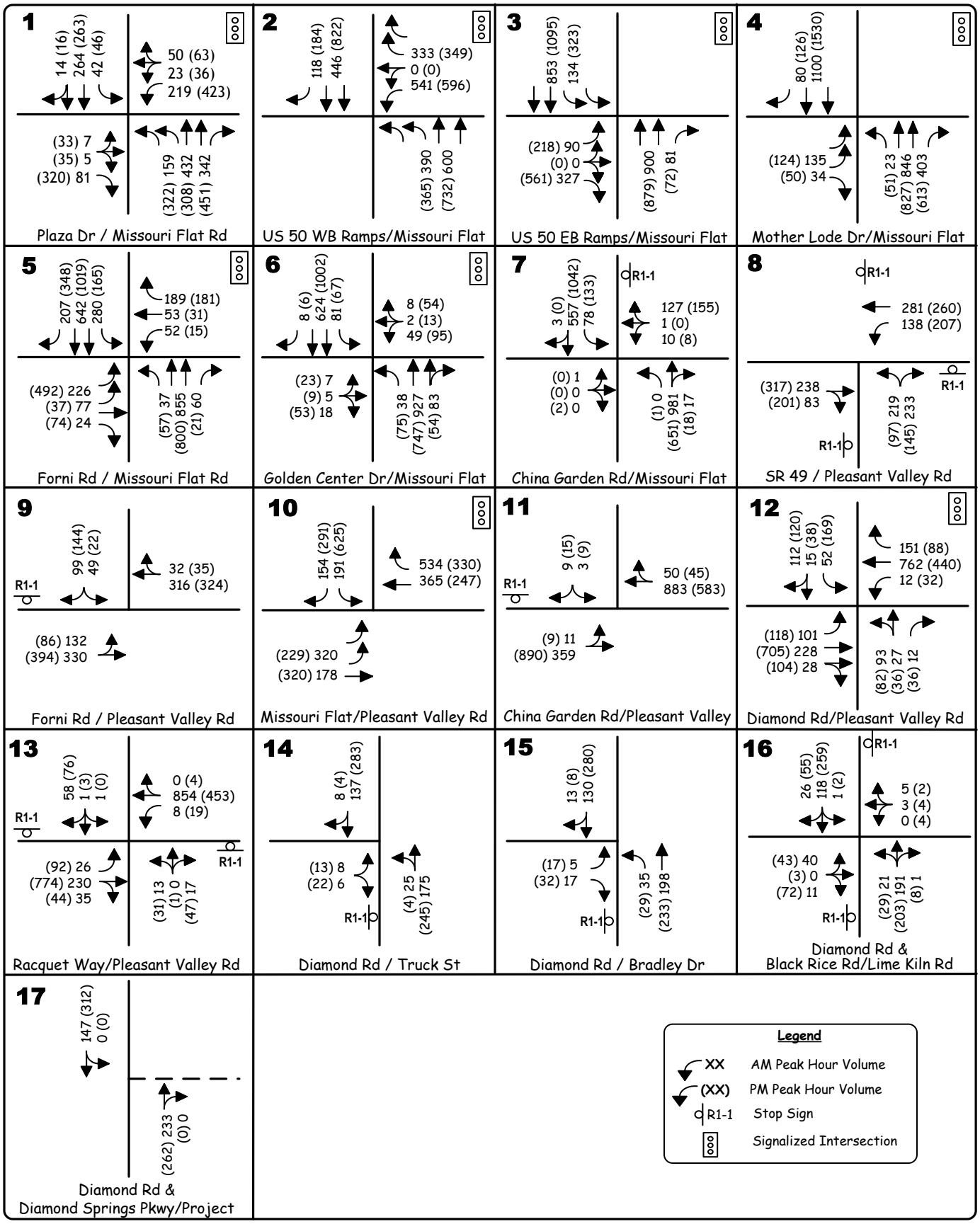
Diamond Road is a rural road and sidewalk is not present in the vicinity of the project. According to the El Dorado County Transportation Commission *El Dorado County Transportation Plan* new development has sidewalks fronting shopping centers and is contained in many residential subdivisions. It is possible that sidewalks will be installed along the west side of Diamond Road as part of the Diamond Dorado Center project. Sidewalks are proposed within the Piedmont Oaks project but not along the east side of Diamond Road. Sidewalk should be installed along the curb returns along the east side of Diamond Road as part of Piedmont Oaks development to provide a contiguous access between the project site and the Diamond Dorado Center.

Existing Traffic Operating Conditions

Traffic Volume Counts. This analysis makes use of peak hour traffic volume counts presented in the *Diamond Springs and El Dorado Area Mobility and Livable Community Plan* (DSEDAMLCP) traffic study, as well as new traffic counts conducted on April 8, 2014 and July 30, 2014. The July counts were adjusted based on turning movement counts that were conducted at adjacent intersections while school was in session. The counts are included in the Appendix, and the intersection turning movements are presented in Figure 3.

Intersection Levels of Service. Table 2 summarizes current operating Levels of Service at the study area intersections developed based on mean 10 simulation runs conducted for each time period. As indicated, all study intersections currently operate with acceptable Levels of Service during the a.m. and p.m. peak hours.

Traffic Signal Warrants. Two unsignalized intersections carry volumes that meet the peak hour signal warrant criteria during either peak period. These include the Missouri Flat Road / China Garden Road intersection and the Pleasant Valley Road / SR 49 (South) intersection where the peak hour signal warrant is met in both AM and PM peak periods. Two additional intersections meet the peak hour volume portion of the peak hour warrant. These include the Pleasant Valley Road / Forni Road intersection and the Pleasant Valley Road / Racquet Way intersection.



EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS

TABLE 2
EXISTING PEAK HOUR LEVELS OF SERVICE AT INTERSECTIONS

Location	Control	AM Peak Hour		PM Peak Hour		Traffic Signal Warranted?
		LOS	Average Delay	LOS	Average Delay	
1. Missouri Flat Rd / Plaza Dr	Signal	B	16.7	C	27.7	N/A
2. Missouri Flat Rd / WB US 50 ramps	Signal	B	18.4	B	17.2	N/A
3. Missouri Flat Rd / EB US 50 ramps	Signal	B	16.2	C	21.3	N/A
4. Missouri Flat Rd / Mother Lode Dr	Signal	A	8.5	A	8.5	N/A
5. Missouri Flat Rd / Forni Rd	Signal	C	21.8	C	20.6	N/A
6. Missouri Flat Rd / Golden Center Dr	Signal	B	14.9	C	20.2	N/A
7. Missouri Flat Rd / China Garden Rd	WB Stop					Yes*
NB Left		◊	◊	◊	◊	
SB Left		C	15.2	B	12.5	
EB		E	37.4	B	10.4	
WB		C	23.9	C	17.6	
8. Pleasant Valley Rd (SR 49) / SR-49 South	AWS Stop	B	12.5	C	15.3	Yes
9. Pleasant Valley Rd (SR 49) / Forni Rd	SB Stop					Yes†
SB		D	31.8	B	11.8	
EB Left		A	6.0	A	6.5	
10. Missouri Flat Rd / Pleasant Valley Rd (SR 49)	Signal	B	17.6	B	16.9	N/A
11. Pleasant Valley Rd (SR 49) / China Garden Rd	SB Stop					No
SB		A	1.8	A	2.3	
EB Left		B	13.8	A	8.1	
12. Diamond Rd (SR 49)/Pleasant Valley Rd (SR 49)	Signal	B	18.9	B	17.8	N/A
13. Pleasant Valley Rd / Racquet Way	NB / SB					Yes‡
NB	Stop	A	7.1	C	19.2	
SB		A	9.9	A	7.3	
EB Left		A	6.2	A	4.8	
WB Left		A	6.6	B	11.5	
14. Diamond Road (SR 49) / Truck St	EB Stop					No
NB Left		A	2.4	A	2.5	
EB		A	4.2	A	4.9	
15. Diamond Road (SR 49) / Bradley Dr	EB Stop					No
NB Left		A	3.1	A	3.7	
EB		A	3.6	A	7.4	
16. Diamond Road (SR 49) / Lime Kiln Rd – Black Rice Ln	EB / WB Stop					No
NB Left		A	3.7	A	5.4	
SB Left		A	2.1	A	2.6	
EB		A	5.4	A	6.4	
WB		A	4.1	A	6.7	

* meets volume and delay warrant in AM and PM peak hours
† meets volume warrant in AM and PM peak hours
‡ meets volume warrant in PM peak hour
◊ no delay reported

Intersection Queues. Table 3 presents information regarding current peak period queuing in lanes at signalized study intersections. In each case, the available storage has been presented along with current peak hour traffic volumes and the 95th percentile queue length. On multiple lane approaches the longest queue amongst a group of common lanes has been noted.

Most intersections have lane storage capacity that can accommodate peak period queues. Those 95th percentile queues with length exceeding the available storage have been highlighted. The 95th percentile queue exceeds available storage in nine locations.

TABLE 3
EXISTING PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour		PM Peak Hour	
		VPH	Queue (feet)	VPH	Queue (feet)
1. Missouri Flat Road / Plaza Drive					
NB left turn	330	159 (2)	105	322 (2)	191
NB through	450	432 (2)	100	308 (2)	196
NB right turn	450	342	100	451	131
SB left turn	110	42	64	46	70
EB left+through+right	120	93 (2)	66	388 (2)	203
WB left +through+right turn	275	282 (2)	159	522 (2)	232
2. Missouri Flat Road / WB US 50 ramps					
NB left turn	160	390 (2)	167	365 (2)	165
NB through	360	600 (2)	289	732 (2)	213
SB through	520	446 (2)	157	822 (2)	225
WB left turn	410	541 (2)	211	596 (2)	220
WB right turn	410	333 (2)	127	349 (2)	148
3. Missouri Flat Road / EB US 50 ramps					
NB through	160	900 (2)	206	879 (2)	185
NB right turn	140	81	73	72	85
SB left	160	134 (2)	192	323 (2)	214
SB through	380	853 (2)	353	1,095 (2)	419
EB left+through+right turn	540	417 (3)	137	779 (3)	213
4. Missouri Flat Road / Mother Lode Drive					
NB left turn	150	23	56	51	67
NB through	2,300	846 (2)	175	827 (2)	147
SB through	140	1,100 (2)	106	1,530 (2)	168
SB right turn	130	80	<25	126	66
5. Missouri Flat Road / Forni Road					
NB left turn	250	37	68	57	84
NB through	1,000	855 (2)	268	800 (2)	248
NB right turn	160	60	125	21	79
SB left turn	300	280	271	165	182
SB through	2,300	642 (2)	181	1,019 (2)	260
SB right turn	150	207	125	348	181
Highlighted values indicate queue length in excess of available storage					

TABLE 3 (cont'd)
EXISTING PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour		PM Peak Hour	
		VPH	Queue (feet)	VPH	Queue (feet)
6. Missouri Flat Road / Golden Center Drive					
NB left turn	120	38	68	75	100
SB left turn	160	81	115	67	151
10. Missouri Flat Road / SR 49 (Pleasant Valley Rd)					
SB left turn	600	191	153	625	238
SB right turn	600	154	72	291	93
EB left turn	160	320 (2)	176	229 (2)	137
WB right turn	190	534	221	330	153
12. Diamond Road (SR 49) / Pleasant Valley Rd (SR 49)					
SB left turn	340	52	70	169	146
SB through+right	340	127	100	158	105
NB right turn	100	12	36	36	78
NB left+through	600	120	119	118	129
EB left turn	200	101	120	118	158
WB right turn	170	151	222	88	118
WB left turn	100	12	48	32	90

Highlighted values indicate queue length in excess of available storage

PROJECT CHARACTERISTICS

The development of this project will attract traffic to the project site. The amount of additional traffic on a particular section of the street network is dependent upon two factors:

- Trip Generation, the number of new trips generated by the project, and
- Trip Distribution and Assignment, the specific routes that the new traffic takes.

Trip Generation

Trip generation is determined by identifying the type and size of land use being developed. Recognized sources of trip generation data may then be used to calculate the total number of trip ends that the project creates.

The trip generation for this project was calculated using trip generation rates published in the *Trip Generation Manual* (Institute of Transportation Engineers, 9th Edition, 2012. Applicable rates are found in categories 210 (Single Family Residential) and 710 (General Office Building), as noted in Table 4.

TABLE 4
TRIP GENERATION

Land Use	Unit Quantity	Size	Trips Per Unit						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Single Family Residential (LU 210)	Unit	104	10.47	25%	75%	0.79	63%	37%	1.05
General Office (LU 710)	KSF	20.0	19.32	88%	12%	2.64	17%	83%	5.04
Single Family Residential (LU 210)			**1,089**	21	62	**83**	69	40	**109**
General Office (LU 710)			**386**	46	6	**53**	17	84	**101**
Net New trips			**1,475**	**67**	**68**	**135**	**86**	**124**	**210**

KSF – thousand square feet
Notes – no pass-by trip reduction; numbers may not add up due to rounding

Application of applicable trip generation rates yields a total of 1,475 new daily trips, with 135 new trips expected in the a.m. peak hour and 210 new trips generated during the p.m. peak hour.

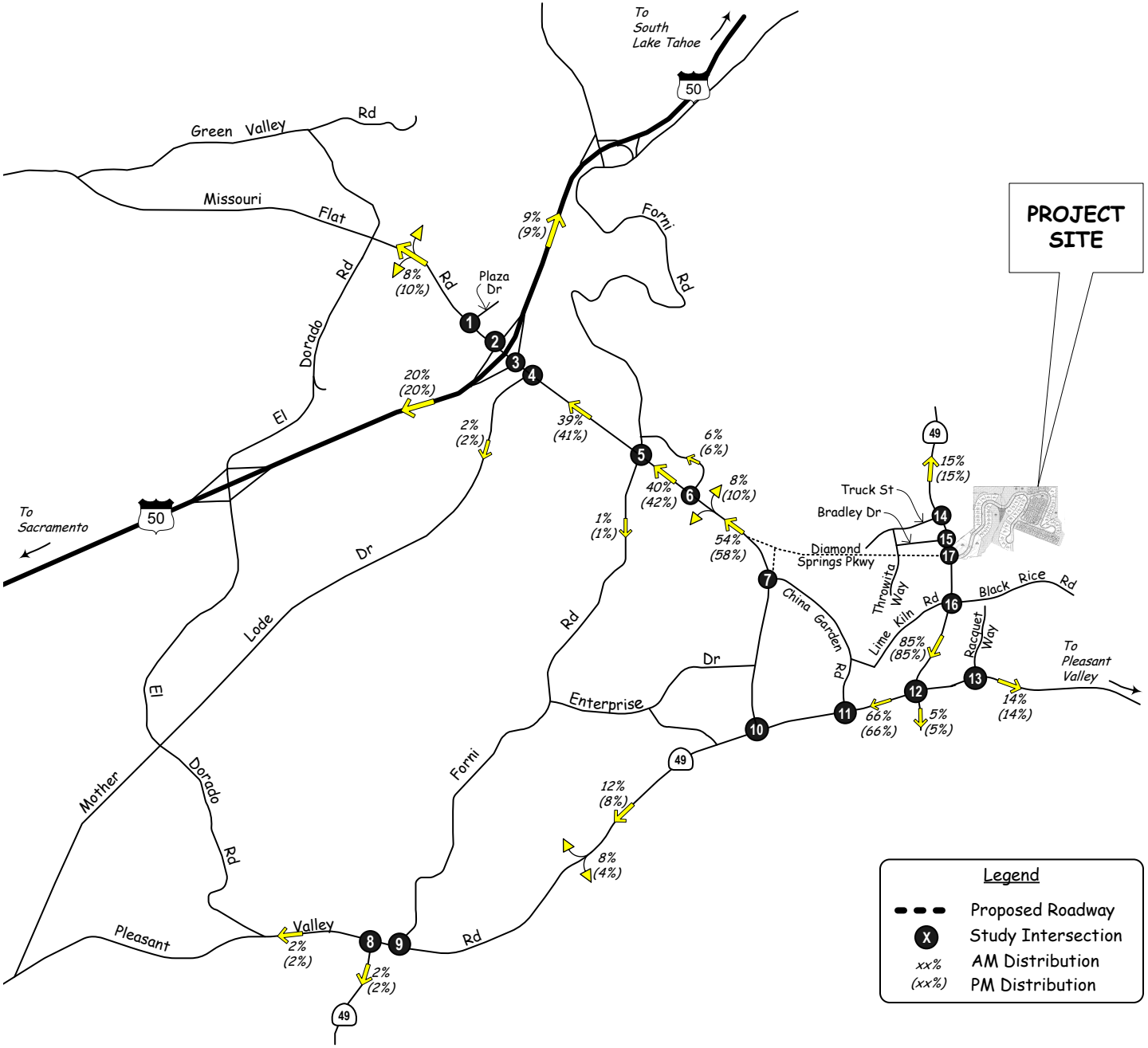
Trip Distribution & Assignment

Two trip distribution patterns were applied to trips related to the Project. One pattern was applied to Existing and Near Term Conditions (i.e., Existing plus Project and 2019 plus Project) and another pattern was applied to Long-Term (2035) Conditions. Table 5 presents the project trip distributions.

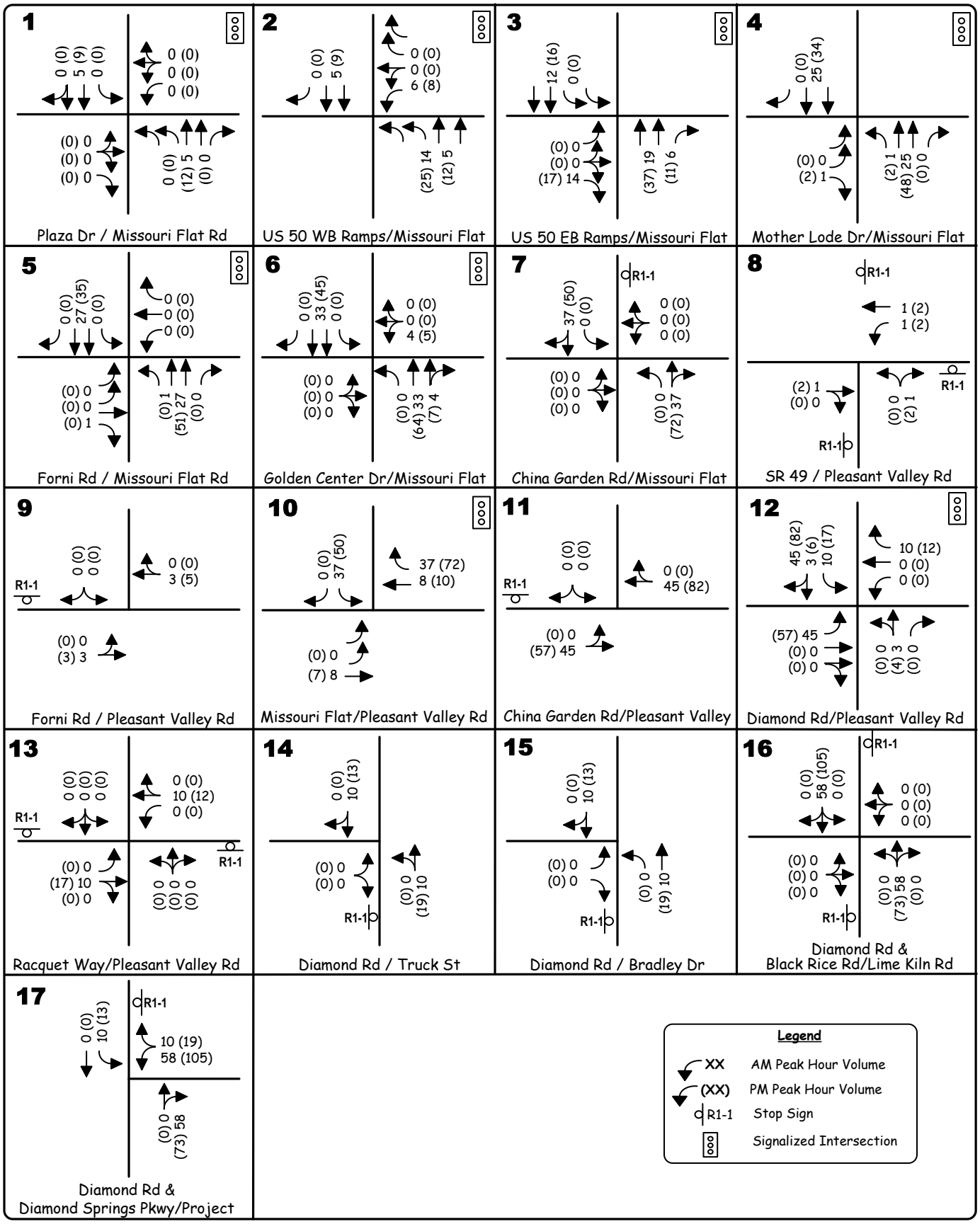
Existing and 2019. To evaluate the traffic related effects of the Project, trips that would be generated by the Project were distributed onto the roadway network. Trip distribution simulates the geographical pattern of travel, matching trips generated by one type of land use (e.g. residential) with trips generated by other types of land uses (e.g., education, employment, and shopping). Trip distribution patterns to and from the Project were based on the previous traffic study for the project site conducted by AECOM in 2012 but adjusted to account for school-related traffic. The project trip distribution pattern is shown in Figure 4 with the project traffic shown in Figure 5.

TABLE 5
PROJECT TRIP DISTRIBUTION

Direction	Route	Distribution	
		Existing / 2019	2035
North	Diamond Road (SR 49)	15%	15%
	Missouri Flat Road , north of US 50	8%	10%
South	Fowler Lane	5%	5%
	Koki Lane / Paterson Drive	8%	4%
	SR 49 (South)	2%	2%
West	Pleasant Valley Road west of SR 49 (South)	2%	2%
	US 50 west of Missouri Flat Road	20%	20%
	Mother Lode Drive west of Missouri Flat Road	2%	2%
	Forni Road west of Missouri Flat Road	1%	1%
East	US 50 east of Missouri Flat Road	9%	9%
	Pleasant Valley Road east of Diamond Road	14%	14%
Internal along Missouri Flat Road	Along Missouri Flat Road	8%	10%
	Golden Center Drive	6%	6%
Total		100%	100%



EXISTING AND 2019 PROJECT TRIP DISTRIBUTION



EXISTING & 2019 PROJECT ONLY
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

PROJECT TRAFFIC IMPACTS

Existing Plus Project Conditions

Traffic Volumes The impacts of developing the project uses on the project site have been identified by superimposing project traffic onto existing background conditions. Figure 6 displays the "Existing Plus Project" traffic volumes at each study intersection in both AM and PM peak hours.

Circulation System Improvements. Figure 6 also presents the intersection geometry and traffic controls resulting from implementation of the project's planned improvements along Diamond Springs Road. For purposes of the analysis it is assumed that a left turn lane will be added along southbound Diamond Road to provide left turn storage. The proposed access roadway will be stop controlled.

Intersection Levels of Service. Intersection Levels of Service were calculated and used as the basis for evaluating project impacts. Table 6 displays the peak hour Levels of Service at each study intersection and compares existing Levels of Service with those accompanying the project.

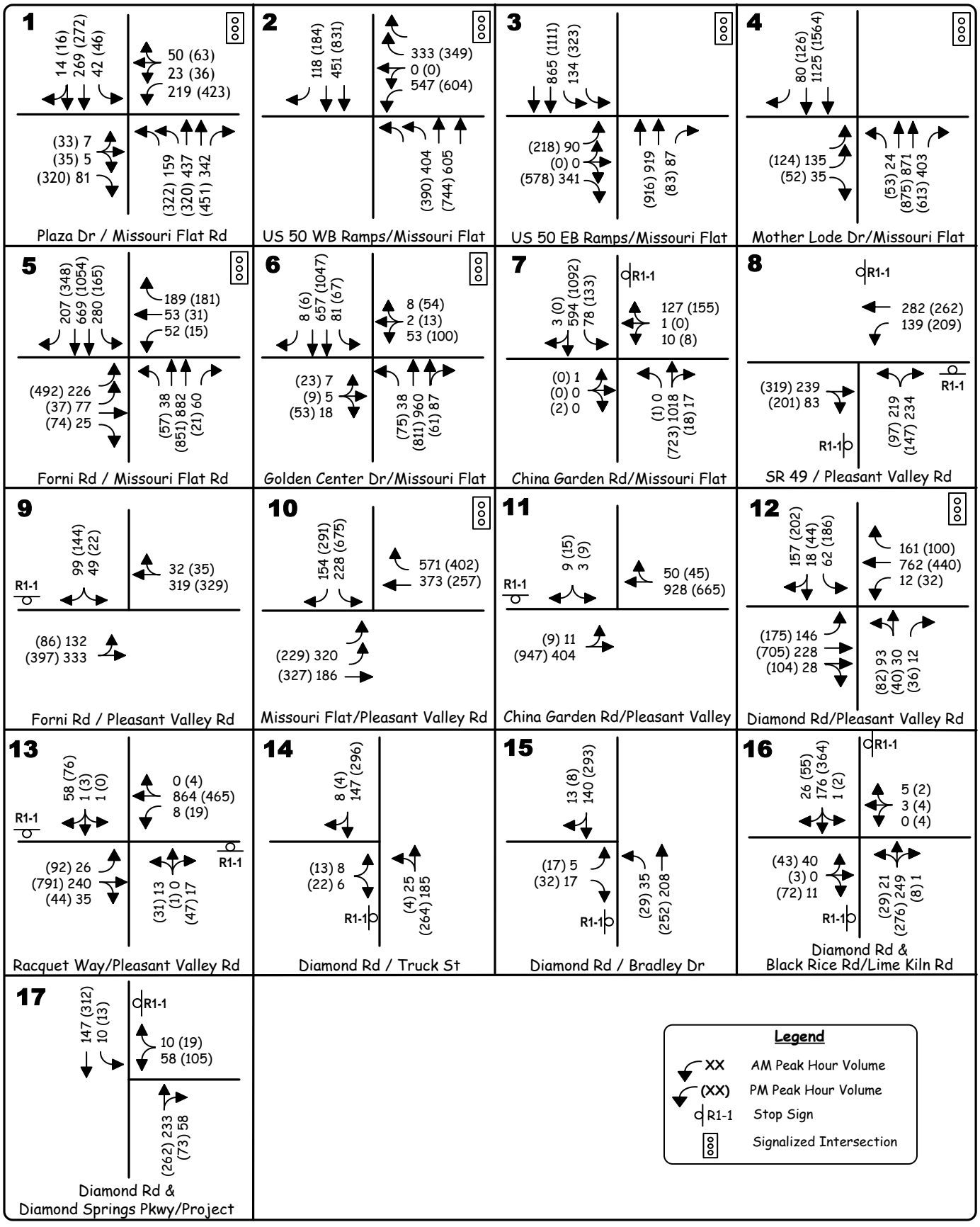
All intersections will continue to operate better than the minimum El Dorado County standard (i.e., LOS E or better).

Traffic Signal Warrants. Existing Plus Project traffic volumes at unsignalized intersections were compared to peak hour warrant requirements to determine whether traffic signals may be needed. Two unsignalized intersections will continue to carry volumes that meet the peak hour signal warrant criteria during either peak period. These include the Missouri Flat Road / China Garden Road intersection and the Pleasant Valley Road / SR 49 (South) intersection where the peak hour signal warrant is met in both AM and PM peak periods. Two additional intersections meet the peak hour volume portion of the peak hour warrant. These include the Pleasant Valley Road / Forni Road intersection and the Pleasant Valley Road / Racquet Way intersection.

Intersection Queues. Table 7 identifies peak period queues assuming the addition of project trips**. P**roject trips and the SimTraffic software may change the length of some queues. Those 95th percentile queues with length exceeding the available storage have been highlighted. Under Existing plus Project conditions eleven locations will exceed the available storage.

Project Access

Access is proposed via a stop control along the Project Access approach to the Diamond Road intersection. This access is projected to be the east leg of the proposed Diamond Springs Parkway / Diamond Road intersection. Emergency only vehicle access will be provided via Black Rice Lane south of the Project access intersection. The forecasted LOS for the intersection is LOS A for both the main line left turns and the side street approach.



EXISTING PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

TABLE 6
PEAK HOUR INTERSECTION LEVELS OF SERVICE
EXISTING PLUS PROJECT CONDITIONS

Location	Control	AM Peak Hour				PM Peak Hour				Traffic Signal Warranted?
		Existing		Ex Plus Project		Existing		Ex Plus Project		
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
1. Missouri Flat Rd / Plaza Dr	Signal	B	16.7	B	16.1	C	27.7	C	27.7	N/A
2. Missouri Flat Rd / WB US 50 ramps	Signal	B	18.4	B	19.1	B	17.2	B	17.8	N/A
3. Missouri Flat Rd / EB US 50 ramps	Signal	B	16.2	B	16.5	C	21.3	C	21.7	N/A
4. Missouri Flat Rd / Mother Lode Dr	Signal	A	8.5	A	8.8	A	8.5	A	8.9	N/A
5. Missouri Flat Rd / Forni Rd	Signal	C	21.8	C	21.1	C	20.6	C	21.8	N/A
6. Missouri Flat Rd / Golden Center Dr	Signal	B	14.9	B	14.8	C	20.2	C	21.5	N/A
7. Missouri Flat Rd / China Garden Rd	WB Stop									Yes*
NB Left		◊	◊	◊	◊	◊	◊	◊	◊	
SB Left		C	15.2	C	16.4	B	12.5	B	13.9	
EB		E	37.4	C	19.0	B	10.4	B	11.9	
WB		C	23.9	E	35.0	C	17.6	C	23.9	
8. Pleasant Valley Rd (SR 49) / SR-49 South	AWS Stop	B	12.5	B	11.1	C	15.3	C	17.4	Yes
9. Pleasant Valley Rd (SR 49) / Forni Rd	SB Stop									Yes†
SB		D	31.8	E	37.0	B	11.8	B	11.1	
EB Left		A	6.0	A	5.9	A	6.5	A	6.3	
10. Missouri Flat Rd / Pleasant Valley Rd (SR 49)	Signal	B	17.6	B	19.3	B	16.9	B	18.4	N/A
11. Pleasant Valley Rd (SR 49) / China Garden Rd	SB Stop									No
SB		A	1.8	A	2.2	A	2.3	A	2.7	
EB Left		B	13.8	B	13.0	A	8.1	B	10.9	
12. Diamond Rd (SR 49) / Pleasant Valley Rd (SR 49)	Signal	B	18.9	C	25.3	B	17.8	C	19.7	N/A

* meets volume and delay warrant in AM and PM peak hours

† meets volume warrant in AM and PM peak hours

‡ meets volume warrant in PM peak hour

◊ no delay reported

TABLE 6 (cont'd)
PEAK HOUR INTERSECTION LEVELS OF SERVICE
EXISTING PLUS PROJECT CONDITIONS

Location	Control	AM Peak Hour				PM Peak Hour				Traffic Signal Warranted?
		Existing		Ex Plus Project		Existing		Ex Plus Project		
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
13. Pleasant Valley Rd / Racquet Way	NB / SB									Yes‡
NB	Stop	A	7.1	A	9.8	C	19.2	C	20.0	
SB		A	9.9	B	10.3	A	7.3	A	7.2	
EB Left		A	6.2	A	7.1	A	4.8	A	5.1	
WB Left		A	6.6	A	6.3	B	11.5	B	10.8	
14. Diamond Road (SR 49) / Truck St	EB Stop									No
NB Left		A	2.4	A	2.6	A	2.5	A	4.0	
EB		A	4.2	A	4.8	A	4.9	A	5.1	
15. Diamond Road (SR 49) / Bradley Dr	EB Stop									No
NB Left		A	3.1	A	2.7	A	3.7	A	3.1	
EB		A	3.6	A	3.6	A	7.4	A	5.0	
16. Diamond Road (SR 49) / Lime Kiln Rd – Black Rice Ln	EB / WB Stop									No
NB Left		A	3.7	A	4.2	A	5.4	A	5.8	
SB Left		A	2.1	A	1.7	A	2.6	A	4.3	
EB		A	5.4	A	6.6	A	6.4	A	7.5	
WB		A	4.1	A	4.8	A	6.7	A	8.0	
17. Diamond Road (SR 49) / Project Access	WB Stop									No
SB Left		---	---	A	3.7	---	---	A	3.7	
WB		---	---	A	6.3	---	---	A	8.8	

* meets volume and delay warrant in AM and PM peak hours

† meets volume warrant in AM and PM peak hours

‡ meets volume warrant in PM peak hour

◊ no delay reported

TABLE 7
EXISTING PLUS PROJECT PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour VPH Existing	AM Peak Hour VPH Project Only	AM Peak Hour VPH Total	AM Peak Hour Ex Plus Project Queue (feet)	PM Peak Hour VPH Existing	PM Peak Hour VPH Project Only	PM Peak Hour VPH Total	PM Peak Hour Ex Plus Project Queue (feet)
1. Missouri Flat Road / Plaza Drive									
NB left turn	330	159 (2)	0	159	97	322 (2)	0	322	195
NB through	450	432 (2)	5	437	95	308 (2)	12	320	199
NB right turn	450	342	0	342	96	451	0	451	136
SB left turn	110	42	0	42	61	46	0	46	76
EB left+through+right	120	93 (2)	0	93	67	388 (2)	0	388	203
WB left +through+right turn	275	282 (2)	0	282	151	522 (2)	0	522	229
2. Missouri Flat Road / WB US 50 ramps									
NB left turn	160	390 (2)	14	404	170	365 (2)	25	390	166
NB through	360	600 (2)	5	605	349	732 (2)	12	744	275
SB through	520	446 (2)	5	451	164	822 (2)	9	831	223
WB left turn	410	541 (2)	6	547	217	596 (2)	8	604	230
WB right turn	410	333 (2)	0	333	125	349 (2)	0	349	142
3. Missouri Flat Road / EB US 50 ramps									
NB through	160	900 (2)	19	919	201	879 (2)	37	916	189
NB right turn	140	81	0	81	70	72	0	72	84
SB left	160	134 (2)	0	134	183	323 (2)	0	323	213
SB through	380	853 (2)	12	865	384	1,095 (2)	16	1,111	431
EB left+through+right turn	540	417 (3)	14	431	156	779 (3)	17	796	222
4. Missouri Flat Road / Mother Lode Drive									
NB left turn	150	23	1	24	62	51	2	53	73
NB through	2,300	846 (2)	25	871	191	827 (2)	48	875	170
SB through	140	1,100 (2)	25	1,125	113	1,530 (2)	34	1,564	171
SB right turn	130	80	0	80	<25	126	0	126	81

Highlighted values indicate queue length in excess of available storage

TABLE 7 (cont'd)
EXISTING PLUS PROJECT PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour				PM Peak Hour			
		VPH			Ex Plus Project Queue (feet)	VPH			Ex Plus Project Queue (feet)
		Existing	Project Only	Total		Existing	Project Only	Total	
5. Missouri Flat Road / Forni Road									
NB left turn	250	37	1	38	64	57	0	57	88
NB through	1,000	855 (2)	27	882	270	800 (2)	51	851	276
NB right turn	160	60	0	60	134	21	0	21	72
SB left turn	300	280	0	280	275	165	0	165	185
SB through	2,300	642 (2)	27	669	187	1,019 (2)	35	1,054	247
SB right turn	150	207	1	208	122	348	5	353	167
6. Missouri Flat Road / Golden Center Drive									
NB left turn	120	38	0	38	77	75	0	75	122
SB left turn	160	81	0	81	125	67	0	67	142
10. Missouri Flat Road / SR 49 (Pleasant Valley Rd)									
SB left turn	600	191	37	228	179	625	50	675	230
SB right turn	600	154	0	154	81	291	0	291	104
EB left turn	160	320	0	320	152	229	0	229	138
WB right turn	190	534	37	571	251	330	72	402	162
12. Diamond Road (SR 49) / Pleasant Valley Rd (SR 49)									
SB left turn	340	52	10	62	80	169	17	186	159
SB through+right	340	127	48	175	140	158	83	241	166
NB right turn	100	12	0	12	49	36	0	36	72
NB left+through	600	120	3	123	144	118	4	122	132
EB left turn	200	101	45	146	168	118	53	171	203
WB right turn	170	151	10	161	245	88	12	100	159
WB left turn	100	12	0	12	62	32	0	32	96

Highlighted values indicate queue length in excess of available storage

EXISTING PLUS APPROVED PROJECTS IMPACTS (2019)

The analysis of the near term 2019 cumulative condition is intended to consider the impact of this project within the context of the "Existing Plus Approved Projects" (EPAP) conditions occurring within 5 years (i.e., by 2019).

Analysis Methodology

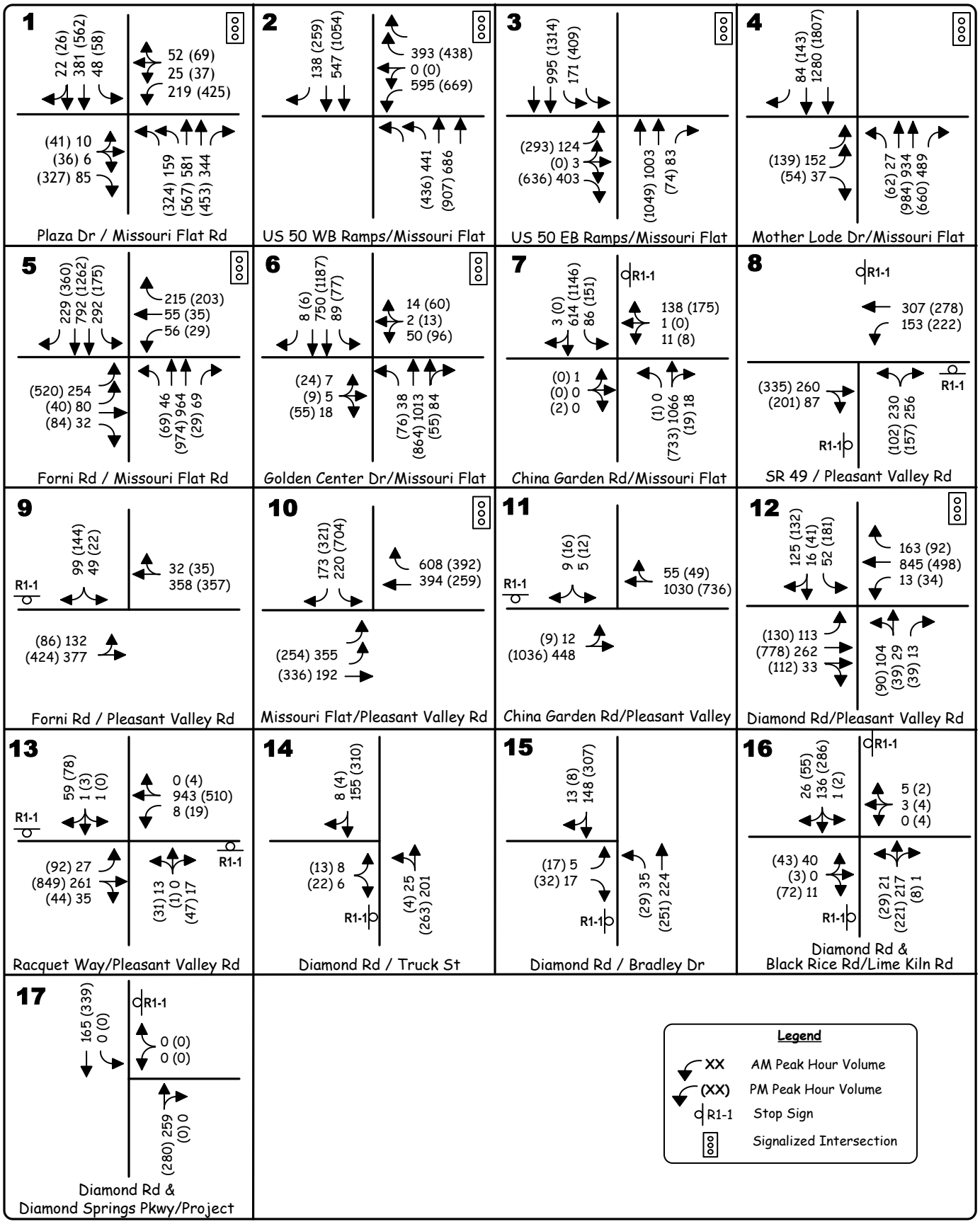
El Dorado County traffic study guidelines prescribe two methodologies to determine future short term traffic volumes. The two methodologies involve either 1) adding trips associated with specific approved projects located in the study area to current turning movement counts, or 2) interpolating short term growth based on information developed from long term traffic volumes projections.

Direction regarding the analysis of Year 2019 conditions was provided by Caltrans in consultation with DOT. Because the study area circulation system is influenced by regional growth, interpolation of available long term forecasts is the preferred methodology for estimating year 2019 volumes.

The approach taken to produce Year 2019 volume follows El Dorado County traffic study guidelines. The Year 2035 traffic volumes presented in the *DSEDAMLCP* traffic study were selected as being representative of long term conditions, with adjustment of specific approach volumes. Peak hour approach volumes for 2019 were calculated using straight-line interpolation. The resulting approach growth rate at each intersection was determined to be between 5% and 9% on various intersection approaches. These volumes were developed in the preparation of *The Crossing Traffic Impact Analysis* prepared by KDAnderson & Associates, Inc. in 2014.

Year 2019 Forecasts / Conditions

Traffic Volumes. The identified short term growth rates described above were applied to the current traffic volumes at each intersection, and the resulting background base Year 2019 volumes determined. Two additional near term projects were identified by El Dorado County staff and were added to the base volumes. The two projects include Phase 1 of *The Crossing* and the *Willow Creek Retail Center*. The Crossing is located north of the Missouri Flat Road / US 50 interchange while Willow Creek is located in the northwest quadrant of the Missouri Flat Road / Forni Road intersection. 2019 No Project volumes are presented in Figure 7.



2019 TRAFFIC VOLUMES AND LANE CONFIGURATIONS

Intersection Levels of Service. The identified Year 2019 volumes were used to recalculate operating Levels of Service at selected intersections. For the purpose of this analysis, no improvements to study area intersections have been assumed to occur by the Year 2019.

Table 8 displays the a.m. and p.m. peak hour Levels of Service at each study intersection in the 2019 condition. One unsignalized intersection, Missouri Flat Road at China Garden Road will operate at an LOS F condition along the eastbound (driveway) and westbound (China Garden Road) approaches in the AM peak hour. This intersection meets the peak hour warrant in both AM and PM peak periods.

Intersection Queues. Table 9 identifies peak period queues for the Year 2019 base condition. Approach queues are observed to increase as a result of the projected traffic increase in the next five years. Thirteen approaches are projected to exceed the available storage.

TABLE 8
PEAK HOUR INTERSECTION LEVELS OF SERVICE
2019 PLUS PROJECT CONDITIONS

Location	Control	AM Peak Hour				PM Peak Hour				Traffic Signal Warranted?
		2019		2019 Plus Project		2019		2019 Plus Project		
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
1. Missouri Flat Rd / Plaza Dr	Signal	B	16.2	B	15.6	C	31.6	C	29.6	N/A
2. Missouri Flat Rd / WB US 50 ramps	Signal	C	20.1	C	20.5	C	25.4	C	27.2	N/A
3. Missouri Flat Rd / EB US 50 ramps	Signal	B	18.7	B	18.9	C	26.1	C	28.4	N/A
4. Missouri Flat Rd / Mother Lode Dr	Signal	A	9.7	B	10.3	B	10.2	B	10.2	N/A
5. Missouri Flat Rd / Forni Rd	Signal	C	22.6	C	21.5	C	26.2	C	31.5	N/A
6. Missouri Flat Rd / Golden Center Dr	Signal	B	15.6	B	15.8	C	23.7	C	29.7	N/A
7. Missouri Flat Rd / China Garden Rd	WB Stop									Yes*
NB Left		◊	◊	◊	◊	◊	◊	◊	◊	
SB Left		C	19.8	C	18.6	C	15.2	E	42.3	
EB		F	61.4	F	67.1	C	16.1	F	67.2	
WB		F	74.7	F	60.8	D	32.3	F	129.5	
8. Pleasant Valley Rd (SR 49) / SR-49 South	AWS Stop	C	21.2	C	18.0	C	21.9	C	22.2	Yes
9. Pleasant Valley Rd (SR 49) / Forni Rd	SB Stop									Yes†
SB		E	38.4	F	53.5	C	23.1	C	21.6	
EB Left		A	6.7	A	6.8	A	6.7	A	6.4	
10. Missouri Flat Rd / Pleasant Valley Rd (SR 49)	Signal	C	20.4	C	22.5	B	18.4	B	14.1	N/A
11. Pleasant Valley Rd (SR 49) / China Garden Rd	SB Stop									No
SB		A	2.8	A	3.4	A	4.2	A	4.5	
EB Left		C	21.1	C	15.6	B	11.0	B	14.6	

* meets volume and delay warrant in AM and PM peak hours

† meets volume warrant in AM and PM peak hours

‡ meets volume warrant in PM peak hour

◊ no delay reported

TABLE 8 (cont'd)
PEAK HOUR INTERSECTION LEVELS OF SERVICE
2019 PLUS PROJECT CONDITIONS

Location	Control	AM Peak Hour				PM Peak Hour				Traffic Signal Warranted?
		2019		2019 Plus Project		2019		2019 Plus Project		
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
12. Diamond Rd (SR 49) / Pleasant Valley Rd (SR 49)	Signal	C	30.6	D	38.9	C	20.3	C	23.2	N/A
13. Pleasant Valley Rd / Racquet Way	NB / SB									Yes‡
NB	Stop	B	14.6	E	49.5	C	21.8	C	20.8	
SB		E	41.4	F	94.1	A	8.3	A	8.1	
EB Left		A	9.4	B	11.2	A	5.0	A	5.3	
WB Left		B	10.4	B	11.6	B	12.3	B	11.6	
14. Diamond Road (SR 49) / Truck St	EB Stop									No
NB Left		A	2.6	A	2.4	A	2.7	A	3.3	
EB		A	4.1	A	4.3	A	5.1	A	4.5	
15. Diamond Road (SR 49) / Bradley Dr	EB Stop									No
NB Left		A	2.5	A	2.8	A	3.1	A	3.7	
EB		A	4.2	A	3.8	A	5.1	A	5.4	
16. Diamond Rd (SR 49) / Lime Kiln Rd – Black Rice Ln	EB / WB									No
NB Left	Stop	A	3.8	A	4.2	A	4.9	A	6.5	
SB Left		A	1.4	A	1.6	A	2.3	A	4.6	
EB		A	5.5	A	6.6	A	6.7	A	8.5	
WB		A	4.6	A	4.9	A	7.5	A	9.3	
17. Diamond Road (SR 49) / Project Access	WB Stop									No
SB Left		---	---	A	3.6	---	---	A	3.1	
WB		---	---	A	6.3	---	---	A	9.6	

* meets volume and delay warrant in AM and PM peak hours
† meets volume warrant in AM and PM peak hours
‡ meets volume warrant in PM peak hour
◊ no delay reported

TABLE 9
2019 PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour VPH	AM Peak Hour Queue (feet)	PM Peak Hour VPH	PM Peak Hour Queue (feet)
1. Missouri Flat Road / Plaza Drive					
NB left turn	330	159 (2)	99	324 (2)	211
NB through	450	581 (2)	117	567 (2)	240
NB right turn	450	344	103	453	228
SB left turn	110	48	71	58	122
EB left+through+right	120	101 (2)	77	404 (2)	224
WB left +through+right turn	275	296 (2)	147	531 (2)	252
2. Missouri Flat Road / WB US 50 ramps					
NB left turn	160	441 (2)	170	436 (2)	168
NB through	360	686 (2)	421	907 (2)	343
SB through	520	547 (2)	173	1,054 (2)	483
WB left turn	410	595 (2)	235	669 (2)	252
WB right turn	410	393 (2)	155	438 (2)	199
3. Missouri Flat Road / EB US 50 ramps					
NB through	160	1,003 (2)	193	1,049 (2)	180
NB right turn	140	83	75	74	84
SB left	160	171 (2)	207	409 (2)	218
SB through	380	995 (2)	406	1,314 (2)	454
EB left+through+right turn	540	530 (3)	178	929 (3)	312
4. Missouri Flat Road / Mother Lode Drive					
NB left turn	150	27	80	62	91
NB through	2,300	934 (2)	234	984 (2)	201
SB through	140	1,280 (2)	133	1,807 (2)	180
SB right turn	130	84	41	143	104
5. Missouri Flat Road / Forni Road					
NB left turn	250	46	97	69	111
NB through	1,000	964 (2)	317	974 (2)	323
NB right turn	160	69	157	29	113
SB left turn	300	292	287	175	212
SB through	2,300	792 (2)	246	1,262 (2)	294
SB right turn	150	229	127	360	190
6. Missouri Flat Road / Golden Center Drive					
NB left turn	120	38	80	76	136
SB left turn	160	89	138	77	175
10. Missouri Flat Road / SR 49 (Pleasant Valley Rd)					
SB left turn	600	220	174	704	223
SB right turn	600	173	98	321	123
EB left turn	160	355 (2)	158	254 (2)	145
WB right turn	190	608	271	392	175

Highlighted values indicate queue length in excess of available storage

TABLE 9 (cont'd)
2019 PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

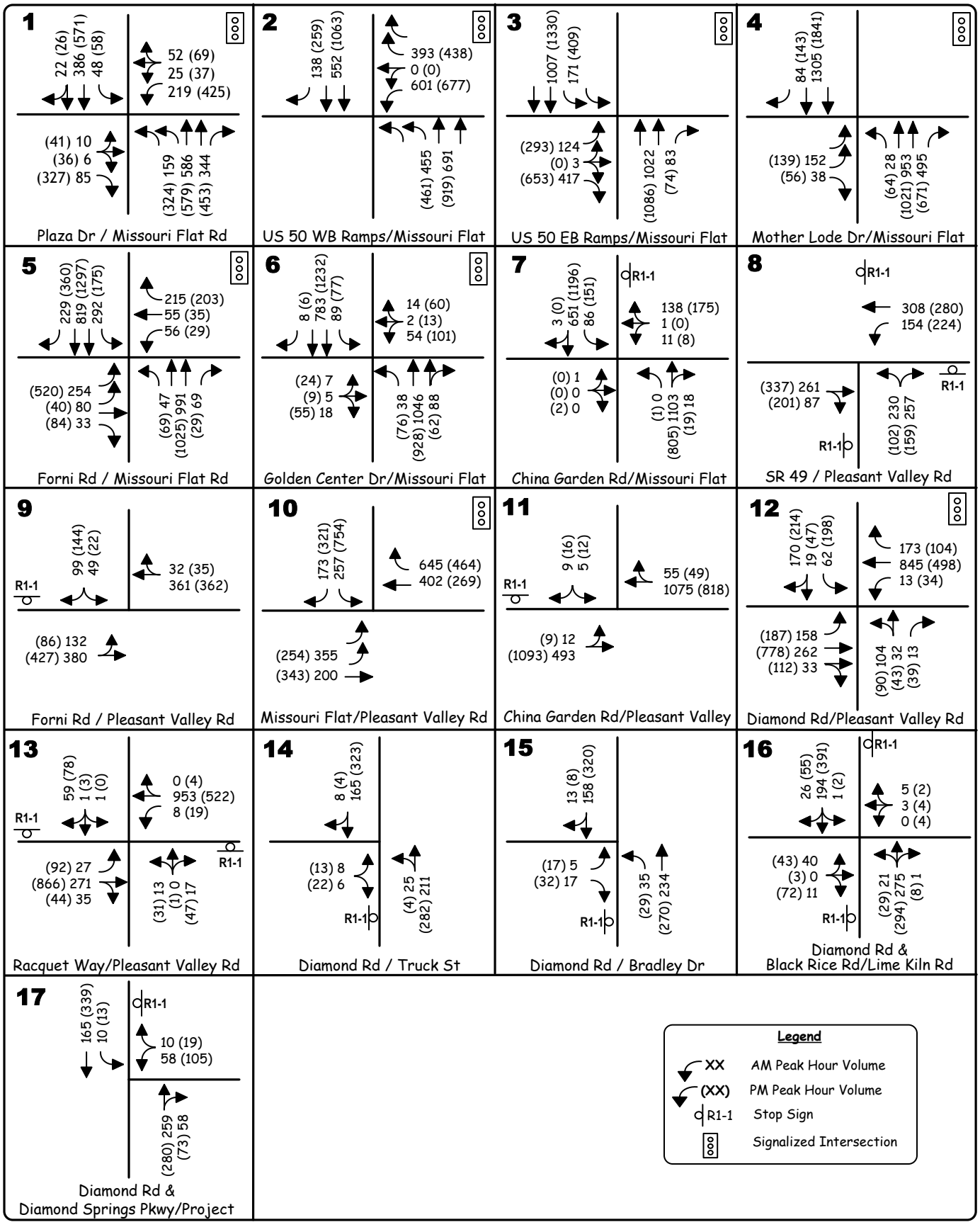
Location	Capacity (feet)	AM Peak Hour		PM Peak Hour	
		VPH	Queue (feet)	VPH	Queue (feet)
12. Diamond Road (SR 49) / Pleasant Valley Rd (SR 49)					
SB left turn	340	52	81	181	173
SB through+right	340	141	124	173	129
NB right turn	100	13	55	39	73
NB left+through	600	133	152	129	143
EB left turn	200	113	143	130	184
WB right turn	170	163	256	92	159
WB left turn	100	13	67	34	90

Highlighted values indicate queue length in excess of available storage

2019 Plus Project

Intersection Levels of Service. The identified Year 2019 plus Project volumes were used to recalculate operating Levels of Service at selected intersections. Figure 8 displays the "2019 Plus Project" traffic volumes at each study intersection in both a.m. and p.m. peak hours. Table 8 displays the AM and PM peak hour Levels of Service at each study intersection in the 2019 plus Project condition. Three intersections will operate at LOS F conditions with the proposed project. These include the Missouri Flat Road / China Garden Road intersection which will continue to operate at LOS F in both AM and PM peak hours, the Pleasant Valley Road (SR 49) / Forni Road intersection which will decline to LOS F on the southbound approach and Pleasant Valley Road / Racquet Way which will decline to LOS F conditions on the northbound and southbound approaches. The Pleasant Valley Road (SR 49) / Forni Road intersection will meet the volume portion of the peak hour warrant in both AM and PM peak hours while the Pleasant Valley Road / Racquet Way intersection will meet the volume portion of the peak hour warrant in the PM peak hour.

Intersection Queues. Table 10 identifies peak period queues for the Year 2019 plus Project condition assuming the addition of project trips**.** Project trips will result in additional queuing throughout the study area with fourteen locations projected to exceed the available storage.



2019 PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

TABLE 10
2019 PLUS PROJECT PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour VPH 2019	AM Peak Hour VPH Project Only	AM Peak Hour VPH Total	AM Peak Hour 2019 Plus Project Queue (feet)	PM Peak Hour VPH 2019	PM Peak Hour VPH Project Only	PM Peak Hour VPH Total	PM Peak Hour 2019 Plus Project Queue (feet)
1. Missouri Flat Road / Plaza Drive									
NB left turn	330	159 (2)	0	159	100	324 (2)	0	324	168
NB through	450	581 (2)	5	586	120	567 (2)	12	579	199
NB right turn	450	344	0	344	117	453	0	453	197
SB left turn	110	48	0	48	68	58	0	58	120
EB left+through+right	120	101 (2)	0	101	73	404 (2)	0	404	229
WB left +through+right turn	275	296 (2)	0	296	143	531 (2)	0	531	261
2. Missouri Flat Road / WB US 50 ramps									
NB left turn	160	441 (2)	14	455	170	436 (2)	25	461	165
NB through	360	686 (2)	5	691	447	907 (2)	12	919	346
SB through	520	547 (2)	5	552	170	1,054 (2)	9	1,063	504
WB left turn	410	595 (2)	6	601	237	669 (2)	8	677	243
WB right turn	410	393 (2)	0	393	155	438 (2)	0	438	187
3. Missouri Flat Road / EB US 50 ramps									
NB through	160	1,003 (2)	19	1,022	199	1,049 (2)	37	1,086	184
NB right turn	140	83	0	83	73	74	0	74	85
SB left	160	171 (2)	0	171	205	409 (2)	0	409	220
SB through	380	995 (2)	12	1,007	409	1,314 (2)	16	1,330	452
EB left+through+right turn	540	530 (3)	14	544	177	929 (3)	17	946	373
4. Missouri Flat Road / Mother Lode Drive									
NB left turn	150	27	1	28	78	62	2	64	102
NB through	2,300	934 (2)	19	953	301	984 (2)	37	1,021	204
SB through	140	1,280 (2)	25	1,305	131	1,807 (2)	34	1,841	177
SB right turn	130	84	0	84	35	143	0	143	98

Highlighted values indicate queue length in excess of available storage

TABLE 10 (cont'd)
2019 PLUS PROJECT PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour VPH 2019	AM Peak Hour VPH Project Only	AM Peak Hour VPH Total	AM Peak Hour 2019 Plus Project Queue (feet)	PM Peak Hour VPH 2019	PM Peak Hour VPH Project Only	PM Peak Hour VPH Total	PM Peak Hour 2019 Plus Project Queue (feet)
5. Missouri Flat Road / Forni Road									
NB left turn	250	46	1	47	96	69	0	69	136
NB through	1,000	964 (2)	27	991	309	974 (2)	51	1,025	330
NB right turn	160	69	0	69	156	29	0	29	93
SB left turn	300	292	0	292	282	175	0	175	214
SB through	2,300	792 (2)	27	819	240	1,262 (2)	35	1,297	321
SB right turn	150	229	0	229	135	360	0	360	195
6. Missouri Flat Road / Golden Center Drive									
NB left turn	120	38	0	38	67	76	0	76	130
SB left turn	160	89	0	89	137	77	0	77	191
10. Missouri Flat Road / SR 49 (Pleasant Valley Rd)									
SB left turn	600	220	37	257	203	704	50	754	217
SB right turn	600	173	0	173	94	321	0	321	122
EB left turn	160	355 (2)	0	355	158	254 (2)	0	254	147
WB right turn	190	608	37	645	276	392	72	464	198
12. Diamond Road (SR 49) / Pleasant Valley Rd (SR 49)									
SB left turn	340	52	10	62	85	181	17	198	190
SB through+right	340	141	48	189	176	173	88	261	200
NB right turn	100	13	0	13	53	39	0	39	82
NB left+through	600	133	3	136	172	129	4	133	143
EB left turn	200	113	45	158	178	130	57	187	211
WB right turn	170	163	10	173	269	92	12	104	179
WB left turn	100	13	0	13	56	34	0	34	94

Highlighted values indicate queue length in excess of available storage

CUMULATIVE IMPACTS (2035)

The analysis of the long range 2035 cumulative condition is intended to consider the impact of this project within the context of buildout of the General Plan circulation element occurring in 2035.

Year 2035 Forecasts / Conditions

Roadway Conditions

Roadways in 2035 are projected to remain with their current lane configurations. The Diamond Springs Parkway, north of China Garden Road, will connect Missouri Flat Road to Diamond Road (SR 49) and is projected to be completed by 2035. This roadway will include two through lanes in each direction with turn lanes at key intersections. Missouri Flat Road will become the west and south legs of the Missouri Flat Road / China Garden Road intersection. Missouri Flat Road south of China Garden Road will continue to include one through lane in each direction. Diamond Road, as part of the Diamond Springs parkway connection will be widened to two lanes in each direction between Diamond Springs Parkway and Pleasant Valley Road. Dual left turn lanes will be provided for northbound Diamond Road at Diamond Springs Parkway and south Diamond Road at Pleasant Valley Road. The inside lanes will allow for u-turns as through movements and left turns across Diamond Road will be prohibited in this segment.

The Missouri Flat Road / Diamond Springs Parkway intersection will include two left turn lanes and a through-right lane along the northbound approach, a left turn lane, two through lanes and a right turn lane along the eastbound approach, a single lane along the southbound approach and a left turn lane, a through lane and a through-right lane on the westbound approach. The intersection will be signalized and was analyzed as part of the 2035 conditions.

The Diamond Springs Parkway / Diamond Road intersection will include two left turn lanes and a through lane along the northbound approach, a through lane and a right turn lane along the southbound approach and a left lane and a right lane along the eastbound approach. The intersection will be signalized and was analyzed with the signal in 2035 conditions. As part of this project the Bradley Drive intersection will be modified to right-in, right-out access only. Additionally, the Diamond Road / Lime Kiln Road – Black Rice Lane will be modified to allow right-in, right-out and left-in movements only.

An intermediate intersection at Throwita Way will be constructed. This intersection will include a left turn lane, two through lanes and a right turn lane for eastbound traffic, a left turn lane, a through lane and a through-right lane for westbound traffic, a single lane for south bound traffic and a right lane and a through-left lane for northbound traffic. The intersection will be signalized and was analyzed as part of the 2035 conditions.

2035 Traffic Forecasts

Year 2035 traffic forecasts were based on the *DSEDAMLCP* traffic volumes and were expanded to account for traffic along the Diamond Springs Parkway Corridor and Diamond Road (SR 49). Traffic volumes not contained in the *DSEDAMLCP* were developed based upon the growth rates

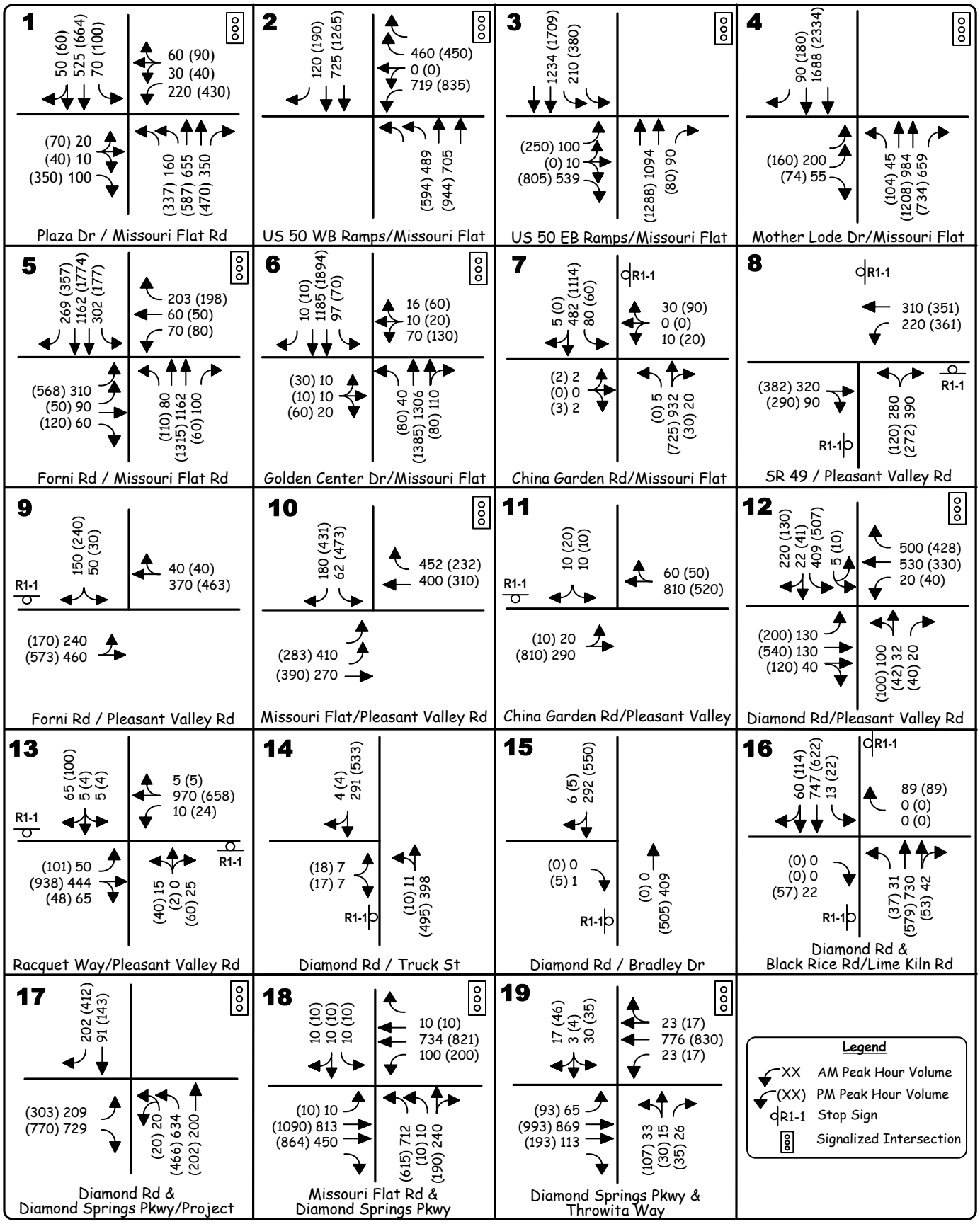
identified between Existing and 2035 *DSEDAMLCP* time periods, the *Diamond Springs Parkway EIR Circulation Element* prepared by Kimley Horn Associates and the *Diamond Dorado Retail Center EIR Traffic Impact Analysis* also prepared by Kimley Horn Associates. Intersection turning movements are presented in Figure 9.

Intersection Levels of Service. The identified Year 2035 volumes were used to recalculate operating Levels of Service at the study intersections. Table 11 displays the a.m. and p.m. peak hour Levels of Service at each study intersection in the 2035 condition. 2035 Synchro files developed for the *DESDAMLCP* were obtained and expanded to include study intersections that were identified for analysis for this project.

Four intersections will operate with LOS F conditions. These include the Missouri Flat Road / US 50 Westbound Ramps intersection which will operate at LOS F in the PM peak hour, the SR 49 / Pleasant Valley Road intersection which will operate at LOS F in both AM and PM peak hours, the Pleasant Valley Road / Racquet Way intersection which will operate with the southbound approach at LOS F in the AM peak hour and the Pleasant Valley Road / Forni Road intersection which will operate at LOS F along the southbound approach in the AM and PM peak hours.

Traffic Signal Warrants. Two unsignalized intersections carry volumes that meet the peak hour signal warrant criteria during either peak period. These include the Pleasant Valley Road / SR 49 (South) intersection where the peak hour signal warrant is met in both AM and PM peak periods and the Pleasant Valley Road / Racquet Way intersection where the peak hour signal warrant is met in the PM peak hour. Three additional intersections meet the peak hour volume portion of the peak hour warrant. These include the Missouri Flat Road / China Garden Road intersection, the Pleasant Valley Road / Forni Road intersection and the Diamond Road / Lime Kiln Road – Black Rice Lane intersection.

Intersection Queues. Table 12 identifies peak period queues for the Year 2035 base condition. Project trips will result in additional queuing throughout the study area with 24 locations projected to exceed the available storage. The most extensive queues are projected to occur in the vicinity of the US 50 / Missouri Flat Road interchange where the westbound US 50 off-ramp queue is projected to exceed 1,100 feet and the eastbound US 50 off-ramp is projected to exceed 1,700 feet. Additionally, the northbound queue along Missouri Flat Road at Mother Lode Drive is expected to exceed 2,200 feet.



2035 NO PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

TABLE 11
PEAK HOUR INTERSECTION LEVELS OF SERVICE
2035 PLUS PROJECT CONDITIONS

Location	Control	AM Peak Hour				PM Peak Hour				Traffic Signal Warranted?
		2035		2035 Plus Project		2035		2035 Plus Project		
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
1. Missouri Flat Rd / Plaza Dr	Signal	B	15.5	B	15.8	E	57.3	E	64.5	N/A
2. Missouri Flat Rd / WB US 50 ramps	Signal	C	31.1	C	21.3	F	109.3	F	111.1	N/A
3. Missouri Flat Rd / EB US 50 ramps	Signal	C	30.6	C	25.5	E	71.9	E	78.6	N/A
4. Missouri Flat Rd / Mother Lode Dr	Signal	B	17.2	B	16.1	D	50.1	E	64.1	N/A
5. Missouri Flat Rd / Forni Rd	Signal	D	41.5	D	39.5	E	59.1	E	65.5	N/A
6. Missouri Flat Rd / Golden Center Dr	Signal	C	24.2	C	25.1	D	35.2	D	37.1	N/A
7. Missouri Flat Rd / China Garden Rd	WB Stop									Yes*
NB Left		A	3.4	A	3.9	◊	◊	◊	◊	
SB Left		B	14.8	C	17.8	B	11.1	B	12.0	
EB		B	14.5	C	20.5	E	27.9	D	27.3	
WB		B	12.4	B	11.2	E	47.9	F	56.6	
8. Pleasant Valley Rd (SR 49) / SR-49 South	AWS Stop	F	58.7	F	55.5	F	70.0	F	68.7	Yes
9. Pleasant Valley Rd (SR 49) / Forni Rd	SB Stop									Yes†
SB		F	220.9	F	212.9	F	97.7	F	179.0	
EB Left		A	8.5	A	8.8	A	9.7	A	9.9	
10. Missouri Flat Rd / Pleasant Valley Rd (SR 49)	Signal	D	48.9	D	51.8	C	30.6	C	30.3	N/A
11. Pleasant Valley Rd (SR 49) / China Garden Rd	SB Stop									No
SB		A	3.2	A	2.6	A	3.3	A	4.1	
EB Left		B	11.7	B	11.0	A	7.8	A	7.8	
12. Diamond Road (SR 49) / Pleasant Valley Rd (SR 49)	Signal	C	26.9	C	26.0	C	22.6	C	22.8	N/A

* meets volume and delay warrant in AM and PM peak hours
† meets volume warrant in AM and PM peak hours
‡ meets volume warrant in PM peak hour
◊ no delay reported

TABLE 11 (cont'd)
PEAK HOUR INTERSECTION LEVELS OF SERVICE
2035 PLUS PROJECT CONDITIONS

Location	Control	AM Peak Hour				PM Peak Hour				Traffic Signal Warranted?
		2035		2035 Plus Project		2035		2035 Plus Project		
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
13. Pleasant Valley Rd / Racquet Way	NB / SB									Yes‡
NB	Stop	E	41.2	C	24.3	E	41.7	E	46.0	
SB		F	55.8	E	38.5	B	13.6	C	17.3	
EB Left		B	11.1	B	12.1	A	6.1	A	6.4	
WB Left		A	9.6	B	13.6	B	11.4	B	12.0	
14. Diamond Road (SR 49) / Truck St	EB Stop									No
NB Left		A	3.1	A	3.1	A	3.6	A	5.7	
EB		A	5.6	A	5.8	A	8.9	A	8.5	
15. Diamond Road (SR 49) / Bradley Dr	EB Stop									No
EB right		A	3.6	A	2.3	A	3.7	A	4.0	
16. Diamond Rd (SR 49) / Lime Kiln Rd – Black Rice Ln	EB / WB									Yes†
NB Left	Stop	A	7.8	A	7.1	A	6.8	A	6.9	
SB Left		A	5.7	A	5.6	A	4.7	A	5.2	
EB right		A	4.2	A	4.7	A	3.8	A	3.7	
WB right		A	6.0	A	5.6	A	4.9	A	4.9	
17. Diamond Rd (SR 49) / Diamond Springs Pkwy - Project Access	Signal	C	27.8	C	29.9	C	29.2	C	28.0	N/A
18. Missouri Flat Road / Diamond Springs Pkwy	Signal	C	20.8	C	21.7	C	23.7	C	25.1	N/A
19. Diamond Springs Pkwy / Throwita Way	Signal	B	14.6	B	13.1	B	17.0	B	16.8	N/A

* meets volume and delay warrant in AM and PM peak hours
† meets volume warrant in AM and PM peak hours
‡ meets volume warrant in PM peak hour
◊ no delay reported

TABLE 12
2035 PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour VPH	AM Peak Hour Queue (feet)	PM Peak Hour VPH	PM Peak Hour Queue (feet)
1. Missouri Flat Road / Plaza Drive					
NB left turn	330	160 (2)	87	330 (2)	147
NB through	450	655 (2)	170	574 (2)	218
NB right turn	450	350	170	460	248
SB left turn	110	70	79	100	236
EB left+through+right	120	130 (2)	78	460 (2)	241
WB left +through+right turn	275	310 (2)	125	560 (2)	390
2. Missouri Flat Road / WB US 50 ramps					
NB left turn	160	489 (2)	169	594 (2)	169
NB through	360	705 (2)	308	914 (2)	357
SB through	520	725 (2)	265	1,265 (2)	545
WB left turn	410	719 (2)	677	835 (2)	1,158
WB right turn	410	460 (2)	352	450 (2)	522
3. Missouri Flat Road / EB US 50 ramps					
NB through	160	1,094 (2)	194	1,288 (2)	188
NB right turn	140	90	99	80	85
SB left	160	210 (2)	196	380 (2)	198
SB through	380	1,234 (2)	443	1,709 (2)	422
EB left+through+right turn	540	649 (3)	337	925 (3)	1,728
4. Missouri Flat Road / Mother Lode Drive					
NB left turn	150	45	115	104	226
NB through	2,300	984 (2)	355	1,208 (2)	2,137
SB through	140	1,688 (2)	168	2,244 (2)	165
SB right turn	130	90	96	170	109
5. Missouri Flat Road / Forni Road					
NB left turn	250	80	224	110	286
NB through	1,000	1,162 (2)	446	1,315 (2)	490
NB right turn	160	100	190	60	163
SB left turn	300	302	367	177	347
SB through	2,300	1,162 (2)	548	1,774 (2)	528
SB right turn	150	269	229	357	235
6. Missouri Flat Road / Golden Center Drive					
NB left turn	120	40	124	80	192
SB left turn	160	97	194	70	169
10. Missouri Flat Road / SR 49 (Pleasant Valley Rd)					
SB left turn	600	62	56	473	198
SB right turn	600	180	77	431	117
EB left turn	160	410 (2)	160	283 (2)	210
WB right turn	190	452	167	232	118

Highlighted values indicate queue length in excess of available storage

TABLE 12 (cont'd)
2035 PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour VPH	AM Peak Hour Queue (feet)	PM Peak Hour VPH	PM Peak Hour Queue (feet)
12. Diamond Rd (SR 49) / Pleasant Valley Rd (SR 49)					
SB left turn	340	409	193	507	216
SB through+right	340	242	136	171	101
NB right turn	100	20	73	40	99
NB left+through	600	132	171	142	184
EB left turn	200	130	144	200	199
WB right turn	170	500	246	428	204
WB left turn	100	20	97	40	110
17. Diamond Rd (SR 49) / Diamond Springs Pkwy					
NB left	350	634 (2)	366	466 (2)	329
SB right	464	202	122	412	265
EB left	995	209	211	303	260
EB right	995	729	292	770	227
18. Missouri Flat Rd / Diamond Springs Pkwy					
NB left	275	712 (2)	226	615 (2)	210
EB through	1,600	813 (2)	352	1,090 (2)	372
EB right	250	450	217	864	310
WB left	500	100	123	200	217
19. Diamond Springs Pkwy / Throwita Way					
NB right	200	26	42	35	65
EB left	200	65	109	93	129
EB right	200	113	121	193	127
WB left	200	23	64	17	49

Highlighted values indicate queue length in excess of available storage

2035 Plus Project

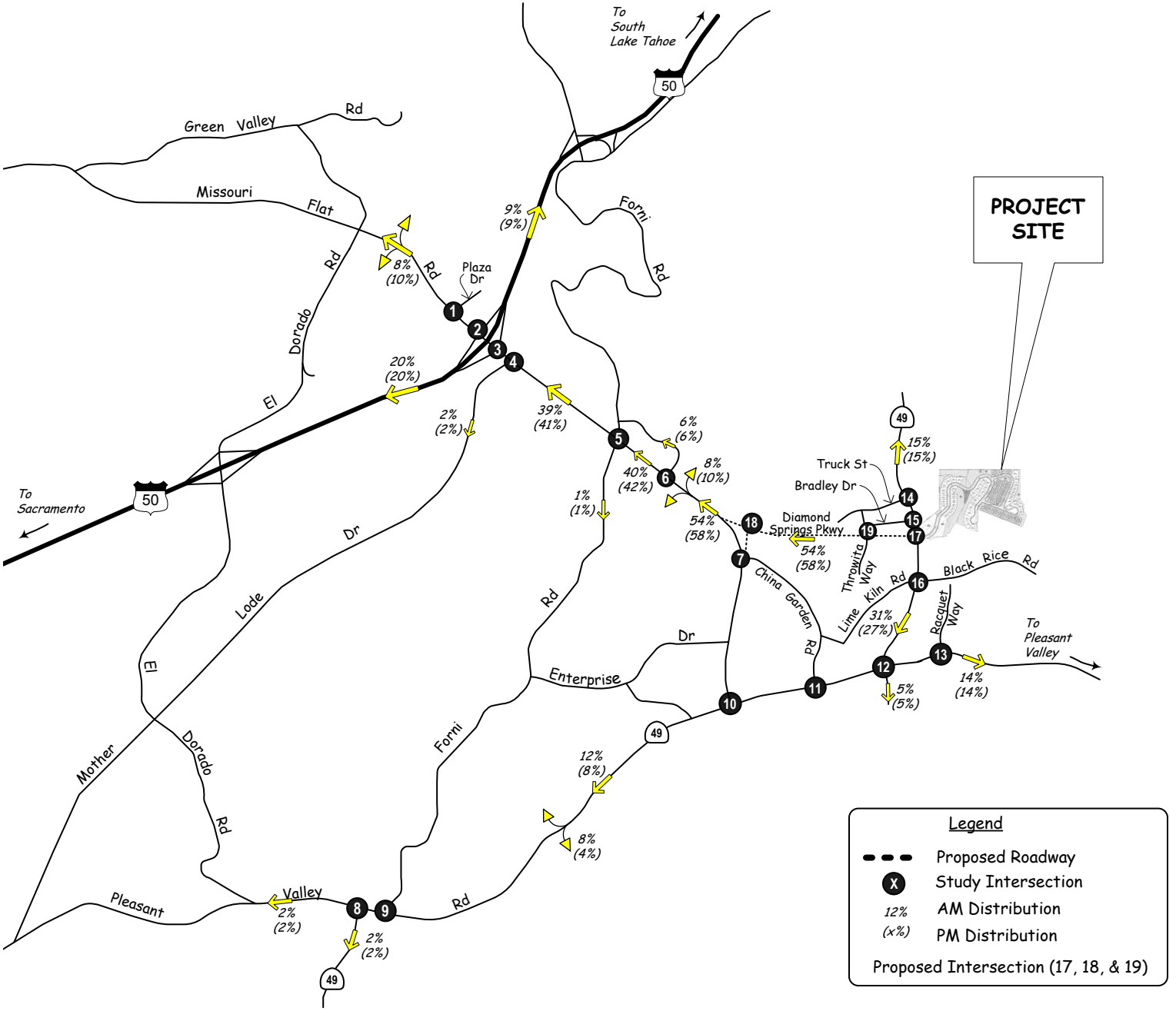
Trip Distribution & Assignment

A new trip distribution pattern was applied to trips related to the Project in the future. Table 5 presents the project trip distributions for 2035. The Long-Term scenario considers the completion of the Diamond Springs Parkway (DSP), between Missouri Flat Road and Diamond Road. Project traffic that is projected to use Missouri Flat Road and Pleasant Valley Parkway to get to the project site in the short term will be able to use DSP by 2035 to access the site directly. Figure 10 presents the modified trip distribution with DSP completed.

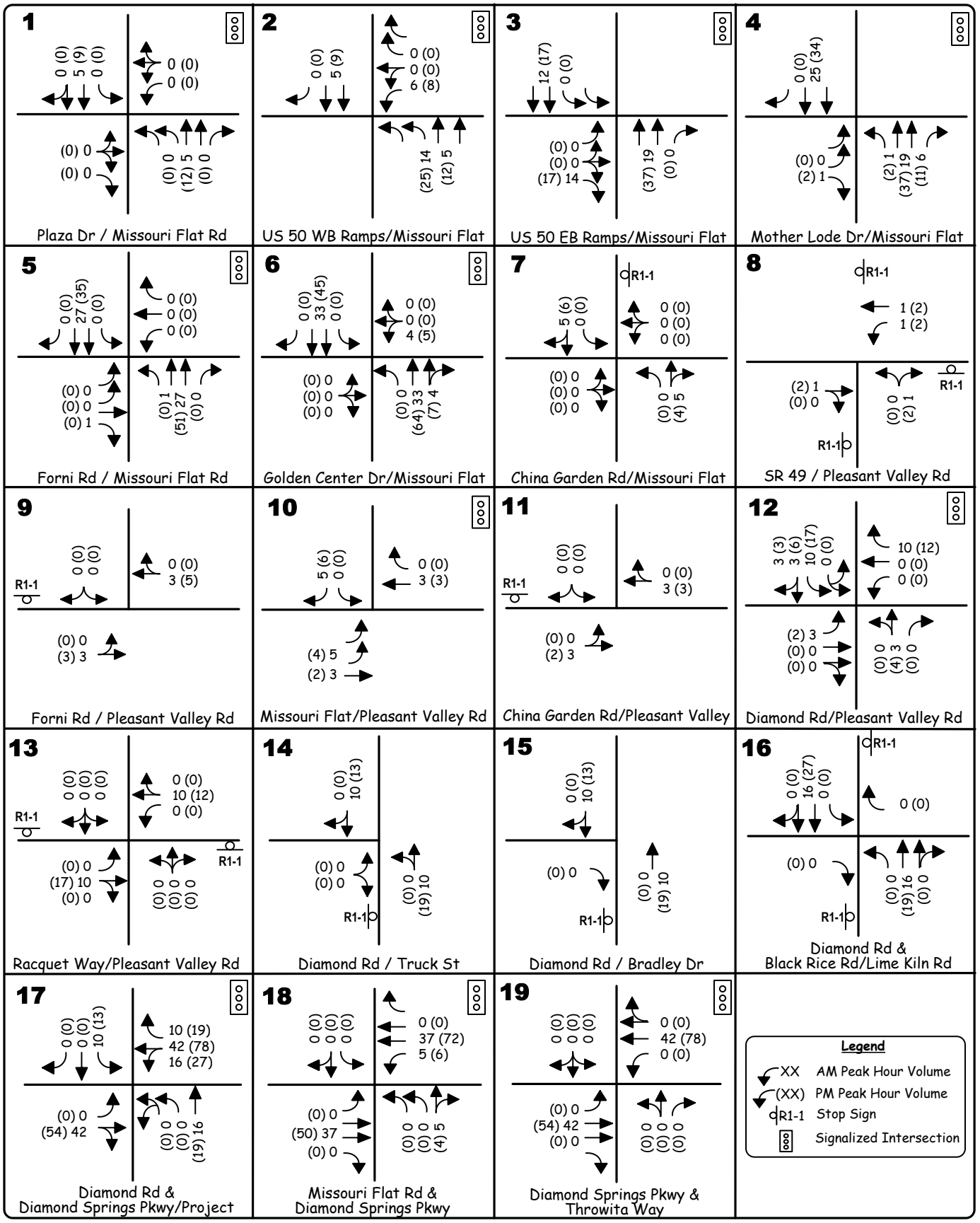
Intersection Levels of Service. The Year 2035 plus Project volumes were used to recalculate operating Levels of Service at the study intersections. Figure 11 displays the "2035 Project Only" traffic volumes while Figure 12 present the "2035 Plus Project traffic" traffic volumes at each study intersection in both a.m. and p.m. peak hours. Table 11 displays the a.m. and p.m. peak hour Levels of Service at each study intersection in the 2035 plus Project condition. Four intersections will operate at LOS F conditions with the proposed project. These include Missouri Flat Road / US 50 Westbound Ramps intersection which will continue to operate at LOS F in the PM peak hour, the SR 49 / Pleasant Valley Road intersection which will continue to operate at LOS F in both AM and PM peak hours, the Pleasant Valley Road / Forni Road intersection which will continue to operate at LOS F along the southbound approach in the AM and PM peak hours and the Missouri Flat Road / China Garden Road intersection which will continue to operate at LOS F along the westbound approach.

Traffic Signal Warrants. Two unsignalized intersections carry volumes that meet the peak hour signal warrant criteria during either peak period. These include the Pleasant Valley Road / SR 49 (South) intersection where the peak hour signal warrant is met in both AM and PM peak periods and the Pleasant Valley Road / Racquet Way intersection where the peak hour signal warrant is met in the PM peak hour. Three additional intersections meet the peak hour volume portion of the peak hour warrant. These include the Missouri Flat Road / China Garden Road intersection, the Pleasant Valley Road / Forni Road intersection and the Diamond Road / Lime Kiln Road – Black Rice Lane intersection.

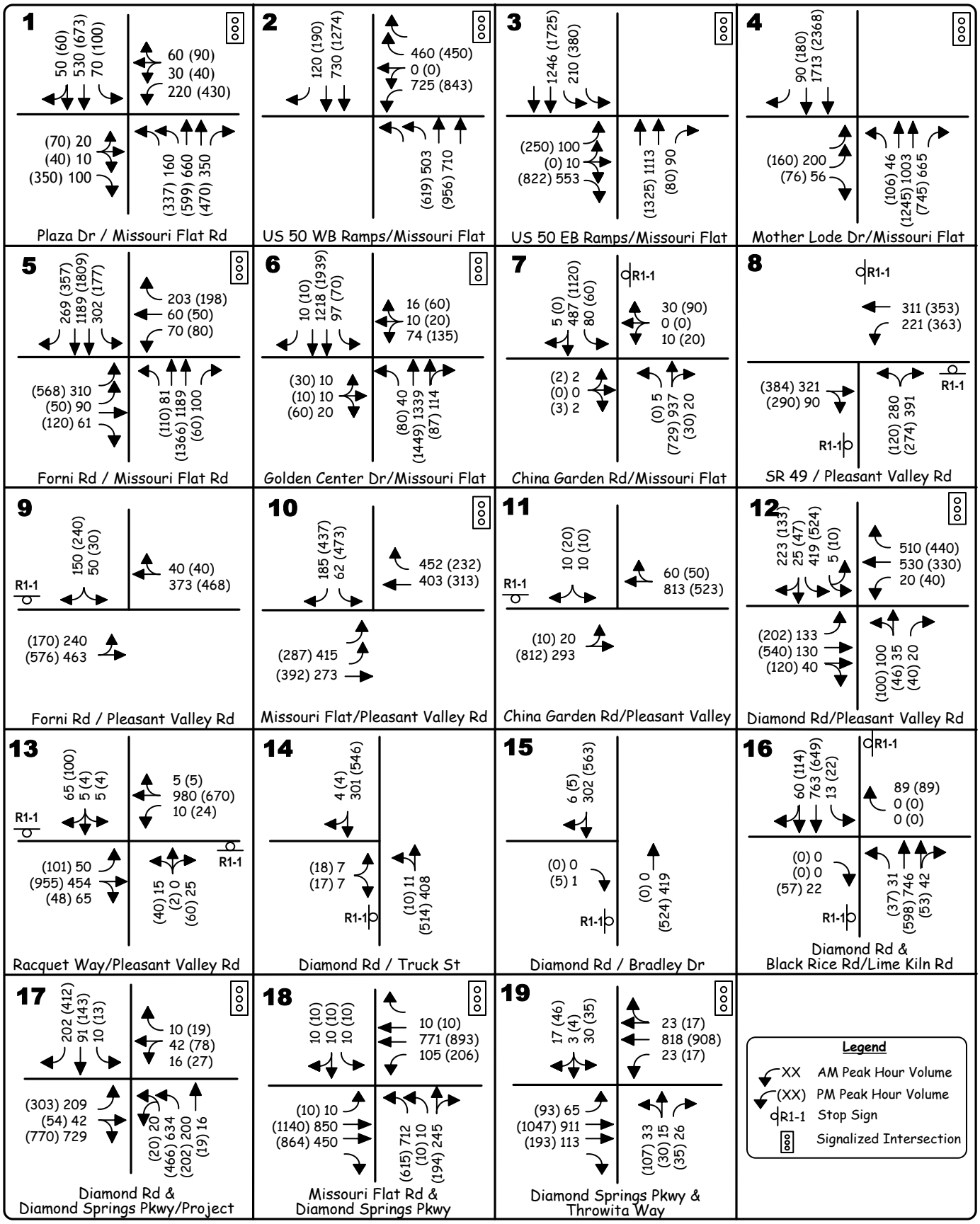
Intersection Queues. Table 13 identifies peak period queues for the Year 2035 plus Project condition assuming the addition of project trips**.** Project trips will result in additional queuing throughout the study area with 26 locations projected to exceed the available storage. The most extensive queues will continue to occur in the vicinity of the US 50 / Missouri Flat Road interchange where the westbound US 50 off-ramp queue is projected to exceed 1,100 feet, the eastbound US 50 off-ramp is projected to exceed 1,800 feet and the northbound Missouri Flat Road approach to Mother Lode Drive is projected to exceed 2,500 feet.



LONG-TERM (2035) PROJECT TRIP DISTRIBUTION



2035 PROJECT ONLY
TRAFFIC VOLUMES AND LANE CONFIGURATIONS



2035 PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

TABLE 13
2035 PLUS PROJECT PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour VPH 2035	AM Peak Hour VPH Project Only	AM Peak Hour VPH Total	AM Peak Hour 2035 Plus Project Queue (feet)	PM Peak Hour VPH 2035	PM Peak Hour VPH Project Only	PM Peak Hour VPH Total	PM Peak Hour 2035 Plus Project Queue (feet)
1. Missouri Flat Rd / Plaza Drive									
NB left turn	330	160 (2)	0	160	92	330 (2)	0	330	147
NB through	450	655 (2)	5	660	181	574 (2)	12	586	204
NB right turn	450	350	0	350	182	460	0	460	221
SB left turn	110	70	0	70	85	100	0	100	241
EB left+through+right	120	130 (2)	0	130	83	460 (2)	0	460	257
WB left +through+right turn	275	310 (2)	0	310	121	560 (2)	0	560	569
2. Missouri Flat Rd / WB US 50 ramps									
NB left turn	160	489 (2)	14	503	171	594 (2)	25	619	170
NB through	360	705 (2)	5	710	326	914 (2)	12	926	371
SB through	520	725 (2)	5	730	218	1,265 (2)	9	1,274	546
WB left turn	410	719 (2)	6	725	283	835 (2)	8	843	1,122
WB right turn	410	460 (2)	0	460	186	450 (2)	0	450	515
3. Missouri Flat Rd / EB US 50 ramps									
NB through	160	1,094 (2)	19	1,113	195	1,288 (2)	37	1,325	192
NB right turn	140	90	0	90	94	80	0	80	90
SB left	160	210 (2)	0	210	171	380 (2)	0	380	197
SB through	380	1,234 (2)	12	1,246	367	1,709 (2)	16	1,725	429
EB left+through+right turn	540	649 (3)	14	663	301	925 (3)	17	942	1,873
4. Missouri Flat Rd / Mother Lode Drive									
NB left turn	150	45	1	46	127	104	2	106	223
NB through	2,300	984 (2)	19	1,003	323	1,208 (2)	37	1,245	2,590
SB through	140	1,688 (2)	25	1,713	138	2,244 (2)	34	2,278	165
SB right turn	130	90	0	90	81	170	0	170	95

Highlighted values indicate queue length in excess of available storage

TABLE 13 (cont'd)
2035 PLUS PROJECT PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour VPH 2035	AM Peak Hour VPH Project Only	AM Peak Hour VPH Total	AM Peak Hour 2035 Plus Project Queue (feet)	PM Peak Hour VPH 2035	PM Peak Hour VPH Project Only	PM Peak Hour VPH Total	PM Peak Hour 2035 Plus Project Queue (feet)
5. Missouri Flat Rd / Forni Rd									
NB left turn	250	80	1	81	222	110	0	110	328
NB through	1,000	1,162 (2)	27	1,189	461	1,315 (2)	51	1,366	495
NB right turn	160	100	0	100	179	60	0	60	172
SB left turn	300	302	0	302	391	177	0	177	339
SB through	2,300	1,162 (2)	27	1,189	576	1,774 (2)	35	1,809	544
SB right turn	150	269	0	269	226	357	0	357	235
6. Missouri Flat Rd / Golden Center Drive									
NB left turn	120	40	0	40	126	80	0	80	192
SB left turn	160	97	0	97	187	70	0	70	170
10. Missouri Flat Rd / SR 49 (Pleasant Valley Rd)									
SB left turn	600	62	0	62	58	473	0	473	193
SB right turn	600	180	2	182	81	431	6	437	126
EB left turn	160	410 (2)	2	412	198	283 (2)	4	287	207
WB right turn	190	452	0	452	160	232	0	232	132
12. Diamond Rd (SR 49) / Pleasant Valley Rd (SR 49)									
SB left turn	340	409	10	419	196	507	17	524	216
SB through+right	340	242	4	246	152	171	9	180	102
NB right turn	100	20	0	20	68	40	0	40	94
NB left+through	600	132	3	135	147	142	4	146	174
EB left turn	200	130	1	131	141	200	2	202	207
WB right turn	170	500	10	510	246	428	12	440	217
WB left turn	100	20	0	20	88	40	0	40	103

Highlighted values indicate queue length in excess of available storage

TABLE 13 (cont'd)
2035 PLUS PROJECT PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour VPH 2035	AM Peak Hour VPH Project Only	AM Peak Hour VPH Total	AM Peak Hour 2035 Plus Project Queue (feet)	PM Peak Hour VPH 2035	PM Peak Hour VPH Project Only	PM Peak Hour VPH Total	PM Peak Hour 2035 Plus Project Queue (feet)
17. Diamond Rd (SR 49) / Diamond Springs Pkwy									
NB left	350	634 (2)	0	634	297	466 (2)	0	466	233
SB left	100	0	10	10	34	0	13	13	55
SB right	464	202	0	202	115	412	0	412	214
EB left	995	209	0	209	201	303	54	357	241
EB right	995	729	0	729	398	770	0	770	336
WB left	200	0	14	14	48	0	27	27	72
18. Missouri Flat Rd / Diamond Springs Pkwy									
NB left	275	712 (2)	0	712	271	615 (2)	0	615	220
EB through	1,600	813 (2)	37	850	329	1,090 (2)	50	1,140	399
EB right	250	450	0	450	220	864	0	864	299
WB left	500	100	2	102	121	200	6	206	231
19. Diamond Springs Pkwy / Throwita Way									
NB right	200	26	0	26	46	35	0	35	43
EB left	200	65	0	65	114	93	0	93	137
EB right	200	113	0	113	118	193	0	193	144
WB left	200	23	0	23	57	17	0	17	47

Highlighted values indicate queue length in excess of available storage

FINDINGS / RECOMMENDATIONS / MITIGATIONS

The preceding analysis has identified project impacts that may occur without mitigation. The text that follows identifies a strategy for mitigating the impacts of the proposed project. Recommendations are identified for facilities that have deficiencies in the roadway network without the project. If the project causes a significant impact, mitigations are identified for the facility.

Existing Conditions

All intersections operate within acceptable El Dorado County LOS thresholds. No recommendations are made.

Existing plus Project Conditions - Mitigations

All intersections will operate within acceptable El Dorado County LOS thresholds. The following mitigations are made:

- The project shall contribute its fair share to the cost of regional circulation improvements via the existing countywide traffic impact mitigation (TIM) fee program.

- Sidewalk should be installed along the curb returns along the east side of Diamond Road as part of Piedmont Oaks development to provide contiguous access between the project site and the Diamond Dorado Center.

Diamond Road / Project Access intersection: A left turn lane with standard Caltrans transitions on each approach and departure should be constructed along Diamond Road for left turn access into the project site. The left turn lane should be constructed back to back with the left turn lane at Bradley Drive. The left turn lane for the project should be 100' with the left turn lane at Bradley Drive 120' long.

No additional mitigations are made at this time.

2019 Conditions - Recommendations

Missouri Flat Road / China Garden Road intersection: This intersection will operate with the eastbound driveway and westbound China Garden Road approach operating at LOS F in the AM peak hour. Although the County General Plan allows LOS F conditions along Missouri Flat Road between Mother Lode Drive and China Garden Road this does not apply to the intersections. The intersection meets the peak hour traffic signal warrant and signalization of this intersection will improve the operation in the a.m. peak hour to LOS B (18.4 seconds delay).

2019 plus Project Conditions - Mitigations

Missouri Flat Road / China Garden Road intersection: Under project conditions the intersection will continue to operate at LOS F conditions on the eastbound driveway and westbound approach. The project should pay their fair share of signalizing the intersection identified in the 2019 Conditions section. The fair share is project traffic divided by the difference in future and existing volumes. With Diamond Springs Parkway (DSP) being constructed in the future, traffic will shift to DSP, resulting in a net decrease in traffic by 2035 at the Missouri Flat Road / China Garden Road intersection. The fair share methodology was determined using the total volumes at the Missouri Flat Road / DSP intersection as all traffic at this intersection would travel through the Missouri Flat Road / China Garden Road if DSP were not constructed. Using this method the project is responsible for 6.41% of the project cost. With signalization the intersection will operate at LOS B (18.7 seconds) in the a.m. peak hour and LOS C (30.2 seconds) in the PM peak hour.

Pleasant Valley Road / Forni Road intersection: This intersection will operate with the southbound Forni Road approach operating at LOS F in the AM peak hour. The volume portion of the peak hour signal warrant is met in both AM and PM peak hours. A traffic signal is not recommended at this time due to proximity of this intersection to the Pleasant Valley Road / SR-49 South intersection. This intersection is under Caltrans jurisdiction. As noted in the *Diamond Dorado Traffic Impact Analysis* prepared by Farhad & Associates in 2010 Caltrans indicated that a traffic signal should not be installed at this location until the Pleasant Valley Road / Forni Road intersection and the Pleasant Valley Road / SR-49 South intersection is realigned to constitute one intersection. Another possible solution may include a roundabout with the realignment of Pleasant Valley Road with SR 49 and Forni Road. No mitigation is recommended as part of this project.

Pleasant Valley Road / Racquet Way intersection: This intersection will operate with the southbound approach at LOS F in the AM peak hour. Installation of a traffic signal will improve the intersection operation to LOS C (31.4 seconds per vehicle). The project should pay their fair share of the improvement as the intersection will decline to LOS F in the 2035 No Project Condition. Using the Caltrans fair share methodology the project should pay 5.4% of the improvement.

No other mitigations are necessary.

2035 Conditions - Recommendations

Missouri Flat Road / US 50 Eastbound and Westbound Ramp intersections: The westbound US 50 ramp intersections will operate at LOS F conditions in 2035. A single point urban interchange (SPUI) should be considered that will combine the eastbound and westbound ramp intersections into a single intersection along Missouri Flat Road. The SPUI would consist of two through lanes and two left turn lanes at the intersection with two left lanes and two right turn lane along the eastbound and westbound off-ramps. Implementation of this new interchange will result in LOS D (37.5 seconds per vehicle) operation at the new intersection. The County is

currently undertaking the Missouri Flat Area Master Circulation and Funding Plan (MC&FP) Phase II analysis which will provide a mechanism for the County to fund improvements to the U.S. Highway 50/Missouri Flat Road Interchange and adjacent arterials and collector roads.

Pleasant Valley Road/ SR 49 intersection: This intersection will operate at LOS F conditions in the AM peak hour (58.7 seconds per vehicle) and the PM peak hour (70.0 seconds per vehicle). As noted in the *Diamond Dorado Traffic Impact Analysis* prepared by Farhad & Associates in 2010 Caltrans indicated that a traffic signal should not be installed at this location until the Pleasant Valley Road / Forni Road intersection and the Pleasant Valley Road / SR-49 South intersection is realigned to constitute one intersection. Another possible solution may include a roundabout with the realignment of Pleasant Valley Road with SR 49 and Forni Road.

Pleasant Valley Road/ Forni Road intersection: This intersection will operate with the southbound Forni Road approach operating at LOS F in the AM peak hour. The volume portion of the peak hour signal warrant is met in the AM and PM peak hour. A traffic signal is not recommended at this time due to proximity of this intersection to the Pleasant Valley Road / SR-49 South intersection. This intersection is under Caltrans jurisdiction. As noted in the *Diamond Dorado Traffic Impact Analysis* prepared by Farhad & Associates in 2010 Caltrans indicated that a traffic signal should not be installed at this location until the Pleasant Valley Road / Forni Road intersection and the Pleasant Valley Road / SR-49 South intersection is realigned to constitute one intersection. Another possible solution may include a roundabout with the realignment of Pleasant Valley Road with SR 49 and Forni Road.

Pleasant Valley Road/ Racquet Way intersection: The southbound approach of this intersection will operate at LOS F conditions in the AM peak hour (55.8 seconds per vehicle). The intersection meets the traffic volume section of the peak hour signal warrant in the AM peak hour and both delay and volume sections of the warrant in the PM peak hour. Signalization of this intersection will improve the operation to an LOS B condition (19.7 seconds per vehicle) in the AM peak hour.

2035 plus Project Conditions - Mitigations

Missouri Flat Road / US 50 Eastbound and Westbound Ramp intersections: The westbound US 50 ramp intersections will both operate at LOS F conditions in 2035. A single point urban interchange (SPUI) should be considered that will combine both ramp intersections into a single intersection along Missouri Flat Road. The SPUI would consist of two through lanes and two left turn lanes at the intersection with two left lanes and two right turn lane along the eastbound and westbound off-ramps. Implementation of this new interchange will result in LOS D (38.6 seconds per vehicle) operation at the new intersection.

The County is currently undertaking the Missouri Flat Area Master Circulation and Funding Plan (MC&FP) Phase II analysis which will provide a mechanism for the County to fund improvements to the U.S. Highway 50/Missouri Flat Road Interchange and adjacent arterials and collector roads. Since there is no funding mechanism in place the project should pay their fair share of the improvements.

The project should pay their fair share of the improvement as the intersection will decline to LOS F in the 2035 No Project Condition. Using the Caltrans fair share methodology the project should pay 3.2% of the improvement.

Missouri Flat Road / China Garden Road intersection: Under project conditions the intersection will continue to operate at LOS F conditions on the eastbound driveway and westbound approach. The intersection was identified for signalization in the 2019 scenario. With signalization the intersection will operate at LOS A (9.7 seconds) in the PM peak hour.

Pleasant Valley Road/ SR 49 intersection: This intersection will operate at LOS F conditions in the AM peak hour (55.5 seconds per vehicle) and the PM peak hour (68.7 seconds per vehicle). As noted in the *Diamond Dorado Traffic Impact Analysis* prepared by Farhad & Associates in 2010 Caltrans indicated that a traffic signal should not be installed at this location until the Pleasant Valley Road / Forni Road intersection and the Pleasant Valley Road / SR-49 South intersection is realigned to constitute one intersection. Another possible solution may include a roundabout with the realignment of Pleasant Valley Road with SR 49 and Forni Road. Since there is no defined project at this time there are no mitigations required for the project.

Pleasant Valley Road/ Forni Road intersection: This intersection will operate with the southbound Forni Road approach operating at LOS F in the AM peak hour. The volume portion of the peak hour signal warrant is met in both AM and PM peak hours. A traffic signal is not recommended at this time due to proximity of this intersection to the Pleasant Valley Road / SR-49 South intersection. This intersection is under Caltrans jurisdiction. As noted in the *Diamond Dorado Traffic Impact Analysis* prepared by Farhad & Associates in 2010 Caltrans has indicated that a traffic signal should not be installed at this location until the Pleasant Valley Road / Forni Road intersection and the Pleasant Valley Road / SR-49 South intersection is realigned to constitute one intersection. Another possible solution may include a roundabout with the realignment of Pleasant Valley Road with SR 49 and Forni Road. Since there is no defined project at this time there are no mitigations required for the project.

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APPENDICES

(under separate cover)

APPENDIX
FAIR SHARE PERCENTAGES & COSTS

(Future + Project Volumes) - Future
(Future + Project) – Existing

US 50 Eastbound - Westbound Ramps / Missouri Flat Road (Single Point Interchange)

	4,201 – 4,170		5,764 – 5,710
AM	4,201 – 3,060	PM	5,764 – 4,222
	= 2.7%		= 3.5%

Average Fair Share Percentage: 3.1%

Pleasant Valley Road / Racquet Way

	1,679 – 1,659		2,013 – 1,984
AM	1,679 – 1,243	PM	2,013 – 1,544
	= 4.6%		= 6.2%

Average Fair Share Percentage: 5.4%

Missouri Flat Road / China Garden Road

	3,197 – 3,109		3,967 – 3,430
AM	3,197 – 1813	PM	3,967 – 2,001
	= -6.36%		= -6.46%

Average Fair Share Percentage: 6.41%

TRAFFIC IMPACT ANALYSIS

FOR

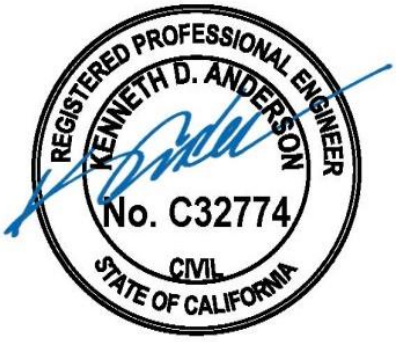
EL DORADO COUNTY SHERIFF HEADQUARTERS FACILITY
Diamond Springs, El Dorado County CA

Prepared For:

Lebeck Young Engineering, Inc.
3430 Robin Lane, Building 2
Cameron Park, CA 95682

Prepared By:

KDAnderson & Associates, Inc.
3853 Taylor Road, Suite G
Loomis, California 95650
(916) 660-1555



October 26, 2015

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TRAFFIC IMPACT ANALYSIS FOR
EL DORADO COUNTY SHERIFF HEADQUARTERS FACILITY
Diamond Springs, El Dorado County

TABLE OF CONTENTS

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TRAFFIC IMPACT ANALYSIS FOR
EL DORADO COUNTY SHERIFF HEADQUARTERS FACILITY
Diamond Springs, El Dorado County

EXECUTIVE SUMMARY

- **Project Description.** This study evaluates the traffic impacts associated with the proposed Sheriff's Headquarters project in the Diamond Springs area of El Dorado County. The project consists of four buildings totaling 106,331 square feet, 200 secure parking spaces and 170 public parking spaces. The project is located on the south side of Industrial Avenue west of Missouri Flat Road in the Diamond Springs area of El Dorado County. The trip generation for this project was developed based on the facility usage statistics occurring at the existing sheriff facility. The usage data indicates that the a.m. peak hour occurs between 7 and 8 a.m. with 116 peak hour trips generated while the p.m. peak hour occurs between 5 and 6 p.m. with 117 peak hour trips generated.

- **Existing Setting.** This study addresses traffic conditions at twelve existing intersections, nine along Missouri Flat Road, two on Pleasant Valley Road and one along Forni Road. Level of Service calculations were completed using *Synchro-SimTraffic* software. Unsignalized intersections that have two-way-left-turn-lanes (TWLTL) were analyzed using Synchro 2010 LOS methodology. All study intersections except the Missouri Flat Road / China Garden Road and the Missouri Flat Road / Enterprise Drive intersections currently operate with acceptable Levels of Service (i.e., LOS E or better) during the a.m. and p.m. peak hours.

- Missouri Flat Road / China Garden Road: The eastbound driveway opposite China Garden Road and the China Garden Road approach operates at LOS F in the a.m. peak hour. The intersection meets the peak hour signal warrant. Installation of a traffic signal will improve the level of service at the intersection to LOS B with a delay of 14.7 seconds. Alternatively, restricting the turning movements on the eastbound and westbound approaches to right-turns only would result in acceptable operations in both peak hours. The improvements for this impacted intersection are included in the 10-20 year time frame of the County's CIP. The County's 20-year CIP includes approximately $89,300,000 for traffic signal and intersection operational improvements. County Long Range Planning annually monitors intersections with the potential need for improvements, which would include this intersection. At such time that sufficient warrants are met, then the improvement project can be added to the CIP by name, and funding allocated.

- Missouri Flat Road / Enterprise Drive: The eastbound approach of the intersection operates at LOS F, and the intersection meets the peak hour signal warrant. Signalization of the intersection will result in an LOS A condition in the a.m. peak hour (6.8 seconds) and LOS B condition in the p.m. peak hour (12.4 seconds). The improvements for this impacted intersection are included in the 10-20 year time frame of the County's CIP. The County's 20-year CIP includes approximately $89,300,000 for traffic signal and intersection operational improvements. County Long Range Planning annually monitors intersections with the

potential need for improvements, which would include this intersection. At such time that sufficient warrants are met, then the improvement project can be added to the CIP by name, and funding allocated.

- **Existing Plus Project Impacts.** The operation of the proposed project will increase the volume of traffic on the study area circulation system. All intersections except Missouri Flat Road at China Garden Road and Missouri Flat Road at Enterprise Drive will operate within acceptable El Dorado County LOS thresholds. The following mitigations are noted:

  Pay TIM Fees: The Sheriff Department shall contribute its fair share to the cost of regional circulation improvements via the existing countywide traffic impact mitigation (TIM) fee program.

- Missouri Flat Road / China Garden Road: The eastbound driveway opposite China Garden Road and the China Garden Road approach will continue to operate at LOS F in the a.m. peak hour while the westbound China Garden Road approach will operate at LOS F in the a.m. and p.m. peak hours. Because the project adds more than 10 peak hour trips, this impact is significant. The intersection will meet the peak hour signal warrant. Installation of a traffic signal identified in the Existing Conditions will maintain acceptable levels of service at the intersection during the a.m. peak hour (LOS B – 16.1 seconds) and p.m. peak hour (LOS B – 16.1 seconds).

  A second option would be to limit China Garden Road and driveway traffic to right turns only. With this mitigation the intersection will operate with the worst movement (westbound) at LOS D (30.3 seconds) in the a.m. peak hour and LOS C (20.6 seconds) in the p.m. peak hour.

  The TIM fees paid by the Sheriff's Department would cover its fair share of this improvement, and no additional mitigation is required.

- Missouri Flat Road / Enterprise Drive: The eastbound approach to the intersection will continue to operate at LOS F in both the a.m. and p.m. peak hours. Because the project adds more than 10 peak hour trips, this impact is significant. The intersection will meet the peak hour signal warrant. Installation of a traffic signal identified in the Existing Conditions will maintain acceptable levels of service at the intersection during the a.m. peak hour (LOS A – 8.5 seconds) and p.m. peak hour (LOS B – 18.4 seconds). The TIM fees paid by the Sheriff's Department would cover its fair share of this improvement.

- **Year 2025 Background Conditions.** Pursuant to El Dorado County traffic study guidelines, Year 2025 conditions were identified based on interpolation between current traffic volumes and Year 2035 traffic volume forecasts. Diamond Springs Parkway (DSP) is expected to be constructed by 2025. Since the existing roadway configuration does not include the DSP a model run was conducted for the baseline 2010 a.m. and p.m. model conditions assuming DSP was built. This provided 'existing' roadway volumes, thereby allowing the roadway volumes to be calculated under 2025 conditions with DSP completed. Four intersections will operate with LOS F conditions. These include Missouri Flat Road at China Garden Road,

Missouri Flat Road at Enterprise Drive, Pleasant Valley Road at SR 49 and Pleasant Valley Road at Forni Road. The following recommendations are noted:

- Missouri Flat Road / China Garden Road: This intersection will operate with the westbound China Garden Road approach operating at LOS F. Installation of a traffic signal identified in the Existing Conditions will maintain acceptable levels of service at the intersection during the a.m. peak hour (LOS B – 12.4 seconds) and p.m. peak hour (LOS B – 10.1 seconds). Alternatively, restricting the turning movements on the eastbound and westbound approaches to right-turns only would result in acceptable operations in both peak hours.

- Missouri Flat Road / Enterprise Drive: This intersection will operate with the eastbound approach at LOS F in the a.m. and p.m. peak hours. Installation of a traffic signal identified in the Existing Conditions will maintain acceptable levels of service at the intersection during the a.m. peak hour (LOS A – 8.6 seconds) and p.m. peak hour (LOS B – 14.3 seconds).

- Pleasant Valley Road at SR 49: The intersection will decline to LOS F conditions in the a.m. peak hour. Signalization of the intersection will result in a LOS B condition in the a.m. peak hour (19.2 seconds). The improvements for this impacted intersection are included in the 10-20 year time frame of the County's CIP. The County's 20-year CIP includes approximately $89,300,000 for traffic signal and intersection operational improvements. County Long Range Planning annually monitors intersections with the potential need for improvements, which would include this intersection. At such time that sufficient warrants are met, then the improvement project can be added to the CIP by name, and funding allocated.

- Pleasant Valley Road / Forni Road: The southbound Forni Road approach will decline to LOS F in the a.m. peak hour. The County has identified improvements along Pleasant Valley Road between SR 49 and Missouri Flat Road (GP 176) that will include installation of a two-way-left-turn-lane. The project is programmed for construction between Fiscal Year 2025/26 and 2034/35. Installation of this improvement will allow the intersection to operate at LOS D (25.8 seconds).

- **2025 Plus Project Conditions.** The trips generated by the proposed project were superimposed onto the Year 2025 background conditions, and resulting peak hour Levels of Service were calculated. Four intersections will operate with LOS F conditions. These include Missouri Flat Road at China Garden Road, Missouri Flat Road at Enterprise Drive, Pleasant Valley Road at SR 49 and Pleasant Valley Road at Forni Road. In addition, the Missouri Flat Road / Industrial Drive intersection will meet the peak hour signal warrant. The following mitigations are identified:

- Missouri Flat Road / China Garden Road: Under Plus Project conditions the intersection will operate at LOS F conditions on the westbound approach. The project adds more than 10 trips to the intersection, and this impact is significant. Installation of a traffic signal identified in the Existing Conditions will maintain acceptable Levels of Service at the intersection during the a.m. peak hour (LOS B – 14.9 seconds) and p.m. peak hour (LOS B – 11.6 seconds).

Under the right turn limitation on China Garden Road and driveway traffic the intersection will operate with the worst movement (westbound) at LOS C (16.5 seconds) in the a.m. peak hour and LOS C (20.2 seconds) in the p.m. peak hour. The TIM fees paid by the Sheriff's Department would cover its fair share of this improvement.

- Missouri Flat Road / Enterprise Drive: Under project conditions the intersection will operate at LOS F conditions on the eastbound approach. The project adds more than 10 trips to the intersection, and this impact is significant. Installation of the traffic signal identified in the Existing Conditions will maintain acceptable levels of service at the intersection during the a.m. peak hour (LOS B – 10.9 seconds) and p.m. peak hour (LOS B – 14.4 seconds). The TIM fees paid by the Sheriff's Department would cover its fair share of this improvement.

- Pleasant Valley Road at SR 49: Under project conditions the intersection will operate at LOS F. The project adds more than 10 trips to the intersection, and this impact is significant. Installation of the traffic signal identified in the Year 2025 Conditions will maintain acceptable levels of service at the intersection during the a.m. peak hour (LOS C – 20.2 seconds). The TIM fees paid by the Sheriff's Department would cover its fair share of this improvement.

- Pleasant Valley Road / Forni Road: The southbound Forni Road approach will operate at LOS F in the a.m. peak hour. The project adds more than 10 trips to the intersection, and this impact is significant. Installation of a two-way-left-turn lane identified in the County's Capital Improvement Program will allow the intersection to operate at LOS D (26.5 seconds). The project is programmed for construction between Fiscal Year 2025/26 and 2034/35 and is therefore consistent with General Plan Policy TC-Xf. The TIM fees paid by the Sheriff's Department would cover its fair share of this improvement.

- Missouri Flat Road / Industrial Drive: Under project conditions the intersection will meet the peak hour signal warrant. The project should construct a traffic signal at this location to ensure public safety access is maintained. Installation of a new traffic signal would improve the operating conditions to LOS B (17.5 seconds) in the a.m. peak hour and LOS B (13.4 seconds) in the p.m. peak hour.

  As noted in the intersection descriptions there are several driveways on Missouri Flat Road that could be affected by installing a new traffic signal. The driveways adjacent to the intersection (i.e. the south driveway on the east side of the intersection and the north driveway in the southwest quadrant of the intersection) may require closure or realignment to improve safety and minimize interference of the operation of the signal. Additional driveways could be impacted depending on the area of improvement. These issues will be evaluated when the traffic signal is designed.

No other mitigations are necessary.

- **2035 Conditions.** Three intersections will operate with LOS F conditions. These include Missouri Flat Road at China Garden Road, Missouri Flat Road at Enterprise Drive and Pleasant Valley Road at SR 49. The following recommendations are noted:

- Missouri Flat Road / China Garden Road: This intersection will operate with the westbound China Garden Road approach operating at LOS F. Installation of a traffic signal identified in the Existing Conditions will maintain acceptable levels of service at the intersection during the a.m. peak hour (LOS B – 13.5 seconds) and p.m. peak hour (LOS B – 11.1 seconds). Alternatively, restricting the turning movements on the eastbound and westbound approaches to right-turns only would result in acceptable operations in both peak hours.

- Missouri Flat Road / Enterprise Drive: This intersection will operate with the eastbound approach at LOS F in the a.m. and p.m. peak hours. Installation of a traffic signal identified in the Existing Conditions will maintain acceptable levels of service at the intersection during the a.m. peak hour (LOS A – 8.3 seconds) and p.m. peak hour (LOS B – 13.4 seconds).

- Pleasant Valley Road / SR 49: The intersection will decline to LOS F conditions in the a.m. peak hour. Signalization of the intersection will result in an LOS C condition in the a.m. peak hour (29.9 seconds). The improvements for this impacted intersection are included in the 10-20 year time frame of the County's CIP. The County's 20-year CIP includes approximately $89,300,000 for traffic signal and intersection operational improvements. County Long Range Planning annually monitors intersections with the potential need for improvements, which would include this intersection. At such time that sufficient warrants are met, then the improvement project can be added to the CIP by name, and funding allocated.

2035 plus Project Conditions

- Missouri Flat Road / China Garden Road: Under project conditions the intersection will operate at LOS F conditions along the westbound China Garden Road approach. Because the project adds more than 10 peak hour trips, this impact is significant. Installation of a traffic signal identified in the Existing Conditions will maintain acceptable levels of service at the intersection during the a.m. peak hour (LOS B – 12.9 seconds) and p.m. peak hour (LOS B – 12.7 seconds).

  Under the right turn limitation on China Garden Road and driveway traffic the intersection will operate with the worst movement (westbound) at LOS C (18.6 seconds) in the a.m. peak hour and LOS C (23.5 seconds) in the p.m. peak hour. The TIM fees paid by the Sheriff's Department would cover its fair share of this improvement.

- Missouri Flat Road / Enterprise Drive: Under project conditions the intersection will operate at LOS F conditions on the eastbound Enterprise Drive approach. Because the project adds more than 10 peak hour trips, this impact is significant. Installation of a traffic signal identified in the Existing Conditions will maintain acceptable levels of service at the intersection during the a.m. peak hour (LOS A – 9.5 seconds) and p.m. peak hour (LOS B – 14.6 seconds). The TIM fees paid by the Sheriff's Department would cover its fair share of this improvement.

- Pleasant Valley Road / SR 49: The intersection will operate at LOS F conditions in the a.m. peak hour. The project adds more than 10 trips to the intersection, and this impact is significant. Signalization of the intersection will result in an LOS C condition in the a.m. peak hour (25.2 seconds). The County's 20-Year Capital Improvement Program (CIP) identifies about $89,300,000 for traffic signal and intersection operational improvements. The TIM fees paid by the Sheriff's Department would cover its fair share of this improvement.

No other mitigations are necessary.

TRAFFIC IMPACT ANALYSIS FOR
EL DORADO COUNTY SHERIFF HEADQUARTERS FACILITY
Diamond Springs, El Dorado County

INTRODUCTION

Study Purpose and Objectives

This study evaluates the traffic impacts associated with the proposed Sheriff's Headquarters project in the Diamond Springs area of El Dorado County. The project consists of four buildings totaling 106,331 square feet, 200 secure parking spaces and 170 public parking spaces. The project is located on the south side of Industrial Avenue west of Missouri Flat Road in the Diamond Springs area of El Dorado County. Figure 1 illustrates the site relative to the greater Diamond Springs area.

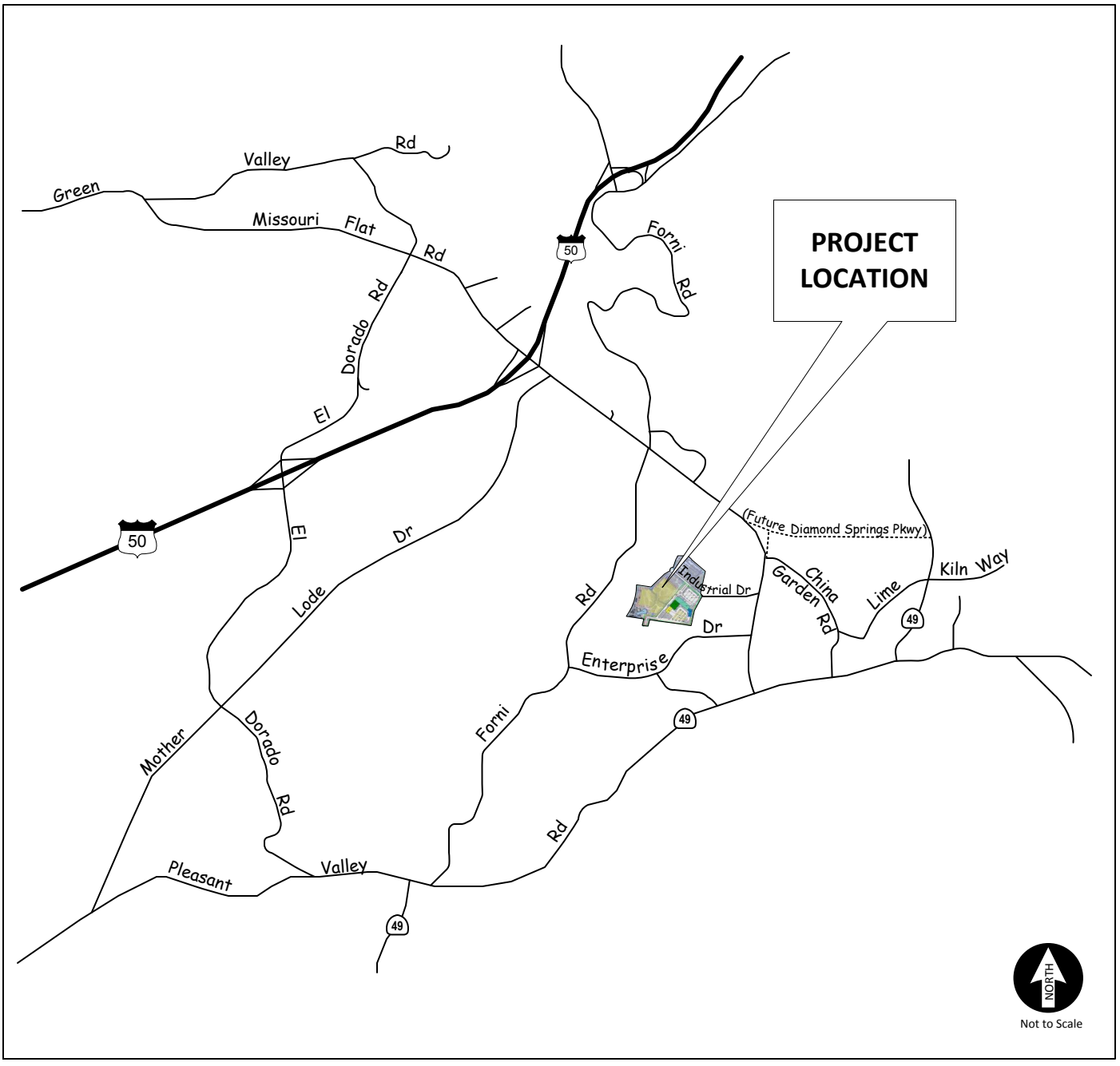
The scope of this traffic analysis has been identified through consideration of El Dorado County traffic study guidelines in consultation with El Dorado County Department of Transportation (DOT). Based on direction from DOT this study addresses the following scenarios:

1. Existing (2014) Traffic Conditions
2. Existing (2014) Plus Project Conditions
3. 2025 Traffic Conditions
4. 2025 Plus Project Conditions
5. 2035 Traffic Conditions
6. 2035 Plus Project Conditions

The objective of this study is to identify those roads and street intersections that may be impacted by development of this project based on El Dorado County significance criteria.

Project Description

The proposed project includes a new sheriff headquarters in the Diamond Springs area of El Dorado County. The project spans an 11 acre site and includes four buildings totaling 106,331 sure feet. The buildings include a 59,331 square feet administration facility, a 24,000 square foot training building, an 11,000 square foot service building and a 12,000 square foot morgue. The primary access and only public access will be from Industrial Avenue via Missouri Flat Road while a private access for official sheriff vehicles is also planned on the south side of the site. A gated access would allow sheriff's vehicles to access Missouri Flat Road via Enterprise Drive through Merchandise Way or Capitol Avenue. Figure 2 provides the proposed site plan along Industrial Avenue.



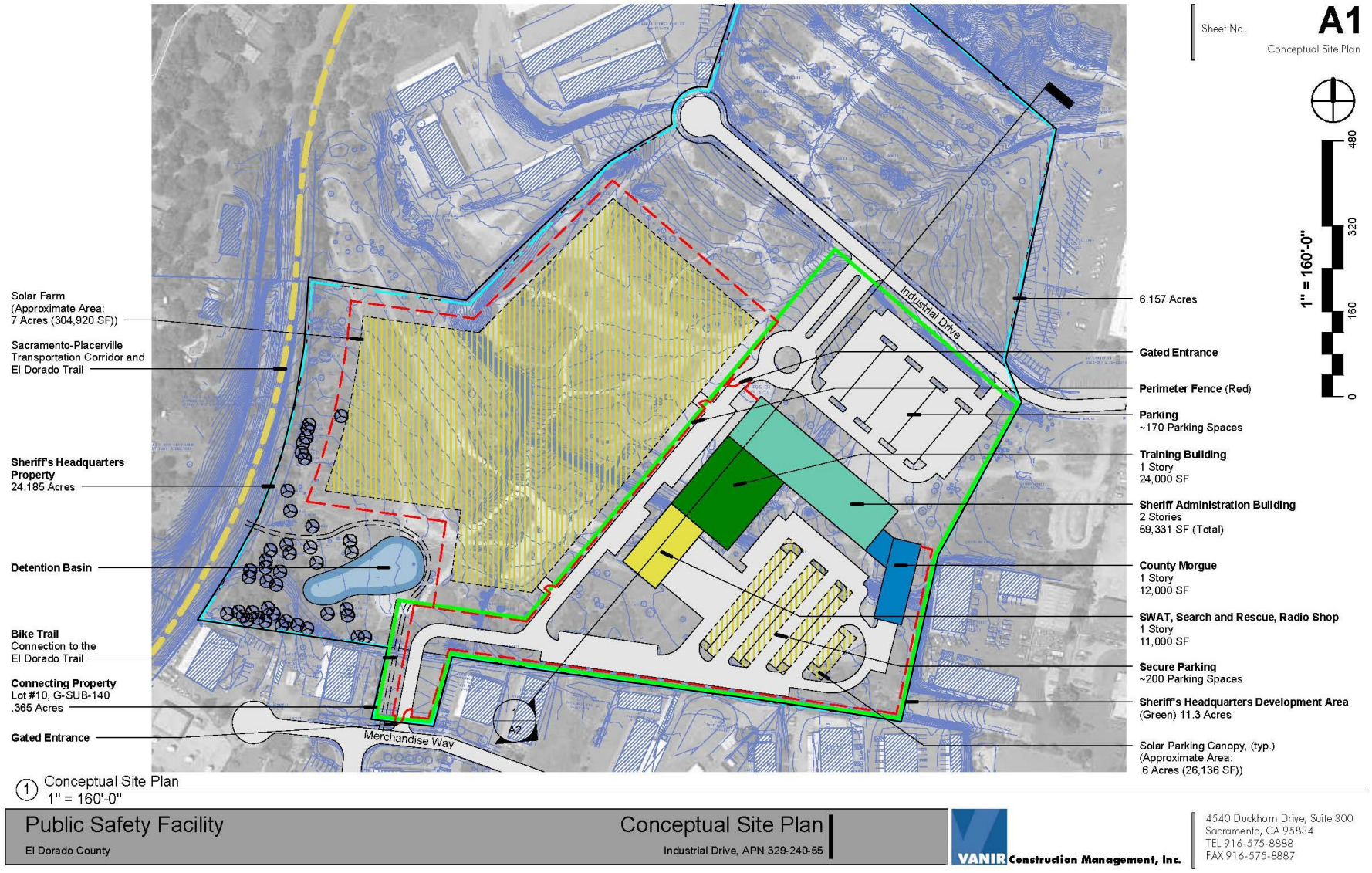
VICINITY MAP

KD Anderson & Associates, Inc.
Transportation Engineers

4431-01 LT 10/26/2015

Sheriff's Headquarters Project El Dorado County

figure 1



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Transportation Engineers

4431-01 LT 10/26/2015

SITE PLAN

figure 2

EXISTING SETTING

Study Area

This study addresses traffic conditions at twelve (12) existing intersections, nine along Missouri Flat Road, one along Forni Road and two along Missouri Flat Road. The limits of the study area were based on discussion with El Dorado County staff. The text that follows describes the roadway facilities included in this analysis.

The quality of traffic flow is typically governed by the operation of major intersections and the daily volume of traffic along the roadways. The physical characteristics of the study intersections are described in the text which follows.

Study Area Intersections

The **Missouri Flat Road / Westbound US 50 ramps** intersection is controlled by a coordinated traffic signal. The Missouri Flat Road approaches feature dual northbound left turn lanes and a separate southbound right turn lane. The four lane exit from US 50 is configured with a dual left turn lane and dual right turn lanes.

The **Missouri Flat Road / Eastbound US 50 ramps** intersection is controlled by a coordinated traffic signal. The Missouri Flat Road approaches feature dual southbound left turn lanes and a separate northbound right turn lane. The three lane exit from US 50 is configured with a separate left turn lane and right turn lanes, as well as a combined left, thru and right turn lane.

The **Missouri Flat Road / Mother Lode Drive** intersection is signalized and located roughly 250 feet from the Eastbound US 50 ramps intersection. The Missouri Flat Road approaches have separate left turn and right turn lanes. The eastbound Mother Lode Drive approach has three lanes configured as dual left turns and a separate right turn lane.

The **Missouri Flat Road / Forni Road** intersection is also signalized and located roughly ½ mile south of the Mother Lode Drive intersection. The Missouri Flat Road approaches each include separate left turn and right turn lanes. The Forni Road approaches have separate left turn, through and right turn lanes, and a second left turn lane has been provided on the eastbound approach.

The **Missouri Flat Road / Golden Center Drive** intersection is located about 1,100 feet south of Forni Road. This signalized intersection includes separate left turn lanes on the Missouri Flat Road approaches and a separate right turn lane on the southbound approach. The Golden Center Drive approaches are single lanes which operate with permitted phasing.

The **Missouri Flat Road / China Garden Road** intersection is located about 2,100 feet south of Golden Center Drive. This unsignalized intersection includes single lanes along Missouri Flat Road with a separate left turn lane on the southbound approach. A TWLTL is present on the northbound approach of Missouri Flat Road and north of the southbound left turn lane. The China Garden Road approach consists of a single lane which is stop controlled.

The **Missouri Flat Road / Industrial Drive** intersection is located about 600 feet south of China Garden Road. This unsignalized intersection includes single lanes along Missouri Flat Road with a TWLTL present along Missouri Flat Road. The Industrial Drive approach consists of a single lane which is stop controlled. This intersection is the primary access intersection to the project site.

There are several driveways in the area of the intersection including two driveways on the east side of the intersection, the north driveway about 120' from the intersection and the south driveway about 70' from the intersection. Additionally, there are two driveways in the southwest quadrant of the intersection, with one driveway directly adjacent to Industrial Drive and a second about 300' to the south. The project traffic may impact these adjacent driveways.

The **Missouri Flat Road / Enterprise Drive** intersection is located along a two lane section of Missouri Flat Road. A TWLTL is available on Missouri Flat Road. The eastbound Enterprise Drive approach is controlled by a stop sign.

The **Missouri Flat Road / (SR 49) Pleasant Valley Road** intersection is located at the southern end of Missouri Flat Road. This tee intersection is controlled by an actuated traffic signal. The Pleasant Valley Road approaches have single through lanes in each direction, with dual eastbound left turn lanes and a separate westbound right turn lane. The two lane southbound approach on Missouri Flat Road is configured as separate left turn and right turn lanes, and the right turn "overlaps" the eastbound left turn phase.

The **Forni Road / Enterprise Drive** intersection is located approximately midway between Missouri Flat Road and Pleasant Valley Road. Enterprise Drive provides the only direct connector along Forni Road to either Missouri Flat Road or Pleasant Valley Road. This intersection is stop controlled along Enterprise Drive and includes single lanes along all approaches.

The **Pleasant Valley Road (SR 49) / SR 49 South** intersection is located about two miles southwest of the project site. This tee intersection is all-way stop controlled. Eastbound Pleasant Valley Road and northbound SR 49 have single lane approaches while westbound Pleasant Valley Road includes a left turn lane and a through lane.

The **Pleasant Valley Road (SR 49) / Forni Road** intersection is located about 500' east of the SR-49 South intersection. This tee intersection is stop controlled along Forni Road which intersects Pleasant Valley Road at about a 30° skew to the northeast. All roadway approaches are single lane.

Analysis Criteria

Level of Service Methodology. *Level of Service Analysis* has been employed to provide a basis for describing existing traffic conditions and for evaluating the significance of project traffic impacts. Level of Service measures the *quality* of traffic flow and is represented by letter designations from "A" to "F", with a grade of "A" referring to the best conditions, and "F"

representing the worst conditions. The guidelines and analyses used for this report follow El Dorado County standards.

Local agencies adopt minimum Level of Service standards for their facilities. El Dorado County identifies LOS E as the acceptable Level of Service on roadways and state highways within the unincorporated areas of the County in the Community Regions and LOS D in the Rural Centers and Rural Regions except as specified in the General Plan; the project is located within a Community Region. The County's General Plan allows some roadway segments to operate at LOS F. Two segments are along Missouri Flat Road, from US 50 to Mother Lode Drive and from Mother Lode Drive to China Garden Road while a third is along Pleasant Valley Road between El Dorado Road and SR 49.. The analysis techniques presented in the *2010 Highway Capacity Manual* were used to calculate Level of Service and to provide a basis for describing existing traffic conditions and evaluating the significance of project traffic impacts.

Various software programs have been developed to assist in calculating intersection Level of Service, and the level of sophistication of each program responds to factors that affect the overall flow of traffic. In this case, Synchro-SimTraffic software was employed in order to account for the effects of closely spaced traffic signals along Missouri Flat Road. The files originally developed for the El Dorado County Transportation Commission's *Diamond Springs and El Dorado Area Mobility and Livable Community Plan (DSEDAMLCP)* were obtained and, in consultation with El Dorado County DOT and KAI, applicable adjustments were made to reflect current geometry and operational characteristics. The software is a stochastic model, i.e. randomness is present when running the simulations. The results will vary within each scenario and between scenarios. This may result in some intersections having lower delays in the Plus Project scenario than in the No Project scenario. The simulation results contained herein reflect the average of the mean 10 one-hour simulation runs selected from a 20 run sample. Each run employed a 10 minute seeding period.

SimTraffic is not able to currently analyze two-stage gap analysis with two-way-left-turn–lanes (TWLTL). According to Trafficware, the program architecture "needs considerable changes to the driver lane choice, gap acceptance methods." They are continuing to look into these elements while the FHWA continues to look into new algorithms through their Next Generation Simulation Program. Since TWLTL analysis is unavailable using SimTraffic, intersections with TWLTL's were evaluated using Synchro 2010 methodology which does analyze gap acceptance with two-way-left-turn-lanes.

The intersection Levels of Service presented in this analysis are based on the weighted average total delay per vehicle for the intersection as a whole at signalized intersections and at locations controlled by all-way stops. The average delay experienced by motorists yielding the right of way is the basis for identification of Level of Service at locations controlled by side street stop signs. Applicable Level of Service thresholds based on average delay are shown in Table 1.

TABLE 1
LEVEL OF SERVICE DEFINITIONS

Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. Delay ≤ 10.0 sec	Little or no delay. Delay ≤ 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and ≤ 20.0 sec	Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and ≤ 35.0 sec	Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestion of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35.0 sec and ≤ 55.0 sec	Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay > 55.0 sec and ≤ 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. Delay > 80.0 sec	Intersection blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.
Sources: 2010 Highway Capacity Manual, Transportation Research Board (TRB).			

Intersection Level of Service Thresholds of Significance. A traffic impact is considered to be significant under El Dorado County guidelines if the project causes an intersection to change from LOS E to LOS F. Worsening of conditions at facilities already operating at unacceptable levels of service is also considered a significant impact. The County's General Plan Policy TC-Xe defines worsen as any of the following conditions:

a. a 2% increase in traffic during the a.m. peak hour, p.m. peak hour or daily trips, or
b. the addition of 100 or more daily trips, or
c. the addition of 10 or more trips during the a.m. peak hour or the p.m. peak hour.

When a project identifies an impact on the County's roadway network for a scenario with or without the project, a separate analysis must be done to identify what improvements are needed for mitigation and when the improvements must be in place. The timing of the proposed mitigation must be in compliance with General Plan Policy TC-Xf:

At the time of approval of the tentative map for a single family residential subdivision of five or more parcels that worsens (defined as a project that triggers Policy TC-Xe [A] or [B] or [C]) traffic on the County road system, the County shall do one of the following: (1) condition the project to construct all road improvements necessary to maintain or attain Level of Service standards as detailed in this Transportation and Circulation Element based on existing traffic plus traffic generated from the development plus forecasted traffic growth at 10-years from project submittal; or (2) ensure the commencement of construction of the necessary road improvements are included in the County's 10-year CIP.

For all other discretionary projects that worsen (defined as a project that triggers Policy TC-Xe [A] or [B] or [C]) traffic on the County road system, the County shall do one of the following: (1) condition the project to construct all road improvements necessary to maintain or attain Level of Service standards as detailed in this Transportation and Circulation Element; or (2) ensure the construction of the necessary road improvements are included in the County's 20-year CIP.

Projects that have impacts to Caltrans facilities shall use Caltrans LOS standards and significance thresholds in conjunction with the requirements of El Dorado County General Plan Circulation Policy TC-Xd.

Intersection Queuing Analysis. The quality of traffic flow can also be affected by queuing at signalized intersections. For this study the lengths of peak period queues have been identified at key signalized intersections and compared to available storage in order to determine whether spillover from turn lanes can affect adjoining travel or extend through adjacent intersections. 95th percentile queue lengths have been calculated as a byproduct of the SimTraffic output. Those locations where the 95th percentile queue exceeds the available storage have also been noted.

Traffic Signal Warrants. Traffic signal warrants are a series of standards which provide guidelines for determining if a traffic signal is appropriate. Signal warrant analyses are typically conducted at intersections of uncontrolled major streets and stop sign-controlled minor streets. If one or more signal warrants are met, signalization of the intersection may be appropriate. However, a signal should typically not be installed if none of the warrants are met, since the installation of signals would increase delays on the previously-uncontrolled major street, resulting in an undesirable increase in overall vehicle delay at the intersection. Signalization may also increase the occurrence of particular types of accidents. Therefore, if signals are installed where signal warrants are not met the detriment of increased accidents and overall delay may be greater than the benefit in traffic operating conditions on movements operating below the significance threshold. Signal warrants provide an industry-standard basis for identifying when the adverse effect on the worst movement is substantial enough to warrant signalization.

The extent to which existing or projected traffic volumes may justify signalization at un-signalized intersections has been determined based on consideration of traffic signal warrant presented in the *Manual of Uniform Traffic Control Devices, 2012.* For this analysis the volume thresholds associated with Warrant 3 (Peak Hour Volume) have been assessed. For this analysis the "rural" criteria have been employed along Missouri Flat Road based on speed limits in excess of 40 mph. The "rural" criteria was also used along Forni Road based on the road characteristics.

At unsignalized intersections, a traffic impact is considered "adverse" if the agency LOS standard is exceeded but the projected traffic does not satisfy traffic signal warrants. Under these conditions, the means to completely alleviate delays to stop controlled vehicles may be to install a traffic signal. However, the unmet signal warrants would imply that the reduction in delay for the stop-controlled vehicles may not justify the new delays that would be incurred by the major street traffic (which is currently not stopped). An alternative to a traffic signal could be installation of a roundabout.

Public Transit

The El Dorado County Transit Authority (EDCTA) offers local fixed route, regional commuter route, dial-a-ride and para-transit services. One local fixed route passes the project site along Missouri Flat Road. This is the Diamond Springs (DS) route. The DS route is about ¼ mile from the project site. This route travels along Missouri Flat Road to Pleasant Valley Road and loops along Racquet Way before returning to Missouri Flat Road on its way to Folsom Lake College. The route operates from about 7:00 a.m. to about 6:00 p.m. Monday through Friday at one-hour headways. Transit passengers can also use other routes to travel to the Missouri Flat Road Transit Center where they can transfer to the DS route.

EDCTA also operates commuter routes to downtown Sacramento Monday through Friday. A park-n-ride lot is available along Commerce Way, between Enterprise Drive and Pleasant Valley Road. Four inbound routes to Sacramento are operated from the Commerce Way lot between 5:30 a.m. and 6:00 a.m. Ten return trips from Sacramento are available but are 'request only' stops.

The *Western El Dorado County Short and Long Range Transit Plan* has identified the following improvements for transit service in the Diamond Springs area. Short Range improvements include beginning the route schedule at 6:00 a.m., extending the existing weekday route schedule by one hour at the end of the day and instituting Saturday service between 9:00 a.m. and 5:00 p.m. Long Range improvements include revising the route as a result of the construction of Diamond Springs Parkway between Missouri Flat Road and Diamond Road.

Bicycle and Pedestrian Facilities

Designated Class II bicycle facilities (bike lanes) exist along Missouri Flat Road from Golden Center Drive to Plaza Drive. Paved shoulders are present along most of Missouri Flat Road between Golden Center Drive and Pleasant Valley Road; however, these shoulders are not designated bicycle lanes. Narrow paved shoulders are also present along Forni Road between Missouri Flat Road and Pleasant Valley Road; these shoulders are generally less than one foot wide and are not viable for bicyclists. Industrial Drive does not have marked bicycle facilities.

Future bicycle facilities include the extension of Class II bike lanes along Missouri Flat Road to Pleasant Valley Road, Class II bike lanes along Enterprise Drive and Commerce Way, Class II bike lanes along Forni Road, from Enterprise Drive to Missouri Flat Road and a Class I bike path along the Sacramento Placerville Transportation Corridor, a part of the El Dorado Trail.

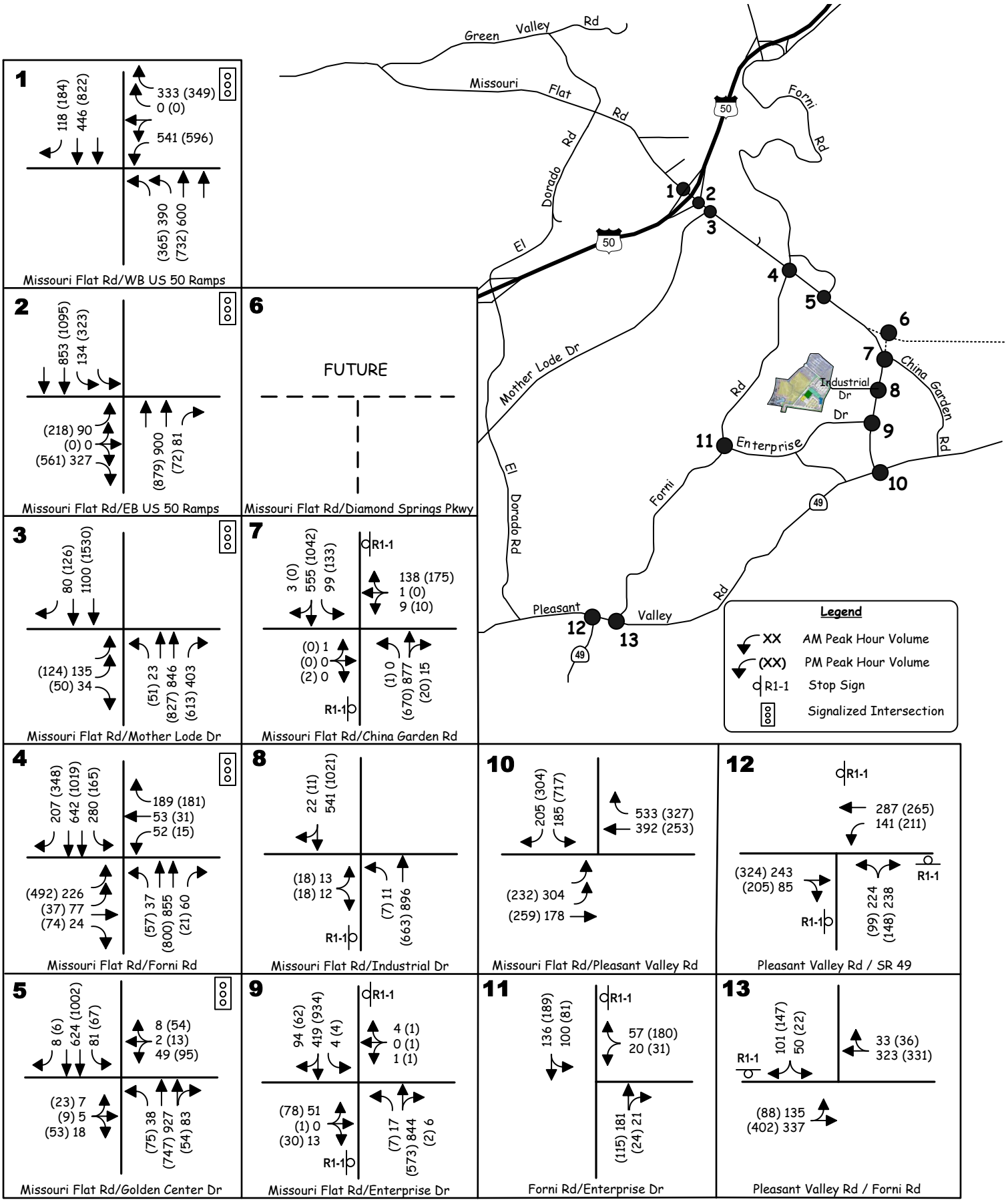
Sidewalk is present along both sides of Missouri Flat Road south of Golden Center Drive. The sidewalk extends about 300' south on the west side and about 550' south on the east side. The remaining roadways in the project vicinity do not have sidewalk and pedestrians have to walk along the shoulders of these facilities.

Existing Traffic Operating Conditions

Traffic Volume Counts. This analysis makes use of additional traffic counts conducted in July 2014 and October 2014. The July counts were adjusted based on turning movement counts that were conducted at adjacent intersections while school was in session. The counts are included in the Appendix, and the intersection turning movements are presented in Figure 3.

Intersection Levels of Service. Table 2 summarizes current operating Levels of Service at the study area intersections for both time periods. All study intersections except the Missouri Flat Road / China Garden Road and Missouri Flat Road / Enterprise Drive intersections currently operate with acceptable Levels of Service during the a.m. and p.m. peak hours. The side street approaches at the China Garden Road intersection operates at LOS F conditions in the a.m. peak hour; the eastbound approach at China Garden Road is a driveway with less than five vehicles entering Missouri Flat Road. The eastbound Enterprise Drive approach will operate at LOS F in both peak periods.

Traffic Signal Warrants. The peak hour traffic signal warrant is currently met at four intersections. These include China Garden Road at Missouri Flat Road, Enterprise Drive at Missouri Flat Road, Pleasant Valley Road at SR 49 and Forni Road at Pleasant Valley Road. The warrant is met in the p.m. period only at the Enterprise Drive at Missouri Flat Road intersection and is met during both peak periods at the remaining three. The Pleasant Valley Road / SR 49 and Forni Road / Pleasant Valley Road intersections operate within accepted County LOS thresholds while the China Garden Road / Missouri Flat Road intersection and the Enterprise Drive / Missouri Flat Road intersection will operate with at least one approach operating at LOS F.



EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS

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4431-01 LT 10/26/2015

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figure 3

TABLE 2
EXISTING PEAK HOUR LEVELS OF SERVICE AT INTERSECTIONS

Location	Control	AM Peak Hour		PM Peak Hour		Traffic Signal Warranted?
		LOS	Average Delay	LOS	Average Delay	
1. Missouri Flat Rd / WB US 50 ramps	Signal	B	18.4	B	17.6	N/A
2. Missouri Flat Rd / EB US 50 ramps	Signal	B	16.2	C	21.5	N/A
3. Missouri Flat Rd / Mother Lode Dr	Signal	A	8.5	A	8.6	N/A
4. Missouri Flat Rd / Forni Rd	Signal	C	21.5	C	22.4	N/A
5. Missouri Flat Rd / Golden Center Dr	Signal	B	14.8	C	21.0	N/A
6. Missouri Flat Rd / Diamond Springs Pkwy	Signal	N/A	N/A	N/A	N/A	N/A
7. Missouri Flat Rd / China Garden Rd	EB/WB					Yes*
NB Left	Stop	(Δ)	(Δ)	(B)	(10.6)	
SB Left		(B)	(11.2)	(A)	(9.8)	
EB		(F)	(185.9)	(C)	(18.6)	
WB		(F)	(55.9)	(E)	(43.5)	
8. Missouri Flat Rd / Industrial Dr	EB Stop					No
NB Left		(A)	(8.9)	(B)	(10.9)	
EB		(C)	(17.8)	(C)	(24.5)	
9. Missouri Flat Rd / Enterprise Dr						Yes†
NB Left	EB/WB	(A)	(8.7)	(B)	(10.5)	
SB Left	Stop	(B)	(10.2)	(A)	(8.7)	
EB		(F)	(99.1)	(F)	(250.8)	
WB		(C)	(23.7)	(E)	(40.0)	
10. Missouri Flat Rd / Pleasant Valley Rd	Signal	B	18.7	B	20.0	N/A
11. Forni Rd / Enterprise Dr	WB Stop					No
SB Left		(A)	(7.9)	(A)	(7.7)	
WB		(B)	(11.2)	(B)	(11.3)	
12. Pleasant Valley Rd / SR 49	AWS	E	41.7	C	20.8	Yes*
13. Pleasant Valley Rd / Forni Rd	SB Stop					Yes*
SB		(E)	(39.3)	(B)	(14.9)	
EB Left		(A)	(9.0)	(A)	(8.4)	

Δ no volume
* meets peak hour warrant in AM and PM peak hour
† meets peak hour warrant in PM peak hour
(xx) – delay and level of service for side street traffic using Synchro 2010 including TWLTL analysis
N/A – not applicable
AWS – all way stop

Intersection Queues. Table 3 presents information regarding current peak period queuing in lanes at signalized study intersections. In each case, the available storage has been presented along with current peak hour traffic volumes and the 95th percentile queue length. On multiple lane approaches the longest queue amongst a group of common lanes has been noted.

Most intersections have lane storage capacity that can accommodate peak period queues. Those 95th percentile queues with length exceeding the available storage have been highlighted. The 95th percentile queue exceeds available storage in eight locations.

TABLE 3
EXISTING PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour		PM Peak Hour	
		VPH	Queue (feet)	VPH	Queue (feet)
1. Missouri Flat Road / WB US 50 ramps					
NB left turn	160 (2)	390	167	365	163
NB through	360 (2)	600	274	732	215
SB through	520 (2)	446	158	822	250
WB left turn	410 (2)	541	214	596	227
WB right turn	410 (2)	333	139	349	149
2. Missouri Flat Road / EB US 50 ramps					
NB through	160 (2)	900	200	879	181
NB right turn	140	81	70	72	78
SB left	160 (2)	134	196	323	215
SB through	380 (2)	853	351	1,095	430
EB left+through+right turn	540 (3)	417	150	779	215
3. Missouri Flat Road / Mother Lode Drive					
NB left turn	150	23	55	51	79
NB through	2,300 (2)	846	182	827	164
SB through	140 (2)	1,100	102	1,530	169
SB right turn	130	80	<25	126	59
4. Missouri Flat Road / Forni Road					
NB left turn	250	37	48	57	94
NB through	1,000 (2)	855	242	800	275
NB right turn	160	60	101	21	83
SB left turn	300	280	275	165	194
SB through	2,300 (2)	642	207	1,019	259
SB right turn	150	207	108	348	180
5. Missouri Flat Road / Golden Center Drive					
NB left turn	120	38	75	75	111
SB left turn	160	81	124	67	154
10. Missouri Flat Road / Pleasant Valley Road					
EB Left*	130 (2)	304	165	232	138
WB Right	200	533	243	327	156

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches

PROJECT CHARACTERISTICS

The development of this project will attract traffic to the project site. The amount of additional traffic on a particular section of the street network is dependent upon two factors:

- Trip Generation, the number of new trips generated by the project, and
- Trip Distribution and Assignment, the specific routes that the new traffic takes.

Trip Generation

Trip generation is determined by identifying the type and size of land use being developed. Recognized sources of trip generation data may then be used to calculate the total number of trip ends resulting from the day to day operation of the businesses in the project.

The trip generation for this project was developed based on the existing usage statistics occurring at the existing sheriff facility. Sheriff's department staff provided data for the various employees including time and days of shifts for each work group (i.e. patrol deputies, school resource officers, records, dispatch, etc.) as well as visitors to the department. The data indicates that the a.m. peak hour occurs between 7 and 8 a.m. and the p.m. peak hour occurs between 5 and 6 p.m. The entire projected mid-week trip generation for the site is shown in Table 4. The project is expected to generate 494 daily trips, 116 a.m. peak hour trips and 117 p.m. peak hour trips.

The site will also house a solar facility. Trips projected for the solar array will be limited to maintenance and operation of the site. KD Anderson & Associates, Inc. conducted a study for the Castor Solar Project in Taft, California in March 2014 for a 1.5 megawatt solar facility on 12 acres. The trip generation for this project included maintenance on the site two to four times annually, occurring for three to five days with up to three employees cleaning the solar panels. Based on this data, trip generation for the solar facility will not occur daily and is projected to be nominal.

TABLE 4
PROJECTED TRIP GENERATION – EL DORADO COUNTY SHERIFF FACILITY

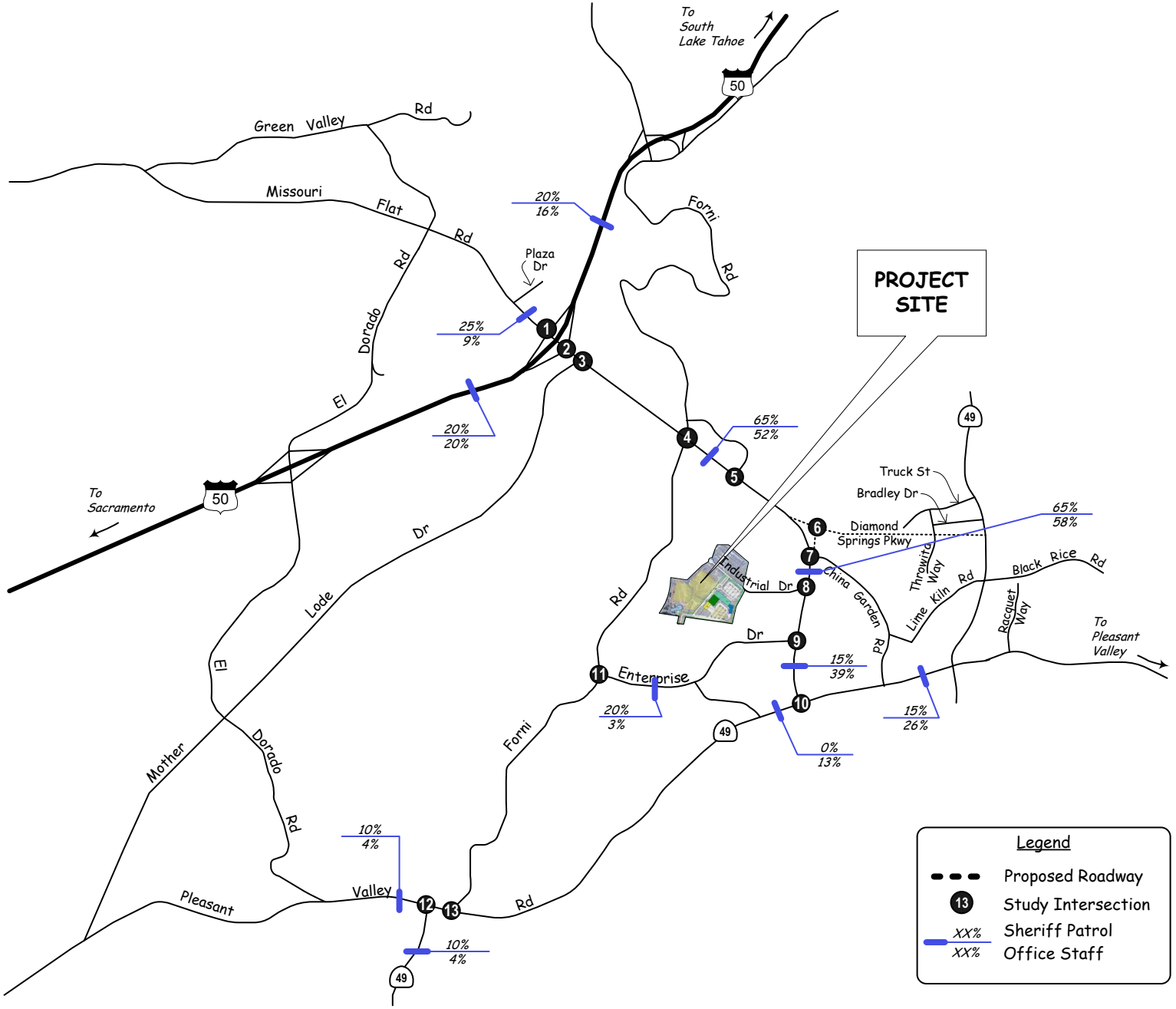
Wednesday	patrol		12 am - 1	1 - 2	2 - 3	3 - 4	4 - 5	5 - 6	6 -7	7 - 8	8 -9	9 -10	10 -11	11 - noon	12 - 1	1- 2	2 -3	3 - 4	4 - 5	5 - 6	6 -7	7- 8	8 - 9	9 - 10	10 - 11	11pm - 12 am	
"Commute to/from Site"																											
Patrol	team 1/2 IN							11		5																	
	team 1/2 OUT																				11		5				
	team 3/4 IN																	7		11							
	team 3/4 OUT							7		11																	
SRO	officer 1 IN								1																		
	officer 1 OUT																				1						
	officer 2 IN								1																		
	officer 2 OUT																				1						
SED	SGT IN													1													
	SGT OUT																									1	
	depty's IN													4													
	depty's OUT																									4	
Records (13)	IN									9							1		1						2		
	OUT		1			1						2									9						
Dispatch (24)	IN								6														6				
	OUT										6										6						
Dispatch Manager	IN									1																	
	OUT																			1							
office-non shift	IN									88																	
	OUT																			88							
volunteers (5)	IN										1	1	1		1		1										
	OUT												1		1		1		1	1							
visitors (49)	IN										4	5	5	5	7	6	5	6	6								
	OUT										2	5	5	5	6	7	5	5	6	3							
"Patrol movements to/from Site"																											
Patrol Activity	team 1/2 IN																			11		5					
activity	team 1/2 OUT								11		5																
	team 3/4 IN					7		11																			
	team 3/4 OUT																		7		11						
SRO (2)	IN																			2							
	OUT									2																	
Volunteers	IN															1			1								
(ex. Moving speed signs)	OUT										1			1													
		total	1	0	0	8	0	29	19	**116**	19	13	12	16	15	14	13	18	22	**117**	28	16	6	5	2	5	494
			12 am - 1	1 - 2	2 - 3	3 - 4	4 - 5	5 - 6	6 -7	7 - 8	8 -9	9 -10	10 -11	11 - noon	12 - 1	1- 2	2 -3	3 - 4	4 - 5	5 - 6	6 -7	7- 8	8 - 9	9 - 10	10 - 11	11pm - 12 am	
RED - INBOUND TRIPS																											
BLACK - OUTBOUND TRIPS																											

Trip Distribution & Assignment

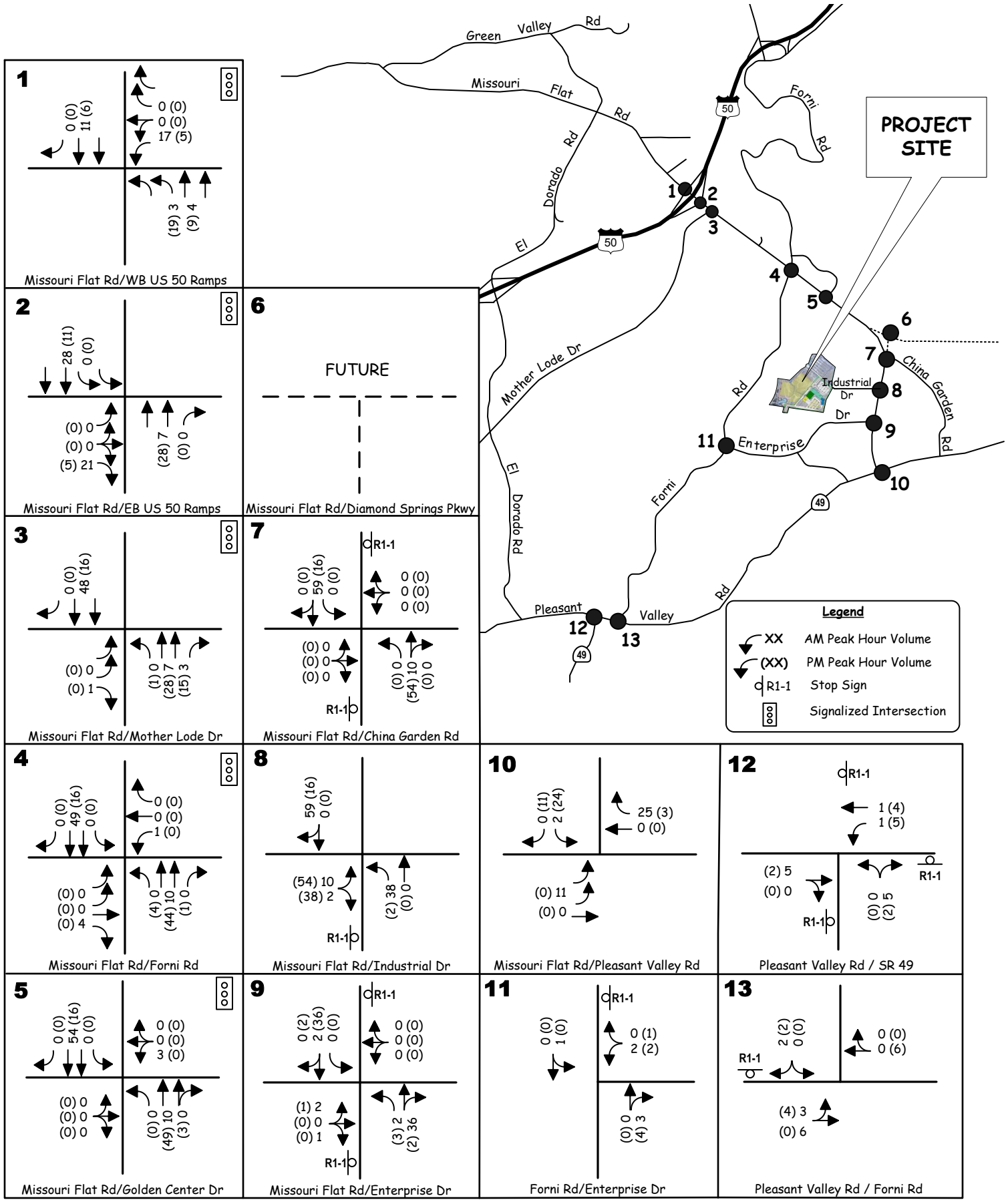
The trip distribution was split into sheriff patrol and sheriff office staff. The distribution of project traffic was developed generally based on the patrol areas including school locations. A select link analysis was completed using the County's Travel Demand Model (TDM) to determine the trip distribution for office staff; patrol vehicles will circulate throughout the west slope of El Dorado County. An adjustment was also made for traffic along Missouri Flat Road as the TDM appears to direct vehicles to Diamond Road instead of Missouri Flat Road to head toward Placerville. After discussion with County staff a 10% shift in traffic from Diamond Road to Missouri Flat Road was made in the select link distribution. Table 5 presents the projected trip distribution percentages for the project. Figure 4 presents the trip distribution percentages generated by the project while Figure 5 presents the project trips generated.

TABLE 5
PROJECT TRIP DISTRIBUTION
EXISTING CONDITIONS

Direction	Route	Distribution	
		Sheriff Patrol	Office Staff
North	Via Missouri Flat Road	25%	9%
North	Internal Diamond Springs traffic via Missouri Flat Road	0%	13%
South	To SR49	10%	4%
South	Internal Diamond Springs traffic via Missouri Flat Road and Pleasant Valley Road	0%	8%
East	To US 50 via Missouri Flat Road	20%	16%
East	Via Pleasant Valley Road	15%	26%
West	Via US 50 via Missouri Flat Road	20%	20%
West	Via Pleasant Valley Road	10%	4%
	Total	100%	100%



EXISTING PROJECT TRIP DISTRIBUTION



EXISTING PROJECT ONLY VOLUMES AND LANE CONFIGURATIONS

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Transportation Engineers

4431-01 LT 10/26/2015

Sheriff's Headquarters Project El Dorado County

figure 5

PROJECT TRAFFIC IMPACTS

Existing Plus Project Conditions

Traffic Volumes The impacts of developing the project uses on the project site have been identified by superimposing project traffic onto existing background conditions. Figure 6 displays the "Existing Plus Project" traffic volumes at each study intersection in both a.m. and p.m. peak hours.

Intersection Levels of Service. Table 6 displays the peak hour Levels of Service at each study intersection comparing existing Levels of Service with those accompanying the project.

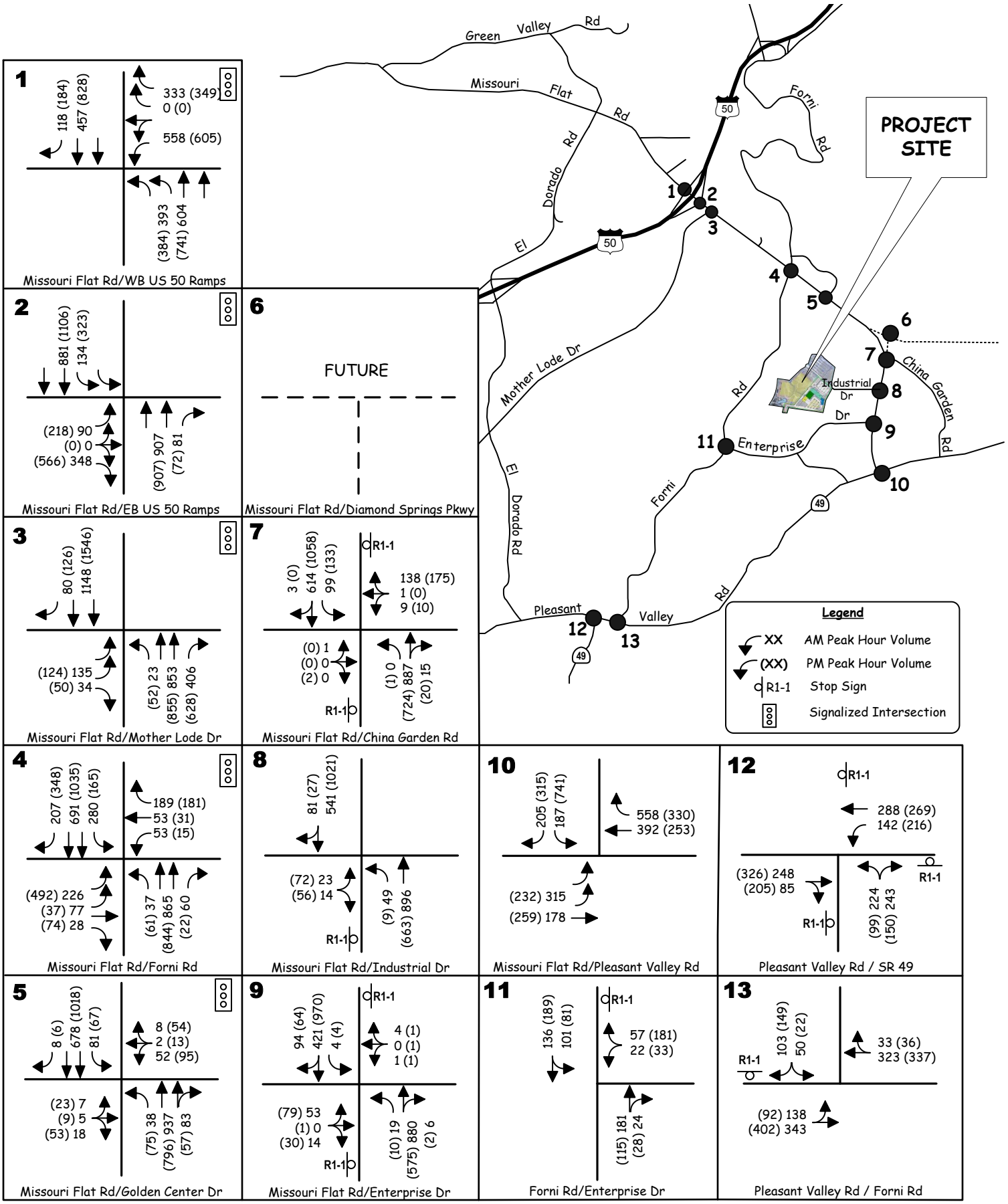
All intersections except the Missouri Flat Road / China Garden Road and Missouri Flat / Enterprise Drive intersections will continue to operate at or above the minimum El Dorado County standard (i.e., LOS E or better). The Missouri Flat Road / Enterprise Drive intersection will continue to operate with the eastbound Enterprise Drive approach at LOS F in both a.m. and p.m. peak hours. The westbound China Garden Road approach and eastbound driveway will continue to operate at LOS F in the a.m. peak hour at the Missouri Flat Road / China Garden Road intersection. The westbound approach will also decline to LOS F in the p.m. peak hour.

Because existing conditions already exceed the LOS E minimum standard the significance of the projects impact is based on the increase in traffic volume per General Plan Policy TC-Xe. At the Missouri Flat Road / Enterprise Drive intersection the project adds 44 peak hour trips. This exceeds the 10 trip increment permitted under the GP, and the project's impact is significant. At the Missouri Flat Road / China Garden Road intersection the project adds 70 peak hour trips. This also exceeds the 10 trip increment and the project's impact is significant.

Traffic Signal Warrants. The peak hour traffic signal warrant will be met at five intersections, including the China Garden Road / Missouri Flat Road intersection, Enterprise Drive / Missouri Flat Road intersection, Pleasant Valley Road / SR 49 intersection and the Forni Road / Pleasant Valley Road intersection that are met under the Existing conditions. With the project the Missouri Flat Road / Industrial Drive intersection will also meet the peak hour signal warrant in the p.m. peak hour. Satisfaction of traffic signal warrants is not a significant criteria under County traffic study guidelines.

The Pleasant Valley Road / SR 49 and Forni Road / Pleasant Valley Road intersections will continue to operate within accepted County LOS thresholds as will the Missouri Flat Road / Industrial Drive intersection while the China Garden Road / Missouri Flat Road intersection and the Enterprise Drive / Missouri Flat Road intersection will continue to operate with at least one approach at LOS F.

Intersection Queues. Table 7 identifies peak period queues assuming the addition of project trips. Project trips and the SimTraffic software may change the length of some queues. Those 95th percentile queues with length exceeding the available storage have been highlighted. Under Existing Plus Project conditions queues will exceed the available storage at the same intersections that were noted for existing conditions.



EXISTING PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

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4431-01 LT 10/26/2015

Sheriff's Headquarters Project El Dorado County

figure 6

TABLE 6
PEAK HOUR INTERSECTION LEVELS OF SERVICE - EXISTING PLUS PROJECT CONDITIONS

Location	Control	Existing				Existing Plus Project				Traffic Signal Warranted?
		AM		PM		AM		PM		
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
1. Missouri Flat Rd / WB US 50 ramps	Signal	B	18.4	B	17.6	B	18.3	B	18.1	N/A
2. Missouri Flat Rd / EB US 50 ramps	Signal	B	16.2	C	21.5	B	16.8	C	21.6	N/A
3. Missouri Flat Rd / Mother Lode Dr	Signal	A	8.5	A	8.6	A	8.6	A	8.7	N/A
4. Missouri Flat Rd / Forni Rd	Signal	C	21.5	C	22.4	C	21.5	C	23.0	N/A
5. Missouri Flat Rd / Golden Center Dr	Signal	B	14.8	C	21.0	B	15.0	C	21.5	N/A
6. Missouri Flat Rd / Diamond Springs Pkwy	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7. Missouri Flat Rd / China Garden Rd	EB/WB Stop									Yes*
NB Left		(Δ)	(Δ)	(B)	(10.6)	(Δ)	(Δ)	(B)	(10.6)	
SB Left		(B)	(11.2)	(A)	(9.8)	(B)	(11.3)	(B)	(10.1)	
EB		(F)	(185.9)	(C)	(18.6)	(F)	(217.9)	(C)	(18.9)	
WB		(F)	(55.9)	(E)	(43.5)	(F)	(62.6)	(F)	(56.6)	
8. Missouri Flat Rd / Industrial Dr	EB Stop									Yes‡
NB Left		(A)	(8.9)	(B)	(10.9)	(A)	(9.3)	(B)	(11.0)	
EB		(C)	(17.8)	(C)	(24.5)	(C)	(21.7)	(E)	(47.4)	
9. Missouri Flat Rd / Enterprise Dr	EB/WB Stop									Yes†
NB Left		(A)	(8.7)	(B)	(10.5)	(A)	(8.8)	(B)	(10.8)	
SB Left		(B)	(10.2)	(A)	(8.7)	(B)	(10.4)	(A)	(8.7)	
EB		(F)	(99.1)	(F)	(250.8)	(F)	(124.6)	(F)	(293.3)	
WB		(C)	(23.7)	(E)	(40.0)	(D)	(25.1)	(E)	(43.0)	
10. Missouri Flat Rd / Pleasant Valley Rd	Signal	B	18.7	B	20.0	B	19.0	C	20.2	N/A
11. Forni Rd / Enterprise Dr	WB Stop									No
SB Left		(A)	(7.9)	(A)	(7.7)	(A)	(7.9)	(A)	(7.7)	
WB		(B)	(11.2)	(B)	(11.3)	(B)	(11.4)	(B)	(11.4)	
12. Pleasant Valley Rd / SR 49	AWS	E	41.7	C	20.8	E	41.4	C	21.2	Yes*
13. Pleasant Valley Rd / Forni Rd	SB Stop									Yes*
SB		(E)	(39.3)	(B)	(14.9)	(E)	(41.6)	(C)	(15.1)	
EB Left		(A)	(9.0)	(A)	(8.4)	(A)	(9.0)	(A)	(8.4)	

Δ no volume N/A – not applicable AWS – all way stop
* meets peak hour warrant in AM and PM peak hour without and with project
† meets peak hour warrant in PM peak hour without and with project
‡ meets peak hour warrant in PM peak hour with project
(xx) – delay and level of service for side street traffic using Synchro 2010 including TWLTL analysis

TABLE 7
EXISTING PLUS PROJECT PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour VPH Existing	AM Peak Hour VPH Project Only	AM Peak Hour VPH Total	AM Peak Hour Ex Plus Project Queue (feet)	PM Peak Hour VPH Existing	PM Peak Hour VPH Project Only	PM Peak Hour VPH Total	PM Peak Hour Ex Plus Project Queue (feet)
1. Missouri Flat Road / WB US 50 ramps									
NB left turn	160 (2)	390	3	393	169	365	19	384	164
NB through	360 (2)	600	4	604	270	732	9	741	234
SB through	520 (2)	446	11	457	163	822	6	828	252
WB left turn	410 (2)	541	17	558	228	596	5	601	229
WB right turn	410 (2)	333	0	333	131	349	0	349	153
2. Missouri Flat Road / EB US 50 ramps									
NB through	160 (2)	900	7	907	201	879	28	907	186
NB right turn	140	81	0	81	76	72	0	72	86
SB left	160 (2)	134	0	134	191	323	0	323	216
SB through	380 (2)	853	28	881	384	1,095	11	1,106	432
EB left+through+right turn	540 (3)	417	21	438	147	779	5	784	222
3. Missouri Flat Road / Mother Lode Drive									
NB left turn	150	23	0	23	61	51	1	52	70
NB through	2,300 (2)	846	7	853	177	827	28	855	149
SB through	140 (2)	1,100	48	1,148	107	1,530	16	1,546	169
SB right turn	130	80	0	80	<25	126	0	126	81

Highlighted values indicate queue length in excess of available storage

TABLE 7 (cont'd)
EXISTING PLUS PROJECT PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour				PM Peak Hour			
		VPH			Ex Plus Project Queue (feet)	VPH			Ex Plus Project Queue (feet)
		Existing	Project Only	Total		Existing	Project Only	Total	
4. Missouri Flat Road / Forni Road									
NB left turn	250	37	0	37	51	57	4	61	115
NB through	1,000 (2)	855	10	865	260	800	44	844	277
NB right turn	160	60	0	60	104	21	1	22	84
SB left turn	300	280	0	280	287	165	0	165	207
SB through	2,300 (2)	642	49	691	225	1,019	16	1,035	281
SB right turn	150	207	0	207	120	348	0	348	187
5. Missouri Flat Road / Golden Center Drive									
NB left turn	120	38	0	38	73	75	0	75	116
SB left turn	160	81	0	81	118	67	0	67	139
10. Missouri Flat Road / Pleasant Valley Road									
EB Left*	130 (2)	304	11	315	173	232	0	232	143
WB Right	200	533	25	558	245	327	3	330	153

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches

NEAR TERM FUTURE CONDITIONS (2025)

The analysis of the near term future conditions (2025) is intended to consider the impact of this project within the context of the roadway facilities occurring in ten years.

Analysis Methodology

El Dorado County traffic study guidelines identify that near term future conditions are calculated using straight line interpolation between existing traffic conditions and 2035 traffic projections. The traffic network for 2025 includes all applicable projects in the County's Ten Year CIP.

Year 2025 Forecasts / Conditions

Year 2025 Lane Configurations. The near term cumulative analysis assumes regional circulation system improvements that will be completed by 2025 are identified in the County's Capital Improvement Program (CIP). One roadway project is identified below:

- Construction of the Diamond Springs Parkway (DSP), a four-lane arterial roadway from east of Golden Center Drive to a new T-intersection with SR 49 south of Bradley Drive. The project includes a new signalized intersection with Missouri Flat Road and Diamond Road (SR 49).

Basis for Analysis - Regional Traffic Growth. The most recent countywide regional travel demand forecasting model was used as the basis for developing future volumes forecasts in the study area.

Since the existing roadway configuration does not include the DSP a model run was conducted for the baseline 2010 a.m. and p.m. model conditions assuming DSP was built. This provided 'existing' roadway volumes, thereby allowing the roadway volumes to be calculated under 2025 conditions with DSP completed. An incremental approach was taken whereby the difference between baseline and future 2035 model forecasts were applied to current volumes to create adjusted future volume and approach growth factors. These growth factors were applied to each intersection approach and the turning movement volumes at the study intersections were balanced using the 'Furness' techniques described in NCHRP Report 255.

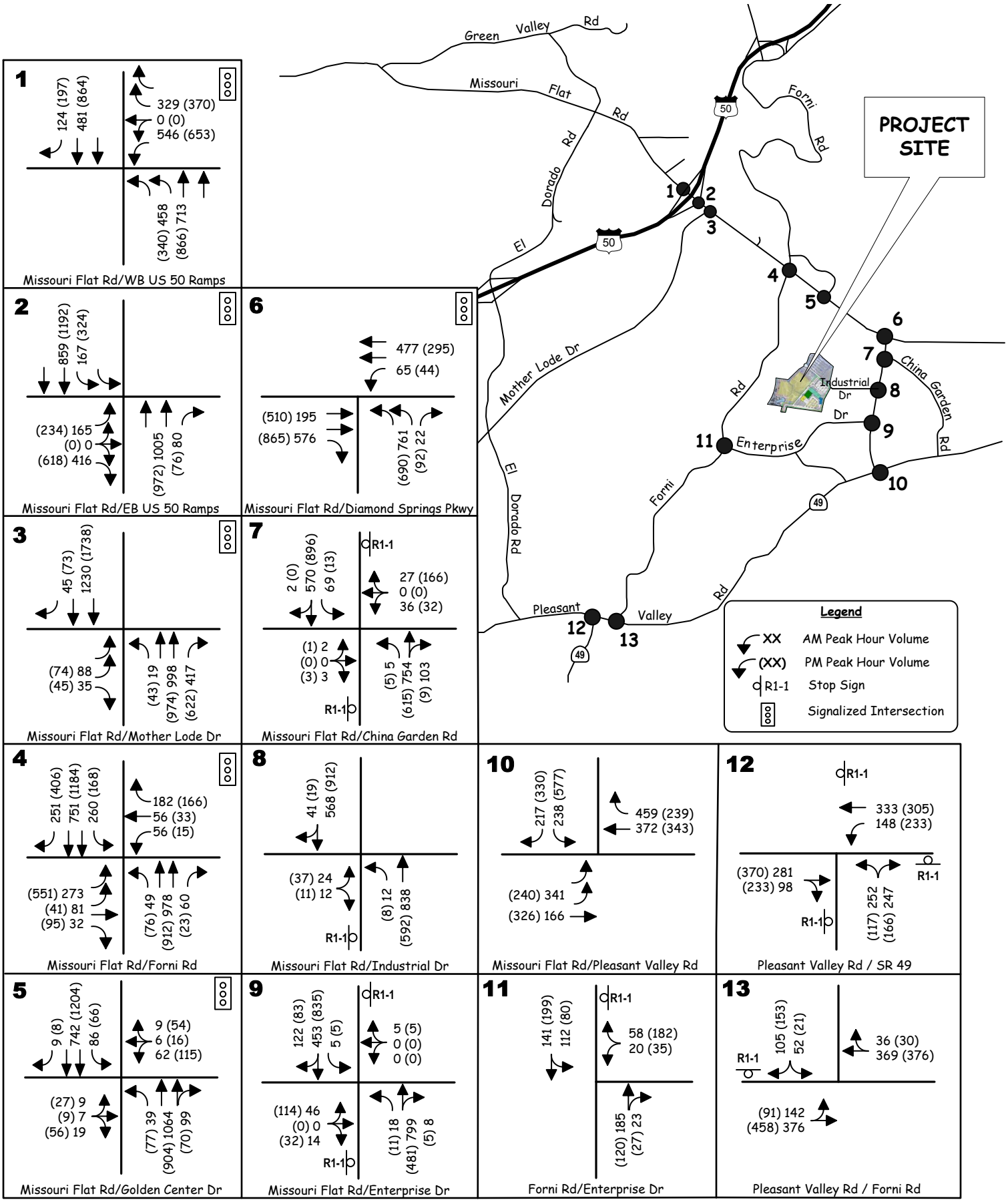
The incorporation of DSP will change area traffic patterns, and individual turning movements at intersections may increase or decrease when compared to existing traffic volumes. Figure 7 presents the projected 2025 traffic volumes.

Intersection Levels of Service. The identified Year 2025 volumes were used to recalculate operating Levels of Service at the selected intersections. Table 8 displays the a.m. and p.m. peak hour Levels of Service at each study intersection in the 2025 condition. Three unsignalized intersections, Missouri Flat Road at China Garden Road, Missouri Flat Road at Enterprise Drive and Pleasant Valley Road at Forni Road will operate at a LOS F condition along the side street approaches while the all-way stop controlled Pleasant Valley Road at SR 49 intersection will operate at LOS F.

Traffic Signal Warrants. The peak hour traffic signal warrant will be met at four intersections, China Garden Road at Missouri Flat Road, Enterprise Drive at Missouri Flat Road, Pleasant Valley Road at SR 49 and Forni Road at Pleasant Valley Road intersection.

All four intersections will operate with at least one approach at LOS F.

Intersection Queues. Table 9 identifies peak period queues under 2025 conditions. 95th percentile queues with length exceeding the available storage have been highlighted. Under 2025 conditions eight locations will exceed the available storage.



2025 TRAFFIC VOLUMES AND LANE CONFIGURATIONS

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figure 7

TABLE 8
PEAK HOUR INTERSECTION LEVELS OF SERVICE - 2025 PLUS PROJECT CONDITIONS

Location	Control	2025				2025 Plus Project				Traffic Signal Warranted?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
1. Missouri Flat Rd / WB US 50 ramps	Signal	B	16.6	B	16.6	B	16.7	B	17.7	N/A
2. Missouri Flat Rd / EB US 50 ramps	Signal	B	14.3	C	26.0	B	15.0	C	26.2	N/A
3. Missouri Flat Rd / Mother Lode Dr	Signal	B	11.0	B	12.4	B	11.1	B	12.3	N/A
4. Missouri Flat Rd / Forni Rd	Signal	C	26.4	D	40.7	C	28.9	D	35.9	N/A
5. Missouri Flat Rd / Golden Center Dr	Signal	C	21.8	C	27.3	C	21.4	C	30.4	N/A
6. Missouri Flat Rd / Diamond Springs Pkwy	Signal	B	10.6	B	12.2	B	11.3	B	12.6	N/A
7. Missouri Flat Rd / China Garden Rd	EB/WB Stop									Yes*
NB Left		(A)	(8.8)	(B)	(10.1)	(A)	(9.0)	(B)	(10.2)	
SB Left		(B)	(10.5)	(A)	(9.0)	(B)	(10.5)	(A)	(9.3)	
EB		(D)	(33.0)	(E)	(38.8)	(E)	(37.6)	(E)	(44.7)	
WB		(F)	(83.6)	(F)	(73.3)	(F)	(105.3)	(F)	(107.3)	
8. Missouri Flat Rd / Industrial Dr	EB Stop									Yes‡
NB Left		(A)	(8.9)	(B)	(10.3)	(A)	(9.4)	(B)	(10.4)	
EB		(C)	(18.8)	(C)	(23.3)	(C)	(21.7)	(E)	(40.4)	
9. Missouri Flat Rd / Enterprise Dr	EB/WB Stop									Yes†
NB Left		(A)	(8.8)	(B)	(10.3)	(A)	(8.9)	(B)	(10.4)	
SB Left		(A)	(9.7)	(A)	(8.5)	(A)	(9.8)	(A)	(8.5)	
EB		(F)	(64.2)	(F)	(>300)	(F)	(72.1)	(F)	(>300)	
WB		(C)	(15.5)	(B)	(11.6)	(C)	(15.8)	(B)	(11.6)	
10. Missouri Flat Rd / Pleasant Valley Rd	Signal	C	22.8	C	30.3	C	25.2	C	33.4	N/A
11. Forni Rd / Enterprise Dr	WB Stop									No
SB Left		(A)	(8.0)	(A)	(7.7)	(A)	(8.0)	(A)	(7.7)	
WB		(B)	(11.3)	(B)	(11.5)	(B)	(11.4)	(B)	(11.6)	
12. Pleasant Valley Rd / SR 49	AWS	F	50.4	E	39.2	F	51.5	E	39.4	Yes*
13. Pleasant Valley Rd / Forni Rd	SB Stop									Yes*
SB		(F)	(67.3)	(D)	(25.7)	(F)	(73.5)	(D)	(26.7)	
EB Left		(A)	(9.3)	(A)	(9.0)	(A)	(9.3)	(A)	(9.0)	

Δ no volume N/A – not applicable AWS – all way stop
* meets peak hour warrant in AM and PM peak hour without and with project
† meets peak hour warrant in PM peak hour without and with project
‡ meets peak hour warrant in PM peak hour with project
(xx) – delay and level of service for side street traffic using Synchro 2010 including TWLTL analysis

TABLE 9
PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS - 2025 CONDITIONS

Location	Capacity (feet)	AM Peak Hour		PM Peak Hour	
		VPH	Queue (feet)	VPH	Queue (feet)
1. Missouri Flat Road / WB US 50 ramps					
NB left turn	160 (2)	458	168	340	153
NB through	360 (2)	713	353	866	133
SB through	520 (2)	481	146	864	255
WB left turn	410 (2)	546	199	653	228
WB right turn	410 (2)	329	135	370	171
2. Missouri Flat Road / EB US 50 ramps					
NB through	160 (2)	1,005	202	972	190
NB right turn	140	80	68	76	58
SB left	160 (2)	167	101	324	185
SB through	380 (2)	859	106	1,192	336
EB left+through+right turn	540 (3)	581	173	852	307
3. Missouri Flat Road / Mother Lode Drive					
NB left turn	150	19	63	43	119
NB through	2,300 (2)	998	278	974	304
SB through	140 (2)	1,230	187	1,738	192
SB right turn	130	45	53	73	76
4. Missouri Flat Road / Forni Road					
NB left turn	250	49	135	76	185
NB through	1,000 (2)	978	371	912	371
NB right turn	160	60	128	23	95
SB left turn	300	260	322	168	315
SB through	2,300 (2)	751	351	1,184	531
SB right turn	150	251	168	406	233
5. Missouri Flat Road / Golden Center Drive					
NB left turn	120	39	102	77	162
SB left turn	160	86	158	66	159
6. Missouri Flat Road / Diamond Springs Parkway					
NB left turn	275 (2)	761	142	690	154
EB right turn	250	576	161	865	207
WB left turn	500	65	78	44	63
10. Missouri Flat Road / Pleasant Valley Road					
EB Left*	130 (2)	341	198	240	208
WB Right	200	459	185	239	129

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches

2025 Plus Project

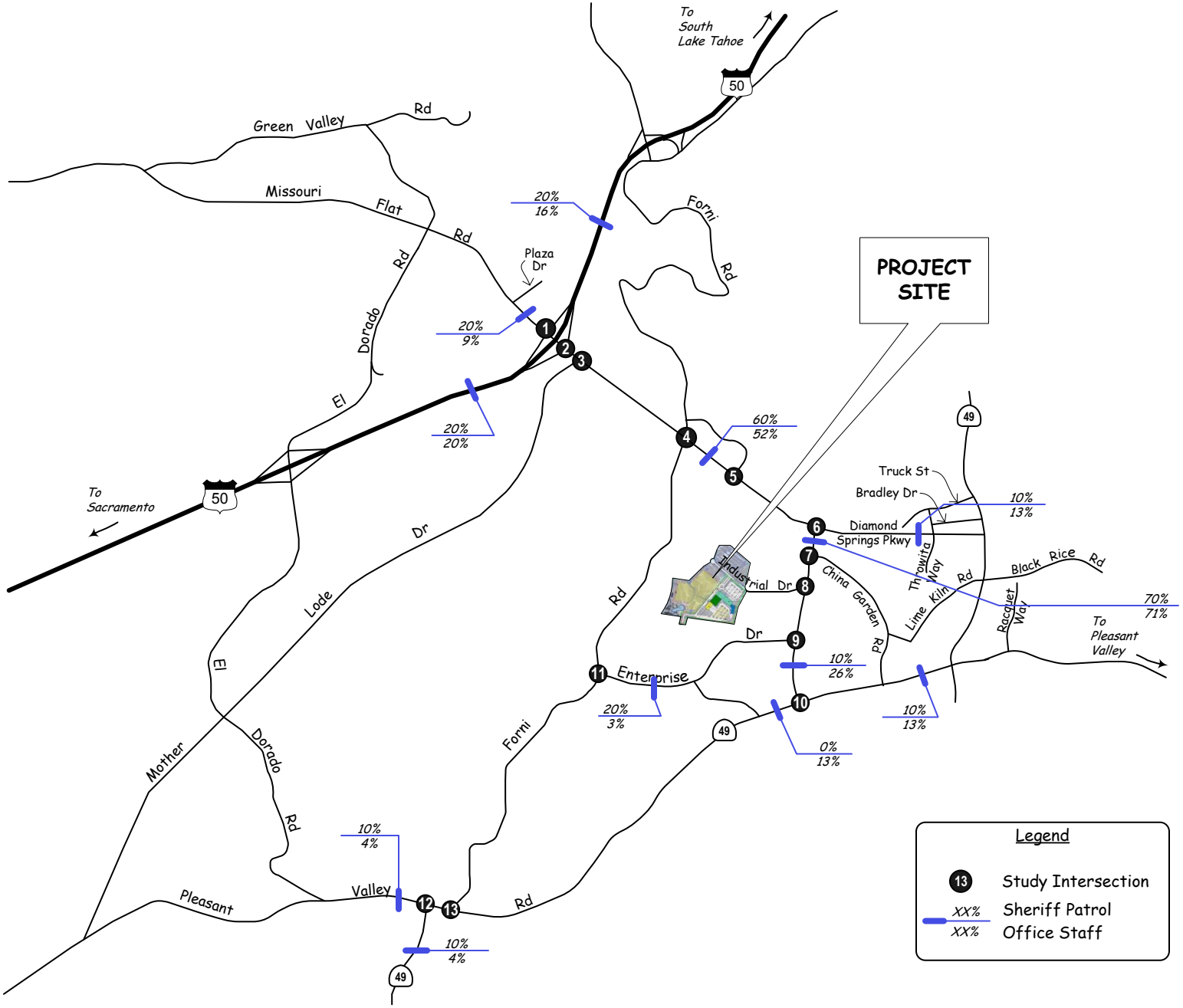
Trip Distribution & Assignment. With the construction of Diamond Springs Parkway a select link analysis showed a variation in trips to the east, with some trips using Diamond Springs Parkway instead of Pleasant Valley Road. Table 10 presents the projected trip distribution percentages for the project. Figure 8 presents the trip distribution percentages generated by the project while Figure 9 presents the project trips generated.

TABLE 10
PROJECT TRIP DISTRIBUTION

Direction	Route	Distribution	
		Sheriff Patrol	Office Staff
North	Via Missouri Flat Road	20%	9%
North	Internal Diamond Springs traffic via Missouri Flat Road	0%	13%
South	To SR49	10%	4%
South	Internal Diamond Springs traffic via Missouri Flat Road and Pleasant Valley Road	0%	8%
East	To US 50 via Missouri Flat Road	20%	16%
East	Via Pleasant Valley Road	10%	13%
East	Via Diamond Springs Parkway	10%	13%
West	Via US 50 via Missouri Flat Road	20%	20%
West	Via Pleasant Valley Road	10%	4%
Total		100%	100%

Intersection Levels of Service. The identified Year 2025 plus Project volumes were used to recalculate operating Levels of Service at selected intersections. Figure 10 displays the "2025 Plus Project" traffic volumes at each study intersection in both a.m. and p.m. peak hours while Table 8 displays the a.m. and p.m. peak hour Levels of Service at each study intersection in the 2025 plus Project condition. Four intersections will operate at LOS F conditions under the proposed project conditions. These include Missouri Flat Road at China Garden Road, Missouri Flat Road at Enterprise Drive, Pleasant Valley Road at Forni Road and Pleasant Valley Road at SR 49.

The westbound approach of the Missouri Flat Road / China Garden Road intersection will continue to operate at LOS F conditions in the a.m. and p.m. peak hours. As noted under Existing Plus Project conditions the project's additional traffic will exceed the permissible increment and this impact is significant. The eastbound approach of the Missouri Flat Road / Enterprise Drive intersection also will operate at LOS F in both peak periods, and project traffic at this location is more than 10 peak hour trips, thereby making the impact significant. The southbound approach of the Pleasant Valley Road / Forni Road intersection will continue to operate at LOS F in the a.m. peak hour. Because the project adds more than 10 peak hour trips, this impact is significant. Finally, the Pleasant Valley Road / SR 49 intersection will operate at LOS F in the a.m. peak hour. The project's additional traffic of more than 10 peak hour trips creates a significant impact at this intersection.



2025 / 2035
PROJECT TRIP DISTRIBUTION

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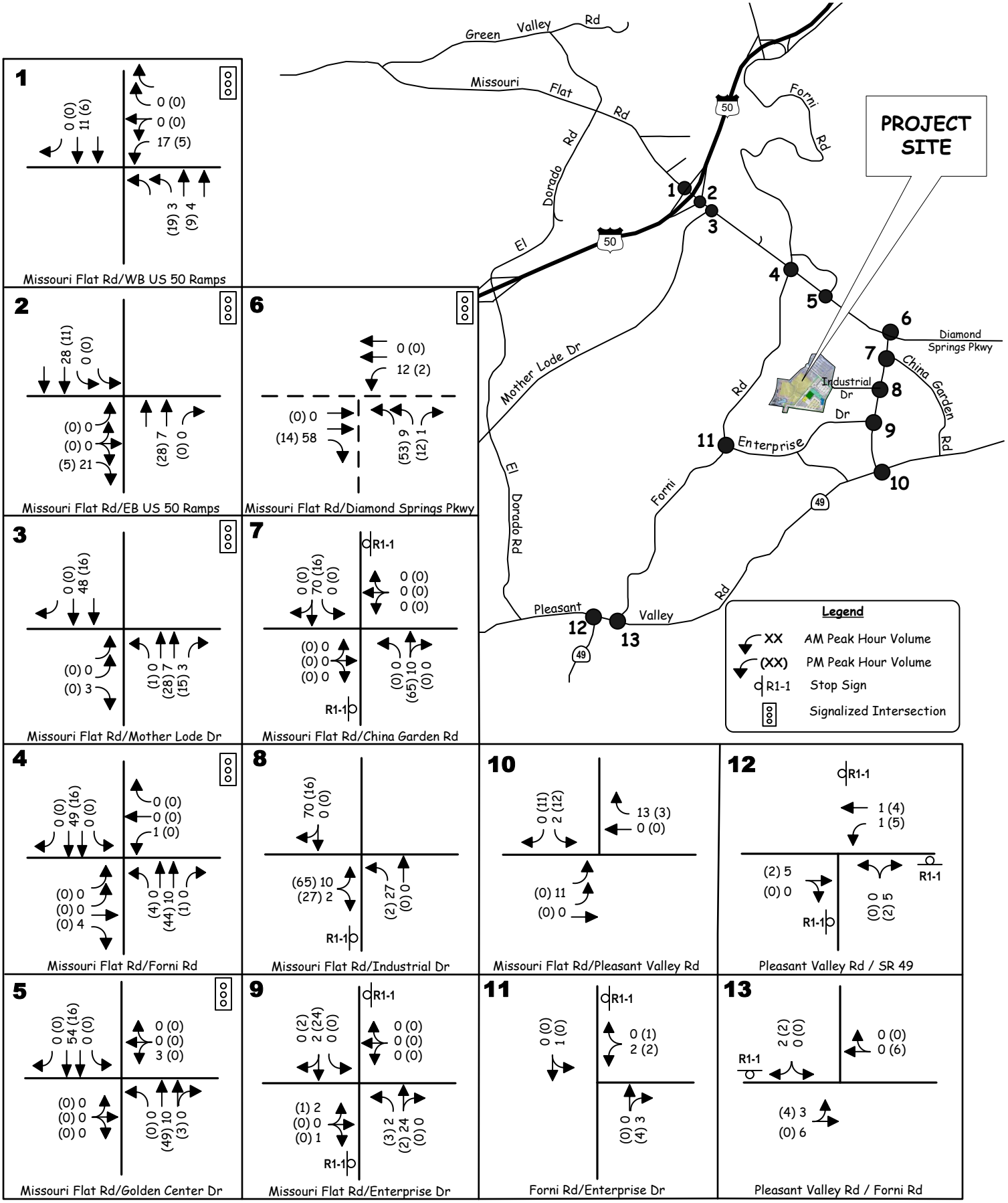
figure 8



2025 / 2035 PROJECT VOLUMES AND LANE CONFIGURATIONS

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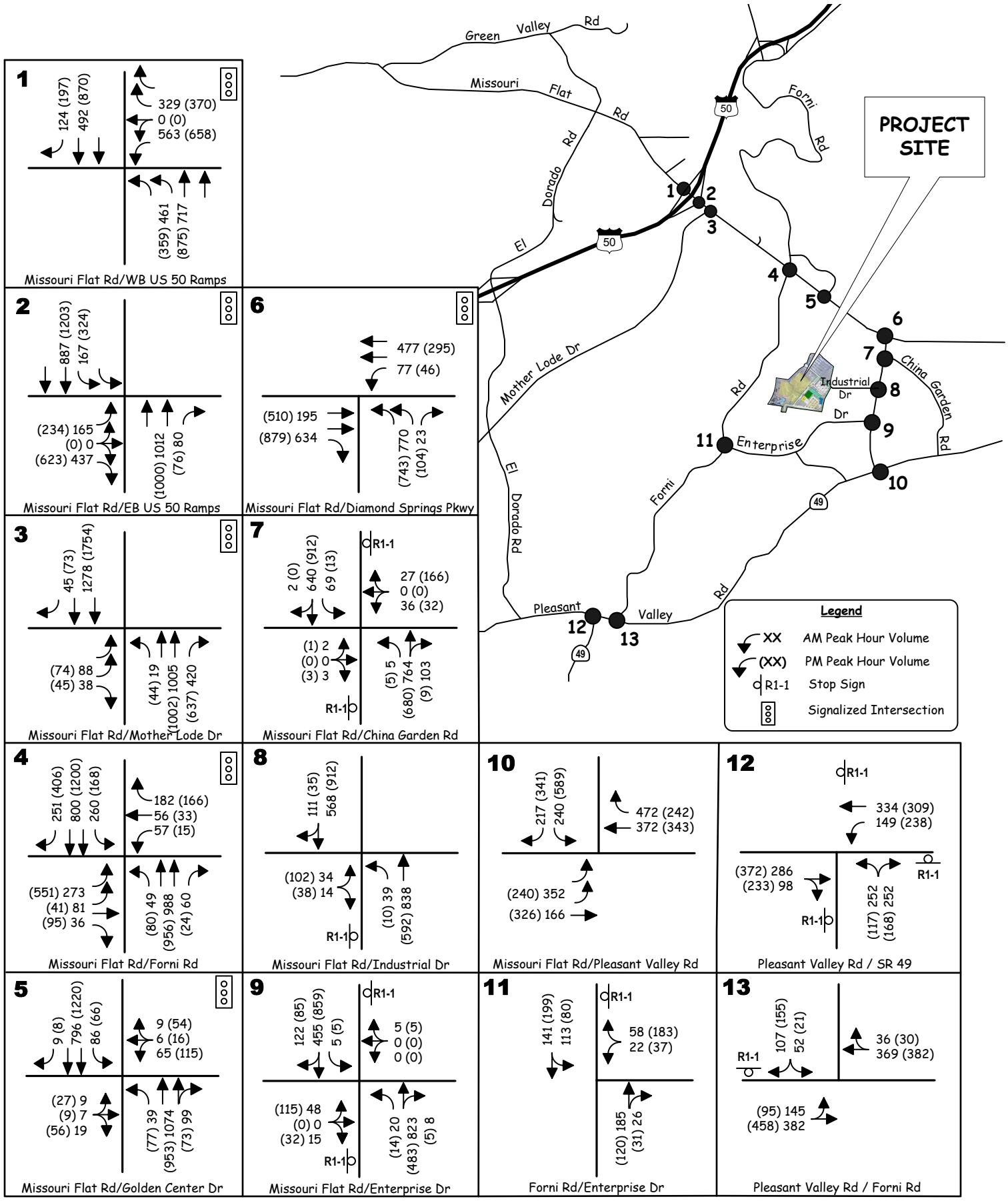
figure 9



2025 PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

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figure 10

Traffic Signal Warrants. Under 2025 plus Project conditions the peak hour traffic signal warrant will be met at five intersections, including the China Garden Road / Missouri Flat Road intersection, Enterprise Drive at Missouri Flat Road, Pleasant Valley Road at SR 49 and the Forni Road / Pleasant Valley Road intersection. With the project the Missouri Flat Road / Industrial Drive intersection will also meet the peak hour signal warrant in the p.m. peak hour.

Intersection Queues. Table 11 identifies peak period queues assuming the addition of project trips. Project trips and the SimTraffic software may change the length of some queues. Those 95th percentile queues with length exceeding the available storage have been highlighted. Under 2025 Plus Project conditions, nine locations will have queues that exceed the available storage.

TABLE 11
PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS
2025 PLUS PROJECT CONDITIONS

Location	Capacity (feet)	AM Peak Hour				PM Peak Hour			
		VPH			2025 Plus Project Queue (feet)	VPH			2025 Plus Project Queue (feet)
		2025	Project Only	Total		2025	Project Only	Total	
1. Missouri Flat Road / WB US 50 ramps									
NB left turn	160 (2)	458	3	461	170	340	19	359	155
NB through	360 (2)	713	4	717	339	866	9	875	142
SB through	520 (2)	481	11	492	151	864	6	870	261
WB left turn	410 (2)	546	17	563	194	653	5	658	280
WB right turn	410 (2)	329	0	329	133	370	0	370	174
2. Missouri Flat Road / EB US 50 ramps									
NB through	160 (2)	1,005	7	1,012	193	972	28	1,000	191
NB right turn	140	80	0	80	68	76	0	76	61
SB left	160 (2)	167	0	167	102	324	0	324	189
SB through	380 (2)	859	28	887	131	1,192	11	1,203	356
EB left+through+right turn	540 (3)	581	21	602	184	852	5	857	306
3. Missouri Flat Road / Mother Lode Drive									
NB left turn	150	19	0	19	72	43	1	44	113
NB through	2,300 (2)	998	7	1,005	273	974	28	1,002	291
SB through	140 (2)	1,230	48	1,278	189	1,738	16	1,754	190
SB right turn	130	45	0	45	55	73	0	73	76

Highlighted values indicate queue length in excess of available storage

TABLE 11 (cont'd)
2025 PLUS PROJECT PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour VPH 2025	AM Peak Hour VPH Project Only	AM Peak Hour VPH Total	AM Peak Hour 2025 Plus Project Queue (feet)	PM Peak Hour VPH 2025	PM Peak Hour VPH Project Only	PM Peak Hour VPH Total	PM Peak Hour 2025 Plus Project Queue (feet)
4. Missouri Flat Road / Forni Road									
NB left turn	250	49	0	47	128	76	4	73	174
NB through	1,000 (2)	978	10	989	379	912	44	1,070	365
NB right turn	160	60	0	69	149	23	1	30	100
SB left turn	300	260	0	280	354	168	0	166	297
SB through	2,300 (2)	751	49	838	426	1,184	16	1,288	522
SB right turn	150	251	0	220	187	406	0	353	233
5. Missouri Flat Road / Golden Center Drive									
NB left turn	120	39	0	38	111	77	0	76	172
SB left turn	160	86	0	81	145	66	0	67	171
6. Missouri Flat Road / Diamond Springs Parkway									
NB left turn	275 (2)	761	9	770	155	690	53	743	164
EB right turn	250	576	58	634	214	865	14	879	225
WB left turn	500	65	12	77	91	44	2	46	62
10. Missouri Flat Road / Pleasant Valley Road									
EB Left*	130 (2)	341	11	352	203	240	0	240	206
WB Right	200	459	13	472	193	239	3	242	159

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches

2035 CUMULATIVE IMPACTS

The analysis of the long term cumulative impact analysis is intended to consider the impact of this project within the context of conditions occurring under the El Dorado County General Plan in the Year 2035.

Year 2035 Lane Configurations. The cumulative analysis assumes regional circulation system improvements will be completed between 2026 and 2035 and are identified in the County's Capital Improvement Program (CIP). The identified roadway projects include:

- State Route 49 Widening from Pleasant Valley Road to Missouri Flat Road; this includes widening of State Route 49 from Pleasant Valley Road to Missouri Flat Road to accommodate a two-way left-turn lane.

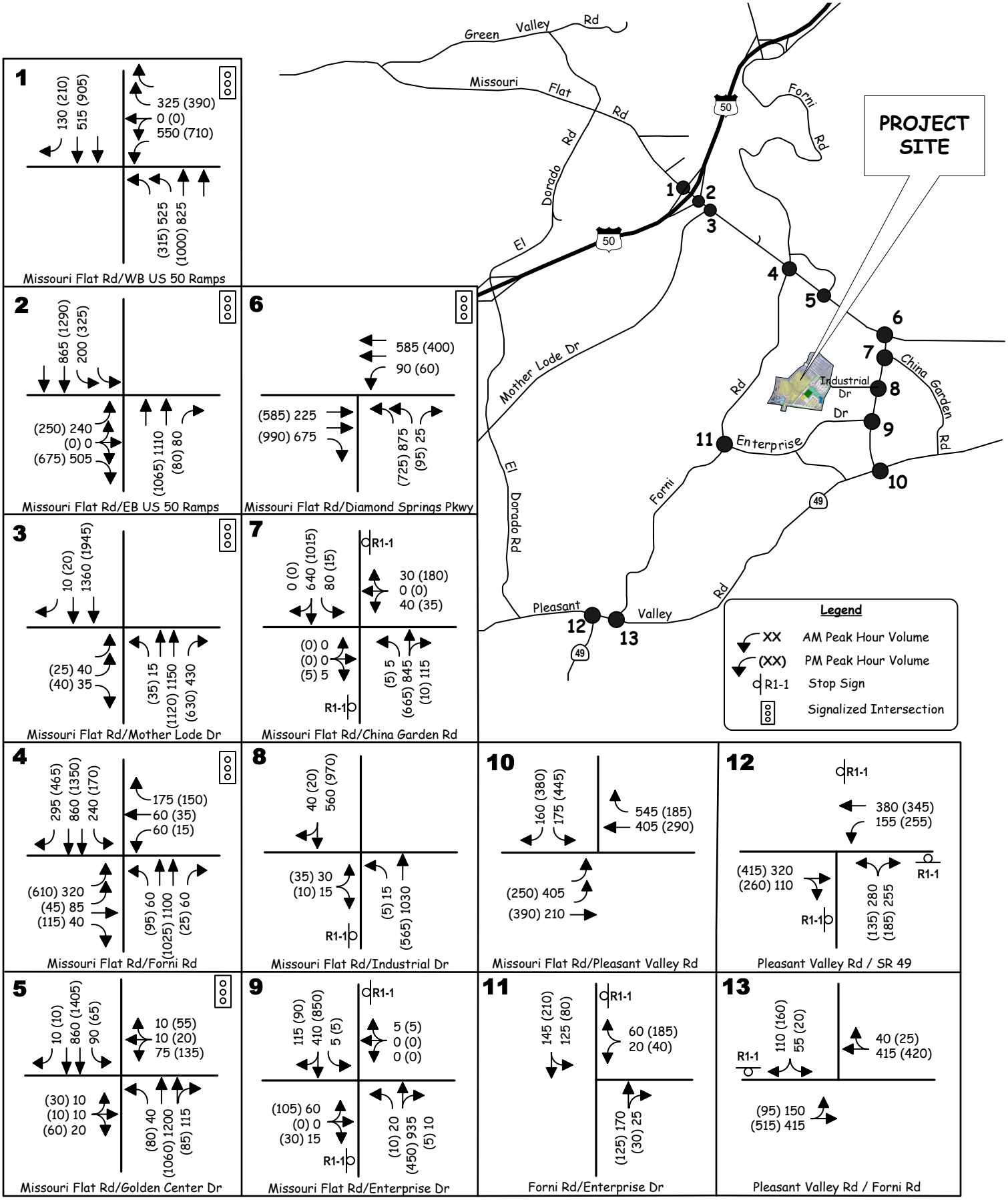
Year 2035 Forecasts / Conditions. As noted in the Year 2025 Forecasts / Conditions section turning movement volumes were projected for Year 2035 which reflect the effects of local and regional development as well the results of community wide circulation improvements. Figure 11 presents the projected Year 2035 traffic volumes.

Intersection Levels of Service. The identified Year 2035 volumes were used to recalculate operating Levels of Service at the selected intersections. Table 12 displays the a.m. and p.m. peak hour Levels of Service at each study intersection in the 2035 condition. Three unsignalized intersections, Missouri Flat Road at China Garden Road, Missouri Flat Road at Enterprise Drive and Pleasant Valley Road at SR 49 will operate at a LOS F conditions. The westbound approach of the Missouri Flat Road / China Garden Road intersection will operate at LOS F in both a.m. and p.m. peak hours while the eastbound approach of the Missouri Flat Road / Enterprise Drive intersection will operate at LOS F in both peak periods. The Pleasant Valley Road / SR 49 intersection will operate at LOS F in the a.m. peak hour only.

Traffic Signal Warrants. The peak hour traffic signal warrant will be met at four intersections, China Garden Road at Missouri Flat Road, Enterprise Drive at Missouri Flat Road, Pleasant Valley Road at SR 49 and Forni Road at Pleasant Valley Road intersection.

The Pleasant Valley Road / Forni Road intersection will operate within accepted County LOS thresholds while the China Garden Road / Missouri Flat Road intersection, the Enterprise Drive / Missouri Flat Road intersection and the SR 49 / Pleasant Valley Road intersection will operate with at least one approach at LOS F.

Intersection Queues. Table 13 identifies peak period queues under 2035 conditions. 95th percentile queues with length exceeding the available storage have been highlighted. Under 2035 conditions thirteen locations will exceed the available storage.



2035 TRAFFIC VOLUMES AND LANE CONFIGURATIONS

TABLE 12
PEAK HOUR INTERSECTION LEVELS OF SERVICE - 2035 PLUS PROJECT CONDITIONS

Location	Control	2035				2035 Plus Project				Traffic Signal Warranted?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	LOS	Average Delay	
1. Missouri Flat Rd / WB US 50 ramps	Signal	B	18.6	B	18.8	B	18.3	B	18.4	N/A
2. Missouri Flat Rd / EB US 50 ramps	Signal	B	16.9	C	25.6	B	17.2	C	26.3	N/A
3. Missouri Flat Rd / Mother Lode Dr	Signal	B	13.1	B	11.5	B	13.3	B	12.6	N/A
4. Missouri Flat Rd / Forni Rd	Signal	C	30.5	E	61.1	C	31.5	E	62.4	N/A
5. Missouri Flat Rd / Golden Center Dr	Signal	C	23.0	C	32.2	C	24.0	D	35.4	N/A
6. Missouri Flat Rd / Diamond Springs Pkwy	Signal	B	13.4	B	14.7	B	14.2	B	15.3	N/A
7. Missouri Flat Rd / China Garden Rd	EB/WB Stop									Yes*
NB Left		(A)	(9.0)	(B)	(10.7)	(A)	(9.3)	(B)	(10.8)	
SB Left		(B)	(11.2)	(A)	(9.2)	(B)	(11.3)	(A)	(9.5)	
EB		(B)	(13.2)	(C)	(19.3)	(B)	(14.1)	(C)	(19.7)	
WB		(F)	(188.1)	(F)	(174.9)	(F)	(265.6)	(F)	(242.2)	
8. Missouri Flat Rd / Industrial Dr	EB Stop									Yes‡
NB Left		(A)	(8.9)	(B)	(10.6)	(A)	(9.3)	(B)	(10.7)	
EB		(C)	(22.1)	(C)	(24.1)	(D)	(26.3)	(E)	(42.8)	
9. Missouri Flat Rd / Enterprise Dr										Yes*
NB Left	EB/WB Stop	(A)	(8.7)	(B)	(10.4)	(A)	(8.7)	(B)	(10.5)	
SB Left		(B)	(10.4)	(A)	(8.4)	(B)	(10.5)	(A)	(8.4)	
EB		(F)	(121.6)	(F)	(251.1)	(F)	(141.1)	(F)	(286.9)	
WB		(C)	(17.8)	(B)	(11.3)	(C)	(18.3)	(B)	(11.3)	
10. Missouri Flat Rd / Pleasant Valley Rd	Signal	D	45.7	C	20.8	D	48.3	C	21.0	N/A
11. Forni Rd / Enterprise Dr	WB Stop									No
SB Left		(A)	(7.9)	(A)	(7.7)	(A)	(8.0)	(A)	(7.7)	
WB		(B)	(11.3)	(B)	(11.9)	(B)	(11.5)	(B)	(12.0)	
12. Pleasant Valley Rd / SR 49	AWS	F	61.5	E	44.6	F	61.5	E	45.2	Yes*
13. Pleasant Valley Rd / Forni Rd	SB Stop									Yes*
SB		(D)	(33.9)	(C)	(21.9)	(E)	(35.4)	(C)	(22.5)	
EB Left		(A)	(9.1)	(A)	(9.2)	(A)	(9.7)	(A)	(9.3)	

Δ no volume N/A – not applicable AWS – all way stop
* meets peak hour warrant in AM and PM peak hour without and with project
† meets peak hour warrant in PM peak hour without and with project
‡ meets peak hour warrant in PM peak hour with project
(xx) – delay and level of service for side street traffic using Synchro 2010 including TWLTL analysis

TABLE 13
PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS
2035 CONDITIONS

Location	Capacity (feet)	AM Peak Hour		PM Peak Hour	
		VPH	Queue (feet)	VPH	Queue (feet)
1. Missouri Flat Road / WB US 50 ramps					
NB left turn	160 (2)	525	163	315	146
NB through	360 (2)	825	438	1,000	129
SB through	520 (2)	515	165	905	260
WB left turn	410 (2)	550	188	710	325
WB right turn	410 (2)	325	144	390	234
2. Missouri Flat Road / EB US 50 ramps					
NB through	160 (2)	1,110	191	1,065	187
NB right turn	140	80	36	80	20
SB left	160 (2)	200	109	325	188
SB through	380 (2)	865	107	1,240	338
EB left+through+right turn	540 (3)	745	205	925	331
3. Missouri Flat Road / Mother Lode Drive					
NB left turn	150	15	88	30	109
NB through	2,300 (2)	1,150	468	1,120	322
SB through	140 (2)	1,360	190	1,945	207
SB right turn	130	10	20	20	32
4. Missouri Flat Road / Forni Road					
NB left turn	250	60	183	95	261
NB through	1,000 (2)	1,100	400	1,025	422
NB right turn	160	60	147	25	82
SB left turn	300	240	364	170	343
SB through	2,300 (2)	860	450	1,350	542
SB right turn	150	295	211	465	225
5. Missouri Flat Road / Golden Center Drive					
NB left turn	120	40	121	80	185
SB left turn	160	90	172	65	165
6. Missouri Flat Road / Diamond Springs Parkway					
NB left turn	275 (2)	875	180	725	177
EB right turn	250	675	234	990	271
WB left turn	500	90	105	60	76
10. Missouri Flat Road / Pleasant Valley Road					
EB Left*	130 (2)	405	190	250	197
WB Right	200	545	216	185	109

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches

2035 PLUS PROJECT

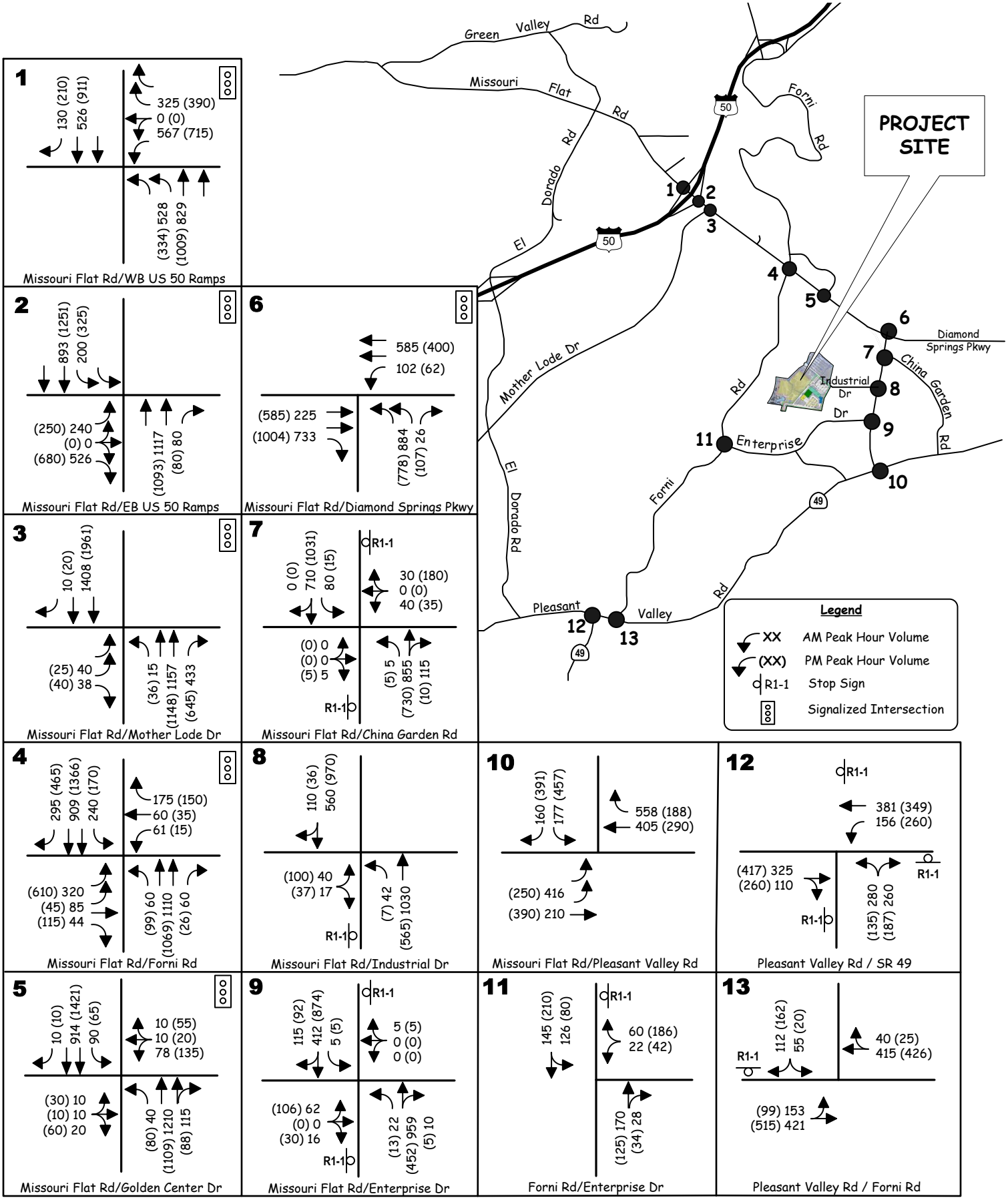
Intersection Levels of Service. The identified Year 2035 plus Project volumes were used to recalculate operating Levels of Service at selected intersections. Figure 12 displays the "2035 Plus Project" traffic volumes at each study intersection in both a.m. and p.m. peak hours. Table 12 displays the a.m. and p.m. peak hour Levels of Service at each study intersection in the 2035 plus Project condition.

Three unsignalized intersections, Missouri Flat Road at China Garden Road, Missouri Flat Road at Enterprise Drive and Pleasant Valley Road at SR 49 will operate at a LOS F conditions. The westbound approach of the Missouri Flat Road / China Garden Road intersection will continue to operate at LOS F in both a.m. and p.m. peak hours. Because the project adds more than 10 peak hour trips, this impact is significant. The eastbound approach of the Missouri Flat Road / Enterprise Drive intersection will continue to operate at LOS F in both peak periods. Because the project adds more than 10 peak hour trips, this impact is significant. The Pleasant Valley Road / SR 49 intersection will continue to operate at LOS F in the a.m. peak hour only. The project will add 13 trips to this intersection. This exceeds the 10 trip increment, and the project's impact is significant.

Traffic Signal Warrants. Under 2035 Plus Project conditions the peak hour traffic signal warrant will be met at five intersections, including the China Garden Road / Missouri Flat Road intersection, Enterprise Drive at Missouri Flat Road, Pleasant Valley Road at SR 49 and the Forni Road / Pleasant Valley Road intersection. With the project the Missouri Flat Road / Industrial Drive intersection will also meet the peak hour signal warrant in the p.m. peak hour.

The Pleasant Valley Road / Forni Road intersection and the Missouri Flat Road / Industrial Drive intersection will operate within accepted County LOS thresholds while the China Garden Road / Missouri Flat Road intersection, the Enterprise Drive / Missouri Flat Road intersection and the SR 49 / Pleasant Valley Road intersection will operate with at least one approach at LOS F.

Intersection Queues. Table 14 identifies peak period queues assuming the addition of project trips. Project trips and the SimTraffic software may change the length of some queues. Those 95th percentile queues with length exceeding the available storage have been highlighted. Under 2035 Plus Project conditions the same thirteen locations which had queues that exceed the available storage under the No Project condition, will continue to do so with the project.



2035 PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

4431-01 LT 10/26/2015

Sheriff's Headquarters Project El Dorado County

figure 12

TABLE 14
PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS
2035 PLUS PROJECT CONDITIONS

Location	Capacity (feet)	AM Peak Hour VPH 2035	AM Peak Hour VPH Project Only	AM Peak Hour VPH Total	AM Peak Hour 2035 Plus Project Queue (feet)	PM Peak Hour VPH 2035	PM Peak Hour VPH Project Only	PM Peak Hour VPH Total	PM Peak Hour 2035 Plus Project Queue (feet)
1. Missouri Flat Road / WB US 50 ramps									
NB left turn	160 (2)	525	3	528	166	315	19	334	150
NB through	360 (2)	825	4	829	417	1,000	9	1,009	158
SB through	520 (2)	515	11	526	172	905	6	911	257
WB left turn	410 (2)	550	17	567	199	710	5	715	299
WB right turn	410 (2)	325	0	325	150	390	0	390	184
2. Missouri Flat Road / EB US 50 ramps									
NB through	160 (2)	1,110	7	1,117	194	1,065	28	1,093	189
NB right turn	140	80	0	80	47	80	0	80	21
SB left	160 (2)	200	0	200	121	325	0	325	162
SB through	380 (2)	865	28	893	122	1,240	11	1,251	338
EB left+through+right turn	540 (3)	745	21	766	218	925	5	930	351
3. Missouri Flat Road / Mother Lode Drive									
NB left turn	150	15	0	15	82	30	1	31	117
NB through	2,300 (2)	1,150	7	1,157	429	1,120	28	1,148	432
SB through	140 (2)	1,360	48	1,408	193	1,945	16	1,961	206
SB right turn	130	10	0	10	24	20	0	20	20

Highlighted values indicate queue length in excess of available storage

TABLE 14 (cont'd)
2035 PLUS PROJECT PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS

Location	Capacity (feet)	AM Peak Hour VPH 2035	AM Peak Hour VPH Project Only	AM Peak Hour VPH Total	AM Peak Hour 2035 Plus Project Queue (feet)	PM Peak Hour VPH 2035	PM Peak Hour VPH Project Only	PM Peak Hour VPH Total	PM Peak Hour 2035 Plus Project Queue (feet)
4. Missouri Flat Road / Forni Road									
NB left turn	250	60	0	60	183	95	4	99	252
NB through	1,000 (2)	1,100	10	1,110	429	1,025	44	1,069	439
NB right turn	160	60	0	60	138	25	1	26	89
SB left turn	300	240	0	240	356	170	0	170	354
SB through	2,300 (2)	860	49	909	454	1,350	16	1,366	540
SB right turn	150	295	0	295	213	465	0	465	227
5. Missouri Flat Road / Golden Center Drive									
NB left turn	120	40	0	40	129	80	0	80	196
SB left turn	160	90	0	90	174	65	0	65	169
6. Missouri Flat Road / Diamond Springs Parkway									
NB left turn	275 (2)	875	9	884	188	725	53	778	179
EB right turn	250	675	58	733	276	990	14	1,004	274
WB left turn	500	90	12	102	114	60	2	62	77
10. Missouri Flat Road / Pleasant Valley Road									
EB Left*	130 (2)	405	11	416	188	250	0	250	198
WB Right	200	545	13	558	228	185	3	188	116

Highlighted values indicate queue length in excess of available storage
* - longest lane for multiple turn lane approaches

FINDINGS / RECOMMENDATIONS / MITIGATIONS

The preceding analysis has identified project impacts that may occur without mitigation. The text that follows identifies a strategy for mitigating the impacts of the proposed project. Recommendations are identified for facilities that have deficiencies in the roadway network without the project. If the project causes a significant impact, mitigations are identified for the facility.

Existing Conditions – Improvement Recommendations

All intersections, except the Missouri Flat Road / China Garden Road and Missouri Flat Road / Enterprise Drive intersections operate within acceptable El Dorado County LOS thresholds. The following recommendations are made:

- Missouri Flat Road / China Garden Road: The eastbound driveway opposite China Garden Road and the China Garden Road approach will operate at LOS F in the a.m. peak hour. The intersection meets the peak hour signal warrant. Installation of a traffic signal will improve the level of service at the intersection to LOS B with a delay of 14.7 seconds. Alternatively, restricting the eastbound and westbound approaches to right-turns only would result in acceptable operations in both peak hours. The improvements for this impacted intersection are included in the 10-20 year time frame of the County's CIP. The County's 20-year CIP includes approximately $89,300,000 for traffic signal and intersection operational improvements. County Long Range Planning annually monitors intersections with the potential need for improvements, which would include this intersection. At such time that sufficient warrants are met, then the improvement project can be added to the CIP by name, and funding allocated.

- Missouri Flat Road / Enterprise Drive: The eastbound approach of the intersection operates at LOS F and the intersection meets the peak hour signal warrant. Signalization of the intersection will result in an LOS A condition in the a.m. peak hour (6.8 seconds) and LOS B condition in the p.m. peak hour (12.4 seconds). The improvements for this impacted intersection are included in the 10-20 year time frame of the County's CIP. The County's 20-year CIP includes approximately $89,300,000 for traffic signal and intersection operational improvements. County Long Range Planning annually monitors intersections with the potential need for improvements, which would include this intersection. At such time that sufficient warrants are met, then the improvement project can be added to the CIP by name, and funding allocated.

Existing Plus Project Conditions - Mitigations

All intersections except Missouri Flat Road at China Garden Road and Missouri Flat Road at Enterprise Drive will operate within acceptable El Dorado County LOS thresholds. The following mitigations are noted:

Pay TIM Fees: The Sheriff Department shall contribute its fair share to the cost of regional circulation improvements via the existing countywide traffic impact mitigation (TIM) fee program.

- Missouri Flat Road / China Garden Road: The eastbound driveway opposite China Garden Road and the China Garden Road approach will continue to operate at LOS F in the a.m. peak hour while the westbound China Garden Road approach will operate at LOS F in the a.m. and p.m. peak hours. The project adds more than 10 trips to the intersection, and this impact is significant. The intersection will meet the peak hour signal warrant. Installation of a traffic signal identified in the Existing Conditions will maintain acceptable levels of service at the intersection during the a.m. peak hour (LOS B – 16.1 seconds) and p.m. peak hour (LOS B – 16.1 seconds).

  A second option would be to limit China Garden Road and driveway traffic to right turns only. With this mitigation the intersection will operate with the worst movement (westbound) at LOS D (30.3 seconds) in the a.m. peak hour and LOS C (20.6 seconds) in the p.m. peak hour.

  The TIM fees paid by the Sheriff's Department would cover its fair share of this improvement.

- Missouri Flat Road / Enterprise Drive: The eastbound approach to the intersection will continue to operate at LOS F in both the a.m. and p.m. peak hours. The project adds more than 10 trips to the intersection, and this impact is significant. The intersection will meet the peak hour signal warrant. Installation of a traffic signal identified in the Existing Conditions will maintain acceptable levels of service at the intersection during the a.m. peak hour (LOS A – 8.5 seconds) and p.m. peak hour (LOS B – 18.4 seconds). The TIM fees paid by the Sheriff's Department would cover its fair share of this improvement.

2025 Conditions – Improvement Recommendations

Four intersections will operate with LOS F conditions. These include Missouri Flat Road at China Garden Road, Missouri Flat Road at Enterprise Drive, Pleasant Valley Road at SR 49 and Pleasant Valley Road at Forni Road. The following recommendations are noted:

- Missouri Flat Road / China Garden Road: This intersection will operate with the westbound China Garden Road approach operating at LOS F. Installation of a traffic signal identified in the Existing Conditions will maintain acceptable levels of service at the intersection during the a.m. peak hour (LOS B – 12.4 seconds) and p.m. peak hour (LOS B – 10.1 seconds). Alternatively, restricting the eastbound and westbound approaches to right-turns only would result in acceptable operations in both peak hours.

- Missouri Flat Road / Enterprise Drive: This intersection will operate with the eastbound approach at LOS F in the a.m. and p.m. peak hours. Installation of a traffic signal identified

in the Existing Conditions will maintain acceptable levels of service at the intersection during the a.m. peak hour (LOS A – 8.6 seconds) and p.m. peak hour (LOS B – 14.3 seconds).

- Pleasant Valley Road at SR 49: The intersection will decline to LOS F conditions in the a.m. peak hour. Signalization of the intersection will result in an LOS B condition in the a.m. peak hour (19.2 seconds). The improvements for this impacted intersection are included in the 10-20 year time frame of the County's CIP. The County's 20-year CIP includes approximately $89,300,000 for traffic signal and intersection operational improvements. County Long Range Planning annually monitors intersections with the potential need for improvements, which would include this intersection. At such time that sufficient warrants are met, then the improvement project can be added to the CIP by name, and funding allocated.

- Pleasant Valley Road / Forni Road: The southbound Forni Road approach will decline to LOS F in the a.m. peak hour. The County has identified improvements along Pleasant Valley Road between SR 49 and Missouri Flat Road (GP 176) that will include installation of a two-way-left-turn-lane. The project is programmed for construction between Fiscal Year 2025/26 and 2034/35. Installation of this improvement will allow the intersection to operate at LOS D (25.8 seconds).

2025 Plus Project Conditions - Mitigations

Four intersections will operate with LOS F conditions. These include Missouri Flat Road at China Garden Road, Missouri Flat Road at Enterprise Drive, Pleasant Valley Road at SR 49 and Pleasant Valley Road at Forni Road. In addition, the Missouri Flat Road / Industrial Drive intersection will meet the peak hour signal warrant. The following mitigations are identified:

- Missouri Flat Road / China Garden Road: Under Plus Project conditions the intersection will operate at LOS F conditions on the westbound approach. The project adds more than 10 trips to the intersection, and this impact is significant. Installation of a traffic signal identified in the Existing Conditions will maintain acceptable levels of service at the intersection during the a.m. peak hour (LOS B – 14.9 seconds) and p.m. peak hour (LOS B – 11.6 seconds).

  Under the right turn limitation on China Garden Road and driveway traffic the intersection will operate with the worst movement (westbound) at LOS C (16.5 seconds) in the a.m. peak hour and LOS C (20.2 seconds) in the p.m. peak hour. The TIM fees paid by the Sheriff's Department would cover its fair share of this improvement.

- Missouri Flat Road / Enterprise Drive: Under project conditions the intersection will operate at LOS F conditions on the eastbound approach. The project adds more than 10 trips to the intersection, and this impact is significant. Installation of the traffic signal identified in the Existing Conditions will maintain acceptable levels of service at the intersection during the a.m. peak hour (LOS B – 10.9 seconds) and p.m. peak hour (LOS B – 14.4 seconds). The TIM fees paid by the Sheriff's Department would cover its fair share of this improvement.

- Pleasant Valley Road at SR 49: Under project conditions the intersection will operate at LOS F. The project adds more than 10 trips to the intersection, and this impact is significant. Installation of the traffic signal identified in the Year 2025 Conditions will maintain acceptable levels of service at the intersection during the a.m. peak hour (LOS C – 20.2 seconds). The TIM fees paid by the Sheriff's Department would cover its fair share of this improvement.

- Pleasant Valley Road / Forni Road: The southbound Forni Road approach will operate at LOS F in the a.m. peak hour. The project adds more than 10 trips to the intersection, and this impact is significant. Installation of a two-way-left-turn lane identified in the County's Capital Improvement Program will allow the intersection to operate at LOS D (26.5 seconds). The project is programmed for construction between Fiscal Year 2025/26 and 2034/35 and is therefore consistent with General Plan Policy TC-Xf. The TIM fees paid by the Sheriff's Department would cover its fair share of this improvement.

- Missouri Flat Road / Industrial Drive: Under project conditions the intersection will meet the peak hour signal warrant. The project should construct a traffic signal at this location to ensure public safety access is maintained. Installation of a new traffic signal would improve the operating conditions to LOS B (17.5 seconds) in the a.m. peak hour and LOS B (13.4 seconds) in the p.m. peak hour.

  As noted in the intersection descriptions there are several driveways on Missouri Flat Road that could be affected by installing a new traffic signal. The driveways adjacent to the intersection (i.e. the south driveway on the east side of the intersection and the north driveway in the southwest quadrant of the intersection) may require closure or realignment to improve safety and minimize interference of the operation of the signal. Additional driveways could be impacted depending on the area of improvement. These issues will be evaluated when the traffic signal is designed.

Table 15 presents the levels of service for the signalized intersection under the mitigated p.m. conditions, i.e. with signalization of the Missouri Flat Road / Industrial Drive intersection. All intersections operate with Level of Service that meet the LOS E standard. Table 16 presents the associated projected queuing under the mitigated p.m. conditions. No additional lanes will exceed capacity after mitigation.

No other mitigations are necessary.

2035 Conditions – Improvement Recommendations

Three intersections will operate with LOS F conditions if the proposed project does not proceed. These include Missouri Flat Road at China Garden Road, Missouri Flat Road at Enterprise Drive and Pleasant Valley Road at SR 49. The following recommendations are noted:

- Missouri Flat Road / China Garden Road: This intersection will operate with the westbound China Garden Road approach operating at LOS F. Installation of a traffic signal identified in the Existing Conditions will maintain acceptable levels of service at the intersection during

the a.m. peak hour (LOS B – 13.5 seconds) and p.m. peak hour (LOS B – 11.1 seconds). Alternatively, restricting the eastbound and westbound approaches to right-turns only would result in acceptable operations in both peak hours.

- Missouri Flat Road / Enterprise Drive: This intersection will operate with the eastbound approach at LOS F in the a.m. and p.m. peak hours. Installation of a traffic signal identified in the Existing Conditions will maintain acceptable levels of service at the intersection during the a.m. peak hour (LOS A – 8.3 seconds) and p.m. peak hour (LOS B – 13.4 seconds).

- Pleasant Valley Road / SR 49: The intersection will decline to LOS F conditions in the a.m. peak hour. Signalization of the intersection will result in an LOS C condition in the a.m. peak hour (29.9 seconds). The improvements for this impacted intersection are included in the 10-20 year time frame of the County's CIP. The County's 20-year CIP includes approximately $89,300,000 for traffic signal and intersection operational improvements. County Long Range Planning annually monitors intersections with the potential need for improvements, which would include this intersection. At such time that sufficient warrants are met, then the improvement project can be added to the CIP by name, and funding allocated.

2035 Plus Project Conditions - Mitigations

- Missouri Flat Road / China Garden Road: Under Plus Project conditions the intersection will operate at LOS F conditions along the westbound China garden Road approach. The project adds more than 10 trips to the intersection, and this impact is significant. Installation of a traffic signal identified in the Existing Conditions will maintain acceptable levels of service at the intersection during the a.m. peak hour (LOS B – 12.9 seconds) and p.m. peak hour (LOS B – 12.7 seconds).

  Under the right turn limitation on China Garden Road and driveway traffic the intersection will operate with the worst movement (westbound) at LOS C (18.6 seconds) in the a.m. peak hour and LOS C (23.5 seconds) in the p.m. peak hour. The TIM fees paid by the Sheriff's Department would cover its fair share of this improvement.

- Missouri Flat Road / Enterprise Drive: Under project conditions the intersection will operate at LOS F conditions on the eastbound Enterprise Drive approach. The project adds more than 10 trips to the intersection, and this impact is significant. Installation of a traffic signal identified in the Existing Conditions will maintain acceptable levels of service at the intersection during the a.m. peak hour (LOS A – 9.5 seconds) and p.m. peak hour (LOS B – 14.6 seconds). The TIM fees paid by the Sheriff's Department would cover its fair share of this improvement.

- Pleasant Valley Road / SR 49: The intersection will operate at LOS F conditions in the a.m. peak hour. The project adds more than 10 trips to the intersection, and this impact is significant. Signalization of the intersection will result in an LOS C condition in the a.m. peak hour (25.2 seconds). The County's 20-Year Capital Improvement Program (CIP) identifies about $89,300,000 for traffic signal and intersection operational improvements.

The TIM fees paid by the Sheriff's Department should cover its fair share of this improvement.

Table 15 presents the Levels of Service for the signalized intersection under the mitigated p.m. conditions, i.e. with signalization of the Missouri Flat Road / Industrial Drive intersection. All meet the minimum Level of Service standard. Table 16 presents the associated projected queuing under the mitigated p.m. conditions. As shown, implementing the mitigations eliminates one location where queues exceed storage.

No other mitigations are necessary.

TABLE 15
PEAK HOUR INTERSECTION LEVELS OF SERVICE
MITIGATED 'PLUS PROJECT' CONDITIONS

Location	Control	2025 + Project PM Peak Hour		2035 Plus Project PM Peak Hour	
		LOS	Average Delay	LOS	Average Delay
1. Missouri Flat Rd / WB US 50 ramps	Signal	B	16.4	B	18.3
2. Missouri Flat Rd / EB US 50 ramps	Signal	C	25.1	C	26.9
3. Missouri Flat Rd / Mother Lode Dr	Signal	B	12.7	B	12.4
4. Missouri Flat Rd / Forni Rd	Signal	D	35.8	E	63.3
5. Missouri Flat Rd / Golden Center Dr	Signal	C	29.1	D	33.4
6. Missouri Flat Rd / Diamond Springs Pkwy	Signal	B	12.7	B	15.7
7. Missouri Flat Rd / China Garden Rd	Signal (SSSC)	B (C)	11.6 (20.2)	B (C)	12.7 (23.5)
8. Missouri Flat Rd / Industrial Dr	Signal	B	13.4	B	12.9
9. Missouri Flat Rd / Enterprise Dr	Signal	B	14.4	B	14.6
10. Missouri Flat Rd / Pleasant Valley Rd	Signal	D	37.2	C	21.0
12. Pleasant Valley Rd / SR 49	Signal	N/A	N/A	E	46.4

SSSC – side street stop control (worst movement shown in either a.m. or p.m. peak hour)

TABLE 16
PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS
MITIGATED 'PLUS PROJECT' CONDITIONS

Location	Capacity (feet)	MITIGATED 2025 PM Peak Hour				MITIGATED 2035 PM Peak Hour			
		VPH			2025 Plus Project Queue (feet)	VPH			2035 Plus Project Queue (feet)
		2025	Project Only	Total		2035	Project Only	Total	
1. Missouri Flat Road / WB US 50 ramps									
NB left turn	160 (2)	340	19	359	158	315	19	334	154
NB through	360 (2)	866	9	875	162	1,000	9	1,009	138
SB through	520 (2)	864	6	870	243	905	6	911	264
WB left turn	410 (2)	653	5	658	231	710	5	715	289
WB right turn	410 (2)	370	0	370	166	390	0	390	166
2. Missouri Flat Road / EB US 50 ramps									
NB through	160 (2)	972	28	1,000	193	1,065	28	1,093	187
NB right turn	140	76	0	76	63	80	0	80	25
SB left	160 (2)	324	0	324	185	325	0	325	188
SB through	380 (2)	1,192	11	1,203	323	1,240	11	1,251	337
EB left+through+right turn	540 (3)	852	5	857	297	925	5	930	343
3. Missouri Flat Road / Mother Lode Drive									
NB left turn	150	43	1	44	133	30	1	31	107
NB through	2,300 (2)	974	28	1,002	317	1,120	28	1,148	339
SB through	140 (2)	1,738	16	1,754	193	1,945	16	1,961	202
SB right turn	130	73	0	73	80	20	0	20	32
4. Missouri Flat Road / Forni Road									
NB left turn	250	76	4	80	169	95	4	99	232
NB through	1,000 (2)	912	44	956	372	1,025	44	1,069	441
NB right turn	160	23	1	24	104	25	1	26	102
SB left turn	300	168	0	168	279	170	0	170	356
SB through	2,300 (2)	1,184	16	1,200	511	1,350	16	1,366	543
SB right turn	150	406	0	406	235	465	0	465	230
5. Missouri Flat Road / Golden Center Drive									
NB left turn	120	77	0	77	172	80	0	80	180
SB left turn	160	66	0	66	150	65	0	65	170

TABLE 16 (cont'd)
PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS
MITIGATED 'PLUS PROJECT' CONDITIONS

Location	Capacity (feet)	MITIGATED 2025 PM Peak Hour VPH 2025	Project Only	Total	2025 Plus Project Queue (feet)	MITIGATED 2035 PM Peak Hour VPH 2035	Project Only	Total	2035 Plus Project Queue (feet)
6. Missouri Flat Road / Diamond Springs Parkway									
NB left turn	275 (2)	690	53	743	162	725	53	778	180
EB right turn	250	865	14	879	230	990	14	1,004	281
WB left turn	500	44	2	46	60	60	2	62	74
7. Missouri Flat Road / China Garden Road									
NB Left	TWLTL	5	0	5	24	5	0	5	20
SB Left	200	13	0	13	61	15	0	15	87
EB	Driveway	4	0	4	20	5	0	5	25
WB	>600	198	0	198	153	215	0	215	167
8. Missouri Flat Road / Industrial Drive									
NB Left	TWLTL	8	2	10	29	5	2	7	28
EB	>600	48	92	140	181	45	92	137	165
9. Missouri Flat Road / Enterprise Drive									
NB Left	TWLTL	11	3	14	32	10	3	13	29
SB Left	TWLTL	5	0	5	19	5	0	5	25
EB	>600	146	1	147	158	135	1	136	141
WB	Driveway	5	0	5	24	5	0	5	18
10. Missouri Flat Road / Pleasant Valley Road									
EB Left	130 (2)	240	0	240	209	250	0	250	196
WB Right	200	239	3	242	143	185	3	188	103
12. Pleasant Valley Road / SR 49									
NB	700	N/A	N/A	N/A	N/A	320	2	322	389
WB Left	80	N/A	N/A	N/A	N/A	255	5	260	115
Queue exceeds storage with and without mitigation									
Queue no longer exceeds storage with mitigation									

REFERENCES

1. Transportation Research Board, *Highway Capacity Manual*, 2010
2. Caltrans *Highway Design Manual*, 2012
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5. Telephone and E-mail correspondence, Natalie Porter and Claudia Wade, El Dorado County, October and November, 2014
6. *Diamond Springs and El Dorado Area Mobility and Livable Community Plan Draft Technical Report*, Fehr & Peers, Inc. February 2014
7. *The Crossing Traffic Impact Study*, KDAnderson & Associates, Inc. May 2014
8. *Piedmont Oak Estates Traffic Impact Study*, KDAnderson & Associates, Inc. October 2014
9. *Diamond Springs Parkway DEIR*, Michael Brandman Associates, June 2010
10. El Dorado County Bicycle Transportation Plan 2010

APPENDICES

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.3	0.0	0.0	0.5
Total Del/Veh (s)	24.7	16.0	12.7	18.4

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.0	0.0	0.0	0.2
Total Del/Veh (s)	17.6	11.6	20.1	16.2

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	2.1	0.0	0.0	0.1
Total Del/Veh (s)	33.9	8.8	4.3	8.5

4: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.6	0.0	0.0	0.0	0.1
Total Del/Veh (s)	38.5	17.6	20.8	18.1	21.5

5: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	13.6	22.2	12.4	17.6	14.8

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	2.6	0.2	0.0	0.8
Total Del/Veh (s)	22.8	20.2	10.7	18.7

Total Zone Performance

Denied Del/Veh (s)	1.7
Total Del/Veh (s)	1165.7

Intersection	
Intersection Delay, s/veh	41.7
Intersection LOS	E

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Vol, veh/h	0	243	85	0	141	287	0	224	238
Peak Hour Factor	0.92	0.78	0.78	0.92	0.78	0.78	0.92	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	312	109	0	181	368	0	287	305
Number of Lanes	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	32.2	25.4	63.5
HCM LOS	D	D	F

Lane	NBLn1	EBLn1	WBLn1	WBLn2
Vol Left, %	48%	0%	100%	0%
Vol Thru, %	0%	74%	0%	100%
Vol Right, %	52%	26%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	462	328	141	287
LT Vol	224	0	141	0
Through Vol	0	243	0	287
RT Vol	238	85	0	0
Lane Flow Rate	592	421	181	368
Geometry Grp	2	5	7	7
Degree of Util (X)	1	0.805	0.401	0.763
Departure Headway (Hd)	6.488	6.892	7.977	7.463
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	563	534	459	493
Service Time	4.488	4.803	5.598	5.099
HCM Lane V/C Ratio	1.052	0.788	0.394	0.746
HCM Control Delay	63.5	32.2	15.8	30.1
HCM Lane LOS	F	D	C	D
HCM 95th-tile Q	14.4	7.7	1.9	6.6

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	0	0	9	1	138	0	877	15	99	555	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	10	1	155	0	985	17	111	624	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1920	1850	625	1842	1843	994	627	0	0	1002	0	0
Stage 1	848	848	-	994	994	-	-	-	-	-	-	-
Stage 2	1072	1002	-	848	849	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	51	74	485	58	75	297	955	-	-	691	-	-
Stage 1	356	378	-	295	323	-	-	-	-	-	-	-
Stage 2	267	320	-	356	377	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	21	62	485	51	63	297	955	-	-	691	-	-
Mov Cap-2 Maneuver	21	62	-	51	63	-	-	-	-	-	-	-
Stage 1	356	317	-	295	323	-	-	-	-	-	-	-
Stage 2	127	320	-	299	316	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	185.9	55.9	0	1.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	955	-	-	21	225	691	-	-
HCM Lane V/C Ratio	-	-	-	0.054	0.739	0.161	-	-
HCM Control Delay (s)	0	-	-	185.9	55.9	11.2	-	-
HCM Lane LOS	A	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	5	0.6	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	13	12	11	896	541	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	1	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	14	12	1018	615	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1670	627	640	0	-	0
Stage 1	627	-	-	-	-	-
Stage 2	1043	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	106	484	944	-	-	-
Stage 1	532	-	-	-	-	-
Stage 2	339	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	105	484	944	-	-	-
Mov Cap-2 Maneuver	232	-	-	-	-	-
Stage 1	532	-	-	-	-	-
Stage 2	334	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.8	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	944	-	309	-	-
HCM Lane V/C Ratio	0.013	-	0.092	-	-
HCM Control Delay (s)	8.9	-	17.8	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	51	0	13	1	0	4	17	844	6	4	419	94
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	59	0	15	1	0	5	20	981	7	5	487	109

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1578	1579	542	1583	1630	985	597	0	0	988	0	0
Stage 1	551	551	-	1024	1024	-	-	-	-	-	-	-
Stage 2	1027	1028	-	559	606	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	89	109	540	88	102	301	980	-	-	699	-	-
Stage 1	519	515	-	284	313	-	-	-	-	-	-	-
Stage 2	283	311	-	513	487	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	86	106	540	84	99	301	980	-	-	699	-	-
Mov Cap-2 Maneuver	86	106	-	84	99	-	-	-	-	-	-	-
Stage 1	508	511	-	278	307	-	-	-	-	-	-	-
Stage 2	273	305	-	495	484	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	99.1	23.7	0.2	0.1
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	980	-	-	104	198	699	-	-
HCM Lane V/C Ratio	0.02	-	-	0.716	0.029	0.007	-	-
HCM Control Delay (s)	8.7	-	-	99.1	23.7	10.2	-	-
HCM Lane LOS	A	-	-	F	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.7	0.1	0	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	20	57	181	21	100	136
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	64	203	24	112	153

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	593	215	0	0	227	0
Stage 1	215	-	-	-	-	-
Stage 2	378	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	468	825	-	-	1341	-
Stage 1	821	-	-	-	-	-
Stage 2	693	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	425	825	-	-	1341	-
Mov Cap-2 Maneuver	425	-	-	-	-	-
Stage 1	821	-	-	-	-	-
Stage 2	630	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	3.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	663	1341	-
HCM Lane V/C Ratio	-	-	0.13	0.084	-
HCM Control Delay (s)	-	-	11.2	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.3	-

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	135	337	323	33	50	101
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	180	449	431	44	67	135

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	475	0	-	0	1262	453
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	809	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1087	-	-	-	188	607
Stage 1	-	-	-	-	640	-
Stage 2	-	-	-	-	438	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1087	-	-	-	146	607
Mov Cap-2 Maneuver	-	-	-	-	146	-
Stage 1	-	-	-	-	640	-
Stage 2	-	-	-	-	341	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	39.3
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1087	-	-	-	297
HCM Lane V/C Ratio	0.166	-	-	-	0.678
HCM Control Delay (s)	9	0	-	-	39.3
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0.6	-	-	-	4.6

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	240	220	167	130	137	149	339	164	184	152
Average Queue (ft)	149	131	79	33	109	121	96	49	92	70
95th Queue (ft)	214	194	139	88	167	167	274	121	158	133
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)							0			
Queuing Penalty (veh)							1			
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)					1	6	0			
Queuing Penalty (veh)					2	18	0			

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	114	178	153	171	167	85	93	174	368	359
Average Queue (ft)	31	87	46	126	103	28	27	99	198	202
95th Queue (ft)	81	150	107	200	187	70	69	196	351	335
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				11	5				0	0
Queuing Penalty (veh)				36	16				0	0
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)								0	10	
Queuing Penalty (veh)								0	14	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	EB	NB	NB	NB	B24	B24	SB	SB	SB
Directions Served	L	L	R	L	T	T	T	T	T	T	R
Maximum Queue (ft)	95	137	63	87	220	128	60	107	134	126	12
Average Queue (ft)	36	64	20	15	75	28	2	5	43	43	0
95th Queue (ft)	78	119	48	55	182	87	44	76	102	99	13
Link Distance (ft)		633			1949	1949	368	368	138	138	
Upstream Blk Time (%)								0	0	0	
Queuing Penalty (veh)								0	1	1	
Storage Bay Dist (ft)	200		200	150							200
Storage Blk Time (%)					2					0	
Queuing Penalty (veh)					0					0	

Intersection: 4: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB	B24
Directions Served	L	L	T	R	L	T	L	T	T	R	L	T	T	R	T
Maximum Queue (ft)	124	146	136	43	110	110	72	254	266	157	292	252	217	162	10
Average Queue (ft)	41	55	47	13	43	44	14	131	131	17	182	94	89	45	0
95th Queue (ft)	94	109	98	36	87	88	48	235	242	101	275	207	173	108	10
Link Distance (ft)			3521			275		293	293			368	368		1949
Upstream Blk Time (%)								0	0			0			
Queuing Penalty (veh)								0	1			3			
Storage Bay Dist (ft)	195	195		150	190		250			150	300			150	
Storage Blk Time (%)			0					0	6	0	1	0	1	0	
Queuing Penalty (veh)			1					0	4	0	4	0	2	0	

Intersection: 5: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	T	L	T	T	R
Maximum Queue (ft)	55	84	114	210	215	7	181	261	261	16
Average Queue (ft)	16	35	31	112	119	0	57	88	104	1
95th Queue (ft)	40	71	75	176	184	7	124	195	204	9
Link Distance (ft)	184	367		216	216	2030		652	652	
Upstream Blk Time (%)				0	0					
Queuing Penalty (veh)				0	1					
Storage Bay Dist (ft)			150				175			500
Storage Blk Time (%)				1			0	2		
Queuing Penalty (veh)				1			0	1		

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB	B68
Directions Served	L	L	T	T	R	L	R	T
Maximum Queue (ft)	140	152	312	441	225	184	139	43
Average Queue (ft)	102	66	88	191	124	79	44	2
95th Queue (ft)	148	165	211	362	243	152	97	25
Link Distance (ft)				1506		127	127	419
Upstream Blk Time (%)						3	0	
Queuing Penalty (veh)						6	1	
Storage Bay Dist (ft)	130	130			200			
Storage Blk Time (%)	5	3	2	5	0			
Queuing Penalty (veh)	9	6	6	27	1			

Zone Summary

Zone wide Queuing Penalty: 165

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.3	0.0	0.0	0.4
Total Del/Veh (s)	25.3	14.1	14.3	17.6

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.4	0.0	0.0	0.4
Total Del/Veh (s)	26.5	13.7	23.9	21.5

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	2.1	0.0	0.0	0.1
Total Del/Veh (s)	34.5	8.3	6.3	8.6

4: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	1.3	0.0	0.1	0.0	0.3
Total Del/Veh (s)	46.1	10.5	21.4	15.5	22.4

5: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.0	0.0
Total Del/Veh (s)	20.2	25.8	16.1	24.2	21.0

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	2.1	0.0	56.4	27.7
Total Del/Veh (s)	21.0	17.5	21.0	20.0

Total Zone Performance

Denied Del/Veh (s)	20.0
Total Del/Veh (s)	1138.3

Intersection	
Intersection Delay, s/veh	20.8
Intersection LOS	C

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Vol, veh/h	0	324	205	0	211	265	0	99	148
Peak Hour Factor	0.92	0.94	0.94	0.92	0.94	0.94	0.92	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	345	218	0	224	282	0	105	157
Number of Lanes	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	29.8	14.1	14.2
HCM LOS	D	B	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2
Vol Left, %	40%	0%	100%	0%
Vol Thru, %	0%	61%	0%	100%
Vol Right, %	60%	39%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	247	529	211	265
LT Vol	99	0	211	0
Through Vol	0	324	0	265
RT Vol	148	205	0	0
Lane Flow Rate	263	563	224	282
Geometry Grp	2	5	7	7
Degree of Util (X)	0.45	0.836	0.412	0.477
Departure Headway (Hd)	6.17	5.351	6.602	6.094
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	581	675	543	589
Service Time	4.231	3.4	4.36	3.851
HCM Lane V/C Ratio	0.453	0.834	0.413	0.479
HCM Control Delay	14.2	29.8	13.9	14.3
HCM Lane LOS	B	D	B	B
HCM 95th-tile Q	2.3	9.2	2	2.6

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	2	10	0	175	1	670	20	133	1042	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	10	0	180	1	691	21	137	1074	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2141	2061	1074	2052	2051	701	1074	0	0	711	0	0
Stage 1	1348	1348	-	703	703	-	-	-	-	-	-	-
Stage 2	793	713	-	1349	1348	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	35	55	267	41	56	439	649	-	-	888	-	-
Stage 1	186	219	-	428	440	-	-	-	-	-	-	-
Stage 2	382	435	-	186	219	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	18	46	267	36	47	439	649	-	-	888	-	-
Mov Cap-2 Maneuver	18	46	-	36	47	-	-	-	-	-	-	-
Stage 1	186	185	-	427	439	-	-	-	-	-	-	-
Stage 2	225	434	-	156	185	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.6	43.5	0	1.1
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	649	-	-	267	274	888	-	-
HCM Lane V/C Ratio	0.002	-	-	0.008	0.696	0.154	-	-
HCM Control Delay (s)	10.6	-	-	18.6	43.5	9.8	-	-
HCM Lane LOS	B	-	-	C	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	4.7	0.5	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	18	18	7	663	1021	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	1	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	20	8	729	1122	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1872	1128	1134	0	-	0
Stage 1	1128	-	-	-	-	-
Stage 2	744	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	79	249	616	-	-	-
Stage 1	309	-	-	-	-	-
Stage 2	470	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	78	249	616	-	-	-
Mov Cap-2 Maneuver	203	-	-	-	-	-
Stage 1	309	-	-	-	-	-
Stage 2	464	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.5	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	616	-	224	-	-
HCM Lane V/C Ratio	0.012	-	0.177	-	-
HCM Control Delay (s)	10.9	-	24.5	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-

Intersection	
Int Delay, s/veh	16.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	78	1	30	1	1	1	7	573	2	4	934	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	83	1	32	1	1	1	7	610	2	4	994	66

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1662	1662	1027	1678	1694	611	1060	0	0	612	0	0
Stage 1	1035	1035	-	626	626	-	-	-	-	-	-	-
Stage 2	627	627	-	1052	1068	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 77	97	285	75	93	494	657	-	-	967	-	-
Stage 1	280	309	-	472	477	-	-	-	-	-	-	-
Stage 2	471	476	-	274	298	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 75	96	285	65	92	494	657	-	-	967	-	-
Mov Cap-2 Maneuver	~ 75	96	-	65	92	-	-	-	-	-	-	-
Stage 1	277	308	-	467	472	-	-	-	-	-	-	-
Stage 2	464	471	-	241	297	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	250.8	40	0.1	0
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	657	-	-	94	106	967	-	-
HCM Lane V/C Ratio	0.011	-	-	1.234	0.03	0.004	-	-
HCM Control Delay (s)	10.5	-	-	250.8	40	8.7	-	-
HCM Lane LOS	B	-	-	F	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	8.1	0.1	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	4.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	31	180	115	24	81	189
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	196	125	26	88	205

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	520	138	0	0	151	0
Stage 1	138	-	-	-	-	-
Stage 2	382	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	516	910	-	-	1430	-
Stage 1	889	-	-	-	-	-
Stage 2	690	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	480	910	-	-	1430	-
Mov Cap-2 Maneuver	480	-	-	-	-	-
Stage 1	889	-	-	-	-	-
Stage 2	642	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.3	0	2.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	804	1430	-
HCM Lane V/C Ratio	-	-	0.285	0.062	-
HCM Control Delay (s)	-	-	11.3	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0.2	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	88	402	331	36	22	147
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	95	432	356	39	24	158

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	395	0	-	0	997	375
Stage 1	-	-	-	-	375	-
Stage 2	-	-	-	-	622	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1164	-	-	-	271	671
Stage 1	-	-	-	-	695	-
Stage 2	-	-	-	-	535	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1164	-	-	-	242	671
Mov Cap-2 Maneuver	-	-	-	-	242	-
Stage 1	-	-	-	-	695	-
Stage 2	-	-	-	-	478	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	14.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1164	-	-	-	545
HCM Lane V/C Ratio	0.081	-	-	-	0.333
HCM Control Delay (s)	8.4	0	-	-	14.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	1.5

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	257	259	168	133	137	148	280	131	305	254
Average Queue (ft)	154	149	85	32	100	113	83	55	140	97
95th Queue (ft)	227	226	149	89	163	161	215	110	250	193
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)					1	3	0			0
Queuing Penalty (veh)					2	10	1			0

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	192	240	209	169	159	95	160	174	406	401
Average Queue (ft)	90	147	119	144	97	36	74	134	295	294
95th Queue (ft)	165	215	194	181	157	78	156	215	430	413
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				12	2				0	0
Queuing Penalty (veh)				39	6				3	3
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)							0	1	16	
Queuing Penalty (veh)							1	5	52	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	EB	NB	NB	NB	B24	B24	SB	SB	SB
Directions Served	L	L	R	L	T	T	T	T	T	T	R
Maximum Queue (ft)	83	134	66	100	219	82	76	150	156	156	121
Average Queue (ft)	26	63	27	32	60	15	4	8	91	106	8
95th Queue (ft)	62	115	60	79	164	54	66	96	164	169	59
Link Distance (ft)		633			1949	1949	368	368	138	138	
Upstream Blk Time (%)							0	0	2	4	0
Queuing Penalty (veh)							0	0	18	30	0
Storage Bay Dist (ft)	200		200	150							200
Storage Blk Time (%)					2					4	0
Queuing Penalty (veh)					1					4	0

Intersection: 4: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	L	T	R	L	T	L	T	T	R	L	T	T	R
Maximum Queue (ft)	207	220	584	74	59	91	134	310	300	129	230	272	305	175
Average Queue (ft)	152	163	102	27	14	30	43	149	155	15	118	132	144	87
95th Queue (ft)	227	234	375	53	44	67	94	273	275	83	194	234	259	180
Link Distance (ft)			3537			275		340	340			368	368	
Upstream Blk Time (%)								0	0			0	0	
Queuing Penalty (veh)								1	0			0	0	
Storage Bay Dist (ft)	195	195		150	190		250			150	300			150
Storage Blk Time (%)	3	8	1					1	11	0		0	6	0
Queuing Penalty (veh)	3	8	3					1	2	0		0	21	1

Intersection: 5: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	T	L	T	T	R
Maximum Queue (ft)	100	177	154	206	204	11	199	407	408	19
Average Queue (ft)	42	84	55	110	108	0	63	182	198	1
95th Queue (ft)	81	147	111	182	180	11	154	347	360	10
Link Distance (ft)	184	367		216	216	2030		652	652	
Upstream Blk Time (%)				0	0					
Queuing Penalty (veh)				1	1					
Storage Bay Dist (ft)			150				175			500
Storage Blk Time (%)			0	2			0	9	0	
Queuing Penalty (veh)			0	2			0	6	0	

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB	B68	B68	B66
Directions Served	L	L	T	T	R	L	R	T	T	T
Maximum Queue (ft)	140	153	229	243	207	230	125	503	148	440
Average Queue (ft)	93	48	90	131	67	203	49	305	5	85
95th Queue (ft)	138	138	168	207	156	223	100	577	89	359
Link Distance (ft)				1302		131	131	419	419	625
Upstream Blk Time (%)						56	0	18		0
Queuing Penalty (veh)						276	1	86		1
Storage Bay Dist (ft)	130	130			200					
Storage Blk Time (%)	2	1	2	1	0					
Queuing Penalty (veh)	4	3	4	3	0					

Zone Summary

Zone wide Queuing Penalty: 603

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.3	0.0	0.0	0.5
Total Del/Veh (s)	24.4	15.9	13.3	18.3

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.0	0.0	0.0	0.2
Total Del/Veh (s)	17.1	12.3	21.1	16.8

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	2.0	0.0	0.0	0.1
Total Del/Veh (s)	36.1	9.0	4.5	8.6

4: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.6	0.0	0.0	0.0	0.1
Total Del/Veh (s)	38.9	17.5	20.6	18.1	21.5

5: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	14.5	25.1	12.6	17.6	15.0

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	2.8	0.3	0.0	0.9
Total Del/Veh (s)	23.2	20.4	11.1	19.0

Total Zone Performance

Denied Del/Veh (s)	1.7
Total Del/Veh (s)	1220.5

Intersection	
Intersection Delay, s/veh	41.4
Intersection LOS	E

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Vol, veh/h	0	248	85	0	142	288	0	224	243
Peak Hour Factor	0.92	0.78	0.78	0.92	0.78	0.78	0.92	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	318	109	0	182	369	0	287	312
Number of Lanes	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	31.9	24.9	63.4
HCM LOS	D	C	F

Lane	NBLn1	EBLn1	WBLn1	WBLn2
Vol Left, %	48%	0%	100%	0%
Vol Thru, %	0%	74%	0%	100%
Vol Right, %	52%	26%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	467	333	142	288
LT Vol	224	0	142	0
Through Vol	0	248	0	288
RT Vol	243	85	0	0
Lane Flow Rate	599	427	182	369
Geometry Grp	2	5	7	7
Degree of Util (X)	1	0.802	0.397	0.754
Departure Headway (Hd)	6.384	6.764	7.853	7.354
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	563	538	459	491
Service Time	4.471	4.797	5.595	5.095
HCM Lane V/C Ratio	1.064	0.794	0.397	0.752
HCM Control Delay	63.4	31.9	15.7	29.4
HCM Lane LOS	F	D	C	D
HCM 95th-tile Q	14.4	7.7	1.9	6.4

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	0	0	9	1	138	0	887	15	99	614	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	10	1	155	0	997	17	111	690	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1997	1927	692	1919	1921	1005	693	0	0	1013	0	0
Stage 1	914	914	-	1005	1005	-	-	-	-	-	-	-
Stage 2	1083	1013	-	914	916	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	45	67	444	51	67	293	902	-	-	684	-	-
Stage 1	327	352	-	291	319	-	-	-	-	-	-	-
Stage 2	263	316	-	327	351	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	18	56	444	45	56	293	902	-	-	684	-	-
Mov Cap-2 Maneuver	18	56	-	45	56	-	-	-	-	-	-	-
Stage 1	327	295	-	291	319	-	-	-	-	-	-	-
Stage 2	123	316	-	274	294	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	217.9	62.6	0	1.6
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	902	-	-	18	215	684	-	-
HCM Lane V/C Ratio	-	-	-	0.062	0.773	0.163	-	-
HCM Control Delay (s)	0	-	-	217.9	62.6	11.3	-	-
HCM Lane LOS	A	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	5.4	0.6	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	23	14	49	896	541	81
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	1	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	16	56	1018	615	92

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1791	661	707	0	-	0
Stage 1	661	-	-	-	-	-
Stage 2	1130	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	89	462	891	-	-	-
Stage 1	514	-	-	-	-	-
Stage 2	308	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	83	462	891	-	-	-
Mov Cap-2 Maneuver	203	-	-	-	-	-
Stage 1	514	-	-	-	-	-
Stage 2	289	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.7	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	891	-	258	-	-
HCM Lane V/C Ratio	0.062	-	0.163	-	-
HCM Control Delay (s)	9.3	-	21.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	53	0	14	1	0	4	19	880	6	4	421	94
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	62	0	16	1	0	5	22	1023	7	5	490	109

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1626	1627	544	1633	1679	1027	599	0	0	1030	0	0
Stage 1	553	553	-	1071	1071	-	-	-	-	-	-	-
Stage 2	1073	1074	-	562	608	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	82	102	539	81	95	285	978	-	-	674	-	-
Stage 1	517	514	-	267	297	-	-	-	-	-	-	-
Stage 2	267	296	-	512	486	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	79	99	539	77	92	285	978	-	-	674	-	-
Mov Cap-2 Maneuver	79	99	-	77	92	-	-	-	-	-	-	-
Stage 1	505	510	-	261	290	-	-	-	-	-	-	-
Stage 2	257	289	-	493	482	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	124.6	25.1	0.2	0.1
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	978	-	-	96	185	674	-	-
HCM Lane V/C Ratio	0.023	-	-	0.812	0.031	0.007	-	-
HCM Control Delay (s)	8.8	-	-	124.6	25.1	10.4	-	-
HCM Lane LOS	A	-	-	F	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	4.4	0.1	0	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	22	57	181	24	101	136
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	64	203	27	113	153

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	597	217	0	0	230	0
Stage 1	217	-	-	-	-	-
Stage 2	380	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	466	823	-	-	1338	-
Stage 1	819	-	-	-	-	-
Stage 2	691	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	423	823	-	-	1338	-
Mov Cap-2 Maneuver	423	-	-	-	-	-
Stage 1	819	-	-	-	-	-
Stage 2	627	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	3.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	651	1338	-
HCM Lane V/C Ratio	-	-	0.136	0.085	-
HCM Control Delay (s)	-	-	11.4	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.3	-

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	138	343	323	33	50	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	184	457	431	44	67	137

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	475	0	-	0	1278	453
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	825	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1087	-	-	-	183	607
Stage 1	-	-	-	-	640	-
Stage 2	-	-	-	-	430	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1087	-	-	-	141	607
Mov Cap-2 Maneuver	-	-	-	-	141	-
Stage 1	-	-	-	-	640	-
Stage 2	-	-	-	-	332	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	41.6
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1087	-	-	-	292
HCM Lane V/C Ratio	0.169	-	-	-	0.699
HCM Control Delay (s)	9	0	-	-	41.6
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0.6	-	-	-	4.8

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	244	233	155	106	137	149	326	153	198	149
Average Queue (ft)	153	134	75	28	110	123	99	50	96	72
95th Queue (ft)	228	213	131	71	167	169	270	112	163	131
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)							0	0		
Queuing Penalty (veh)							0	0		
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)					1	6	0			
Queuing Penalty (veh)					3	17	0			

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	99	166	139	166	165	96	85	174	387	373
Average Queue (ft)	30	88	49	133	109	31	26	94	219	218
95th Queue (ft)	73	147	104	201	185	76	66	191	384	366
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				13	5				0	0
Queuing Penalty (veh)				43	17				0	0
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)								0	12	
Queuing Penalty (veh)								0	16	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	EB	NB	NB	NB	B24	B24	B24	SB	SB	SB
Directions Served	L	L	R	L	T	T	T	T		T	T	R
Maximum Queue (ft)	96	138	54	93	224	122	71	232	39	139	135	14
Average Queue (ft)	34	63	18	18	74	27	5	14	1	46	49	0
95th Queue (ft)	75	118	46	61	177	81	72	132	40	107	107	14
Link Distance (ft)		633			1949	1949	368	368	368	138	138	
Upstream Blk Time (%)							0	0	0	0	0	0
Queuing Penalty (veh)							0	0	0	1	1	0
Storage Bay Dist (ft)	200		200	150								200
Storage Blk Time (%)					1						0	0
Queuing Penalty (veh)					0						0	0

Intersection: 4: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB	B24	B24
Directions Served	L	L	T	R	L	T	L	T	T	R	L	T	T	R	T	T
Maximum Queue (ft)	115	125	120	63	105	112	84	288	310	144	300	278	242	150	54	40
Average Queue (ft)	46	61	44	17	41	46	13	132	135	18	180	98	97	47	6	1
95th Queue (ft)	96	114	95	47	86	91	51	245	260	104	287	225	195	120	89	41
Link Distance (ft)			3521			275		293	293			368	368		1949	1949
Upstream Blk Time (%)								0	0			1	0			
Queuing Penalty (veh)								1	2			7	0			
Storage Bay Dist (ft)	195	195		150	190		250			150	300			150		
Storage Blk Time (%)			0					1	7	0	2	0	2	0		
Queuing Penalty (veh)			0					0	4	0	8	1	4	0		

Intersection: 5: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	T	L	T	T	R
Maximum Queue (ft)	53	85	108	208	225	26	165	240	247	17
Average Queue (ft)	16	37	30	115	125	1	56	97	109	2
95th Queue (ft)	40	74	73	179	192	22	118	197	204	10
Link Distance (ft)	184	367		216	216	2030		652	652	
Upstream Blk Time (%)				0	0					
Queuing Penalty (veh)				1	1					
Storage Bay Dist (ft)			150				175			500
Storage Blk Time (%)				2			0	1		
Queuing Penalty (veh)				1			0	1		

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB	B68
Directions Served	L	L	T	T	R	L	R	T
Maximum Queue (ft)	141	153	296	420	225	178	125	8
Average Queue (ft)	107	74	94	185	128	83	46	0
95th Queue (ft)	150	173	225	338	245	155	100	5
Link Distance (ft)				1506		127	127	419
Upstream Blk Time (%)						3	0	
Queuing Penalty (veh)						7	0	
Storage Bay Dist (ft)	130	130			200			
Storage Blk Time (%)	6	4	2	4	1			
Queuing Penalty (veh)	11	7	5	26	2			

Zone Summary

Zone wide Queuing Penalty: 190

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.3	0.0	0.0	0.4
Total Del/Veh (s)	25.0	14.9	14.9	18.1

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.4	0.0	0.1	0.4
Total Del/Veh (s)	26.8	13.8	24.0	21.6

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	2.0	0.0	0.0	0.1
Total Del/Veh (s)	34.9	8.3	6.3	8.7

4: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	1.3	0.0	0.1	0.0	0.2
Total Del/Veh (s)	48.9	11.7	21.1	15.9	23.0

5: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.0	0.0
Total Del/Veh (s)	22.0	25.5	15.8	25.6	21.5

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	2.1	0.0	55.1	27.5
Total Del/Veh (s)	22.4	17.1	21.0	20.2

Total Zone Performance

Denied Del/Veh (s)	20.1
Total Del/Veh (s)	1202.3

Intersection	
Intersection Delay, s/veh	21.2
Intersection LOS	C

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Vol, veh/h	0	326	205	0	216	269	0	99	150
Peak Hour Factor	0.92	0.94	0.94	0.92	0.94	0.94	0.92	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	347	218	0	230	286	0	105	160
Number of Lanes	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	30.6	14.4	14.4
HCM LOS	D	B	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2
Vol Left, %	40%	0%	100%	0%
Vol Thru, %	0%	61%	0%	100%
Vol Right, %	60%	39%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	249	531	216	269
LT Vol	99	0	216	0
Through Vol	0	326	0	269
RT Vol	150	205	0	0
Lane Flow Rate	265	565	230	286
Geometry Grp	2	5	7	7
Degree of Util (X)	0.456	0.843	0.423	0.486
Departure Headway (Hd)	6.191	5.374	6.62	6.112
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	580	672	542	587
Service Time	4.254	3.426	4.382	3.873
HCM Lane V/C Ratio	0.457	0.841	0.424	0.487
HCM Control Delay	14.4	30.6	14.2	14.6
HCM Lane LOS	B	D	B	B
HCM 95th-tile Q	2.4	9.4	2.1	2.6

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	2	10	0	175	1	724	20	133	1058	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	10	0	180	1	746	21	137	1091	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2214	2134	1091	2125	2124	757	1091	0	0	767	0	0
Stage 1	1365	1365	-	759	759	-	-	-	-	-	-	-
Stage 2	849	769	-	1366	1365	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	31	49	261	36	50	408	640	-	-	847	-	-
Stage 1	182	215	-	399	415	-	-	-	-	-	-	-
Stage 2	356	411	-	182	215	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	15	41	261	31	42	408	640	-	-	847	-	-
Mov Cap-2 Maneuver	15	41	-	31	42	-	-	-	-	-	-	-
Stage 1	182	180	-	398	414	-	-	-	-	-	-	-
Stage 2	198	410	-	151	180	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.9	56.6	0	1.1
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	640	-	-	261	246	847	-	-
HCM Lane V/C Ratio	0.002	-	-	0.008	0.775	0.162	-	-
HCM Control Delay (s)	10.6	-	-	18.9	56.6	10.1	-	-
HCM Lane LOS	B	-	-	C	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	5.7	0.6	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	72	56	9	663	1021	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	1	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	79	62	10	729	1122	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1885	1137	1152	0	-	0
Stage 1	1137	-	-	-	-	-
Stage 2	748	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 78	246	606	-	-	-
Stage 1	306	-	-	-	-	-
Stage 2	468	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 77	246	606	-	-	-
Mov Cap-2 Maneuver	201	-	-	-	-	-
Stage 1	306	-	-	-	-	-
Stage 2	460	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	47.4	0.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	606	-	218	-	-
HCM Lane V/C Ratio	0.016	-	0.645	-	-
HCM Control Delay (s)	11	-	47.4	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.1	-	3.9	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	18.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	79	1	30	1	1	1	10	575	2	4	970	64
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	84	1	32	1	1	1	11	612	2	4	1032	68

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1709	1709	1066	1725	1743	613	1100	0	0	614	0	0
Stage 1	1074	1074	-	634	634	-	-	-	-	-	-	-
Stage 2	635	635	-	1091	1109	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 72	91	270	70	87	492	635	-	-	965	-	-
Stage 1	266	296	-	467	473	-	-	-	-	-	-	-
Stage 2	467	472	-	260	285	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 70	89	270	60	85	492	635	-	-	965	-	-
Mov Cap-2 Maneuver	~ 70	89	-	60	85	-	-	-	-	-	-	-
Stage 1	261	295	-	459	465	-	-	-	-	-	-	-
Stage 2	457	464	-	227	284	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	293.3	43	0.2	0
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	635	-	-	88	98	965	-	-
HCM Lane V/C Ratio	0.017	-	-	1.33	0.033	0.004	-	-
HCM Control Delay (s)	10.8	-	-	293.3	43	8.7	-	-
HCM Lane LOS	B	-	-	F	E	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	8.7	0.1	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	4.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	33	181	115	28	81	189
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	197	125	30	88	205

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	522	140	0	0	155	0
Stage 1	140	-	-	-	-	-
Stage 2	382	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	515	908	-	-	1425	-
Stage 1	887	-	-	-	-	-
Stage 2	690	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	479	908	-	-	1425	-
Mov Cap-2 Maneuver	479	-	-	-	-	-
Stage 1	887	-	-	-	-	-
Stage 2	642	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	2.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	798	1425	-
HCM Lane V/C Ratio	-	-	0.291	0.062	-
HCM Control Delay (s)	-	-	11.4	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0.2	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	92	402	337	36	22	149
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	432	362	39	24	160

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	401	0	-	0	1012	382
Stage 1	-	-	-	-	382	-
Stage 2	-	-	-	-	630	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1158	-	-	-	265	665
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	531	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1158	-	-	-	235	665
Mov Cap-2 Maneuver	-	-	-	-	235	-
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	471	-

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	15.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1158	-	-	-	538
HCM Lane V/C Ratio	0.085	-	-	-	0.342
HCM Control Delay (s)	8.4	0	-	-	15.1
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	1.5

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	260	247	195	164	137	148	314	148	294	252
Average Queue (ft)	154	148	85	34	104	118	91	59	142	106
95th Queue (ft)	229	224	153	95	164	162	234	115	252	205
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)							0			
Queuing Penalty (veh)							1			
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)					1	3	0			
Queuing Penalty (veh)					2	13	1			

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	187	252	233	167	161	91	156	174	409	406
Average Queue (ft)	90	145	117	142	101	40	70	137	293	295
95th Queue (ft)	165	222	201	186	159	86	147	216	432	423
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				13	2				0	1
Queuing Penalty (veh)				42	7				4	4
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)							0	0	17	
Queuing Penalty (veh)							1	2	54	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	EB	NB	NB	NB	B24	B24	SB	SB	SB
Directions Served	L	L	R	L	T	T	T	T	T	T	R
Maximum Queue (ft)	78	132	72	114	208	84	150	277	159	156	136
Average Queue (ft)	29	65	27	30	59	13	5	16	93	106	14
95th Queue (ft)	67	117	55	70	149	50	79	141	164	169	81
Link Distance (ft)		633			1949	1949	368	368	138	138	
Upstream Blk Time (%)							0	0	2	4	0
Queuing Penalty (veh)							0	1	18	32	0
Storage Bay Dist (ft)	200		200	150							200
Storage Blk Time (%)					1					4	0
Queuing Penalty (veh)					1					5	1

Intersection: 4: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB	B24	B24
Directions Served	L	L	T	R	L	T	L	T	T	R	L	T	T	R	T	T
Maximum Queue (ft)	206	219	511	83	59	95	179	283	308	174	251	330	363	175	12	17
Average Queue (ft)	151	159	106	27	15	32	52	145	151	16	119	140	152	89	0	1
95th Queue (ft)	225	231	428	58	45	71	115	264	277	84	207	257	281	187	13	13
Link Distance (ft)			3537			275		340	340			368	368		1949	1949
Upstream Blk Time (%)								0	0			0	0			
Queuing Penalty (veh)								0	0			1	3			
Storage Bay Dist (ft)	195	195		150	190		250			150	300			150		
Storage Blk Time (%)	4	8	0			0		1	11	0		0	7	0		
Queuing Penalty (veh)	4	9	2			0		1	2	0		1	23	1		

Intersection: 5: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	T	L	T	T	R
Maximum Queue (ft)	109	179	154	232	223	34	199	452	450	19
Average Queue (ft)	44	83	55	115	116	2	57	194	208	2
95th Queue (ft)	87	149	116	198	192	28	139	374	387	10
Link Distance (ft)	184	367		216	216	2030		652	652	
Upstream Blk Time (%)				1	0					
Queuing Penalty (veh)				3	1					
Storage Bay Dist (ft)			150				175			500
Storage Blk Time (%)			1	2				11	0	
Queuing Penalty (veh)			3	2				7	0	

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB	B68	B68	B66
Directions Served	L	L	T	T	R	L	R	T	T	T
Maximum Queue (ft)	137	152	266	248	214	236	138	503	247	452
Average Queue (ft)	92	49	100	128	68	205	55	342	9	115
95th Queue (ft)	136	143	195	207	153	229	112	594	117	451
Link Distance (ft)				1302		131	131	419	419	625
Upstream Blk Time (%)						58	0	21		0
Queuing Penalty (veh)						292	2	104		4
Storage Bay Dist (ft)	130	130			200					
Storage Blk Time (%)	2	1	3	1	0					
Queuing Penalty (veh)	5	3	7	3	0					

Zone Summary

Zone wide Queuing Penalty: 669

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.3	0.0	0.0	0.4
Total Del/Veh (s)	22.3	17.0	10.2	16.6

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.2	0.0	0.0	0.3
Total Del/Veh (s)	23.2	12.2	11.3	14.3

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.7	0.0	0.0	0.1
Total Del/Veh (s)	53.5	12.2	5.7	11.0

4: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	3.0	0.0	0.0	0.1	0.4
Total Del/Veh (s)	37.6	18.2	25.1	26.1	26.4

5: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0
Total Del/Veh (s)	21.6	33.9	17.7	26.6	21.8

6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	12.8	8.2	10.8	10.6

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0
Total Del/Veh (s)	40.8	16.2	10.6	22.8

Total Zone Performance

Denied Del/Veh (s)	1.6
Total Del/Veh (s)	344.1

Intersection	
Intersection Delay, s/veh	50.4
Intersection LOS	F

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Vol, veh/h	0	281	98	0	148	333	0	252	247
Peak Hour Factor	0.92	0.78	0.78	0.92	0.78	0.78	0.92	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	360	126	0	190	427	0	323	317
Number of Lanes	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	47.8	37.2	65
HCM LOS	E	E	F

Lane	NBLn1	EBLn1	WBLn1	WBLn2
Vol Left, %	51%	0%	100%	0%
Vol Thru, %	0%	74%	0%	100%
Vol Right, %	49%	26%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	499	379	148	333
LT Vol	252	0	148	0
Through Vol	0	281	0	333
RT Vol	247	98	0	0
Lane Flow Rate	640	486	190	427
Geometry Grp	2	5	7	7
Degree of Util (X)	1	0.917	0.423	0.894
Departure Headway (Hd)	6.749	6.901	8.035	7.535
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	544	530	452	482
Service Time	4.768	4.901	5.735	5.235
HCM Lane V/C Ratio	1.176	0.917	0.42	0.886
HCM Control Delay	65	47.8	16.5	46.4
HCM Lane LOS	F	E	C	E
HCM 95th-tile Q	14.1	11	2.1	9.9

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	2	0	3	36	0	27	5	754	103	69	570	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	190	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	3	39	0	29	5	820	112	75	620	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1672	1713	621	1658	1658	876	622	0	0	932	0	0
Stage 1	771	771	-	886	886	-	-	-	-	-	-	-
Stage 2	901	942	-	772	772	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	76	90	487	78	98	348	959	-	-	734	-	-
Stage 1	393	410	-	339	363	-	-	-	-	-	-	-
Stage 2	333	342	-	392	409	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	64	80	487	71	88	348	959	-	-	734	-	-
Mov Cap-2 Maneuver	64	80	-	71	88	-	-	-	-	-	-	-
Stage 1	391	368	-	337	361	-	-	-	-	-	-	-
Stage 2	303	340	-	350	367	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	33	83.6	0.1	1.1
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	959	-	-	134	108	734	-	-
HCM Lane V/C Ratio	0.006	-	-	0.041	0.634	0.102	-	-
HCM Control Delay (s)	8.8	-	-	33	83.6	10.5	-	-
HCM Lane LOS	A	-	-	D	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	3.2	0.3	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	24	12	12	838	568	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	1	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	13	13	911	617	45

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1577	640	662	0	-	0
Stage 1	640	-	-	-	-	-
Stage 2	937	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	121	475	927	-	-	-
Stage 1	525	-	-	-	-	-
Stage 2	381	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	119	475	927	-	-	-
Mov Cap-2 Maneuver	252	-	-	-	-	-
Stage 1	525	-	-	-	-	-
Stage 2	376	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.8	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	927	-	299	-	-
HCM Lane V/C Ratio	0.014	-	0.131	-	-
HCM Control Delay (s)	8.9	-	18.8	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	46	0	14	0	0	5	18	799	8	5	453	122
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	50	0	15	0	0	5	20	868	9	5	492	133

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1485	1486	559	1489	1548	873	625	0	0	877	0	0
Stage 1	570	570	-	912	912	-	-	-	-	-	-	-
Stage 2	915	916	-	577	636	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	103	124	529	102	114	349	956	-	-	770	-	-
Stage 1	506	505	-	328	353	-	-	-	-	-	-	-
Stage 2	327	351	-	502	472	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	99	121	529	97	111	349	956	-	-	770	-	-
Mov Cap-2 Maneuver	99	121	-	97	111	-	-	-	-	-	-	-
Stage 1	495	502	-	321	346	-	-	-	-	-	-	-
Stage 2	315	344	-	484	469	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	64.2	15.5	0.2	0.1
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	956	-	-	122	349	770	-	-
HCM Lane V/C Ratio	0.02	-	-	0.535	0.016	0.007	-	-
HCM Control Delay (s)	8.8	-	-	64.2	15.5	9.7	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.5	0	0	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	20	58	185	23	112	141
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	63	201	25	122	153

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	611	214	0	0	226	0
Stage 1	214	-	-	-	-	-
Stage 2	397	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	457	826	-	-	1342	-
Stage 1	822	-	-	-	-	-
Stage 2	679	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	412	826	-	-	1342	-
Mov Cap-2 Maneuver	412	-	-	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	612	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.3	0	3.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	657	1342	-
HCM Lane V/C Ratio	-	-	0.129	0.091	-
HCM Control Delay (s)	-	-	11.3	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.3	-

Intersection	
Int Delay, s/veh	11

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	142	376	369	36	52	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	189	501	492	48	69	140

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	540	0	-	0	1396	516
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	880	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1028	-	-	-	156	559
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	406	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1028	-	-	-	116	559
Mov Cap-2 Maneuver	-	-	-	-	116	-
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	302	-

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	67.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1028	-	-	-	247
HCM Lane V/C Ratio	0.184	-	-	-	0.848
HCM Control Delay (s)	9.3	0	-	-	67.3
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.7	-	-	-	6.8

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	199	211	154	129	137	149	390	314	175	131
Average Queue (ft)	125	126	77	32	124	135	144	63	77	56
95th Queue (ft)	188	199	135	82	162	168	353	177	146	114
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)							0	0		
Queuing Penalty (veh)							3	0		
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)					1	11	0			
Queuing Penalty (veh)					5	39	1			

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	147	194	185	171	170	103	103	115	132	156
Average Queue (ft)	55	113	84	140	119	20	42	66	27	40
95th Queue (ft)	122	173	158	202	193	68	85	101	80	106
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				15	7	0				
Queuing Penalty (veh)				54	27	0				
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)							0	0	0	
Queuing Penalty (veh)							0	0	0	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	EB	NB	NB	NB	NB	B24	B24	B24	SB	SB
Directions Served	L	L	R	L	T	T	R	T	T		T	T
Maximum Queue (ft)	92	154	73	89	358	249	55	149	152	35	164	169
Average Queue (ft)	13	71	20	18	119	58	2	5	7	1	92	108
95th Queue (ft)	52	132	55	63	278	174	40	78	87	35	179	187
Link Distance (ft)		633			1949	1949		368	368	368	138	138
Upstream Blk Time (%)								0	0		5	7
Queuing Penalty (veh)								0	0		32	45
Storage Bay Dist (ft)	200		200	150			250					
Storage Blk Time (%)		0			6	0						7
Queuing Penalty (veh)		0			1	0						3

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	SB
Directions Served	R
Maximum Queue (ft)	82
Average Queue (ft)	6
95th Queue (ft)	53
Link Distance (ft)	
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	200
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Intersection: 4: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	B25	B25
Directions Served	L	L	T	R	L	T	L	T	T	R	T	T
Maximum Queue (ft)	176	186	148	67	101	109	238	376	382	175	41	44
Average Queue (ft)	71	90	51	19	47	44	41	198	200	27	3	3
95th Queue (ft)	141	159	111	49	90	92	135	361	371	128	24	29
Link Distance (ft)			1180			275		317	317		652	652
Upstream Blk Time (%)								2	3			
Queuing Penalty (veh)								14	16			
Storage Bay Dist (ft)	195	195		150	190		250			150		
Storage Blk Time (%)	0	0	0	0				6	17	0		
Queuing Penalty (veh)	0	0	1	0				3	10	0		

Intersection: 4: Missouri Flat Road & Forni Road

Movement	SB	SB	SB	SB	B24	B24
Directions Served	L	T	T	R	T	T
Maximum Queue (ft)	316	391	390	175	89	63
Average Queue (ft)	201	152	157	70	13	4
95th Queue (ft)	322	351	316	168	124	57
Link Distance (ft)		368	368		1949	1949
Upstream Blk Time (%)		4	1			
Queuing Penalty (veh)		25	5			
Storage Bay Dist (ft)	300			150		
Storage Blk Time (%)	7	1	6	0		
Queuing Penalty (veh)	27	2	16	0		

Intersection: 5: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	B43	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	T	T	L	T	T	R
Maximum Queue (ft)	66	142	155	300	301	126	140	194	442	486	17
Average Queue (ft)	20	52	38	182	199	11	15	77	126	188	2
95th Queue (ft)	51	105	102	295	307	72	84	158	312	388	10
Link Distance (ft)	184	367		216	216	1592	1592		652	652	
Upstream Blk Time (%)				5	7						
Queuing Penalty (veh)				32	47						
Storage Bay Dist (ft)			150					175			500
Storage Blk Time (%)				11				2	4	1	
Queuing Penalty (veh)				4				6	3	0	

Intersection: 6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	R	L	T	T	L	L	R
Maximum Queue (ft)	104	192	230	95	120	132	154	159	30
Average Queue (ft)	37	46	46	38	54	57	87	92	8
95th Queue (ft)	81	116	161	78	101	105	136	142	28
Link Distance (ft)	1592	1592			2033	2033		451	451
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			250	500			275		
Storage Blk Time (%)			0						
Queuing Penalty (veh)			0						

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB	B68
Directions Served	L	L	T	T	R	L	R	T
Maximum Queue (ft)	142	155	546	288	216	186	117	28
Average Queue (ft)	124	115	193	141	94	92	45	1
95th Queue (ft)	164	198	470	229	185	160	91	13
Link Distance (ft)			658	1506		127	127	419
Upstream Blk Time (%)			0			3	0	
Queuing Penalty (veh)			0			7	0	
Storage Bay Dist (ft)	130	130			200			
Storage Blk Time (%)	29	22	2	1	0			
Queuing Penalty (veh)	50	37	5	5	0			

Zone Summary

Zone wide Queuing Penalty: 530

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.2	0.0	0.0	0.3
Total Del/Veh (s)	26.2	11.3	14.2	16.6

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.6	0.0	0.1	0.4
Total Del/Veh (s)	37.8	18.0	24.6	26.0

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.9	0.0	0.0	0.1
Total Del/Veh (s)	50.4	15.3	7.3	12.4

4: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	5.8	0.0	0.1	0.0	1.1
Total Del/Veh (s)	100.5	13.1	28.9	27.8	40.7

5: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.2	0.3	0.0	0.1
Total Del/Veh (s)	32.1	37.8	21.9	29.8	27.3

6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	18.0	5.2	10.9	12.2

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	3.2	1.5
Total Del/Veh (s)	66.4	17.0	13.8	30.3

Total Zone Performance

Denied Del/Veh (s)	3.3
Total Del/Veh (s)	378.7

Intersection	
Intersection Delay, s/veh	39.2
Intersection LOS	E

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Vol, veh/h	0	370	233	0	233	305	0	117	166
Peak Hour Factor	0.92	0.78	0.78	0.92	0.78	0.78	0.92	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	474	299	0	299	391	0	150	213
Number of Lanes	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	61.5	23.4	21.5
HCM LOS	F	C	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2
Vol Left, %	41%	0%	100%	0%
Vol Thru, %	0%	61%	0%	100%
Vol Right, %	59%	39%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	283	603	233	305
LT Vol	117	0	233	0
Through Vol	0	370	0	305
RT Vol	166	233	0	0
Lane Flow Rate	363	773	299	391
Geometry Grp	2	5	7	7
Degree of Util (X)	0.659	1	0.602	0.733
Departure Headway (Hd)	6.538	6.089	7.253	6.752
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	548	603	502	540
Service Time	4.632	4.104	4.953	4.452
HCM Lane V/C Ratio	0.662	1.282	0.596	0.724
HCM Control Delay	21.5	61.5	20.3	25.8
HCM Lane LOS	C	F	C	D
HCM 95th-tile Q	4.8	14.9	3.9	6.1

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	0	3	32	0	166	5	615	9	13	896	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	190	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	3	35	0	180	5	668	10	14	974	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1776	1691	974	1688	1686	673	974	0	0	678	0	0
Stage 1	1002	1002	-	684	684	-	-	-	-	-	-	-
Stage 2	774	689	-	1004	1002	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	64	93	306	74	94	455	708	-	-	914	-	-
Stage 1	292	320	-	439	449	-	-	-	-	-	-	-
Stage 2	391	446	-	291	320	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	38	91	306	72	92	455	708	-	-	914	-	-
Mov Cap-2 Maneuver	38	91	-	72	92	-	-	-	-	-	-	-
Stage 1	290	315	-	436	446	-	-	-	-	-	-	-
Stage 2	234	443	-	283	315	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	38.8	73.3	0.1	0.1
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	708	-	-	111	245	914	-	-
HCM Lane V/C Ratio	0.008	-	-	0.039	0.878	0.015	-	-
HCM Control Delay (s)	10.1	-	-	38.8	73.3	9	-	-
HCM Lane LOS	B	-	-	E	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	7.3	0	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	37	11	8	592	912	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	1	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	12	9	643	991	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1663	1002	1012	0	-	0
Stage 1	1002	-	-	-	-	-
Stage 2	661	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	107	294	685	-	-	-
Stage 1	355	-	-	-	-	-
Stage 2	514	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	106	294	685	-	-	-
Mov Cap-2 Maneuver	237	-	-	-	-	-
Stage 1	355	-	-	-	-	-
Stage 2	507	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.3	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	685	-	248	-	-
HCM Lane V/C Ratio	0.013	-	0.21	-	-
HCM Control Delay (s)	10.3	-	23.3	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.8	-	-

Intersection	
Int Delay, s/veh	28.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	114	0	32	0	0	5	11	481	5	5	835	83
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	124	0	35	0	0	5	12	523	5	5	908	90

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1516	1516	953	1530	1558	526	998	0	0	528	0	0
Stage 1	964	964	-	549	549	-	-	-	-	-	-	-
Stage 2	552	552	-	981	1009	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 98	119	314	96	112	552	693	-	-	1039	-	-
Stage 1	307	334	-	520	516	-	-	-	-	-	-	-
Stage 2	518	515	-	300	318	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 95	116	314	84	110	552	693	-	-	1039	-	-
Mov Cap-2 Maneuver	~ 95	116	-	84	110	-	-	-	-	-	-	-
Stage 1	302	332	-	511	507	-	-	-	-	-	-	-
Stage 2	504	506	-	265	316	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 302.1	11.6	0.2	0
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	693	-	-	112	552	1039	-	-
HCM Lane V/C Ratio	0.017	-	-	1.417	0.01	0.005	-	-
HCM Control Delay (s)	10.3	-	-	$ 302.1	11.6	8.5	-	-
HCM Lane LOS	B	-	-	F	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	11.2	0	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	4.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	35	182	120	27	80	199
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	198	130	29	87	216

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	535	145	0	0	160	0
Stage 1	145	-	-	-	-	-
Stage 2	390	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	506	902	-	-	1419	-
Stage 1	882	-	-	-	-	-
Stage 2	684	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	471	902	-	-	1419	-
Mov Cap-2 Maneuver	471	-	-	-	-	-
Stage 1	882	-	-	-	-	-
Stage 2	636	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	2.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	786	1419	-
HCM Lane V/C Ratio	-	-	0.3	0.061	-
HCM Control Delay (s)	-	-	11.5	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.3	0.2	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	91	458	376	30	21	153
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	121	611	501	40	28	204

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	541	0	-	0	1374	521
Stage 1	-	-	-	-	521	-
Stage 2	-	-	-	-	853	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1028	-	-	-	160	555
Stage 1	-	-	-	-	596	-
Stage 2	-	-	-	-	418	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1028	-	-	-	132	555
Mov Cap-2 Maneuver	-	-	-	-	132	-
Stage 1	-	-	-	-	596	-
Stage 2	-	-	-	-	344	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	25.7
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1028	-	-	-	400
HCM Lane V/C Ratio	0.118	-	-	-	0.58
HCM Control Delay (s)	9	0	-	-	25.7
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.4	-	-	-	3.5

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	248	250	204	170	135	146	191	128	276	245
Average Queue (ft)	147	157	102	45	88	103	64	56	150	121
95th Queue (ft)	222	228	171	116	153	149	133	107	255	214
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)					0	1	0			
Queuing Penalty (veh)					1	5	0			

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	285	352	372	172	173	91	160	174	394	395
Average Queue (ft)	117	191	192	155	141	17	94	123	147	168
95th Queue (ft)	243	307	316	183	190	58	157	185	331	336
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				26	14	0			0	0
Queuing Penalty (veh)				90	50	0			2	2
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)							1	3	8	
Queuing Penalty (veh)							4	20	25	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	EB	NB	NB	NB	B24	B24	SB	SB	SB
Directions Served	L	L	R	L	T	T	T	T	T	T	R
Maximum Queue (ft)	46	130	86	174	355	233	224	273	166	189	123
Average Queue (ft)	7	60	31	43	147	74	8	12	131	135	12
95th Queue (ft)	29	110	67	119	304	179	97	125	191	192	76
Link Distance (ft)		633			1949	1949	368	368	138	138	
Upstream Blk Time (%)							0	0	13	15	0
Queuing Penalty (veh)							0	0	115	138	0
Storage Bay Dist (ft)	200		200	150							200
Storage Blk Time (%)					11	0				15	0
Queuing Penalty (veh)					5	0				11	1

Intersection: 4: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	B25	B25
Directions Served	L	L	T	R	L	T	L	T	T	R	T	T
Maximum Queue (ft)	207	220	922	74	57	94	257	366	377	174	55	93
Average Queue (ft)	190	204	438	30	16	31	75	194	205	15	3	6
95th Queue (ft)	240	248	1077	62	45	73	185	358	371	95	46	57
Link Distance (ft)			1180			275		317	317		652	652
Upstream Blk Time (%)			5					2	3			
Queuing Penalty (veh)			0					10	14			
Storage Bay Dist (ft)	195	195		150	190		250			150		
Storage Blk Time (%)	12	36					0	6	17	0		
Queuing Penalty (veh)	16	49					0	4	4	0		

Intersection: 4: Missouri Flat Road & Forni Road

Movement	SB	SB	SB	SB	B24	B24
Directions Served	L	T	T	R	T	T
Maximum Queue (ft)	324	432	447	175	227	316
Average Queue (ft)	168	261	329	139	29	61
95th Queue (ft)	315	465	531	233	160	241
Link Distance (ft)		368	368		1949	1949
Upstream Blk Time (%)		4	11			
Queuing Penalty (veh)		39	100			
Storage Bay Dist (ft)	300			150		
Storage Blk Time (%)	2	5	23	0		
Queuing Penalty (veh)	12	9	95	3		

Intersection: 5: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	B43	SB	SB	SB	SB	B25
Directions Served	LTR	LTR	L	T	TR	T	T	L	T	T	R	T
Maximum Queue (ft)	154	242	172	289	282	82	85	198	569	600	117	84
Average Queue (ft)	57	113	81	166	178	4	5	69	236	307	7	3
95th Queue (ft)	118	201	162	265	271	45	48	159	517	586	96	53
Link Distance (ft)	184	367		216	216	1592	1592		652	652		317
Upstream Blk Time (%)	0			3	4				0	0		0
Queuing Penalty (veh)	0			16	21				1	2		0
Storage Bay Dist (ft)			150					175			500	
Storage Blk Time (%)			2	10				0	10	3		
Queuing Penalty (veh)			8	8				0	7	0		

Intersection: 5: Missouri Flat Road & Golden Center Drive

Movement	B25
Directions Served	T
Maximum Queue (ft)	44
Average Queue (ft)	2
95th Queue (ft)	36
Link Distance (ft)	317
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	R	L	T	T	L	L	R
Maximum Queue (ft)	168	227	246	78	98	80	171	180	64
Average Queue (ft)	73	82	75	29	39	36	89	97	25
95th Queue (ft)	138	163	207	63	76	72	146	154	52
Link Distance (ft)	1592	1592			2033	2033		451	451
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			250	500			275		
Storage Blk Time (%)			0						
Queuing Penalty (veh)			1						

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB	B68	B68
Directions Served	L	L	T	T	R	L	R	T	T
Maximum Queue (ft)	142	154	608	261	224	208	153	224	10
Average Queue (ft)	121	115	307	137	50	172	62	51	0
95th Queue (ft)	166	208	696	221	129	233	118	173	3
Link Distance (ft)			658	1506		127	127	419	419
Upstream Blk Time (%)			7			25	1	0	
Queuing Penalty (veh)			41			111	2	0	
Storage Bay Dist (ft)	130	130			200				
Storage Blk Time (%)	40	29	9	1	0				
Queuing Penalty (veh)	134	98	22	3	0				

Zone Summary

Zone wide Queuing Penalty: 1301

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.2	0.0	0.0	0.4
Total Del/Veh (s)	22.2	16.7	10.8	16.7

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.2	0.0	0.0	0.3
Total Del/Veh (s)	24.7	12.6	11.8	15.0

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.7	0.0	0.0	0.1
Total Del/Veh (s)	49.3	12.4	6.2	11.1

4: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	3.0	0.0	0.0	0.1	0.4
Total Del/Veh (s)	38.1	17.7	26.8	30.4	28.9

5: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	22.9	34.0	16.4	27.2	21.4

6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	14.2	8.5	10.9	11.3

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.1
Total Del/Veh (s)	48.4	16.3	10.8	25.2

Total Zone Performance

Denied Del/Veh (s)	1.6
Total Del/Veh (s)	372.8

Intersection	
Intersection Delay, s/veh	51.5
Intersection LOS	F

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Vol, veh/h	0	286	98	0	149	334	0	252	252
Peak Hour Factor	0.92	0.78	0.78	0.92	0.78	0.78	0.92	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	367	126	0	191	428	0	323	323
Number of Lanes	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	50.9	37.8	65.1
HCM LOS	F	E	F

Lane	NBLn1	EBLn1	WBLn1	WBLn2
Vol Left, %	50%	0%	100%	0%
Vol Thru, %	0%	74%	0%	100%
Vol Right, %	50%	26%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	504	384	149	334
LT Vol	252	0	149	0
Through Vol	0	286	0	334
RT Vol	252	98	0	0
Lane Flow Rate	646	492	191	428
Geometry Grp	2	5	7	7
Degree of Util (X)	1	0.934	0.427	0.899
Departure Headway (Hd)	6.775	6.827	8.055	7.555
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	543	527	449	484
Service Time	4.791	4.907	5.755	5.255
HCM Lane V/C Ratio	1.19	0.934	0.425	0.884
HCM Control Delay	65.1	50.9	16.6	47.3
HCM Lane LOS	F	F	C	E
HCM 95th-tile Q	14.1	11.5	2.1	10

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	2	0	3	36	0	27	5	764	103	69	640	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	190	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	3	39	0	29	5	830	112	75	696	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1759	1800	697	1745	1745	886	698	0	0	942	0	0
Stage 1	847	847	-	897	897	-	-	-	-	-	-	-
Stage 2	912	953	-	848	848	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	66	80	441	68	86	343	898	-	-	728	-	-
Stage 1	357	378	-	334	358	-	-	-	-	-	-	-
Stage 2	328	338	-	356	378	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	55	71	441	62	77	343	898	-	-	728	-	-
Mov Cap-2 Maneuver	55	71	-	62	77	-	-	-	-	-	-	-
Stage 1	355	339	-	332	356	-	-	-	-	-	-	-
Stage 2	298	336	-	317	339	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	37.6	105.3	0.1	1
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	898	-	-	116	96	728	-	-
HCM Lane V/C Ratio	0.006	-	-	0.047	0.713	0.103	-	-
HCM Control Delay (s)	9	-	-	37.6	105.3	10.5	-	-
HCM Lane LOS	A	-	-	E	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	3.6	0.3	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	34	14	39	838	568	111
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	1	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	15	42	911	617	121

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1674	678	738	0	-	0
Stage 1	678	-	-	-	-	-
Stage 2	996	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	105	452	868	-	-	-
Stage 1	504	-	-	-	-	-
Stage 2	357	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	100	452	868	-	-	-
Mov Cap-2 Maneuver	229	-	-	-	-	-
Stage 1	504	-	-	-	-	-
Stage 2	340	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.7	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	868	-	267	-	-
HCM Lane V/C Ratio	0.049	-	0.195	-	-
HCM Control Delay (s)	9.4	-	21.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.7	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	48	0	15	0	0	5	20	823	8	5	455	122
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	52	0	16	0	0	5	22	895	9	5	495	133

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1517	1519	561	1522	1580	899	627	0	0	903	0	0
Stage 1	572	572	-	942	942	-	-	-	-	-	-	-
Stage 2	945	947	-	580	638	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	98	119	527	97	109	338	955	-	-	753	-	-
Stage 1	505	504	-	316	342	-	-	-	-	-	-	-
Stage 2	314	340	-	500	471	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	94	115	527	92	106	338	955	-	-	753	-	-
Mov Cap-2 Maneuver	94	115	-	92	106	-	-	-	-	-	-	-
Stage 1	493	501	-	309	334	-	-	-	-	-	-	-
Stage 2	302	332	-	481	468	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	72.1	15.8	0.2	0.1
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	955	-	-	117	338	753	-	-
HCM Lane V/C Ratio	0.023	-	-	0.585	0.016	0.007	-	-
HCM Control Delay (s)	8.9	-	-	72.1	15.8	9.8	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.9	0	0	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	22	58	185	26	113	141
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	63	201	28	123	153

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	614	215	0	0	229	0
Stage 1	215	-	-	-	-	-
Stage 2	399	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	455	825	-	-	1339	-
Stage 1	821	-	-	-	-	-
Stage 2	678	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	410	825	-	-	1339	-
Mov Cap-2 Maneuver	410	-	-	-	-	-
Stage 1	821	-	-	-	-	-
Stage 2	610	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	3.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	645	1339	-
HCM Lane V/C Ratio	-	-	0.135	0.092	-
HCM Control Delay (s)	-	-	11.4	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.3	-

Intersection	
Int Delay, s/veh	12

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	145	382	369	36	52	107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	193	509	492	48	69	143

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	540	0	-	0	1412	516
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	896	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1028	-	-	-	152	559
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	399	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1028	-	-	-	112	559
Mov Cap-2 Maneuver	-	-	-	-	112	-
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	294	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	73.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1028	-	-	-	242
HCM Lane V/C Ratio	0.188	-	-	-	0.876
HCM Control Delay (s)	9.3	0	-	-	73.5
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.7	-	-	-	7.2

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	213	214	163	126	137	149	382	267	173	152
Average Queue (ft)	126	127	77	32	120	133	135	59	84	62
95th Queue (ft)	193	194	133	81	164	170	339	159	151	125
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)							0	0		
Queuing Penalty (veh)							2	0		
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)					1	10	0			
Queuing Penalty (veh)					4	37	1			

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	163	212	202	173	168	100	107	115	165	184
Average Queue (ft)	58	118	98	144	125	21	42	66	36	49
95th Queue (ft)	127	184	174	197	193	68	88	102	107	131
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				16	8	0				
Queuing Penalty (veh)				58	31	0				
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)									0	
Queuing Penalty (veh)									0	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	EB	NB	NB	NB	B24	B24	SB	SB	SB
Directions Served	L	L	R	L	T	T	T	T	T	T	R
Maximum Queue (ft)	80	151	60	110	330	211	243	298	157	172	108
Average Queue (ft)	12	70	21	19	125	57	10	12	103	118	7
95th Queue (ft)	46	130	49	72	273	150	105	119	183	189	55
Link Distance (ft)		633			1949	1949	368	368	138	138	
Upstream Blk Time (%)							0	0	6	9	0
Queuing Penalty (veh)							0	0	38	57	0
Storage Bay Dist (ft)	200		200	150							200
Storage Blk Time (%)		0			6	0				9	0
Queuing Penalty (veh)		0			1	0				4	0

Intersection: 4: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	B25
Directions Served	L	L	T	R	L	T	R	L	T	T	R	T
Maximum Queue (ft)	169	176	126	53	109	113	19	219	384	383	175	74
Average Queue (ft)	70	94	49	18	47	42	1	40	203	209	36	3
95th Queue (ft)	138	158	104	44	93	88	19	128	362	379	149	34
Link Distance (ft)			1180			275			317	317		652
Upstream Blk Time (%)									2	3		
Queuing Penalty (veh)									14	18		
Storage Bay Dist (ft)	195	195		150	190		175	250			150	
Storage Blk Time (%)	0	0	0						6	17	0	
Queuing Penalty (veh)	0	0	1						3	10	0	

Intersection: 4: Missouri Flat Road & Forni Road

Movement	B25	SB	SB	SB	SB	B24	B24
Directions Served	T	L	T	T	R	T	T
Maximum Queue (ft)	85	324	415	397	175	60	63
Average Queue (ft)	5	230	201	185	80	7	4
95th Queue (ft)	40	354	426	360	187	52	42
Link Distance (ft)	652		368	368		1949	1949
Upstream Blk Time (%)			5	1			
Queuing Penalty (veh)			31	10			
Storage Bay Dist (ft)		300			150		
Storage Blk Time (%)		11	2	9	0		
Queuing Penalty (veh)		46	5	23	0		

Intersection: 5: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	B43	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	T	T	L	T	T	R
Maximum Queue (ft)	70	154	158	294	292	107	124	188	477	520	17
Average Queue (ft)	22	52	40	177	191	7	10	71	141	226	2
95th Queue (ft)	52	108	111	288	297	48	61	145	347	446	12
Link Distance (ft)	184	367		216	216	1592	1592		652	652	
Upstream Blk Time (%)				4	6						
Queuing Penalty (veh)				25	37						
Storage Bay Dist (ft)			150					175			500
Storage Blk Time (%)				10				0	4	1	
Queuing Penalty (veh)				4				2	4	0	

Intersection: 6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway

Movement	EB	EB	EB	B43	WB	WB	WB	NB	NB	NB
Directions Served	T	T	R	T	L	T	T	L	L	R
Maximum Queue (ft)	93	193	257	7	110	128	137	172	181	32
Average Queue (ft)	36	46	78	0	46	55	58	89	96	8
95th Queue (ft)	76	123	214	5	91	104	107	144	155	28
Link Distance (ft)	1592	1592		216		2033	2033		451	451
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			250		500			275		
Storage Blk Time (%)			0							
Queuing Penalty (veh)			0							

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB	B68
Directions Served	L	L	T	T	R	L	R	T
Maximum Queue (ft)	142	154	599	306	224	186	128	23
Average Queue (ft)	123	111	224	142	99	93	46	1
95th Queue (ft)	162	203	580	234	193	162	98	12
Link Distance (ft)			658	1506		127	127	419
Upstream Blk Time (%)			3			3	0	
Queuing Penalty (veh)			16			8	1	
Storage Bay Dist (ft)	130	130			200			
Storage Blk Time (%)	31	24	2	1	0			
Queuing Penalty (veh)	53	41	7	6	0			

Zone Summary

Zone wide Queuing Penalty: 599

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.2	0.0	0.0	0.3
Total Del/Veh (s)	29.4	11.4	14.5	17.7

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.6	0.0	0.2	0.5
Total Del/Veh (s)	36.4	18.1	26.1	26.2

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.9	0.0	0.0	0.1
Total Del/Veh (s)	54.5	14.9	7.2	12.3

4: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	4.2	0.0	0.1	0.0	0.8
Total Del/Veh (s)	83.7	12.5	26.6	25.8	35.9

5: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.7	0.0	0.3
Total Del/Veh (s)	33.5	42.7	24.2	33.5	30.4

6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	18.6	5.2	11.1	12.6

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	3.5	1.6
Total Del/Veh (s)	75.5	17.7	15.1	33.4

Total Zone Performance

Denied Del/Veh (s)	3.3
Total Del/Veh (s)	389.2

Intersection	
Intersection Delay, s/veh	39.4
Intersection LOS	E

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Vol, veh/h	0	372	233	0	238	309	0	117	168
Peak Hour Factor	0.92	0.78	0.78	0.92	0.78	0.78	0.92	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	477	299	0	305	396	0	150	215
Number of Lanes	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	61.6	24.1	21.8
HCM LOS	F	C	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2
Vol Left, %	41%	0%	100%	0%
Vol Thru, %	0%	61%	0%	100%
Vol Right, %	59%	39%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	285	605	238	309
LT Vol	117	0	238	0
Through Vol	0	372	0	309
RT Vol	168	233	0	0
Lane Flow Rate	365	776	305	396
Geometry Grp	2	5	7	7
Degree of Util (X)	0.664	1	0.616	0.744
Departure Headway (Hd)	6.546	6.111	7.266	6.765
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	548	597	500	539
Service Time	4.639	4.126	4.966	4.465
HCM Lane V/C Ratio	0.666	1.3	0.61	0.735
HCM Control Delay	21.8	61.6	20.9	26.6
HCM Lane LOS	C	F	C	D
HCM 95th-tile Q	4.9	14.8	4.1	6.4

Intersection	
Int Delay, s/veh	11.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	0	3	32	0	166	5	680	9	13	912	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	190	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	3	35	0	180	5	739	10	14	991	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1865	1780	991	1776	1775	744	991	0	0	749	0	0
Stage 1	1020	1020	-	755	755	-	-	-	-	-	-	-
Stage 2	845	760	-	1021	1020	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	56	82	299	64	83	415	698	-	-	860	-	-
Stage 1	285	314	-	401	417	-	-	-	-	-	-	-
Stage 2	357	414	-	285	314	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	31	80	299	62	81	415	698	-	-	860	-	-
Mov Cap-2 Maneuver	31	80	-	62	81	-	-	-	-	-	-	-
Stage 1	283	309	-	398	414	-	-	-	-	-	-	-
Stage 2	200	411	-	277	309	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	44.7	107.3	0.1	0.1
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	698	-	-	95	216	860	-	-
HCM Lane V/C Ratio	0.008	-	-	0.046	0.996	0.016	-	-
HCM Control Delay (s)	10.2	-	-	44.7	107.3	9.3	-	-
HCM Lane LOS	B	-	-	E	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	8.9	0.1	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	102	38	10	592	912	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	1	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	111	41	11	643	991	38

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1675	1010	1029	0	-	0
Stage 1	1010	-	-	-	-	-
Stage 2	665	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 105	291	675	-	-	-
Stage 1	352	-	-	-	-	-
Stage 2	511	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 103	291	675	-	-	-
Mov Cap-2 Maneuver	234	-	-	-	-	-
Stage 1	352	-	-	-	-	-
Stage 2	503	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	40.4	0.2	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	675	-	247	-	-
HCM Lane V/C Ratio	0.016	-	0.616	-	-
HCM Control Delay (s)	10.4	-	40.4	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0	-	3.7	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	32.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	115	0	32	0	0	5	14	483	5	5	859	85
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	125	0	35	0	0	5	15	525	5	5	934	92

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1552	1552	980	1566	1595	528	1026	0	0	530	0	0
Stage 1	991	991	-	558	558	-	-	-	-	-	-	-
Stage 2	561	561	-	1008	1037	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 92	113	303	90	107	550	677	-	-	1037	-	-
Stage 1	296	324	-	514	512	-	-	-	-	-	-	-
Stage 2	512	510	-	290	308	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 89	110	303	78	104	550	677	-	-	1037	-	-
Mov Cap-2 Maneuver	~ 89	110	-	78	104	-	-	-	-	-	-	-
Stage 1	289	322	-	503	501	-	-	-	-	-	-	-
Stage 2	496	499	-	255	307	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 349.7	11.6	0.3	0
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	677	-	-	105	550	1037	-	-
HCM Lane V/C Ratio	0.022	-	-	1.522	0.01	0.005	-	-
HCM Control Delay (s)	10.4	-	-	$ 349.7	11.6	8.5	-	-
HCM Lane LOS	B	-	-	F	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	11.9	0	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	4.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	37	183	120	31	80	199
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	199	130	34	87	216

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	537	147	0	0	164	0
Stage 1	147	-	-	-	-	-
Stage 2	390	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	505	900	-	-	1414	-
Stage 1	880	-	-	-	-	-
Stage 2	684	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	470	900	-	-	1414	-
Mov Cap-2 Maneuver	470	-	-	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	636	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	2.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	780	1414	-
HCM Lane V/C Ratio	-	-	0.307	0.061	-
HCM Control Delay (s)	-	-	11.6	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.3	0.2	-

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	95	458	382	30	21	155
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	127	611	509	40	28	207

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	549	0	-	0	1393	529
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	864	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1021	-	-	-	156	550
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	413	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1021	-	-	-	127	550
Mov Cap-2 Maneuver	-	-	-	-	127	-
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	335	-

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	26.7
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1021	-	-	-	394
HCM Lane V/C Ratio	0.124	-	-	-	0.596
HCM Control Delay (s)	9	0	-	-	26.7
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.4	-	-	-	3.7

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	299	314	205	146	135	146	212	117	323	267
Average Queue (ft)	162	173	99	43	92	106	63	54	152	127
95th Queue (ft)	269	280	174	104	155	152	142	100	261	224
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)		0	0		0	2	0			0
Queuing Penalty (veh)		1	0		1	7	1			0

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	293	349	333	174	179	95	160	174	408	407
Average Queue (ft)	107	187	188	155	140	18	98	126	169	185
95th Queue (ft)	228	302	306	189	191	61	163	189	354	356
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				26	14	0			0	0
Queuing Penalty (veh)				95	49	0			2	3
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)							1	4	10	
Queuing Penalty (veh)							4	24	33	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	EB	NB	NB	NB	NB	B24	B24	SB	SB	SB
Directions Served	L	L	R	L	T	T	R	T	T	T	T	R
Maximum Queue (ft)	40	151	94	155	342	241	28	78	230	161	179	123
Average Queue (ft)	6	64	32	44	145	65	1	3	12	132	139	12
95th Queue (ft)	27	126	70	113	291	162	28	53	122	190	189	76
Link Distance (ft)		633			1949	1949		368	368	138	138	
Upstream Blk Time (%)								0	0	13	15	0
Queuing Penalty (veh)								0	1	118	140	0
Storage Bay Dist (ft)	200		200	150			250					200
Storage Blk Time (%)		0			10	0					15	0
Queuing Penalty (veh)		0			4	0					11	1

Intersection: 4: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	B25
Directions Served	L	L	T	R	L	T	R	L	T	T	R	T
Maximum Queue (ft)	207	220	920	96	57	96	20	242	372	379	140	25
Average Queue (ft)	186	200	351	33	14	30	1	67	185	192	17	1
95th Queue (ft)	241	251	901	70	43	73	20	174	354	365	100	14
Link Distance (ft)			1180			275			317	317		652
Upstream Blk Time (%)			1						2	2		
Queuing Penalty (veh)			0						8	12		
Storage Bay Dist (ft)	195	195		150	190		175	250			150	
Storage Blk Time (%)	10	32		0		0			6	16	0	
Queuing Penalty (veh)	13	44		0		0			5	4	0	

Intersection: 4: Missouri Flat Road & Forni Road

Movement	B25	SB	SB	SB	SB	B24	B24
Directions Served	T	L	T	T	R	T	T
Maximum Queue (ft)	38	319	439	455	175	299	396
Average Queue (ft)	2	164	256	325	134	33	64
95th Queue (ft)	18	297	453	522	233	174	256
Link Distance (ft)	652		368	368		1949	1949
Upstream Blk Time (%)			3	10			
Queuing Penalty (veh)			29	95			
Storage Bay Dist (ft)		300			150		
Storage Blk Time (%)		0	5	22	0		
Queuing Penalty (veh)		1	9	92	2		

Intersection: 5: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	B43	SB	SB	SB	SB	B25
Directions Served	LTR	LTR	L	T	TR	T	T	L	T	T	R	T
Maximum Queue (ft)	135	258	174	286	289	101	122	200	635	669	119	3
Average Queue (ft)	56	122	86	181	185	10	9	77	265	345	5	0
95th Queue (ft)	107	217	172	288	289	62	59	171	563	640	79	4
Link Distance (ft)	184	367		216	216	1592	1592		652	652		317
Upstream Blk Time (%)				7	6				0	1		
Queuing Penalty (veh)				36	31				1	5		
Storage Bay Dist (ft)			150					175			500	
Storage Blk Time (%)			6	12				0	13	5		
Queuing Penalty (veh)			27	9				1	9	0		

Intersection: 5: Missouri Flat Road & Golden Center Drive

Movement	B25
Directions Served	T
Maximum Queue (ft)	141
Average Queue (ft)	6
95th Queue (ft)	75
Link Distance (ft)	317
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway

Movement	EB	EB	EB	B43	WB	WB	WB	NB	NB	NB
Directions Served	T	T	R	T	L	T	T	L	L	R
Maximum Queue (ft)	167	248	255	4	72	78	84	181	198	66
Average Queue (ft)	72	86	81	0	29	35	38	92	101	29
95th Queue (ft)	135	180	225	4	62	69	71	152	164	56
Link Distance (ft)	1592	1592		216		2033	2033		451	451
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			250		500			275		
Storage Blk Time (%)		0	0							
Queuing Penalty (veh)		0	1							

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB	B68	B68
Directions Served	L	L	T	T	R	L	R	T	T
Maximum Queue (ft)	142	155	637	296	216	218	152	271	4
Average Queue (ft)	126	122	337	148	60	177	63	76	0
95th Queue (ft)	165	206	742	241	159	238	121	216	4
Link Distance (ft)			658	1506		127	127	419	419
Upstream Blk Time (%)			9			31	1		
Queuing Penalty (veh)			58			143	3		
Storage Bay Dist (ft)	130	130			200				
Storage Blk Time (%)	47	35	8	2	0				
Queuing Penalty (veh)	157	115	19	5	0				

Zone Summary

Zone wide Queuing Penalty: 1432

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.2	0.0	0.0	0.4
Total Del/Veh (s)	22.9	20.2	11.5	18.6

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.3	0.0	0.0	0.3
Total Del/Veh (s)	23.6	16.1	12.9	16.9

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	2.2	0.0	0.0	0.1
Total Del/Veh (s)	41.3	19.1	4.9	13.1

4: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	3.0	0.0	0.0	0.0	0.4
Total Del/Veh (s)	41.2	21.8	26.6	32.1	30.5

5: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0
Total Del/Veh (s)	26.9	38.8	17.4	29.5	23.0

6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	15.8	10.5	13.6	13.4

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	13.0	0.6	0.0	4.3
Total Del/Veh (s)	114.0	17.3	9.3	45.7

Total Zone Performance

Denied Del/Veh (s)	4.9
Total Del/Veh (s)	511.7

Intersection	
Intersection Delay, s/veh	61.5
Intersection LOS	F

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Vol, veh/h	0	320	110	0	155	380	0	280	255
Peak Hour Factor	0.92	0.78	0.78	0.92	0.78	0.78	0.92	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	410	141	0	199	487	0	359	327
Number of Lanes	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	66	54	65.4
HCM LOS	F	F	F

Lane	NBLn1	EBLn1	WBLn1	WBLn2
Vol Left, %	52%	0%	100%	0%
Vol Thru, %	0%	74%	0%	100%
Vol Right, %	48%	26%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	535	430	155	380
LT Vol	280	0	155	0
Through Vol	0	320	0	380
RT Vol	255	110	0	0
Lane Flow Rate	686	551	199	487
Geometry Grp	2	5	7	7
Degree of Util (X)	1	1	0.449	1
Departure Headway (Hd)	6.847	6.975	8.131	7.631
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	535	524	445	477
Service Time	4.847	4.975	5.831	5.331
HCM Lane V/C Ratio	1.282	1.052	0.447	1.021
HCM Control Delay	65.4	66	17.3	68.9
HCM Lane LOS	F	F	C	F
HCM 95th-tile Q	14	13.9	2.3	13.3

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	5	40	0	30	5	845	115	80	640	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	190	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	43	0	33	5	918	125	87	696	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1878	1924	696	1864	1862	981	696	0	0	1043	0	0
Stage 1	870	870	-	992	992	-	-	-	-	-	-	-
Stage 2	1008	1054	-	872	870	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	54	67	442	56	73	303	900	-	-	667	-	-
Stage 1	346	369	-	296	324	-	-	-	-	-	-	-
Stage 2	290	303	-	345	369	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	43	58	442	50	63	303	900	-	-	667	-	-
Mov Cap-2 Maneuver	43	58	-	50	63	-	-	-	-	-	-	-
Stage 1	344	321	-	294	322	-	-	-	-	-	-	-
Stage 2	257	301	-	296	321	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.2	188.1	0	1.2
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	900	-	-	442	78	667	-	-
HCM Lane V/C Ratio	0.006	-	-	0.012	0.975	0.13	-	-
HCM Control Delay (s)	9	-	-	13.2	188.1	11.2	-	-
HCM Lane LOS	A	-	-	B	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	5.2	0.4	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	30	15	15	1030	560	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	1	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	16	16	1120	609	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1782	630	652	0	-	0
Stage 1	630	-	-	-	-	-
Stage 2	1152	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	90	482	935	-	-	-
Stage 1	531	-	-	-	-	-
Stage 2	301	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	88	482	935	-	-	-
Mov Cap-2 Maneuver	210	-	-	-	-	-
Stage 1	531	-	-	-	-	-
Stage 2	296	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.1	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	935	-	259	-	-
HCM Lane V/C Ratio	0.017	-	0.189	-	-
HCM Control Delay (s)	8.9	-	22.1	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	60	0	15	0	0	5	20	935	10	5	410	115
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	65	0	16	0	0	5	22	1016	11	5	446	125

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1587	1590	508	1592	1647	1022	571	0	0	1027	0	0
Stage 1	519	519	-	1065	1065	-	-	-	-	-	-	-
Stage 2	1068	1071	-	527	582	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	87	108	565	87	99	287	1002	-	-	676	-	-
Stage 1	540	533	-	269	299	-	-	-	-	-	-	-
Stage 2	268	297	-	535	499	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	83	105	565	83	96	287	1002	-	-	676	-	-
Mov Cap-2 Maneuver	83	105	-	83	96	-	-	-	-	-	-	-
Stage 1	528	529	-	263	292	-	-	-	-	-	-	-
Stage 2	257	290	-	516	495	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	121.6	17.8	0.2	0.1
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1002	-	-	100	287	676	-	-
HCM Lane V/C Ratio	0.022	-	-	0.815	0.019	0.008	-	-
HCM Control Delay (s)	8.7	-	-	121.6	17.8	10.4	-	-
HCM Lane LOS	A	-	-	F	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	4.5	0.1	0	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	20	60	170	25	125	145
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	65	185	27	136	158

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	627	198	0	0	212	0
Stage 1	198	-	-	-	-	-
Stage 2	429	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	447	843	-	-	1358	-
Stage 1	835	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	398	843	-	-	1358	-
Mov Cap-2 Maneuver	398	-	-	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	585	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.3	0	3.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	659	1358	-
HCM Lane V/C Ratio	-	-	0.132	0.1	-
HCM Control Delay (s)	-	-	11.3	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.3	-

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	150	415	415	40	55	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	200	553	553	53	73	147

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	607	0	-	0	1533	580
Stage 1	-	-	-	-	580	-
Stage 2	-	-	-	-	953	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	971	-	-	-	128	514
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	375	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	971	-	-	-	90	514
Mov Cap-2 Maneuver	-	-	-	-	198	-
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	264	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	33.9
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	971	-	-	-	336
HCM Lane V/C Ratio	0.206	-	-	-	0.655
HCM Control Delay (s)	9.7	0	-	-	33.9
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.8	-	-	-	4.4

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	219	218	166	119	137	149	408	384	195	157
Average Queue (ft)	123	120	84	32	131	141	220	108	91	65
95th Queue (ft)	188	187	144	81	150	163	438	281	165	131
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)							2	0		
Queuing Penalty (veh)							14	1		
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)					2	16	0			
Queuing Penalty (veh)					7	66	2			

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	190	232	229	173	167	60	125	128	132	154
Average Queue (ft)	78	134	111	156	137	8	49	72	30	40
95th Queue (ft)	153	205	192	185	191	36	94	109	87	107
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				28	13					
Queuing Penalty (veh)				110	50					
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)							0	0	0	
Queuing Penalty (veh)							0	0	0	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	NB	NB	NB	NB	B24	B24	SB	SB	SB
Directions Served	L	R	L	T	T	R	T	T	T	T	R
Maximum Queue (ft)	107	57	164	507	358	110	143	202	157	166	28
Average Queue (ft)	37	22	21	224	87	4	8	15	90	104	1
95th Queue (ft)	88	50	88	468	248	57	93	137	178	190	20
Link Distance (ft)	633			1949	1949		368	368	138	138	
Upstream Blk Time (%)							0	0	4	7	0
Queuing Penalty (veh)							0	1	29	46	0
Storage Bay Dist (ft)		200	150			250					200
Storage Blk Time (%)				20	0	0				7	0
Queuing Penalty (veh)				3	1	0				1	0

Intersection: 4: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	B25	B25	SB	SB	SB	SB	B24
Directions Served	L	L	T	R	L	T	L	T	T	R	T	T	L	T	T	R	T
Maximum Queue (ft)	192	197	154	65	110	121	259	386	395	175	106	110	324	439	419	175	116
Average Queue (ft)	93	108	59	21	49	50	62	218	221	35	6	7	238	229	206	101	14
95th Queue (ft)	169	178	123	54	93	102	183	390	400	147	47	49	364	450	386	211	92
Link Distance (ft)			1180			275		317	317		652	652		368	368		1949
Upstream Blk Time (%)								4	4					9	1		
Queuing Penalty (veh)								24	27					62	9		
Storage Bay Dist (ft)	195	195		150	190		250			150			300			150	
Storage Blk Time (%)	0	1	0					8	18	0			15	3	11	0	
Queuing Penalty (veh)	0	1	2					5	11	0			64	7	34	1	

Intersection: 4: Missouri Flat Road & Forni Road

Movement	B24
Directions Served	T
Maximum Queue (ft)	50
Average Queue (ft)	4
95th Queue (ft)	36
Link Distance (ft)	1949
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	B43	SB	SB	SB	SB	B25
Directions Served	LTR	LTR	L	T	TR	T	T	L	T	T	R	T
Maximum Queue (ft)	81	150	166	297	298	193	209	194	458	538	119	7
Average Queue (ft)	25	70	43	203	217	23	26	86	167	242	6	0
95th Queue (ft)	61	130	121	315	324	112	116	172	375	468	79	7
Link Distance (ft)	184	367		216	216	1592	1592		652	652		317
Upstream Blk Time (%)				8	10				0	0		
Queuing Penalty (veh)				56	74				0	0		
Storage Bay Dist (ft)			150					175			500	
Storage Blk Time (%)				15				2	6	1		
Queuing Penalty (veh)				6				7	6	0		

Intersection: 6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway

Movement	EB	EB	EB	B43	WB	WB	WB	NB	NB	NB
Directions Served	T	T	R	T	L	T	T	L	L	R
Maximum Queue (ft)	109	279	262	7	141	145	159	191	198	30
Average Queue (ft)	45	61	92	0	53	65	65	113	116	9
95th Queue (ft)	91	163	234	5	105	123	125	176	180	28
Link Distance (ft)	1592	1592		216		2033	2033		451	451
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			250		500			275		
Storage Blk Time (%)			1							
Queuing Penalty (veh)			1							

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB	B68
Directions Served	L	L	T	T	R	L	R	T
Maximum Queue (ft)	142	155	676	339	224	158	96	4
Average Queue (ft)	138	145	522	159	115	72	36	0
95th Queue (ft)	154	190	876	277	216	131	76	4
Link Distance (ft)			658	1506		127	127	419
Upstream Blk Time (%)			21			1	0	
Queuing Penalty (veh)			132			3	0	
Storage Bay Dist (ft)	130	130			200			
Storage Blk Time (%)	60	50	4	2	0			
Queuing Penalty (veh)	130	107	15	14	1			

Zone Summary

Zone wide Queuing Penalty: 1125

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.2	0.0	0.0	0.3
Total Del/Veh (s)	32.6	10.8	15.6	18.8

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.6	0.0	0.0	0.4
Total Del/Veh (s)	37.0	19.1	23.3	25.6

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	2.6	0.0	0.1	0.1
Total Del/Veh (s)	47.9	16.3	6.1	11.5

4: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	113.0	0.0	0.0	0.1	21.5
Total Del/Veh (s)	191.9	15.8	33.0	33.1	61.1

5: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.3	0.9	0.1	0.4
Total Del/Veh (s)	36.2	45.1	25.3	35.9	32.2

6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	20.6	6.8	12.8	14.7

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	2.0	0.0	0.0	0.6
Total Del/Veh (s)	41.0	14.2	9.7	20.8

Total Zone Performance

Denied Del/Veh (s)	27.8
Total Del/Veh (s)	470.8

Intersection	
Intersection Delay, s/veh	44.6
Intersection LOS	E

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Vol, veh/h	0	415	260	0	255	345	0	135	185
Peak Hour Factor	0.92	0.78	0.78	0.92	0.78	0.78	0.92	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	532	333	0	327	442	0	173	237
Number of Lanes	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	63.1	33	27.5
HCM LOS	F	D	D

Lane	NBLn1	EBLn1	WBLn1	WBLn2
Vol Left, %	42%	0%	100%	0%
Vol Thru, %	0%	61%	0%	100%
Vol Right, %	58%	39%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	320	675	255	345
LT Vol	135	0	255	0
Through Vol	0	415	0	345
RT Vol	185	260	0	0
Lane Flow Rate	410	865	327	442
Geometry Grp	2	5	7	7
Degree of Util (X)	0.755	1	0.681	0.861
Departure Headway (Hd)	6.626	6.393	7.504	7.004
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	542	571	484	522
Service Time	4.714	4.405	5.204	4.704
HCM Lane V/C Ratio	0.756	1.515	0.676	0.847
HCM Control Delay	27.5	63.1	24.7	39.2
HCM Lane LOS	D	F	C	E
HCM 95th-tile Q	6.6	14.5	5.1	9.2

Intersection	
Int Delay, s/veh	19.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	5	35	0	180	5	665	10	15	1015	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	190	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	38	0	196	5	723	11	16	1103	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1973	1881	1103	1878	1875	728	1103	0	0	734	0	0
Stage 1	1136	1136	-	739	739	-	-	-	-	-	-	-
Stage 2	837	745	-	1139	1136	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	47	71	257	54	72	423	633	-	-	871	-	-
Stage 1	246	277	-	409	424	-	-	-	-	-	-	-
Stage 2	361	421	-	245	277	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	25	69	257	52	70	423	633	-	-	871	-	-
Mov Cap-2 Maneuver	25	69	-	52	70	-	-	-	-	-	-	-
Stage 1	244	272	-	406	421	-	-	-	-	-	-	-
Stage 2	192	418	-	235	272	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.3	174.9	0.1	0.1
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	633	-	-	257	196	871	-	-
HCM Lane V/C Ratio	0.009	-	-	0.021	1.192	0.019	-	-
HCM Control Delay (s)	10.7	-	-	19.3	174.9	9.2	-	-
HCM Lane LOS	B	-	-	C	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	12	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	35	10	5	565	970	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	1	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	11	5	614	1054	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1690	1065	1076	0	-	0
Stage 1	1065	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	103	270	648	-	-	-
Stage 1	331	-	-	-	-	-
Stage 2	534	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	102	270	648	-	-	-
Mov Cap-2 Maneuver	229	-	-	-	-	-
Stage 1	331	-	-	-	-	-
Stage 2	530	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.1	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	648	-	237	-	-
HCM Lane V/C Ratio	0.008	-	0.206	-	-
HCM Control Delay (s)	10.6	-	24.1	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.8	-	-

Intersection	
Int Delay, s/veh	22

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	105	0	30	0	0	5	10	450	5	5	850	90
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	114	0	33	0	0	5	11	489	5	5	924	98

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1500	1500	973	1514	1547	492	1022	0	0	495	0	0
Stage 1	984	984	-	514	514	-	-	-	-	-	-	-
Stage 2	516	516	-	1000	1033	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 100	122	306	98	114	577	679	-	-	1069	-	-
Stage 1	299	327	-	543	535	-	-	-	-	-	-	-
Stage 2	542	534	-	293	310	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 97	119	306	86	112	577	679	-	-	1069	-	-
Mov Cap-2 Maneuver	~ 97	119	-	86	112	-	-	-	-	-	-	-
Stage 1	294	325	-	534	526	-	-	-	-	-	-	-
Stage 2	528	525	-	261	309	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	251.1	11.3	0.2	0
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	679	-	-	114	577	1069	-	-
HCM Lane V/C Ratio	0.016	-	-	1.287	0.009	0.005	-	-
HCM Control Delay (s)	10.4	-	-	251.1	11.3	8.4	-	-
HCM Lane LOS	B	-	-	F	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	9.7	0	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	4.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	40	185	125	30	80	210
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	201	136	33	87	228

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	554	152	0	0	168	0
Stage 1	152	-	-	-	-	-
Stage 2	402	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	493	894	-	-	1410	-
Stage 1	876	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	458	894	-	-	1410	-
Mov Cap-2 Maneuver	458	-	-	-	-	-
Stage 1	876	-	-	-	-	-
Stage 2	628	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	2.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	765	1410	-
HCM Lane V/C Ratio	-	-	0.32	0.062	-
HCM Control Delay (s)	-	-	11.9	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.4	0.2	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	95	515	420	25	20	160
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	127	687	560	33	27	213

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	593	0	-	0	1517	577
Stage 1	-	-	-	-	577	-
Stage 2	-	-	-	-	940	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	983	-	-	-	131	516
Stage 1	-	-	-	-	562	-
Stage 2	-	-	-	-	380	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	983	-	-	-	104	516
Mov Cap-2 Maneuver	-	-	-	-	221	-
Stage 1	-	-	-	-	562	-
Stage 2	-	-	-	-	301	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	21.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	983	-	-	-	449
HCM Lane V/C Ratio	0.129	-	-	-	0.535
HCM Control Delay (s)	9.2	0	-	-	21.9
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	3.1

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	333	347	256	177	134	144	174	122	298	268
Average Queue (ft)	178	187	121	48	77	94	66	59	161	138
95th Queue (ft)	313	325	234	125	146	141	129	109	260	227
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)		1	0		0	1	0			
Queuing Penalty (veh)		5	0		1	4	2			

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	309	374	373	173	178	30	161	174	369	377
Average Queue (ft)	123	200	201	156	148	4	98	125	148	163
95th Queue (ft)	262	331	333	182	187	20	164	188	332	338
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				28	20				0	0
Queuing Penalty (veh)				107	77				3	3
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)		0					0	3	8	
Queuing Penalty (veh)		0					3	21	25	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	NB	NB	NB	NB	B24	B24	SB	SB	SB
Directions Served	L	R	L	T	T	R	T	T	T	T	R
Maximum Queue (ft)	79	75	174	403	289	82	180	276	167	190	54
Average Queue (ft)	27	26	37	154	89	6	6	15	116	126	2
95th Queue (ft)	64	60	109	322	224	71	86	134	198	207	32
Link Distance (ft)	633			1949	1949		368	368	138	138	
Upstream Blk Time (%)							0	0	9	12	0
Queuing Penalty (veh)							0	1	90	115	0
Storage Bay Dist (ft)		200	150			250					200
Storage Blk Time (%)				12	0	0				12	0
Queuing Penalty (veh)				4	2	0				2	0

Intersection: 4: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	B25	B25	SB	SB	SB	SB	B24
Directions Served	L	L	T	R	L	T	L	T	T	R	T	T	L	T	T	R	T
Maximum Queue (ft)	207	220	1226	81	57	94	274	396	395	160	127	130	325	454	471	175	804
Average Queue (ft)	203	218	993	32	16	34	114	227	232	12	11	12	187	334	395	154	212
95th Queue (ft)	223	227	1504	67	46	77	261	415	422	82	72	77	343	516	542	225	728
Link Distance (ft)			1180			275		317	317		652	652		368	368		1949
Upstream Blk Time (%)			43					6	6					10	24		
Queuing Penalty (veh)			0					33	36					104	242		
Storage Bay Dist (ft)	195	195		150	190		250			150			300			150	
Storage Blk Time (%)	18	60				0	1	10	21	0			1	12	31	1	
Queuing Penalty (veh)	29	97				0	6	10	5	0			7	21	145	8	

Intersection: 4: Missouri Flat Road & Forni Road

Movement	B24
Directions Served	T
Maximum Queue (ft)	920
Average Queue (ft)	294
95th Queue (ft)	871
Link Distance (ft)	1949
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	B43	SB	SB	SB	SB	B25	B25
Directions Served	LTR	LTR	L	T	TR	T	T	L	T	T	R	T	T
Maximum Queue (ft)	155	271	174	292	294	134	141	200	656	687	374	126	246
Average Queue (ft)	66	143	101	199	204	14	15	73	312	379	19	5	11
95th Queue (ft)	130	240	185	309	311	78	83	165	654	710	171	65	100
Link Distance (ft)	184	367		216	216	1592	1592		652	652		317	317
Upstream Blk Time (%)	0			9	9				1	2		0	0
Queuing Penalty (veh)	0			50	52				5	17		0	1
Storage Bay Dist (ft)			150					175			500		
Storage Blk Time (%)			6	15				0	14	8	0		
Queuing Penalty (veh)			29	13				2	9	1	0		

Intersection: 6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway

Movement	EB	EB	EB	B43	WB	WB	WB	NB	NB	NB
Directions Served	T	T	R	T	L	T	T	L	L	R
Maximum Queue (ft)	168	379	274	32	106	113	111	198	204	69
Average Queue (ft)	81	111	117	1	38	47	47	101	111	27
95th Queue (ft)	146	249	271	30	76	91	89	163	177	53
Link Distance (ft)	1592	1592		216		2033	2033		451	451
Upstream Blk Time (%)				0						
Queuing Penalty (veh)				0						
Storage Bay Dist (ft)			250		500			275		
Storage Blk Time (%)		0	2						0	
Queuing Penalty (veh)		0	5						0	

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB	B68	B68
Directions Served	L	L	T	T	R	L	R	T	T
Maximum Queue (ft)	142	154	554	247	170	200	157	84	10
Average Queue (ft)	112	93	199	118	41	136	64	8	0
95th Queue (ft)	159	197	490	199	109	205	121	51	7
Link Distance (ft)			658	1506		127	127	419	419
Upstream Blk Time (%)			2			9	1		
Queuing Penalty (veh)			13			42	3		
Storage Bay Dist (ft)	130	130			200				
Storage Blk Time (%)	21	13	7	1	0				
Queuing Penalty (veh)	84	53	18	2	0				

Zone Summary

Zone wide Queuing Penalty: 1606

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.2	0.0	0.0	0.3
Total Del/Veh (s)	23.3	18.9	12.0	18.3

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.3	0.0	0.0	0.3
Total Del/Veh (s)	24.4	16.3	13.2	17.2

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	2.0	0.0	0.0	0.1
Total Del/Veh (s)	47.3	19.3	4.8	13.3

4: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	3.0	0.0	0.0	0.2	0.5
Total Del/Veh (s)	43.7	21.1	28.5	32.4	31.5

5: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0
Total Del/Veh (s)	28.8	38.9	18.3	30.4	24.0

6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	17.4	11.1	13.4	14.2

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	28.5	0.6	0.0	8.9
Total Del/Veh (s)	125.9	17.9	9.1	48.3

Total Zone Performance

Denied Del/Veh (s)	8.5
Total Del/Veh (s)	554.5

Intersection	
Intersection Delay, s/veh	61.5
Intersection LOS	F

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Vol, veh/h	0	325	110	0	156	381	0	280	260
Peak Hour Factor	0.92	0.78	0.78	0.92	0.78	0.78	0.92	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	417	141	0	200	488	0	359	333
Number of Lanes	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	66	53.9	65.3
HCM LOS	F	F	F

Lane	NBLn1	EBLn1	WBLn1	WBLn2
Vol Left, %	52%	0%	100%	0%
Vol Thru, %	0%	75%	0%	100%
Vol Right, %	48%	25%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	540	435	156	381
LT Vol	280	0	156	0
Through Vol	0	325	0	381
RT Vol	260	110	0	0
Lane Flow Rate	692	558	200	488
Geometry Grp	2	5	7	7
Degree of Util (X)	1	1	0.452	1
Departure Headway (Hd)	6.843	6.977	8.131	7.631
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	533	524	446	479
Service Time	4.843	4.977	5.831	5.331
HCM Lane V/C Ratio	1.298	1.065	0.448	1.019
HCM Control Delay	65.3	66	17.4	68.9
HCM Lane LOS	F	F	C	F
HCM 95th-tile Q	14	13.9	2.3	13.3

Intersection	
Int Delay, s/veh	10.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	5	40	0	30	5	855	115	80	710	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	190	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	43	0	33	5	929	125	87	772	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1965	2011	772	1951	1949	992	772	0	0	1054	0	0
Stage 1	946	946	-	1003	1003	-	-	-	-	-	-	-
Stage 2	1019	1065	-	948	946	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	47	59	400	48	64	298	843	-	-	661	-	-
Stage 1	314	340	-	292	320	-	-	-	-	-	-	-
Stage 2	286	299	-	313	340	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	37	51	400	~ 42	55	298	843	-	-	661	-	-
Mov Cap-2 Maneuver	37	51	-	~ 42	55	-	-	-	-	-	-	-
Stage 1	312	295	-	290	318	-	-	-	-	-	-	-
Stage 2	253	297	-	268	295	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.1	265.6	0	1.1
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	843	-	-	400	66	661	-	-
HCM Lane V/C Ratio	0.006	-	-	0.014	1.153	0.132	-	-
HCM Control Delay (s)	9.3	-	-	14.1	265.6	11.3	-	-
HCM Lane LOS	A	-	-	B	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	6	0.5	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	40	17	42	1030	560	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	1	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	18	46	1120	609	120

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1879	668	728	0	-	0
Stage 1	668	-	-	-	-	-
Stage 2	1211	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	78	458	876	-	-	-
Stage 1	510	-	-	-	-	-
Stage 2	282	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	74	458	876	-	-	-
Mov Cap-2 Maneuver	190	-	-	-	-	-
Stage 1	510	-	-	-	-	-
Stage 2	267	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	26.3	0.4	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	876	-	230	-	-
HCM Lane V/C Ratio	0.052	-	0.269	-	-
HCM Control Delay (s)	9.3	-	26.3	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0.2	-	1.1	-	-

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	62	0	16	0	0	5	22	959	10	5	412	115
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	0	17	0	0	5	24	1042	11	5	448	125

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1619	1622	510	1626	1680	1048	573	0	0	1053	0	0
Stage 1	521	521	-	1096	1096	-	-	-	-	-	-	-
Stage 2	1098	1101	-	530	584	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	83	103	563	82	95	277	1000	-	-	661	-	-
Stage 1	539	532	-	259	289	-	-	-	-	-	-	-
Stage 2	258	288	-	533	498	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	79	100	563	78	92	277	1000	-	-	661	-	-
Mov Cap-2 Maneuver	79	100	-	78	92	-	-	-	-	-	-	-
Stage 1	526	528	-	253	282	-	-	-	-	-	-	-
Stage 2	247	281	-	513	494	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	141.1	18.3	0.2	0.1
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1000	-	-	96	277	661	-	-
HCM Lane V/C Ratio	0.024	-	-	0.883	0.02	0.008	-	-
HCM Control Delay (s)	8.7	-	-	141.1	18.3	10.5	-	-
HCM Lane LOS	A	-	-	F	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	5	0.1	0	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	22	60	170	28	126	145
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	65	185	30	137	158

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	632	200	0	0	215	0
Stage 1	200	-	-	-	-	-
Stage 2	432	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	444	841	-	-	1355	-
Stage 1	834	-	-	-	-	-
Stage 2	655	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	395	841	-	-	1355	-
Mov Cap-2 Maneuver	395	-	-	-	-	-
Stage 1	834	-	-	-	-	-
Stage 2	582	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	3.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	645	1355	-
HCM Lane V/C Ratio	-	-	0.138	0.101	-
HCM Control Delay (s)	-	-	11.5	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.3	-

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	153	421	415	40	55	112
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	204	561	553	53	73	149

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	607	0	-	0	1549	580
Stage 1	-	-	-	-	580	-
Stage 2	-	-	-	-	969	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	971	-	-	-	125	514
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	368	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	971	-	-	-	87	514
Mov Cap-2 Maneuver	-	-	-	-	193	-
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	256	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	35.4
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	971	-	-	-	332
HCM Lane V/C Ratio	0.21	-	-	-	0.671
HCM Control Delay (s)	9.7	0	-	-	35.4
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0.8	-	-	-	4.6

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	211	222	169	135	137	149	404	373	202	160
Average Queue (ft)	126	130	85	37	128	140	200	94	94	68
95th Queue (ft)	193	199	150	97	157	166	417	245	172	133
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)							1	0		
Queuing Penalty (veh)							10	1		
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)					2	14	0			
Queuing Penalty (veh)					7	58	2			

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	199	258	243	172	169	73	132	141	164	166
Average Queue (ft)	80	142	118	157	141	11	54	76	32	45
95th Queue (ft)	160	218	204	183	194	47	107	121	104	122
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				28	14	0				
Queuing Penalty (veh)				114	56	0				
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)							0	0	0	
Queuing Penalty (veh)							0	0	1	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	NB	NB	NB	NB	B24	B24	SB	SB	SB
Directions Served	L	R	L	T	T	R	T	T	T	T	R
Maximum Queue (ft)	120	59	132	476	312	81	188	260	159	167	40
Average Queue (ft)	44	22	19	214	100	4	6	10	87	101	1
95th Queue (ft)	97	50	82	429	261	57	86	111	181	193	24
Link Distance (ft)	633			1949	1949		368	368	138	138	
Upstream Blk Time (%)							0	0	4	7	0
Queuing Penalty (veh)							0	0	31	47	0
Storage Bay Dist (ft)		200	150			250					200
Storage Blk Time (%)				20	0	0				7	0
Queuing Penalty (veh)				3	1	0				1	0

Intersection: 4: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	B25	B25	SB	SB	SB	SB	B24
Directions Served	L	L	T	R	L	T	L	T	T	R	T	T	L	T	T	R	T
Maximum Queue (ft)	201	211	176	61	113	106	274	392	396	175	139	145	320	426	422	175	171
Average Queue (ft)	97	117	60	21	53	48	62	233	234	31	10	13	231	221	220	99	43
95th Queue (ft)	175	189	126	49	102	94	183	424	429	138	68	73	356	454	413	213	228
Link Distance (ft)			1180			275		317	317		652	652		368	368		1949
Upstream Blk Time (%)								6	6					13	3		
Queuing Penalty (veh)								35	36					97	20		
Storage Bay Dist (ft)	195	195		150	190		250			150			300			150	
Storage Blk Time (%)	0	1	0	0			0	11	21	0			17	1	13	0	
Queuing Penalty (veh)	0	1	1	0			0	7	12	0			76	4	39	0	

Intersection: 4: Missouri Flat Road & Forni Road

Movement	B24
Directions Served	T
Maximum Queue (ft)	196
Average Queue (ft)	38
95th Queue (ft)	220
Link Distance (ft)	1949
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	B43	SB	SB	SB	SB	B25
Directions Served	LTR	LTR	L	T	TR	T	T	L	T	T	R	T
Maximum Queue (ft)	66	173	166	296	296	236	269	195	525	552	68	20
Average Queue (ft)	25	69	47	211	225	32	39	87	175	254	4	1
95th Queue (ft)	57	133	129	324	331	141	157	174	421	493	57	15
Link Distance (ft)	184	367		216	216	1592	1592		652	652		317
Upstream Blk Time (%)				9	12				0	0		
Queuing Penalty (veh)				71	89				0	1		
Storage Bay Dist (ft)			150					175			500	
Storage Blk Time (%)			0	16				2	7	1		
Queuing Penalty (veh)			0	6				10	6	0		

Intersection: 6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	R	L	T	T	L	L	R
Maximum Queue (ft)	127	363	269	146	153	162	220	218	45
Average Queue (ft)	49	76	121	59	65	69	114	120	11
95th Queue (ft)	98	227	276	114	125	133	178	188	34
Link Distance (ft)	1592	1592			2033	2033		451	451
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			250	500			275		
Storage Blk Time (%)		0	2				0		
Queuing Penalty (veh)		0	2				0		

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	L	T	T	R	L	R
Maximum Queue (ft)	142	155	676	346	224	157	98
Average Queue (ft)	139	147	543	164	123	68	36
95th Queue (ft)	154	188	884	283	228	124	77
Link Distance (ft)			658	1506		127	127
Upstream Blk Time (%)			23			1	0
Queuing Penalty (veh)			142			2	0
Storage Bay Dist (ft)	130	130			200		
Storage Blk Time (%)	65	54	3	2	1		
Queuing Penalty (veh)	139	116	14	12	3		

Zone Summary

Zone wide Queuing Penalty: 1274

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.2	0.0	0.0	0.3
Total Del/Veh (s)	31.2	11.2	15.1	18.4

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.6	0.0	0.0	0.4
Total Del/Veh (s)	40.4	18.7	23.3	26.3

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	2.7	0.0	0.1	0.1
Total Del/Veh (s)	48.7	18.4	6.2	12.6

4: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	105.4	0.0	0.0	0.1	19.8
Total Del/Veh (s)	203.0	15.0	31.8	34.4	62.4

5: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.3	0.9	0.2	0.5
Total Del/Veh (s)	36.3	45.6	27.3	40.7	35.4

6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	21.4	6.9	13.4	15.3

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.4	0.0	0.0	0.1
Total Del/Veh (s)	41.8	14.4	9.9	21.0

Total Zone Performance

Denied Del/Veh (s)	25.7
Total Del/Veh (s)	501.6

Intersection	
Intersection Delay, s/veh	45.2
Intersection LOS	E

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Vol, veh/h	0	417	260	0	260	349	0	135	187
Peak Hour Factor	0.92	0.78	0.78	0.92	0.78	0.78	0.92	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	535	333	0	333	447	0	173	240
Number of Lanes	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	63.2	34.4	28
HCM LOS	F	D	D

Lane	NBLn1	EBLn1	WBLn1	WBLn2
Vol Left, %	42%	0%	100%	0%
Vol Thru, %	0%	62%	0%	100%
Vol Right, %	58%	38%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	322	677	260	349
LT Vol	135	0	260	0
Through Vol	0	417	0	349
RT Vol	187	260	0	0
Lane Flow Rate	413	868	333	447
Geometry Grp	2	5	7	7
Degree of Util (X)	0.761	1	0.696	0.872
Departure Headway (Hd)	6.633	6.415	7.52	7.019
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	541	573	483	519
Service Time	4.718	4.427	5.22	4.719
HCM Lane V/C Ratio	0.763	1.515	0.689	0.861
HCM Control Delay	28	63.2	25.7	40.8
HCM Lane LOS	D	F	D	E
HCM 95th-tile Q	6.7	14.5	5.3	9.5

Intersection	
Int Delay, s/veh	26

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	5	35	0	180	5	730	10	15	1031	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	190	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	38	0	196	5	793	11	16	1121	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2061	1968	1121	1966	1963	799	1121	0	0	804	0	0
Stage 1	1153	1153	-	810	810	-	-	-	-	-	-	-
Stage 2	908	815	-	1156	1153	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	40	63	251	47	63	386	623	-	-	820	-	-
Stage 1	240	272	-	374	393	-	-	-	-	-	-	-
Stage 2	330	391	-	239	272	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	19	61	251	45	61	386	623	-	-	820	-	-
Mov Cap-2 Maneuver	19	61	-	45	61	-	-	-	-	-	-	-
Stage 1	238	267	-	371	390	-	-	-	-	-	-	-
Stage 2	161	388	-	229	267	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.7	242.2	0.1	0.1
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	623	-	-	251	173	820	-	-
HCM Lane V/C Ratio	0.009	-	-	0.022	1.351	0.02	-	-
HCM Control Delay (s)	10.8	-	-	19.7	242.2	9.5	-	-
HCM Lane LOS	B	-	-	C	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	13.9	0.1	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	100	37	7	565	970	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	1	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	109	40	8	614	1054	39

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1703	1074	1093	0	-	0
Stage 1	1074	-	-	-	-	-
Stage 2	629	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 101	267	638	-	-	-
Stage 1	328	-	-	-	-	-
Stage 2	531	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 100	267	638	-	-	-
Mov Cap-2 Maneuver	227	-	-	-	-	-
Stage 1	328	-	-	-	-	-
Stage 2	524	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	42.8	0.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	638	-	237	-	-
HCM Lane V/C Ratio	0.012	-	0.628	-	-
HCM Control Delay (s)	10.7	-	42.8	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0	-	3.8	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	24.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	106	0	30	0	0	5	13	452	5	5	874	92
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	115	0	33	0	0	5	14	491	5	5	950	100

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1536	1536	1000	1549	1583	494	1050	0	0	497	0	0
Stage 1	1011	1011	-	522	522	-	-	-	-	-	-	-
Stage 2	525	525	-	1027	1061	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 95	116	295	93	109	575	663	-	-	1067	-	-
Stage 1	289	317	-	538	531	-	-	-	-	-	-	-
Stage 2	536	529	-	283	300	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 92	113	295	81	106	575	663	-	-	1067	-	-
Mov Cap-2 Maneuver	~ 92	113	-	81	106	-	-	-	-	-	-	-
Stage 1	283	316	-	527	520	-	-	-	-	-	-	-
Stage 2	520	518	-	251	299	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	286.9	11.3	0.3	0
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	663	-	-	108	575	1067	-	-
HCM Lane V/C Ratio	0.021	-	-	1.369	0.009	0.005	-	-
HCM Control Delay (s)	10.5	-	-	286.9	11.3	8.4	-	-
HCM Lane LOS	B	-	-	F	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	10.3	0	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	4.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	42	186	125	34	80	210
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	202	136	37	87	228

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	556	154	0	0	173	0
Stage 1	154	-	-	-	-	-
Stage 2	402	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	492	892	-	-	1404	-
Stage 1	874	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	457	892	-	-	1404	-
Mov Cap-2 Maneuver	457	-	-	-	-	-
Stage 1	874	-	-	-	-	-
Stage 2	628	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	2.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	759	1404	-
HCM Lane V/C Ratio	-	-	0.327	0.062	-
HCM Control Delay (s)	-	-	12	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.4	0.2	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	99	515	426	25	20	162
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	132	687	568	33	27	216

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	601	0	-	0	1536	585
Stage 1	-	-	-	-	585	-
Stage 2	-	-	-	-	951	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	976	-	-	-	128	511
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	375	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	976	-	-	-	100	511
Mov Cap-2 Maneuver	-	-	-	-	215	-
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	293	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	22.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	976	-	-	-	444
HCM Lane V/C Ratio	0.135	-	-	-	0.547
HCM Control Delay (s)	9.3	0	-	-	22.5
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.5	-	-	-	3.2

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	330	335	232	171	136	147	216	129	291	267
Average Queue (ft)	179	183	109	51	81	99	74	60	157	136
95th Queue (ft)	285	299	184	130	150	149	158	111	257	230
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)		0	0		0	1	0			
Queuing Penalty (veh)		1	0		1	6	1			

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	322	402	409	175	179	39	161	174	392	396
Average Queue (ft)	134	213	213	155	148	4	95	122	149	163
95th Queue (ft)	270	351	357	183	189	21	162	183	333	338
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				29	18				0	0
Queuing Penalty (veh)				113	73				3	2
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)							1	3	7	
Queuing Penalty (veh)							4	19	22	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	NB	NB	NB	NB	B24	B24	B24	SB	SB	SB
Directions Served	L	R	L	T	T	R	T	T		T	T	R
Maximum Queue (ft)	87	83	169	522	451	81	221	230	34	169	183	28
Average Queue (ft)	26	31	40	182	104	4	9	14	1	120	128	1
95th Queue (ft)	66	67	117	432	326	57	104	130	35	200	206	20
Link Distance (ft)	633			1949	1949		368	368	368	138	138	
Upstream Blk Time (%)							0	0		10	12	0
Queuing Penalty (veh)							0	1		97	119	0
Storage Bay Dist (ft)		200	150			250						200
Storage Blk Time (%)				17	0	0					12	0
Queuing Penalty (veh)				6	0	0					2	0

Intersection: 4: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	B25	B25	SB	SB	SB	SB	B24
Directions Served	L	L	T	R	L	T	L	T	T	R	T	T	L	T	T	R	T
Maximum Queue (ft)	207	220	1235	74	52	82	274	395	394	159	131	146	324	460	467	175	788
Average Queue (ft)	204	216	1010	31	15	33	111	219	225	14	12	16	196	356	410	157	249
95th Queue (ft)	223	234	1569	66	44	72	252	433	439	89	73	83	354	533	540	227	798
Link Distance (ft)			1180			275		317	317		652	652		368	368		1949
Upstream Blk Time (%)			52					7	8					13	27		
Queuing Penalty (veh)			0					43	48					135	277		
Storage Bay Dist (ft)	195	195		150	190		250			150			300			150	
Storage Blk Time (%)	21	60					0	11	19	0			1	16	33	1	
Queuing Penalty (veh)	34	97					1	11	5	0			3	27	153	8	

Intersection: 4: Missouri Flat Road & Forni Road

Movement	B24
Directions Served	T
Maximum Queue (ft)	864
Average Queue (ft)	325
95th Queue (ft)	896
Link Distance (ft)	1949
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	B43	SB	SB	SB	SB	B25	B25
Directions Served	LTR	LTR	L	T	TR	T	T	L	T	T	R	T	T
Maximum Queue (ft)	168	289	174	292	302	219	206	200	665	701	322	206	258
Average Queue (ft)	67	148	106	220	225	26	26	78	344	412	19	9	19
95th Queue (ft)	131	249	196	322	321	126	121	169	681	733	171	93	137
Link Distance (ft)	184	367		216	216	1592	1592		652	652		317	317
Upstream Blk Time (%)	0	0		12	12				1	3		0	0
Queuing Penalty (veh)	0	0		74	72				9	23		0	1
Storage Bay Dist (ft)			150					175			500		
Storage Blk Time (%)			7	19				0	18	11	0		
Queuing Penalty (veh)			41	15				0	12	1	0		

Intersection: 6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway

Movement	EB	EB	EB	B43	WB	WB	WB	NB	NB	NB
Directions Served	T	T	R	T	L	T	T	L	L	R
Maximum Queue (ft)	181	338	274	39	99	110	110	195	206	70
Average Queue (ft)	87	112	120	2	38	46	47	104	112	29
95th Queue (ft)	155	234	274	25	77	89	87	170	179	56
Link Distance (ft)	1592	1592		216		2033	2033		451	451
Upstream Blk Time (%)				0						
Queuing Penalty (veh)				0						
Storage Bay Dist (ft)			250		500			275		
Storage Blk Time (%)		0	1							
Queuing Penalty (veh)		0	4							

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB	B68
Directions Served	L	L	T	T	R	L	R	T
Maximum Queue (ft)	142	154	537	217	190	201	148	85
Average Queue (ft)	111	98	206	117	43	138	67	7
95th Queue (ft)	159	198	472	188	116	203	125	47
Link Distance (ft)			658	1506		127	127	419
Upstream Blk Time (%)			1			10	1	
Queuing Penalty (veh)			5			46	4	
Storage Bay Dist (ft)	130	130			200			
Storage Blk Time (%)	22	15	7	1	0			
Queuing Penalty (veh)	91	63	18	1	0			

Zone Summary

Zone wide Queuing Penalty: 1795

7: Missouri Flat Road & China Garden Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	14.7	18.3	14.4	14.4	14.7

9: Missouri Flat Road & Enterprise Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.0	0.0
Total Del/Veh (s)	22.5	11.8	5.9	6.4	6.8

Total Zone Performance

Denied Del/Veh (s)	0.5
Total Del/Veh (s)	343.9

9: Missouri Flat Road & Enterprise Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	23.0	13.2	5.3	15.3	12.4

Total Zone Performance

Denied Del/Veh (s)	0.4
Total Del/Veh (s)	416.0

7: Missouri Flat Road & China Garden Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	69.0	27.4	13.6	16.8	16.1

9: Missouri Flat Road & Enterprise Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.0	0.0
Total Del/Veh (s)	35.5	17.1	7.1	7.4	8.5

Total Zone Performance

Denied Del/Veh (s)	0.5
Total Del/Veh (s)	406.0

7: Missouri Flat Road & China Garden Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0
Total Del/Veh (s)	12.5	19.0	10.0	19.3	16.1

9: Missouri Flat Road & Enterprise Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0
Total Del/Veh (s)	35.5	37.8	5.8	23.4	18.4

Total Zone Performance

Denied Del/Veh (s)	0.6
Total Del/Veh (s)	659.3

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	1	0	0	138	0	887	15	99	614	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	1	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	0	0	155	0	997	17	111	690	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1919	1927	692	1919	1921	1005	693	0	0	1013	0	0
Stage 1	914	914	-	1005	1005	-	-	-	-	-	-	-
Stage 2	1005	1013	-	914	916	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	51	67	444	51	67	293	902	-	-	684	-	-
Stage 1	327	352	-	291	319	-	-	-	-	-	-	-
Stage 2	291	316	-	327	351	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	21	56	444	45	56	293	902	-	-	684	-	-
Mov Cap-2 Maneuver	21	56	-	45	56	-	-	-	-	-	-	-
Stage 1	327	295	-	291	319	-	-	-	-	-	-	-
Stage 2	137	316	-	273	294	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.1	30.3	0	1.6
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	902	-	-	444	293	684	-	-
HCM Lane V/C Ratio	-	-	-	0.003	0.529	0.163	-	-
HCM Control Delay (s)	0	-	-	13.1	30.3	11.3	-	-
HCM Lane LOS	A	-	-	B	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	2.9	0.6	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	2	0	0	175	1	724	20	133	1058	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	1	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	0	0	180	1	746	21	137	1091	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2124	2134	1091	2124	2124	757	1091	0	0	767	0	0
Stage 1	1365	1365	-	759	759	-	-	-	-	-	-	-
Stage 2	759	769	-	1365	1365	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	36	49	261	36	50	408	640	-	-	847	-	-
Stage 1	182	215	-	399	415	-	-	-	-	-	-	-
Stage 2	399	411	-	182	215	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	18	41	261	31	42	408	640	-	-	847	-	-
Mov Cap-2 Maneuver	18	41	-	31	42	-	-	-	-	-	-	-
Stage 1	182	180	-	398	414	-	-	-	-	-	-	-
Stage 2	222	410	-	151	180	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.9	20.6	0	1.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	640	-	-	261	408	847	-	-
HCM Lane V/C Ratio	0.002	-	-	0.008	0.442	0.162	-	-
HCM Control Delay (s)	10.6	-	-	18.9	20.6	10.1	-	-
HCM Lane LOS	B	-	-	C	C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	2.2	0.6	-	-

7: Missouri Flat Road & China Garden Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	21.0	23.4	12.2	11.2	12.4

9: Missouri Flat Road & Enterprise Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.0	0.0
Total Del/Veh (s)	17.2	6.1	7.8	7.6	8.6

12: SR 49 & Pleasant Valley Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.4	0.0	1.1	0.5
Total Del/Veh (s)	22.0	16.7	19.4	19.2

Total Zone Performance

Denied Del/Veh (s)	0.8
Total Del/Veh (s)	435.5

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	142	376	369	36	52	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	189	501	492	48	69	140

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	540	0	-	0	1396	516
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	880	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1028	-	-	-	156	559
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	406	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1028	-	-	-	116	559
Mov Cap-2 Maneuver	-	-	-	-	228	-
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	302	-

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	25.8
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1028	-	-	-	377
HCM Lane V/C Ratio	0.184	-	-	-	0.555
HCM Control Delay (s)	9.3	0	-	-	25.8
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.7	-	-	-	3.2

7: Missouri Flat Road & China Garden Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0
Total Del/Veh (s)	16.1	20.4	6.1	10.5	10.1

9: Missouri Flat Road & Enterprise Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	34.6	6.1	6.5	15.1	14.3

Total Zone Performance

Denied Del/Veh (s)	0.3
Total Del/Veh (s)	1622.0

7: Missouri Flat Road & China Garden Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	20.9	23.0	17.2	11.2	14.9

8: Missouri Flat Road & Industrial Dr Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	38.9	23.2	8.9	17.5

9: Missouri Flat Road & Enterprise Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.1	0.3	0.0	0.1
Total Del/Veh (s)	16.9	9.1	11.7	8.5	10.9

12: SR 49 & Pleasant Valley Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.4	0.0	0.5	0.3
Total Del/Veh (s)	22.6	17.9	20.6	20.2

Total Zone Performance

Denied Del/Veh (s)	0.7
Total Del/Veh (s)	611.2

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	145	382	369	36	52	107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	193	509	492	48	69	143

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	540	0	-	0	1412	516
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	896	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1028	-	-	-	152	559
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	399	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1028	-	-	-	112	559
Mov Cap-2 Maneuver	-	-	-	-	223	-
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	294	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	26.5
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1028	-	-	-	374
HCM Lane V/C Ratio	0.188	-	-	-	0.567
HCM Control Delay (s)	9.3	0	-	-	26.5
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.7	-	-	-	3.4

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	5	0	0	27	5	764	103	69	640	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	1	-	-	190	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	0	0	29	5	830	112	75	696	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1744	1800	697	1744	1745	886	698	0	0	942	0	0
Stage 1	847	847	-	897	897	-	-	-	-	-	-	-
Stage 2	897	953	-	847	848	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	68	80	441	68	86	343	898	-	-	728	-	-
Stage 1	357	378	-	334	358	-	-	-	-	-	-	-
Stage 2	334	338	-	357	378	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	57	71	441	62	77	343	898	-	-	728	-	-
Mov Cap-2 Maneuver	57	71	-	62	77	-	-	-	-	-	-	-
Stage 1	355	339	-	332	356	-	-	-	-	-	-	-
Stage 2	304	336	-	316	339	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.3	16.5	0.1	1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	898	-	-	441	343	728	-	-
HCM Lane V/C Ratio	0.006	-	-	0.012	0.086	0.103	-	-
HCM Control Delay (s)	9	-	-	13.3	16.5	10.5	-	-
HCM Lane LOS	A	-	-	B	C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0.3	-	-

7: Missouri Flat Road & China Garden Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	16.1	20.8	8.6	11.7	11.6

8: Missouri Flat Road & Industrial Dr Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	49.9	6.1	12.6	13.4

9: Missouri Flat Road & Enterprise Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	35.4	6.0	6.2	15.5	14.4

Total Zone Performance

Denied Del/Veh (s)	0.2
Total Del/Veh (s)	1783.0

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.2	0.0	0.0	0.3
Total Del/Veh (s)	25.3	11.7	14.0	16.4

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.5	0.0	0.0	0.4
Total Del/Veh (s)	36.5	17.7	23.8	25.1

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	2.0	0.0	0.0	0.1
Total Del/Veh (s)	50.5	16.1	7.2	12.7

4: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	3.6	0.0	0.1	0.0	0.7
Total Del/Veh (s)	86.9	11.9	26.3	24.3	35.8

5: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.3	0.4	0.0	0.2
Total Del/Veh (s)	31.3	41.8	23.4	31.8	29.1

6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	18.7	5.4	11.4	12.7

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	3.0	1.4
Total Del/Veh (s)	89.1	16.9	15.1	37.2

Total Zone Performance

Denied Del/Veh (s)	2.8
Total Del/Veh (s)	389.5

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	4	0	0	166	5	680	9	13	912	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	1	-	-	190	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	4	0	0	180	5	739	10	14	991	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1775	1780	991	1775	1775	744	991	0	0	749	0	0
Stage 1	1020	1020	-	755	755	-	-	-	-	-	-	-
Stage 2	755	760	-	1020	1020	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	64	82	299	64	83	415	698	-	-	860	-	-
Stage 1	285	314	-	401	417	-	-	-	-	-	-	-
Stage 2	401	414	-	285	314	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	36	80	299	62	81	415	698	-	-	860	-	-
Mov Cap-2 Maneuver	36	80	-	62	81	-	-	-	-	-	-	-
Stage 1	283	309	-	398	414	-	-	-	-	-	-	-
Stage 2	225	411	-	276	309	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.2	20.2	0.1	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	698	-	-	299	415	860	-	-
HCM Lane V/C Ratio	0.008	-	-	0.015	0.435	0.016	-	-
HCM Control Delay (s)	10.2	-	-	17.2	20.2	9.3	-	-
HCM Lane LOS	B	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	2.1	0.1	-	-

Intersection: 7: Missouri Flat Road & China Garden Rd

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	30	183	29	273	84	455
Average Queue (ft)	4	84	6	106	17	147
95th Queue (ft)	20	153	24	237	61	352
Link Distance (ft)	158	1431		558		451
Upstream Blk Time (%)						1
Queuing Penalty (veh)						7
Storage Bay Dist (ft)			1		190	
Storage Blk Time (%)			8	11		4
Queuing Penalty (veh)			54	1		1

Intersection: 8: Missouri Flat Road & Industrial Dr

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	214	29	225	428
Average Queue (ft)	100	9	59	180
95th Queue (ft)	181	29	162	363
Link Distance (ft)	527		796	558
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)		1		
Storage Blk Time (%)		12	4	
Queuing Penalty (veh)		73	0	

Intersection: 9: Missouri Flat Road & Enterprise Dr

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	194	31	29	241	26	455
Average Queue (ft)	93	5	11	64	4	153
95th Queue (ft)	158	24	32	159	19	337
Link Distance (ft)	2614	218		624		796
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			1		1	
Storage Blk Time (%)			16	7	5	12
Queuing Penalty (veh)			78	1	46	1

Zone Summary

Zone wide Queuing Penalty: 261

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	237	258	199	174	135	146	249	151	275	235
Average Queue (ft)	144	155	98	41	95	107	69	55	147	124
95th Queue (ft)	216	231	166	112	158	154	162	119	243	217
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)							0	0		
Queuing Penalty (veh)							0	0		
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)					0	2	0			
Queuing Penalty (veh)					2	7	2			

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	269	327	338	171	177	98	160	174	354	349
Average Queue (ft)	108	188	190	155	142	17	93	121	149	167
95th Queue (ft)	218	290	297	186	193	63	154	185	319	323
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				26	14	0			0	0
Queuing Penalty (veh)				93	50	0			2	1
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)							0	2	7	
Queuing Penalty (veh)							2	14	24	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	EB	NB	NB	NB	NB	B24	B24	SB	SB	SB
Directions Served	L	L	R	L	T	T	R	T	T	T	T	R
Maximum Queue (ft)	38	144	113	165	369	241	26	144	176	162	184	136
Average Queue (ft)	6	64	29	54	159	68	1	6	7	125	133	13
95th Queue (ft)	25	124	72	133	317	176	27	82	91	193	192	80
Link Distance (ft)		633			1949	1949		368	368	138	138	
Upstream Blk Time (%)								0	0	12	15	0
Queuing Penalty (veh)								0	0	113	135	0
Storage Bay Dist (ft)	200		200	150			250					200
Storage Blk Time (%)		0	0	0	12	0					15	0
Queuing Penalty (veh)		0	0	0	5	0					11	1

Intersection: 4: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	B25	B25
Directions Served	L	L	T	R	L	T	L	T	T	R	T	T
Maximum Queue (ft)	207	220	853	79	59	88	253	382	384	160	73	79
Average Queue (ft)	187	200	377	32	14	27	64	185	193	18	3	4
95th Queue (ft)	243	250	981	63	44	67	169	355	372	104	31	37
Link Distance (ft)			1180			275		317	317		652	652
Upstream Blk Time (%)			1					2	3			
Queuing Penalty (veh)			0					11	15			
Storage Bay Dist (ft)	195	195		150	190		250			150		
Storage Blk Time (%)	10	31						6	16	0		
Queuing Penalty (veh)	14	42						4	4	0		

Intersection: 4: Missouri Flat Road & Forni Road

Movement	SB	SB	SB	SB	B24	B24
Directions Served	L	T	T	R	T	T
Maximum Queue (ft)	307	430	443	175	309	370
Average Queue (ft)	153	244	307	136	29	52
95th Queue (ft)	279	448	511	235	176	238
Link Distance (ft)		368	368		1949	1949
Upstream Blk Time (%)		3	9			
Queuing Penalty (veh)		24	79			
Storage Bay Dist (ft)	300			150		
Storage Blk Time (%)	0	4	20	1		
Queuing Penalty (veh)	2	7	84	3		

Intersection: 5: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	B43	SB	SB	SB	SB	B25
Directions Served	LTR	LTR	L	T	TR	T	T	L	T	T	R	T
Maximum Queue (ft)	138	265	174	290	289	96	105	196	569	627	168	109
Average Queue (ft)	56	126	87	176	184	7	8	68	258	328	9	4
95th Queue (ft)	113	217	172	287	287	51	56	150	547	618	111	60
Link Distance (ft)	184	367		216	216	1592	1592		652	652		317
Upstream Blk Time (%)	0	0		5	6				0	0		0
Queuing Penalty (veh)	0	0		24	30				1	3		0
Storage Bay Dist (ft)			150					175			500	
Storage Blk Time (%)			4	12				0	11	4	0	
Queuing Penalty (veh)			18	9				1	8	0	0	

Intersection: 5: Missouri Flat Road & Golden Center Drive

Movement	B25
Directions Served	T
Maximum Queue (ft)	104
Average Queue (ft)	4
95th Queue (ft)	65
Link Distance (ft)	317
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway

Movement	EB	EB	EB	B43	WB	WB	WB	NB	NB	NB
Directions Served	T	T	R	T	L	T	T	L	L	R
Maximum Queue (ft)	160	308	264	7	68	84	88	178	197	78
Average Queue (ft)	72	85	86	0	28	38	39	94	101	30
95th Queue (ft)	133	185	230	5	60	75	75	150	162	62
Link Distance (ft)	1592	1592		216		2033	2033		451	451
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			250		500			275		
Storage Blk Time (%)		0	1						0	
Queuing Penalty (veh)		0	2						0	

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB	B68	B68
Directions Served	L	L	T	T	R	L	R	T	T
Maximum Queue (ft)	142	155	632	296	208	221	160	286	3
Average Queue (ft)	126	125	400	146	54	181	66	75	0
95th Queue (ft)	167	209	823	244	143	238	126	215	3
Link Distance (ft)			658	1506		127	127	419	419
Upstream Blk Time (%)			14			31	1	0	
Queuing Penalty (veh)			89			143	3	0	
Storage Bay Dist (ft)	130	130			200				
Storage Blk Time (%)	49	37	10	2	0				
Queuing Penalty (veh)	166	124	24	5	0				

Zone Summary

Zone wide Queuing Penalty: 1401

7: Missouri Flat Road & China Garden Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.2	28.2	13.7	11.8	13.5

9: Missouri Flat Road & Enterprise Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	18.5	9.6	7.5	7.1	8.3

12: SR 49 & Pleasant Valley Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	2.2	0.1	3.2	1.8
Total Del/Veh (s)	36.0	21.2	33.6	29.9

Total Zone Performance

Denied Del/Veh (s)	2.8
Total Del/Veh (s)	268.4

7: Missouri Flat Road & China Garden Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.1	0.0	0.0
Total Del/Veh (s)	11.8	20.7	6.9	11.9	11.1

9: Missouri Flat Road & Enterprise Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	33.9	4.9	5.2	14.3	13.4

12: SR 49 & Pleasant Valley Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	2.9	0.6	0.4	1.5
Total Del/Veh (s)	46.9	34.2	46.5	42.0

Total Zone Performance

Denied Del/Veh (s)	2.0
Total Del/Veh (s)	1133.3

7: Missouri Flat Road & China Garden Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.4	24.5	13.3	11.3	12.9

9: Missouri Flat Road & Enterprise Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	18.0	9.6	9.3	7.6	9.5

12: SR 49 & Pleasant Valley Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.4	0.1	0.8	0.4
Total Del/Veh (s)	32.1	21.7	23.2	25.2

Total Zone Performance

Denied Del/Veh (s)	0.7
Total Del/Veh (s)	252.7

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.2	0.0	0.0	0.4
Total Del/Veh (s)	22.8	20.6	11.8	18.9

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.3	0.0	0.0	0.3
Total Del/Veh (s)	25.4	16.4	13.1	17.5

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	2.1	0.0	0.0	0.1
Total Del/Veh (s)	45.3	20.4	5.0	13.9

4: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	3.0	0.0	0.0	0.0	0.4
Total Del/Veh (s)	40.7	21.3	29.4	29.3	30.2

5: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0
Total Del/Veh (s)	28.7	39.0	17.4	28.9	22.8

6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	16.7	10.9	14.1	14.1

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	20.9	0.6	0.0	6.8
Total Del/Veh (s)	112.7	17.6	8.7	45.1

Total Zone Performance

Denied Del/Veh (s)	6.8
Total Del/Veh (s)	529.7

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	5	0	0	30	5	855	115	80	710	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	1	-	-	190	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	0	0	33	5	929	125	87	772	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1949	2011	772	1949	1949	992	772	0	0	1054	0	0
Stage 1	946	946	-	1003	1003	-	-	-	-	-	-	-
Stage 2	1003	1065	-	946	946	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	49	59	400	49	64	298	843	-	-	661	-	-
Stage 1	314	340	-	292	320	-	-	-	-	-	-	-
Stage 2	292	299	-	314	340	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	39	51	400	43	55	298	843	-	-	661	-	-
Mov Cap-2 Maneuver	39	51	-	43	55	-	-	-	-	-	-	-
Stage 1	312	295	-	290	318	-	-	-	-	-	-	-
Stage 2	259	297	-	269	295	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.1	18.6	0	1.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	843	-	-	400	298	661	-	-
HCM Lane V/C Ratio	0.006	-	-	0.014	0.109	0.132	-	-
HCM Control Delay (s)	9.3	-	-	14.1	18.6	11.3	-	-
HCM Lane LOS	A	-	-	B	C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.4	0.5	-	-

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.2	0.0	0.0	0.3
Total Del/Veh (s)	30.5	11.2	15.4	18.3

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.6	0.0	0.0	0.4
Total Del/Veh (s)	41.3	19.0	23.8	26.9

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	2.7	0.0	0.2	0.1
Total Del/Veh (s)	48.6	17.9	6.4	12.4

4: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	97.0	0.0	0.0	0.1	18.1
Total Del/Veh (s)	198.2	16.0	32.8	35.9	63.3

5: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.3	1.6	0.1	0.7
Total Del/Veh (s)	35.5	46.7	25.6	37.9	33.4

6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	21.9	6.9	14.1	15.7

7: Missouri Flat Road & China Garden Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.1	0.0	0.1
Total Del/Veh (s)	16.1	20.5	10.3	12.9	12.7

8: Missouri Flat Road & Industrial Dr Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	45.6	6.1	12.2	12.9

9: Missouri Flat Road & Enterprise Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	35.1	5.7	6.1	15.7	14.6

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.9	0.0	0.0	0.6
Total Del/Veh (s)	42.7	13.8	9.5	21.0

12: SR 49 & Pleasant Valley Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	5.5	0.9	0.7	2.8
Total Del/Veh (s)	46.7	47.6	43.7	46.4

Total Zone Performance

Denied Del/Veh (s)	17.7
Total Del/Veh (s)	538.6

Intersection: 1: Missouri Flat Road & WB Ramps

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	LT	R	R	L	L	T	T	T	T
Maximum Queue (ft)	309	312	189	158	135	145	181	133	304	252
Average Queue (ft)	173	181	105	46	86	100	70	61	160	138
95th Queue (ft)	281	289	166	112	154	150	138	114	264	229
Link Distance (ft)	983	983					395	395	459	459
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			400	400	125	125				
Storage Blk Time (%)		0			0	1	0			
Queuing Penalty (veh)		0			1	5	1			

Intersection: 2: Missouri Flat Road & EB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	R	L	L	T	T
Maximum Queue (ft)	339	390	427	172	179	40	161	174	396	407
Average Queue (ft)	137	215	221	157	151	5	101	128	152	169
95th Queue (ft)	275	343	359	177	187	25	166	188	327	337
Link Distance (ft)		1460		138	138	138			395	395
Upstream Blk Time (%)				29	20				0	0
Queuing Penalty (veh)				115	79				1	2
Storage Bay Dist (ft)	700		550				150	150		
Storage Blk Time (%)							0	4	8	
Queuing Penalty (veh)							2	23	26	

Intersection: 3: Missouri Flat Road & Mother Lode Drive

Movement	EB	EB	EB	NB	NB	NB	NB	B24	B24	SB	SB	SB
Directions Served	L	L	R	L	T	T	R	T	T	T	T	R
Maximum Queue (ft)	5	84	89	158	390	361	137	111	267	174	179	28
Average Queue (ft)	0	25	31	37	172	103	12	4	13	121	131	2
95th Queue (ft)	6	64	71	107	339	250	103	67	126	199	202	32
Link Distance (ft)		633			1949	1949		368	368	138	138	
Upstream Blk Time (%)								0	0	10	13	0
Queuing Penalty (veh)								0	1	101	124	0
Storage Bay Dist (ft)	200		200	150			250					200
Storage Blk Time (%)					15	1	0				13	0
Queuing Penalty (veh)					5	4	0				3	0

Intersection: 4: Missouri Flat Road & Forni Road

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	B25	B25
Directions Served	L	L	T	R	L	T	L	T	T	R	T	T
Maximum Queue (ft)	207	220	1225	84	59	94	273	394	397	175	156	150
Average Queue (ft)	204	218	1028	34	17	35	103	235	247	18	14	16
95th Queue (ft)	214	223	1498	72	49	78	232	421	441	102	77	84
Link Distance (ft)			1180			275		317	317		652	652
Upstream Blk Time (%)			46					6	8			
Queuing Penalty (veh)			0					37	47			
Storage Bay Dist (ft)	195	195		150	190		250			150		
Storage Blk Time (%)	23	61				0	0	11	22	0		
Queuing Penalty (veh)	37	98				0	0	11	6	0		

Intersection: 4: Missouri Flat Road & Forni Road

Movement	SB	SB	SB	SB	B24	B24
Directions Served	L	T	T	R	T	T
Maximum Queue (ft)	324	456	467	175	875	948
Average Queue (ft)	202	364	404	154	273	345
95th Queue (ft)	356	538	543	230	839	925
Link Distance (ft)		368	368		1949	1949
Upstream Blk Time (%)		14	28			
Queuing Penalty (veh)		138	282			
Storage Bay Dist (ft)	300			150		
Storage Blk Time (%)	1	16	34	2		
Queuing Penalty (veh)	5	28	157	13		

Intersection: 5: Missouri Flat Road & Golden Center Drive

Movement	EB	WB	NB	NB	NB	B43	B43	SB	SB	SB	SB	B25
Directions Served	LTR	LTR	L	T	TR	T	T	L	T	T	R	T
Maximum Queue (ft)	150	282	174	298	293	155	171	199	665	704	372	108
Average Queue (ft)	62	148	96	209	217	21	24	74	353	423	19	5
95th Queue (ft)	122	244	180	326	326	100	102	170	686	741	171	58
Link Distance (ft)	184	367		216	216	1592	1592		652	652		317
Upstream Blk Time (%)	0	0		11	12				1	2		0
Queuing Penalty (veh)	0	0		68	70				4	17		0
Storage Bay Dist (ft)			150					175			500	
Storage Blk Time (%)			7	18				1	16	11	0	
Queuing Penalty (veh)			38	15				4	11	1	0	

Intersection: 5: Missouri Flat Road & Golden Center Drive

Movement	B25
Directions Served	T
Maximum Queue (ft)	156
Average Queue (ft)	12
95th Queue (ft)	110
Link Distance (ft)	317
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway

Movement	EB	EB	EB	B43	B43	WB	WB	WB	NB	NB	NB
Directions Served	T	T	R	T	T	L	T	T	L	L	R
Maximum Queue (ft)	178	389	275	2	19	94	106	93	206	217	67
Average Queue (ft)	88	111	132	0	1	39	47	48	110	121	29
95th Queue (ft)	151	245	281	2	9	74	89	84	180	189	57
Link Distance (ft)	1592	1592		216	216		2033	2033		451	451
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)			250			500			275		
Storage Blk Time (%)			2						0	0	
Queuing Penalty (veh)			5						0	0	

Intersection: 7: Missouri Flat Road & China Garden Rd

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	37	206	29	340	160	492
Average Queue (ft)	6	89	4	141	20	186
95th Queue (ft)	25	167	20	293	87	405
Link Distance (ft)	158	1431		558		451
Upstream Blk Time (%)						1
Queuing Penalty (veh)						7
Storage Bay Dist (ft)			1		190	
Storage Blk Time (%)			6	13		6
Queuing Penalty (veh)			42	1		1

Intersection: 8: Missouri Flat Road & Industrial Dr

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	200	29	234	435
Average Queue (ft)	93	8	52	182
95th Queue (ft)	165	28	172	355
Link Distance (ft)	527		796	558
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		1		
Storage Blk Time (%)		12	4	
Queuing Penalty (veh)		68	0	

Intersection: 9: Missouri Flat Road & Enterprise Dr

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	161	33	29	198	29	508
Average Queue (ft)	87	3	10	59	6	188
95th Queue (ft)	141	18	29	149	25	391
Link Distance (ft)	2614	218		624		796
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			1		1	
Storage Blk Time (%)			15	8	8	16
Queuing Penalty (veh)			71	1	75	1

Intersection: 10: Pleasant Valley Rd & Missouri Flat Rd

Movement	EB	EB	EB	WB	WB	SB	SB	B68	B68
Directions Served	L	L	T	T	R	L	R	T	T
Maximum Queue (ft)	142	154	563	222	175	201	160	126	2
Average Queue (ft)	110	93	216	113	40	140	64	12	0
95th Queue (ft)	159	196	526	186	103	212	126	64	2
Link Distance (ft)			658	1506		127	127	419	419
Upstream Blk Time (%)			2			11	1		
Queuing Penalty (veh)			10			50	4		
Storage Bay Dist (ft)	130	130			200				
Storage Blk Time (%)	22	14	7	1	0				
Queuing Penalty (veh)	88	58	18	1	0				

Intersection: 12: SR 49 & Pleasant Valley Rd

Movement	EB	WB	WB	NB
Directions Served	TR	L	T	LR
Maximum Queue (ft)	798	104	679	431
Average Queue (ft)	409	100	345	198
95th Queue (ft)	788	115	698	389
Link Distance (ft)	797		700	576
Upstream Blk Time (%)	8		3	1
Queuing Penalty (veh)	0		22	0
Storage Bay Dist (ft)		80		
Storage Blk Time (%)		52	2	
Queuing Penalty (veh)		192	5	

Zone Summary

Zone wide Queuing Penalty: 2301

1: Missouri Flat Road & WB Ramps Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.2	0.0	0.0	0.3
Total Del/Veh (s)	29.2	11.3	15.7	18.0

2: Missouri Flat Road & EB Ramps Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.6	0.0	0.0	0.4
Total Del/Veh (s)	35.2	19.3	23.0	25.0

3: Missouri Flat Road & Mother Lode Drive Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	2.7	0.0	0.1	0.1
Total Del/Veh (s)	46.9	19.1	5.9	12.8

4: Missouri Flat Road & Forni Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	68.2	0.0	0.0	0.1	12.5
Total Del/Veh (s)	188.9	14.8	32.1	33.5	60.0

5: Missouri Flat Road & Golden Center Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.3	2.3	0.1	1.0
Total Del/Veh (s)	39.8	45.9	25.7	43.0	35.9

6: Missouri Flat Road & Missouri Flat Rd/Diamond Springs Parkway Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	22.7	6.8	12.9	15.7

7: Missouri Flat Road & China Garden Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.0	0.1
Total Del/Veh (s)	11.5	8.4	2.9	5.2	4.6

8: Missouri Flat Road & Industrial Dr Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	48.5	4.9	7.2	9.7

9: Missouri Flat Road & Enterprise Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	35.0	4.5	5.2	14.3	13.3

10: Pleasant Valley Rd & Missouri Flat Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	2.7	0.0	0.0	0.8
Total Del/Veh (s)	46.5	14.5	10.1	22.6

12: SR 49 & Pleasant Valley Rd Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	5.4	2.1	0.4	3.1
Total Del/Veh (s)	49.5	57.4	48.7	52.4

Total Zone Performance

Denied Del/Veh (s)	13.6
Total Del/Veh (s)	540.8

Intersection	
Int Delay, s/veh	2.3

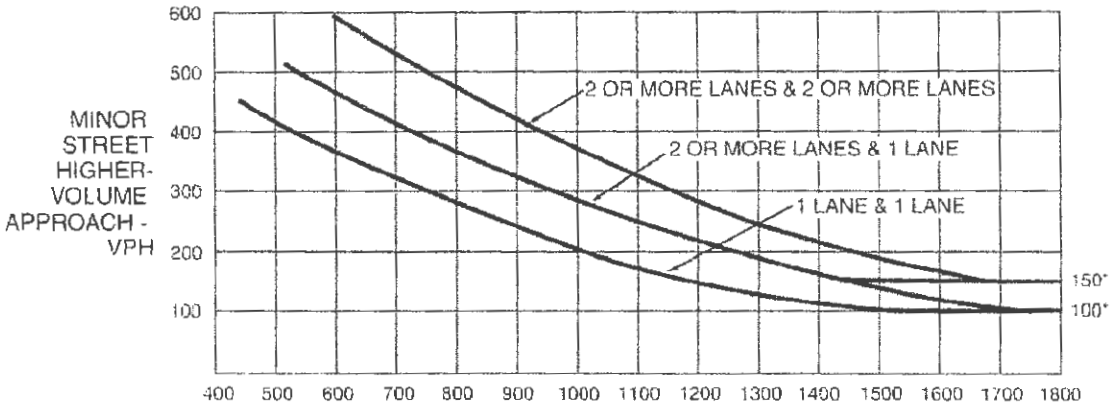
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	5	0	0	180	5	730	10	15	1031	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	1	-	-	190	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	0	0	196	5	793	11	16	1121	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1963	1968	1121	1963	1963	799	1121	0	0	804	0	0
Stage 1	1153	1153	-	810	810	-	-	-	-	-	-	-
Stage 2	810	815	-	1153	1153	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	47	63	251	47	63	386	623	-	-	820	-	-
Stage 1	240	272	-	374	393	-	-	-	-	-	-	-
Stage 2	374	391	-	240	272	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	23	61	251	45	61	386	623	-	-	820	-	-
Mov Cap-2 Maneuver	23	61	-	45	61	-	-	-	-	-	-	-
Stage 1	238	267	-	371	390	-	-	-	-	-	-	-
Stage 2	183	388	-	230	267	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.7	23.5	0.1	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	623	-	-	251	386	820	-	-
HCM Lane V/C Ratio	0.009	-	-	0.022	0.507	0.02	-	-
HCM Control Delay (s)	10.8	-	-	19.7	23.5	9.5	-	-
HCM Lane LOS	B	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	2.8	0.1	-	-

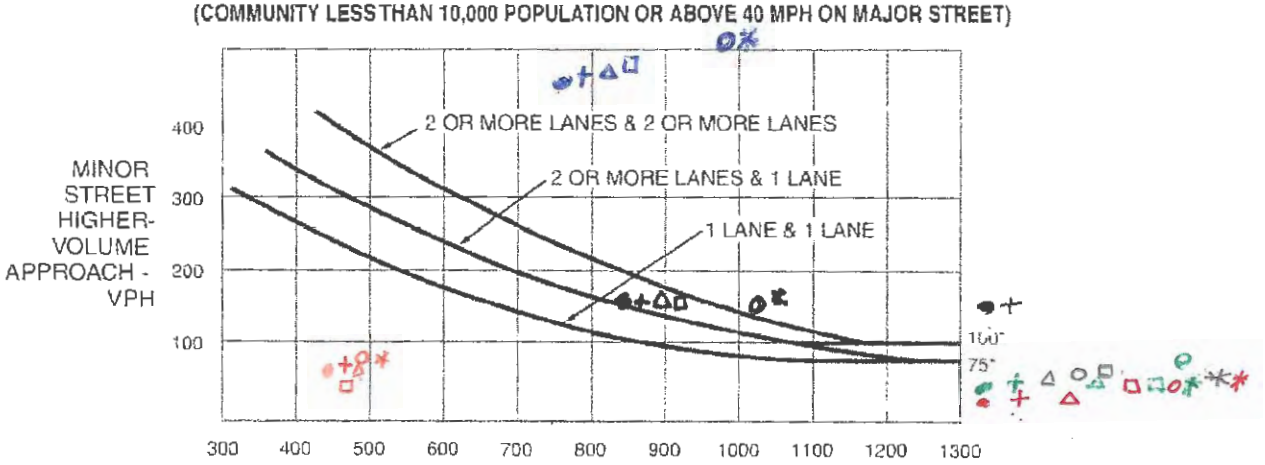
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



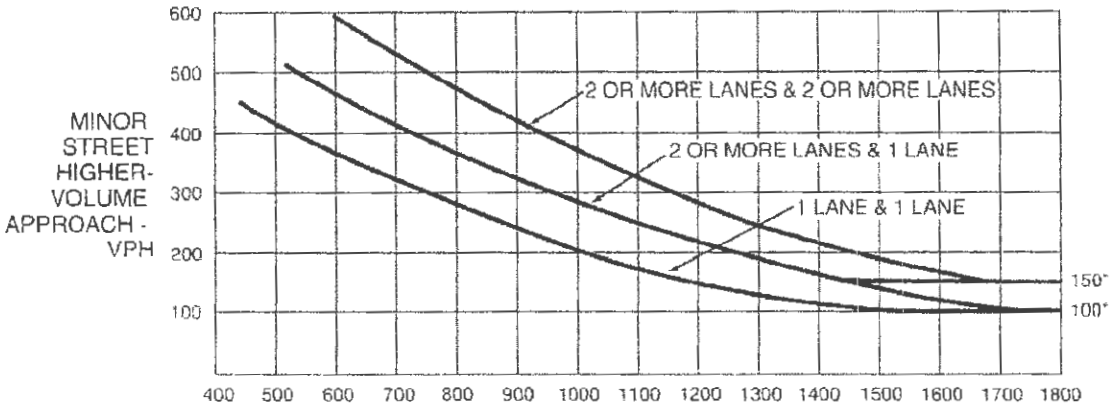
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

- ○ EXISTING
- \+ EXISTING + PROJECT
- △ 2019
- □ 2019 + PROJECT
- ○ 2035
- ✱ 2035 + PROJECT

MISSOURI FLAT / CHINA GARDEN
MISSOURI FLAT / INDUSTRIAL
MISSOURI FLAT / ENTERPRISE
PLEASANT VALLEY / S.249
PLEASANT VALLEY / FORNI
ENTERPRISE / FORNI

AM

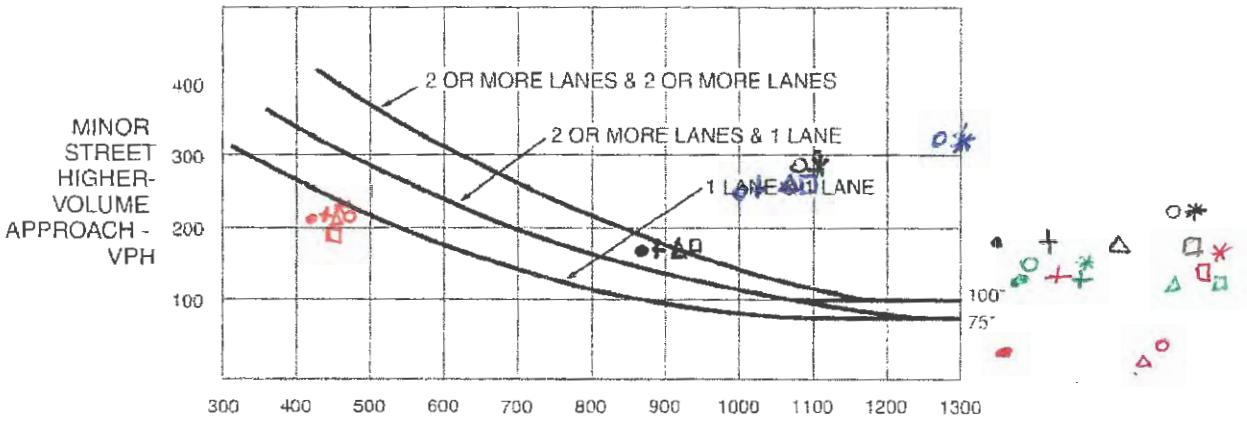
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

• EXISTING
+ EXISTING + PROJECT
△ 2019
□ 2019 + PROJECT
○ 2035
✱ 2035 + PROJECT

MISSOURI FLAT / CHINA GARDEN
MISSOURI FLAT / INDUSTRIAL
MISSOURI FLAT / ENTERPRISE
PLEASANT VALLEY / SR49
PLEASANT VALLEY / FORNI
ENTERPRISE / FORNI

PM