Traffic Information Reissuance for the Diamond Springs Parkway Project Draft Environmental Impact Report - Appendix M

State Clearinghouse No. 2007122033

El Dorado County Department of Transportation

July 7, 2010

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Traffic Information Reissuance for the Draft Environmental Impact Report Diamond Springs Parkway Project County of El Dorado, California

State Clearinghouse No. 2007122033

APPENDIX M

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Appendices

Appendix M: Traffic Impact Analysis

M.1 - Traffic Impact Analysis, May 6, 2010
M.2 - Supplemental Consolidated LOS and Delay Data, May 18, 2010
M.3 - Supplemental Plus Project Figures, June 28, 2010

Appendix M:
Traffic Impact Analysis

M.1 - Traffic Impact Analysis, May 6, 2010

Traffic Impact Analysis

Diamond Springs Parkway
Diamond Springs, California

May 6, 2010

Prepared for:

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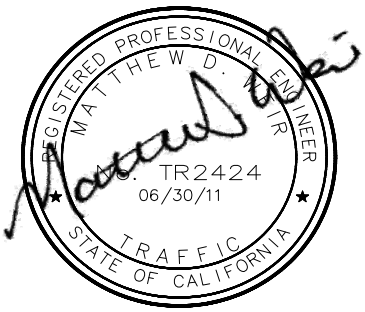

EXECUTIVE SUMMARY

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

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

Intersections

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

Roadway Segments

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

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

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

Significant findings of this study include:

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

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

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

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

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

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

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

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

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

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

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

Project mitigation measures are summarized in Table ES-1.

Table ES-1 – Mitigations Summary Matrix

#	Intersection / Roadway Segment	Scenario	Mitigation Type	Mitigation Measure
I7	Diamond Springs Pkwy @ Missouri Flat Rd	2010 + PP	LOS	None
			Queuing	Add additional WBTH lane (500-feet), add additional NBLT Lane (325-feet) and extend WBLT to 325-feet
		2020 + PP	LOS	Add additional NBLT lane
			Queuing	No additional mitigations from 2010 + PP (Queuing)
		2030 + PP	LOS	Add additional WBTH lane to 2020 + PP (LOS)
			Queuing	No additional mitigations from 2010 + PP (Queuing)
I8	Diamond Springs Pkwy @ Throwita Way	2010 + PP	LOS	None
			Queuing	Add additional WBTH lane (SR-49 through Throwita)
		2020 + PP	LOS	Impliment coordinated signal timings
			Queuing	No additional mitigations from 2010 + PP (Queuing)
		2030 + PP	LOS	Add additional EBTH and WBTH lane (per Roadway Segment LOS)
			Queuing	Extend EBLT to 175-feet
I9	Diamond Springs Pkwy @ Diamond Rd (SR-49)	2010 + PP	LOS	Add provision to allow NB U-Turn
			Queuing	Extend NB dual lefts to 350-feet
		2020 + PP	LOS	No additional mitigations from 2010 + PP (LOS)
			Queuing	No additional mitigations from 2010 + PP (Queuing)
		2030 + PP	LOS	No additional mitigations from 2010 + PP (LOS)
			Queuing	No additional mitigations from 2010 + PP (Queuing)
I12	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd	2010 + PP	LOS	Restrict EB/WB LT and TH (no traffic signal control)
			Queuing	No additional mitigations from 2010 + PP (LOS)
		2020 + PP	LOS Queuing	No additional mitigations from 2010 + PP
		2030 + PP	LOS Queuing	No additional mitigations from 2010 + PP
I13	Diamond Rd (SR-49) @ Pleasant Valley Rd	2010 + PP	LOS	Optimize signal timing
			Queuing	Add additional SBLT lane (500-feet), optimize signal timing, add NBRT overlap, and add WBRT overlap
		2020 + PP	LOS	Add additional SBLT lane and optimize signal timing
			Queuing	No additional mitigations from 2010 + PP (Queuing)
		2030 + PP	LOS	Optimize signal timing in addition to 2020 + PP (LOS)
			Queuing	Convert NBRT lane to shared TH/RT and modify signal phasing accordingly
R6	SR-49 north of Pleasant Valley Road	2010 + PP	LOS	None
			Queuing	None
		2020 + PP	LOS	None
			Queuing	None
		2030 + PP	LOS	Upgrade to Four-Lane, Multilane Highway
			Queuing	None
R7	SR-49 north of Truck Street	2010 + PP	LOS	None
			Queuing	None
		2020 + PP	LOS	None
			Queuing	None
		2030 + PP	LOS	Upgrade to Major Two-Lane Highway
			Queuing	None
R8	Diamond Springs Parkway east of Missouri Flat Road	2010 + PP	LOS	None
			Queuing	None
		2020 + PP	LOS	None
			Queuing	None
		2030 + PP	LOS	Upgrade to Divided, Four-Lane Arterial
			Queuing	None

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

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INTRODUCTION

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

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

PROJECT DESCRIPTION

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

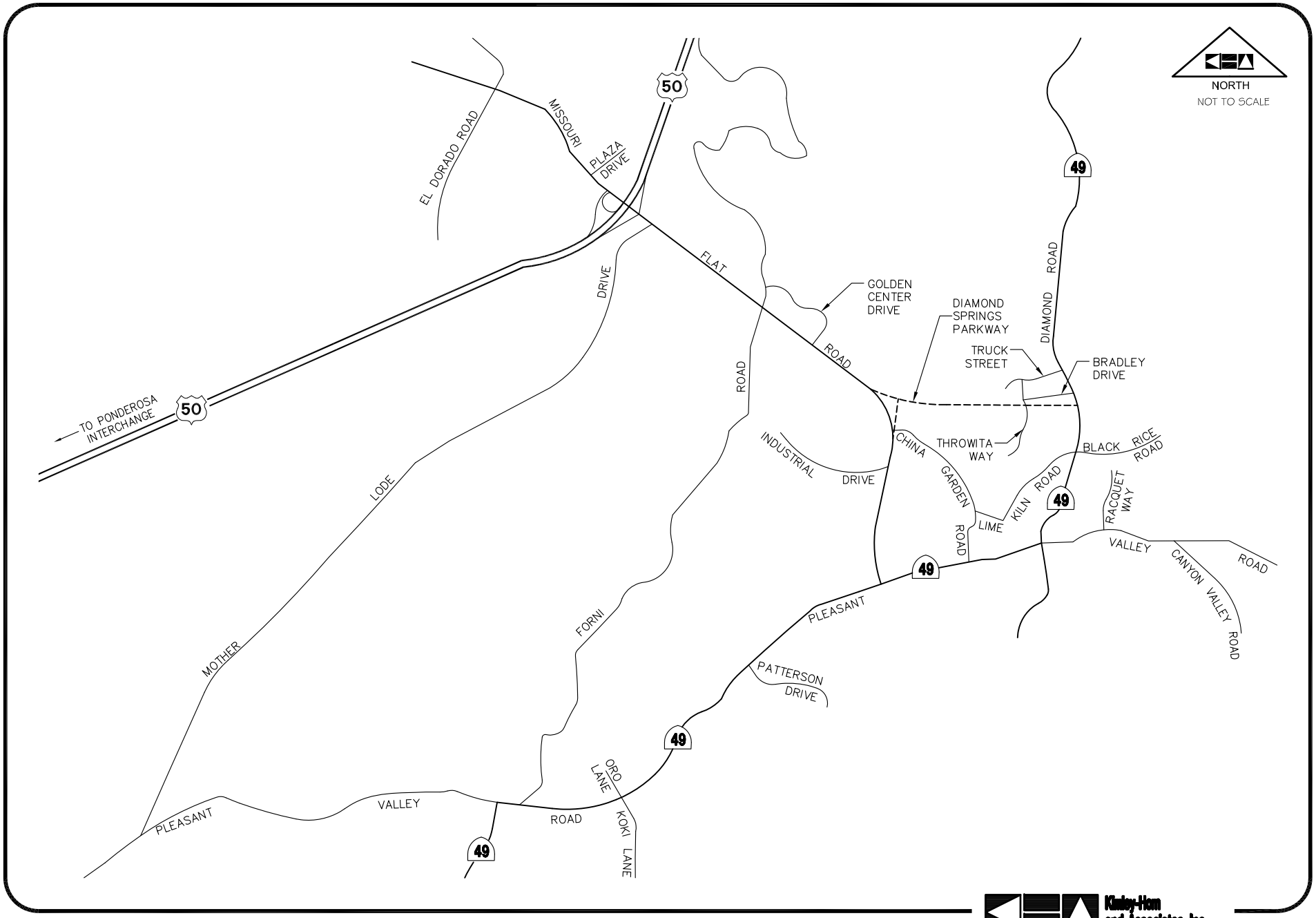
Intersections

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

Roadway Segments

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

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



Kimley-Horn and Associates, Inc.

FIGURE 1

PROJECT VICINITY MAP

DIAMOND SPRINGS PARKWAY

EL DORADO COUNTY, CA

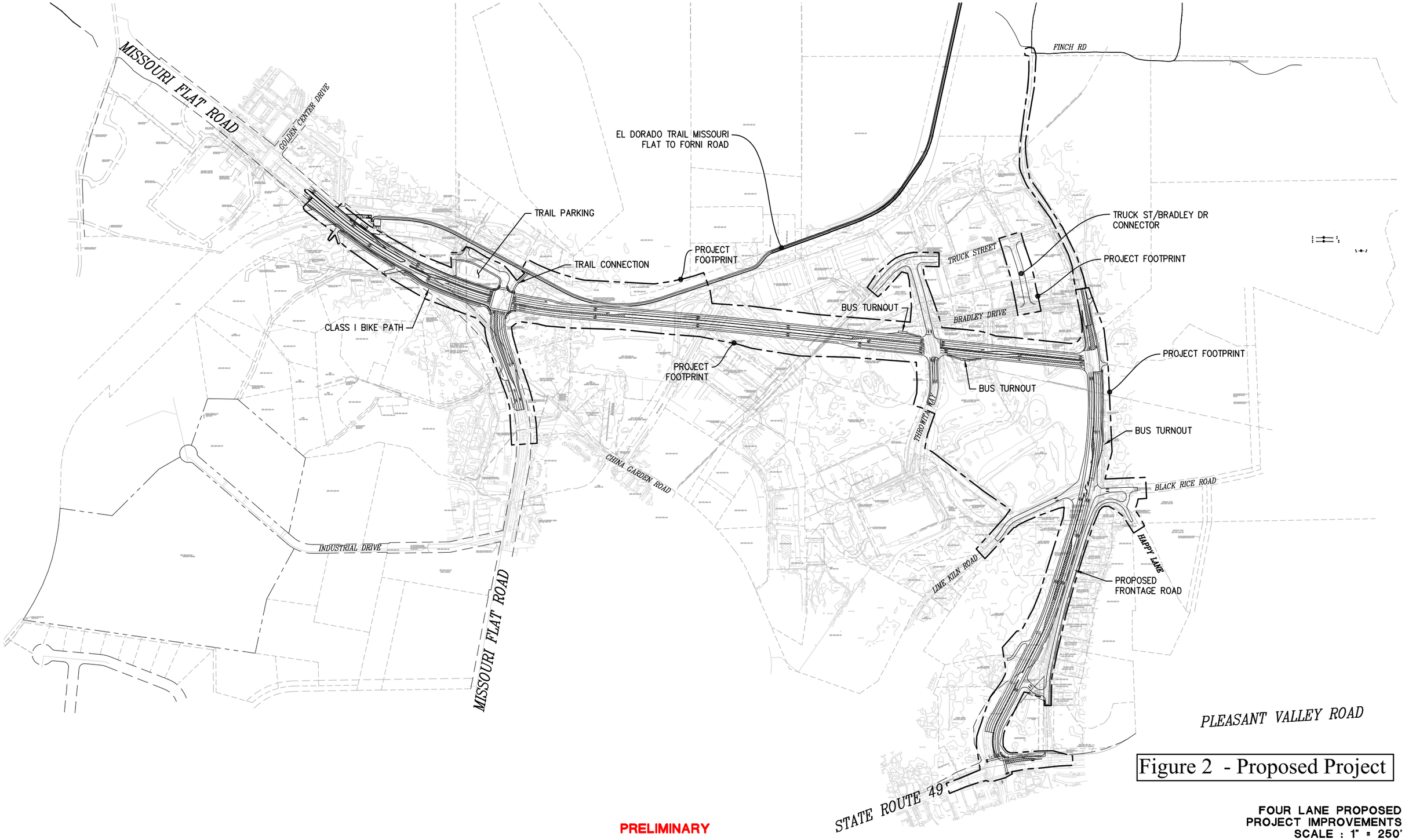


Figure 2 - Proposed Project

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

PRELIMINARY

REVISION			
NUMBER	DATE	DESCRIPTION	BY

PREPARED UNDER THE SUPERVISION OF :

REGISTERED CIVIL ENGINEER

DATE:

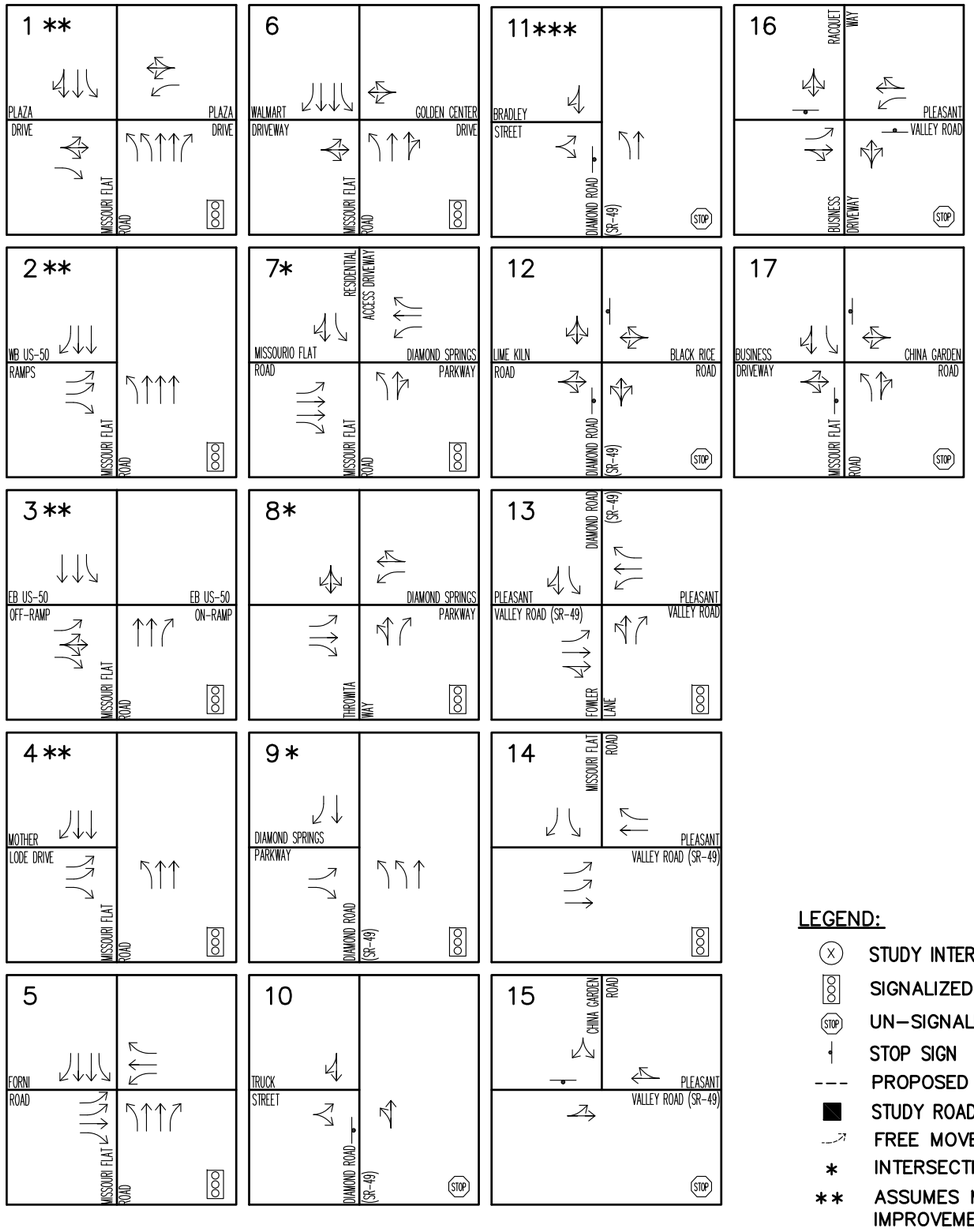
DESIGNED:	DRAWN: ARB
CHECKED: JPM	DATE: 5/7/10
ROAD NUMBER:	

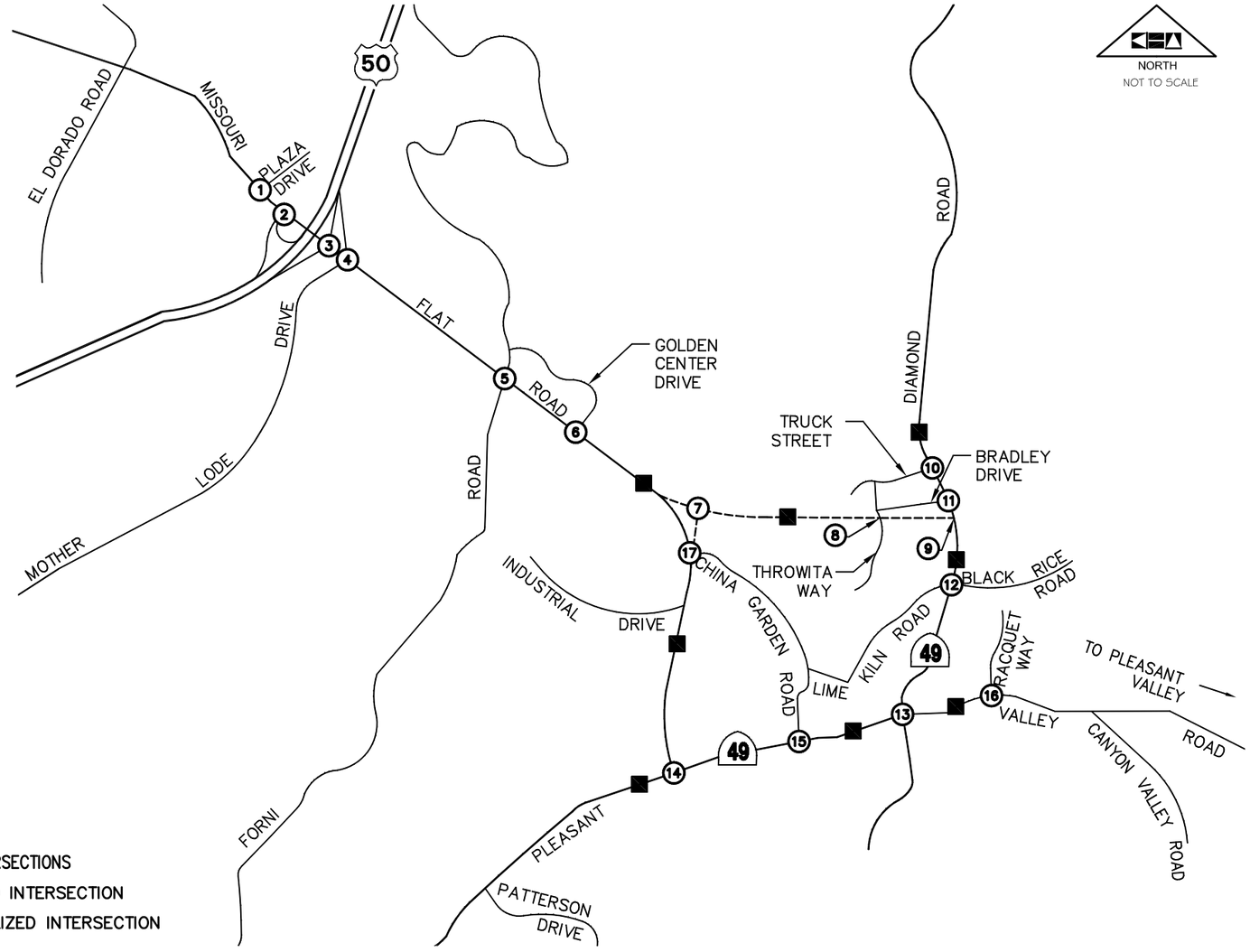
EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION

DIAMOND SPRINGS PARKWAY

SHEET EX 1
1 OF 1
W.O. No. 72334

FOR REDUCED PLANS
0 1 2
ORIGINAL SCALE IS IN INCHES
Drawing name: C:\Civil 3D Projects\72334 Diamond Springs Pkwy\CADD Files\Exhibits\Traffic\Traffic Exhibit.dwg Layout Tab: EX-1 May 07,2010 - 11:54am Abishop





LEGEND:

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

Kimley-Horn and Associates, Inc.

FIGURE 3

PROJECT LOCATION, STUDY INTERSECTIONS, AND EXISTING LANE GEOMETRY

DIAMOND SPRINGS PARKWAY
EL DORADO COUNTY, CA

PROJECT AREA ROADWAYS

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

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

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

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

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

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

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

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

ASSESSMENT OF PROPOSED PROJECT

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

TRAFFIC IMPACT ANALYSIS METHODOLOGY

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

Intersections

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

Table 1 – Intersection Level of Service Criteria

Level of Service (LOS)	Un-Signalized	Signalized
	Average Control Delay* (sec/veh)	Control Delay per Vehicle (sec/veh)
A	≤ 10	≤ 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F	> 50	> 80

Source: Highway Capacity Manual, 2000
* Applied to the worst lane/lane group(s) for TWSC

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

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

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

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

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

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

Table 2 – Roadway Segment Level of Service Criteria

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

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

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

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

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

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

a. Year 2007 Peak-Hour Intersection Turn Movement Volumes

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

b. Year 2007 plus Project Roadway Segment Volumes

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

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

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

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

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

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

c. Year 2030 Roadway Segment Volumes

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

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

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

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

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

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

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

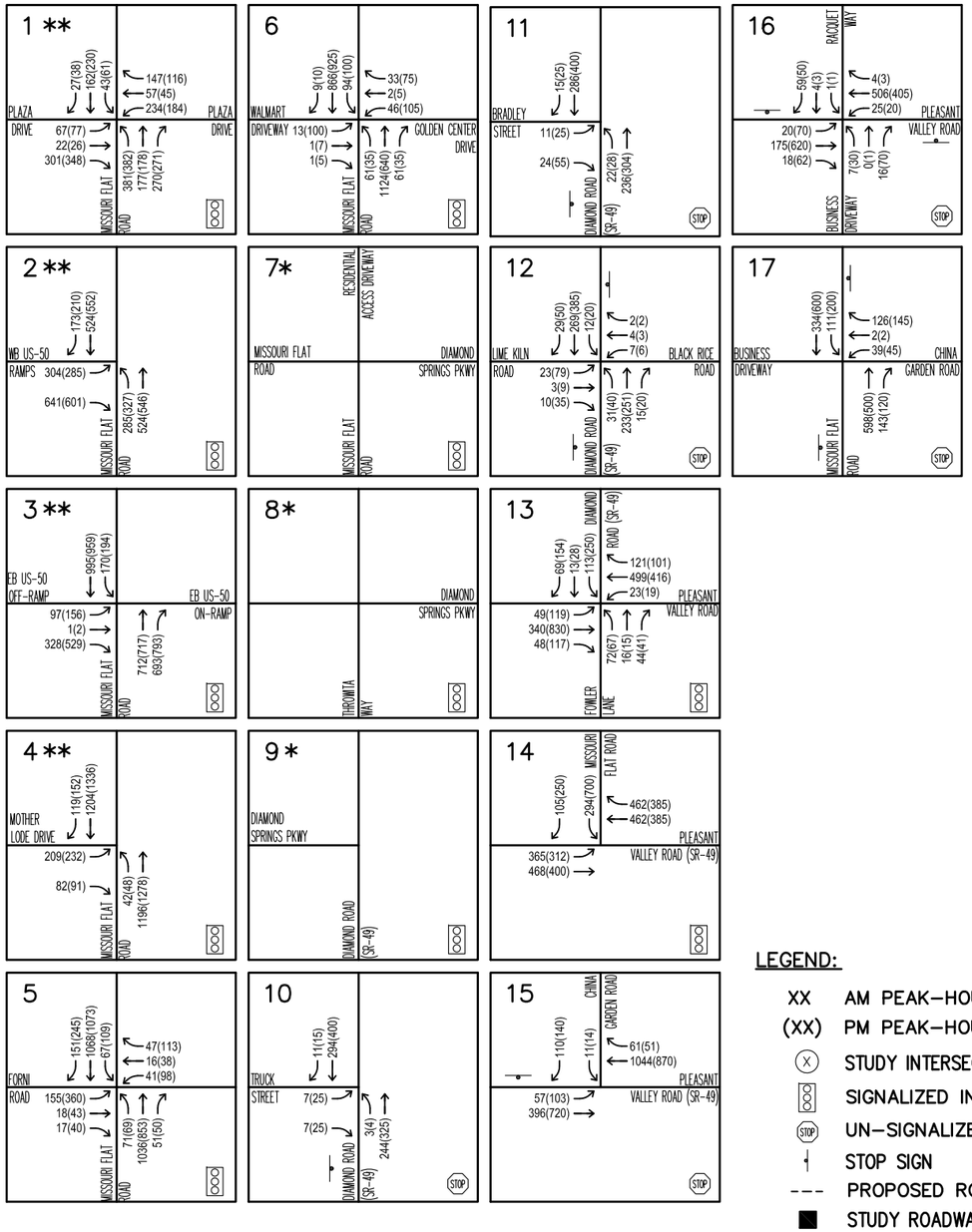
g. Year 2020 PM Peak-Hour Intersection Turn Movement Volumes
Year 2020 No Project and Year 2020 Plus Project intersection volumes were calculated assuming a straight line growth rate between the Year 2010 intersection volumes and the Year 2030 intersection volumes.

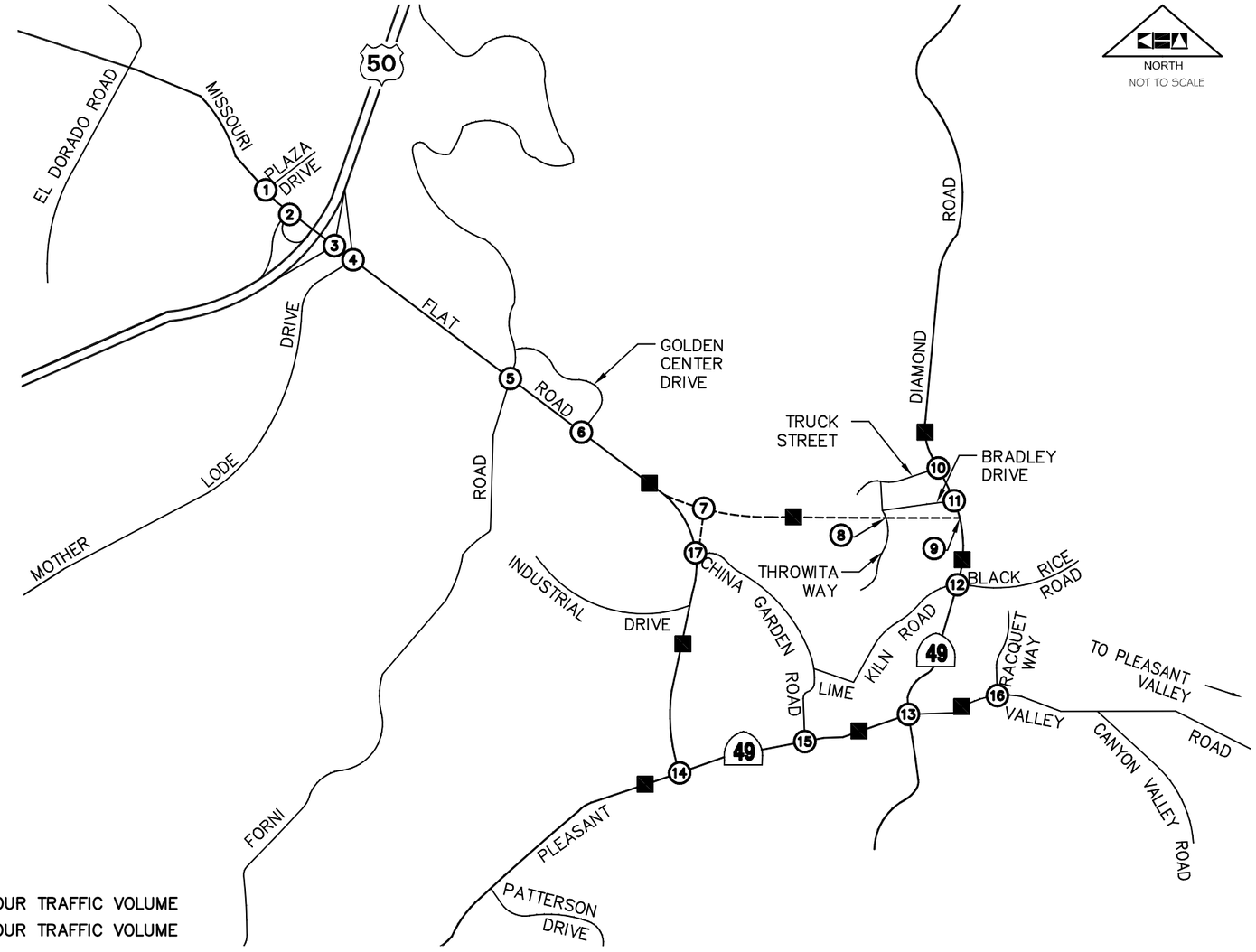
h. *AM Peak-Hour Turn Movement Volumes*
The AM peak-hour turn movement volumes for the year 2010, year 2020, and year 2030 conditions were calculated by applying a factor to the corresponding PM peak hour turn movement volumes. This factor was determined based by considering the existing 2007 traffic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

EXISTING (2010) CONDITIONS

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

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





LEGEND:

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

Kimley-Horn and Associates, Inc.

FIGURE 4

EXISTING (2010) PEAK–HOUR TRAFFIC VOLUMES

DIAMOND SPRINGS PARKWAY
EL DORADO COUNTY, CA

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

Table 3 – Existing (2010) Intersection Levels of Service

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

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

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

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

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

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

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

EXISTING (2010) PLUS PROPOSED PROJECT CONDITIONS

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

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

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

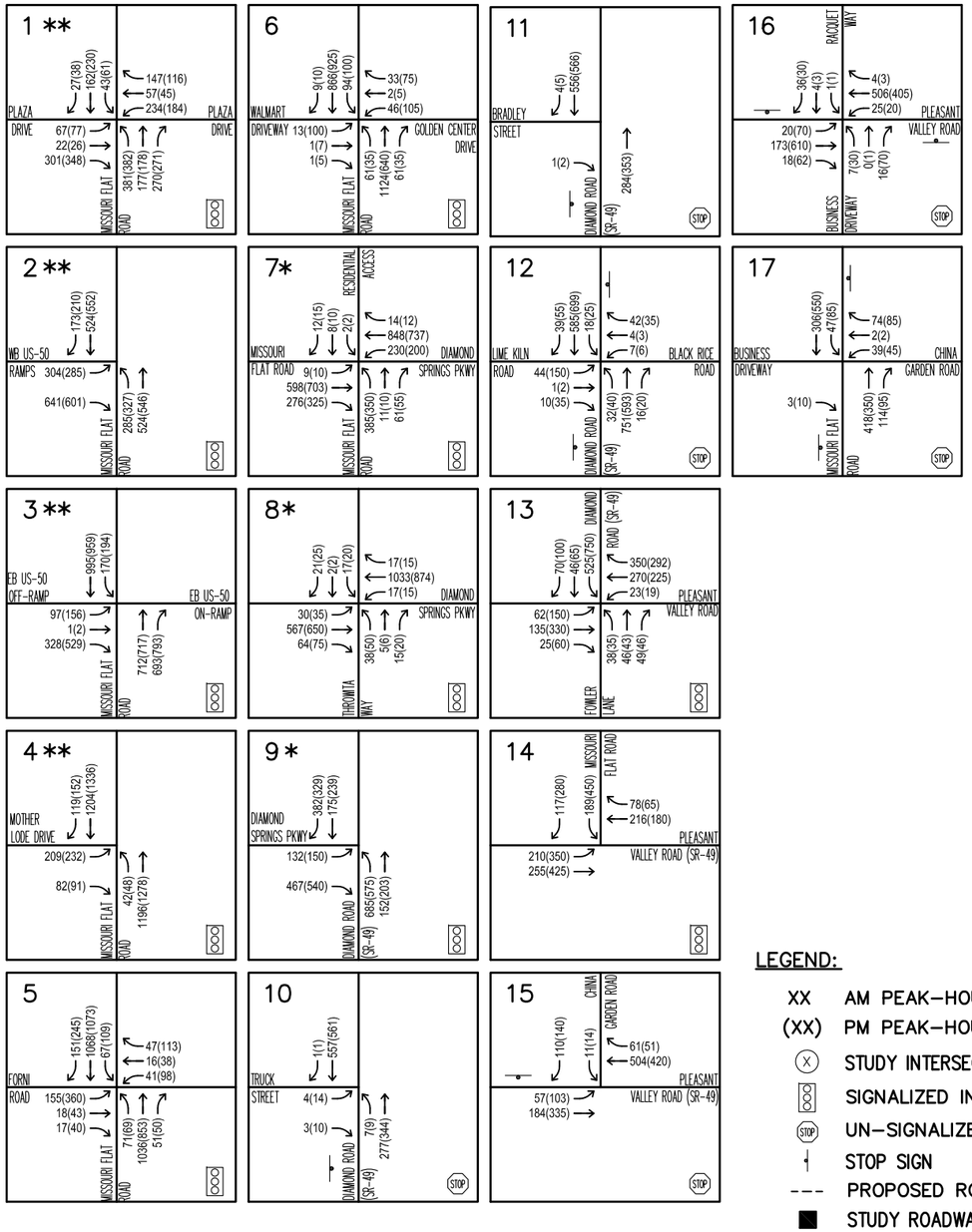
Roadway Segments
Table 6 presents the peak-hour roadway segment operating conditions for this analysis scenario. As indicated in Table 6, the study roadway segments operate from LOS C to LOS F during the PM peak-hour.

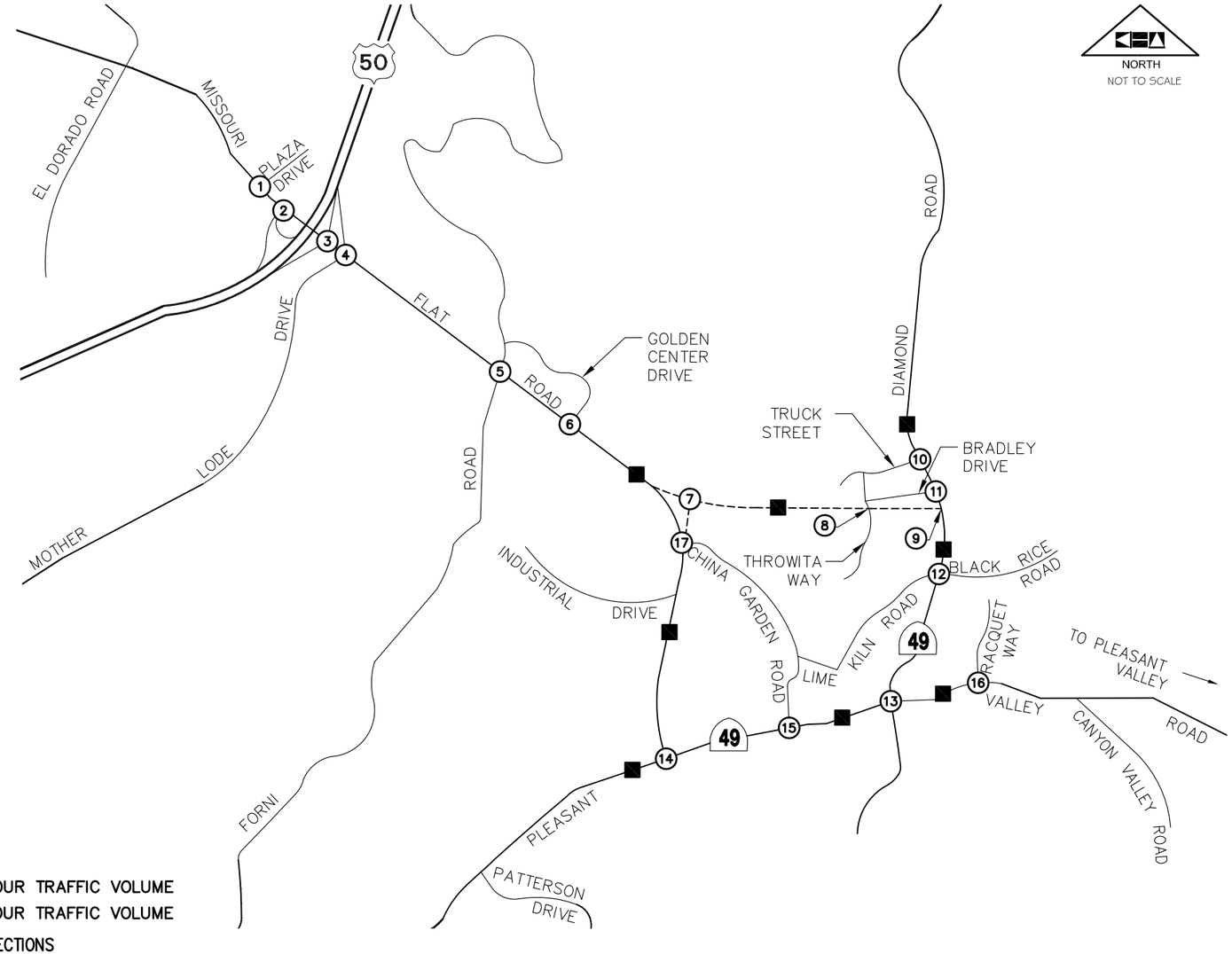
INTERIM (2020) CONDITIONS

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

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

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





LEGEND:

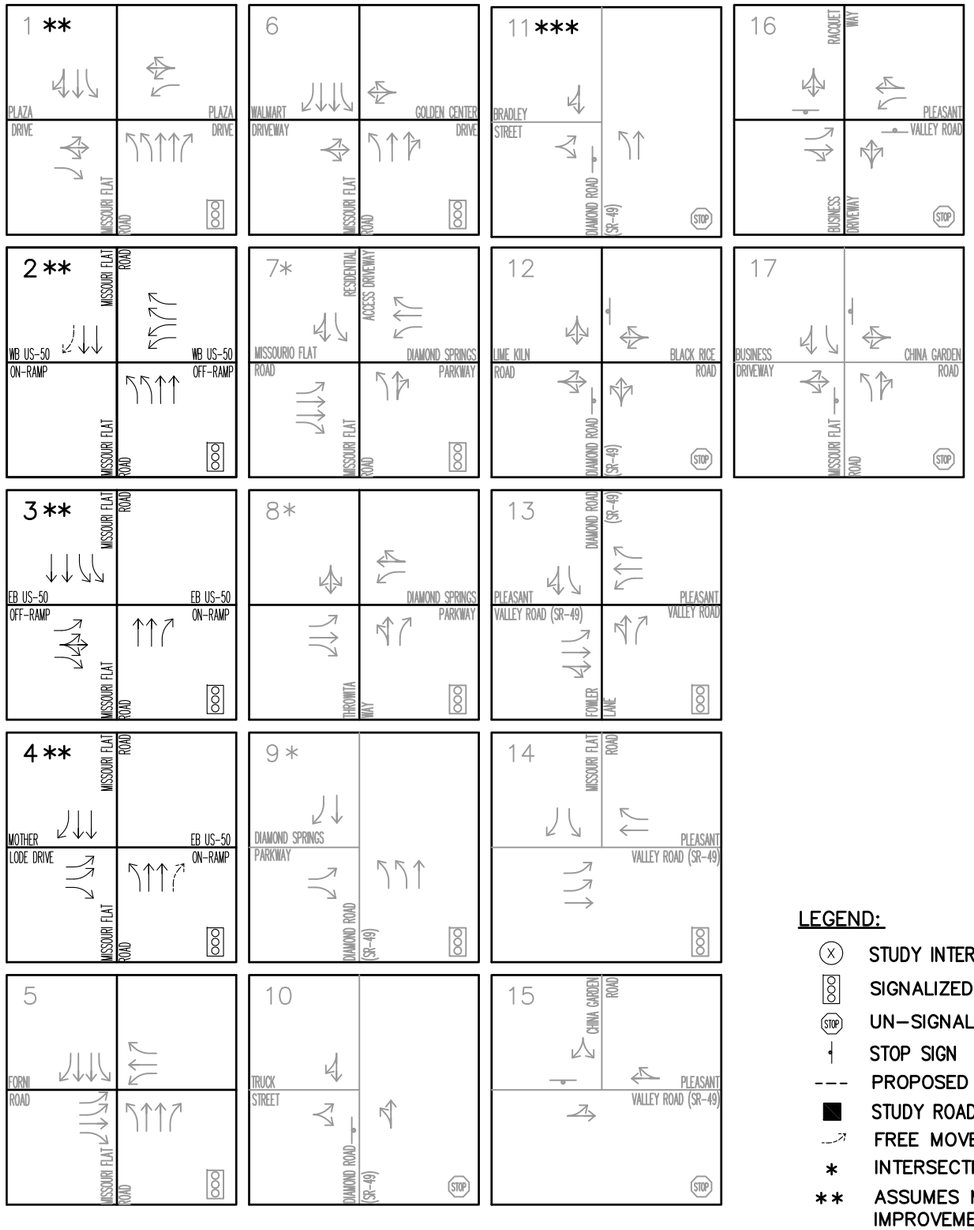
- XX AM PEAK-HOUR TRAFFIC VOLUME
- (XX) PM PEAK-HOUR TRAFFIC VOLUME
- (X) STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP UN-SIGNALIZED INTERSECTION
- STOP SIGN
- --- PROPOSED ROADWAY
- ■ STUDY ROADWAY SEGMENT
- * INTERSECTION FOR PLUS PROJECT SCENARIOS ONLY
- ** ASSUMES MISSOURI FLAT INTERCHANGE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

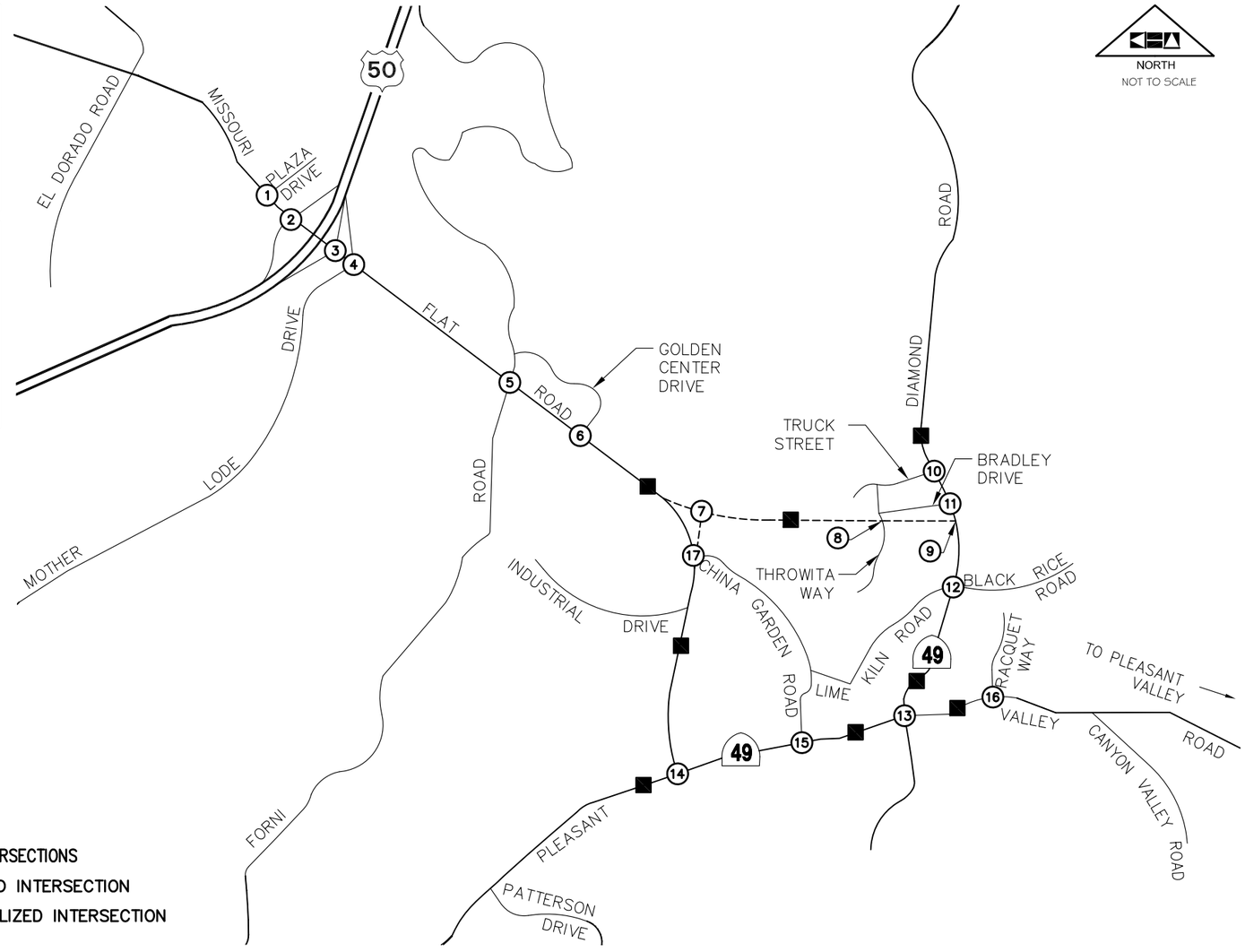
Kimley-Horn and Associates, Inc.

FIGURE 5

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

DIAMOND SPRINGS PARKWAY
EL DORADO COUNTY, CA





LEGEND:

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

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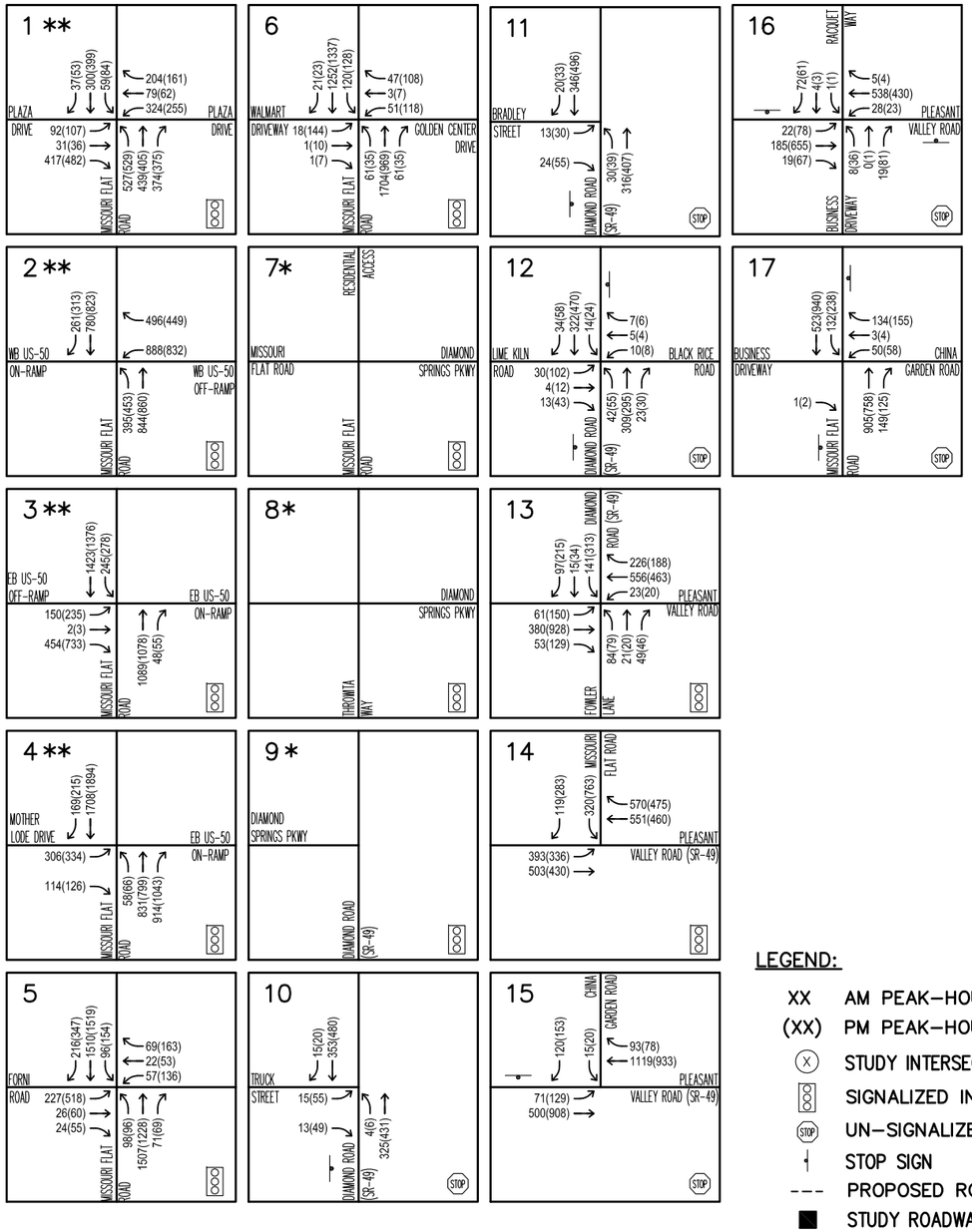
FIGURE 6

INTERIM (2020) INTERSECTION CONFIGURATIONS

DIAMOND SPRINGS PARKWAY
EL DORADO COUNTY, CA



LEGEND:

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

Kimley-Horn and Associates, Inc.

FIGURE 7

INTERIM (2020) PEAK–HOUR TRAFFIC VOLUMES

DIAMOND SPRINGS PARKWAY
EL DORADO COUNTY, CA

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

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

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

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

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

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

Table 7 – Interim (2020) Intersection Levels of Service

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

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

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

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

INTERIM (2020) PLUS PROPOSED PROJECT CONDITIONS

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

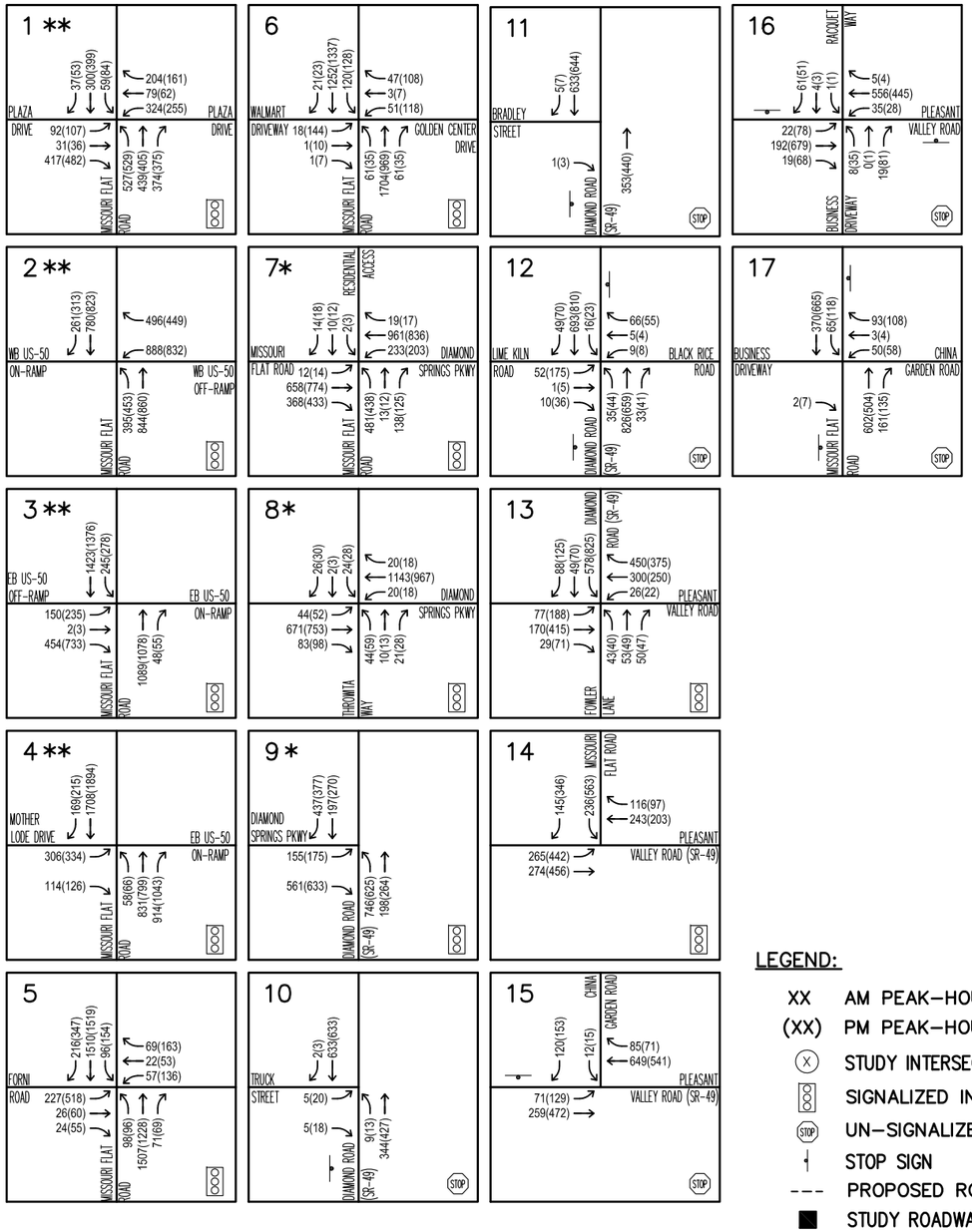
Intersections
Table 9 presents the peak-hour intersection operating conditions for this analysis scenario. As indicated in Table 9, the study intersections operate from LOS B to LOS F during the AM and PM peak-hours.

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

CUMULATIVE (2030) CONDITIONS

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

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



LEGEND:

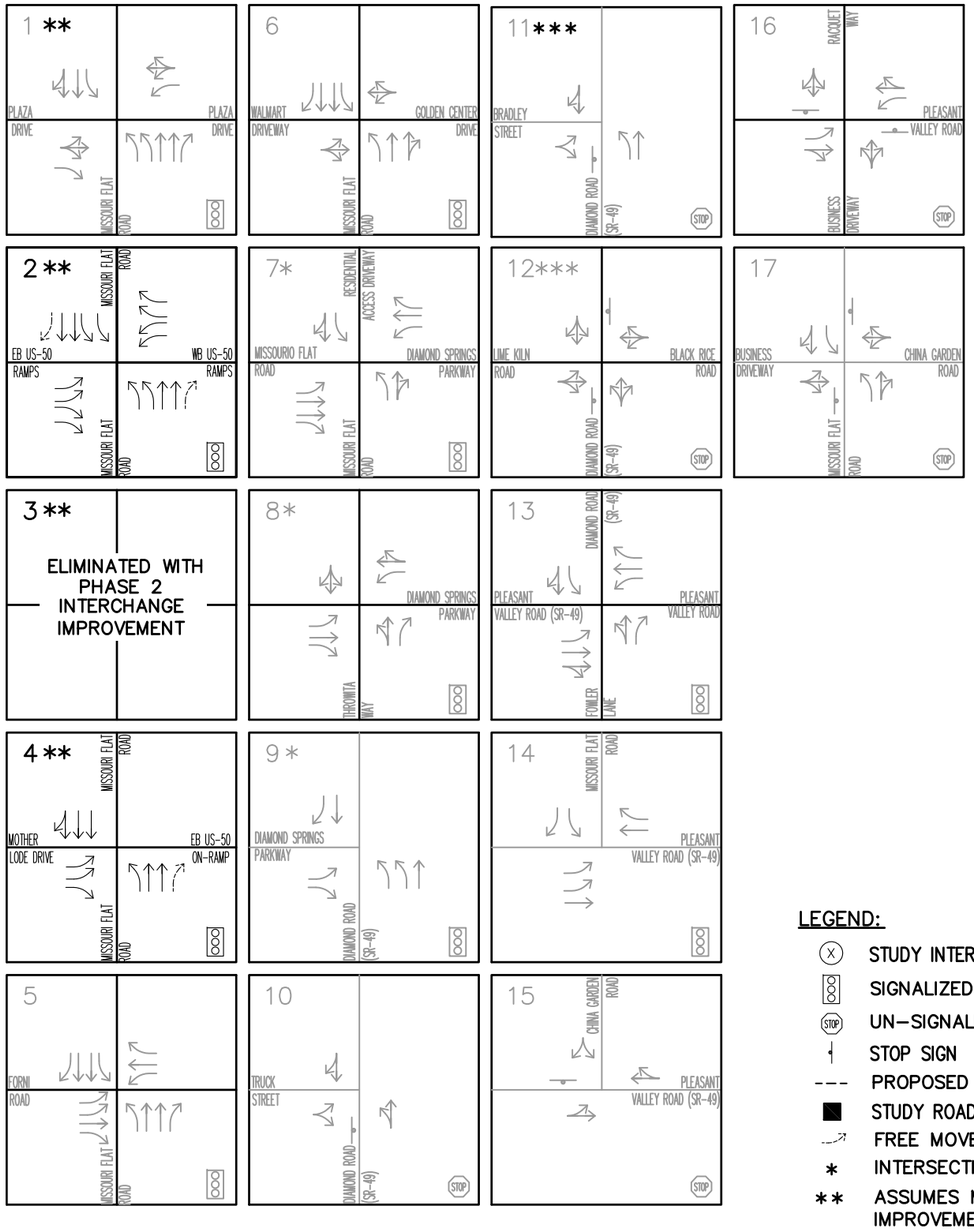
- XX AM PEAK–HOUR TRAFFIC VOLUME
- (XX) PM PEAK–HOUR TRAFFIC VOLUME
- (X) STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- UN–SIGNALIZED INTERSECTION
- STOP SIGN
- --- PROPOSED ROADWAY
- ■ STUDY ROADWAY SEGMENT
- * INTERSECTION FOR PLUS PROJECT SCENARIOS ONLY
- ** ASSUMES MISSOURI FLAT INTERCHANGE PHASE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

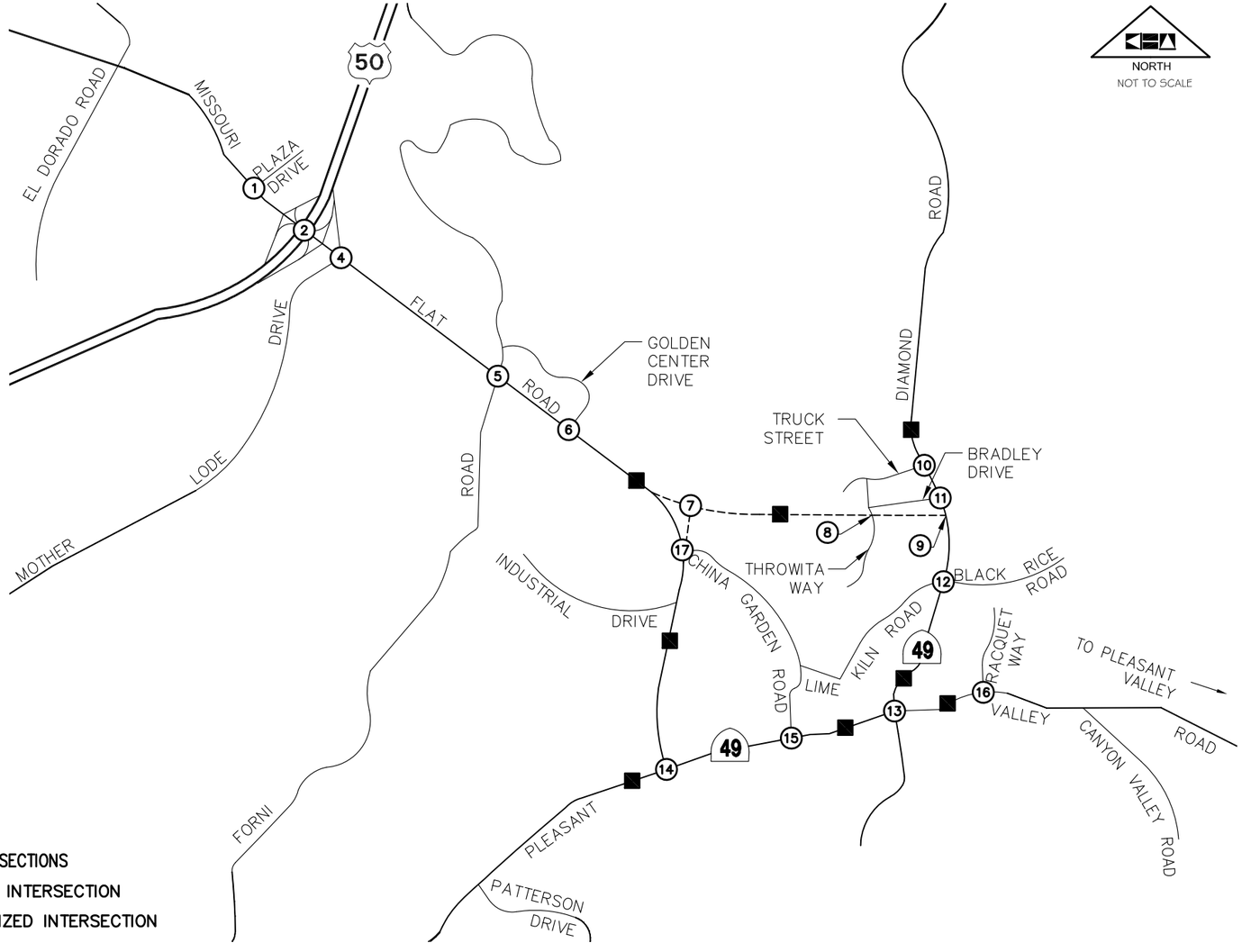
Kimley-Horn and Associates, Inc.

FIGURE 8

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

DIAMOND SPRINGS PARKWAY
EL DORADO COUNTY, CA





LEGEND:

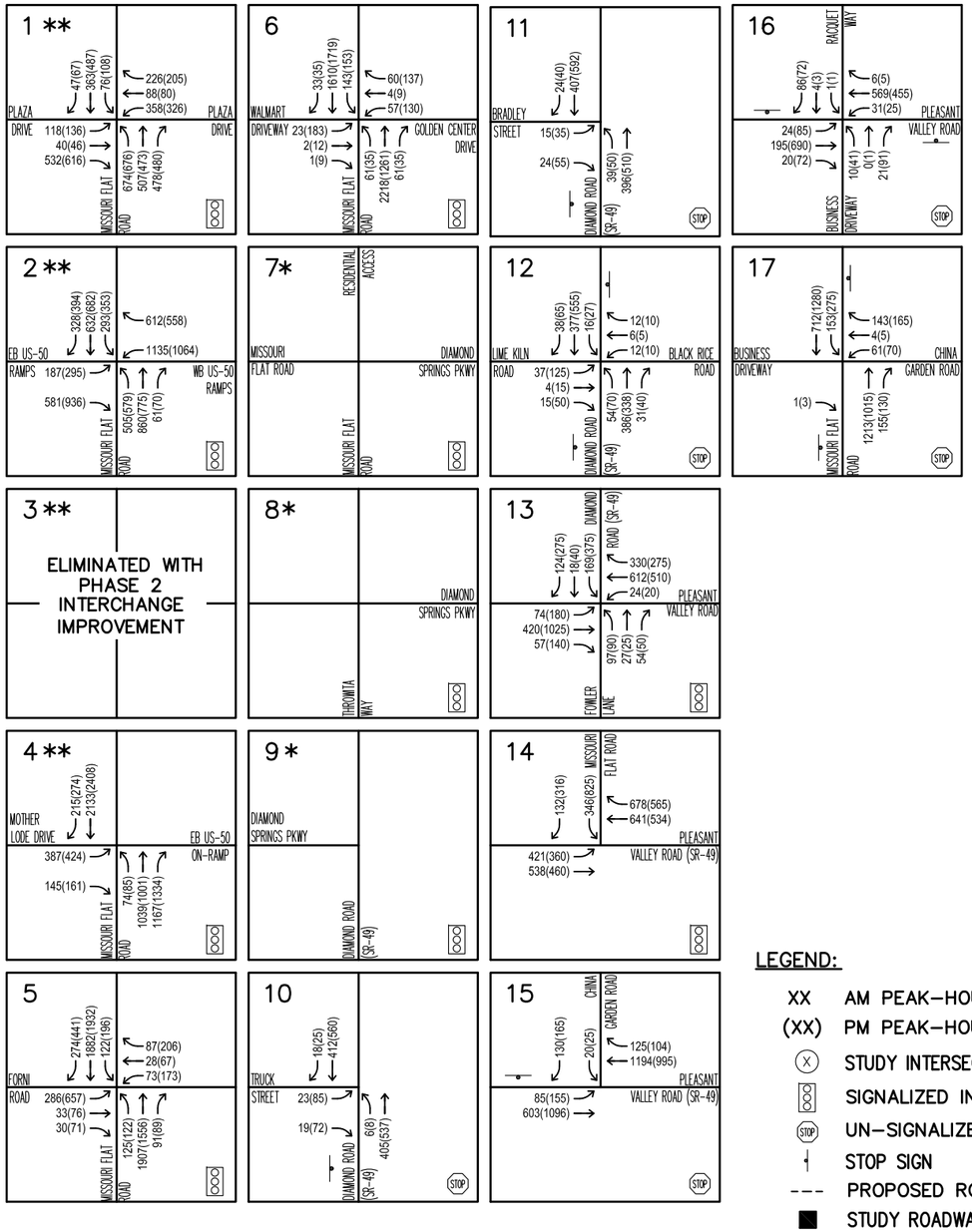
- (X) STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- (STOP) UN-SIGNALIZED INTERSECTION
- STOP SIGN
- --- PROPOSED ROADWAY
- ■ STUDY ROADWAY SEGMENT
- FREE MOVEMENT
- * INTERSECTION FOR PLUS PROJECT SCENARIOS ONLY
- ** ASSUMES MISSOURI FLAT INTERCHANGE PHASE 2 IMPROVEMENTS ARE IN PLACE
- *** LEFT TURNS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

Kimley-Horn and Associates, Inc.

FIGURE 9

CUMULATIVE (2030) INTERSECTION CONFIGURATIONS

DIAMOND SPRINGS PARKWAY
EL DORADO COUNTY, CA



LEGEND:

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

Kimley-Horn and Associates, Inc.

FIGURE 10

CUMULATIVE (2030) PEAK-HOUR TRAFFIC VOLUMES

DIAMOND SPRINGS PARKWAY
EL DORADO COUNTY, CA

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

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

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

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

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

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

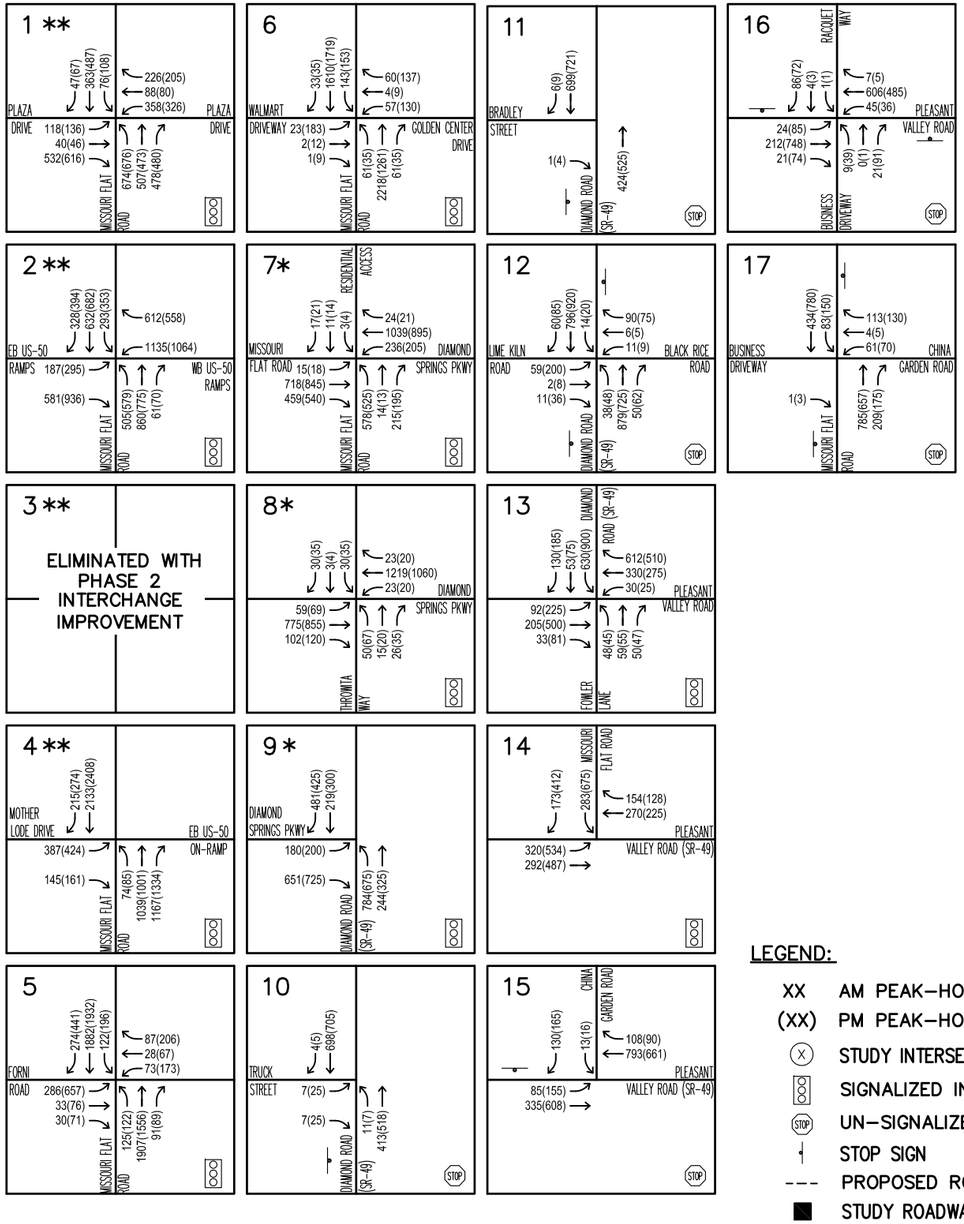
Intersections
Table 11 presents the peak-hour intersection operating conditions for this analysis scenario. As indicated in Table 11, the study intersections operate from LOS B to LOS F during the AM and PM peak-hours.

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

CUMULATIVE (2030) PLUS PROPOSED PROJECT CONDITIONS

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

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



LEGEND:

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

Kimley-Horn and Associates, Inc.

FIGURE 11

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

DIAMOND SPRINGS PARKWAY
EL DORADO COUNTY, CA

Table 11 – Cumulative (2030) Intersection Levels of Service

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

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

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

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

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

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

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

Roadway Segments

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

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

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

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

IMPACTS AND MITIGATION

Standards of Significance

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

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

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

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

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

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

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

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

Impacts and Mitigation

Existing (2010) plus Proposed Project Conditions

Intersections

Impacts:

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

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

Mitigation:

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

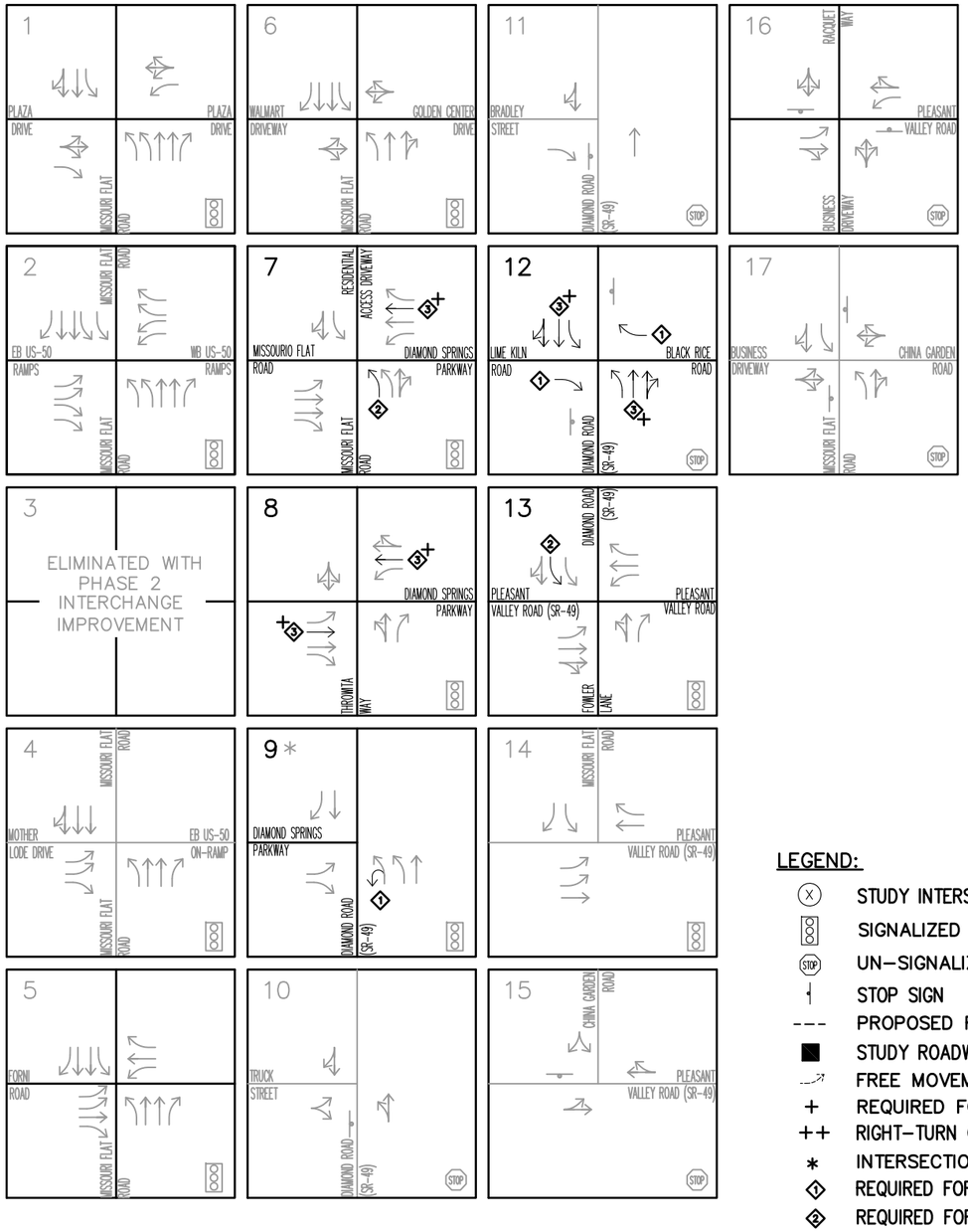
Eastbound Lime Kiln Road Thru and Left:

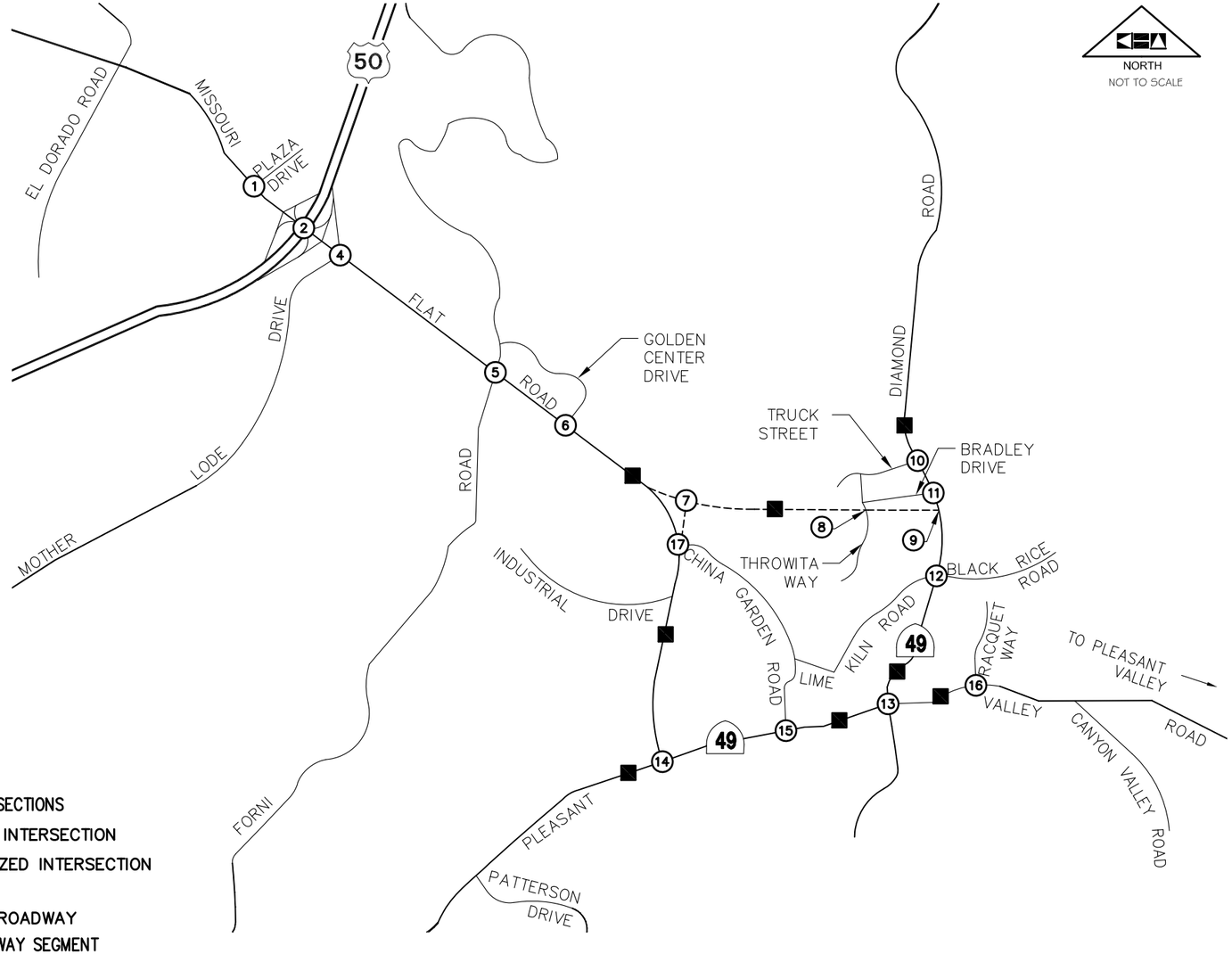
- 50% assumed to use China Garden Rd to NB Missouri Flat Rd
- 12.5% assumed to use China Garden Rd to Pleasant Valley Rd to NB Diamond Rd (SR-49)
- 12.5% assumed to use China Garden Rd to Missouri Flat Rd to EB Diamond Springs Pkwy to NB Diamond Rd (SR-49)
- 25% assumed to make a southbound right-turn at Diamond Road (SR-49)/Pleasant Valley

Westbound Black Rice Road Thru and Left:

- 100% assumed to make NB to SB u-turn at Diamond Springs Parkway/Diamond Rd (SR-49)

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





LEGEND:

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

NOTE: DARK LANES INDICATE MODIFICATIONS

Kimley-Horn and Associates, Inc.

FIGURE 12

LANE GEOMETRIES WITH LOS MITIGATION

DIAMOND SPRINGS PARKWAY
EL DORADO COUNTY, CA

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

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

Intersection	Existing (2010) plus Proposed Project			Existing (2010) plus Proposed Project (Mitigated)		
	Traffic Control	Delay* (seconds)	LOS	Traffic Control	Delay* (seconds)	LOS
Diamond Rd. @ Lime Kiln Rd./Black Rice Rd	TWSC	199.6 (EB) / >200 (EB)	F / F	TWSC	17.2 (WB) / 17.4 (EB)	C / C

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

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

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

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

Intersection	Existing (2010) plus Proposed Project		Existing (2010) plus Proposed Project (Mitigated)	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Diamond Rd (SR-49) @ Pleasant Valley Rd	155.9	F	64.1	E

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

Roadway Segments

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

Mitigation:
M3. None Required.

Interim (2020) plus Proposed Project Conditions

Intersections

Impacts:

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

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

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

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

Mitigation:

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

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

Intersection	Interim (2020) plus Proposed Project		Interim (2020) plus Proposed Project (Mitigated)	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Diamond Springs Pkwy @ Missouri Flat Road	95.5	F	50.7	D

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

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

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

Intersection	Interim (2020) plus Proposed Project		Interim (2020) plus Proposed Project (Mitigated)	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Diamond Springs Pkwy @ Throwita Way	97.5	F	51.3	D

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

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

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

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

Intersection	Interim (2020) plus Proposed Project			Interim (2020) plus Proposed Project (Mitigated)		
	Traffic Control	Delay* (seconds)	LOS	Traffic Control	Delay* (seconds)	LOS
Diamond Rd. @ Lime Kiln Rd./Black Rice Rd	TWSC	747.3 (EB) / >200 (EB)	F / F	Signal	20.9 (WB) / 21.9 (EB)	C / C

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

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

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

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

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

Intersection	Interim (2020) plus Proposed Project		Interim (2020) plus Proposed Project (Mitigated)	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Diamond Rd. (SR-49) @ Pleasant Valley Rd.	165.5	F	35.6	D

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

Roadway Segments

Impact:

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

Mitigation:

M8. None Required.

Cumulative (2030) plus Proposed Project Conditions

Intersections

Impacts:

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

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

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

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

Mitigation:

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

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

Intersection	Cumulative (2030) plus Proposed Project		Cumulative (2030) plus Proposed Project (Mitigated)	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Diamond Springs Pkwy @ Missouri Flat Rd.	132.8 / 90.5	F / F	30.4 / 33.3	C / C
Note: Results are presented in **AM / PM peak-hour** format.				

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

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

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

Intersection	Cumulative (2030) plus Proposed Project		Cumulative (2030) plus Proposed Project (Mitigated)	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Diamond Springs Pkwy @ Throwita Way	110.9	F	43.1	D

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

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

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

Intersection	Cumulative (2030) plus Proposed Project			Cumulative (2030) plus Proposed Project (Mitigated)		
	Traffic Control	Delay* (seconds)	LOS	Traffic Control	Delay* (seconds)	LOS
Diamond Rd. @ Lime Kiln Rd.	TWSC	>200 (EB) / >200 (EB)	F / F	TWSC	12.3 (EB) / 14.7 (EB)	B / B

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

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

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

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

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

Intersection	Cumulative (2030) plus Proposed Project		Cumulative (2030) plus Proposed Project (Mitigated)	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Diamond Rd. (SR-49) @ Pleasant Valley Rd.	99.0 / 171.7	F / F	26.2 / 44.0	C / D
Note: Results are presented in **AM / PM peak-hour** format.				

Roadway Segments

Impacts:

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

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

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

Mitigation:

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

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

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

OTHER CONSIDERATIONS

Peak-Hour Traffic Signal Warrant Evaluation

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

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

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

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

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

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

Intersection Queuing Evaluation

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

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

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

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

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

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

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

Table 28 – Intersection Queuing Evaluation Results for Selected Locations

Intersection / Analysis Scenario	Movement	AM Peak-Hour		PM Peak-Hour	
		Available Storage (ft)	95th % Queue (ft)	Available Storage (ft)	95th % Queue (ft)
DSP @ Missouri Flat Rd	**WBTH**				
Existing (2010) plus Project		2,835*	998	2,835*	830
Interim (2020) plus Project			1,208		1,024
Interim (2020) plus Project (with LOS Mitigation)			1081		763
Cumulative (2030) plus Project			1,360		1,148
Cumulative (2030) plus Project (with LOS Mitigation)			500		340
	WBLT				
Existing (2010) plus Project		150	270	150	253
Interim (2020) plus Project			294		257
Interim (2020) plus Project (with LOS Mitigation)			255		274
Cumulative (2030) plus Project			303		291
Cumulative (2030) plus Project (with LOS Mitigation)			324		323
	NBLT				
Existing (2010) plus Project		150	540	150	492
Interim (2020) plus Project			706		620
Interim (2020) plus Project (with LOS Mitigation)		150+	319	150+	357
Cumulative (2030) plus Project		150	874	150	777
Cumulative (2030) plus Project (with LOS Mitigation)		150+	288	150+	321
DSP @ Throwita Way	**EBLT**				
Existing (2010) plus Project		150	59	150	74
Interim (2020) plus Project			123		114
Interim (2020) plus Project (with LOS Mitigation)			111		123
Cumulative (2030) plus Project			126		179
Cumulative (2030) plus Project (with LOS Mitigation)			80		163
	WBLT				
Existing (2010) plus Project		100	34	100	32
Interim (2020) plus Project			53		37
Interim (2020) plus Project (with LOS Mitigation)			30		30
Cumulative (2030) plus Project			46		50
Cumulative (2030) plus Project (with LOS Mitigation)			30		27
	WBTH				
Existing (2010) plus Project		850*	1,112	850*	910
Interim (2020) plus Project			1,566		1,091
Interim (2020) plus Project (with LOS Mitigation)			1406		957
Cumulative (2030) plus Project			1,452		1,246
Cumulative (2030) plus Project (with LOS Mitigation)			454		275
DSP @ Diamond Rd (SR-49)	**NBTH**				
Existing (2010) plus Project		725*	47	725*	69
Interim (2020) plus Project			68		101
Cumulative (2030) plus Project			94		140
	NBLT				
Existing (2010) plus Project		200+	237	200+	222
Interim (2020) plus Project			293		267
Cumulative (2030) plus Project			376		303
	SBTH				
Existing (2010) plus Project		270*	154	270*	210
Interim (2020) plus Project			178		255
Cumulative (2030) plus Project			204		295

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

Intersection / Analysis Scenario	Movement	AM Peak-Hour		PM Peak-Hour	
		Available Storage (ft)	95th % Queue (ft)	Available Storage (ft)	95th % Queue (ft)
DSP @ Diamond Rd (SR-49)	**SBRT**	(Continued)			
Existing (2010) plus Project		270*	77	270*	66
Interim (2020) plus Project			84		74
Cumulative (2030) plus Project			122		352
	EBLT				
Existing (2010) plus Project		850*	129	850*	151
Interim (2020) plus Project			154		183
Cumulative (2030) plus Project			186		208
	EBRT				
Existing (2010) plus Project		850*	41	850*	149
Interim (2020) plus Project			120		309
Cumulative (2030) plus Project			265		496
Diamond Rd (SR-49) @ Lime Kiln Rd	**EBLT**				
Existing (2010)		>500*	8	>500*	57
Existing (2010) plus Project			114		>500
Existing (2010) plus Project (with LOS Mitigation)			4		21
Interim (2020)			15		153
Interim (2020) plus Project			196		>500
Interim (2020) plus Project (with LOS Mitigation)			5		30
Cumulative (2030)			27		351
Cumulative (2030) plus Project			>500		>500
Cumulative (2030) plus Project (with LOS Mitigation)			4		19
	NBLT				
Existing (2010)		200	2	200	3
Existing (2010) plus Project			3		5
Existing (2010) plus Project (with LOS Mitigation)			3		5
Interim (2020)			3		5
Interim (2020) plus Project			4		6
Interim (2020) plus Project (with LOS Mitigation)			4		6
Cumulative (2030)			4		7
Cumulative (2030) plus Project			5		8
Cumulative (2030) plus Project (with LOS Mitigation)			5		7
	NBTH				
Existing (2010)		1,740*	2	1,740*	3
Existing (2010) plus Project			3		5
Existing (2010) plus Project (with LOS Mitigation)			0		0
Interim (2020)			3		5
Interim (2020) plus Project			4		6
Interim (2020) plus Project (with LOS Mitigation)			0		0
Cumulative (2030)			4		7
Cumulative (2030) plus Project			5		8
Cumulative (2030) plus Project (with LOS Mitigation)			0		0

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

Intersection / Analysis Scenario	Movement	AM Peak-Hour		PM Peak-Hour	
		Available Storage (ft)	95th % Queue (ft)	Available Storage (ft)	95th % Queue (ft)
Diamond Rd (SR-49) @ Lime Kiln Rd	**SBLT**	(Continued)			
Existing (2010)		100	1	100	1
Existing (2010) plus Project			2		2
Existing (2010) plus Project (with LOS Mitigation)			2		2
Interim (2020)			1		2
Interim (2020) plus Project			2		2
Interim (2020) plus Project (with LOS Mitigation)			2		2
Cumulative (2030)			1		2
Cumulative (2030) plus Project			2		2
Cumulative (2030) plus Project (with LOS Mitigation)			2		2
	SBTH				
Existing (2010)		725*	1	725*	1
Existing (2010) plus Project			2		2
Existing (2010) plus Project (with LOS Mitigation)			0		0
Interim (2020)			1		2
Interim (2020) plus Project			2		2
Interim (2020) plus Project (with LOS Mitigation)			0		0
Cumulative (2030)			1		2
Cumulative (2030) plus Project			2		2
Cumulative (2030) plus Project (with LOS Mitigation)			0		0
Diamond Rd (SR-49) @ Pleasant Valley Rd	**EBLT**				
Existing (2010)		180	83	180	165
Existing (2010) plus Project			80		161
Existing (2010) plus Project (with LOS Mitigation)			129		321
Interim (2020)			109		212
Interim (2020) plus Project			124		243
Interim (2020) plus Project (with LOS Mitigation)			121		267
Cumulative (2030)			137		258
Cumulative (2030) plus Project			149		311
Cumulative (2030) plus Project (with LOS Mitigation)			134		332
	SBLT				
Existing (2010)		335	151	335	383
Existing (2010) plus Project			676		1,032
Existing (2010) plus Project (with LOS Mitigation)			504		990
Interim (2020)			121		339
Interim (2020) plus Project			586		965
Interim (2020) plus Project (with LOS Mitigation)		335+	168	335+	377
Cumulative (2030)		335	164	335	417
Cumulative (2030) plus Project			720		1,099
Cumulative (2030) plus Project (with LOS Mitigation)		335+	225	335+	419
	WBRT				
Existing (2010)		180	52	180	44
Existing (2010) plus Project			65		64
Existing (2010) plus Project (with LOS Mitigation)			71		91
Interim (2020)			39		43
Interim (2020) plus Project			59		65
Interim (2020) plus Project (with LOS Mitigation)			60		77
Cumulative (2030)			62		67
Cumulative (2030) plus Project			76		80
Cumulative (2030) plus Project (with LOS Mitigation)			87		101

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

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

- **Diamond Springs Parkway @ Missouri Flat Road** – The northbound left-turn pockets at this intersection should be extended to 325-feet to accommodate the rerouted traffic from Lime Kiln Road for Year 2020 conditions. An additional westbound through lane should be provided 500-feet east of the intersection to reduce the westbound through queue. In addition, the westbound left-turn pocket should be extended to 325-feet. The effect of these improvements on vehicle queues is shown in Table 29. The modified lane geometries are presented in Figure 13.

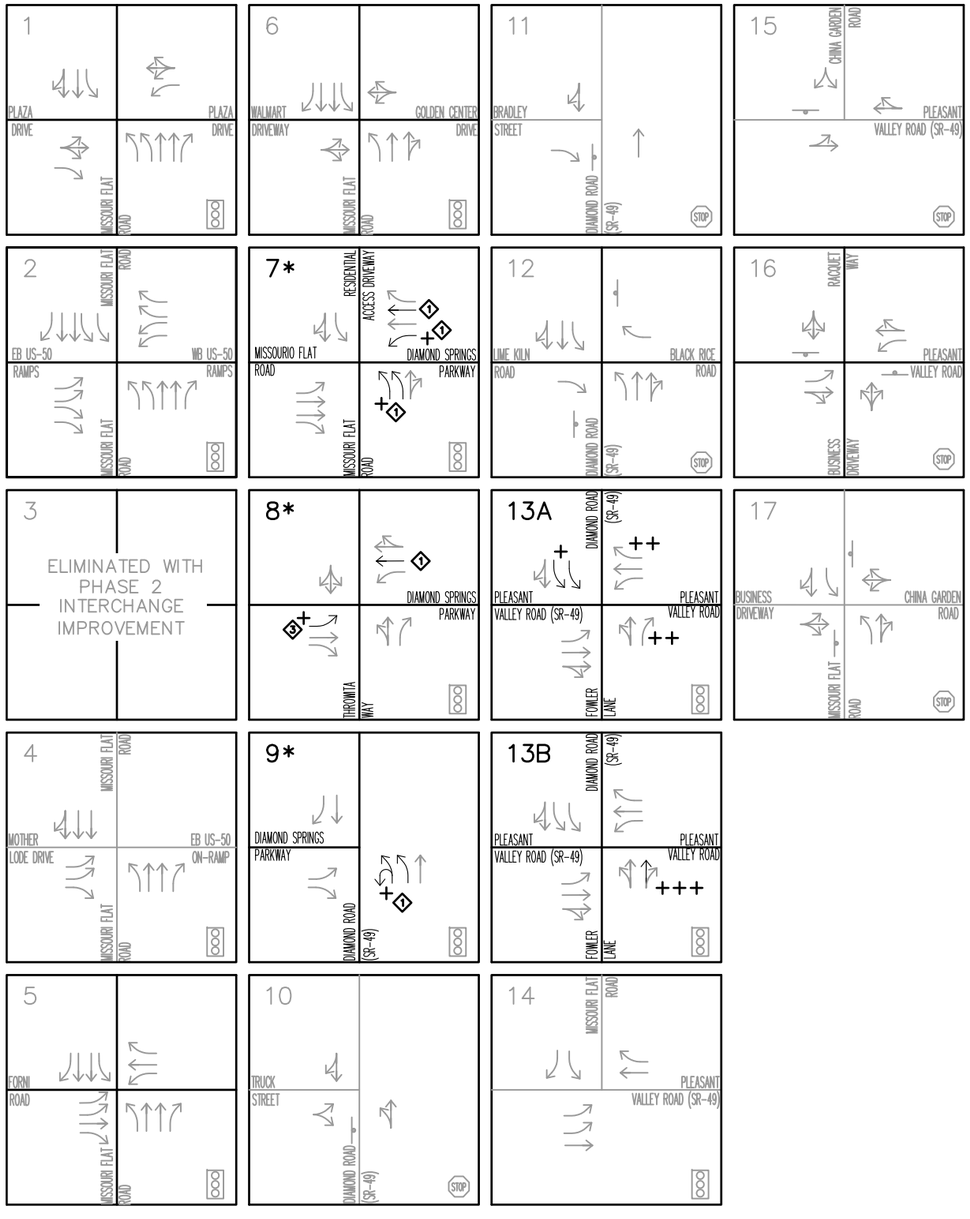
- **Diamond Springs Parkway @ Throwita Way** – To accommodate the westbound through queue, an additional westbound through lane should be provided between Diamond Road (SR-49) and Throwita Way. This lane should terminate at a distance west of Throwita Way such that it is useful, and beneficial to through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

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

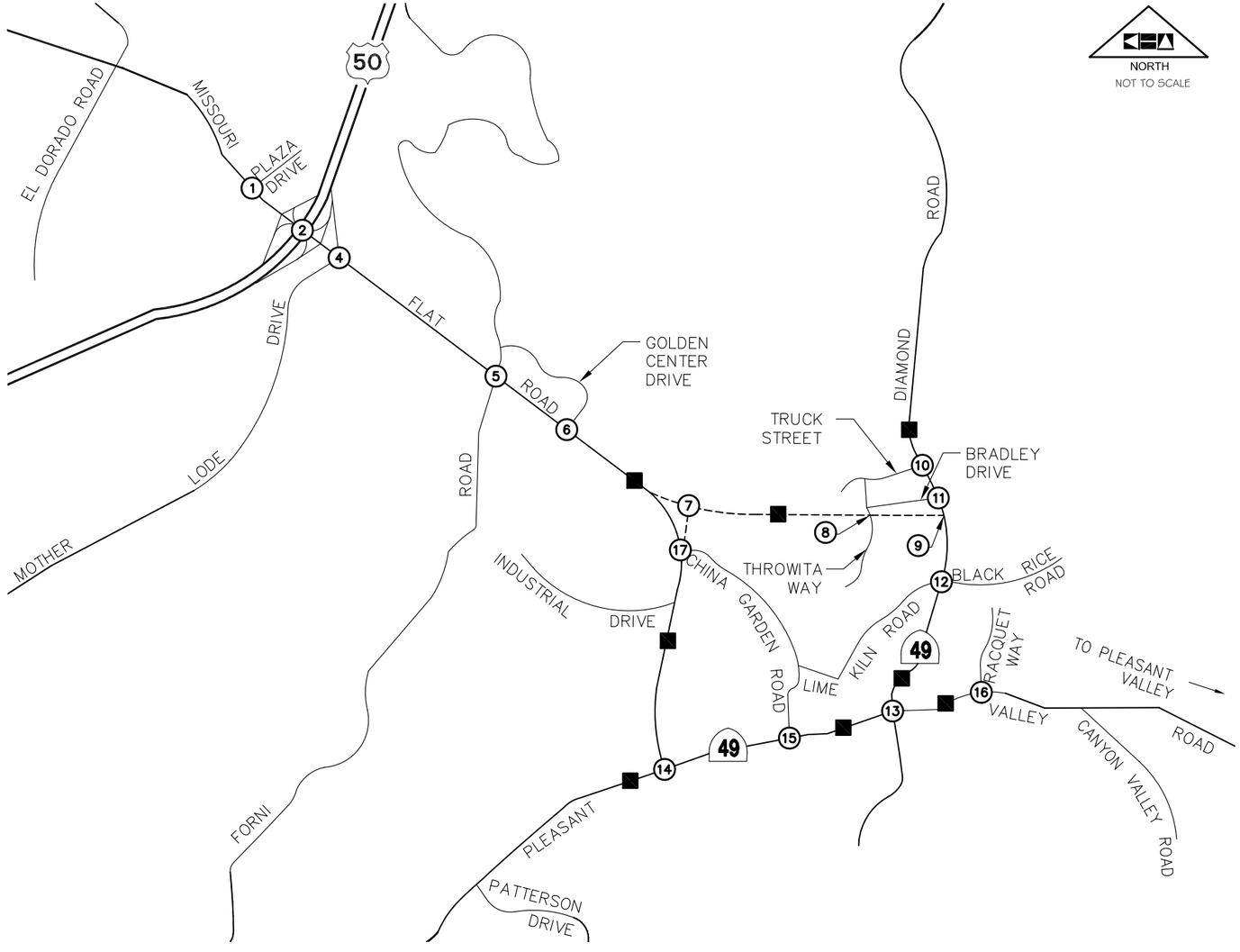
- **Diamond Road (SR-49) @ Pleasant Valley Road** – To accommodate the queue for the southbound left-turn, dual 500-foot southbound left-turn pockets should be added. In addition, northbound and westbound right-turn overlap signal phases should also be incorporated. These improvements should be implemented with the proposed project (year 2010).

  For year 2030 conditions, the northbound right-turn lane should be converted to a shared through-right lane and the signal phasing should be modified accordingly. It is important to note that the eastbound left-turn queue is anticipated to exceed the available storage by thirty-four (34) feet under year 2030 PM peak-hour conditions. Because vehicle storage is measured to the back of striping delineation, it is presumed that the additional 34-feet required can be accommodated within the existing turn pocket bay taper without adversely affecting adjacent traffic flow.

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



NOTE: DARK LANES INDICATE QUEUING MITIGATION MEASURES



LEGEND:

(X)	STUDY INTERSECTIONS
	SIGNALIZED INTERSECTION
STOP	UN-SIGNALIZED INTERSECTION
	STOP SIGN
---	PROPOSED ROADWAY
	STUDY ROADWAY SEGMENT
	FREE MOVEMENT

13A	INTERSECTION CONFIGURATION RECOMMENDED FOR 2010
13B	INTERSECTION CONFIGURATION RECOMMENDED FOR 2030
+	LENGTHEN TURN POCKET
++	RIGHT-TURN OVERLAP SIGNAL PHASE
+++	REMOVE RIGHT-TURN OVERLAP SIGNAL PHASE
*	INTERSECTION FOR PLUS PROJECT SCENARIOS ONLY
①	RECOMMENDED FOR 2010 IMPROVEMENTS
②	RECOMMENDED FOR 2020 IMPROVEMENTS
③	RECOMMENDED FOR 2030 IMPROVEMENTS

Kimley-Horn and Associates, Inc.

FIGURE 13

LANE GEOMETRIES WITH QUEUE MITIGATION

DIAMOND SPRINGS PARKWAY
EL DORADO COUNTY, CA

Table 29 – Intersection Queuing Evaluation with Queuing Mitigation

Intersection / Analysis Scenario	Movement	AM Peak-Hour		PM Peak-Hour	
		Storage Provided (ft)	95th % Queue (ft)	Storage Provided (ft)	95th % Queue (ft)
DSP @ Missouri Flat Rd	**WBTH**				
Interim (2020) plus Project (Queue Mitigation)		2,835*	337	2,835*	248
Cumulative (2030) plus Project (Queue Mitigation)			500		340
	WBLT				
Interim (2020) plus Project (Queue Mitigation)		325	276	325	268
Cumulative (2030) plus Project (Queue Mitigation)			324		323
	NBLT				
Interim (2020) plus Project (Queue Mitigation)		325+	267	325+	286
Cumulative (2030) plus Project (Queue Mitigation)			288		321
DSP @ Throwita Way	**EBLT**				
Interim (2020) plus Project (Queue Mitigation)		175	111	175	120
Cumulative (2030) plus Project (Queue Mitigation)			146		162
	WBTH				
Interim (2020) plus Project (Queue Mitigation)		850*	124	850*	120
Cumulative (2030) plus Project (Queue Mitigation)			493		156
DSP @ Diamond Rd (SR-49)	**NBLT**				
Interim (2020) plus Project (Queue Mitigation)		350+	328	350+	263
Cumulative (2030) plus Project (Queue Mitigation)			347		293
	EBRT				
Interim (2020) plus Project (Queue Mitigation)		850*	419	850*	540
Cumulative (2030) plus Project (Queue Mitigation)			583		753
Diamond Rd (SR-49) @ Pleasant Valley Rd	**EBLT**				
Interim (2020) plus Project (Queue Mitigation)		180	89	180	207
Cumulative (2030) plus Project (Queue Mitigation)			91		214
	SBLT				
Interim (2020) plus Project (Queue Mitigation)		500+	205	500+	437
Cumulative (2030) plus Project (Queue Mitigation)			231		491
	WBRT				
Interim (2020) plus Project (Queue Mitigation)		180	34	180	59
Cumulative (2030) plus Project (Queue Mitigation)			36		160

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

Table 30 – Mitigations Summary Matrix

#	Intersection / Roadway Segment	Scenario	Mitigation Type	Mitigation Measure
I7	Diamond Springs Pkwy @ Missouri Flat Rd	2010 + PP	LOS	None
			Queuing	Add additional WBTH lane (500-feet), add additional NBLT Lane (325-feet) and extend WBLT to 325-feet
		2020 + PP	LOS	Add additional NBLT lane
			Queuing	No additional mitigations from 2010 + PP (Queuing)
		2030 + PP	LOS	Add additional WBTH lane to 2020 + PP (LOS)
			Queuing	No additional mitigations from 2010 + PP (Queuing)
I8	Diamond Springs Pkwy @ Throwita Way	2010 + PP	LOS	None
			Queuing	Add additional WBTH lane (SR-49 through Throwita)
		2020 + PP	LOS	Impliment coordinated signal timings
			Queuing	No additional mitigations from 2010 + PP (Queuing)
		2030 + PP	LOS	Add additional EBTH and WBTH lane (per Roadway Segment LOS)
			Queuing	Extend EBLT to 175-feet
I9	Diamond Springs Pkwy @ Diamond Rd (SR-49)	2010 + PP	LOS	Add provision to allow NB U-Turn
			Queuing	Extend NB dual lefts to 350-feet
		2020 + PP	LOS	No additional mitigations from 2010 + PP (LOS)
			Queuing	No additional mitigations from 2010 + PP (Queuing)
		2030 + PP	LOS	No additional mitigations from 2010 + PP (LOS)
			Queuing	No additional mitigations from 2010 + PP (Queuing)
I12	Diamond Rd (SR-49) @ Lime Kiln Rd/Black Rice Rd	2010 + PP	LOS	Restrict EB/WB LT and TH (no traffic signal control)
			Queuing	No additional mitigations from 2010 + PP (LOS)
		2020 + PP	LOS	No additional mitigations from 2010 + PP
			Queuing	
		2030 + PP	LOS	No additional mitigations from 2010 + PP
			Queuing	
I13	Diamond Rd (SR-49) @ Pleasant Valley Rd	2010 + PP	LOS	Optimize signal timing
			Queuing	Add additional SBLT lane (500-feet), optimize signal timing, add NBRT overlap, and add WBRT overlap
		2020 + PP	LOS	Add additional SBLT lane and optimize signal timing
			Queuing	No additional mitigations from 2010 + PP (Queuing)
		2030 + PP	LOS	Optimize signal timing in addition to 2020 + PP (LOS)
			Queuing	Convert NBRT lane to shared TH/RT and modify signal phasing accordingly
R6	SR-49 north of Pleasant Valley Road	2010 + PP	LOS	None
			Queuing	None
		2020 + PP	LOS	None
			Queuing	None
		2030 + PP	LOS	Upgrade to Four-Lane, Multilane Highway
			Queuing	None
R7	SR-49 north of Truck Street	2010 + PP	LOS	None
			Queuing	None
		2020 + PP	LOS	None
			Queuing	None
		2030 + PP	LOS	Upgrade to Major Two-Lane Highway
			Queuing	None
R8	Diamond Springs Parkway east of Missouri Flat Road	2010 + PP	LOS	None
			Queuing	None
		2020 + PP	LOS	None
			Queuing	None
		2030 + PP	LOS	Upgrade to Divided, Four-Lane Arterial
			Queuing	None

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

Preliminary Traffic Safety Evaluation

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

Table 31 – Project Area Sites Selected Safety for Investigation

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

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

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

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

Bicycle and Pedestrian Facilities Evaluation

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

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

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

CONCLUSIONS

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

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

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

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

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

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

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

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

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

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

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

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

Appendix A:

Traffic Count Data Sheets

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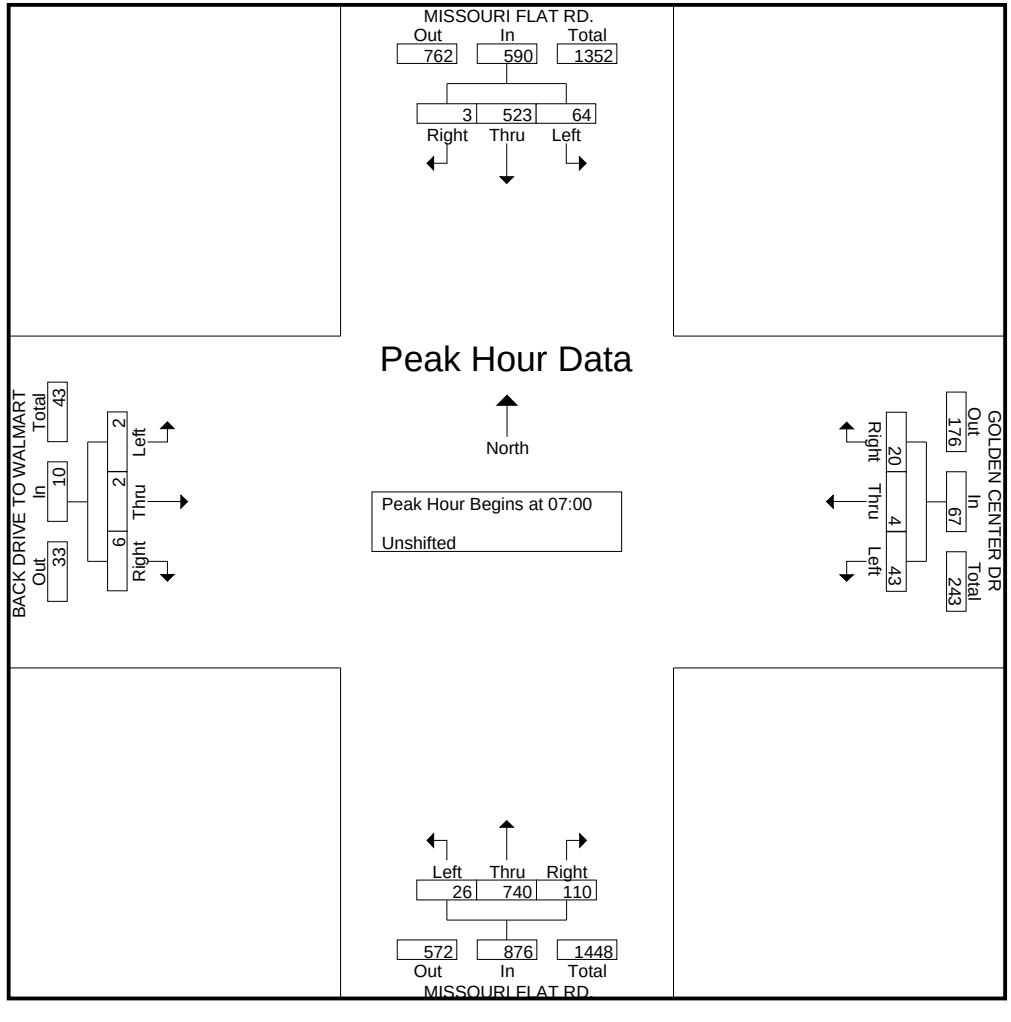
EL DORADO COUNTY

File Name : FF-MISS.FLAT-GLDN.CENTER
Site Code : 00000000
Start Date : 11/29/2007
Page No : 1

Groups Printed- Unshifted

	MISSOURI FLAT RD. Southbound					GOLDEN CENTER DR Westbound					MISSOURI FLAT RD. Northbound					BACK DRIVE TO WALMART Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:30	10	115	1	0	126	5	0	3	0	8	2	170	22	0	194	1	1	0	0	2	330
06:45	17	123	0	0	140	7	0	4	0	11	2	161	20	0	183	0	2	1	0	3	337
Total	27	238	1	0	266	12	0	7	0	19	4	331	42	0	377	1	3	1	0	5	667
07:00	14	119	1	0	134	3	0	2	0	5	6	171	15	0	192	1	1	1	0	3	334
07:15	21	147	0	0	168	22	2	13	0	37	6	194	41	0	241	0	0	0	0	0	446
07:30	11	124	1	0	136	10	0	4	0	14	7	173	17	0	197	1	0	4	0	5	352
07:45	18	133	1	0	152	8	2	1	0	11	7	202	37	0	246	0	1	1	0	2	411
Total	64	523	3	0	590	43	4	20	0	67	26	740	110	0	876	2	2	6	0	10	1543
08:00	16	141	2	0	159	9	1	4	0	14	7	137	12	0	156	1	1	2	0	4	333
08:15	10	143	2	0	155	15	0	2	0	17	11	161	26	0	198	3	1	4	0	8	378
08:30	11	137	0	0	148	7	3	3	0	13	16	167	20	0	203	1	0	2	0	3	367
08:45	18	115	0	0	133	13	2	7	0	22	14	167	32	0	213	0	2	1	0	3	371
Total	55	536	4	0	595	44	6	16	0	66	48	632	90	0	770	5	4	9	0	18	1449
09:00	12	138	0	0	150	19	3	2	0	24	11	160	23	0	194	1	3	7	0	11	379
09:15	17	125	0	0	142	12	1	4	0	17	14	143	16	0	173	4	2	1	0	7	339
Total	29	263	0	0	292	31	4	6	0	41	25	303	39	0	367	5	5	8	0	18	718
15:30	8	122	4	0	134	19	4	10	0	33	16	101	13	0	130	1	9	19	0	29	326
15:45	12	139	3	0	154	19	4	12	0	35	8	95	11	0	114	3	4	12	0	19	322
Total	20	261	7	0	288	38	8	22	0	68	24	196	24	0	244	4	13	31	0	48	648
16:00	14	146	2	0	162	24	5	8	0	37	15	94	17	0	126	5	1	13	0	19	344
16:15	8	143	1	0	152	19	3	9	0	31	14	100	12	0	126	5	2	21	0	28	337
16:30	12	145	0	0	157	29	2	14	0	45	13	102	14	0	129	0	3	13	0	16	347
16:45	8	150	1	0	159	31	1	9	0	41	9	99	10	0	118	0	1	15	0	16	334
Total	42	584	4	0	630	103	11	40	0	154	51	395	53	0	499	10	7	62	0	79	1362
17:00	3	137	5	0	145	33	3	6	0	42	10	96	11	0	117	0	2	10	0	12	316
17:15	14	164	1	0	179	19	3	4	0	26	9	85	8	0	102	2	2	14	0	18	325
17:30	16	148	2	0	166	12	1	5	0	18	5	100	8	0	113	1	3	7	0	11	308
17:45	6	135	3	0	144	17	3	1	0	21	11	79	16	0	106	2	2	5	0	9	280
Total	39	584	11	0	634	81	10	16	0	107	35	360	43	0	438	5	9	36	0	50	1229
18:00	8	129	3	0	140	15	2	3	0	20	7	83	11	0	101	1	2	9	0	12	273
18:15	5	117	1	0	123	13	1	2	0	16	4	75	15	0	94	1	1	8	0	10	243
Grand Total	289	3235	34	0	3558	380	46	132	0	558	224	3115	427	0	3766	34	46	170	0	250	8132
Apprch %	8.1	90.9	1	0		68.1	8.2	23.7	0		5.9	82.7	11.3	0		13.6	18.4	68	0		
Total %	3.6	39.8	0.4	0	43.8	4.7	0.6	1.6	0	6.9	2.8	38.3	5.3	0	46.3	0.4	0.6	2.1	0	3.1	

	MISSOURI FLAT RD. Southbound				GOLDEN CENTER DR Westbound				MISSOURI FLAT RD. Northbound				BACK DRIVE TO WALMART Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 09:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	14	119	1	134	3	0	2	5	6	171	15	192	1	1	1	3	334
07:15	21	147	0	168	22	2	13	37	6	194	41	241	0	0	0	0	446
07:30	11	124	1	136	10	0	4	14	7	173	17	197	1	0	4	5	352
07:45	18	133	1	152	8	2	1	11	7	202	37	246	0	1	1	2	411
Total Volume	64	523	3	590	43	4	20	67	26	740	110	876	2	2	6	10	1543
% App. Total	10.8	88.6	0.5		64.2	6	29.9		3	84.5	12.6		20	20	60		
PHF	.762	.889	.750	.878	.489	.500	.385	.453	.929	.916	.671	.890	.500	.500	.375	.500	.865



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File Name : FF-MISS.FLAT-GLDN.CENTER
Site Code : 00000000
Start Date : 11/29/2007
Page No : 3

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Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 15:30 to 18:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:00																	
16:00	14	146	2	162	24	5	8	37	15	94	17	126	5	1	13	19	344
16:15	8	143	1	152	19	3	9	31	14	100	12	126	5	2	21	28	337
16:30	12	145	0	157	29	2	14	45	13	102	14	129	0	3	13	16	347
16:45	8	150	1	159	31	1	9	41	9	99	10	118	0	1	15	16	334
Total Volume	42	584	4	630	103	11	40	154	51	395	53	499	10	7	62	79	1362
% App. Total	6.7	92.7	0.6		66.9	7.1	26		10.2	79.2	10.6		12.7	8.9	78.5		
PHF	.750	.973	.500	.972	.831	.550	.714	.856	.850	.968	.779	.967	.500	.583	.738	.705	.981

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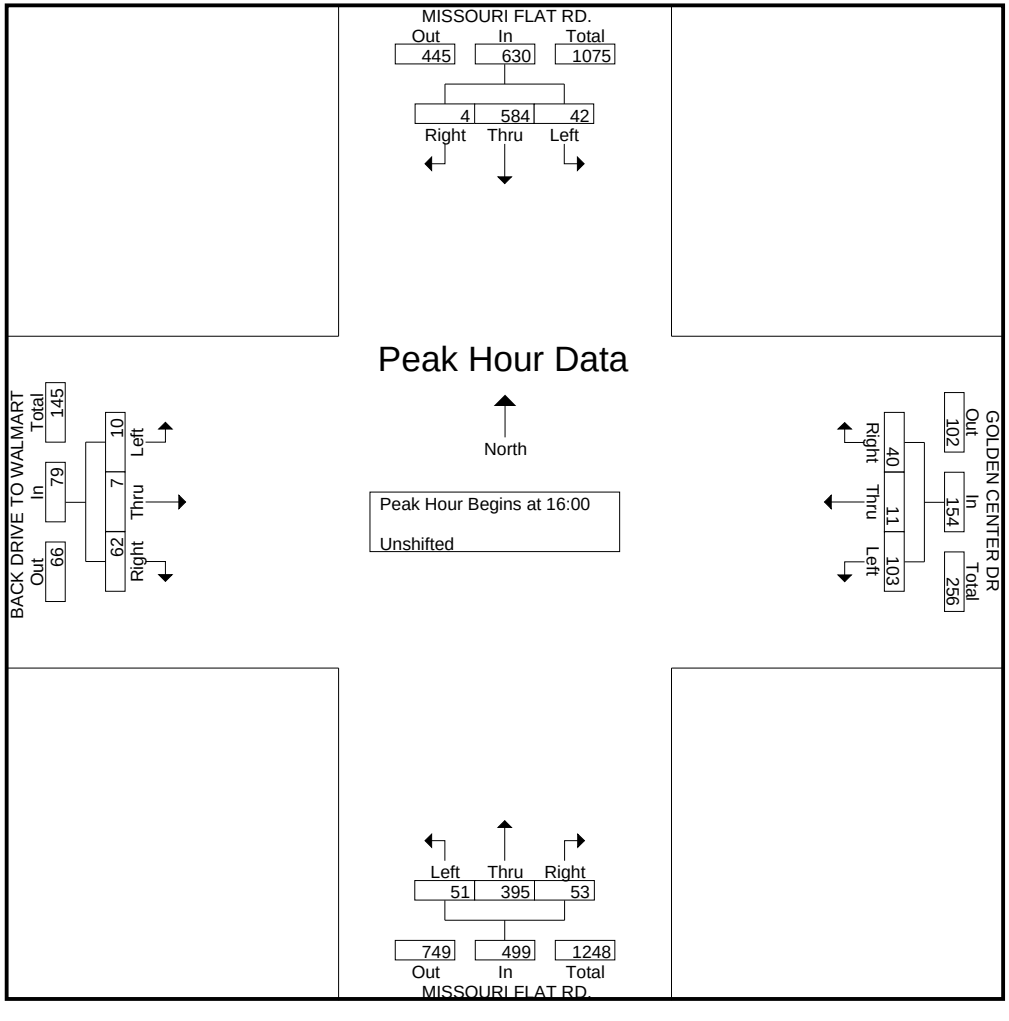
File Name : FF-MISS.FLAT-GLDN.CENTER
Site Code : 00000000
Start Date : 11/29/2007
Page No : 4



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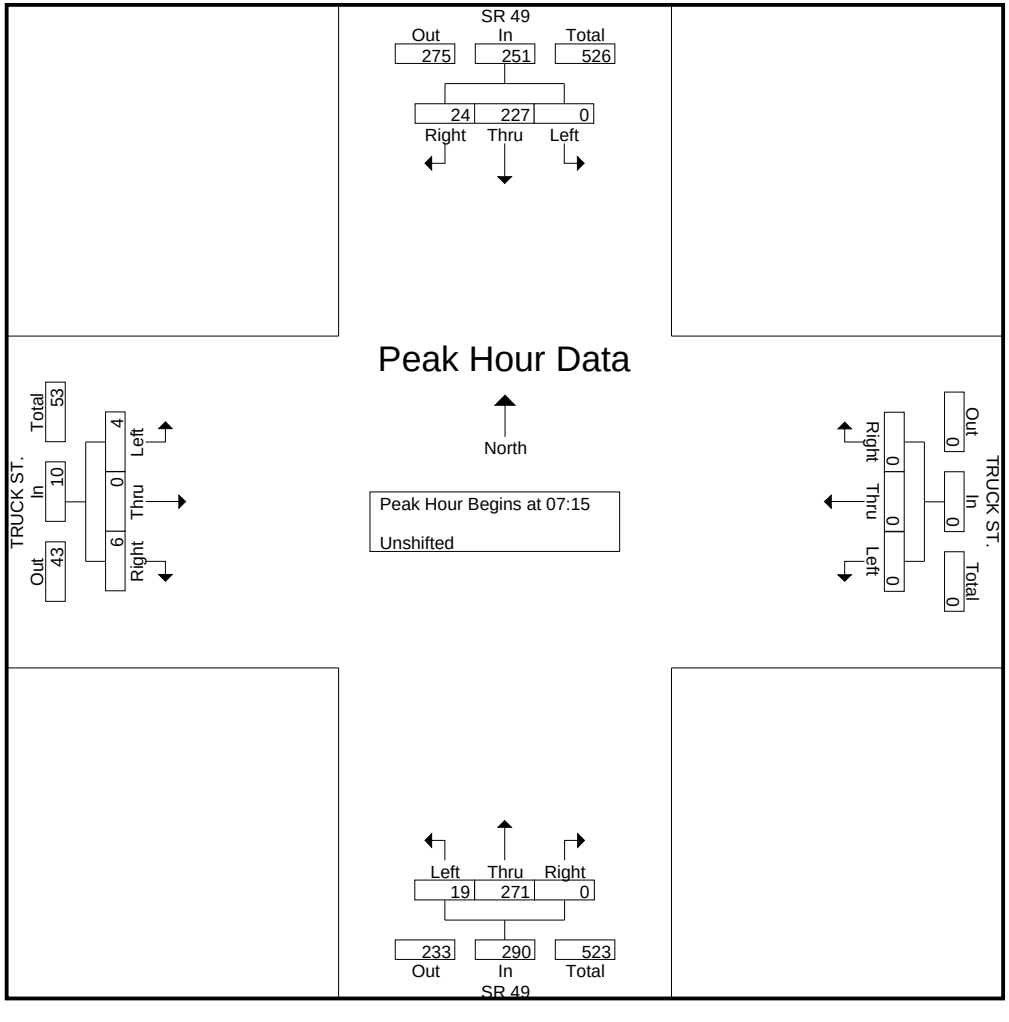
EL DORADO COUNTY

File Name : FF-SR49-TRUCK
Site Code : 00000000
Start Date : 11/29/2007
Page No : 1

Groups Printed- Unshifted

	SR 49 Southbound					TRUCK ST. Westbound					SR 49 Northbound					TRUCK ST. Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
06:30	0	29	0	0	29	0	0	0	0	0	1	31	0	0	32	1	0	1	0	2	0	63	63
06:45	0	38	1	0	39	0	0	0	0	0	0	37	0	0	37	0	0	0	0	0	0	76	76
Total	0	67	1	0	68	0	0	0	0	0	1	68	0	0	69	1	0	1	0	2	0	139	139
07:00	0	36	1	0	37	0	0	0	0	0	1	43	0	0	44	2	0	1	0	3	0	84	84
07:15	0	53	1	0	54	0	0	0	0	0	5	53	0	0	58	1	0	2	0	3	0	115	115
07:30	0	40	4	0	44	0	0	0	0	0	5	74	0	0	79	1	0	1	0	2	0	125	125
07:45	0	70	14	0	84	0	0	0	0	0	4	78	0	0	82	1	0	3	0	4	0	170	170
Total	0	199	20	0	219	0	0	0	0	0	15	248	0	0	263	5	0	7	0	12	0	494	494
08:00	0	64	5	0	69	0	0	0	0	0	5	66	0	0	71	1	0	0	0	1	0	141	141
08:15	0	43	8	0	51	0	0	0	0	0	2	47	0	0	49	2	0	2	0	4	0	104	104
08:30	0	49	4	0	53	0	0	0	0	0	2	56	0	0	58	1	0	3	0	4	0	115	115
08:45	0	53	5	0	58	0	0	0	0	0	4	65	0	0	69	3	0	0	0	3	0	130	130
Total	0	209	22	0	231	0	0	0	0	0	13	234	0	0	247	7	0	5	0	12	0	490	490
09:00	0	47	2	0	49	0	0	0	0	0	3	57	0	0	60	1	0	2	0	3	0	112	112
09:15	0	42	8	0	50	0	0	0	0	0	4	56	0	0	60	4	0	3	0	7	0	117	117
Total	0	89	10	0	99	0	0	0	0	0	7	113	0	0	120	5	0	5	0	10	0	229	229
15:30	0	79	1	0	80	0	0	0	0	0	0	76	0	0	76	1	0	4	0	5	0	161	161
15:45	0	70	0	0	70	0	0	0	0	0	0	108	0	0	108	4	0	7	0	11	0	189	189
Total	0	149	1	0	150	0	0	0	0	0	0	184	0	0	184	5	0	11	0	16	0	350	350
16:00	0	105	0	0	105	0	0	0	0	0	2	80	0	0	82	2	0	3	0	5	0	192	192
16:15	0	88	0	0	88	0	0	0	0	0	4	81	0	0	85	7	0	9	0	16	0	189	189
16:30	0	83	0	0	83	0	0	0	0	0	1	122	0	0	123	5	0	2	0	7	0	213	213
16:45	0	80	1	0	81	0	0	0	0	0	2	93	0	0	95	4	0	3	0	7	0	183	183
Total	0	356	1	0	357	0	0	0	0	0	9	376	0	0	385	18	0	17	0	35	0	777	777
17:00	0	92	1	0	93	0	0	0	0	0	1	94	0	0	95	9	0	7	0	16	0	204	204
17:15	0	84	0	0	84	0	0	0	0	0	1	101	0	0	102	4	0	3	0	7	0	193	193
17:30	0	68	0	0	68	0	0	0	0	0	0	72	0	0	72	2	0	4	0	6	0	146	146
17:45	0	38	0	0	38	0	0	0	0	0	0	46	0	0	46	0	0	3	0	3	0	87	87
Total	0	282	1	0	283	0	0	0	0	0	2	313	0	0	315	15	0	17	0	32	0	630	630
18:00	0	57	0	0	57	0	0	0	0	0	0	55	0	0	55	1	0	4	0	5	0	117	117
18:15	0	34	0	0	34	0	0	0	0	0	1	34	0	0	35	0	0	0	0	0	0	69	69
Grand Total	0	1442	56	0	1498	0	0	0	0	0	48	1625	0	0	1673	57	0	67	0	124	0	3295	3295
Apprch %	0	96.3	3.7			0	0	0			2.9	97.1	0			46	0	54					
Total %	0	43.8	1.7		45.5	0	0	0		0	1.5	49.3	0		50.8	1.7	0	2		3.8	0	100	

	SR 49 Southbound				TRUCK ST. Westbound				SR 49 Northbound				TRUCK ST. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 09:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	0	53	1	54	0	0	0	0	5	53	0	58	1	0	2	3	115
07:30	0	40	4	44	0	0	0	0	5	74	0	79	1	0	1	2	125
07:45	0	70	14	84	0	0	0	0	4	78	0	82	1	0	3	4	170
08:00	0	64	5	69	0	0	0	0	5	66	0	71	1	0	0	1	141
Total Volume	0	227	24	251	0	0	0	0	19	271	0	290	4	0	6	10	551
% App. Total	0	90.4	9.6		0	0	0		6.6	93.4	0		40	0	60		
PHF	.000	.811	.429	.747	.000	.000	.000	.000	.950	.869	.000	.884	1.000	.000	.500	.625	.810



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EL DORADO COUNTY

File Name : FF-SR49-TRUCK
Site Code : 00000000
Start Date : 11/29/2007

	SR 49 Southbound				TRUCK ST. Westbound				SR 49 Northbound				TRUCK ST. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 15:30 to 18:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	0	83	0	83	0	0	0	0	1	122	0	123	5	0	2	7	213
16:45	0	80	1	81	0	0	0	0	2	93	0	95	4	0	3	7	183
17:00	0	92	1	93	0	0	0	0	1	94	0	95	9	0	7	16	204
17:15	0	84	0	84	0	0	0	0	1	101	0	102	4	0	3	7	193
Total Volume	0	339	2	341	0	0	0	0	5	410	0	415	22	0	15	37	793
% App. Total	0	99.4	0.6		0	0	0		1.2	98.8	0		59.5	0	40.5		
PHF	.000	.921	.500	.917	.000	.000	.000	.000	.625	.840	.000	.843	.611	.000	.536	.578	.931

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File Name : FF-SR49-TRUCK
Site Code : 00000000
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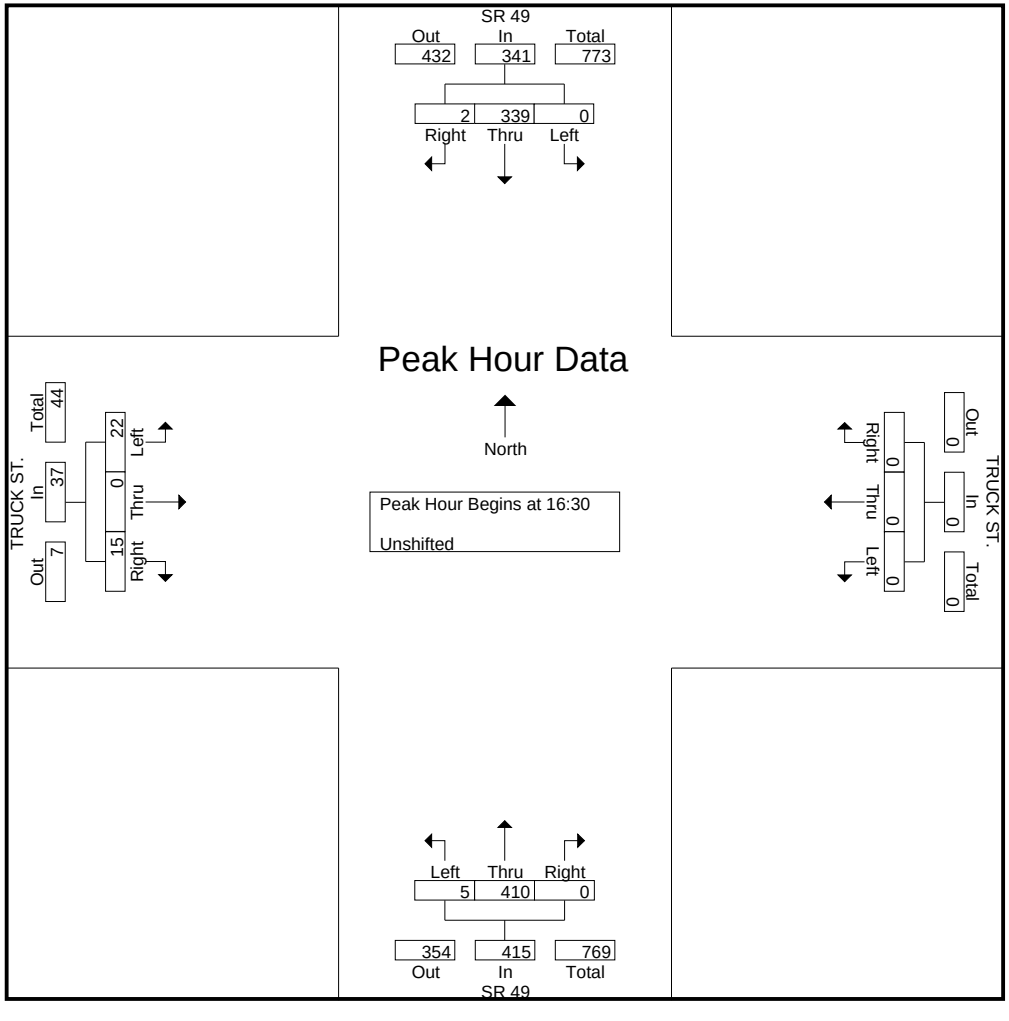

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File Name : FF--SR 49-BRADLEY
Site Code : 00000000
Start Date : 11/29/2007
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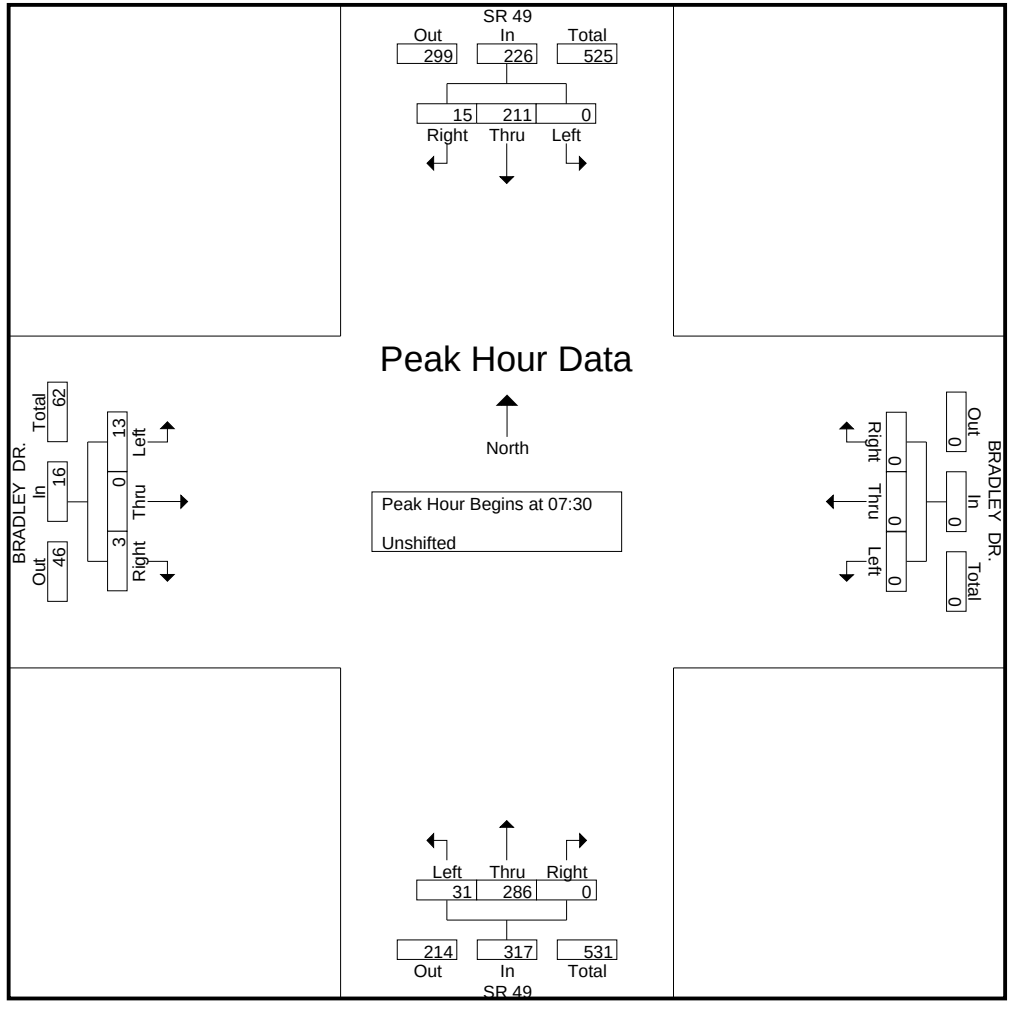
Groups Printed- Unshifted

	SR 49 Southbound					BRADLEY DR. Westbound					SR 49 Northbound					BRADLEY DR. Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
06:30	0	28	0	0	28	0	0	0	0	0	0	32	0	0	32	1	0	0	0	1	0	61	61
06:45	0	37	0	0	37	0	0	0	0	0	1	35	0	0	36	0	0	0	0	0	0	73	73
Total	0	65	0	0	65	0	0	0	0	0	1	67	0	0	68	1	0	0	0	1	0	134	134
07:00	0	37	3	0	40	0	0	0	0	0	2	33	0	0	35	2	0	1	0	3	0	78	78
07:15	0	54	1	0	55	0	0	0	0	0	2	55	0	0	57	1	0	0	0	1	0	113	113
07:30	0	40	0	0	40	0	0	0	0	0	6	84	0	0	90	5	0	0	0	5	0	135	135
07:45	0	64	10	0	74	0	0	0	0	0	13	83	0	0	96	4	0	1	0	5	0	175	175
Total	0	195	14	0	209	0	0	0	0	0	23	255	0	0	278	12	0	2	0	14	0	501	501
08:00	0	58	5	0	63	0	0	0	0	0	7	62	0	0	69	1	0	1	0	2	0	134	134
08:15	0	49	0	0	49	0	0	0	0	0	5	57	0	0	62	3	0	1	0	4	0	115	115
08:30	0	41	4	0	45	0	0	0	0	0	14	60	0	0	74	3	0	2	0	5	0	124	124
08:45	0	50	4	0	54	0	0	0	0	0	8	61	0	0	69	4	0	1	0	5	0	128	128
Total	0	198	13	0	211	0	0	0	0	0	34	240	0	0	274	11	0	5	0	16	0	501	501
09:00	0	49	4	0	53	0	0	0	0	0	10	57	0	0	67	4	0	3	0	7	0	127	127
09:15	0	42	3	0	45	0	0	0	0	0	9	55	0	0	64	3	0	4	0	7	0	116	116
Total	0	91	7	0	98	0	0	0	0	0	19	112	0	0	131	7	0	7	0	14	0	243	243
15:30	0	78	5	0	83	0	0	0	0	0	8	82	0	0	90	4	0	4	0	8	0	181	181
15:45	0	80	0	0	80	0	0	0	0	0	12	100	0	0	112	4	0	10	0	14	0	206	206
Total	0	158	5	0	163	0	0	0	0	0	20	182	0	0	202	8	0	14	0	22	0	387	387
16:00	0	102	3	0	105	0	0	0	0	0	8	79	0	0	87	1	0	7	0	8	0	200	200
16:15	0	93	4	0	97	0	0	0	0	0	4	84	0	0	88	1	0	5	0	6	0	191	191
16:30	0	85	2	0	87	0	0	0	0	0	2	119	0	0	121	3	0	6	0	9	0	217	217
16:45	0	80	0	0	80	0	0	0	0	0	6	91	1	0	98	1	0	5	0	6	0	184	184
Total	0	360	9	0	369	0	0	0	0	0	20	373	1	0	394	6	0	23	0	29	0	792	792
17:00	0	84	1	0	85	0	0	0	0	0	1	89	1	0	91	2	0	1	0	3	0	179	179
17:15	0	92	2	0	94	0	0	0	0	0	3	100	0	0	103	5	0	2	0	7	0	204	204
17:30	0	68	0	0	68	0	0	0	0	0	1	74	0	0	75	2	0	4	0	6	0	149	149
17:45	0	58	0	0	58	0	0	0	0	0	1	46	0	0	47	1	0	0	0	1	0	106	106
Total	0	302	3	0	305	0	0	0	0	0	6	309	1	0	316	10	0	7	0	17	0	638	638
18:00	0	53	1	0	54	0	0	0	0	0	1	49	0	0	50	1	0	2	0	3	0	107	107
18:15	0	37	1	0	38	0	0	0	0	0	3	33	0	0	36	3	0	3	0	6	0	80	80
Grand Total	0	1459	53	0	1512	0	0	0	0	0	127	1620	2	0	1749	59	0	63	0	122	0	3383	3383
Apprch %	0	96.5	3.5			0	0	0			7.3	92.6	0.1			48.4	0	51.6					
Total %	0	43.1	1.6		44.7	0	0	0		0	3.8	47.9	0.1		51.7	1.7	0	1.9		3.6	0	100	

	SR 49 Southbound				BRADLEY DR. Westbound				SR 49 Northbound				BRADLEY DR. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 09:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	0	40	0	40	0	0	0	0	6	84	0	90	5	0	0	5	135
07:45	0	64	10	74	0	0	0	0	13	83	0	96	4	0	1	5	175
08:00	0	58	5	63	0	0	0	0	7	62	0	69	1	0	1	2	134
08:15	0	49	0	49	0	0	0	0	5	57	0	62	3	0	1	4	115
Total Volume	0	211	15	226	0	0	0	0	31	286	0	317	13	0	3	16	559
% App. Total	0	93.4	6.6		0	0	0		9.8	90.2	0		81.2	0	18.8		
PHF	.000	.824	.375	.764	.000	.000	.000	.000	.596	.851	.000	.826	.650	.000	.750	.800	.799



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EL DORADO COUNTY

File Name : FF--SR 49-BRADLEY
Site Code : 00000000
Start Date : 11/29/2007
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	SR 49 Southbound				BRADLEY DR. Westbound				SR 49 Northbound				BRADLEY DR. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 15:30 to 18:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 15:45																	
15:45	0	80	0	80	0	0	0	0	12	100	0	112	4	0	10	14	206
16:00	0	102	3	105	0	0	0	0	8	79	0	87	1	0	7	8	200
16:15	0	93	4	97	0	0	0	0	4	84	0	88	1	0	5	6	191
16:30	0	85	2	87	0	0	0	0	2	119	0	121	3	0	6	9	217
Total Volume	0	360	9	369	0	0	0	0	26	382	0	408	9	0	28	37	814
% App. Total	0	97.6	2.4		0	0	0		6.4	93.6	0		24.3	0	75.7		
PHF	.000	.882	.563	.879	.000	.000	.000	.000	.542	.803	.000	.843	.563	.000	.700	.661	.938

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EL DORADO COUNTY

File Name : FF--SR 49-BRADLEY
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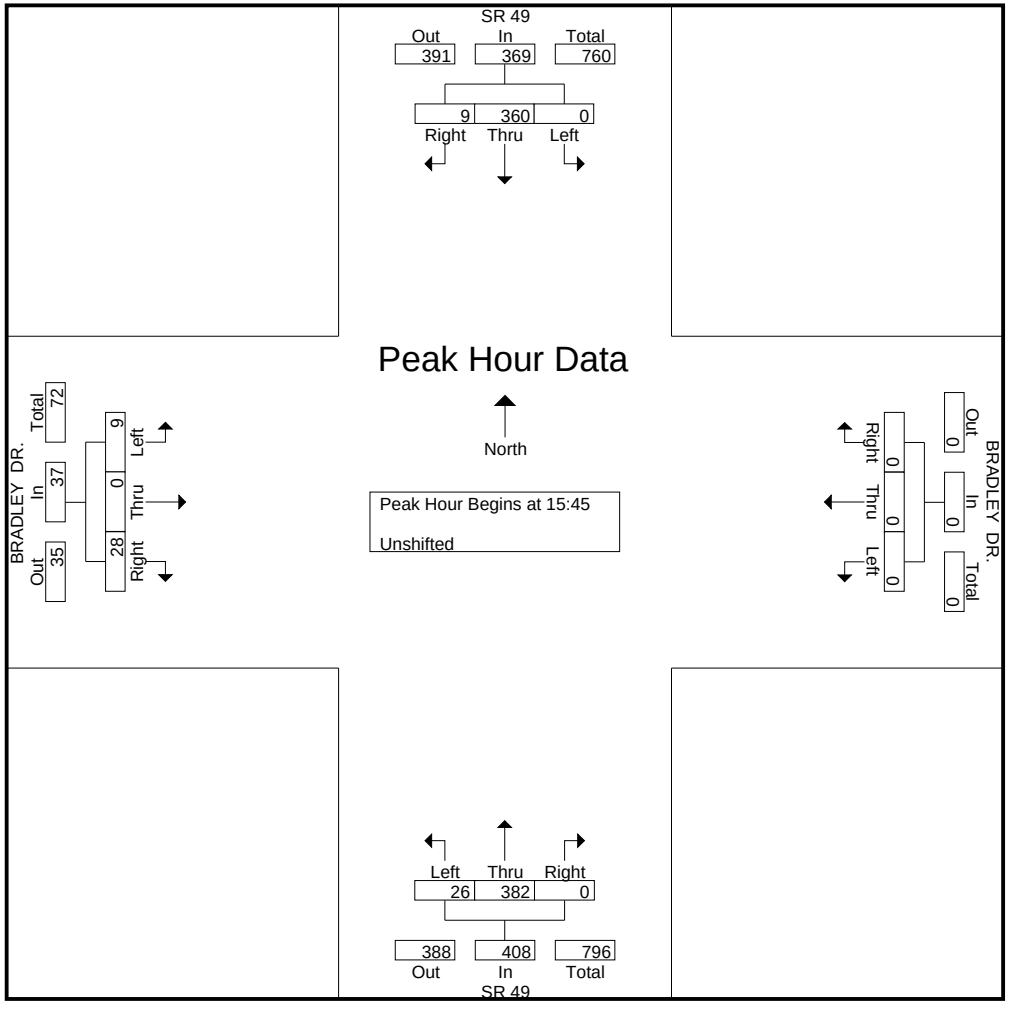

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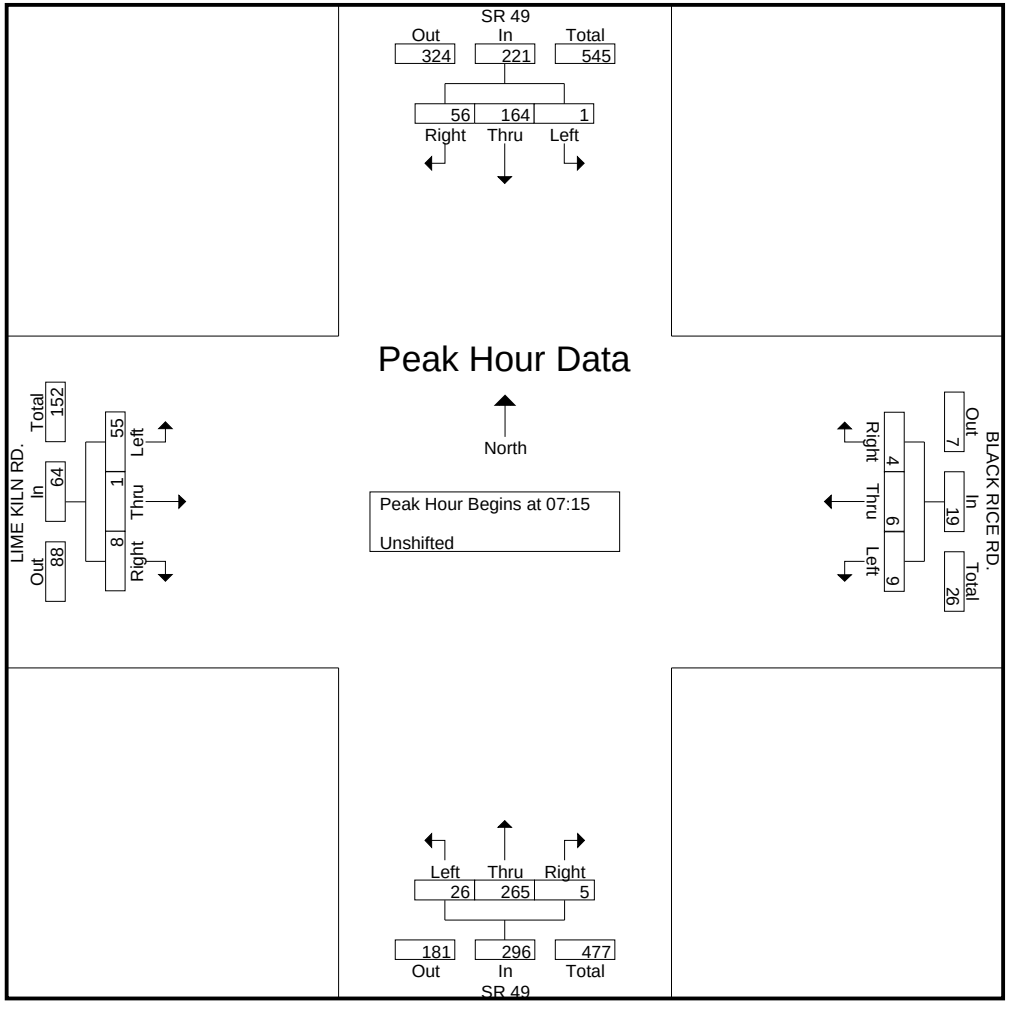
EL DORADO COUNTY
Bank 1-contains truck classification num

File Name : FF-SR49-BLCK. RICE
Site Code : 00000000
Start Date : 11/29/2007
Page No : 1

Groups Printed- Unshifted

	SR 49 Southbound					BLACK RICE RD. Westbound					SR 49 Northbound					LIME KILN RD. Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
06:30	0	15	15	0	30	1	0	1	0	2	0	26	0	0	26	6	0	1	0	7	0	65	65
06:45	0	16	17	0	33	2	1	0	0	3	0	23	0	0	23	9	1	2	0	12	0	71	71
Total	0	31	32	0	63	3	1	1	0	5	0	49	0	0	49	15	1	3	0	19	0	136	136
07:00	0	24	13	0	37	1	1	0	0	2	4	24	0	0	28	7	0	1	0	8	0	75	75
07:15	0	41	16	0	57	2	2	0	0	4	11	46	2	0	59	16	0	1	0	17	0	137	137
07:30	0	33	10	0	43	1	2	0	0	3	2	80	0	0	82	14	1	2	0	17	0	145	145
07:45	1	45	17	0	63	3	1	1	0	5	7	79	3	0	89	15	0	1	0	16	0	173	173
Total	1	143	56	0	200	7	6	1	0	14	24	229	5	0	258	52	1	5	0	58	0	530	530
08:00	0	45	13	0	58	3	1	3	0	7	6	60	0	0	66	10	0	4	0	14	0	145	145
08:15	0	38	11	0	49	0	0	2	0	2	3	55	1	0	59	7	1	6	0	14	0	124	124
08:30	0	33	7	0	40	0	3	0	0	3	4	55	1	0	60	14	0	4	0	18	0	121	121
08:45	0	39	14	0	53	0	0	0	0	0	4	61	0	0	65	11	0	0	0	11	0	129	129
Total	0	155	45	0	200	3	4	5	0	12	17	231	2	0	250	42	1	14	0	57	0	519	519
09:00	1	38	9	0	48	1	2	1	0	4	2	49	3	0	54	17	2	3	0	22	0	128	128
09:15	1	44	8	0	53	0	2	0	0	2	4	59	0	0	63	8	1	4	0	13	0	131	131
Total	2	82	17	0	101	1	4	1	0	6	6	108	3	0	117	25	3	7	0	35	0	259	259
15:30	0	78	12	0	90	1	1	2	0	4	4	52	1	0	57	41	3	14	0	58	0	209	209
15:45	1	73	13	0	87	3	0	0	0	3	6	92	2	0	100	18	3	7	0	28	0	218	218
Total	1	151	25	0	177	4	1	2	0	7	10	144	3	0	157	59	6	21	0	86	0	427	427
16:00	1	100	10	0	111	1	1	1	0	3	4	64	2	0	70	28	3	13	0	44	0	228	228
16:15	0	70	13	0	83	2	0	0	0	2	5	59	3	0	67	27	4	14	0	45	0	197	197
16:30	2	74	14	0	90	2	2	2	0	6	3	76	1	0	80	33	1	19	0	53	0	229	229
16:45	0	79	16	0	95	2	1	0	0	3	3	68	3	0	74	32	2	22	0	56	0	228	228
Total	3	323	53	0	379	7	4	3	0	14	15	267	9	0	291	120	10	68	0	198	0	882	882
17:00	0	96	14	0	110	0	0	0	0	0	2	58	0	0	60	33	2	28	0	63	0	233	233
17:15	1	55	13	0	69	1	0	1	0	2	3	54	2	0	59	31	2	19	0	52	0	182	182
17:30	1	56	18	0	75	1	1	2	0	4	1	51	2	0	54	19	1	17	0	37	0	170	170
17:45	1	48	9	0	58	1	0	2	0	3	2	46	1	0	49	23	6	5	0	34	0	144	144
Total	3	255	54	0	312	3	1	5	0	9	8	209	5	0	222	106	11	69	0	186	0	729	729
18:00	1	50	3	0	54	2	1	0	0	3	2	34	3	0	39	10	0	10	0	20	0	116	116
18:15	0	34	4	0	38	1	0	2	0	3	4	29	1	0	34	6	2	5	0	13	0	88	88
Grand Total	11	1224	289	0	1524	31	22	20	0	73	86	1300	31	0	1417	435	35	202	0	672	0	3686	3686
Apprch %	0.7	80.3	19			42.5	30.1	27.4			6.1	91.7	2.2			64.7	5.2	30.1					
Total %	0.3	33.2	7.8		41.3	0.8	0.6	0.5		2	2.3	35.3	0.8		38.4	11.8	0.9	5.5		18.2	0	100	

	SR 49 Southbound				BLACK RICE RD. Westbound				SR 49 Northbound				LIME KILN RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 09:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	0	41	16	57	2	2	0	4	11	46	2	59	16	0	1	17	137
07:30	0	33	10	43	1	2	0	3	2	80	0	82	14	1	2	17	145
07:45	1	45	17	63	3	1	1	5	7	79	3	89	15	0	1	16	173
08:00	0	45	13	58	3	1	3	7	6	60	0	66	10	0	4	14	145
Total Volume	1	164	56	221	9	6	4	19	26	265	5	296	55	1	8	64	600
% App. Total	0.5	74.2	25.3		47.4	31.6	21.1		8.8	89.5	1.7		85.9	1.6	12.5		
PHF	.250	.911	.824	.877	.750	.750	.333	.679	.591	.828	.417	.831	.859	.250	.500	.941	.867



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EL DORADO COUNTY
Bank 1-contains truck classification num

File Name : FF-SR49-BLCK. RICE
Site Code : 00000000
Start Date : 11/29/2007

	SR 49 Southbound				BLACK RICE RD. Westbound				SR 49 Northbound				LIME KILN RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 15:30 to 18:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:15																	
16:15	0	70	13	83	2	0	0	2	5	59	3	67	27	4	14	45	197
16:30	2	74	14	90	2	2	2	6	3	76	1	80	33	1	19	53	229
16:45	0	79	16	95	2	1	0	3	3	68	3	74	32	2	22	56	228
17:00	0	96	14	110	0	0	0	0	2	58	0	60	33	2	28	63	233
Total Volume	2	319	57	378	6	3	2	11	13	261	7	281	125	9	83	217	887
% App. Total	0.5	84.4	15.1		54.5	27.3	18.2		4.6	92.9	2.5		57.6	4.1	38.2		
PHF	.250	.831	.891	.859	.750	.375	.250	.458	.650	.859	.583	.878	.947	.563	.741	.861	.952

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Site Code : 00000000
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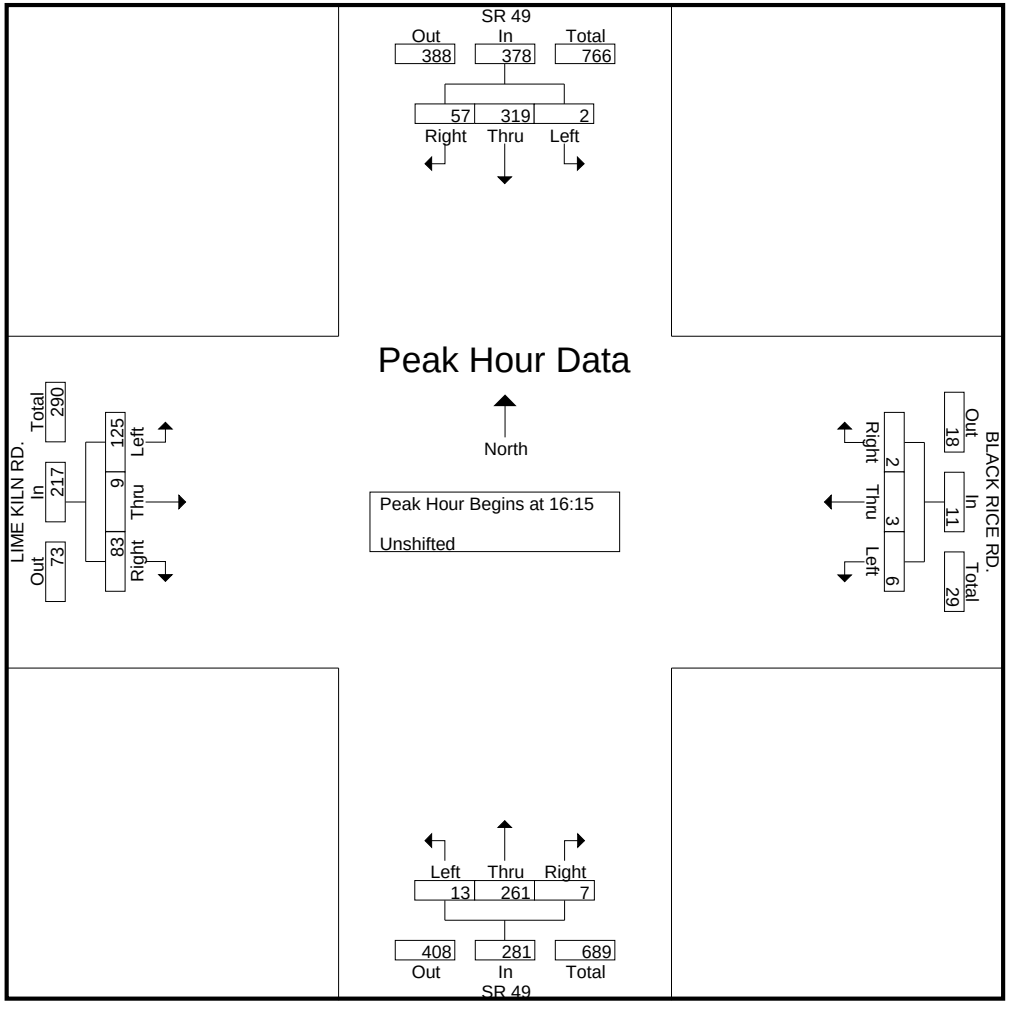

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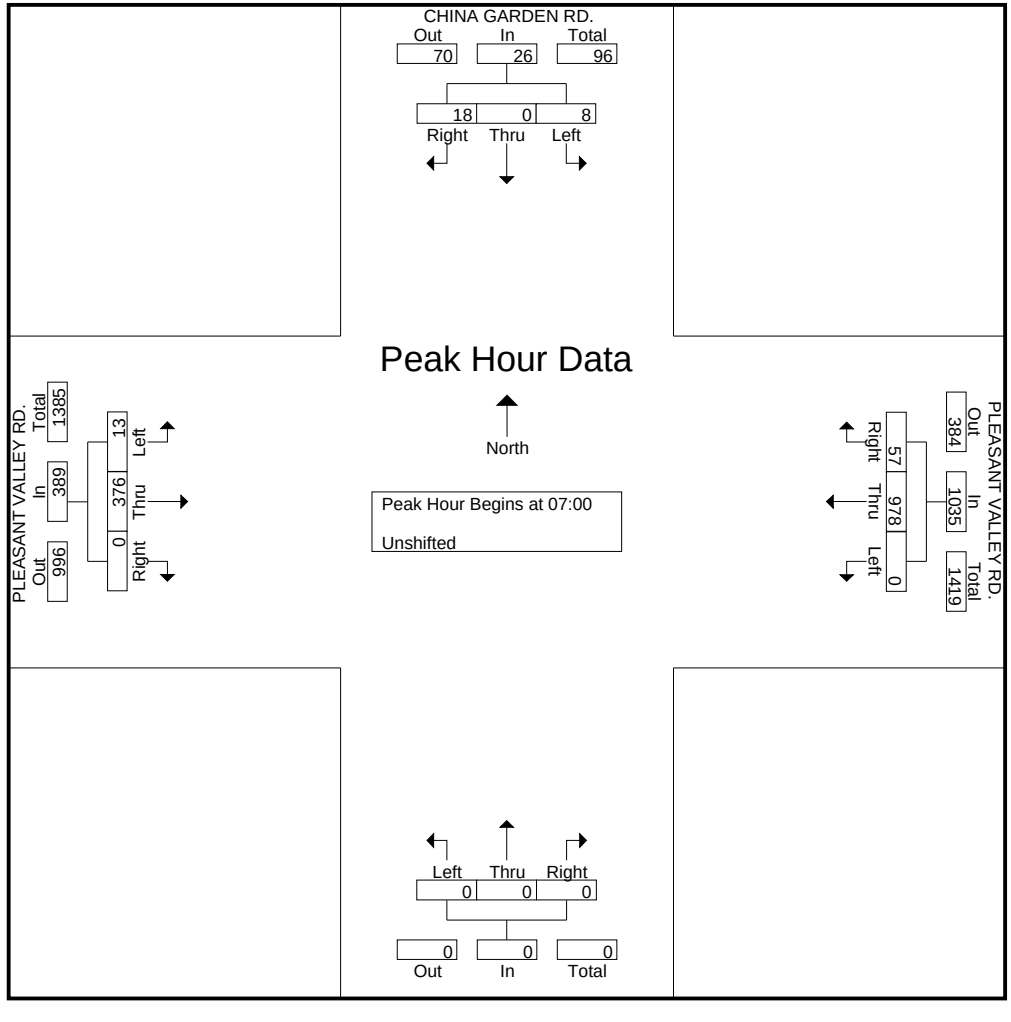
EL DORADO COUNTY

File Name : FF-CHINA GRDN-PLEAS
Site Code : 00000000
Start Date : 11/29/2007
Page No : 1

Groups Printed- Unshifted

	CHINA GARDEN RD. Southbound					PLEASANT VALLEY RD. Westbound					Northbound					PLEASANT VALLEY RD. Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
06:30	1	0	0	0	1	0	229	9	0	238	0	0	0	0	0	0	69	0	0	69	0	308	308
06:45	0	0	1	0	1	0	214	11	0	225	0	0	0	0	0	0	71	0	0	71	0	297	297
Total	1	0	1	0	2	0	443	20	0	463	0	0	0	0	0	0	140	0	0	140	0	605	605
07:00	5	0	7	0	12	0	231	13	0	244	0	0	0	0	0	3	64	0	0	67	0	323	323
07:15	2	0	2	0	4	0	269	17	0	286	0	0	0	0	0	5	85	0	0	90	0	380	380
07:30	0	0	5	0	5	0	252	10	0	262	0	0	0	0	0	3	114	0	0	117	0	384	384
07:45	1	0	4	0	5	0	226	17	0	243	0	0	0	0	0	2	113	0	0	115	0	363	363
Total	8	0	18	0	26	0	978	57	0	1035	0	0	0	0	0	13	376	0	0	389	0	1450	1450
08:00	2	0	2	0	4	0	195	6	0	201	0	0	0	0	0	4	87	0	0	91	0	296	296
08:15	3	0	3	0	6	0	206	12	0	218	0	0	0	0	0	5	85	0	0	90	0	314	314
08:30	2	0	8	0	10	0	193	14	0	207	0	0	0	0	0	5	94	0	0	99	0	316	316
08:45	3	0	3	0	6	0	191	12	0	203	0	0	0	0	0	7	109	0	0	116	0	325	325
Total	10	0	16	0	26	0	785	44	0	829	0	0	0	0	0	21	375	0	0	396	0	1251	1251
09:00	4	0	3	0	7	0	182	11	0	193	0	0	0	0	0	3	97	0	0	100	0	300	300
09:15	3	0	1	0	4	0	156	7	0	163	0	0	0	0	0	2	105	0	0	107	0	274	274
Total	7	0	4	0	11	0	338	18	0	356	0	0	0	0	0	5	202	0	0	207	0	574	574
15:30	3	0	7	0	10	0	87	15	0	102	0	0	0	0	0	4	158	0	0	162	0	274	274
15:45	4	0	1	0	5	0	115	10	0	125	0	0	0	0	0	4	160	0	0	164	0	294	294
Total	7	0	8	0	15	0	202	25	0	227	0	0	0	0	0	8	318	0	0	326	0	568	568
16:00	4	0	8	0	12	0	91	12	0	103	0	0	0	0	0	6	171	0	0	177	0	292	292
16:15	2	0	2	0	4	0	103	10	0	113	0	0	0	0	0	6	178	0	0	184	0	301	301
16:30	3	0	6	0	9	0	90	10	0	100	0	0	0	0	0	5	165	0	0	170	0	279	279
16:45	5	0	3	0	8	0	118	11	0	129	0	0	0	0	0	5	171	0	0	176	0	313	313
Total	14	0	19	0	33	0	402	43	0	445	0	0	0	0	0	22	685	0	0	707	0	1185	1185
17:00	5	0	7	0	12	0	82	8	0	90	0	0	0	0	0	3	178	0	0	181	0	283	283
17:15	3	0	8	0	11	0	76	5	0	81	0	0	0	0	0	7	205	0	0	212	0	304	304
17:30	2	0	6	0	8	0	67	2	0	69	0	0	0	0	0	7	184	0	0	191	0	268	268
17:45	6	0	3	0	9	0	61	4	0	65	0	0	0	0	0	1	170	0	0	171	0	245	245
Total	16	0	24	0	40	0	286	19	0	305	0	0	0	0	0	18	737	0	0	755	0	1100	1100
18:00	4	0	4	0	8	0	51	5	0	56	0	0	0	0	0	3	168	0	0	171	0	235	235
18:15	4	0	4	0	8	0	72	13	0	85	0	0	0	0	0	10	149	0	0	159	0	252	252
Grand Total	71	0	98	0	169	0	3557	244	0	3801	0	0	0	0	0	100	3150	0	0	3250	0	7220	7220
Apprch %	42	0	58			0	93.6	6.4			0	0	0			3.1	96.9	0					
Total %	1	0	1.4		2.3	0	49.3	3.4		52.6	0	0	0		0	1.4	43.6	0		45	0	100	

	CHINA GARDEN RD. Southbound				PLEASANT VALLEY RD. Westbound				Northbound				PLEASANT VALLEY RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 09:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	5	0	7	12	0	231	13	244	0	0	0	0	3	64	0	67	323
07:15	2	0	2	4	0	269	17	286	0	0	0	0	5	85	0	90	380
07:30	0	0	5	5	0	252	10	262	0	0	0	0	3	114	0	117	384
07:45	1	0	4	5	0	226	17	243	0	0	0	0	2	113	0	115	363
Total Volume	8	0	18	26	0	978	57	1035	0	0	0	0	13	376	0	389	1450
% App. Total	30.8	0	69.2		0	94.5	5.5		0	0	0		3.3	96.7	0		
PHF	.400	.000	.643	.542	.000	.909	.838	.905	.000	.000	.000	.000	.650	.825	.000	.831	.944



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Site Code : 00000000
Start Date : 11/29/2007
Page No : 3

	CHINA GARDEN RD. Southbound				PLEASANT VALLEY RD. Westbound				Northbound				PLEASANT VALLEY RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 15:30 to 18:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:00																	
16:00	4	0	8	12	0	91	12	103	0	0	0	0	6	171	0	177	292
16:15	2	0	2	4	0	103	10	113	0	0	0	0	6	178	0	184	301
16:30	3	0	6	9	0	90	10	100	0	0	0	0	5	165	0	170	279
16:45	5	0	3	8	0	118	11	129	0	0	0	0	5	171	0	176	313
Total Volume	14	0	19	33	0	402	43	445	0	0	0	0	22	685	0	707	1185
% App. Total	42.4	0	57.6		0	90.3	9.7		0	0	0		3.1	96.9	0		
PHF	.700	.000	.594	.688	.000	.852	.896	.862	.000	.000	.000	.000	.917	.962	.000	.961	.946

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Site Code : 00000000
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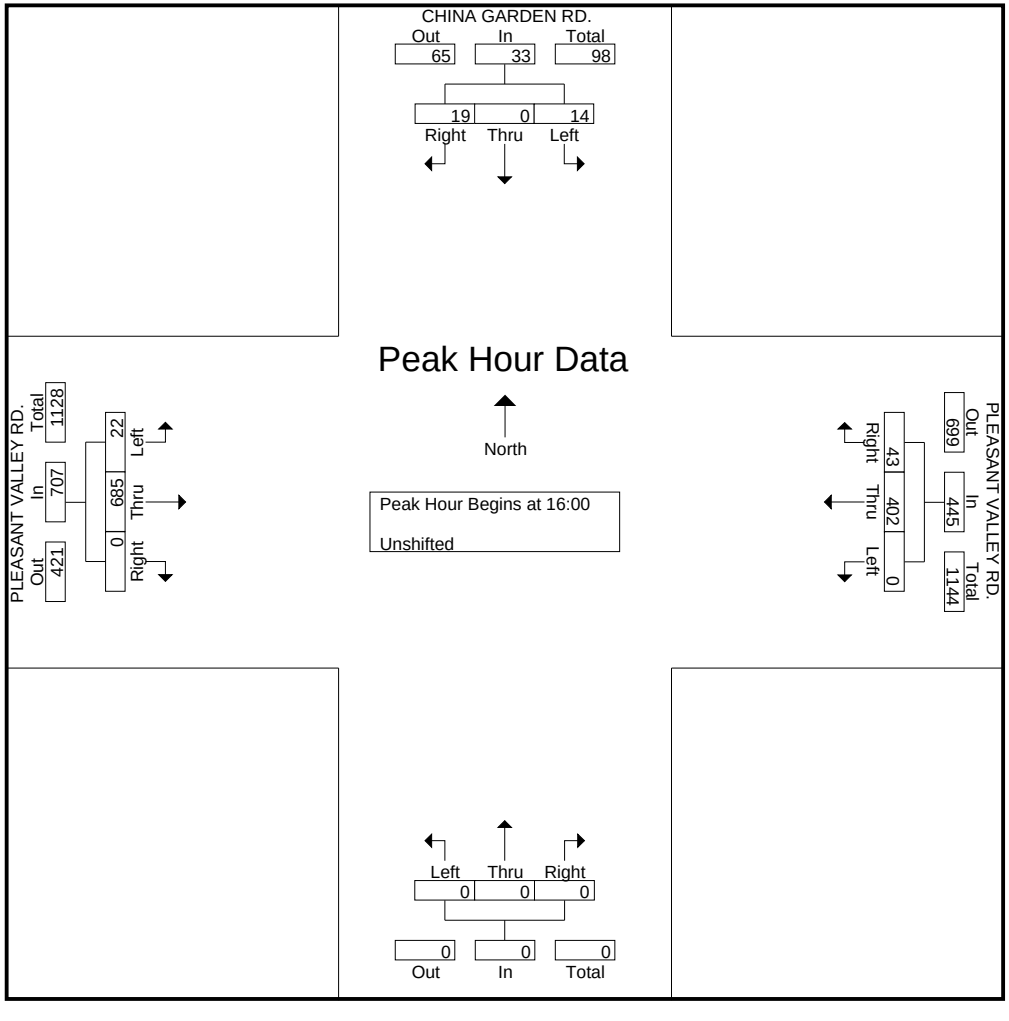

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File Name : F-MISS.FLAT-CHNA. GRDN
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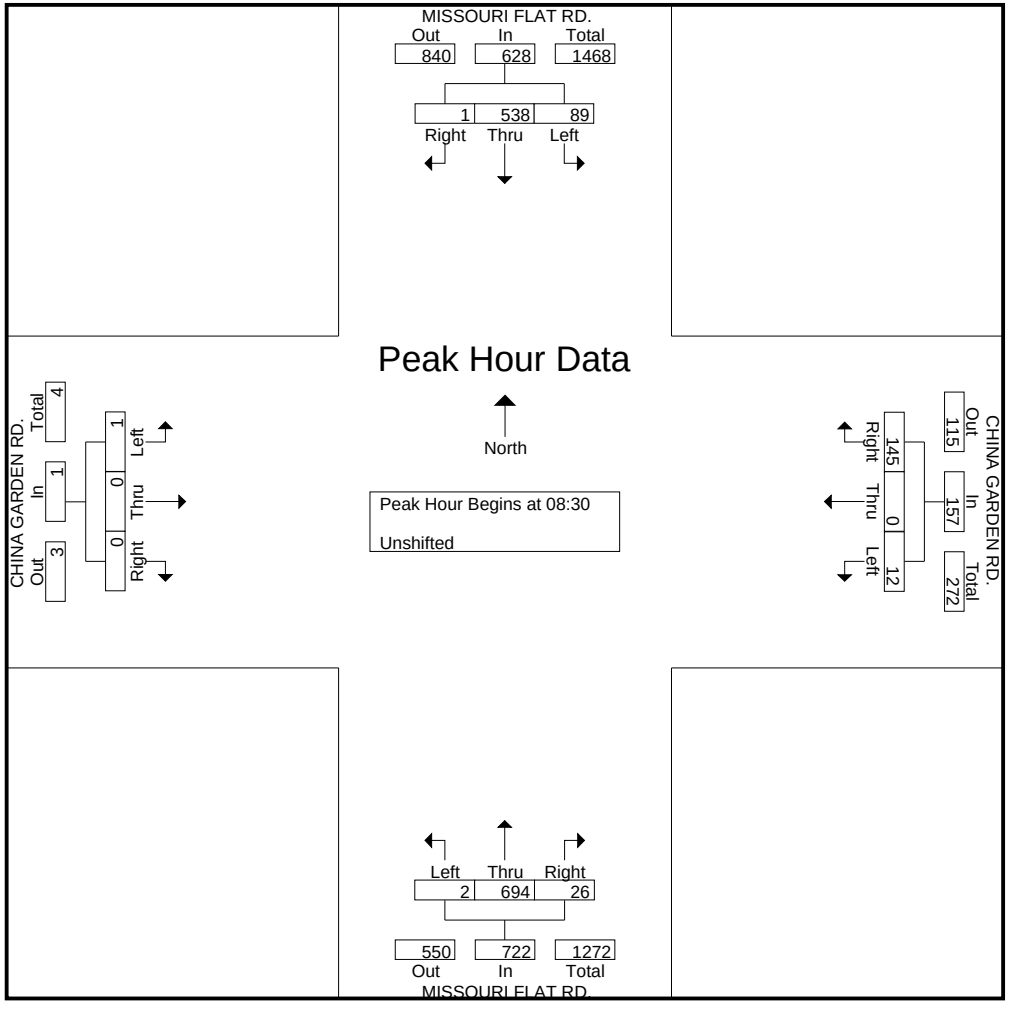
Page No : 1

Groups Printed- Unshifted

	MISSOURI FLAT RD. Southbound					CHINA GARDEN RD. Westbound					MISSOURI FLAT RD. Northbound					CHINA GARDEN RD. Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
06:30	9	60	0	0	69	4	0	22	0	26	0	140	0	0	140	0	1	0	0	1	0	236	236
06:45	10	91	0	0	101	1	0	20	0	21	0	150	2	0	152	0	0	0	0	0	0	274	274
Total	19	151	0	0	170	5	0	42	0	47	0	290	2	0	292	0	1	0	0	1	0	510	510
07:00	19	75	0	0	94	3	0	31	0	34	0	170	0	0	170	0	0	0	0	0	0	298	298
07:15	18	125	0	0	143	4	0	47	0	51	0	166	2	0	168	0	0	0	0	0	0	362	362
07:30	21	133	1	0	155	8	0	44	0	52	0	182	4	0	186	0	0	0	0	0	0	393	393
07:45	36	135	0	0	171	4	0	23	0	27	0	195	3	0	198	0	0	0	0	0	0	396	396
Total	94	468	1	0	563	19	0	145	0	164	0	713	9	0	722	0	0	0	0	0	0	1449	1449
08:00	29	135	0	0	164	3	0	31	0	34	0	136	5	0	141	0	0	0	0	0	0	339	339
08:15	26	129	1	0	156	3	0	29	0	32	0	163	8	0	171	0	0	0	0	0	0	359	359
08:30	14	139	0	0	153	2	0	39	0	41	1	185	8	0	194	1	0	0	0	1	0	389	389
08:45	21	134	1	0	156	3	0	31	0	34	0	173	5	0	178	0	0	0	0	0	0	368	368
Total	90	537	2	0	629	11	0	130	0	141	1	657	26	0	684	1	0	0	0	1	0	1455	1455
09:00	31	124	0	0	155	2	0	39	0	41	0	187	6	0	193	0	0	0	0	0	0	389	389
09:15	23	141	0	0	164	5	0	36	0	41	1	149	7	0	157	0	0	0	0	0	0	362	362
Total	54	265	0	0	319	7	0	75	0	82	1	336	13	0	350	0	0	0	0	0	0	751	751
15:30	39	198	0	0	237	5	0	43	0	48	0	128	25	0	153	1	0	0	0	1	0	439	439
15:45	37	243	1	0	281	6	0	33	0	39	0	124	14	0	138	0	0	1	0	1	0	459	459
Total	76	441	1	0	518	11	0	76	0	87	0	252	39	0	291	1	0	1	0	2	0	898	898
16:00	40	224	0	0	264	7	0	31	0	38	0	136	18	0	154	0	0	1	0	1	0	457	457
16:15	40	229	0	0	269	5	0	39	0	44	0	141	20	0	161	0	0	1	0	1	0	475	475
16:30	54	244	0	0	298	5	1	38	0	44	0	146	14	0	160	0	0	1	0	1	0	503	503
16:45	48	243	0	0	291	4	0	44	0	48	0	129	10	0	139	0	0	1	0	1	0	479	479
Total	182	940	0	0	1122	21	1	152	0	174	0	552	62	0	614	0	0	4	0	4	0	1914	1914
17:00	43	228	0	0	271	5	1	39	0	45	0	135	9	0	144	0	0	0	0	0	0	460	460
17:15	29	213	0	0	242	3	0	34	0	37	0	134	5	0	139	0	0	0	0	0	0	418	418
17:30	24	225	0	0	249	4	0	27	0	31	0	132	8	0	140	0	0	0	0	0	0	420	420
17:45	33	207	0	0	240	3	0	16	0	19	0	105	7	0	112	0	0	0	0	0	0	371	371
Total	129	873	0	0	1002	15	1	116	0	132	0	506	29	0	535	0	0	0	0	0	0	1669	1669
18:00	23	220	0	0	243	2	0	25	0	27	0	115	5	0	120	0	0	0	0	0	0	390	390
18:15	24	183	0	0	207	2	0	9	0	11	1	100	0	0	101	0	0	1	0	1	0	320	320
Grand Total	691	4078	4	0	4773	93	2	770	0	865	3	3521	185	0	3709	2	1	6	0	9	0	9356	9356
Apprch %	14.5	85.4	0.1			10.8	0.2	89			0.1	94.9	5			22.2	11.1	66.7					
Total %	7.4	43.6	0		51	1	0	8.2		9.2	0	37.6	2		39.6	0	0	0.1		0.1	0	100	

	MISSOURI FLAT RD. Southbound				CHINA GARDEN RD. Westbound				MISSOURI FLAT RD. Northbound				CHINA GARDEN RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 09:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:30																	
08:30	14	139	0	153	2	0	39	41	1	185	8	194	1	0	0	1	389
08:45	21	134	1	156	3	0	31	34	0	173	5	178	0	0	0	0	368
09:00	31	124	0	155	2	0	39	41	0	187	6	193	0	0	0	0	389
09:15	23	141	0	164	5	0	36	41	1	149	7	157	0	0	0	0	362
Total Volume	89	538	1	628	12	0	145	157	2	694	26	722	1	0	0	1	1508
% App. Total	14.2	85.7	0.2		7.6	0	92.4		0.3	96.1	3.6		100	0	0		
PHF	.718	.954	.250	.957	.600	.000	.929	.957	.500	.928	.813	.930	.250	.000	.000	.250	.969



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Start Date : 1/10/2008

	MISSOURI FLAT RD. Southbound				CHINA GARDEN RD. Westbound				MISSOURI FLAT RD. Northbound				CHINA GARDEN RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 15:30 to 18:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:15																	
16:15	40	229	0	269	5	0	39	44	0	141	20	161	0	0	1	1	475
16:30	54	244	0	298	5	1	38	44	0	146	14	160	0	0	1	1	503
16:45	48	243	0	291	4	0	44	48	0	129	10	139	0	0	1	1	479
17:00	43	228	0	271	5	1	39	45	0	135	9	144	0	0	0	0	460
Total Volume	185	944	0	1129	19	2	160	181	0	551	53	604	0	0	3	3	1917
% App. Total	16.4	83.6	0		10.5	1.1	88.4		0	91.2	8.8		0	0	100		
PHF	.856	.967	.000	.947	.950	.500	.909	.943	.000	.943	.663	.938	.000	.000	.750	.750	.953

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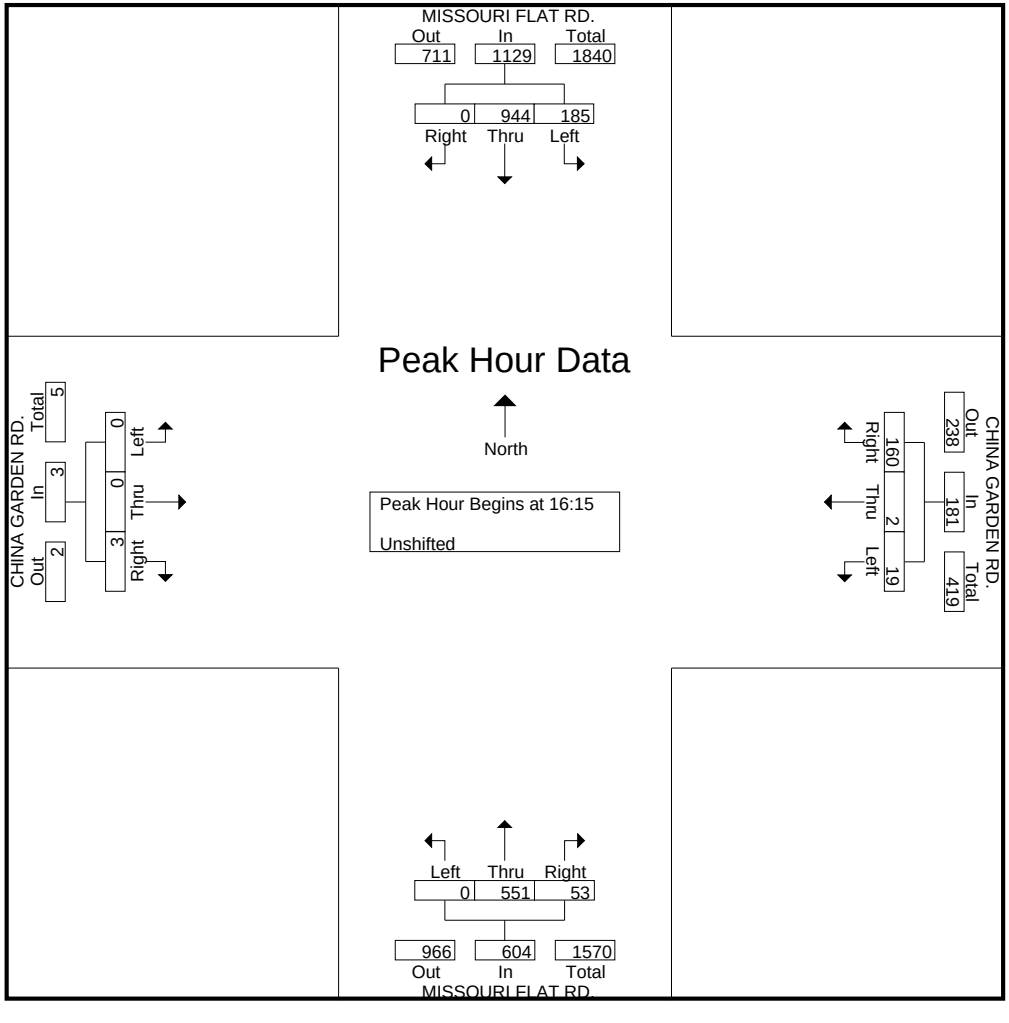
PLACERVILLE
BANK 1 = CLASSIFICATION

File Name : F-MISS.FLAT-CHNA. GRDN
Site Code : 00000000
Start Date : 1/10/2008



Appendix B:

Analysis Worksheets for
Existing (2010) Conditions

HCM Signalized Intersection Capacity Analysis 2010
1: Plaza Dr. & Missouri Flat Rd. AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	22	301	234	57	147	381	177	270	43	162	27
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	0.95	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frt		0.92	0.85	1.00	0.90		1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1427	1346	1504	1422		3072	3167	1417	1583	3099	
Flt Permitted		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1427	1346	1504	1422		3072	3167	1417	1583	3099	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	74	24	334	260	63	163	423	197	300	48	180	30
RTOR Reduction (vph)	0	63	134	0	71	0	0	0	119	0	15	0
Lane Group Flow (vph)	0	159	76	234	181	0	423	197	181	48	195	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Split		pm+ov	Split			Prot		pm+ov	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		15.1	32.4	20.6	20.6		17.3	33.8	54.4	4.5	21.0	
Effective Green, g (s)		15.1	32.4	20.6	20.6		17.3	33.8	54.4	4.5	21.0	
Actuated g/C Ratio		0.17	0.36	0.23	0.23		0.19	0.38	0.60	0.05	0.23	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		239	544	344	325		591	1189	856	79	723	
v/s Ratio Prot		c0.11	0.03	c0.16	0.13		c0.14	0.06	0.05	c0.03	c0.06	
v/s Ratio Perm			0.03						0.08			
v/c Ratio		0.66	0.14	0.68	0.56		0.72	0.17	0.21	0.61	0.27	
Uniform Delay, d1		35.1	19.4	31.7	30.7		34.0	18.7	8.1	41.9	28.2	
Progression Factor		1.00	1.00	1.00	1.00		0.92	0.85	1.11	1.00	1.00	
Incremental Delay, d2		6.8	0.1	5.4	2.1		3.9	0.3	0.1	12.5	0.9	
Delay (s)		41.9	19.5	37.1	32.7		35.2	16.2	9.0	54.4	29.2	
Level of Service		D	B	D	C		D	B	A	D	C	
Approach Delay (s)		31.0			34.9			22.6			33.8	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM Average Control Delay	28.6	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.58			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	57.7%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis 2010
2: WB US-50 On Ramp & Missouri Flat Rd. AM Peak

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	304	641	285	524	524	173
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	2956	1363	1524	4378	3047	1363
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	2956	1363	1524	4378	3047	1363
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	338	712	317	582	582	192
RTOR Reduction (vph)	0	22	0	0	0	107
Lane Group Flow (vph)	338	690	317	582	582	85
Turn Type		pm+ov	Prot			pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	14.4	52.4	38.0	67.6	25.6	40.0
Effective Green, g (s)	14.4	52.4	38.0	67.6	25.6	40.0
Actuated g/C Ratio	0.16	0.58	0.42	0.75	0.28	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	473	854	643	3288	867	666
v/s Ratio Prot	0.11	c0.34	0.21	0.13	c0.19	0.02
v/s Ratio Perm		0.17				0.04
v/c Ratio	0.71	0.81	0.49	0.18	0.67	0.13
Uniform Delay, d1	35.9	14.8	19.0	3.2	28.5	14.7
Progression Factor	1.00	1.00	0.81	0.25	0.73	0.26
Incremental Delay, d2	5.1	5.7	0.5	0.1	3.8	0.1
Delay (s)	40.9	20.5	15.9	0.9	24.7	3.9
Level of Service	D	C	B	A	C	A
Approach Delay (s)	27.1			6.2	19.6	
Approach LOS	C			A	B	

Intersection Summary				
HCM Average Control Delay	18.0	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.77			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	67.2%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	97	1	328	0	0	0	0	712	693	170	995	0
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	0.91	0.95					0.95	1.00	1.00	0.95	
Frt	1.00	0.86	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1447	1251	1295					3047	1363	1524	3047	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1447	1251	1295					3047	1363	1524	3047	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	108	1	364	0	0	0	0	791	770	189	1106	0
RTOR Reduction (vph)	0	131	131	0	0	0	0	0	282	0	0	0
Lane Group Flow (vph)	97	59	55	0	0	0	0	791	488	189	1106	0
Turn Type	Split		Perm						Perm	Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	11.6	11.6	11.6					51.1	51.1	15.3	70.4	
Effective Green, g (s)	11.6	11.6	11.6					51.1	51.1	15.3	70.4	
Actuated g/C Ratio	0.13	0.13	0.13					0.57	0.57	0.17	0.78	
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	187	161	167					1730	774	259	2383	
v/s Ratio Prot	c0.07	0.05						0.26		c0.12	0.36	
v/s Ratio Perm			0.04						c0.36			
v/c Ratio	0.52	0.37	0.33					0.46	0.63	0.73	0.46	
Uniform Delay, d1	36.6	35.9	35.7					11.4	13.1	35.4	3.4	
Progression Factor	1.00	1.00	1.00					0.79	0.47	0.97	0.81	
Incremental Delay, d2	2.4	1.4	1.2					0.8	3.4	6.5	0.4	
Delay (s)	39.0	37.3	36.8					9.7	9.6	41.0	3.1	
Level of Service	D	D	D					A	A	D	A	
Approach Delay (s)		37.5			0.0			9.7			8.7	
Approach LOS		D			A			A			A	

Intersection Summary				
HCM Average Control Delay	13.2	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	75.3%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	209	82	42	1196	1204	119
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3072	1417	1583	3167	3167	1417
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3072	1417	1583	3167	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	232	91	47	1329	1338	132
RTOR Reduction (vph)	0	79	0	0	0	20
Lane Group Flow (vph)	232	12	47	1329	1338	112
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	12.2	12.2	5.6	69.8	60.2	60.2
Effective Green, g (s)	12.2	12.2	5.6	69.8	60.2	60.2
Actuated g/C Ratio	0.14	0.14	0.06	0.78	0.67	0.67
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	416	192	98	2456	2118	948
v/s Ratio Prot	c0.08		0.03	c0.42	c0.42	
v/s Ratio Perm		0.01				0.08
v/c Ratio	0.56	0.06	0.48	0.54	0.63	0.12
Uniform Delay, d1	36.4	33.9	40.8	3.9	8.5	5.4
Progression Factor	1.00	1.00	1.00	1.00	0.83	0.59
Incremental Delay, d2	1.6	0.1	3.7	0.9	1.3	0.2
Delay (s)	38.0	34.1	44.5	4.8	8.4	3.4
Level of Service	D	C	D	A	A	A
Approach Delay (s)	36.9			6.1	7.9	
Approach LOS	D			A	A	

Intersection Summary				
HCM Average Control Delay	10.1	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.60			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	52.3%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

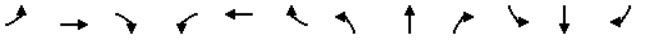
HCM Signalized Intersection Capacity Analysis 2010
5: Forni Rd. & Missouri Flat Rd. AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	155	18	17	41	16	47	71	1036	51	67	1068	151
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	172	20	19	46	18	52	79	1151	57	74	1187	168
RTOR Reduction (vph)	0	0	17	0	0	49	0	0	12	0	0	36
Lane Group Flow (vph)	172	20	2	46	18	3	79	1151	45	74	1187	132
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	8.4	9.0	9.0	3.5	4.1	4.1	6.0	38.2	38.2	5.7	37.9	37.9
Effective Green, g (s)	8.4	9.0	9.0	3.5	4.1	4.1	6.0	38.2	38.2	5.7	37.9	37.9
Actuated g/C Ratio	0.12	0.13	0.13	0.05	0.06	0.06	0.08	0.54	0.54	0.08	0.53	0.53
Clearance Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	3.0	3.0	0.2	3.0	3.0
Lane Grp Cap (vph)	361	210	179	78	96	81	133	1694	758	126	1681	752
v/s Ratio Prot	c0.06	0.01		c0.03	c0.01		c0.05	0.36		0.05	c0.37	
v/s Ratio Perm			0.00			0.00			0.03			0.09
v/c Ratio	0.48	0.10	0.01	0.59	0.19	0.04	0.59	0.68	0.06	0.59	0.71	0.18
Uniform Delay, d1	29.4	27.6	27.3	33.2	32.1	31.8	31.5	12.1	8.0	31.7	12.6	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	0.0	7.2	0.3	0.1	4.7	1.1	0.0	4.4	1.4	0.1
Delay (s)	29.8	27.7	27.3	40.4	32.4	31.9	36.2	13.2	8.0	36.2	13.9	8.8
Level of Service	C	C	C	D	C	C	D	B	A	D	B	A
Approach Delay (s)		29.4			35.3			14.4			14.5	
Approach LOS		C			D			B			B	

Intersection Summary				
HCM Average Control Delay	16.3	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	15.0	
Intersection Capacity Utilization	59.8%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis 2010
6: Golden Center Dr. & Missouri Flat Rd. AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	1	1	46	2	33	61	1124	61	94	866	9
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frt		0.99			0.94		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96			0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1524			1531		1583	3142		1583	3167	1417
Flt Permitted		0.82			0.82		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1305			1284		1583	3142		1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	14	1	1	51	2	37	68	1249	68	104	962	10
RTOR Reduction (vph)	0	1	0	0	26	0	0	2	0	0	0	2
Lane Group Flow (vph)	0	15	0	0	64	0	68	1315	0	104	962	8
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot			Prot		Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4								2
Actuated Green, G (s)		7.1			7.1		6.7	41.1		8.2	42.6	42.6
Effective Green, g (s)		7.1			7.1		6.7	41.1		8.2	42.6	42.6
Actuated g/C Ratio		0.10			0.10		0.10	0.59		0.12	0.61	0.61
Clearance Time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		2.5			2.5		2.5	3.0		2.5	3.0	3.0
Lane Grp Cap (vph)		134			131		153	1861		187	1944	870
v/s Ratio Prot							0.04	c0.42		c0.07	0.30	
v/s Ratio Perm		0.01			c0.05							0.01
v/c Ratio		0.11			0.49		0.44	0.71		0.56	0.49	0.01
Uniform Delay, d1		28.3			29.4		29.6	9.9		28.9	7.4	5.2
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.3			2.1		1.5	1.2		2.9	0.2	0.0
Delay (s)		28.6			31.5		31.1	11.2		31.7	7.6	5.2
Level of Service		C			C		C	B		C	A	A
Approach Delay (s)		28.6			31.5			12.1			9.9	
Approach LOS		C			C			B			A	

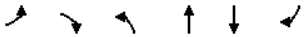
Intersection Summary				
HCM Average Control Delay	12.0	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.66			
Actuated Cycle Length (s)	69.4	Sum of lost time (s)	13.0	
Intersection Capacity Utilization	59.4%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	7	7	3	244	294	11
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	8	3	271	327	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				900		
pX, platoon unblocked						
vC, conflicting volume	611	333	339			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	611	333	339			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	98	99	100			
cM capacity (veh/h)	450	700	1198			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	16	274	339
Volume Left	8	3	0
Volume Right	8	0	12
cSH	548	1198	1700
Volume to Capacity	0.03	0.00	0.20
Queue Length 95th (ft)	2	0	0
Control Delay (s)	11.8	0.1	0.0
Lane LOS	B	A	
Approach Delay (s)	11.8	0.1	0.0
Approach LOS	B		

Intersection Summary				
Average Delay		0.3		
Intersection Capacity Utilization		28.0%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	11	24	22	236	286	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	12	27	24	262	318	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				446		
pX, platoon unblocked						
vC, conflicting volume	637	326	334			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	637	326	334			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	97	96	98			
cM capacity (veh/h)	426	706	1203			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	39	24	262	334
Volume Left	12	24	0	0
Volume Right	27	0	0	17
cSH	585	1203	1700	1700
Volume to Capacity	0.07	0.02	0.15	0.20
Queue Length 95th (ft)	5	2	0	0
Control Delay (s)	11.6	8.1	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	11.6	0.7		0.0
Approach LOS	B			

Intersection Summary				
Average Delay		1.0		
Intersection Capacity Utilization		30.4%	ICU Level of Service	A
Analysis Period (min)		15		

HCM Unsignalized Intersection Capacity Analysis 2010
12: Lime Kiln Rd. & Diamond Rd. (SR-49) AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	23	3	10	7	4	2	31	233	15	12	269	29
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	26	3	11	8	4	2	34	259	17	13	299	32
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked												
vC, conflicting volume	682	686	315	691	694	267	331			276		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	682	686	315	691	694	267	331			276		
tC, single (s)	7.2	6.6	6.3	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	93	99	98	98	99	100	97			99		
cM capacity (veh/h)	343	351	716	336	347	762	1206			1265		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	40	14	310	344
Volume Left	26	8	34	13
Volume Right	11	2	17	32
cSH	402	371	1206	1265
Volume to Capacity	0.10	0.04	0.03	0.01
Queue Length 95th (ft)	8	3	2	1
Control Delay (s)	14.9	15.1	1.1	0.4
Lane LOS	B	C	A	A
Approach Delay (s)	14.9	15.1	1.1	0.4
Approach LOS	B	C		

Intersection Summary				
Average Delay		1.8		
Intersection Capacity Utilization	39.1%	ICU Level of Service		A
Analysis Period (min)		15		

HCM Signalized Intersection Capacity Analysis 2010
13: Pleasant Valley Rd. (SR-49) & Diamond Rd. (SR-49) AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	340	48	23	499	121	72	16	44	113	13	69
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1524	2991		1583	1667	1417		1601	1417	1524	1400	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1524	2991		1583	1667	1417		1601	1417	1524	1400	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	54	378	53	26	554	134	80	18	49	126	14	77
RTOR Reduction (vph)	0	8	0	0	0	52	0	0	43	0	63	0
Lane Group Flow (vph)	54	423	0	26	554	82	0	98	6	126	28	0
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	2%	2%	2%	6%	6%	6%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			
Actuated Green, G (s)	4.9	37.9		1.8	34.8	34.8		8.6	8.6	13.8	13.8	
Effective Green, g (s)	4.9	37.9		1.8	34.8	34.8		8.6	8.6	13.8	13.8	
Actuated g/C Ratio	0.06	0.49		0.02	0.45	0.45		0.11	0.11	0.18	0.18	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.2		2.7	2.7	3.0	3.0	
Lane Grp Cap (vph)	97	1480		37	757	644		180	159	275	252	
v/s Ratio Prot	c0.04	0.14		0.02	c0.33			c0.06		c0.08	0.02	
v/s Ratio Perm						0.06			0.00			
v/c Ratio	0.56	0.29		0.70	0.73	0.13		0.54	0.03	0.46	0.11	
Uniform Delay, d1	34.8	11.4		37.1	17.1	12.1		32.1	30.3	28.1	26.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.9	0.1		39.1	3.7	0.1		2.9	0.1	1.2	0.2	
Delay (s)	38.7	11.5		76.3	20.8	12.2		35.1	30.4	29.3	26.5	
Level of Service	D	B		E	C	B		D	C	C	C	
Approach Delay (s)		14.5			21.2			33.5			28.1	
Approach LOS		B			C			C			C	

Intersection Summary				
HCM Average Control Delay	21.2	HCM Level of Service		C
HCM Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	76.6	Sum of lost time (s)		14.5
Intersection Capacity Utilization	56.8%	ICU Level of Service		B
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	365	468	462	462	294	105
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2956	1604	1604	1363	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	2956	1604	1604	1363	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	406	520	513	513	327	117
RTOR Reduction (vph)	0	0	0	38	0	60
Lane Group Flow (vph)	406	520	513	475	327	57
Heavy Vehicles (%)	6%	6%	6%	6%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	15.1	48.9	30.8	54.7	23.9	39.0
Effective Green, g (s)	15.1	48.9	30.8	54.7	23.9	39.0
Actuated g/C Ratio	0.19	0.61	0.38	0.68	0.30	0.49
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	555	976	614	927	471	687
v/s Ratio Prot	c0.14	0.32	c0.32	0.15	c0.21	0.02
v/s Ratio Perm				0.20		0.02
v/c Ratio	0.73	0.53	0.84	0.51	0.69	0.08
Uniform Delay, d1	30.7	9.1	22.5	6.3	25.0	11.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.3	0.3	9.2	0.6	4.6	0.0
Delay (s)	35.0	9.4	31.7	6.9	29.6	11.1
Level of Service	D	A	C	A	C	B
Approach Delay (s)		20.6	19.3		24.7	
Approach LOS		C	B		C	

Intersection Summary				
HCM Average Control Delay	20.8	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.76			
Actuated Cycle Length (s)	80.4	Sum of lost time (s)	10.6	
Intersection Capacity Utilization	67.1%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	57	396	1044	61	11	110
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	63	440	1160	68	12	122
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1228				1761	1194
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1228				1761	1194
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	89				85	46
cM capacity (veh/h)	554				82	227

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	503	1228	134
Volume Left	63	0	12
Volume Right	0	68	122
cSH	554	1700	196
Volume to Capacity	0.11	0.72	0.69
Queue Length 95th (ft)	10	0	106
Control Delay (s)	3.2	0.0	56.0
Lane LOS	A		F
Approach Delay (s)	3.2	0.0	56.0
Approach LOS			F

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	175	18	25	506	4	7	0	16	1	4	59
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	194	20	28	562	4	8	0	18	1	4	66
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)		1091										
pX, platoon unblocked												
vC, conflicting volume	567			214			934	871	204	877	879	564
vC1, stage 1 conf vol							249	249		620	620	
vC2, stage 2 conf vol							686	622		257	259	
vCu, unblocked vol	567			214			934	871	204	877	879	564
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			98	100	98	100	99	88
cM capacity (veh/h)	1005			1356			334	418	836	426	430	525

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	22	214	28	567	26	71
Volume Left	22	0	28	0	8	1
Volume Right	0	20	0	4	18	66
cSH	1005	1700	1356	1700	573	516
Volume to Capacity	0.02	0.13	0.02	0.33	0.04	0.14
Queue Length 95th (ft)	2	0	2	0	3	12
Control Delay (s)	8.7	0.0	7.7	0.0	11.6	13.1
Lane LOS	A		A		B	B
Approach Delay (s)	0.8		0.4		11.6	13.1
Approach LOS					B	B

Intersection Summary					
Average Delay	1.8				
Intersection Capacity Utilization	43.4%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	39	2	126	0	598	143	111	334	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	43	2	140	0	664	159	123	371	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	1423	1441	371	1362	1362	744	371			823		
vC1, stage 1 conf vol	618	618		744	744							
vC2, stage 2 conf vol	806	823		618	618							
vCu, unblocked vol	1423	1441	371	1362	1362	744	371			823		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.2	5.6		6.1	5.5							
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	86	99	66	100			85		
cM capacity (veh/h)	116	231	666	300	310	415	1187			807		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	186	0	823	123	371
Volume Left	0	43	0	0	123	0
Volume Right	0	140	0	159	0	0
cSH	1700	379	1700	1700	807	1700
Volume to Capacity	0.00	0.49	0.00	0.48	0.15	0.22
Queue Length 95th (ft)	0	65	0	0	13	0
Control Delay (s)	0.0	23.3	0.0	0.0	10.3	0.0
Lane LOS	A	C			B	
Approach Delay (s)	0.0	23.3	0.0		2.6	
Approach LOS	A	C				

Intersection Summary					
Average Delay	3.7				
Intersection Capacity Utilization	73.0%	ICU Level of Service		C	
Analysis Period (min)	15				

Queues 2010

13: Pleasant Valley Rd. (SR-49) & Diamond Rd. (SR-49) AM Peak

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	54	431	26	554	134	98	49	126	91
v/c Ratio	0.43	0.29	0.26	0.75	0.20	0.40	0.19	0.45	0.29
Control Delay	52.6	12.9	51.7	27.9	7.0	42.5	14.0	41.1	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.6	12.9	51.7	27.9	7.0	42.5	14.0	41.1	14.7
Queue Length 50th (ft)	25	51	12	217	10	43	0	54	6
Queue Length 95th (ft)	83	130	50	470	52	125	36	151	55
Internal Link Dist (ft)		152		260		844			629
Turn Bay Length (ft)	185		105		180		75	335	
Base Capacity (vph)	420	2226	437	1228	1069	520	493	569	571
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.19	0.06	0.45	0.13	0.19	0.10	0.22	0.16

Intersection Summary

HCM Signalized Intersection Capacity Analysis 2010

1: Plaza Dr. & Missouri Flat Rd. PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	26	348	184	45	116	382	178	271	61	230	38
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	0.95	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frt		0.92	0.85	1.00	0.90		1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1428	1346	1504	1422		3072	3167	1417	1583	3100	
Flt Permitted		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1428	1346	1504	1422		3072	3167	1417	1583	3100	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	86	29	387	204	50	129	424	198	301	68	256	42
RTOR Reduction (vph)	0	52	144	0	67	0	0	0	159	0	12	0
Lane Group Flow (vph)	0	206	100	184	132	0	424	198	142	68	286	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Split		pm+ov	Split			Prot		pm+ov	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		19.4	38.7	17.7	17.7		19.3	29.4	47.1	17.5	27.6	
Effective Green, g (s)		19.4	38.7	17.7	17.7		19.3	29.4	47.1	17.5	27.6	
Actuated g/C Ratio		0.19	0.39	0.18	0.18		0.19	0.29	0.47	0.18	0.28	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		277	575	266	252		593	931	724	277	856	
v/s Ratio Prot		c0.14	0.03	c0.12	0.09		c0.14	0.06	0.03	0.04	c0.09	
v/s Ratio Perm			0.04						0.07			
v/c Ratio		0.75	0.17	0.69	0.53		0.72	0.21	0.20	0.25	0.33	
Uniform Delay, d1		38.0	20.1	38.6	37.3		37.8	26.6	15.4	35.6	28.9	
Progression Factor		1.00	1.00	1.00	1.00		0.95	0.65	0.05	1.00	1.00	
Incremental Delay, d2		10.4	0.1	7.5	2.0		3.9	0.5	0.1	0.5	1.0	
Delay (s)		48.4	20.3	46.1	39.3		39.7	17.7	0.9	36.0	29.9	
Level of Service		D	C	D	D		D	B	A	D	C	
Approach Delay (s)		34.7			42.6			22.3			31.1	
Approach LOS		C			D			C			C	

Intersection Summary				
HCM Average Control Delay	30.2	HCM Level of Service		C
HCM Volume to Capacity ratio	0.56			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)		12.0
Intersection Capacity Utilization	59.2%	ICU Level of Service		B
Analysis Period (min)	15			

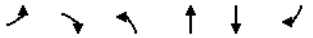
c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	285	601	327	546	552	210
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	2956	1363	1524	4378	3047	1363
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	2956	1363	1524	4378	3047	1363
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	317	668	363	607	613	233
RTOR Reduction (vph)	0	29	0	0	0	124
Lane Group Flow (vph)	317	639	363	607	613	109
Turn Type		pm+ov	Prot			pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	14.7	56.0	41.3	77.3	32.0	46.7
Effective Green, g (s)	14.7	56.0	41.3	77.3	32.0	46.7
Actuated g/C Ratio	0.15	0.56	0.41	0.77	0.32	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	435	818	629	3384	975	691
v/s Ratio Prot	0.11	c0.32	0.24	0.14	c0.20	0.02
v/s Ratio Perm		0.15				0.06
v/c Ratio	0.73	0.78	0.58	0.18	0.63	0.16
Uniform Delay, d1	40.7	17.2	22.6	3.0	28.9	15.3
Progression Factor	1.00	1.00	1.24	0.59	0.69	0.26
Incremental Delay, d2	6.0	4.9	1.1	0.1	2.8	0.1
Delay (s)	46.8	22.1	29.2	1.9	22.7	4.1
Level of Service	D	C	C	A	C	A
Approach Delay (s)	30.0			12.1	17.6	
Approach LOS	C			B	B	

Intersection Summary			
HCM Average Control Delay	20.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	156	2	529	0	0	0	0	717	793	194	959	0
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	0.91	0.95					0.95	1.00	1.00	0.95	
Frt	1.00	0.86	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1447	1251	1295					3047	1363	1524	3047	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1447	1251	1295					3047	1363	1524	3047	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	173	2	588	0	0	0	0	797	881	216	1066	0
RTOR Reduction (vph)	0	128	128	0	0	0	0	0	312	0	0	0
Lane Group Flow (vph)	156	179	172	0	0	0	0	797	569	216	1066	0
Turn Type	Split		Perm						Perm	Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	17.7	17.7	17.7					53.1	53.1	17.2	74.3	
Effective Green, g (s)	17.7	17.7	17.7					53.1	53.1	17.2	74.3	
Actuated g/C Ratio	0.18	0.18	0.18					0.53	0.53	0.17	0.74	
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	256	221	229					1618	724	262	2264	
v/s Ratio Prot	0.11	c0.14						0.26		c0.14	0.35	
v/s Ratio Perm			0.13						c0.42			
v/c Ratio	0.61	0.81	0.75					0.49	0.79	0.82	0.47	
Uniform Delay, d1	38.0	39.5	39.0					14.9	18.9	39.9	5.1	
Progression Factor	1.00	1.00	1.00					0.80	0.54	1.01	0.56	
Incremental Delay, d2	4.1	19.1	12.6					0.9	7.3	13.5	0.5	
Delay (s)	42.0	58.6	51.6					12.8	17.4	53.7	3.3	
Level of Service	D	E	D					B	B	D	A	
Approach Delay (s)		52.5			0.0			15.2			11.8	
Approach LOS		D			A			B			B	

Intersection Summary			
HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	232	91	48	1278	1336	152
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3072	1417	1583	3167	3167	1417
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3072	1417	1583	3167	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	258	101	53	1420	1484	169
RTOR Reduction (vph)	0	87	0	0	0	23
Lane Group Flow (vph)	258	14	53	1420	1484	146
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	13.8	13.8	7.6	78.2	66.6	66.6
Effective Green, g (s)	13.8	13.8	7.6	78.2	66.6	66.6
Actuated g/C Ratio	0.14	0.14	0.08	0.78	0.67	0.67
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	424	196	120	2477	2109	944
v/s Ratio Prot	c0.08		0.03	c0.45	c0.47	
v/s Ratio Perm		0.01				0.10
v/c Ratio	0.61	0.07	0.44	0.57	0.70	0.15
Uniform Delay, d1	40.6	37.5	44.2	4.3	10.5	6.2
Progression Factor	1.00	1.00	1.00	1.00	0.93	1.10
Incremental Delay, d2	2.5	0.2	2.6	1.0	1.6	0.3
Delay (s)	43.0	37.7	46.8	5.3	11.4	7.1
Level of Service	D	D	D	A	B	A
Approach Delay (s)	41.5			6.8	11.0	
Approach LOS	D			A	B	

Intersection Summary				
HCM Average Control Delay	12.3	HCM Level of Service		B
HCM Volume to Capacity ratio	0.66			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)		8.0
Intersection Capacity Utilization	58.6%	ICU Level of Service		B
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	360	43	40	98	38	113	69	853	50	109	1073	245
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	400	48	44	109	42	126	77	948	56	121	1192	272
RTOR Reduction (vph)	0	0	39	0	0	116	0	0	17	0	0	67
Lane Group Flow (vph)	400	48	5	109	42	10	77	948	39	121	1192	205
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	19.6	11.0	11.0	15.8	7.2	7.2	6.6	37.9	37.9	10.5	41.8	41.8
Effective Green, g (s)	19.6	11.0	11.0	15.8	7.2	7.2	6.6	37.9	37.9	10.5	41.8	41.8
Actuated g/C Ratio	0.22	0.12	0.12	0.18	0.08	0.08	0.07	0.42	0.42	0.12	0.46	0.46
Clearance Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	3.0	3.0	0.2	3.0	3.0
Lane Grp Cap (vph)	668	203	173	277	133	113	116	1331	595	184	1468	657
v/s Ratio Prot	c0.13	c0.03		0.07	0.03		0.05	0.30		c0.08	c0.38	
v/s Ratio Perm			0.00			0.01			0.03			0.15
v/c Ratio	0.60	0.24	0.03	0.39	0.32	0.09	0.66	0.71	0.06	0.66	0.81	0.31
Uniform Delay, d1	31.8	35.8	34.9	33.0	39.2	38.5	40.7	21.6	15.6	38.1	20.8	15.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.2	0.0	0.3	0.5	0.1	10.5	1.8	0.0	6.3	3.5	0.3
Delay (s)	32.7	36.0	34.9	33.3	39.7	38.6	51.3	23.5	15.6	44.4	24.4	15.5
Level of Service	C	D	C	C	D	D	D	C	B	D	C	B
Approach Delay (s)		33.2			36.7			25.0			24.4	
Approach LOS		C			D			C			C	

Intersection Summary				
HCM Average Control Delay	26.8	HCM Level of Service		C
HCM Volume to Capacity ratio	0.64			
Actuated Cycle Length (s)	90.2	Sum of lost time (s)		6.0
Intersection Capacity Utilization	66.4%	ICU Level of Service		C
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis 2010
6: Golden Center Dr. & Missouri Flat Rd. PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	7	5	105	5	75	35	640	35	100	925	10
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frt		0.99			0.95		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96			0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1526			1532		1583	3142		1583	3167	1417
Flt Permitted		0.63			0.79		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1011			1247		1583	3142		1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	111	8	6	117	6	83	39	711	39	111	1028	11
RTOR Reduction (vph)	0	2	0	0	21	0	0	3	0	0	0	3
Lane Group Flow (vph)	0	124	0	0	185	0	39	747	0	111	1028	8
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot			Prot		Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4								2
Actuated Green, G (s)		16.4			16.4		4.1	27.7		8.5	32.1	32.1
Effective Green, g (s)		16.4			16.4		4.1	27.7		8.5	32.1	32.1
Actuated g/C Ratio		0.25			0.25		0.06	0.42		0.13	0.49	0.49
Clearance Time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		2.5			2.5		2.5	3.0		2.5	3.0	3.0
Lane Grp Cap (vph)		253			312		99	1327		205	1550	693
v/s Ratio Prot							0.02	0.24		c0.07	c0.32	
v/s Ratio Perm		0.12			c0.15							0.01
v/c Ratio		0.49			0.59		0.39	0.56		0.54	0.66	0.01
Uniform Delay, d1		21.0			21.7		29.6	14.4		26.7	12.7	8.6
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		1.1			2.5		1.9	0.5		2.3	1.1	0.0
Delay (s)		22.1			24.2		31.4	14.9		29.0	13.7	8.6
Level of Service		C			C		C	B		C	B	A
Approach Delay (s)		22.1			24.2			15.7			15.2	
Approach LOS		C			C			B			B	

Intersection Summary				
HCM Average Control Delay	16.6	HCM Level of Service		B
HCM Volume to Capacity ratio	0.60			
Actuated Cycle Length (s)	65.6	Sum of lost time (s)		8.0
Intersection Capacity Utilization	54.0%	ICU Level of Service		A
Analysis Period (min)	15			

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis 2010
10: Truck St. & Diamond Rd. (SR-49) PM Peak

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	25	25	4	325	400	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	28	4	361	444	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				900		
pX, platoon unblocked						
vC, conflicting volume	823	453	461			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	823	453	461			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	92	95	100			
cM capacity (veh/h)	337	599	1079			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	56	366	461
Volume Left	28	4	0
Volume Right	28	0	17
cSH	431	1079	1700
Volume to Capacity	0.13	0.00	0.27
Queue Length 95th (ft)	11	0	0
Control Delay (s)	14.6	0.1	0.0
Lane LOS	B	A	
Approach Delay (s)	14.6	0.1	0.0
Approach LOS	B		

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	34.5%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	25	55	28	304	400	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	61	31	338	444	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				446		
pX, platoon unblocked						
vC, conflicting volume	858	458	472			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	858	458	472			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	91	90	97			
cM capacity (veh/h)	313	594	1069			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	89	31	338	472
Volume Left	28	31	0	0
Volume Right	61	0	0	28
cSH	464	1069	1700	1700
Volume to Capacity	0.19	0.03	0.20	0.28
Queue Length 95th (ft)	18	2	0	0
Control Delay (s)	14.6	8.5	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	14.6	0.7		0.0
Approach LOS	B			

Intersection Summary				
Average Delay			1.7	
Intersection Capacity Utilization			38.0%	ICU Level of Service A
Analysis Period (min)			15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	79	9	35	6	3	2	40	251	20	20	385	50
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	88	10	39	7	3	2	44	279	22	22	428	56
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked												
vC, conflicting volume	883	890	456	923	907	290	483			301		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	883	890	456	923	907	290	483			301		
tC, single (s)	7.2	6.6	6.3	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	64	96	93	97	99	100	96			98		
cM capacity (veh/h)	247	261	597	213	256	740	1059			1237		

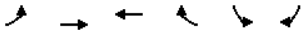
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	137	12	346	506
Volume Left	88	7	44	22
Volume Right	39	2	22	56
cSH	298	258	1059	1237
Volume to Capacity	0.46	0.05	0.04	0.02
Queue Length 95th (ft)	57	4	3	1
Control Delay (s)	26.9	19.6	1.5	0.5
Lane LOS	D	C	A	A
Approach Delay (s)	26.9	19.6	1.5	0.5
Approach LOS	D	C		

Intersection Summary				
Average Delay			4.7	
Intersection Capacity Utilization			50.6%	ICU Level of Service A
Analysis Period (min)			15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	119	830	117	19	416	101	67	15	41	250	28	154
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1524	2991		1583	1667	1417		1602	1417	1524	1400	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1524	2991		1583	1667	1417		1602	1417	1524	1400	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	132	922	130	21	462	112	74	17	46	278	31	171
RTOR Reduction (vph)	0	8	0	0	0	61	0	0	42	0	126	0
Lane Group Flow (vph)	132	1044	0	21	462	51	0	91	4	278	76	0
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	2%	2%	2%	6%	6%	6%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			
Actuated Green, G (s)	11.0	42.7		1.9	33.6	33.6		8.8	8.8	24.4	24.4	
Effective Green, g (s)	11.0	42.7		1.9	33.6	33.6		8.8	8.8	24.4	24.4	
Actuated g/C Ratio	0.12	0.46		0.02	0.36	0.36		0.10	0.10	0.26	0.26	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.2		2.7	2.7	3.0	3.0	
Lane Grp Cap (vph)	182	1384		33	607	516		153	135	403	370	
v/s Ratio Prot	c0.09	c0.35		0.01	0.28			c0.06		c0.18	0.05	
v/s Ratio Perm						0.04			0.00			
v/c Ratio	0.73	0.75		0.64	0.76	0.10		0.59	0.03	0.69	0.21	
Uniform Delay, d1	39.2	20.5		44.9	25.8	19.4		40.0	37.9	30.5	26.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.5	2.4		25.9	5.7	0.1		5.5	0.1	4.9	0.3	
Delay (s)	50.7	22.9		70.7	31.5	19.5		45.5	38.0	35.4	26.7	
Level of Service	D	C		E	C	B		D	D	D	C	
Approach Delay (s)		26.0			30.6			43.0			31.7	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM Average Control Delay	29.3	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	92.3	Sum of lost time (s)	10.1	
Intersection Capacity Utilization	67.4%	ICU Level of Service	C	
Analysis Period (min)	15			

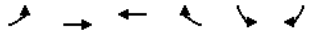
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	312	400	385	385	700	250
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2956	1604	1604	1363	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	2956	1604	1604	1363	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	347	444	428	428	778	278
RTOR Reduction (vph)	0	0	0	48	0	87
Lane Group Flow (vph)	347	444	428	380	778	191
Heavy Vehicles (%)	6%	6%	6%	6%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	12.7	40.4	24.7	57.5	32.8	45.5
Effective Green, g (s)	12.7	40.4	24.7	57.5	32.8	45.5
Actuated g/C Ratio	0.16	0.50	0.31	0.71	0.41	0.56
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	465	802	490	970	643	798
v/s Ratio Prot	c0.12	0.28	c0.27	0.16	c0.49	0.04
v/s Ratio Perm				0.12		0.10
v/c Ratio	0.75	0.55	0.87	0.39	1.21	0.24
Uniform Delay, d1	32.5	14.0	26.6	4.7	24.0	8.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.6	0.5	15.3	0.3	108.5	0.1
Delay (s)	38.2	14.4	41.9	5.0	132.5	9.0
Level of Service	D	B	D	A	F	A
Approach Delay (s)		24.8	23.4		100.0	
Approach LOS		C	C		F	

Intersection Summary				
HCM Average Control Delay	53.8	HCM Level of Service	D	
HCM Volume to Capacity ratio	1.01			
Actuated Cycle Length (s)	80.8	Sum of lost time (s)	10.6	
Intersection Capacity Utilization	86.0%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	103	720	870	51	14	140
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	114	800	967	57	16	156
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1023				2024	995
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1023				2024	995
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	83				70	48
cM capacity (veh/h)	663				53	297

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	914	1023	171
Volume Left	114	0	16
Volume Right	0	57	156
cSH	663	1700	209
Volume to Capacity	0.17	0.60	0.82
Queue Length 95th (ft)	16	0	150
Control Delay (s)	4.7	0.0	71.1
Lane LOS	A		F
Approach Delay (s)	4.7	0.0	71.1
Approach LOS			F

Intersection Summary				
Average Delay		7.8		
Intersection Capacity Utilization		123.9%	ICU Level of Service	H
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	620	62	20	405	3	30	1	70	1	3	50
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	78	689	69	22	450	3	33	1	78	1	3	56
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)		1091										
pX, platoon unblocked				0.72			0.72	0.72	0.72	0.72	0.72	
vC, conflicting volume	453			758			1431	1377	723	1419	1409	452
vC1, stage 1 conf vol							879	879		496	496	
vC2, stage 2 conf vol							552	498		923	913	
vCu, unblocked vol	453			466			1403	1328	418	1387	1374	452
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			97			86	100	83	99	99	91
cM capacity (veh/h)	1107			786			243	268	456	201	251	608

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	78	758	22	453	112	60
Volume Left	78	0	22	0	33	1
Volume Right	0	69	0	3	78	56
cSH	1107	1700	786	1700	360	544
Volume to Capacity	0.07	0.45	0.03	0.27	0.31	0.11
Queue Length 95th (ft)	6	0	2	0	33	9
Control Delay (s)	8.5	0.0	9.7	0.0	19.5	12.4
Lane LOS	A		A		C	B
Approach Delay (s)	0.8		0.5		19.5	12.4
Approach LOS					C	B

Intersection Summary				
Average Delay		2.6		
Intersection Capacity Utilization		67.4%	ICU Level of Service	C
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	45	2	145	0	500	120	200	600	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	50	2	161	0	556	133	222	667	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	1829	1800	667	1733	1733	622	667			689		
vC1, stage 1 conf vol	1111	1111		622	622							
vC2, stage 2 conf vol	718	689		1111	1111							
vCu, unblocked vol	1829	1800	667	1733	1733	622	667			689		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.2	5.6		6.1	5.5							
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	72	99	67	100			75		
cM capacity (veh/h)	52	159	452	177	197	487	923			905		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	213	0	689	222	667
Volume Left	0	50	0	0	222	0
Volume Right	0	161	0	133	0	0
cSH	1700	342	1700	1700	905	1700
Volume to Capacity	0.00	0.62	0.00	0.41	0.25	0.39
Queue Length 95th (ft)	0	100	0	0	24	0
Control Delay (s)	0.0	31.6	0.0	0.0	10.3	0.0
Lane LOS	A	D			B	
Approach Delay (s)	0.0	31.6	0.0		2.6	
Approach LOS	A	D				

Intersection Summary					
Average Delay		5.0			
Intersection Capacity Utilization		72.8%	ICU Level of Service		C
Analysis Period (min)		15			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	132	1052	21	462	112	91	46	278	202
v/c Ratio	0.71	0.74	0.28	0.80	0.20	0.47	0.22	0.67	0.40
Control Delay	63.3	23.5	58.8	38.6	7.4	50.6	15.6	44.6	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.3	23.5	58.8	38.6	7.4	50.6	15.6	44.6	11.7
Queue Length 50th (ft)	73	227	12	236	6	49	0	144	13
Queue Length 95th (ft)	165	402	43	413	44	118	35	#383	91
Internal Link Dist (ft)		152		260		844			629
Turn Bay Length (ft)	185		105		180		75	335	
Base Capacity (vph)	305	1959	317	1080	952	377	369	413	504
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.54	0.07	0.43	0.12	0.24	0.12	0.67	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

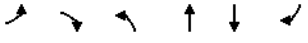
Appendix C:

Analysis Worksheets for
Existing (2010) plus Proposed Project Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	22	301	234	57	147	381	177	270	43	162	27
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	0.95	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frt		0.92	0.85	1.00	0.90		1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1427	1346	1504	1422		3072	3167	1417	1583	3099	
Flt Permitted		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1427	1346	1504	1422		3072	3167	1417	1583	3099	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	74	24	334	260	63	163	423	197	300	48	180	30
RTOR Reduction (vph)	0	63	134	0	71	0	0	0	119	0	15	0
Lane Group Flow (vph)	0	159	76	234	181	0	423	197	181	48	195	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Split		pm+ov	Split			Prot		pm+ov	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		15.1	32.4	20.6	20.6		17.3	33.8	54.4	4.5	21.0	
Effective Green, g (s)		15.1	32.4	20.6	20.6		17.3	33.8	54.4	4.5	21.0	
Actuated g/C Ratio		0.17	0.36	0.23	0.23		0.19	0.38	0.60	0.05	0.23	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		239	544	344	325		591	1189	856	79	723	
v/s Ratio Prot		c0.11	0.03	c0.16	0.13		c0.14	0.06	0.05	c0.03	c0.06	
v/s Ratio Perm			0.03						0.08			
v/c Ratio		0.66	0.14	0.68	0.56		0.72	0.17	0.21	0.61	0.27	
Uniform Delay, d1		35.1	19.4	31.7	30.7		34.0	18.7	8.1	41.9	28.2	
Progression Factor		1.00	1.00	1.00	1.00		0.92	0.85	1.11	1.00	1.00	
Incremental Delay, d2		6.8	0.1	5.4	2.1		3.9	0.3	0.1	12.5	0.9	
Delay (s)		41.9	19.5	37.1	32.7		35.2	16.2	9.0	54.4	29.2	
Level of Service		D	B	D	C		D	B	A	D	C	
Approach Delay (s)		31.0			34.9			22.6			33.8	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM Average Control Delay	28.6	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.58			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	57.7%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	304	641	285	524	524	173
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	2956	1363	1524	4378	3047	1363
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	2956	1363	1524	4378	3047	1363
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	338	712	317	582	582	192
RTOR Reduction (vph)	0	22	0	0	0	107
Lane Group Flow (vph)	338	690	317	582	582	85
Turn Type		pm+ov	Prot			pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	14.4	52.4	38.0	67.6	25.6	40.0
Effective Green, g (s)	14.4	52.4	38.0	67.6	25.6	40.0
Actuated g/C Ratio	0.16	0.58	0.42	0.75	0.28	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	473	854	643	3288	867	666
v/s Ratio Prot	0.11	c0.34	0.21	0.13	c0.19	0.02
v/s Ratio Perm		0.17				0.04
v/c Ratio	0.71	0.81	0.49	0.18	0.67	0.13
Uniform Delay, d1	35.9	14.8	19.0	3.2	28.5	14.7
Progression Factor	1.00	1.00	0.81	0.25	0.73	0.26
Incremental Delay, d2	5.1	5.7	0.5	0.1	3.8	0.1
Delay (s)	40.9	20.5	15.9	0.9	24.7	3.9
Level of Service	D	C	B	A	C	A
Approach Delay (s)	27.1			6.2	19.6	
Approach LOS	C			A	B	

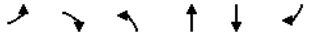
Intersection Summary				
HCM Average Control Delay	18.0	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.77			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	67.2%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	97	1	328	0	0	0	0	712	693	170	995	0
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	0.91	0.95					0.95	1.00	1.00	0.95	
Frt	1.00	0.86	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1447	1251	1295					3047	1363	1524	3047	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1447	1251	1295					3047	1363	1524	3047	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	108	1	364	0	0	0	0	791	770	189	1106	0
RTOR Reduction (vph)	0	131	131	0	0	0	0	0	282	0	0	0
Lane Group Flow (vph)	97	59	55	0	0	0	0	791	488	189	1106	0
Turn Type	Split		Perm						Perm	Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	11.6	11.6	11.6					51.1	51.1	15.3	70.4	
Effective Green, g (s)	11.6	11.6	11.6					51.1	51.1	15.3	70.4	
Actuated g/C Ratio	0.13	0.13	0.13					0.57	0.57	0.17	0.78	
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	187	161	167					1730	774	259	2383	
v/s Ratio Prot	c0.07	0.05						0.26		c0.12	0.36	
v/s Ratio Perm			0.04						c0.36			
v/c Ratio	0.52	0.37	0.33					0.46	0.63	0.73	0.46	
Uniform Delay, d1	36.6	35.9	35.7					11.4	13.1	35.4	3.4	
Progression Factor	1.00	1.00	1.00					0.79	0.47	0.97	0.81	
Incremental Delay, d2	2.4	1.4	1.2					0.8	3.4	6.5	0.4	
Delay (s)	39.0	37.3	36.8					9.7	9.6	41.0	3.1	
Level of Service	D	D	D					A	A	D	A	
Approach Delay (s)		37.5			0.0			9.7			8.7	
Approach LOS		D			A			A			A	

Intersection Summary				
HCM Average Control Delay	13.2	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	75.3%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	209	82	42	1196	1204	119
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3072	1417	1583	3167	3167	1417
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3072	1417	1583	3167	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	232	91	47	1329	1338	132
RTOR Reduction (vph)	0	79	0	0	0	20
Lane Group Flow (vph)	232	12	47	1329	1338	112
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	12.2	12.2	5.6	69.8	60.2	60.2
Effective Green, g (s)	12.2	12.2	5.6	69.8	60.2	60.2
Actuated g/C Ratio	0.14	0.14	0.06	0.78	0.67	0.67
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	416	192	98	2456	2118	948
v/s Ratio Prot	c0.08		0.03	c0.42	c0.42	
v/s Ratio Perm		0.01				0.08
v/c Ratio	0.56	0.06	0.48	0.54	0.63	0.12
Uniform Delay, d1	36.4	33.9	40.8	3.9	8.5	5.4
Progression Factor	1.00	1.00	1.00	1.00	0.83	0.59
Incremental Delay, d2	1.6	0.1	3.7	0.9	1.3	0.2
Delay (s)	38.0	34.1	44.5	4.8	8.4	3.4
Level of Service	D	C	D	A	A	A
Approach Delay (s)	36.9			6.1	7.9	
Approach LOS	D			A	A	

Intersection Summary				
HCM Average Control Delay	10.1	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.60			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	52.3%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	155	18	17	41	16	47	71	1036	51	67	1068	151
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	172	20	19	46	18	52	79	1151	57	74	1187	168
RTOR Reduction (vph)	0	0	17	0	0	49	0	0	12	0	0	36
Lane Group Flow (vph)	172	20	2	46	18	3	79	1151	45	74	1187	132
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	8.4	9.0	9.0	3.5	4.1	4.1	6.0	38.2	38.2	5.7	37.9	37.9
Effective Green, g (s)	8.4	9.0	9.0	3.5	4.1	4.1	6.0	38.2	38.2	5.7	37.9	37.9
Actuated g/C Ratio	0.12	0.13	0.13	0.05	0.06	0.06	0.08	0.54	0.54	0.08	0.53	0.53
Clearance Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	3.0	3.0	0.2	3.0	3.0
Lane Grp Cap (vph)	361	210	179	78	96	81	133	1694	758	126	1681	752
v/s Ratio Prot	c0.06	0.01		c0.03	c0.01		c0.05	0.36		0.05	c0.37	
v/s Ratio Perm			0.00			0.00			0.03			0.09
v/c Ratio	0.48	0.10	0.01	0.59	0.19	0.04	0.59	0.68	0.06	0.59	0.71	0.18
Uniform Delay, d1	29.4	27.6	27.3	33.2	32.1	31.8	31.5	12.1	8.0	31.7	12.6	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	0.0	7.2	0.3	0.1	4.7	1.1	0.0	4.4	1.4	0.1
Delay (s)	29.8	27.7	27.3	40.4	32.4	31.9	36.2	13.2	8.0	36.2	13.9	8.8
Level of Service	C	C	C	D	C	C	D	B	A	D	B	A
Approach Delay (s)		29.4			35.3			14.4			14.5	
Approach LOS		C			D			B			B	

Intersection Summary				
HCM Average Control Delay	16.3	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	15.0	
Intersection Capacity Utilization	59.8%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	1	1	46	2	33	61	1124	61	94	866	9
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frt		0.99			0.94		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96			0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1524			1531		1583	3142		1583	3167	1417
Flt Permitted		0.82			0.82		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1305			1284		1583	3142		1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	14	1	1	51	2	37	68	1249	68	104	962	10
RTOR Reduction (vph)	0	1	0	0	26	0	0	2	0	0	0	2
Lane Group Flow (vph)	0	15	0	0	64	0	68	1315	0	104	962	8
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot			Prot		Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4								2
Actuated Green, G (s)		7.1			7.1		6.7	41.1		8.2	42.6	42.6
Effective Green, g (s)		7.1			7.1		6.7	41.1		8.2	42.6	42.6
Actuated g/C Ratio		0.10			0.10		0.10	0.59		0.12	0.61	0.61
Clearance Time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		2.5			2.5		2.5	3.0		2.5	3.0	3.0
Lane Grp Cap (vph)		134			131		153	1861		187	1944	870
v/s Ratio Prot							0.04	c0.42		c0.07	0.30	
v/s Ratio Perm		0.01			c0.05							0.01
v/c Ratio		0.11			0.49		0.44	0.71		0.56	0.49	0.01
Uniform Delay, d1		28.3			29.4		29.6	9.9		28.9	7.4	5.2
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.3			2.1		1.5	1.2		2.9	0.2	0.0
Delay (s)		28.6			31.5		31.1	11.2		31.7	7.6	5.2
Level of Service		C			C		C	B		C	A	A
Approach Delay (s)		28.6			31.5			12.1			9.9	
Approach LOS		C			C			B			A	

Intersection Summary				
HCM Average Control Delay	12.0	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.66			
Actuated Cycle Length (s)	69.4	Sum of lost time (s)	13.0	
Intersection Capacity Utilization	59.4%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	598	276	230	848	14	385	11	61	2	8	12
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	3167	1417	1583	1667	1417	1583	1454		1583	1519	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	3167	1417	1583	1667	1417	1583	1454		1583	1519	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	10	664	307	256	942	16	428	12	68	2	9	13
RTOR Reduction (vph)	0	0	133	0	0	1	0	49	0	0	13	0
Lane Group Flow (vph)	10	664	174	256	942	15	428	31	0	2	9	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		pm+ov	Prot		Perm	Prot			Prot		
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2			6						
Actuated Green, G (s)	1.2	28.5	52.0	20.7	48.0	48.0	23.5	25.7		1.0	3.2	
Effective Green, g (s)	1.2	28.5	52.0	20.7	48.0	48.0	23.5	25.7		1.0	3.2	
Actuated g/C Ratio	0.01	0.31	0.57	0.23	0.52	0.52	0.26	0.28		0.01	0.03	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	21	982	863	357	871	740	405	407		17	53	
v/s Ratio Prot	0.01	0.21	0.05	c0.16	c0.57		c0.27	0.02		0.00	c0.01	
v/s Ratio Perm			0.07			0.01						
v/c Ratio	0.48	0.68	0.20	0.72	1.08	0.02	1.06	0.08		0.12	0.18	
Uniform Delay, d1	45.0	27.7	9.8	32.9	22.0	10.6	34.2	24.4		45.0	43.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.0	1.9	0.1	6.7	55.0	0.0	60.5	0.1		3.1	1.6	
Delay (s)	61.1	29.5	9.9	39.6	76.9	10.6	94.7	24.4		48.1	44.7	
Level of Service	E	C	A	D	E	B	F	C		D	D	
Approach Delay (s)		23.7			68.2			83.6			45.0	
Approach LOS		C			E			F			D	

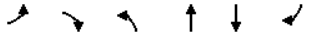
Intersection Summary				
HCM Average Control Delay	54.9	HCM Level of Service	D	
HCM Volume to Capacity ratio	1.04			
Actuated Cycle Length (s)	91.9	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	93.7%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	567	64	17	1033	17	38	5	15	17	2	21
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1583	1667	1417	1583	1663			1537	1363		1459	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	1583	1667	1417	1583	1663			1537	1363		1459	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	630	71	19	1148	19	42	6	17	19	2	23
RTOR Reduction (vph)	0	0	16	0	0	0	0	0	16	0	22	0
Lane Group Flow (vph)	33	630	55	19	1167	0	0	48	1	0	22	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	6%	6%	6%	6%	6%	6%
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	2.1	54.5	54.5	1.4	53.8			6.6	6.6		4.2	
Effective Green, g (s)	2.1	54.5	54.5	1.4	53.8			6.6	6.6		4.2	
Actuated g/C Ratio	0.03	0.66	0.66	0.02	0.65			0.08	0.08		0.05	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	40	1099	934	27	1082			123	109		74	
v/s Ratio Prot	c0.02	0.38		0.01	c0.70			c0.03			c0.02	
v/s Ratio Perm			0.04						0.00			
v/c Ratio	0.82	0.57	0.06	0.70	1.08			0.39	0.01		0.30	
Uniform Delay, d1	40.1	7.7	5.0	40.4	14.4			36.1	35.0		37.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	76.6	0.7	0.0	59.2	51.0			2.0	0.0		2.3	
Delay (s)	116.7	8.5	5.0	99.7	65.5			38.2	35.1		40.1	
Level of Service	F	A	A	F	E			D	D		D	
Approach Delay (s)		13.0			66.0			37.4			40.1	
Approach LOS		B			E			D			D	

Intersection Summary				
HCM Average Control Delay	45.4	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.95			
Actuated Cycle Length (s)	82.7	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	77.9%	ICU Level of Service	D	
Analysis Period (min)	15			

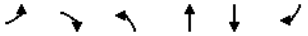
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	132	467	685	152	175	382
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1583	1417	2956	1604	1604	1363
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1583	1417	2956	1604	1604	1363
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	147	519	761	169	194	424
RTOR Reduction (vph)	0	207	0	0	0	323
Lane Group Flow (vph)	147	312	761	169	194	101
Heavy Vehicles (%)	2%	2%	6%	6%	6%	6%
Turn Type		pm+ov	Prot			Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	12.1	35.7	23.6	42.5	14.9	14.9
Effective Green, g (s)	12.1	35.7	23.6	42.5	14.9	14.9
Actuated g/C Ratio	0.19	0.57	0.38	0.68	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	306	899	1114	1089	382	324
v/s Ratio Prot	c0.09	0.13	c0.26	0.11	c0.12	
v/s Ratio Perm		0.09				0.07
v/c Ratio	0.48	0.35	0.68	0.16	0.51	0.31
Uniform Delay, d1	22.5	7.2	16.4	3.6	20.7	19.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.2	1.7	0.1	1.1	0.6
Delay (s)	23.6	7.4	18.1	3.7	21.7	20.2
Level of Service	C	A	B	A	C	C
Approach Delay (s)	11.0			15.5	20.7	
Approach LOS	B			B	C	

Intersection Summary				
HCM Average Control Delay	15.6	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.58			
Actuated Cycle Length (s)	62.6	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	54.9%	ICU Level of Service	A	
Analysis Period (min)	15			

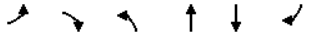
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	4	3	7	277	557	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	3	8	308	619	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				899		
pX, platoon unblocked						
vC, conflicting volume	943	619	620			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	943	619	620			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	98	99	99			
cM capacity (veh/h)	284	481	941			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	8	316	620
Volume Left	4	8	0
Volume Right	3	0	1
cSH	345	941	1700
Volume to Capacity	0.02	0.01	0.36
Queue Length 95th (ft)	2	1	0
Control Delay (s)	15.7	0.3	0.0
Lane LOS	C	A	
Approach Delay (s)	15.7	0.3	0.0
Approach LOS	C		

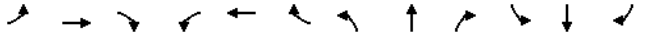
Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	1	0	284	556	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	1	0	316	618	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				358		
pX, platoon unblocked	1.00					
vC, conflicting volume	936	620	622			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	935	620	622			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	100	100	100			
cM capacity (veh/h)	289	481	940			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	1	316	622
Volume Left	0	0	0
Volume Right	1	0	4
cSH	481	1700	1700
Volume to Capacity	0.00	0.19	0.37
Queue Length 95th (ft)	0	0	0
Control Delay (s)	12.5	0.0	0.0
Lane LOS	B		
Approach Delay (s)	12.5	0.0	0.0
Approach LOS	B		

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		43.0%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	44	1	10	7	4	42	32	751	16	18	585	39
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	49	1	11	8	4	47	36	834	18	20	650	43
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked	0.94	0.94	0.94	0.94	0.94		0.94					
vC, conflicting volume	1675	1635	672	1638	1648	843	693			852		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1686	1643	620	1646	1657	843	643			852		
tC, single (s)	7.2	6.6	6.3	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	10	99	98	88	95	87	96			97		
cM capacity (veh/h)	54	86	453	67	84	358	869			770		

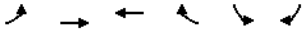
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	61	59	888	713
Volume Left	49	8	36	20
Volume Right	11	47	18	43
cSH	65	197	869	770
Volume to Capacity	0.94	0.30	0.04	0.03
Queue Length 95th (ft)	114	30	3	2
Control Delay (s)	199.6	30.9	1.1	0.7
Lane LOS	F	D	A	A
Approach Delay (s)	199.6	30.9	1.1	0.7
Approach LOS	F	D		

Intersection Summary				
Average Delay		9.0		
Intersection Capacity Utilization		78.2%	ICU Level of Service	D
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	135	25	23	270	350	38	46	49	525	46	70
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1524	2975		1583	1667	1417		1630	1417	1524	1458	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1524	2975		1583	1667	1417		1630	1417	1524	1458	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	69	150	28	26	300	389	42	51	54	583	51	78
RTOR Reduction (vph)	0	14	0	0	0	280	0	0	48	0	34	0
Lane Group Flow (vph)	69	164	0	26	300	109	0	93	6	583	95	0
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	2%	2%	2%	6%	6%	6%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			
Actuated Green, G (s)	5.2	23.7		1.8	20.3	20.3		7.7	7.7	24.6	24.6	
Effective Green, g (s)	5.2	23.7		1.8	20.3	20.3		7.7	7.7	24.6	24.6	
Actuated g/C Ratio	0.07	0.33		0.02	0.28	0.28		0.11	0.11	0.34	0.34	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.2		2.7	2.7	3.0	3.0	
Lane Grp Cap (vph)	110	975		39	468	398		174	151	519	496	
v/s Ratio Prot	c0.05	0.06		0.02	c0.18			c0.06		c0.38	0.06	
v/s Ratio Perm						0.08			0.00			
v/c Ratio	0.63	0.17		0.67	0.64	0.27		0.53	0.04	1.12	0.19	
Uniform Delay, d1	32.6	17.3		35.0	22.8	20.3		30.6	29.0	23.8	16.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.8	0.1		28.5	3.0	0.4		2.7	0.1	78.0	0.2	
Delay (s)	40.4	17.4		63.5	25.9	20.7		33.3	29.1	101.8	17.0	
Level of Service	D	B		E	C	C		C	C	F	B	
Approach Delay (s)		23.8			24.4			31.8			86.5	
Approach LOS		C			C			C			F	

Intersection Summary				
HCM Average Control Delay	49.2	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.83			
Actuated Cycle Length (s)	72.3	Sum of lost time (s)	14.5	
Intersection Capacity Utilization	69.3%	ICU Level of Service	C	
Analysis Period (min)	15			

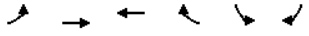
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	210	255	216	78	189	117
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2956	1604	1604	1363	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	2956	1604	1604	1363	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	233	283	240	87	210	130
RTOR Reduction (vph)	0	0	0	38	0	68
Lane Group Flow (vph)	233	283	240	49	210	62
Heavy Vehicles (%)	6%	6%	6%	6%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	6.9	20.4	10.5	22.8	12.3	19.2
Effective Green, g (s)	6.9	20.4	10.5	22.8	12.3	19.2
Actuated g/C Ratio	0.17	0.51	0.26	0.57	0.31	0.48
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	506	812	418	771	483	675
v/s Ratio Prot	c0.08	0.18	c0.15	0.02	c0.13	0.02
v/s Ratio Perm				0.02		0.03
v/c Ratio	0.46	0.35	0.57	0.06	0.43	0.09
Uniform Delay, d1	15.0	6.0	13.0	3.9	11.2	5.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	1.2	0.0	0.7	0.0
Delay (s)	15.3	6.1	14.1	4.0	12.0	5.8
Level of Service	B	A	B	A	B	A
Approach Delay (s)		10.2	11.4		9.6	
Approach LOS		B	B		A	

Intersection Summary				
HCM Average Control Delay	10.4	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.49			
Actuated Cycle Length (s)	40.3	Sum of lost time (s)	10.6	
Intersection Capacity Utilization	41.2%	ICU Level of Service	A	
Analysis Period (min)	15			

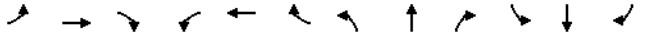
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	57	184	504	61	11	110
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	63	204	560	68	12	122
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	628				925	594
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	628				925	594
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	93				96	76
cM capacity (veh/h)	935				278	505

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	268	628	134
Volume Left	63	0	12
Volume Right	0	68	122
cSH	935	1700	470
Volume to Capacity	0.07	0.37	0.29
Queue Length 95th (ft)	5	0	29
Control Delay (s)	2.7	0.0	15.7
Lane LOS	A		C
Approach Delay (s)	2.7	0.0	15.7
Approach LOS			C

Intersection Summary				
Average Delay		2.7		
Intersection Capacity Utilization		66.4%	ICU Level of Service	C
Analysis Period (min)		15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	173	18	25	506	4	7	0	16	1	4	36
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	192	20	28	562	4	8	0	18	1	4	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)		1091										
pX, platoon unblocked												
vC, conflicting volume	567			212			907	869	202	874	877	564
vC1, stage 1 conf vol							247	247		620	620	
vC2, stage 2 conf vol							660	622		254	257	
vCu, unblocked vol	567			212			907	869	202	874	877	564
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			98	100	98	100	99	92
cM capacity (veh/h)	1005			1358			364	418	839	427	430	525

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	22	212	28	567	26	46
Volume Left	22	0	28	0	8	1
Volume Right	0	20	0	4	18	40
cSH	1005	1700	1358	1700	600	511
Volume to Capacity	0.02	0.12	0.02	0.33	0.04	0.09
Queue Length 95th (ft)	2	0	2	0	3	7
Control Delay (s)	8.7	0.0	7.7	0.0	11.3	12.7
Lane LOS	A		A		B	B
Approach Delay (s)	0.8		0.4		11.3	12.7
Approach LOS					B	B

Intersection Summary				
Average Delay		1.4		
Intersection Capacity Utilization		42.7%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	3	39	2	74	0	418	114	47	306	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	3	43	2	82	0	464	127	52	340	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	992	1036	340	976	972	528	340			591		
vC1, stage 1 conf vol	444	444		528	528							
vC2, stage 2 conf vol	548	591		448	444							
vCu, unblocked vol	992	1036	340	976	972	528	340			591		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.2	5.6		6.1	5.5							
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	90	99	85	100			95		
cM capacity (veh/h)	342	379	693	426	426	550	1219			985		

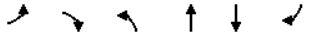
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	3	128	0	591	52	340
Volume Left	0	43	0	0	52	0
Volume Right	3	82	0	127	0	0
cSH	693	499	1700	1700	985	1700
Volume to Capacity	0.00	0.26	0.00	0.35	0.05	0.20
Queue Length 95th (ft)	0	25	0	0	4	0
Control Delay (s)	10.2	14.7	0.0	0.0	8.9	0.0
Lane LOS	B	B			A	
Approach Delay (s)	10.2	14.7	0.0		1.2	
Approach LOS	B	B				

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	59.9%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	26	348	184	45	116	382	178	271	61	230	38
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	0.95	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frt		0.92	0.85	1.00	0.90		1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1428	1346	1504	1422		3072	3167	1417	1583	3100	
Flt Permitted		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1428	1346	1504	1422		3072	3167	1417	1583	3100	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	86	29	387	204	50	129	424	198	301	68	256	42
RTOR Reduction (vph)	0	52	144	0	67	0	0	0	159	0	12	0
Lane Group Flow (vph)	0	206	100	184	132	0	424	198	142	68	286	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Split		pm+ov	Split			Prot		pm+ov	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		19.4	38.7	17.7	17.7		19.3	29.4	47.1	17.5	27.6	
Effective Green, g (s)		19.4	38.7	17.7	17.7		19.3	29.4	47.1	17.5	27.6	
Actuated g/C Ratio		0.19	0.39	0.18	0.18		0.19	0.29	0.47	0.18	0.28	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		277	575	266	252		593	931	724	277	856	
v/s Ratio Prot		c0.14	0.03	c0.12	0.09		c0.14	0.06	0.03	0.04	c0.09	
v/s Ratio Perm			0.04						0.07			
v/c Ratio		0.75	0.17	0.69	0.53		0.72	0.21	0.20	0.25	0.33	
Uniform Delay, d1		38.0	20.1	38.6	37.3		37.8	26.6	15.4	35.6	28.9	
Progression Factor		1.00	1.00	1.00	1.00		0.95	0.65	0.05	1.00	1.00	
Incremental Delay, d2		10.4	0.1	7.5	2.0		3.9	0.5	0.1	0.5	1.0	
Delay (s)		48.4	20.3	46.1	39.3		39.7	17.7	0.9	36.0	29.9	
Level of Service		D	C	D	D		D	B	A	D	C	
Approach Delay (s)		34.7			42.6			22.3			31.1	
Approach LOS		C			D			C			C	

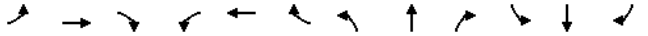
Intersection Summary				
HCM Average Control Delay	30.2	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.56			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	59.2%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group



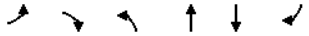
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	285	601	327	546	552	210
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	2956	1363	1524	4378	3047	1363
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	2956	1363	1524	4378	3047	1363
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	317	668	363	607	613	233
RTOR Reduction (vph)	0	29	0	0	0	124
Lane Group Flow (vph)	317	639	363	607	613	109
Turn Type		pm+ov	Prot			pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	14.7	56.0	41.3	77.3	32.0	46.7
Effective Green, g (s)	14.7	56.0	41.3	77.3	32.0	46.7
Actuated g/C Ratio	0.15	0.56	0.41	0.77	0.32	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	435	818	629	3384	975	691
v/s Ratio Prot	0.11	c0.32	0.24	0.14	c0.20	0.02
v/s Ratio Perm		0.15				0.06
v/c Ratio	0.73	0.78	0.58	0.18	0.63	0.16
Uniform Delay, d1	40.7	17.2	22.6	3.0	28.9	15.3
Progression Factor	1.00	1.00	1.24	0.59	0.69	0.26
Incremental Delay, d2	6.0	4.9	1.1	0.1	2.8	0.1
Delay (s)	46.8	22.1	29.2	1.9	22.7	4.1
Level of Service	D	C	C	A	C	A
Approach Delay (s)	30.0			12.1	17.6	
Approach LOS	C			B	B	

Intersection Summary				
HCM Average Control Delay	20.1	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	65.3%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	156	2	529	0	0	0	0	717	793	194	959	0
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	0.91	0.95					0.95	1.00	1.00	0.95	
Frt	1.00	0.86	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1447	1251	1295					3047	1363	1524	3047	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1447	1251	1295					3047	1363	1524	3047	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	173	2	588	0	0	0	0	797	881	216	1066	0
RTOR Reduction (vph)	0	128	128	0	0	0	0	0	312	0	0	0
Lane Group Flow (vph)	156	179	172	0	0	0	0	797	569	216	1066	0
Turn Type	Split		Perm						Perm	Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	17.7	17.7	17.7					53.1	53.1	17.2	74.3	
Effective Green, g (s)	17.7	17.7	17.7					53.1	53.1	17.2	74.3	
Actuated g/C Ratio	0.18	0.18	0.18					0.53	0.53	0.17	0.74	
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	256	221	229					1618	724	262	2264	
v/s Ratio Prot	0.11	c0.14						0.26		c0.14	0.35	
v/s Ratio Perm			0.13						c0.42			
v/c Ratio	0.61	0.81	0.75					0.49	0.79	0.82	0.47	
Uniform Delay, d1	38.0	39.5	39.0					14.9	18.9	39.9	5.1	
Progression Factor	1.00	1.00	1.00					0.80	0.54	1.01	0.56	
Incremental Delay, d2	4.1	19.1	12.6					0.9	7.3	13.5	0.5	
Delay (s)	42.0	58.6	51.6					12.8	17.4	53.7	3.3	
Level of Service	D	E	D					B	B	D	A	
Approach Delay (s)		52.5			0.0			15.2			11.8	
Approach LOS		D			A			B			B	

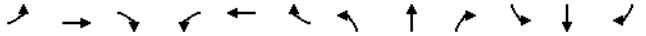
Intersection Summary				
HCM Average Control Delay	21.7	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.80			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	87.8%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	232	91	48	1278	1336	152
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3072	1417	1583	3167	3167	1417
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3072	1417	1583	3167	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	258	101	53	1420	1484	169
RTOR Reduction (vph)	0	87	0	0	0	23
Lane Group Flow (vph)	258	14	53	1420	1484	146
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	13.8	13.8	7.6	78.2	66.6	66.6
Effective Green, g (s)	13.8	13.8	7.6	78.2	66.6	66.6
Actuated g/C Ratio	0.14	0.14	0.08	0.78	0.67	0.67
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	424	196	120	2477	2109	944
v/s Ratio Prot	c0.08		0.03	c0.45	c0.47	
v/s Ratio Perm		0.01				0.10
v/c Ratio	0.61	0.07	0.44	0.57	0.70	0.15
Uniform Delay, d1	40.6	37.5	44.2	4.3	10.5	6.2
Progression Factor	1.00	1.00	1.00	1.00	0.93	1.10
Incremental Delay, d2	2.5	0.2	2.6	1.0	1.6	0.3
Delay (s)	43.0	37.7	46.8	5.3	11.4	7.1
Level of Service	D	D	D	A	B	A
Approach Delay (s)	41.5			6.8	11.0	
Approach LOS	D			A	B	

Intersection Summary				
HCM Average Control Delay	12.3	HCM Level of Service		B
HCM Volume to Capacity ratio	0.66			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)		8.0
Intersection Capacity Utilization	58.6%	ICU Level of Service		B
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	360	43	40	98	38	113	69	853	50	109	1073	245
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	400	48	44	109	42	126	77	948	56	121	1192	272
RTOR Reduction (vph)	0	0	39	0	0	116	0	0	17	0	0	67
Lane Group Flow (vph)	400	48	5	109	42	10	77	948	39	121	1192	205
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	19.6	11.0	11.0	15.8	7.2	7.2	6.6	37.9	37.9	10.5	41.8	41.8
Effective Green, g (s)	19.6	11.0	11.0	15.8	7.2	7.2	6.6	37.9	37.9	10.5	41.8	41.8
Actuated g/C Ratio	0.22	0.12	0.12	0.18	0.08	0.08	0.07	0.42	0.42	0.12	0.46	0.46
Clearance Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	3.0	3.0	0.2	3.0	3.0
Lane Grp Cap (vph)	668	203	173	277	133	113	116	1331	595	184	1468	657
v/s Ratio Prot	c0.13	c0.03		0.07	0.03		0.05	0.30		c0.08	c0.38	
v/s Ratio Perm			0.00			0.01			0.03			0.15
v/c Ratio	0.60	0.24	0.03	0.39	0.32	0.09	0.66	0.71	0.06	0.66	0.81	0.31
Uniform Delay, d1	31.8	35.8	34.9	33.0	39.2	38.5	40.7	21.6	15.6	38.1	20.8	15.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.2	0.0	0.3	0.5	0.1	10.5	1.8	0.0	6.3	3.5	0.3
Delay (s)	32.7	36.0	34.9	33.3	39.7	38.6	51.3	23.5	15.6	44.4	24.4	15.5
Level of Service	C	D	C	C	D	D	D	C	B	D	C	B
Approach Delay (s)		33.2			36.7			25.0			24.4	
Approach LOS		C			D			C			C	

Intersection Summary				
HCM Average Control Delay	26.8	HCM Level of Service		C
HCM Volume to Capacity ratio	0.64			
Actuated Cycle Length (s)	90.2	Sum of lost time (s)		6.0
Intersection Capacity Utilization	66.4%	ICU Level of Service		C
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
6: Golden Center Dr. & Missouri Flat Rd.

2010 plus Proposed Project
PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	7	5	105	5	75	35	640	35	100	925	10
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frt		0.99			0.95		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96			0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1526			1532		1583	3142		1583	3167	1417
Flt Permitted		0.63			0.79		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1011			1247		1583	3142		1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	111	8	6	117	6	83	39	711	39	111	1028	11
RTOR Reduction (vph)	0	2	0	0	21	0	0	3	0	0	0	3
Lane Group Flow (vph)	0	124	0	0	185	0	39	747	0	111	1028	8
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot			Prot		Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4								2
Actuated Green, G (s)		16.4			16.4		4.1	27.7		8.5	32.1	32.1
Effective Green, g (s)		16.4			16.4		4.1	27.7		8.5	32.1	32.1
Actuated g/C Ratio		0.25			0.25		0.06	0.42		0.13	0.49	0.49
Clearance Time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		2.5			2.5		2.5	3.0		2.5	3.0	3.0
Lane Grp Cap (vph)		253			312		99	1327		205	1550	693
v/s Ratio Prot							0.02	0.24		c0.07	c0.32	
v/s Ratio Perm		0.12			c0.15							0.01
v/c Ratio		0.49			0.59		0.39	0.56		0.54	0.66	0.01
Uniform Delay, d1		21.0			21.7		29.6	14.4		26.7	12.7	8.6
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		1.1			2.5		1.9	0.5		2.3	1.1	0.0
Delay (s)		22.1			24.2		31.4	14.9		29.0	13.7	8.6
Level of Service		C			C		C	B		C	B	A
Approach Delay (s)		22.1			24.2			15.7			15.2	
Approach LOS		C			C			B			B	

Intersection Summary				
HCM Average Control Delay	16.6	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.60			
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	54.0%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Missouri Flat Rd. & Diamond Springs Pkwy

2010 plus Proposed Project
PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	703	325	200	737	12	350	10	55	2	10	15
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	3167	1417	1583	1667	1417	1583	1455		1583	1515	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	3167	1417	1583	1667	1417	1583	1455		1583	1515	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	781	361	222	819	13	389	11	61	2	11	17
RTOR Reduction (vph)	0	0	150	0	0	1	0	43	0	0	16	0
Lane Group Flow (vph)	11	781	211	222	819	12	389	29	0	2	12	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		pm+ov	Prot		Perm	Prot			Prot		
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2			6						
Actuated Green, G (s)	1.3	32.8	56.3	18.6	50.1	50.1	23.5	27.9		1.1	5.5	
Effective Green, g (s)	1.3	32.8	56.3	18.6	50.1	50.1	23.5	27.9		1.1	5.5	
Actuated g/C Ratio	0.01	0.34	0.58	0.19	0.52	0.52	0.24	0.29		0.01	0.06	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	21	1078	886	305	866	736	386	421		18	86	
v/s Ratio Prot	0.01	0.25	0.06	c0.14	c0.49		c0.25	0.02		0.00	c0.01	
v/s Ratio Perm			0.09			0.01						
v/c Ratio	0.52	0.72	0.24	0.73	0.95	0.02	1.01	0.07		0.11	0.14	
Uniform Delay, d1	47.2	27.8	9.7	36.5	21.9	11.2	36.5	24.8		47.2	43.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	21.6	2.4	0.1	8.4	18.6	0.0	47.8	0.1		2.7	0.7	
Delay (s)	68.8	30.3	9.8	44.9	40.5	11.2	84.2	24.9		49.9	43.9	
Level of Service	E	C	A	D	D	B	F	C		D	D	
Approach Delay (s)		24.3			41.0			75.0			44.3	
Approach LOS		C			D			E			D	

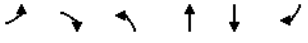
Intersection Summary				
HCM Average Control Delay	39.7	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.92			
Actuated Cycle Length (s)	96.4	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	85.0%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	650	75	15	874	15	50	6	20	20	2	25
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1583	1667	1417	1583	1662			1536	1363		1456	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	1583	1667	1417	1583	1662			1536	1363		1456	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	722	83	17	971	17	56	7	22	22	2	28
RTOR Reduction (vph)	0	0	16	0	0	0	0	0	20	0	26	0
Lane Group Flow (vph)	39	722	67	17	988	0	0	63	2	0	26	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	6%	6%	6%	6%	6%	6%
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	3.0	57.5	57.5	0.7	55.2			7.2	7.2		5.7	
Effective Green, g (s)	3.0	57.5	57.5	0.7	55.2			7.2	7.2		5.7	
Actuated g/C Ratio	0.03	0.66	0.66	0.01	0.63			0.08	0.08		0.07	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	55	1100	935	13	1053			127	113		95	
v/s Ratio Prot	c0.02	0.43		0.01	c0.59			c0.04			c0.02	
v/s Ratio Perm			0.05						0.00			
v/c Ratio	0.71	0.66	0.07	1.31	0.94			0.50	0.02		0.27	
Uniform Delay, d1	41.6	8.9	5.3	43.2	14.4			38.2	36.7		38.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	34.2	1.4	0.0	363.0	14.9			3.0	0.1		1.5	
Delay (s)	75.8	10.3	5.3	406.2	29.3			41.2	36.8		40.3	
Level of Service	E	B	A	F	C			D	D		D	
Approach Delay (s)		12.8			35.7			40.1			40.3	
Approach LOS		B			D			D			D	

Intersection Summary				
HCM Average Control Delay	26.3	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	87.1	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	68.8%	ICU Level of Service	C	
Analysis Period (min)	15			

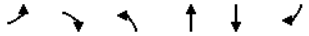
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	150	540	575	203	239	329
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1583	1417	2956	1604	1604	1363
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1583	1417	2956	1604	1604	1363
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	167	600	639	226	266	366
RTOR Reduction (vph)	0	175	0	0	0	263
Lane Group Flow (vph)	167	425	639	226	266	103
Heavy Vehicles (%)	2%	2%	6%	6%	6%	6%
Turn Type		pm+ov	Prot			Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	13.3	35.2	21.9	44.3	18.4	18.4
Effective Green, g (s)	13.3	35.2	21.9	44.3	18.4	18.4
Actuated g/C Ratio	0.20	0.54	0.33	0.68	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	321	847	987	1083	450	382
v/s Ratio Prot	0.11	c0.17	c0.22	0.14	c0.17	
v/s Ratio Perm		0.13				0.08
v/c Ratio	0.52	0.50	0.65	0.21	0.59	0.27
Uniform Delay, d1	23.3	9.6	18.6	4.0	20.4	18.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.5	1.5	0.1	2.1	0.4
Delay (s)	24.8	10.1	20.0	4.1	22.4	18.7
Level of Service	C	B	C	A	C	B
Approach Delay (s)	13.3			15.9	20.3	
Approach LOS	B			B	C	

Intersection Summary				
HCM Average Control Delay	16.2	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.61			
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	58.1%	ICU Level of Service	B	
Analysis Period (min)	15			

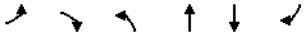
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	14	10	9	344	561	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	16	11	10	382	623	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				899		
pX, platoon unblocked						
vC, conflicting volume	1026	624	624			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1026	624	624			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	94	98	99			
cM capacity (veh/h)	253	478	938			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	27	392	624
Volume Left	16	10	0
Volume Right	11	0	1
cSH	315	938	1700
Volume to Capacity	0.08	0.01	0.37
Queue Length 95th (ft)	7	1	0
Control Delay (s)	17.5	0.3	0.0
Lane LOS	C	A	
Approach Delay (s)	17.5	0.3	0.0
Approach LOS	C		

Intersection Summary				
Average Delay		0.6		
Intersection Capacity Utilization		43.1%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	2	0	353	566	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	2	0	392	629	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				359		
pX, platoon unblocked	0.97					
vC, conflicting volume	1024	632	634			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1011	632	634			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	100	100	100			
cM capacity (veh/h)	254	473	930			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	2	392	634
Volume Left	0	0	0
Volume Right	2	0	6
cSH	473	1700	1700
Volume to Capacity	0.00	0.23	0.37
Queue Length 95th (ft)	0	0	0
Control Delay (s)	12.6	0.0	0.0
Lane LOS	B		
Approach Delay (s)	12.6	0.0	0.0
Approach LOS	B		

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		43.6%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	150	2	35	6	3	35	40	593	20	25	699	55
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	167	2	39	7	3	39	44	659	22	28	777	61
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked	0.89	0.89	0.89	0.89	0.89		0.89					
vC, conflicting volume	1662	1633	807	1662	1652	670	838			681		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1682	1649	722	1682	1671	670	756			681		
tC, single (s)	7.2	6.6	6.3	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	0	97	90	87	96	91	94			97		
cM capacity (veh/h)	54	78	374	53	76	450	745			893		

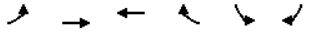
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	208	49	726	866
Volume Left	167	7	44	28
Volume Right	39	39	22	61
cSH	64	191	745	893
Volume to Capacity	3.24	0.26	0.06	0.03
Queue Length 95th (ft)	Err	24	5	2
Control Delay (s)	Err	30.1	1.6	0.8
Lane LOS	F	D	A	A
Approach Delay (s)	Err	30.1	1.6	0.8
Approach LOS	F	D		

Intersection Summary				
Average Delay	1126.2			
Intersection Capacity Utilization	80.7%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	330	60	19	225	292	35	43	46	750	65	100
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1524	2977		1583	1667	1417		1630	1417	1524	1458	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1524	2977		1583	1667	1417		1630	1417	1524	1458	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	167	367	67	21	250	324	39	48	51	833	72	111
RTOR Reduction (vph)	0	12	0	0	0	242	0	0	46	0	36	0
Lane Group Flow (vph)	167	422	0	21	250	82	0	87	5	833	147	0
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	2%	2%	2%	6%	6%	6%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			
Actuated Green, G (s)	12.6	30.6		1.8	19.8	19.8		7.7	7.7	23.9	23.9	
Effective Green, g (s)	12.6	30.6		1.8	19.8	19.8		7.7	7.7	23.9	23.9	
Actuated g/C Ratio	0.16	0.39		0.02	0.25	0.25		0.10	0.10	0.30	0.30	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.2		2.7	2.7	3.0	3.0	
Lane Grp Cap (vph)	245	1160		36	420	357		160	139	464	444	
v/s Ratio Prot	c0.11	0.14		0.01	c0.15			c0.05		c0.55	0.10	
v/s Ratio Perm						0.06			0.00			
v/c Ratio	0.68	0.36		0.58	0.60	0.23		0.54	0.04	1.80	0.33	
Uniform Delay, d1	31.1	17.0		38.0	25.8	23.3		33.7	32.0	27.3	21.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.1	0.2		14.6	2.3	0.4		3.3	0.1	366.4	0.4	
Delay (s)	37.2	17.2		52.5	28.1	23.6		37.0	32.1	393.7	21.6	
Level of Service	D	B		D	C	C		D	C	F	C	
Approach Delay (s)		22.8			26.6			35.2			326.7	
Approach LOS		C			C			D			F	

Intersection Summary			
HCM Average Control Delay	155.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	78.5	Sum of lost time (s)	14.5
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		

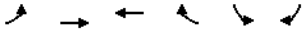
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	350	425	180	65	450	280
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2956	1604	1604	1363	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	2956	1604	1604	1363	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	389	472	200	72	500	311
RTOR Reduction (vph)	0	0	0	24	0	104
Lane Group Flow (vph)	389	472	200	48	500	207
Heavy Vehicles (%)	6%	6%	6%	6%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	11.6	26.1	11.5	43.9	32.4	44.0
Effective Green, g (s)	11.6	26.1	11.5	43.9	32.4	44.0
Actuated g/C Ratio	0.18	0.39	0.17	0.66	0.49	0.67
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	519	633	279	905	776	943
v/s Ratio Prot	0.13	c0.29	0.12	0.03	c0.32	0.04
v/s Ratio Perm				0.01		0.11
v/c Ratio	0.75	0.75	0.72	0.05	0.64	0.22
Uniform Delay, d1	25.9	17.2	25.8	3.9	12.6	4.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.2	4.2	7.1	0.0	1.9	0.0
Delay (s)	31.0	21.3	32.9	3.9	14.5	4.4
Level of Service	C	C	C	A	B	A
Approach Delay (s)		25.7	25.2		10.6	
Approach LOS		C	C		B	

Intersection Summary				
HCM Average Control Delay	19.3	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.69			
Actuated Cycle Length (s)	66.1	Sum of lost time (s)	7.6	
Intersection Capacity Utilization	59.7%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	103	335	420	51	14	140
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	114	372	467	57	16	156
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	523				1096	495
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	523				1096	495
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	89				93	73
cM capacity (veh/h)	1023				210	575

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	487	523	171
Volume Left	114	0	16
Volume Right	0	57	156
cSH	1023	1700	496
Volume to Capacity	0.11	0.31	0.34
Queue Length 95th (ft)	9	0	38
Control Delay (s)	3.1	0.0	16.0
Lane LOS	A		C
Approach Delay (s)	3.1	0.0	16.0
Approach LOS			C

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	610	62	20	405	3	30	1	70	1	3	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	78	678	69	22	450	3	33	1	78	1	3	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)		1091										
pX, platoon unblocked				0.97			0.97	0.97	0.97	0.97	0.97	
vC, conflicting volume	453			747			1397	1366	712	1408	1398	452
vC1, stage 1 conf vol							868	868		496	496	
vC2, stage 2 conf vol							529	498		912	902	
vCu, unblocked vol	453			722			1394	1361	686	1405	1395	452
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			97			87	100	82	99	99	95
cM capacity (veh/h)	1107			852			264	290	433	211	277	608

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	78	747	22	453	112	38
Volume Left	78	0	22	0	33	1
Volume Right	0	69	0	3	78	33
cSH	1107	1700	852	1700	362	524
Volume to Capacity	0.07	0.44	0.03	0.27	0.31	0.07
Queue Length 95th (ft)	6	0	2	0	32	6
Control Delay (s)	8.5	0.0	9.3	0.0	19.3	12.4
Lane LOS	A		A		C	B
Approach Delay (s)	0.8		0.4		19.3	12.4
Approach LOS					C	B

Intersection Summary					
Average Delay	2.4				
Intersection Capacity Utilization	66.8%	ICU Level of Service		C	
Analysis Period (min)	15				

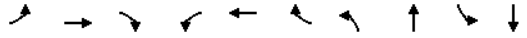
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	10	45	2	85	0	350	95	85	550	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	11	50	2	94	0	389	106	94	611	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	1284	1294	611	1253	1242	442	611			494		
vC1, stage 1 conf vol	800	800		442	442							
vC2, stage 2 conf vol	484	494		811	800							
vCu, unblocked vol	1284	1294	611	1253	1242	442	611			494		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.2	5.6		6.1	5.5							
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	98	83	99	85	100			91		
cM capacity (veh/h)	267	302	486	303	326	616	968			1069		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	11	147	0	494	94	611
Volume Left	0	50	0	0	94	0
Volume Right	11	94	0	106	0	0
cSH	486	451	1700	1700	1069	1700
Volume to Capacity	0.02	0.33	0.00	0.29	0.09	0.36
Queue Length 95th (ft)	2	35	0	0	7	0
Control Delay (s)	12.6	16.8	0.0	0.0	8.7	0.0
Lane LOS	B	C			A	
Approach Delay (s)	12.6	16.8	0.0		1.2	
Approach LOS	B	C				

Intersection Summary					
Average Delay	2.5				
Intersection Capacity Utilization	61.1%	ICU Level of Service		B	
Analysis Period (min)	15				

7: Missouri Flat Rd. & Diamond Springs Pkwy

AM Peak



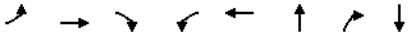
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	10	664	307	256	942	16	428	80	2	22
v/c Ratio	0.09	0.71	0.31	0.67	1.01	0.02	0.98	0.16	0.02	0.17
Control Delay	44.4	32.7	2.1	41.0	52.5	10.8	74.5	10.2	44.5	30.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	32.7	2.1	41.0	52.5	10.8	74.5	10.2	44.5	30.4
Queue Length 50th (ft)	5	157	0	109	377	2	207	4	1	4
Queue Length 95th (ft)	24	261	35	#270	#998	17	#540	44	9	30
Internal Link Dist (ft)		354			198			499		239
Turn Bay Length (ft)	100		250	150		50	150		50	
Base Capacity (vph)	321	1324	991	435	936	797	435	714	321	606
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.50	0.31	0.59	1.01	0.02	0.98	0.11	0.01	0.04

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

8: Diamond Springs Pkwy & Throwita Way

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	33	630	71	19	1167	48	17	44
v/c Ratio	0.39	0.53	0.07	0.22	1.00	0.30	0.11	0.29
Control Delay	55.1	11.5	4.2	47.6	47.4	41.1	18.5	28.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.1	11.5	4.2	47.6	47.4	41.1	18.5	28.0
Queue Length 50th (ft)	18	146	4	10	~768	25	0	11
Queue Length 95th (ft)	#59	370	25	34	#1112	60	20	44
Internal Link Dist (ft)		2476			474	290		465
Turn Bay Length (ft)	150		200	100			100	
Base Capacity (vph)	85	1199	1032	85	1166	558	506	641
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.53	0.07	0.22	1.00	0.09	0.03	0.07

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	147	519	761	169	194	424
v/c Ratio	0.48	0.48	0.69	0.16	0.52	0.66
Control Delay	31.9	2.5	21.5	4.4	29.1	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	2.5	21.5	4.4	29.1	8.5
Queue Length 50th (ft)	50	5	120	18	63	0
Queue Length 95th (ft)	129	41	237	47	154	77
Internal Link Dist (ft)	287			610	278	
Turn Bay Length (ft)	150		200			
Base Capacity (vph)	723	1246	1700	1528	869	932
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.42	0.45	0.11	0.22	0.45

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	69	178	26	300	389	93	54	583	129
v/c Ratio	0.51	0.17	0.28	0.66	0.58	0.41	0.22	1.09	0.24
Control Delay	48.0	16.0	44.6	32.2	6.6	37.7	12.3	96.1	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.0	16.0	44.6	32.2	6.6	37.7	12.3	96.1	16.3
Queue Length 50th (ft)	30	23	11	120	0	39	0	~320	24
Queue Length 95th (ft)	80	54	41	227	65	96	33	#676	84
Internal Link Dist (ft)		152		260		844			629
Turn Bay Length (ft)	185		105		180		75	335	
Base Capacity (vph)	395	2323	410	1300	1190	496	469	534	545
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.08	0.06	0.23	0.33	0.19	0.12	1.09	0.24

Intersection Summary

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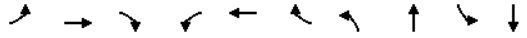
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

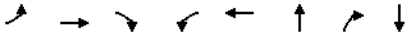


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	11	781	361	222	819	13	389	72	2	28
v/c Ratio	0.10	0.75	0.35	0.68	0.88	0.02	0.94	0.15	0.02	0.22
Control Delay	46.8	33.0	1.9	47.0	32.1	11.2	68.3	10.5	46.5	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.8	33.0	1.9	47.0	32.1	11.2	68.3	10.5	46.5	30.9
Queue Length 50th (ft)	6	224	0	124	393	3	~244	4	1	6
Queue Length 95th (ft)	26	303	34	#253	#830	14	#492	42	9	35
Internal Link Dist (ft)		354			198			499		239
Turn Bay Length (ft)	100		250	150		50	150		50	
Base Capacity (vph)	306	1369	1030	360	929	791	414	680	306	580
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.57	0.35	0.62	0.88	0.02	0.94	0.11	0.01	0.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	39	722	83	17	988	63	22	52
v/c Ratio	0.49	0.60	0.08	0.21	0.90	0.38	0.13	0.33
Control Delay	63.7	13.2	4.3	48.5	31.4	43.7	16.9	28.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.7	13.2	4.3	48.5	31.4	43.7	16.9	28.1
Queue Length 50th (ft)	21	193	6	9	~521	33	0	13
Queue Length 95th (ft)	#74	493	31	32	#910	74	22	49
Internal Link Dist (ft)		2476			474	290		465
Turn Bay Length (ft)	150		200	100			100	
Base Capacity (vph)	80	1195	1029	80	1100	526	481	607
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.60	0.08	0.21	0.90	0.12	0.05	0.09

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	167	600	639	226	266	366
v/c Ratio	0.52	0.60	0.65	0.21	0.61	0.57
Control Delay	33.5	6.1	24.0	5.0	29.5	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	6.1	24.0	5.0	29.5	6.9
Queue Length 50th (ft)	59	37	107	27	90	0
Queue Length 95th (ft)	151	149	222	69	210	66
Internal Link Dist (ft)	287			610	279	
Turn Bay Length (ft)	150		200			
Base Capacity (vph)	696	1190	1540	1493	888	918
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.50	0.41	0.15	0.30	0.40

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	167	434	21	250	324	87	51	833	183
v/c Ratio	0.66	0.36	0.26	0.65	0.56	0.43	0.23	1.74	0.37
Control Delay	45.6	17.3	47.4	36.4	7.5	41.1	13.4	365.6	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	17.3	47.4	36.4	7.5	41.1	13.4	365.6	20.9
Queue Length 50th (ft)	76	66	10	111	0	40	0	~623	49
Queue Length 95th (ft)	161	129	36	205	64	94	33	#1032	130
Internal Link Dist (ft)		152		260		844			629
Turn Bay Length (ft)	185		105		180		75	335	
Base Capacity (vph)	354	2219	367	1240	1137	445	424	478	493
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.20	0.06	0.20	0.28	0.20	0.12	1.74	0.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Appendix D:

Analysis Worksheets for
Interim (2020) Conditions

HCM Signalized Intersection Capacity Analysis 2020
1: Plaza Dr. & Missouri Flat Rd. AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	92	31	417	324	79	204	527	439	374	59	300	37
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	0.95	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frt		0.92	0.85	1.00	0.90		1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1427	1346	1504	1422		3072	3167	1417	1583	3115	
Flt Permitted		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1427	1346	1504	1422		3072	3167	1417	1583	3115	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	102	34	463	360	88	227	586	488	416	66	333	41
RTOR Reduction (vph)	0	47	55	0	58	0	0	0	186	0	9	0
Lane Group Flow (vph)	0	260	237	324	293	0	586	488	230	66	365	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Split		pm+ov	Split			Prot		pm+ov	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		23.3	45.4	27.5	27.5		22.1	30.6	58.1	7.6	16.1	
Effective Green, g (s)		23.3	45.4	27.5	27.5		22.1	30.6	58.1	7.6	16.1	
Actuated g/C Ratio		0.22	0.43	0.26	0.26		0.21	0.29	0.55	0.07	0.15	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		317	633	394	372		647	923	784	115	478	
v/s Ratio Prot		c0.18	0.08	c0.22	0.21		c0.19	0.15	0.08	0.04	c0.12	
v/s Ratio Perm			0.10						0.09			
v/c Ratio		0.82	0.37	0.82	0.79		0.91	0.53	0.29	0.57	0.76	
Uniform Delay, d1		38.9	20.2	36.5	36.0		40.4	31.2	12.5	47.1	42.6	
Progression Factor		1.00	1.00	1.00	1.00		0.79	0.76	0.81	1.00	1.00	
Incremental Delay, d2		15.6	0.4	13.0	10.5		14.3	1.8	0.2	6.8	11.0	
Delay (s)		54.4	20.6	49.4	46.5		46.4	25.5	10.3	53.9	53.6	
Level of Service		D	C	D	D		D	C	B	D	D	
Approach Delay (s)		37.9			47.9			29.5			53.7	
Approach LOS		D			D			C			D	

Intersection Summary				
HCM Average Control Delay	38.3	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.83			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	77.1%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis 2020
2: WB US-50 Ramp & Missouri Flat Rd. AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	888	0	496	395	844	0	0	780	261
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				0.97		0.88	0.97	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				2984		2422	2984	3076			3076	1376
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				2984		2422	2984	3076			3076	1376
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	987	0	551	439	938	0	0	867	290
RTOR Reduction (vph)	0	0	0	0	0	129	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	987	0	422	439	938	0	0	867	290
Turn Type				Prot		custom	Prot					Free
Protected Phases				3		3	5	2			6	
Permitted Phases						3						Free
Actuated Green, G (s)				38.1		38.1	18.3	58.9			36.6	105.0
Effective Green, g (s)				38.1		38.1	18.3	58.9			36.6	105.0
Actuated g/C Ratio				0.36		0.36	0.17	0.56			0.35	1.00
Clearance Time (s)				4.0		4.0	4.0	4.0			4.0	
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				1083		879	520	1725			1072	1376
v/s Ratio Prot				c0.33		0.17	c0.15	0.30			c0.28	
v/s Ratio Perm												0.21
v/c Ratio				0.91		0.48	0.84	0.54			0.81	0.21
Uniform Delay, d1				31.8		25.8	42.0	14.6			31.0	0.0
Progression Factor				1.00		1.00	0.87	0.54			0.85	1.00
Incremental Delay, d2				11.4		0.4	8.8	0.9			4.9	0.3
Delay (s)				43.2		26.2	45.2	8.7			31.3	0.3
Level of Service				D		C	D	A			C	A
Approach Delay (s)		0.0			37.1			20.3			23.5	
Approach LOS		A			D			C			C	

Intersection Summary				
HCM Average Control Delay	27.6	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.86			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	111.5%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	2	454	0	0	0	0	1089	48	245	1423	0
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	0.91	0.95					0.95	1.00	0.97	0.95	
Frt	1.00	0.86	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1461	1264	1307					3076	1376	2984	3076	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1461	1264	1307					3076	1376	2984	3076	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	167	2	504	0	0	0	0	1210	53	272	1581	0
RTOR Reduction (vph)	0	35	35	0	0	0	0	0	11	0	0	0
Lane Group Flow (vph)	150	226	227	0	0	0	0	1210	42	272	1581	0
Turn Type	Split		Perm						Perm	Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	22.9	22.9	22.9					56.9	56.9	13.2	74.1	
Effective Green, g (s)	22.9	22.9	22.9					56.9	56.9	13.2	74.1	
Actuated g/C Ratio	0.22	0.22	0.22					0.54	0.54	0.13	0.71	
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	319	276	285					1667	746	375	2171	
v/s Ratio Prot	0.10	c0.18						0.39		0.09	c0.51	
v/s Ratio Perm			0.17						0.03			
v/c Ratio	0.47	0.82	0.80					0.73	0.06	0.73	0.73	
Uniform Delay, d1	35.8	39.1	38.8					18.2	11.4	44.2	9.4	
Progression Factor	1.00	1.00	1.00					1.26	1.45	1.16	0.22	
Incremental Delay, d2	1.1	16.9	14.2					2.6	0.1	3.5	1.1	
Delay (s)	36.9	56.0	53.0					25.4	16.6	54.6	3.2	
Level of Service	D	E	D					C	B	D	A	
Approach Delay (s)		50.6			0.0			25.1			10.7	
Approach LOS		D			A			C			B	

Intersection Summary				
HCM Average Control Delay	22.6	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	111.5%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	306	0	114	0	0	0	58	831	914	0	1708	169
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0		4.0				4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		1.00				1.00	0.95	1.00		0.95	1.00
Frt	1.00		0.85				1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	3072		1417				1583	3167	1417		3167	1417
Flt Permitted	0.95		1.00				0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	3072		1417				1583	3167	1417		3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	340	0	127	0	0	0	64	923	1016	0	1898	188
RTOR Reduction (vph)	0	0	107	0	0	0	0	0	241	0	0	22
Lane Group Flow (vph)	340	0	20	0	0	0	64	923	775	0	1898	166
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		custom				Prot		Perm			Perm
Protected Phases	4						5	2			6	
Permitted Phases			4						2			6
Actuated Green, G (s)	16.9		16.9				8.5	80.1	80.1		67.6	67.6
Effective Green, g (s)	16.9		16.9				8.5	80.1	80.1		67.6	67.6
Actuated g/C Ratio	0.16		0.16				0.08	0.76	0.76		0.64	0.64
Clearance Time (s)	4.0		4.0				4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0		3.0				3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	494		228				128	2416	1081		2039	912
v/s Ratio Prot	c0.11						0.04	0.29			c0.60	
v/s Ratio Perm			0.01						c0.55			0.12
v/c Ratio	0.69		0.09				0.50	0.38	0.72		0.93	0.18
Uniform Delay, d1	41.6		37.5				46.2	4.2	6.5		16.6	7.5
Progression Factor	1.00		1.00				1.00	1.00	1.00		0.72	0.57
Incremental Delay, d2	4.0		0.2				3.1	0.5	4.1		6.6	0.3
Delay (s)	45.5		37.7				49.3	4.6	10.6		18.6	4.6
Level of Service	D		D				D	A	B		B	A
Approach Delay (s)		43.4			0.0			9.1			17.3	
Approach LOS		D			A			A			B	

Intersection Summary				
HCM Average Control Delay	16.4	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	70.3%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

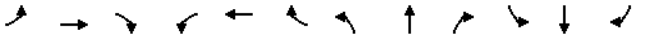
HCM Signalized Intersection Capacity Analysis 2020
5: Forni Rd. & Missouri Flat Rd. AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	227	26	24	57	22	69	98	1507	71	96	1510	216
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	252	29	27	63	24	77	109	1674	79	107	1678	240
RTOR Reduction (vph)	0	0	25	0	0	73	0	0	13	0	0	38
Lane Group Flow (vph)	252	29	2	63	24	4	109	1674	66	107	1678	202
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	9.9	6.7	6.7	8.1	4.9	4.9	8.8	49.3	49.3	8.7	49.2	49.2
Effective Green, g (s)	9.9	6.7	6.7	8.1	4.9	4.9	8.8	49.3	49.3	8.7	49.2	49.2
Actuated g/C Ratio	0.11	0.08	0.08	0.09	0.06	0.06	0.10	0.56	0.56	0.10	0.56	0.56
Clearance Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	3.0	3.0	0.2	3.0	3.0
Lane Grp Cap (vph)	346	127	108	146	93	79	159	1778	796	157	1775	794
v/s Ratio Prot	c0.08	c0.02		0.04	0.01		c0.07	0.53		0.07	c0.53	
v/s Ratio Perm			0.00			0.00			0.05			0.14
v/c Ratio	0.73	0.23	0.02	0.43	0.26	0.05	0.69	0.94	0.08	0.68	0.95	0.25
Uniform Delay, d1	37.7	38.1	37.5	37.7	39.7	39.3	38.2	17.9	8.9	38.2	18.0	9.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.4	0.3	0.0	0.7	0.5	0.1	9.4	10.5	0.0	9.3	11.0	0.2
Delay (s)	44.0	38.5	37.5	38.4	40.2	39.4	47.5	28.4	8.9	47.5	29.0	10.1
Level of Service	D	D	D	D	D	D	D	C	A	D	C	B
Approach Delay (s)		42.9			39.1			28.7			27.7	
Approach LOS		D			D			C			C	

Intersection Summary				
HCM Average Control Delay	29.7	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.79			
Actuated Cycle Length (s)	87.8	Sum of lost time (s)	11.0	
Intersection Capacity Utilization	77.5%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis 2020
6: Golden Center Dr. & Missouri Flat Rd. AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	1	1	51	3	47	61	1704	61	120	1252	21
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frt		0.99			0.94		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1539			1523		1583	3150		1583	3167	1417
Flt Permitted		0.72			0.83		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1155			1294		1583	3150		1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	20	1	1	57	3	52	68	1893	68	133	1391	23
RTOR Reduction (vph)	0	1	0	0	28	0	0	2	0	0	0	3
Lane Group Flow (vph)	0	21	0	0	84	0	68	1959	0	133	1391	20
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot			Prot		Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4								2
Actuated Green, G (s)		12.1			12.1		7.8	76.9		11.0	80.1	80.1
Effective Green, g (s)		12.1			12.1		7.8	76.9		11.0	80.1	80.1
Actuated g/C Ratio		0.11			0.11		0.07	0.68		0.10	0.71	0.71
Clearance Time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		2.5			2.5		2.5	3.0		2.5	3.0	3.0
Lane Grp Cap (vph)		124			139		109	2144		154	2245	1004
v/s Ratio Prot							0.04	c0.62		c0.08	c0.44	
v/s Ratio Perm		0.02			c0.07							0.01
v/c Ratio		0.17			0.61		0.62	0.91		0.86	0.62	0.02
Uniform Delay, d1		45.9			48.2		51.2	15.3		50.3	8.5	4.9
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.5			6.2		9.2	6.5		35.9	0.5	0.0
Delay (s)		46.4			54.4		60.4	21.8		86.1	9.1	4.9
Level of Service		D			D		E	C		F	A	A
Approach Delay (s)		46.4			54.4			23.1			15.6	
Approach LOS		D			D			C			B	

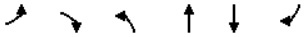
Intersection Summary				
HCM Average Control Delay	21.0	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.91			
Actuated Cycle Length (s)	113.0	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	79.2%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	15	13	4	325	353	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	14	4	361	392	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				900		
pX, platoon unblocked						
vC, conflicting volume	771	401	409			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	771	401	409			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	98	100			
cM capacity (veh/h)	363	643	1134			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	31	366	409
Volume Left	17	4	0
Volume Right	14	0	17
cSH	455	1134	1700
Volume to Capacity	0.07	0.00	0.24
Queue Length 95th (ft)	5	0	0
Control Delay (s)	13.5	0.1	0.0
Lane LOS	B	A	
Approach Delay (s)	13.5	0.1	0.0
Approach LOS	B		

Intersection Summary				
Average Delay		0.6		
Intersection Capacity Utilization		32.7%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	13	24	30	316	346	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	14	27	33	351	384	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				446		
pX, platoon unblocked						
vC, conflicting volume	813	396	407			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	813	396	407			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	96	97			
cM capacity (veh/h)	334	647	1136			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	41	33	351	407
Volume Left	14	33	0	0
Volume Right	27	0	0	22
cSH	487	1136	1700	1700
Volume to Capacity	0.08	0.03	0.21	0.24
Queue Length 95th (ft)	7	2	0	0
Control Delay (s)	13.1	8.3	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	13.1	0.7		0.0
Approach LOS	B			

Intersection Summary				
Average Delay		1.0		
Intersection Capacity Utilization		37.9%	ICU Level of Service	A
Analysis Period (min)		15		

HCM Unsignalized Intersection Capacity Analysis 2020
12: Lime Kiln Rd. & Diamond Rd. (SR-49) AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	4	13	10	5	7	42	309	23	14	322	34
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	4	14	11	6	8	47	343	26	16	358	38
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked												
vC, conflicting volume	868	870	377	874	876	356	396			369		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	868	870	377	874	876	356	396			369		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	98	98	96	98	99	96			99		
cM capacity (veh/h)	252	271	663	247	269	681	1147			1173		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	52	24	416	411
Volume Left	33	11	47	16
Volume Right	14	8	26	38
cSH	306	318	1147	1173
Volume to Capacity	0.17	0.08	0.04	0.01
Queue Length 95th (ft)	15	6	3	1
Control Delay (s)	19.2	17.3	1.3	0.4
Lane LOS	C	C	A	A
Approach Delay (s)	19.2	17.3	1.3	0.4
Approach LOS	C	C		

Intersection Summary				
Average Delay		2.4		
Intersection Capacity Utilization	50.5%	ICU Level of Service		A
Analysis Period (min)		15		

HCM Signalized Intersection Capacity Analysis 2020
13: Pleasant Valley Rd. (SR-49) & Diamond Rd. (SR-49) AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	380	53	23	556	226	84	21	49	141	15	97
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1538	3020		1583	1667	1417		1602	1417	1538	1409	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1538	3020		1583	1667	1417		1602	1417	1538	1409	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	68	422	59	26	618	251	93	23	54	157	17	108
RTOR Reduction (vph)	0	12	0	0	0	138	0	0	48	0	89	0
Lane Group Flow (vph)	68	469	0	26	618	113	0	116	6	157	36	0
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			
Actuated Green, G (s)	4.1	33.2		1.9	31.0	31.0		7.2	7.2	12.3	12.3	
Effective Green, g (s)	4.1	33.2		1.9	31.0	31.0		7.2	7.2	12.3	12.3	
Actuated g/C Ratio	0.06	0.48		0.03	0.45	0.45		0.10	0.10	0.18	0.18	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.2		2.7	2.7	3.0	3.0	
Lane Grp Cap (vph)	91	1451		44	748	636		167	148	274	251	
v/s Ratio Prot	c0.04	0.16		0.02	c0.37			c0.07		c0.10	0.03	
v/s Ratio Perm						0.08			0.00			
v/c Ratio	0.75	0.32		0.59	0.83	0.18		0.69	0.04	0.57	0.14	
Uniform Delay, d1	32.0	11.0		33.2	16.7	11.4		29.9	27.8	26.0	24.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	24.9	0.1		13.3	7.5	0.1		11.3	0.1	2.9	0.3	
Delay (s)	56.9	11.2		46.5	24.2	11.6		41.2	27.9	28.9	24.2	
Level of Service	E	B		D	C	B		D	C	C	C	
Approach Delay (s)		16.8			21.3			37.0			26.8	
Approach LOS		B			C			D			C	

Intersection Summary				
HCM Average Control Delay	22.2	HCM Level of Service		C
HCM Volume to Capacity ratio	0.72			
Actuated Cycle Length (s)	69.1	Sum of lost time (s)		14.5
Intersection Capacity Utilization	62.3%	ICU Level of Service		B
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	393	503	551	570	320	119
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2984	1619	1619	1376	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	2984	1619	1619	1376	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	437	559	612	633	356	132
RTOR Reduction (vph)	0	0	0	9	0	74
Lane Group Flow (vph)	437	559	612	624	356	58
Heavy Vehicles (%)	5%	5%	5%	5%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	12.2	45.1	29.9	49.8	19.9	32.1
Effective Green, g (s)	12.2	45.1	29.9	49.8	19.9	32.1
Actuated g/C Ratio	0.17	0.62	0.41	0.69	0.27	0.44
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	501	1006	667	944	434	627
v/s Ratio Prot	c0.15	0.35	c0.38	0.18	c0.22	0.02
v/s Ratio Perm				0.27		0.03
v/c Ratio	0.87	0.56	0.92	0.66	0.82	0.09
Uniform Delay, d1	29.4	8.0	20.2	6.5	24.7	11.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.9	0.4	17.2	1.8	12.1	0.0
Delay (s)	44.4	8.3	37.4	8.4	36.7	11.8
Level of Service	D	A	D	A	D	B
Approach Delay (s)		24.1	22.6		30.0	
Approach LOS		C	C		C	

Intersection Summary				
HCM Average Control Delay	24.5	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	72.6	Sum of lost time (s)	10.6	
Intersection Capacity Utilization	74.8%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	71	500	1119	93	15	120
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	79	556	1243	103	17	133
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1347				2008	1295
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1347				2008	1295
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	84				70	33
cM capacity (veh/h)	502				55	198

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	634	1347	150
Volume Left	79	0	17
Volume Right	0	103	133
cSH	502	1700	154
Volume to Capacity	0.16	0.79	0.98
Queue Length 95th (ft)	14	0	182
Control Delay (s)	4.4	0.0	124.7
Lane LOS	A		F
Approach Delay (s)	4.4	0.0	124.7
Approach LOS			F

Intersection Summary			
Average Delay	10.1		
Intersection Capacity Utilization	112.2%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	185	19	28	538	5	8	0	19	1	4	72
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	24	206	21	31	598	6	9	0	21	1	4	80
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)		1091										
pX, platoon unblocked												
vC, conflicting volume	603			227			1007	931	216	938	938	601
vC1, stage 1 conf vol							265	265		663	663	
vC2, stage 2 conf vol							742	666		276	276	
vCu, unblocked vol	603			227			1007	931	216	938	938	601
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			98			97	100	97	100	99	84
cM capacity (veh/h)	974			1342			294	395	824	401	409	501

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	24	227	31	603	30	86
Volume Left	24	0	31	0	9	1
Volume Right	0	21	0	6	21	80
cSH	974	1700	1342	1700	537	493
Volume to Capacity	0.03	0.13	0.02	0.35	0.06	0.17
Queue Length 95th (ft)	2	0	2	0	4	16
Control Delay (s)	8.8	0.0	7.7	0.0	12.1	13.8
Lane LOS	A		A		B	B
Approach Delay (s)	0.9		0.4		12.1	13.8
Approach LOS					B	B

Intersection Summary					
Average Delay	2.0				
Intersection Capacity Utilization	46.7%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	1	50	3	134	0	905	149	132	523	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	1	56	3	149	0	1006	166	147	581	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	2031	2046	581	1964	1963	1088	581			1171		
vC1, stage 1 conf vol	874	874		1088	1088							
vC2, stage 2 conf vol	1156	1171		876	874							
vCu, unblocked vol	2031	2046	581	1964	1963	1088	581			1171		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	69	98	43	100			75		
cM capacity (veh/h)	14	108	508	182	200	262	993			596		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	1	208	0	1171	147	581
Volume Left	0	56	0	0	147	0
Volume Right	1	149	0	166	0	0
cSH	508	233	1700	1700	596	1700
Volume to Capacity	0.00	0.89	0.00	0.69	0.25	0.34
Queue Length 95th (ft)	0	184	0	0	24	0
Control Delay (s)	12.1	78.2	0.0	0.0	13.0	0.0
Lane LOS	B	F			B	
Approach Delay (s)	12.1	78.2	0.0		2.6	
Approach LOS	B	F				

Intersection Summary					
Average Delay	8.6				
Intersection Capacity Utilization	100.7%	ICU Level of Service		G	
Analysis Period (min)	15				

Queues 2020

13: Pleasant Valley Rd. (SR-49) & Diamond Rd. (SR-49) AM Peak

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	68	481	26	618	251	116	54	157	125
v/c Ratio	0.73	0.32	0.28	0.86	0.33	0.68	0.27	0.56	0.36
Control Delay	79.2	11.8	41.1	32.2	3.3	55.7	14.3	34.3	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.2	11.8	41.1	32.2	3.3	55.7	14.3	34.3	10.8
Queue Length 50th (ft)	30	49	11	219	0	50	0	63	6
Queue Length 95th (ft)	#109	116	36	#455	39	#146	33	121	48
Internal Link Dist (ft)		152		260		844			629
Turn Bay Length (ft)	185		105		180		75	335	
Base Capacity (vph)	93	1574	144	874	862	170	199	467	503
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.31	0.18	0.71	0.29	0.68	0.27	0.34	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis 2020

1: Plaza Dr. & Missouri Flat Rd. PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	107	36	482	255	62	161	529	405	375	84	399	53
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	0.95	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frt		0.92	0.85	1.00	0.90		1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1428	1346	1504	1422		3072	3167	1417	1583	3111	
Flt Permitted		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1428	1346	1504	1422		3072	3167	1417	1583	3111	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	119	40	536	283	69	179	588	450	417	93	443	59
RTOR Reduction (vph)	0	45	58	0	63	0	0	0	205	0	10	0
Lane Group Flow (vph)	0	312	280	255	213	0	588	450	212	93	492	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Split		pm+ov	Split			Prot		pm+ov	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		26.2	48.0	21.1	21.1		21.8	32.3	53.4	9.4	19.9	
Effective Green, g (s)		26.2	48.0	21.1	21.1		21.8	32.3	53.4	9.4	19.9	
Actuated g/C Ratio		0.25	0.46	0.20	0.20		0.21	0.31	0.51	0.09	0.19	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		356	615	302	286		638	974	721	142	590	
v/s Ratio Prot		c0.22	0.09	c0.17	0.15		c0.19	0.14	0.06	0.06	c0.16	
v/s Ratio Perm			0.11						0.09			
v/c Ratio		0.88	0.46	0.84	0.74		0.92	0.46	0.29	0.65	0.83	
Uniform Delay, d1		37.8	19.5	40.4	39.4		40.8	29.3	14.9	46.2	41.0	
Progression Factor		1.00	1.00	1.00	1.00		1.01	0.72	0.97	1.00	1.00	
Incremental Delay, d2		20.7	0.5	18.9	10.0		16.9	1.4	0.2	10.4	13.1	
Delay (s)		58.5	20.1	59.3	49.5		58.0	22.4	14.7	56.6	54.0	
Level of Service		E	C	E	D		E	C	B	E	D	
Approach Delay (s)		39.8			54.2			34.6			54.4	
Approach LOS		D			D			C			D	

Intersection Summary				
HCM Average Control Delay	42.5	HCM Level of Service		D
HCM Volume to Capacity ratio	0.87			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)		16.0
Intersection Capacity Utilization	79.4%	ICU Level of Service		D
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	832	0	449	453	860	0	0	823	313
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				0.97		0.88	0.97	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				2984		2422	2984	3076			3076	1376
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				2984		2422	2984	3076			3076	1376
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	924	0	499	503	956	0	0	914	348
RTOR Reduction (vph)	0	0	0	0	0	138	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	924	0	361	503	956	0	0	914	348
Turn Type				Prot		custom	Prot					Free
Protected Phases				3		3	5	2			6	
Permitted Phases						3						Free
Actuated Green, G (s)				36.0		36.0	20.3	61.0			36.7	105.0
Effective Green, g (s)				36.0		36.0	20.3	61.0			36.7	105.0
Actuated g/C Ratio				0.34		0.34	0.19	0.58			0.35	1.00
Clearance Time (s)				4.0		4.0	4.0	4.0			4.0	
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				1023		830	577	1787			1075	1376
v/s Ratio Prot				c0.31		0.15	c0.17	0.31			c0.30	
v/s Ratio Perm												0.25
v/c Ratio				0.90		0.43	0.87	0.53			0.85	0.25
Uniform Delay, d1				32.8		26.6	41.1	13.4			31.6	0.0
Progression Factor				1.00		1.00	0.77	0.24			1.20	1.00
Incremental Delay, d2				11.0		0.4	8.0	0.6			5.8	0.3
Delay (s)				43.9		27.0	39.5	3.9			43.8	0.3
Level of Service				D		C	D	A			D	A
Approach Delay (s)		0.0			37.9			16.1			31.8	
Approach LOS		A			D			B			C	

Intersection Summary				
HCM Average Control Delay	28.4	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	123.6%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	235	3	733	0	0	0	0	1078	55	278	1376	0
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	0.91	0.95					0.95	1.00	0.97	0.95	
Frt	1.00	0.86	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1461	1264	1307					3076	1376	2984	3076	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1461	1264	1307					3076	1376	2984	3076	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	261	3	814	0	0	0	0	1198	61	309	1529	0
RTOR Reduction (vph)	0	22	22	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	235	398	401	0	0	0	0	1198	46	309	1529	0
Turn Type	Split		Perm						Perm	Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	34.7	34.7	34.7					46.1	46.1	12.2	62.3	
Effective Green, g (s)	34.7	34.7	34.7					46.1	46.1	12.2	62.3	
Actuated g/C Ratio	0.33	0.33	0.33					0.44	0.44	0.12	0.59	
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	483	418	432					1351	604	347	1825	
v/s Ratio Prot	0.16	c0.31						c0.39		0.10	c0.50	
v/s Ratio Perm			0.31						0.03			
v/c Ratio	0.49	0.95	0.93					0.89	0.08	0.89	0.84	
Uniform Delay, d1	28.0	34.3	33.9					27.1	17.1	45.7	17.3	
Progression Factor	1.00	1.00	1.00					1.23	1.31	1.07	0.43	
Incremental Delay, d2	0.8	31.8	26.0					8.4	0.2	13.0	2.3	
Delay (s)	28.8	66.1	59.9					41.6	22.6	61.8	9.8	
Level of Service	C	E	E					D	C	E	A	
Approach Delay (s)		55.6			0.0			40.7			18.5	
Approach LOS		E			A			D			B	

Intersection Summary				
HCM Average Control Delay	34.8	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.92			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	123.6%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	334	0	126	0	0	0	66	799	1043	0	1894	215
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0		4.0				4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		1.00				1.00	0.95	1.00		0.95	1.00
Frt	1.00		0.85				1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	3072		1417				1583	3167	1417		3167	1417
Flt Permitted	0.95		1.00				0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	3072		1417				1583	3167	1417		3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	371	0	140	0	0	0	73	888	1159	0	2104	239
RTOR Reduction (vph)	0	0	116	0	0	0	0	0	272	0	0	27
Lane Group Flow (vph)	371	0	24	0	0	0	73	888	887	0	2104	212
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		custom				Prot		Perm			Perm
Protected Phases	4						5	2			6	
Permitted Phases			4						2			6
Actuated Green, G (s)	18.2		18.2				9.0	78.8	78.8		65.8	65.8
Effective Green, g (s)	18.2		18.2				9.0	78.8	78.8		65.8	65.8
Actuated g/C Ratio	0.17		0.17				0.09	0.75	0.75		0.63	0.63
Clearance Time (s)	4.0		4.0				4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0		3.0				3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	532		246				136	2377	1063		1985	888
v/s Ratio Prot	c0.12						0.05	0.28			c0.66	
v/s Ratio Perm			0.02						c0.63			0.15
v/c Ratio	0.70		0.10				0.54	0.37	0.83		1.06	0.24
Uniform Delay, d1	40.8		36.5				46.0	4.5	8.7		19.6	8.6
Progression Factor	1.00		1.00				1.00	1.00	1.00		0.88	0.80
Incremental Delay, d2	4.0		0.2				4.0	0.5	7.7		33.1	0.3
Delay (s)	44.8		36.7				50.0	5.0	16.5		50.2	7.2
Level of Service	D		D				D	A	B		D	A
Approach Delay (s)		42.6			0.0			12.8			45.8	
Approach LOS		D			A			B			D	

Intersection Summary				
HCM Average Control Delay	31.4	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.98			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	78.6%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	518	60	55	136	53	163	96	1228	69	154	1519	347
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	576	67	61	151	59	181	107	1364	77	171	1688	386
RTOR Reduction (vph)	0	0	55	0	0	167	0	0	18	0	0	68
Lane Group Flow (vph)	576	67	6	151	59	14	107	1364	59	171	1688	319
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	19.0	9.9	9.9	16.9	7.8	7.8	9.4	46.6	46.6	14.0	51.2	51.2
Effective Green, g (s)	19.0	9.9	9.9	16.9	7.8	7.8	9.4	46.6	46.6	14.0	51.2	51.2
Actuated g/C Ratio	0.19	0.10	0.10	0.17	0.08	0.08	0.09	0.46	0.46	0.14	0.50	0.50
Clearance Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	3.0	3.0	0.2	3.0	3.0
Lane Grp Cap (vph)	570	161	137	261	127	108	145	1441	645	216	1584	709
v/s Ratio Prot	c0.19	c0.04		0.10	0.04		0.07	0.43		c0.11	c0.53	
v/s Ratio Perm			0.00			0.01			0.04			0.22
v/c Ratio	1.01	0.42	0.04	0.58	0.46	0.13	0.74	0.95	0.09	0.79	1.07	0.45
Uniform Delay, d1	41.7	43.5	42.0	39.5	45.3	44.1	45.3	26.7	15.9	42.8	25.6	16.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.3	0.6	0.0	1.9	1.0	0.2	15.5	13.0	0.1	16.7	42.4	0.5
Delay (s)	82.0	44.2	42.0	41.4	46.3	44.3	60.8	39.7	15.9	59.5	68.0	17.0
Level of Service	F	D	D	D	D	D	E	D	B	E	E	B
Approach Delay (s)		75.0			43.5			40.0			58.6	
Approach LOS		E			D			D			E	

Intersection Summary				
HCM Average Control Delay	53.8	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	102.4	Sum of lost time (s)	6.0	
Intersection Capacity Utilization	86.9%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis 2020
6: Golden Center Dr. & Missouri Flat Rd. PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	144	10	7	118	7	108	35	969	35	128	1337	23
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frt		0.99			0.94		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1540			1524		1583	3150		1583	3167	1417
Flt Permitted		0.57			0.81		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		914			1267		1583	3150		1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	160	11	8	131	8	120	39	1077	39	142	1486	26
RTOR Reduction (vph)	0	2	0	0	39	0	0	3	0	0	0	5
Lane Group Flow (vph)	0	177	0	0	220	0	39	1113	0	142	1486	21
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot			Prot		Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4								2
Actuated Green, G (s)		19.2			19.2		2.2	34.1		10.2	42.1	42.1
Effective Green, g (s)		19.2			19.2		2.2	34.1		10.2	42.1	42.1
Actuated g/C Ratio		0.25			0.25		0.03	0.45		0.13	0.55	0.55
Clearance Time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		2.5			2.5		2.5	3.0		2.5	3.0	3.0
Lane Grp Cap (vph)		229			318		46	1404		211	1743	780
v/s Ratio Prot							0.02	0.35		c0.09	c0.47	
v/s Ratio Perm		c0.19			0.17							0.01
v/c Ratio		0.77			0.69		0.85	0.79		0.67	0.85	0.03
Uniform Delay, d1		26.6			26.0		37.0	18.2		31.6	14.6	7.8
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		14.3			5.9		75.8	3.2		7.5	4.3	0.0
Delay (s)		40.9			31.8		112.7	21.3		39.0	18.8	7.9
Level of Service		D			C		F	C		D	B	A
Approach Delay (s)		40.9			31.8			24.4			20.4	
Approach LOS		D			C			C			C	

Intersection Summary				
HCM Average Control Delay	23.9	HCM Level of Service		C
HCM Volume to Capacity ratio	0.84			
Actuated Cycle Length (s)	76.5	Sum of lost time (s)		13.0
Intersection Capacity Utilization	71.8%	ICU Level of Service		C
Analysis Period (min)	15			

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis 2020
10: Truck St. & Diamond Rd. (SR-49) PM Peak

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	55	49	6	431	480	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	61	54	7	479	533	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				900		
pX, platoon unblocked						
vC, conflicting volume	1037	544	556			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1037	544	556			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	76	90	99			
cM capacity (veh/h)	251	533	1000			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	116	486	556
Volume Left	61	7	0
Volume Right	54	0	22
cSH	335	1000	1700
Volume to Capacity	0.35	0.01	0.33
Queue Length 95th (ft)	38	1	0
Control Delay (s)	21.3	0.2	0.0
Lane LOS	C	A	
Approach Delay (s)	21.3	0.2	0.0
Approach LOS	C		

Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	44.1%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	30	55	39	407	496	33
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	61	43	452	551	37
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				446		
pX, platoon unblocked						
vC, conflicting volume	1108	569	588			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1108	569	588			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	85	88	96			
cM capacity (veh/h)	219	516	973			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	94	43	452	588
Volume Left	33	43	0	0
Volume Right	61	0	0	37
cSH	349	973	1700	1700
Volume to Capacity	0.27	0.04	0.27	0.35
Queue Length 95th (ft)	27	3	0	0
Control Delay (s)	19.1	8.9	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	19.1	0.8		0.0
Approach LOS	C			

Intersection Summary				
Average Delay			1.9	
Intersection Capacity Utilization			48.5%	ICU Level of Service A
Analysis Period (min)			15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	102	12	43	8	4	6	55	295	30	24	470	58
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	113	13	48	9	4	7	61	328	33	27	522	64
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked	0.92	0.92	0.92	0.92	0.92		0.92					
vC, conflicting volume	1083	1091	554	1129	1107	344	587			361		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1047	1055	471	1096	1072	344	506			361		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	33	93	91	94	98	99	94			98		
cM capacity (veh/h)	170	187	539	140	183	692	959			1181		

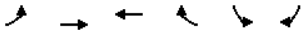
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	174	20	422	613
Volume Left	113	9	61	27
Volume Right	48	7	33	64
cSH	211	205	959	1181
Volume to Capacity	0.83	0.10	0.06	0.02
Queue Length 95th (ft)	153	8	5	2
Control Delay (s)	71.6	24.5	1.9	0.6
Lane LOS	F	C	A	A
Approach Delay (s)	71.6	24.5	1.9	0.6
Approach LOS	F	C		

Intersection Summary				
Average Delay			11.5	
Intersection Capacity Utilization			65.8%	ICU Level of Service C
Analysis Period (min)			15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	928	129	20	463	188	79	20	46	313	34	215
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1538	3020		1583	1667	1417		1603	1417	1538	1410	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1538	3020		1583	1667	1417		1603	1417	1538	1410	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	167	1031	143	22	514	209	88	22	51	348	38	239
RTOR Reduction (vph)	0	12	0	0	0	132	0	0	47	0	178	0
Lane Group Flow (vph)	167	1162	0	22	514	77	0	110	4	348	99	0
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			
Actuated Green, G (s)	10.4	40.5		1.1	31.2	31.2		7.1	7.1	21.8	21.8	
Effective Green, g (s)	10.4	40.5		1.1	31.2	31.2		7.1	7.1	21.8	21.8	
Actuated g/C Ratio	0.12	0.48		0.01	0.37	0.37		0.08	0.08	0.26	0.26	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.2		2.7	2.7	3.0	3.0	
Lane Grp Cap (vph)	188	1439		20	612	520		134	118	394	362	
v/s Ratio Prot	c0.11	c0.38		0.01	0.31			c0.07		c0.23	0.07	
v/s Ratio Perm						0.05			0.00			
v/c Ratio	0.89	0.81		1.10	0.84	0.15		0.82	0.04	0.88	0.27	
Uniform Delay, d1	36.7	18.9		42.0	24.6	18.0		38.3	35.8	30.4	25.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	35.1	3.5		234.8	10.0	0.1		31.2	0.1	20.2	0.4	
Delay (s)	71.9	22.4		276.7	34.6	18.1		69.5	35.9	50.6	25.7	
Level of Service	E	C		F	C	B		E	D	D	C	
Approach Delay (s)		28.6			37.1			58.9			39.5	
Approach LOS		C			D			E			D	

Intersection Summary				
HCM Average Control Delay	34.9	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	10.1	
Intersection Capacity Utilization	75.8%	ICU Level of Service	D	
Analysis Period (min)	15			

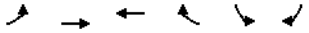
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	336	430	460	475	763	283
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2984	1619	1619	1376	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	2984	1619	1619	1376	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	373	478	511	528	848	314
RTOR Reduction (vph)	0	0	0	3	0	43
Lane Group Flow (vph)	373	478	511	525	848	271
Heavy Vehicles (%)	5%	5%	5%	5%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	13.0	48.4	32.4	86.4	54.0	67.0
Effective Green, g (s)	13.0	48.4	32.4	86.4	54.0	67.0
Actuated g/C Ratio	0.12	0.44	0.29	0.79	0.49	0.61
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	353	712	477	1081	777	863
v/s Ratio Prot	c0.13	0.30	c0.32	0.24	c0.54	0.04
v/s Ratio Perm				0.14		0.15
v/c Ratio	1.06	0.67	1.07	0.49	1.09	0.31
Uniform Delay, d1	48.5	24.5	38.8	4.1	28.0	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	63.6	2.0	61.6	0.4	60.1	0.1
Delay (s)	112.1	26.4	100.4	4.5	88.1	10.5
Level of Service	F	C	F	A	F	B
Approach Delay (s)		64.0	51.7		67.1	
Approach LOS		E	D		E	

Intersection Summary				
HCM Average Control Delay	61.0	HCM Level of Service	E	
HCM Volume to Capacity ratio	1.08			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.6	
Intersection Capacity Utilization	95.1%	ICU Level of Service	F	
Analysis Period (min)	15			

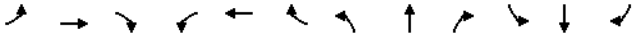
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	129	908	933	78	20	153
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	143	1009	1037	87	22	170
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1123				2376	1080
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1123				2376	1080
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	77				24	36
cM capacity (veh/h)	611				29	265

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	1152	1123	192
Volume Left	143	0	22
Volume Right	0	87	170
cSH	611	1700	137
Volume to Capacity	0.23	0.66	1.40
Queue Length 95th (ft)	23	0	316
Control Delay (s)	8.0	0.0	279.7
Lane LOS	A		F
Approach Delay (s)	8.0	0.0	279.7
Approach LOS			F

Intersection Summary			
Average Delay		25.5	
Intersection Capacity Utilization		143.3%	ICU Level of Service H
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	78	655	67	23	430	4	36	1	81	1	3	61
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	87	728	74	26	478	4	40	1	90	1	3	68
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)		1091										
pX, platoon unblocked				0.69			0.69	0.69	0.69	0.69	0.69	
vC, conflicting volume	482			802			1537	1472	765	1523	1507	480
vC1, stage 1 conf vol							938	938		531	531	
vC2, stage 2 conf vol							598	533		992	976	
vCu, unblocked vol	482			492			1553	1459	439	1533	1510	480
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			97			81	100	79	99	98	88
cM capacity (veh/h)	1080			742			211	241	428	162	221	586

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	87	802	26	482	131	72
Volume Left	87	0	26	0	40	1
Volume Right	0	74	0	4	90	68
cSH	1080	1700	742	1700	325	525
Volume to Capacity	0.08	0.47	0.03	0.28	0.40	0.14
Queue Length 95th (ft)	7	0	3	0	47	12
Control Delay (s)	8.6	0.0	10.0	0.0	23.4	13.0
Lane LOS	A		B		C	B
Approach Delay (s)	0.8		0.5		23.4	13.0
Approach LOS					C	B

Intersection Summary			
Average Delay		3.1	
Intersection Capacity Utilization		70.9%	ICU Level of Service C
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	2	58	4	155	0	758	125	238	940	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	2	64	4	172	0	842	139	264	1044	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	2590	2554	1044	2487	2485	912	1044			981		
vC1, stage 1 conf vol	1573	1573		912	912							
vC2, stage 2 conf vol	1017	981		1576	1573							
vCu, unblocked vol	2590	2554	1044	2487	2485	912	1044			981		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	20	96	48	100			62		
cM capacity (veh/h)	5	52	274	80	99	332	666			704		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	2	241	0	981	264	1044
Volume Left	0	64	0	0	264	0
Volume Right	2	172	0	139	0	0
cSH	274	177	1700	1700	704	1700
Volume to Capacity	0.01	1.36	0.00	0.58	0.38	0.61
Queue Length 95th (ft)	1	359	0	0	44	0
Control Delay (s)	18.2	246.1	0.0	0.0	13.2	0.0
Lane LOS	C	F			B	
Approach Delay (s)	18.2	246.1	0.0		2.7	
Approach LOS	C	F				

Intersection Summary					
Average Delay		24.8			
Intersection Capacity Utilization		99.0%	ICU Level of Service		F
Analysis Period (min)		15			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	167	1174	22	514	209	110	51	348	277
v/c Ratio	0.87	0.79	0.39	0.88	0.33	0.80	0.30	0.87	0.51
Control Delay	78.7	23.3	62.6	43.5	4.5	80.9	17.1	53.4	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.7	23.3	62.6	43.5	4.5	80.9	17.1	53.4	9.5
Queue Length 50th (ft)	95	250	13	260	0	63	0	187	16
Queue Length 95th (ft)	#212	384	#45	#435	43	#161	35	#339	83
Internal Link Dist (ft)		152		260		844			629
Turn Bay Length (ft)	185		105		180		75	335	
Base Capacity (vph)	207	1586	58	684	705	137	168	449	581
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.74	0.38	0.75	0.30	0.80	0.30	0.78	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Appendix E:

Analysis Worksheets for Interim (2020) Conditions plus Proposed Project Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	92	31	417	324	79	204	527	439	374	59	300	37
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	0.95	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frt		0.92	0.85	1.00	0.90		1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1427	1346	1504	1422		3072	3167	1417	1583	3115	
Flt Permitted		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1427	1346	1504	1422		3072	3167	1417	1583	3115	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	102	34	463	360	88	227	586	488	416	66	333	41
RTOR Reduction (vph)	0	47	55	0	58	0	0	0	186	0	9	0
Lane Group Flow (vph)	0	260	237	324	293	0	586	488	230	66	365	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Split		pm+ov	Split			Prot		pm+ov	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		23.3	45.4	27.5	27.5		22.1	30.6	58.1	7.6	16.1	
Effective Green, g (s)		23.3	45.4	27.5	27.5		22.1	30.6	58.1	7.6	16.1	
Actuated g/C Ratio		0.22	0.43	0.26	0.26		0.21	0.29	0.55	0.07	0.15	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		317	633	394	372		647	923	784	115	478	
v/s Ratio Prot		c0.18	0.08	c0.22	0.21		c0.19	0.15	0.08	0.04	c0.12	
v/s Ratio Perm			0.10						0.09			
v/c Ratio		0.82	0.37	0.82	0.79		0.91	0.53	0.29	0.57	0.76	
Uniform Delay, d1		38.9	20.2	36.5	36.0		40.4	31.2	12.5	47.1	42.6	
Progression Factor		1.00	1.00	1.00	1.00		0.79	0.76	0.81	1.00	1.00	
Incremental Delay, d2		15.6	0.4	13.0	10.5		14.3	1.8	0.2	6.8	11.0	
Delay (s)		54.4	20.6	49.4	46.5		46.4	25.5	10.3	53.9	53.6	
Level of Service		D	C	D	D		D	C	B	D	D	
Approach Delay (s)		37.9			47.9			29.5			53.7	
Approach LOS		D			D			C			D	

Intersection Summary				
HCM Average Control Delay	38.3	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.83			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	77.1%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	888	0	496	395	844	0	0	780	261
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				0.97		0.88	0.97	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				2984		2422	2984	3076			3076	1376
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				2984		2422	2984	3076			3076	1376
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	987	0	551	439	938	0	0	867	290
RTOR Reduction (vph)	0	0	0	0	0	129	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	987	0	422	439	938	0	0	867	290
Turn Type				Prot		custom	Prot					Free
Protected Phases				3		3	5	2			6	
Permitted Phases						3						Free
Actuated Green, G (s)				38.1		38.1	18.3	58.9			36.6	105.0
Effective Green, g (s)				38.1		38.1	18.3	58.9			36.6	105.0
Actuated g/C Ratio				0.36		0.36	0.17	0.56			0.35	1.00
Clearance Time (s)				4.0		4.0	4.0	4.0			4.0	
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				1083		879	520	1725			1072	1376
v/s Ratio Prot				c0.33		0.17	c0.15	0.30			c0.28	
v/s Ratio Perm												0.21
v/c Ratio				0.91		0.48	0.84	0.54			0.81	0.21
Uniform Delay, d1				31.8		25.8	42.0	14.6			31.0	0.0
Progression Factor				1.00		1.00	0.87	0.54			0.85	1.00
Incremental Delay, d2				11.4		0.4	8.8	0.9			4.9	0.3
Delay (s)				43.2		26.2	45.2	8.7			31.3	0.3
Level of Service				D		C	D	A			C	A
Approach Delay (s)		0.0			37.1			20.3			23.5	
Approach LOS		A			D			C			C	

Intersection Summary				
HCM Average Control Delay	27.6	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.86			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	111.5%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	2	454	0	0	0	0	1089	48	245	1423	0
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	0.91	0.95					0.95	1.00	0.97	0.95	
Frt	1.00	0.86	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1461	1264	1307					3076	1376	2984	3076	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1461	1264	1307					3076	1376	2984	3076	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	167	2	504	0	0	0	0	1210	53	272	1581	0
RTOR Reduction (vph)	0	35	35	0	0	0	0	0	11	0	0	0
Lane Group Flow (vph)	150	226	227	0	0	0	0	1210	42	272	1581	0
Turn Type	Split		Perm						Perm	Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	22.9	22.9	22.9					56.9	56.9	13.2	74.1	
Effective Green, g (s)	22.9	22.9	22.9					56.9	56.9	13.2	74.1	
Actuated g/C Ratio	0.22	0.22	0.22					0.54	0.54	0.13	0.71	
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	319	276	285					1667	746	375	2171	
v/s Ratio Prot	0.10	c0.18						0.39		0.09	c0.51	
v/s Ratio Perm			0.17						0.03			
v/c Ratio	0.47	0.82	0.80					0.73	0.06	0.73	0.73	
Uniform Delay, d1	35.8	39.1	38.8					18.2	11.4	44.2	9.4	
Progression Factor	1.00	1.00	1.00					1.26	1.45	1.16	0.22	
Incremental Delay, d2	1.1	16.9	14.2					2.6	0.1	3.5	1.1	
Delay (s)	36.9	56.0	53.0					25.4	16.6	54.6	3.2	
Level of Service	D	E	D					C	B	D	A	
Approach Delay (s)		50.6			0.0			25.1			10.7	
Approach LOS		D			A			C			B	

Intersection Summary				
HCM Average Control Delay	22.6	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	111.5%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	306	0	114	0	0	0	58	831	914	0	1708	169
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0		4.0				4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		1.00				1.00	0.95	1.00		0.95	1.00
Frt	1.00		0.85				1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	3072		1417				1583	3167	1417		3167	1417
Flt Permitted	0.95		1.00				0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	3072		1417				1583	3167	1417		3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	340	0	127	0	0	0	64	923	1016	0	1898	188
RTOR Reduction (vph)	0	0	107	0	0	0	0	0	241	0	0	22
Lane Group Flow (vph)	340	0	20	0	0	0	64	923	775	0	1898	166
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		custom				Prot		Perm			Perm
Protected Phases	4						5	2			6	
Permitted Phases			4						2			6
Actuated Green, G (s)	16.9		16.9				8.5	80.1	80.1		67.6	67.6
Effective Green, g (s)	16.9		16.9				8.5	80.1	80.1		67.6	67.6
Actuated g/C Ratio	0.16		0.16				0.08	0.76	0.76		0.64	0.64
Clearance Time (s)	4.0		4.0				4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0		3.0				3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	494		228				128	2416	1081		2039	912
v/s Ratio Prot	c0.11						0.04	0.29			c0.60	
v/s Ratio Perm			0.01						c0.55			0.12
v/c Ratio	0.69		0.09				0.50	0.38	0.72		0.93	0.18
Uniform Delay, d1	41.6		37.5				46.2	4.2	6.5		16.6	7.5
Progression Factor	1.00		1.00				1.00	1.00	1.00		0.72	0.57
Incremental Delay, d2	4.0		0.2				3.1	0.5	4.1		6.6	0.3
Delay (s)	45.5		37.7				49.3	4.6	10.6		18.6	4.6
Level of Service	D		D				D	A	B		B	A
Approach Delay (s)		43.4			0.0			9.1			17.3	
Approach LOS		D			A			A			B	

Intersection Summary				
HCM Average Control Delay	16.4	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	70.3%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: Forni Rd. & Missouri Flat Rd.

2020 plus Proposed Project
AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	227	26	24	57	22	69	98	1507	71	96	1510	216
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	252	29	27	63	24	77	109	1674	79	107	1678	240
RTOR Reduction (vph)	0	0	25	0	0	73	0	0	13	0	0	38
Lane Group Flow (vph)	252	29	2	63	24	4	109	1674	66	107	1678	202
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	9.9	6.7	6.7	8.1	4.9	4.9	8.8	49.3	49.3	8.7	49.2	49.2
Effective Green, g (s)	9.9	6.7	6.7	8.1	4.9	4.9	8.8	49.3	49.3	8.7	49.2	49.2
Actuated g/C Ratio	0.11	0.08	0.08	0.09	0.06	0.06	0.10	0.56	0.56	0.10	0.56	0.56
Clearance Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	3.0	3.0	0.2	3.0	3.0
Lane Grp Cap (vph)	346	127	108	146	93	79	159	1778	796	157	1775	794
v/s Ratio Prot	c0.08	c0.02		0.04	0.01		c0.07	0.53		0.07	c0.53	
v/s Ratio Perm			0.00			0.00			0.05			0.14
v/c Ratio	0.73	0.23	0.02	0.43	0.26	0.05	0.69	0.94	0.08	0.68	0.95	0.25
Uniform Delay, d1	37.7	38.1	37.5	37.7	39.7	39.3	38.2	17.9	8.9	38.2	18.0	9.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.4	0.3	0.0	0.7	0.5	0.1	9.4	10.5	0.0	9.3	11.0	0.2
Delay (s)	44.0	38.5	37.5	38.4	40.2	39.4	47.5	28.4	8.9	47.5	29.0	10.1
Level of Service	D	D	D	D	D	D	D	C	A	D	C	B
Approach Delay (s)		42.9			39.1			28.7			27.7	
Approach LOS		D			D			C			C	

Intersection Summary				
HCM Average Control Delay	29.7	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.79			
Actuated Cycle Length (s)	87.8	Sum of lost time (s)	11.0	
Intersection Capacity Utilization	77.5%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
6: Golden Center Dr. & Missouri Flat Rd.

2020 plus Proposed Project
AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	1	1	51	3	47	61	1704	61	120	1252	21
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frt		0.99			0.94		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1539			1523		1583	3150		1583	3167	1417
Flt Permitted		0.72			0.83		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1155			1294		1583	3150		1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	20	1	1	57	3	52	68	1893	68	133	1391	23
RTOR Reduction (vph)	0	1	0	0	28	0	0	2	0	0	0	3
Lane Group Flow (vph)	0	21	0	0	84	0	68	1959	0	133	1391	20
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot			Prot		Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4								2
Actuated Green, G (s)		12.1			12.1		7.8	76.9		11.0	80.1	80.1
Effective Green, g (s)		12.1			12.1		7.8	76.9		11.0	80.1	80.1
Actuated g/C Ratio		0.11			0.11		0.07	0.68		0.10	0.71	0.71
Clearance Time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		2.5			2.5		2.5	3.0		2.5	3.0	3.0
Lane Grp Cap (vph)		124			139		109	2144		154	2245	1004
v/s Ratio Prot							0.04	c0.62		c0.08	c0.44	
v/s Ratio Perm		0.02			c0.07							0.01
v/c Ratio		0.17			0.61		0.62	0.91		0.86	0.62	0.02
Uniform Delay, d1		45.9			48.2		51.2	15.3		50.3	8.5	4.9
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.5			6.2		9.2	6.5		35.9	0.5	0.0
Delay (s)		46.4			54.4		60.4	21.8		86.1	9.1	4.9
Level of Service		D			D		E	C		F	A	A
Approach Delay (s)		46.4			54.4			23.1			15.6	
Approach LOS		D			D			C			B	

Intersection Summary				
HCM Average Control Delay	21.0	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.91			
Actuated Cycle Length (s)	113.0	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	79.2%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	658	368	233	961	19	481	13	138	2	10	14
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	3167	1417	1583	1667	1417	1583	1438		1583	1519	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	3167	1417	1583	1667	1417	1583	1438		1583	1519	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	13	731	409	259	1068	21	534	14	153	2	11	16
RTOR Reduction (vph)	0	0	179	0	0	1	0	108	0	0	15	0
Lane Group Flow (vph)	13	731	230	259	1068	20	534	59	0	2	12	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		pm+ov	Prot		Perm	Prot			Prot		
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2			6						
Actuated Green, G (s)	1.4	30.7	55.2	21.7	51.0	51.0	24.5	28.8		1.1	5.4	
Effective Green, g (s)	1.4	30.7	55.2	21.7	51.0	51.0	24.5	28.8		1.1	5.4	
Actuated g/C Ratio	0.01	0.31	0.56	0.22	0.52	0.52	0.25	0.29		0.01	0.05	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	23	989	853	349	865	735	395	421		18	83	
v/s Ratio Prot	0.01	0.23	0.07	c0.16	c0.64		c0.34	c0.04		0.00	0.01	
v/s Ratio Perm			0.10			0.01						
v/c Ratio	0.57	0.74	0.27	0.74	1.23	0.03	1.35	0.14		0.11	0.14	
Uniform Delay, d1	48.1	30.2	11.1	35.7	23.6	11.5	36.9	25.6		48.1	44.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	28.1	2.9	0.2	8.3	115.6	0.0	174.3	0.2		2.7	0.8	
Delay (s)	76.3	33.1	11.3	44.0	139.3	11.6	211.2	25.8		50.8	45.0	
Level of Service	E	C	B	D	F	B	F	C		D	D	
Approach Delay (s)		25.9			119.0			167.0			45.4	
Approach LOS		C			F			F			D	

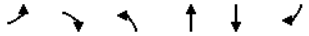
Intersection Summary				
HCM Average Control Delay	95.5	HCM Level of Service	F	
HCM Volume to Capacity ratio	1.15			
Actuated Cycle Length (s)	98.3	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	106.3%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	671	83	20	1143	20	44	10	21	24	2	26
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1583	1667	1417	1583	1662			1556	1376		1475	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.77	1.00		0.88	
Satd. Flow (perm)	1583	1667	1417	1583	1662			1254	1376		1325	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	49	746	92	22	1270	22	49	11	23	27	2	29
RTOR Reduction (vph)	0	0	27	0	0	0	0	0	17	0	21	0
Lane Group Flow (vph)	49	746	65	22	1292	0	0	60	6	0	37	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	4.0	77.2	77.2	2.4	75.6			32.0	32.0		32.0	
Effective Green, g (s)	4.0	77.2	77.2	2.4	75.6			32.0	32.0		32.0	
Actuated g/C Ratio	0.03	0.62	0.62	0.02	0.61			0.26	0.26		0.26	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	51	1041	885	31	1017			325	356		343	
v/s Ratio Prot	c0.03	0.45		0.01	c0.78							
v/s Ratio Perm			0.05					c0.05	0.00		0.03	
v/c Ratio	0.96	0.72	0.07	0.71	1.27			0.18	0.02		0.11	
Uniform Delay, d1	59.7	15.8	9.1	60.3	24.0			35.6	34.1		34.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	111.0	2.4	0.0	54.2	129.3			0.3	0.0		0.1	
Delay (s)	170.7	18.1	9.2	114.4	153.3			35.9	34.1		35.0	
Level of Service	F	B	A	F	F			D	C		D	
Approach Delay (s)		25.6			152.7			35.4			35.0	
Approach LOS		C			F			D			D	

Intersection Summary				
HCM Average Control Delay	97.5	HCM Level of Service	F	
HCM Volume to Capacity ratio	0.95			
Actuated Cycle Length (s)	123.6	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	85.3%	ICU Level of Service	E	
Analysis Period (min)	15			

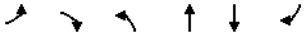
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	155	561	746	198	197	437
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1583	1417	2984	1619	1619	1376
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1583	1417	2984	1619	1619	1376
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	172	623	829	220	219	486
RTOR Reduction (vph)	0	179	0	0	0	368
Lane Group Flow (vph)	172	444	829	220	219	118
Heavy Vehicles (%)	2%	2%	5%	5%	5%	5%
Turn Type		pm+ov	Prot			Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	13.8	40.9	27.1	48.1	17.0	17.0
Effective Green, g (s)	13.8	40.9	27.1	48.1	17.0	17.0
Actuated g/C Ratio	0.20	0.59	0.39	0.69	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	313	910	1157	1114	394	335
v/s Ratio Prot	c0.11	0.19	c0.28	0.14	c0.14	
v/s Ratio Perm		0.12				0.09
v/c Ratio	0.55	0.49	0.72	0.20	0.56	0.35
Uniform Delay, d1	25.3	8.4	18.1	3.9	23.1	21.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.4	2.1	0.1	1.7	0.6
Delay (s)	27.2	8.8	20.3	4.0	24.8	22.5
Level of Service	C	A	C	A	C	C
Approach Delay (s)	12.8			16.9	23.3	
Approach LOS	B			B	C	

Intersection Summary				
HCM Average Control Delay	17.4	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	69.9	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	60.7%	ICU Level of Service	B	
Analysis Period (min)	15			

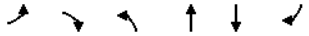
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	5	9	344	633	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	6	10	382	703	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				900		
pX, platoon unblocked						
vC, conflicting volume	1107	704	706			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1107	704	706			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	99			
cM capacity (veh/h)	227	432	879			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	11	392	706
Volume Left	6	10	0
Volume Right	6	0	2
cSH	298	879	1700
Volume to Capacity	0.04	0.01	0.42
Queue Length 95th (ft)	3	1	0
Control Delay (s)	17.6	0.4	0.0
Lane LOS	C	A	
Approach Delay (s)	17.6	0.4	0.0
Approach LOS	C		

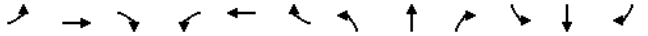
Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	47.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	1	0	353	633	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	1	0	392	703	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				359		
pX, platoon unblocked	0.97					
vC, conflicting volume	1098	706	709			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1088	706	709			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	230	431	876			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	1	392	709
Volume Left	0	0	0
Volume Right	1	0	6
cSH	431	1700	1700
Volume to Capacity	0.00	0.23	0.42
Queue Length 95th (ft)	0	0	0
Control Delay (s)	13.4	0.0	0.0
Lane LOS	B		
Approach Delay (s)	13.4	0.0	0.0
Approach LOS	B		

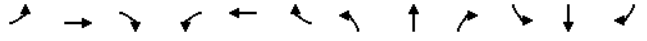
Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		47.6%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	52	1	10	9	5	66	35	826	33	16	693	49
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	58	1	11	10	6	73	39	918	37	18	770	54
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked	0.91	0.91	0.91	0.91	0.91		0.91					
vC, conflicting volume	1923	1865	797	1858	1874	936	824			954		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1962	1899	732	1892	1909	936	762			954		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	98	97	77	90	77	95			97		
cM capacity (veh/h)	29	58	381	43	57	317	766			708		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	70	89	993	842
Volume Left	58	10	39	18
Volume Right	11	73	37	54
cSH	34	159	766	708
Volume to Capacity	2.07	0.56	0.05	0.03
Queue Length 95th (ft)	196	72	4	2
Control Delay (s)	747.3	53.4	1.5	0.7
Lane LOS	F	F	A	A
Approach Delay (s)	747.3	53.4	1.5	0.7
Approach LOS	F	F		

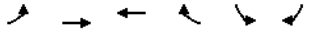
Intersection Summary				
Average Delay		29.6		
Intersection Capacity Utilization		88.0%	ICU Level of Service	E
Analysis Period (min)		15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	170	29	26	300	450	43	53	50	578	49	88
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1538	3009		1583	1667	1417		1630	1417	1538	1462	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1538	3009		1583	1667	1417		1630	1417	1538	1462	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	86	189	32	29	333	500	48	59	56	642	54	98
RTOR Reduction (vph)	0	19	0	0	0	346	0	0	51	0	67	0
Lane Group Flow (vph)	86	202	0	29	333	154	0	107	5	642	85	0
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			
Actuated Green, G (s)	4.1	21.9		1.9	19.7	19.7		5.3	5.3	20.4	20.4	
Effective Green, g (s)	4.1	21.9		1.9	19.7	19.7		5.3	5.3	20.4	20.4	
Actuated g/C Ratio	0.06	0.34		0.03	0.31	0.31		0.08	0.08	0.32	0.32	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.2		2.7	2.7	3.0	3.0	
Lane Grp Cap (vph)	99	1030		47	513	436		135	117	490	466	
v/s Ratio Prot	c0.06	0.07		0.02	c0.20			c0.07		c0.42	0.06	
v/s Ratio Perm						0.11			0.00			
v/c Ratio	0.87	0.20		0.62	0.65	0.35		0.79	0.04	1.31	0.18	
Uniform Delay, d1	29.7	14.8		30.7	19.2	17.2		28.8	27.0	21.8	15.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	49.1	0.1		15.7	2.9	0.5		26.0	0.1	153.7	0.2	
Delay (s)	78.8	14.9		46.4	22.0	17.7		54.8	27.1	175.5	16.0	
Level of Service	E	B		D	C	B		D	C	F	B	
Approach Delay (s)		32.8			20.4			45.3			144.9	
Approach LOS		C			C			D			F	

Intersection Summary				
HCM Average Control Delay	70.6	HCM Level of Service	E	
HCM Volume to Capacity ratio	0.93			
Actuated Cycle Length (s)	64.0	Sum of lost time (s)	14.5	
Intersection Capacity Utilization	77.7%	ICU Level of Service	D	
Analysis Period (min)	15			

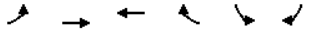
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	265	274	243	116	236	145
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2984	1619	1619	1376	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	2984	1619	1619	1376	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	294	304	270	129	262	161
RTOR Reduction (vph)	0	0	0	42	0	82
Lane Group Flow (vph)	294	304	270	87	262	79
Heavy Vehicles (%)	5%	5%	5%	5%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	7.6	21.9	11.3	24.9	13.6	21.2
Effective Green, g (s)	7.6	21.9	11.3	24.9	13.6	21.2
Actuated g/C Ratio	0.18	0.51	0.26	0.58	0.32	0.49
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	526	823	424	795	500	697
v/s Ratio Prot	c0.10	0.19	c0.17	0.03	c0.17	0.02
v/s Ratio Perm				0.03		0.04
v/c Ratio	0.56	0.37	0.64	0.11	0.52	0.11
Uniform Delay, d1	16.2	6.4	14.1	4.1	12.1	5.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1	2.3	0.1	1.1	0.0
Delay (s)	17.0	6.5	16.4	4.2	13.2	5.9
Level of Service	B	A	B	A	B	A
Approach Delay (s)		11.6	12.4		10.4	
Approach LOS		B	B		B	

Intersection Summary				
HCM Average Control Delay	11.5	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.57			
Actuated Cycle Length (s)	43.1	Sum of lost time (s)	10.6	
Intersection Capacity Utilization	47.4%	ICU Level of Service	A	
Analysis Period (min)	15			

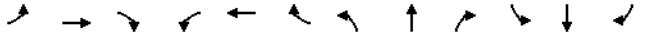
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	71	259	649	85	12	120
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	79	288	721	94	13	133
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	816				1214	768
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	816				1214	768
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	90				93	67
cM capacity (veh/h)	799				181	401

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	367	816	147
Volume Left	79	0	13
Volume Right	0	94	133
cSH	799	1700	361
Volume to Capacity	0.10	0.48	0.41
Queue Length 95th (ft)	8	0	48
Control Delay (s)	3.1	0.0	21.6
Lane LOS	A		C
Approach Delay (s)	3.1	0.0	21.6
Approach LOS			C

Intersection Summary				
Average Delay		3.2		
Intersection Capacity Utilization		82.6%	ICU Level of Service	E
Analysis Period (min)		15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	192	19	35	556	5	8	0	19	1	4	61
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	24	213	21	39	618	6	9	0	21	1	4	68
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)		1091										
pX, platoon unblocked												
vC, conflicting volume	623			234			1038	974	224	982	982	621
vC1, stage 1 conf vol							273	273		698	698	
vC2, stage 2 conf vol							766	701		283	283	
vCu, unblocked vol	623			234			1038	974	224	982	982	621
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			97			97	100	97	100	99	86
cM capacity (veh/h)	958			1333			290	378	816	382	392	488

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	24	234	39	623	30	73
Volume Left	24	0	39	0	9	1
Volume Right	0	21	0	6	21	68
cSH	958	1700	1333	1700	530	479
Volume to Capacity	0.03	0.14	0.03	0.37	0.06	0.15
Queue Length 95th (ft)	2	0	2	0	4	13
Control Delay (s)	8.9	0.0	7.8	0.0	12.2	13.9
Lane LOS	A		A		B	B
Approach Delay (s)	0.8		0.5		12.2	13.9
Approach LOS					B	B

Intersection Summary				
Average Delay		1.9		
Intersection Capacity Utilization		47.5%	ICU Level of Service	A
Analysis Period (min)		15		

HCM Unsignalized Intersection Capacity Analysis — 2020 plus Proposed Project
17: China Garden Rd. & Missouri Flat Rd. — AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	2	50	3	93	0	602	161	65	370	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	2	56	3	103	0	669	179	72	411	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	1329	1403	411	1316	1314	758	411			848		
vC1, stage 1 conf vol	556	556		758	758							
vC2, stage 2 conf vol	774	848		558	556							
vCu, unblocked vol	1329	1403	411	1316	1314	758	411			848		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	83	99	75	100			91		
cM capacity (veh/h)	200	268	634	319	332	407	1148			790		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	2	162	0	848	72	411
Volume Left	0	56	0	0	72	0
Volume Right	2	103	0	179	0	0
cSH	634	370	1700	1700	790	1700
Volume to Capacity	0.00	0.44	0.00	0.50	0.09	0.24
Queue Length 95th (ft)	0	54	0	0	8	0
Control Delay (s)	10.7	22.1	0.0	0.0	10.0	0.0
Lane LOS	B	C			B	
Approach Delay (s)	10.7	22.1	0.0		1.5	
Approach LOS	B	C				

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	76.7%	ICU Level of Service	D	
Analysis Period (min)	15			

HCM Signalized Intersection Capacity Analysis — 2020 plus Proposed Project
1: Plaza Dr. & Missouri Flat Rd. — PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	107	36	482	255	62	161	529	405	375	84	399	53
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	0.95	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frt		0.92	0.85	1.00	0.90		1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1428	1346	1504	1422		3072	3167	1417	1583	3111	
Flt Permitted		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1428	1346	1504	1422		3072	3167	1417	1583	3111	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	119	40	536	283	69	179	588	450	417	93	443	59
RTOR Reduction (vph)	0	45	58	0	63	0	0	0	205	0	10	0
Lane Group Flow (vph)	0	312	280	255	213	0	588	450	212	93	492	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Split		pm+ov	Split			Prot		pm+ov	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		26.2	48.0	21.1	21.1		21.8	32.3	53.4	9.4	19.9	
Effective Green, g (s)		26.2	48.0	21.1	21.1		21.8	32.3	53.4	9.4	19.9	
Actuated g/C Ratio		0.25	0.46	0.20	0.20		0.21	0.31	0.51	0.09	0.19	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		356	615	302	286		638	974	721	142	590	
v/s Ratio Prot		c0.22	0.09	c0.17	0.15		c0.19	0.14	0.06	0.06	c0.16	
v/s Ratio Perm			0.11						0.09			
v/c Ratio		0.88	0.46	0.84	0.74		0.92	0.46	0.29	0.65	0.83	
Uniform Delay, d1		37.8	19.5	40.4	39.4		40.8	29.3	14.9	46.2	41.0	
Progression Factor		1.00	1.00	1.00	1.00		1.01	0.72	0.97	1.00	1.00	
Incremental Delay, d2		20.7	0.5	18.9	10.0		16.9	1.4	0.2	10.4	13.1	
Delay (s)		58.5	20.1	59.3	49.5		58.0	22.4	14.7	56.6	54.0	
Level of Service		E	C	E	D		E	C	B	E	D	
Approach Delay (s)		39.8			54.2			34.6			54.4	
Approach LOS		D			D			C			D	

Intersection Summary				
HCM Average Control Delay	42.5	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.87			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	79.4%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	832	0	449	453	860	0	0	823	313
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				0.97		0.88	0.97	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				2984		2422	2984	3076			3076	1376
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				2984		2422	2984	3076			3076	1376
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	924	0	499	503	956	0	0	914	348
RTOR Reduction (vph)	0	0	0	0	0	138	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	924	0	361	503	956	0	0	914	348
Turn Type				Prot		custom	Prot					Free
Protected Phases				3		3	5	2			6	
Permitted Phases						3						Free
Actuated Green, G (s)				36.0		36.0	20.3	61.0			36.7	105.0
Effective Green, g (s)				36.0		36.0	20.3	61.0			36.7	105.0
Actuated g/C Ratio				0.34		0.34	0.19	0.58			0.35	1.00
Clearance Time (s)				4.0		4.0	4.0	4.0			4.0	
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				1023		830	577	1787			1075	1376
v/s Ratio Prot				c0.31		0.15	c0.17	0.31			c0.30	
v/s Ratio Perm												0.25
v/c Ratio				0.90		0.43	0.87	0.53			0.85	0.25
Uniform Delay, d1				32.8		26.6	41.1	13.4			31.6	0.0
Progression Factor				1.00		1.00	0.77	0.24			1.20	1.00
Incremental Delay, d2				11.0		0.4	8.0	0.6			5.8	0.3
Delay (s)				43.9		27.0	39.5	3.9			43.8	0.3
Level of Service				D		C	D	A			D	A
Approach Delay (s)		0.0			37.9			16.1			31.8	
Approach LOS		A			D			B			C	

Intersection Summary				
HCM Average Control Delay	28.4	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	123.6%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	235	3	733	0	0	0	0	1078	55	278	1376	0
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	0.91	0.95					0.95	1.00	0.97	0.95	
Frt	1.00	0.86	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1461	1264	1307					3076	1376	2984	3076	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1461	1264	1307					3076	1376	2984	3076	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	261	3	814	0	0	0	0	1198	61	309	1529	0
RTOR Reduction (vph)	0	22	22	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	235	398	401	0	0	0	0	1198	46	309	1529	0
Turn Type	Split		Perm						Perm	Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	34.7	34.7	34.7					46.1	46.1	12.2	62.3	
Effective Green, g (s)	34.7	34.7	34.7					46.1	46.1	12.2	62.3	
Actuated g/C Ratio	0.33	0.33	0.33					0.44	0.44	0.12	0.59	
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	483	418	432					1351	604	347	1825	
v/s Ratio Prot	0.16	c0.31						c0.39		0.10	c0.50	
v/s Ratio Perm			0.31						0.03			
v/c Ratio	0.49	0.95	0.93					0.89	0.08	0.89	0.84	
Uniform Delay, d1	28.0	34.3	33.9					27.1	17.1	45.7	17.3	
Progression Factor	1.00	1.00	1.00					1.23	1.31	1.07	0.43	
Incremental Delay, d2	0.8	31.8	26.0					8.4	0.2	13.0	2.3	
Delay (s)	28.8	66.1	59.9					41.6	22.6	61.8	9.8	
Level of Service	C	E	E					D	C	E	A	
Approach Delay (s)		55.6			0.0			40.7			18.5	
Approach LOS		E			A			D			B	

Intersection Summary				
HCM Average Control Delay	34.8	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.92			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	123.6%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
4: Mother Lode Dr. & Missouri Flat Rd.

2020 plus Proposed Project
PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	334	0	126	0	0	0	66	799	1043	0	1894	215
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0		4.0				4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		1.00				1.00	0.95	1.00		0.95	1.00
Frt	1.00		0.85				1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00				0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	3072		1417				1583	3167	1417		3167	1417
Flt Permitted	0.95		1.00				0.95	1.00	1.00		1.00	1.00
Satd. Flow (perm)	3072		1417				1583	3167	1417		3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	371	0	140	0	0	0	73	888	1159	0	2104	239
RTOR Reduction (vph)	0	0	116	0	0	0	0	0	272	0	0	27
Lane Group Flow (vph)	371	0	24	0	0	0	73	888	887	0	2104	212
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		custom				Prot		Perm			Perm
Protected Phases	4						5	2			6	
Permitted Phases			4						2			6
Actuated Green, G (s)	18.2		18.2				9.0	78.8	78.8		65.8	65.8
Effective Green, g (s)	18.2		18.2				9.0	78.8	78.8		65.8	65.8
Actuated g/C Ratio	0.17		0.17				0.09	0.75	0.75		0.63	0.63
Clearance Time (s)	4.0		4.0				4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0		3.0				3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	532		246				136	2377	1063		1985	888
v/s Ratio Prot	c0.12						0.05	0.28			c0.66	
v/s Ratio Perm			0.02						c0.63			0.15
v/c Ratio	0.70		0.10				0.54	0.37	0.83		1.06	0.24
Uniform Delay, d1	40.8		36.5				46.0	4.5	8.7		19.6	8.6
Progression Factor	1.00		1.00				1.00	1.00	1.00		0.88	0.80
Incremental Delay, d2	4.0		0.2				4.0	0.5	7.7		33.1	0.3
Delay (s)	44.8		36.7				50.0	5.0	16.5		50.2	7.2
Level of Service	D		D				D	A	B		D	A
Approach Delay (s)		42.6			0.0			12.8			45.8	
Approach LOS		D			A			B			D	

Intersection Summary				
HCM Average Control Delay	31.4	HCM Level of Service		C
HCM Volume to Capacity ratio	0.98			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)		12.0
Intersection Capacity Utilization	78.6%	ICU Level of Service		D
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: Forni Rd. & Missouri Flat Rd.

2020 plus Proposed Project
PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	518	60	55	136	53	163	96	1228	69	154	1519	347
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	576	67	61	151	59	181	107	1364	77	171	1688	386
RTOR Reduction (vph)	0	0	55	0	0	167	0	0	18	0	0	68
Lane Group Flow (vph)	576	67	6	151	59	14	107	1364	59	171	1688	319
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	19.0	9.9	9.9	16.9	7.8	7.8	9.4	46.6	46.6	14.0	51.2	51.2
Effective Green, g (s)	19.0	9.9	9.9	16.9	7.8	7.8	9.4	46.6	46.6	14.0	51.2	51.2
Actuated g/C Ratio	0.19	0.10	0.10	0.17	0.08	0.08	0.09	0.46	0.46	0.14	0.50	0.50
Clearance Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	3.0	3.0	0.2	3.0	3.0
Lane Grp Cap (vph)	570	161	137	261	127	108	145	1441	645	216	1584	709
v/s Ratio Prot	c0.19	c0.04		0.10	0.04		0.07	0.43		c0.11	c0.53	
v/s Ratio Perm			0.00			0.01			0.04			0.22
v/c Ratio	1.01	0.42	0.04	0.58	0.46	0.13	0.74	0.95	0.09	0.79	1.07	0.45
Uniform Delay, d1	41.7	43.5	42.0	39.5	45.3	44.1	45.3	26.7	15.9	42.8	25.6	16.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.3	0.6	0.0	1.9	1.0	0.2	15.5	13.0	0.1	16.7	42.4	0.5
Delay (s)	82.0	44.2	42.0	41.4	46.3	44.3	60.8	39.7	15.9	59.5	68.0	17.0
Level of Service	F	D	D	D	D	D	E	D	B	E	E	B
Approach Delay (s)		75.0			43.5			40.0			58.6	
Approach LOS		E			D			D			E	

Intersection Summary				
HCM Average Control Delay	53.8	HCM Level of Service		D
HCM Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	102.4	Sum of lost time (s)		6.0
Intersection Capacity Utilization	86.9%	ICU Level of Service		E
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	144	10	7	118	7	108	35	969	35	128	1337	23
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frt		0.99			0.94		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1540			1524		1583	3150		1583	3167	1417
Flt Permitted		0.57			0.81		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		914			1267		1583	3150		1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	160	11	8	131	8	120	39	1077	39	142	1486	26
RTOR Reduction (vph)	0	2	0	0	39	0	0	3	0	0	0	5
Lane Group Flow (vph)	0	177	0	0	220	0	39	1113	0	142	1486	21
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot			Prot		Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4								2
Actuated Green, G (s)		19.2			19.2		2.2	34.1		10.2	42.1	42.1
Effective Green, g (s)		19.2			19.2		2.2	34.1		10.2	42.1	42.1
Actuated g/C Ratio		0.25			0.25		0.03	0.45		0.13	0.55	0.55
Clearance Time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		2.5			2.5		2.5	3.0		2.5	3.0	3.0
Lane Grp Cap (vph)		229			318		46	1404		211	1743	780
v/s Ratio Prot							0.02	0.35		c0.09	c0.47	
v/s Ratio Perm		c0.19			0.17							0.01
v/c Ratio		0.77			0.69		0.85	0.79		0.67	0.85	0.03
Uniform Delay, d1		26.6			26.0		37.0	18.2		31.6	14.6	7.8
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		14.3			5.9		75.8	3.2		7.5	4.3	0.0
Delay (s)		40.9			31.8		112.7	21.3		39.0	18.8	7.9
Level of Service		D			C		F	C		D	B	A
Approach Delay (s)		40.9			31.8			24.4			20.4	
Approach LOS		D			C			C			C	

Intersection Summary				
HCM Average Control Delay	23.9	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.84			
Actuated Cycle Length (s)	76.5	Sum of lost time (s)	13.0	
Intersection Capacity Utilization	71.8%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	774	433	203	836	17	438	12	125	3	12	18
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	3167	1417	1583	1667	1417	1583	1438		1583	1515	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	3167	1417	1583	1667	1417	1583	1438		1583	1515	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	860	481	226	929	19	487	13	139	3	13	20
RTOR Reduction (vph)	0	0	190	0	0	1	0	99	0	0	19	0
Lane Group Flow (vph)	16	860	291	226	929	18	487	53	0	3	14	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		pm+ov	Prot		Perm	Prot			Prot		
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2			6						
Actuated Green, G (s)	2.9	37.5	62.6	19.0	53.6	53.6	25.1	29.8		1.2	5.9	
Effective Green, g (s)	2.9	37.5	62.6	19.0	53.6	53.6	25.1	29.8		1.2	5.9	
Actuated g/C Ratio	0.03	0.36	0.60	0.18	0.52	0.52	0.24	0.29		0.01	0.06	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	44	1147	912	291	863	734	384	414		18	86	
v/s Ratio Prot	0.01	0.27	0.08	c0.14	c0.56		c0.31	c0.04		0.00	0.01	
v/s Ratio Perm			0.13			0.01						
v/c Ratio	0.36	0.75	0.32	0.78	1.08	0.02	1.27	0.13		0.17	0.16	
Uniform Delay, d1	49.4	28.9	10.0	40.2	24.9	12.2	39.2	27.2		50.7	46.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.1	2.7	0.2	12.2	53.4	0.0	139.8	0.1		4.3	0.9	
Delay (s)	54.4	31.6	10.2	52.5	78.3	12.2	179.0	27.4		55.0	47.4	
Level of Service	D	C	B	D	E	B	F	C		E	D	
Approach Delay (s)		24.3			72.3			143.0			48.0	
Approach LOS		C			E			F			D	

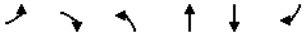
Intersection Summary				
HCM Average Control Delay	65.8	HCM Level of Service	E	
HCM Volume to Capacity ratio	1.03			
Actuated Cycle Length (s)	103.5	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	96.3%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	753	98	18	967	18	59	13	28	28	3	30
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1583	1667	1417	1583	1662			1555	1376		1477	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	1583	1667	1417	1583	1662			1555	1376		1477	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	58	837	109	20	1074	20	66	14	31	31	3	33
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	28	0	31	0
Lane Group Flow (vph)	58	837	90	20	1094	0	0	80	3	0	36	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	4.1	57.4	57.4	1.4	54.7			8.2	8.2		6.3	
Effective Green, g (s)	4.1	57.4	57.4	1.4	54.7			8.2	8.2		6.3	
Actuated g/C Ratio	0.05	0.64	0.64	0.02	0.61			0.09	0.09		0.07	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	73	1072	911	25	1018			143	126		104	
v/s Ratio Prot	c0.04	c0.50		0.01	c0.66			c0.05			c0.02	
v/s Ratio Perm			0.06						0.00			
v/c Ratio	0.79	0.78	0.10	0.80	1.07			0.56	0.02		0.35	
Uniform Delay, d1	42.2	11.4	6.1	43.8	17.3			38.8	36.9		39.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	43.3	3.8	0.0	95.2	50.4			4.7	0.1		2.0	
Delay (s)	85.4	15.2	6.1	139.0	67.7			43.5	37.0		41.6	
Level of Service	F	B	A	F	E			D	D		D	
Approach Delay (s)		18.3			69.0			41.7			41.6	
Approach LOS		B			E			D			D	

Intersection Summary				
HCM Average Control Delay	44.7	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.98			
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	20.0	
Intersection Capacity Utilization	75.4%	ICU Level of Service	D	
Analysis Period (min)	15			

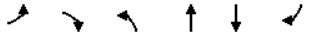
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	175	633	625	264	270	377
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1583	1417	2984	1619	1619	1376
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1583	1417	2984	1619	1619	1376
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	194	703	694	293	300	419
RTOR Reduction (vph)	0	137	0	0	0	299
Lane Group Flow (vph)	194	566	694	293	300	120
Heavy Vehicles (%)	2%	2%	5%	5%	5%	5%
Turn Type		pm+ov	Prot			Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	15.4	40.2	24.8	49.8	21.0	21.0
Effective Green, g (s)	15.4	40.2	24.8	49.8	21.0	21.0
Actuated g/C Ratio	0.21	0.55	0.34	0.68	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	333	856	1011	1101	464	395
v/s Ratio Prot	0.12	c0.22	0.23	0.18	c0.19	
v/s Ratio Perm		0.18				0.09
v/c Ratio	0.58	0.66	0.69	0.27	0.65	0.30
Uniform Delay, d1	26.0	11.7	20.9	4.6	22.9	20.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	1.9	2.0	0.1	3.1	0.4
Delay (s)	28.6	13.6	22.8	4.7	25.9	20.8
Level of Service	C	B	C	A	C	C
Approach Delay (s)	16.8			17.4	23.0	
Approach LOS	B			B	C	

Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	73.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	20	18	13	427	633	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	20	14	474	703	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				899		
pX, platoon unblocked	1.00					
vC, conflicting volume	1208	705	707			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1208	705	707			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	95	98			
cM capacity (veh/h)	196	431	878			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	42	489	707
Volume Left	22	14	0
Volume Right	20	0	3
cSH	264	878	1700
Volume to Capacity	0.16	0.02	0.42
Queue Length 95th (ft)	14	1	0
Control Delay (s)	21.2	0.5	0.0
Lane LOS	C	A	
Approach Delay (s)	21.2	0.5	0.0
Approach LOS	C		

Intersection Summary				
Average Delay		0.9		
Intersection Capacity Utilization		47.4%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	3	0	440	644	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	3	0	489	716	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				358		
pX, platoon unblocked	0.95					
vC, conflicting volume	1208	719	723			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1191	719	723			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	193	423	865			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	3	489	723
Volume Left	0	0	0
Volume Right	3	0	8
cSH	423	1700	1700
Volume to Capacity	0.01	0.29	0.43
Queue Length 95th (ft)	1	0	0
Control Delay (s)	13.6	0.0	0.0
Lane LOS	B		
Approach Delay (s)	13.6	0.0	0.0
Approach LOS	B		

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		48.4%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	175	5	36	8	4	55	44	659	41	23	810	70
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	194	6	40	9	4	61	49	732	46	26	900	78
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked	0.86	0.86	0.86	0.86	0.86		0.86					
vC, conflicting volume	1906	1866	939	1886	1882	755	978			778		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1972	1925	848	1948	1943	755	893			778		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	89	87	71	91	85	92			97		
cM capacity (veh/h)	29	51	307	30	49	404	643			826		

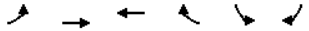
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	240	74	827	1003
Volume Left	194	9	49	26
Volume Right	40	61	46	78
cSH	34	139	643	826
Volume to Capacity	7.01	0.54	0.08	0.03
Queue Length 95th (ft)	Err	66	6	2
Control Delay (s)	Err	57.6	2.1	0.9
Lane LOS	F	F	A	A
Approach Delay (s)	Err	57.6	2.1	0.9
Approach LOS	F	F		

Intersection Summary				
Average Delay	1122.3			
Intersection Capacity Utilization	92.1%	ICU Level of Service	F	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	188	415	71	22	250	375	40	49	47	825	70	125
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1538	3009		1583	1667	1417		1630	1417	1538	1463	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1538	3009		1583	1667	1417		1630	1417	1538	1463	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	209	461	79	24	278	417	44	54	52	917	78	139
RTOR Reduction (vph)	0	18	0	0	0	310	0	0	47	0	66	0
Lane Group Flow (vph)	209	522	0	24	278	107	0	98	5	917	151	0
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			
Actuated Green, G (s)	11.0	29.3		1.1	19.4	19.4		7.0	7.0	24.0	24.0	
Effective Green, g (s)	11.0	29.3		1.1	19.4	19.4		7.0	7.0	24.0	24.0	
Actuated g/C Ratio	0.14	0.39		0.01	0.26	0.26		0.09	0.09	0.32	0.32	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.2		2.7	2.7	3.0	3.0	
Lane Grp Cap (vph)	223	1162		23	426	362		150	131	486	463	
v/s Ratio Prot	c0.14	0.17		0.02	c0.17			c0.06		c0.60	0.10	
v/s Ratio Perm						0.08			0.00			
v/c Ratio	0.94	0.45		1.04	0.65	0.29		0.65	0.04	1.89	0.33	
Uniform Delay, d1	32.1	17.3		37.4	25.2	22.7		33.3	31.4	26.0	19.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	42.2	0.3		201.7	3.6	0.5		9.2	0.1	406.8	0.4	
Delay (s)	74.3	17.6		239.1	28.9	23.2		42.5	31.5	432.8	20.2	
Level of Service	E	B		F	C	C		D	C	F	C	
Approach Delay (s)		33.4			32.6			38.7			353.8	
Approach LOS		C			C			D			F	

Intersection Summary				
HCM Average Control Delay	165.5	HCM Level of Service	F	
HCM Volume to Capacity ratio	1.19			
Actuated Cycle Length (s)	75.9	Sum of lost time (s)	14.5	
Intersection Capacity Utilization	94.5%	ICU Level of Service	F	
Analysis Period (min)	15			

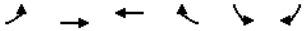
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	442	456	203	97	563	346
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2984	1619	1619	1376	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	2984	1619	1619	1376	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	491	507	226	108	626	384
RTOR Reduction (vph)	0	0	0	1	0	135
Lane Group Flow (vph)	491	507	226	107	626	249
Heavy Vehicles (%)	5%	5%	5%	5%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	14.0	33.2	16.2	51.8	35.6	49.6
Effective Green, g (s)	14.0	33.2	16.2	51.8	35.6	49.6
Actuated g/C Ratio	0.18	0.43	0.21	0.68	0.47	0.65
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	547	704	343	933	738	920
v/s Ratio Prot	c0.16	c0.31	0.14	0.05	c0.40	0.05
v/s Ratio Perm				0.02		0.13
v/c Ratio	0.90	0.72	0.66	0.11	0.85	0.27
Uniform Delay, d1	30.5	17.8	27.6	4.3	18.0	5.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.9	3.1	3.5	0.1	9.2	0.1
Delay (s)	47.4	20.9	31.0	4.4	27.2	5.8
Level of Service	D	C	C	A	C	A
Approach Delay (s)		33.9	22.4		19.0	
Approach LOS		C	C		B	

Intersection Summary				
HCM Average Control Delay	25.9	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.80			
Actuated Cycle Length (s)	76.4	Sum of lost time (s)	6.5	
Intersection Capacity Utilization	71.0%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	129	472	541	71	15	153
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	143	524	601	79	17	170
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	680				1452	641
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	680				1452	641
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	84				86	64
cM capacity (veh/h)	898				121	475

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	668	680	187
Volume Left	143	0	17
Volume Right	0	79	170
cSH	898	1700	377
Volume to Capacity	0.16	0.40	0.50
Queue Length 95th (ft)	14	0	66
Control Delay (s)	3.9	0.0	23.6
Lane LOS	A		C
Approach Delay (s)	3.9	0.0	23.6
Approach LOS			C

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	78	679	68	28	445	4	35	1	81	1	3	51
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	87	754	76	31	494	4	39	1	90	1	3	57
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)		1091										
pX, platoon unblocked				0.93			0.93	0.93	0.93	0.93	0.93	
vC, conflicting volume	499			830			1581	1527	792	1577	1562	497
vC1, stage 1 conf vol							966	966		559	559	
vC2, stage 2 conf vol							615	561		1018	1003	
vCu, unblocked vol	499			781			1586	1529	741	1583	1567	497
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			96			82	100	77	99	99	90
cM capacity (veh/h)	1065			780			215	250	388	156	231	573

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	87	830	31	499	130	61
Volume Left	87	0	31	0	39	1
Volume Right	0	76	0	4	90	57
cSH	1065	1700	780	1700	311	508
Volume to Capacity	0.08	0.49	0.04	0.29	0.42	0.12
Queue Length 95th (ft)	7	0	3	0	49	10
Control Delay (s)	8.7	0.0	9.8	0.0	24.6	13.1
Lane LOS	A		A		C	B
Approach Delay (s)	0.8		0.6		24.6	13.1
Approach LOS					C	B

Intersection Summary					
Average Delay	3.1				
Intersection Capacity Utilization	72.3%	ICU Level of Service		C	
Analysis Period (min)	15				

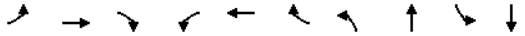
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	7	58	4	108	0	504	135	118	665	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	8	64	4	120	0	560	150	131	739	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	1683	1711	739	1644	1636	635	739			710		
vC1, stage 1 conf vol	1001	1001		635	635							
vC2, stage 2 conf vol	682	710		1009	1001							
vCu, unblocked vol	1683	1711	739	1644	1636	635	739			710		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	98	70	98	75	100			85		
cM capacity (veh/h)	154	210	412	217	242	478	867			889		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	8	189	0	710	131	739
Volume Left	0	64	0	0	131	0
Volume Right	8	120	0	150	0	0
cSH	412	333	1700	1700	889	1700
Volume to Capacity	0.02	0.57	0.00	0.42	0.15	0.43
Queue Length 95th (ft)	1	83	0	0	13	0
Control Delay (s)	13.9	29.0	0.0	0.0	9.7	0.0
Lane LOS	B	D			A	
Approach Delay (s)	13.9	29.0	0.0		1.5	
Approach LOS	B	D				

Intersection Summary					
Average Delay	3.9				
Intersection Capacity Utilization	74.0%	ICU Level of Service		D	
Analysis Period (min)	15				

7: Missouri Flat Rd. & Diamond Springs Pkwy

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	13	731	409	259	1068	21	534	167	2	27
v/c Ratio	0.12	0.78	0.40	0.69	1.15	0.03	1.27	0.30	0.02	0.22
Control Delay	47.5	36.2	2.2	45.9	104.2	11.5	169.1	7.7	46.5	31.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	36.2	2.2	45.9	104.2	11.5	169.1	7.7	46.5	31.5
Queue Length 50th (ft)	8	215	0	148	~771	5	~435	6	1	7
Queue Length 95th (ft)	28	293	38	#294	#1208	21	#706	60	9	35
Internal Link Dist (ft)		405			299			499		239
Turn Bay Length (ft)	100		250	150		50	150		50	
Base Capacity (vph)	299	1231	1022	387	926	788	422	710	317	567
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.59	0.40	0.67	1.15	0.03	1.27	0.24	0.01	0.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

8: Diamond Springs Pkwy & Throwita Way

AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	49	746	92	22	1292	60	23	58
v/c Ratio	0.94	0.71	0.10	0.42	1.28	no cap	0.06	2.00
Control Delay	168.0	20.4	3.6	81.8	159.3		13.0	568.8
Queue Delay	0.0	0.0	0.0	0.0	2.8		0.0	0.0
Total Delay	168.0	20.4	3.6	81.8	162.2	Error	13.0	568.8
Queue Length 50th (ft)	39	394	6	17	~1299	~98	0	~48
Queue Length 95th (ft)	#123	559	28	#53	#1566	#190	22	#138
Internal Link Dist (ft)		2375			375	290		465
Turn Bay Length (ft)	150		200	100			100	
Base Capacity (vph)	52	1055	923	52	1008	1	378	29
Starvation Cap Reductn	0	0	0	0	5	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.71	0.10	0.42	1.29	60.00	0.06	2.00

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	172	623	829	220	219	486
v/c Ratio	0.55	0.59	0.72	0.20	0.57	0.70
Control Delay	35.9	4.8	24.1	4.9	31.9	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	4.8	24.1	4.9	31.9	8.7
Queue Length 50th (ft)	67	28	147	28	84	0
Queue Length 95th (ft)	154	120	293	68	178	84
Internal Link Dist (ft)	302			610	279	
Turn Bay Length (ft)	150		200			
Base Capacity (vph)	645	1190	1532	1487	782	916
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.52	0.54	0.15	0.28	0.53

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	86	221	29	333	500	107	56	642	152
v/c Ratio	0.84	0.20	0.28	0.69	0.65	0.58	0.26	1.26	0.28
Control Delay	92.3	14.0	37.0	28.1	6.5	43.6	12.8	156.7	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.3	14.0	37.0	28.1	6.5	43.6	12.8	156.7	9.6
Queue Length 50th (ft)	34	24	11	114	0	40	0	~327	14
Queue Length 95th (ft)	#124	55	36	192	59	#116	32	#586	59
Internal Link Dist (ft)		152		260		844			629
Turn Bay Length (ft)	185		105		180		75	335	
Base Capacity (vph)	102	1635	158	954	1025	189	214	510	551
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.14	0.18	0.35	0.49	0.57	0.26	1.26	0.28

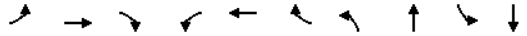
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues 2020 plus Proposed Project

7: Missouri Flat Rd. & Diamond Springs Pkwy PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	16	860	481	226	929	19	487	152	3	33
v/c Ratio	0.15	0.76	0.44	0.73	1.02	0.02	1.19	0.28	0.03	0.27
Control Delay	48.4	34.1	2.2	53.4	59.3	13.7	143.9	7.7	47.0	31.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	34.1	2.2	53.4	59.3	13.7	143.9	7.7	47.0	31.5
Queue Length 50th (ft)	10	264	0	140	544	4	~401	6	2	8
Queue Length 95th (ft)	33	356	38	#257	#1024	20	#620	56	12	38
Internal Link Dist (ft)		405			299			499		239
Turn Bay Length (ft)	100		250	150		50	150		50	
Base Capacity (vph)	293	1141	1095	326	914	778	408	674	310	543
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.75	0.44	0.69	1.02	0.02	1.19	0.23	0.01	0.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues 2020 plus Proposed Project

8: Diamond Springs Pkwy & Throwita Way PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	58	837	109	20	1094	80	31	67
v/c Ratio	0.76	0.73	0.11	0.26	1.07	0.44	0.17	0.40
Control Delay	97.7	19.4	5.7	51.8	71.4	45.5	15.3	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.7	19.4	5.7	51.8	71.4	45.5	15.3	30.8
Queue Length 50th (ft)	33	273	9	11	~724	42	0	18
Queue Length 95th (ft)	#114	#734	42	37	#1091	90	26	59
Internal Link Dist (ft)		2375			375	290		465
Turn Bay Length (ft)	150		200	100			100	
Base Capacity (vph)	76	1149	993	76	1021	505	468	589
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.73	0.11	0.26	1.07	0.16	0.07	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	194	703	694	293	300	419
v/c Ratio	0.59	0.72	0.69	0.27	0.66	0.61
Control Delay	37.6	11.0	27.1	5.8	33.3	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.6	11.0	27.1	5.8	33.3	7.0
Queue Length 50th (ft)	79	99	135	43	118	0
Queue Length 95th (ft)	183	309	267	101	255	74
Internal Link Dist (ft)	302			610	278	
Turn Bay Length (ft)	150		200			
Base Capacity (vph)	628	1152	1490	1436	761	869
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.61	0.47	0.20	0.39	0.48

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	209	540	24	278	417	98	52	917	217
v/c Ratio	0.91	0.45	0.38	0.71	0.64	0.64	0.29	1.84	0.40
Control Delay	76.3	17.2	54.8	36.0	7.5	54.7	15.2	408.2	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.3	17.2	54.8	36.0	7.5	54.7	15.2	408.2	14.3
Queue Length 50th (ft)	95	82	11	117	0	44	0	~648	40
Queue Length 95th (ft)	#243	138	#44	193	65	#124	33	#965	108
Internal Link Dist (ft)		152		260		844			629
Turn Bay Length (ft)	185		105		180		75	335	
Base Capacity (vph)	229	1709	64	759	872	155	181	498	540
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.32	0.38	0.37	0.48	0.63	0.29	1.84	0.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Appendix F:

Analysis Worksheets for Cumulative (2030) Conditions

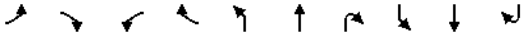
HCM Signalized Intersection Capacity Analysis 2030
1: Plaza Dr. & Missouri Flat Rd. AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	40	532	358	88	226	674	507	478	76	363	47
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	0.95	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frt		0.92	0.85	1.00	0.90		1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1428	1346	1504	1423		3072	3167	1417	1583	3112	
Flt Permitted		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1428	1346	1504	1423		3072	3167	1417	1583	3112	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	131	44	591	398	98	251	749	563	531	84	403	52
RTOR Reduction (vph)	0	36	43	0	53	0	0	0	242	0	8	0
Lane Group Flow (vph)	0	358	329	358	336	0	749	563	289	84	447	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Split		pm+ov	Split			Prot		pm+ov	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		30.0	60.0	28.0	28.0		30.0	40.0	68.0	11.0	21.0	
Effective Green, g (s)		30.0	60.0	28.0	28.0		30.0	40.0	68.0	11.0	21.0	
Actuated g/C Ratio		0.24	0.48	0.22	0.22		0.24	0.32	0.54	0.09	0.17	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		343	689	337	319		737	1013	771	139	523	
v/s Ratio Prot		c0.25	0.11	c0.24	0.24		c0.24	0.18	0.08	0.05	c0.14	
v/s Ratio Perm			0.13						0.12			
v/c Ratio		1.04	0.48	1.06	1.05		1.02	0.56	0.37	0.60	0.85	
Uniform Delay, d1		47.5	21.9	48.5	48.5		47.5	35.2	16.3	54.9	50.5	
Progression Factor		1.00	1.00	1.00	1.00		0.56	0.47	2.08	1.00	1.00	
Incremental Delay, d2		60.7	0.5	66.5	65.3		14.3	0.2	0.0	7.2	16.2	
Delay (s)		108.2	22.4	115.0	113.8		40.7	16.8	34.1	62.1	66.7	
Level of Service		F	C	F	F		D	B	C	E	E	
Approach Delay (s)		66.5			114.4			31.5			66.0	
Approach LOS		E			F			C			E	

Intersection Summary				
HCM Average Control Delay	59.0	HCM Level of Service	E	
HCM Volume to Capacity ratio	1.00			
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	90.9%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis 2030
2: EB US-50 Off Ramp & Missouri Flat Rd. AM Peak



Movement	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2
Lane Configurations										
Volume (vph)	187	581	1135	612	505	860	61	293	632	328
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0	7.0	4.0
Lane Util. Factor	0.97	0.88	0.97	0.88	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3042	2469	3042	2469	3042	3136	1403	3042	3136	1403
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3042	2469	3042	2469	3042	3136	1403	3042	3136	1403
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	208	646	1261	680	561	956	68	326	702	364
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	208	646	1261	680	561	956	68	326	702	364
Turn Type	Prot	custom	Prot	custom	Prot		Free	Prot		Free
Protected Phases	3	1	4	5	1	6		5	2	
Permitted Phases							Free			Free
Actuated Green, G (s)	42.0	32.0	42.0	28.0	32.0	34.0	125.0	28.0	30.0	125.0
Effective Green, g (s)	42.0	32.0	42.0	28.0	32.0	34.0	125.0	28.0	30.0	125.0
Actuated g/C Ratio	0.34	0.26	0.34	0.22	0.26	0.27	1.00	0.22	0.24	1.00
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1022	632	1022	553	779	853	1403	681	753	1403
v/s Ratio Prot	0.07	0.26	c0.41	c0.28	0.18	c0.30		0.11	0.22	
v/s Ratio Perm							0.05			0.26
v/c Ratio	0.20	1.02	1.23	1.23	0.72	1.12	0.05	0.48	0.93	0.26
Uniform Delay, d1	29.6	46.5	41.5	48.5	42.4	45.5	0.0	42.2	46.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	0.83	1.00	1.03	0.84	1.00
Incremental Delay, d2	0.1	41.5	113.8	118.5	2.9	68.1	0.1	0.3	12.1	0.2
Delay (s)	29.7	88.0	155.3	167.0	45.2	105.9	0.1	43.7	51.1	0.2
Level of Service	C	F	F	F	D	F	A	D	D	A
Approach Delay (s)						79.9			36.1	
Approach LOS						E			D	

Intersection Summary				
HCM Average Control Delay	95.2	HCM Level of Service	F	
HCM Volume to Capacity ratio	1.20			
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	21.0	
Intersection Capacity Utilization	Err%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	387	0	145	0	0	0	74	1039	1167	0	2133	215
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0		4.0				4.0	4.0	4.0		4.0	
Lane Util. Factor	0.97		1.00				1.00	0.95	1.00		0.91	
Frt	1.00		0.85				1.00	1.00	0.85		0.99	
Flt Protected	0.95		1.00				0.95	1.00	1.00		1.00	
Satd. Flow (prot)	3072		1417				1583	3167	1417		4487	
Flt Permitted	0.95		1.00				0.95	1.00	1.00		1.00	
Satd. Flow (perm)	3072		1417				1583	3167	1417		4487	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	430	0	161	0	0	0	82	1154	1297	0	2370	239
RTOR Reduction (vph)	0	0	132	0	0	0	0	0	0	0	7	0
Lane Group Flow (vph)	430	0	29	0	0	0	82	1154	1297	0	2602	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		custom				Prot		Free			
Protected Phases	4						5	2			6	
Permitted Phases			4						Free			
Actuated Green, G (s)	22.9		22.9				10.4	94.1	125.0		79.7	
Effective Green, g (s)	22.9		22.9				10.4	94.1	125.0		79.7	
Actuated g/C Ratio	0.18		0.18				0.08	0.75	1.00		0.64	
Clearance Time (s)	4.0		4.0				4.0	4.0			4.0	
Vehicle Extension (s)	3.0		3.0				3.0	3.0			3.0	
Lane Grp Cap (vph)	563		260				132	2384	1417		2861	
v/s Ratio Prot	0.14						0.05	0.36			0.58	
v/s Ratio Perm			0.02						c0.92			
v/c Ratio	0.76		0.11				0.62	0.48	0.92		0.91	
Uniform Delay, d1	48.5		42.6				55.4	6.0	0.0		19.5	
Progression Factor	1.00		1.00				1.00	1.00	1.00		0.62	
Incremental Delay, d2	6.1		0.2				8.8	0.7	10.7		0.6	
Delay (s)	54.6		42.8				64.2	6.7	10.7		12.7	
Level of Service	D		D				E	A	B		B	
Approach Delay (s)		51.4			0.0			10.6			12.7	
Approach LOS		D			A			B			B	

Intersection Summary				
HCM Average Control Delay	15.8	HCM Level of Service		B
HCM Volume to Capacity ratio	0.92			
Actuated Cycle Length (s)	125.0	Sum of lost time (s)		0.0
Intersection Capacity Utilization	78.3%	ICU Level of Service		D
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	286	33	30	73	28	87	125	1907	91	122	1882	274
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	318	37	33	81	31	97	139	2119	101	136	2091	304
RTOR Reduction (vph)	0	0	29	0	0	90	0	0	14	0	0	42
Lane Group Flow (vph)	318	37	4	81	31	7	139	2119	87	136	2091	262
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	12.7	12.4	12.4	6.7	6.4	6.4	11.2	49.0	49.0	11.0	48.8	48.8
Effective Green, g (s)	12.7	12.4	12.4	6.7	6.4	6.4	11.2	49.0	49.0	11.0	48.8	48.8
Actuated g/C Ratio	0.13	0.13	0.13	0.07	0.07	0.07	0.12	0.52	0.52	0.12	0.52	0.52
Clearance Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	3.0	3.0	0.2	3.0	3.0
Lane Grp Cap (vph)	415	220	187	113	113	96	188	1649	738	185	1642	735
v/s Ratio Prot	c0.10	0.02		0.05	c0.02		c0.09	c0.67		0.09	0.66	
v/s Ratio Perm			0.00			0.00			0.06			0.18
v/c Ratio	0.77	0.17	0.02	0.72	0.27	0.07	0.74	1.29	0.12	0.74	1.27	0.36
Uniform Delay, d1	39.3	36.3	35.6	42.8	41.6	41.1	40.0	22.5	11.5	40.1	22.6	13.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.4	0.1	0.0	16.4	0.5	0.1	12.3	133.0	0.1	12.2	128.0	0.3
Delay (s)	46.7	36.4	35.6	59.2	42.1	41.2	52.3	155.6	11.6	52.4	150.6	13.7
Level of Service	D	D	D	E	D	D	D	F	B	D	F	B
Approach Delay (s)		44.8			48.3			143.3			128.9	
Approach LOS		D			D			F			F	

Intersection Summary				
HCM Average Control Delay	126.1	HCM Level of Service		F
HCM Volume to Capacity ratio	0.98			
Actuated Cycle Length (s)	94.1	Sum of lost time (s)		10.0
Intersection Capacity Utilization	93.1%	ICU Level of Service		F
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis 2030
6: Golden Center Dr. & Missouri Flat Rd. AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	2	1	57	4	60	61	2218	61	143	1610	33
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frt		1.00			0.93		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1588			1518		1583	3154		1583	3167	1417
Flt Permitted		0.67			0.84		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1109			1303		1583	3154		1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	26	2	1	63	4	67	68	2464	68	159	1789	37
RTOR Reduction (vph)	0	1	0	0	32	0	0	1	0	0	0	6
Lane Group Flow (vph)	0	28	0	0	102	0	68	2531	0	159	1789	31
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot			Prot		Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4								2
Actuated Green, G (s)		13.5			13.5		18.3	77.1		10.1	68.9	68.9
Effective Green, g (s)		13.5			13.5		18.3	77.1		10.1	68.9	68.9
Actuated g/C Ratio		0.12			0.12		0.16	0.68		0.09	0.61	0.61
Clearance Time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		2.5			2.5		2.5	3.0		2.5	3.0	3.0
Lane Grp Cap (vph)		132			155		255	2139		141	1919	859
v/s Ratio Prot							0.04	c0.80		c0.10	0.56	
v/s Ratio Perm		0.03			c0.08							0.02
v/c Ratio		0.21			0.66		0.27	1.18		1.13	0.93	0.04
Uniform Delay, d1		45.3			47.9		41.8	18.3		51.8	20.3	9.0
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.6			8.7		0.4	87.5		114.2	8.9	0.0
Delay (s)		45.9			56.6		42.2	105.8		166.0	29.2	9.0
Level of Service		D			E		D	F		F	C	A
Approach Delay (s)		45.9			56.6			104.2			39.7	
Approach LOS		D			E			F			D	

Intersection Summary				
HCM Average Control Delay	75.5	HCM Level of Service	E	
HCM Volume to Capacity ratio	1.11			
Actuated Cycle Length (s)	113.7	Sum of lost time (s)	13.0	
Intersection Capacity Utilization	97.8%	ICU Level of Service	F	
Analysis Period (min)	15			

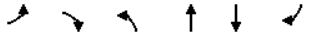
c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis 2030
10: Truck St. & Diamond Rd. (SR-49) AM Peak

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	23	19	6	405	412	18
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	26	21	7	450	458	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				900		
pX, platoon unblocked						
vC, conflicting volume	931	468	478			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	931	468	478			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	96	99			
cM capacity (veh/h)	293	593	1079			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	47	457	478
Volume Left	26	7	0
Volume Right	21	0	20
cSH	380	1079	1700
Volume to Capacity	0.12	0.01	0.28
Queue Length 95th (ft)	10	0	0
Control Delay (s)	15.8	0.2	0.0
Lane LOS	C	A	
Approach Delay (s)	15.8	0.2	0.0
Approach LOS	C		

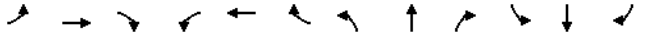
Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	15	24	39	396	407	24
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	27	43	440	452	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				446		
pX, platoon unblocked						
vC, conflicting volume	992	466	479			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	992	466	479			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	96	96			
cM capacity (veh/h)	260	595	1078			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	43	43	440	479
Volume Left	17	43	0	0
Volume Right	27	0	0	27
cSH	398	1078	1700	1700
Volume to Capacity	0.11	0.04	0.26	0.28
Queue Length 95th (ft)	9	3	0	0
Control Delay (s)	15.1	8.5	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	15.1	0.8		0.0
Approach LOS	C			

Intersection Summary				
Average Delay			1.0	
Intersection Capacity Utilization			42.2%	ICU Level of Service A
Analysis Period (min)			15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	37	4	15	12	6	12	54	386	31	16	377	38
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	41	4	17	13	7	13	60	429	34	18	419	42
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked												
vC, conflicting volume	1058	1059	440	1061	1063	446	461			463		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1058	1059	440	1061	1063	446	461			463		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	77	98	97	93	97	98	95			98		
cM capacity (veh/h)	182	208	615	182	207	610	1095			1093		

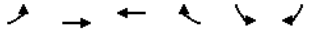
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	62	33	523	479
Volume Left	41	13	60	18
Volume Right	17	13	34	42
cSH	227	262	1095	1093
Volume to Capacity	0.27	0.13	0.05	0.02
Queue Length 95th (ft)	27	11	4	1
Control Delay (s)	26.8	20.8	1.5	0.5
Lane LOS	D	C	A	A
Approach Delay (s)	26.8	20.8	1.5	0.5
Approach LOS	D	C		

Intersection Summary				
Average Delay			3.1	
Intersection Capacity Utilization			62.9%	ICU Level of Service B
Analysis Period (min)			15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	420	57	24	612	330	97	27	54	169	18	124
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1568	3080		1583	1667	1417		1604	1417	1568	1434	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1568	3080		1583	1667	1417		1604	1417	1568	1434	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	82	467	63	27	680	367	108	30	60	188	20	138
RTOR Reduction (vph)	0	10	0	0	0	174	0	0	53	0	113	0
Lane Group Flow (vph)	82	520	0	27	680	193	0	138	7	188	45	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			
Actuated Green, G (s)	5.1	41.2		2.0	38.1	38.1		9.1	9.1	14.5	14.5	
Effective Green, g (s)	5.1	41.2		2.0	38.1	38.1		9.1	9.1	14.5	14.5	
Actuated g/C Ratio	0.06	0.51		0.02	0.47	0.47		0.11	0.11	0.18	0.18	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.2		2.7	2.7	3.0	3.0	
Lane Grp Cap (vph)	98	1561		39	781	664		180	159	280	256	
v/s Ratio Prot	c0.05	0.17		0.02	c0.41			c0.09		c0.12	0.03	
v/s Ratio Perm						0.14			0.00			
v/c Ratio	0.84	0.33		0.69	0.87	0.29		0.77	0.04	0.67	0.17	
Uniform Delay, d1	37.7	11.9		39.3	19.4	13.3		35.1	32.2	31.2	28.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	41.7	0.1		35.0	10.5	0.3		17.1	0.1	6.2	0.3	
Delay (s)	79.4	12.0		74.3	29.9	13.5		52.2	32.3	37.4	28.6	
Level of Service	E	B		E	C	B		D	C	D	C	
Approach Delay (s)		21.1			25.4			46.2			33.4	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM Average Control Delay	27.3	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.81			
Actuated Cycle Length (s)	81.3	Sum of lost time (s)	14.5	
Intersection Capacity Utilization	72.4%	ICU Level of Service	C	
Analysis Period (min)	15			

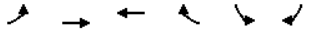
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	421	538	641	678	346	132
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3042	1650	1650	1403	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3042	1650	1650	1403	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	468	598	712	753	384	147
RTOR Reduction (vph)	0	0	0	5	0	83
Lane Group Flow (vph)	468	598	712	748	384	64
Heavy Vehicles (%)	3%	3%	3%	3%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	14.1	55.8	38.7	61.7	23.0	37.1
Effective Green, g (s)	14.1	55.8	38.7	61.7	23.0	37.1
Actuated g/C Ratio	0.16	0.65	0.45	0.71	0.27	0.43
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	496	1066	739	1002	421	608
v/s Ratio Prot	c0.15	0.36	c0.43	0.20	c0.24	0.02
v/s Ratio Perm				0.33		0.03
v/c Ratio	0.94	0.56	0.96	0.75	0.91	0.10
Uniform Delay, d1	35.8	8.5	23.2	7.6	30.7	14.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.5	0.4	24.1	3.2	24.1	0.0
Delay (s)	62.2	8.9	47.3	10.7	54.8	14.8
Level of Service	E	A	D	B	D	B
Approach Delay (s)		32.3	28.5		43.7	
Approach LOS		C	C		D	

Intersection Summary				
HCM Average Control Delay	32.5	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.94			
Actuated Cycle Length (s)	86.4	Sum of lost time (s)	10.6	
Intersection Capacity Utilization	82.6%	ICU Level of Service	E	
Analysis Period (min)	15			

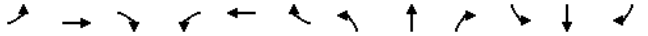
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	85	603	1194	125	20	130
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	94	670	1327	139	22	144
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1466				2255	1396
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1466				2255	1396
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	79				38	16
cM capacity (veh/h)	458				36	173

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	764	1466	167
Volume Left	94	0	22
Volume Right	0	139	144
cSH	458	1700	115
Volume to Capacity	0.21	0.86	1.45
Queue Length 95th (ft)	19	0	295
Control Delay (s)	6.3	0.0	313.6
Lane LOS	A		F
Approach Delay (s)	6.3	0.0	313.6
Approach LOS			F

Intersection Summary				
Average Delay	23.8			
Intersection Capacity Utilization	132.4%	ICU Level of Service	H	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	195	20	31	569	6	10	0	21	1	4	86
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	27	217	22	34	632	7	11	0	23	1	4	96
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)		1091										
pX, platoon unblocked												
vC, conflicting volume	639			239			1080	989	228	998	997	636
vC1, stage 1 conf vol							281	281		704	704	
vC2, stage 2 conf vol							799	708		293	292	
vCu, unblocked vol	639			239			1080	989	228	998	997	636
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			97			96	100	97	100	99	80
cM capacity (veh/h)	945			1328			255	374	812	379	390	478

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	27	239	34	639	34	101
Volume Left	27	0	34	0	11	1
Volume Right	0	22	0	7	23	96
cSH	945	1700	1328	1700	477	472
Volume to Capacity	0.03	0.14	0.03	0.38	0.07	0.21
Queue Length 95th (ft)	2	0	2	0	6	20
Control Delay (s)	8.9	0.0	7.8	0.0	13.1	14.7
Lane LOS	A		A		B	B
Approach Delay (s)	0.9		0.4		13.1	14.7
Approach LOS					B	B

Intersection Summary				
Average Delay	2.3			
Intersection Capacity Utilization	49.3%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis 2030
17: China Garden Rd. & Missouri Flat Rd. AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	1	61	4	143	0	1213	155	153	712	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	1	68	4	159	0	1348	172	170	791	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	2640	2651	791	2566	2565	1434	791			1520		
vC1, stage 1 conf vol	1131	1131		1434	1434							
vC2, stage 2 conf vol	1509	1520		1132	1131							
vCu, unblocked vol	2640	2651	791	2566	2565	1434	791			1520		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	37	96	3	100			61		
cM capacity (veh/h)	0	14	388	107	125	164	829			439		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	1	231	0	1520	170	791
Volume Left	0	68	0	0	170	0
Volume Right	1	159	0	172	0	0
cSH	388	141	1700	1700	439	1700
Volume to Capacity	0.00	1.64	0.00	0.89	0.39	0.47
Queue Length 95th (ft)	0	413	0	0	45	0
Control Delay (s)	14.3	372.7	0.0	0.0	18.3	0.0
Lane LOS	B	F			C	
Approach Delay (s)	14.3	372.7	0.0		3.2	
Approach LOS	B	F				

Intersection Summary				
Average Delay	32.9			
Intersection Capacity Utilization	121.8%	ICU Level of Service	H	
Analysis Period (min)	15			

HCM Signalized Intersection Capacity Analysis 2030
1: Plaza Dr. & Missouri Flat Rd. PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	136	46	616	326	80	205	676	473	480	108	487	67
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	0.95	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frt		0.92	0.85	1.00	0.90		1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1428	1346	1504	1423		3072	3167	1417	1583	3110	
Flt Permitted		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1428	1346	1504	1423		3072	3167	1417	1583	3110	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	151	51	684	362	89	228	751	526	533	120	541	74
RTOR Reduction (vph)	0	35	34	0	50	0	0	0	315	0	8	0
Lane Group Flow (vph)	0	420	397	326	303	0	751	526	218	120	607	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Split		pm+ov	Split			Prot		pm+ov	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		34.0	63.0	26.0	26.0		29.0	27.2	53.2	26.8	25.0	
Effective Green, g (s)		34.0	63.0	26.0	26.0		29.0	27.2	53.2	26.8	25.0	
Actuated g/C Ratio		0.26	0.48	0.20	0.20		0.22	0.21	0.41	0.21	0.19	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		373	652	301	285		685	663	623	326	598	
v/s Ratio Prot		c0.29	0.14	c0.22	0.21		c0.24	0.17	0.07	0.08	c0.20	
v/s Ratio Perm			0.16						0.08			
v/c Ratio		1.13	0.61	1.08	1.06		1.10	0.79	0.35	0.37	1.01	
Uniform Delay, d1		48.0	24.5	52.0	52.0		50.5	48.7	26.5	44.3	52.5	
Progression Factor		1.00	1.00	1.00	1.00		0.73	0.70	0.87	1.00	1.00	
Incremental Delay, d2		85.6	1.6	75.8	70.6		54.7	4.8	0.2	0.7	40.6	
Delay (s)		133.6	26.1	127.8	122.6		91.5	39.0	23.1	45.0	93.1	
Level of Service		F	C	F	F		F	D	C	D	F	
Approach Delay (s)		81.3			125.1			56.1			85.2	
Approach LOS		F			F			E			F	

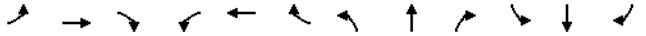
Intersection Summary				
HCM Average Control Delay	78.2	HCM Level of Service	E	
HCM Volume to Capacity ratio	1.08			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	97.0%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2
Lane Configurations										
Volume (vph)	295	936	1064	558	579	775	70	353	682	394
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0	7.0	4.0
Lane Util. Factor	0.97	0.88	0.97	0.88	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3042	2469	3042	2469	3042	3136	1403	3042	3136	1403
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3042	2469	3042	2469	3042	3136	1403	3042	3136	1403
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	328	1040	1182	620	643	861	78	392	758	438
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	328	1040	1182	620	643	861	78	392	758	438
Turn Type	Prot	custom	Prot	custom	Prot		Free	Prot		Free
Protected Phases	3	1	4	5	1	6		5	2	
Permitted Phases							Free			Free
Actuated Green, G (s)	39.0	42.0	39.0	32.0	42.0	38.0	130.0	32.0	28.0	130.0
Effective Green, g (s)	39.0	42.0	39.0	32.0	42.0	38.0	130.0	32.0	28.0	130.0
Actuated g/C Ratio	0.30	0.32	0.30	0.25	0.32	0.29	1.00	0.25	0.22	1.00
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	913	798	913	608	983	917	1403	749	675	1403
v/s Ratio Prot	0.11	c0.42	c0.39	c0.25	0.21	0.27		0.13	0.24	
v/s Ratio Perm							0.06			0.31
v/c Ratio	0.36	1.30	1.29	1.02	0.65	0.94	0.06	0.52	1.12	0.31
Uniform Delay, d1	35.7	44.0	45.5	49.0	37.8	44.9	0.0	42.4	51.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	0.78	0.82	1.00	0.91	0.91	1.00
Incremental Delay, d2	0.2	145.6	140.7	41.6	1.4	16.4	0.1	0.2	62.7	0.2
Delay (s)	35.9	189.6	186.2	90.6	31.0	53.3	0.1	38.9	109.3	0.2
Level of Service	D	F	F	F	C	D	A	D	F	A
Approach Delay (s)						41.6			61.9	
Approach LOS						D			E	

Intersection Summary				
HCM Average Control Delay	102.4	HCM Level of Service	F	
HCM Volume to Capacity ratio	1.27			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	21.0	
Intersection Capacity Utilization	Err%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	424	0	161	0	0	0	85	1001	1334	0	2408	274
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0		4.0				4.0	4.0	4.0		4.0	
Lane Util. Factor	0.97		1.00				1.00	0.95	1.00		0.91	
Frt	1.00		0.85				1.00	1.00	0.85		0.98	
Flt Protected	0.95		1.00				0.95	1.00	1.00		1.00	
Satd. Flow (prot)	3072		1417				1583	3167	1417		4480	
Flt Permitted	0.95		1.00				0.95	1.00	1.00		1.00	
Satd. Flow (perm)	3072		1417				1583	3167	1417		4480	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	471	0	179	0	0	0	94	1112	1482	0	2676	304
RTOR Reduction (vph)	0	0	144	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	471	0	35	0	0	0	94	1112	1482	0	2971	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		custom				Prot		Free			
Protected Phases	4						5	2			6	
Permitted Phases			4						Free			
Actuated Green, G (s)	25.4		25.4				12.6	96.6	130.0		80.0	
Effective Green, g (s)	25.4		25.4				12.6	96.6	130.0		80.0	
Actuated g/C Ratio	0.20		0.20				0.10	0.74	1.00		0.62	
Clearance Time (s)	4.0		4.0				4.0	4.0			4.0	
Vehicle Extension (s)	3.0		3.0				3.0	3.0			3.0	
Lane Grp Cap (vph)	600		277				153	2353	1417		2757	
v/s Ratio Prot	0.15						0.06	0.35			0.66	
v/s Ratio Perm			0.02						c1.05			
v/c Ratio	0.79		0.13				0.61	0.47	1.05		1.08	
Uniform Delay, d1	49.7		43.1				56.4	6.6	65.0		25.0	
Progression Factor	1.00		1.00				1.00	1.00	1.00		0.79	
Incremental Delay, d2	6.7		0.2				7.1	0.7	36.9		35.8	
Delay (s)	56.4		43.4				63.5	7.3	101.9		55.5	
Level of Service	E		D				E	A	F		E	
Approach Delay (s)		52.8			0.0			61.4			55.5	
Approach LOS		D			A			E			E	

Intersection Summary				
HCM Average Control Delay	57.7	HCM Level of Service	E	
HCM Volume to Capacity ratio	1.05			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	0.0	
Intersection Capacity Utilization	87.6%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis 2030
5: Forni Rd. & Missouri Flat Rd. PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	657	76	71	173	67	206	122	1556	89	196	1932	441
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	730	84	79	192	74	229	136	1729	99	218	2147	490
RTOR Reduction (vph)	0	0	70	0	0	211	0	0	19	0	0	69
Lane Group Flow (vph)	730	84	9	192	74	18	136	1729	80	218	2147	421
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	20.0	12.1	12.1	15.7	7.8	7.8	11.6	45.5	45.5	17.0	50.9	50.9
Effective Green, g (s)	20.0	12.1	12.1	15.7	7.8	7.8	11.6	45.5	45.5	17.0	50.9	50.9
Actuated g/C Ratio	0.19	0.11	0.11	0.15	0.07	0.07	0.11	0.43	0.43	0.16	0.48	0.48
Clearance Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	3.0	3.0	0.2	3.0	3.0
Lane Grp Cap (vph)	583	192	163	236	123	105	174	1368	612	256	1531	685
v/s Ratio Prot	c0.24	0.05		0.12	c0.04		0.09	0.55		c0.14	c0.68	
v/s Ratio Perm			0.01			0.01			0.06			0.30
v/c Ratio	1.25	0.44	0.06	0.81	0.60	0.17	0.78	1.26	0.13	0.85	1.40	0.62
Uniform Delay, d1	42.6	43.4	41.5	43.4	47.2	45.7	45.6	29.9	18.0	42.9	27.2	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	127.1	0.6	0.1	18.0	5.6	0.3	18.7	124.7	0.1	22.1	185.1	1.6
Delay (s)	169.8	44.0	41.6	61.4	52.8	46.0	64.3	154.6	18.1	65.0	212.3	21.6
Level of Service	F	D	D	E	D	D	E	F	B	E	F	C
Approach Delay (s)		146.6			53.0			141.5			168.3	
Approach LOS		F			D			F			F	

Intersection Summary				
HCM Average Control Delay	147.5	HCM Level of Service	F	
HCM Volume to Capacity ratio	1.17			
Actuated Cycle Length (s)	105.3	Sum of lost time (s)	10.0	
Intersection Capacity Utilization	105.7%	ICU Level of Service	G	
Analysis Period (min)	15			

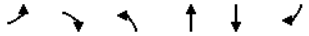
c Critical Lane Group

HCM Signalized Intersection Capacity Analysis 2030
6: Golden Center Dr. & Missouri Flat Rd. PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	183	12	9	130	9	137	35	1261	35	153	1719	35
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frt		0.99			0.93		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1586			1519		1583	3154		1583	3167	1417
Flt Permitted		0.53			0.82		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		872			1279		1583	3154		1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	203	13	10	144	10	152	39	1401	39	170	1910	39
RTOR Reduction (vph)	0	1	0	0	32	0	0	2	0	0	0	6
Lane Group Flow (vph)	0	225	0	0	274	0	39	1438	0	170	1910	33
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot			Prot		Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4								2
Actuated Green, G (s)		29.1			29.1		3.0	53.6		13.4	64.0	64.0
Effective Green, g (s)		29.1			29.1		3.0	53.6		13.4	64.0	64.0
Actuated g/C Ratio		0.27			0.27		0.03	0.49		0.12	0.59	0.59
Clearance Time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		2.5			2.5		2.5	3.0		2.5	3.0	3.0
Lane Grp Cap (vph)		233			341		44	1550		194	1858	831
v/s Ratio Prot							0.02	0.46		c0.11	c0.60	
v/s Ratio Perm		c0.26			0.21							0.02
v/c Ratio		0.96			0.80		0.89	0.93		0.88	1.03	0.04
Uniform Delay, d1		39.5			37.3		52.9	25.9		47.0	22.5	9.5
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		48.4			12.4		91.8	10.0		32.6	28.4	0.0
Delay (s)		87.9			49.8		144.7	35.9		79.6	50.9	9.6
Level of Service		F			D		F	D		E	D	A
Approach Delay (s)		87.9			49.8			38.8			52.5	
Approach LOS		F			D			D			D	

Intersection Summary				
HCM Average Control Delay	49.3	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.99			
Actuated Cycle Length (s)	109.1	Sum of lost time (s)	9.0	
Intersection Capacity Utilization	89.3%	ICU Level of Service	E	
Analysis Period (min)	15			

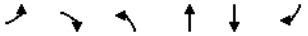
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	85	72	8	537	560	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	94	80	9	597	622	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				900		
pX, platoon unblocked						
vC, conflicting volume	1251	636	650			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1251	636	650			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	50	83	99			
cM capacity (veh/h)	188	476	931			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	174	606	650
Volume Left	94	9	0
Volume Right	80	0	28
cSH	260	931	1700
Volume to Capacity	0.67	0.01	0.38
Queue Length 95th (ft)	109	1	0
Control Delay (s)	43.1	0.3	0.0
Lane LOS	E	A	
Approach Delay (s)	43.1	0.3	0.0
Approach LOS	E		

Intersection Summary			
Average Delay		5.4	
Intersection Capacity Utilization		55.6%	ICU Level of Service B
Analysis Period (min)		15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	35	55	50	510	592	40
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	61	56	567	658	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				446		
pX, platoon unblocked	0.97					
vC, conflicting volume	1358	680	702			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1353	680	702			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	74	86	94			
cM capacity (veh/h)	149	449	890			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	100	56	567	702
Volume Left	39	56	0	0
Volume Right	61	0	0	44
cSH	252	890	1700	1700
Volume to Capacity	0.40	0.06	0.33	0.41
Queue Length 95th (ft)	45	5	0	0
Control Delay (s)	28.4	9.3	0.0	0.0
Lane LOS	D	A		
Approach Delay (s)	28.4	0.8		0.0
Approach LOS	D			

Intersection Summary			
Average Delay		2.4	
Intersection Capacity Utilization		56.8%	ICU Level of Service B
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis 2030
12: Lime Kiln Rd. & Diamond Rd. (SR-49) PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	125	15	50	10	5	10	70	338	40	27	555	65
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	139	17	56	11	6	11	78	376	44	30	617	72
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked	0.87	0.87	0.87	0.87	0.87		0.87					
vC, conflicting volume	1280	1288	653	1330	1302	398	689			420		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1248	1258	530	1305	1274	398	571			420		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	87	88	87	96	98	91			97		
cM capacity (veh/h)	113	132	478	87	129	650	870			1134		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	211	28	498	719
Volume Left	139	11	78	30
Volume Right	56	11	44	72
cSH	144	148	870	1134
Volume to Capacity	1.47	0.19	0.09	0.03
Queue Length 95th (ft)	351	17	7	2
Control Delay (s)	302.0	34.9	2.4	0.7
Lane LOS	F	D	A	A
Approach Delay (s)	302.0	34.9	2.4	0.7
Approach LOS	F	D		

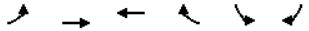
Intersection Summary				
Average Delay	45.6			
Intersection Capacity Utilization	80.4%	ICU Level of Service	D	
Analysis Period (min)	15			

HCM Signalized Intersection Capacity Analysis 2030
13: Pleasant Valley Rd. (SR-49) & Diamond Rd. (SR-49) PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	1025	140	20	510	275	90	25	50	375	40	275
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1568	3079		1583	1667	1417		1604	1417	1568	1434	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1568	3079		1583	1667	1417		1604	1417	1568	1434	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	200	1139	156	22	567	306	100	28	56	417	44	306
RTOR Reduction (vph)	0	12	0	0	0	176	0	0	52	0	222	0
Lane Group Flow (vph)	200	1283	0	22	567	130	0	128	4	417	128	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			
Actuated Green, G (s)	11.0	42.8		1.2	33.0	33.0		7.0	7.0	24.8	24.8	
Effective Green, g (s)	11.0	42.8		1.2	33.0	33.0		7.0	7.0	24.8	24.8	
Actuated g/C Ratio	0.12	0.47		0.01	0.37	0.37		0.08	0.08	0.27	0.27	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.2		2.7	2.7	3.0	3.0	
Lane Grp Cap (vph)	191	1459		21	609	518		124	110	431	394	
v/s Ratio Prot	c0.13	c0.42		0.01	0.34			c0.08		c0.27	0.09	
v/s Ratio Perm						0.09			0.00			
v/c Ratio	1.05	0.88		1.05	0.93	0.25		1.03	0.04	0.97	0.32	
Uniform Delay, d1	39.6	21.4		44.5	27.6	20.0		41.6	38.5	32.4	26.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	78.1	6.4		212.0	21.2	0.3		89.7	0.1	34.6	0.5	
Delay (s)	117.7	27.9		256.6	48.7	20.3		131.3	38.7	66.9	26.6	
Level of Service	F	C		F	D	C		F	D	E	C	
Approach Delay (s)		39.9			44.1			103.1			48.5	
Approach LOS		D			D			F			D	

Intersection Summary				
HCM Average Control Delay	46.5	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.92			
Actuated Cycle Length (s)	90.3	Sum of lost time (s)	10.1	
Intersection Capacity Utilization	85.2%	ICU Level of Service	E	
Analysis Period (min)	15			

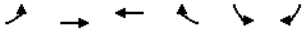
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	360	460	534	565	825	316
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3042	1650	1650	1403	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3042	1650	1650	1403	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	400	511	593	628	917	351
RTOR Reduction (vph)	0	0	0	1	0	38
Lane Group Flow (vph)	400	511	593	627	917	313
Heavy Vehicles (%)	3%	3%	3%	3%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	14.0	58.9	41.9	105.4	63.5	77.5
Effective Green, g (s)	14.0	58.9	41.9	105.4	63.5	77.5
Actuated g/C Ratio	0.11	0.45	0.32	0.81	0.49	0.60
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	328	748	532	1138	773	845
v/s Ratio Prot	c0.13	0.31	c0.36	0.27	c0.58	0.04
v/s Ratio Perm				0.18		0.18
v/c Ratio	1.22	0.68	1.11	0.55	1.19	0.37
Uniform Delay, d1	58.0	28.2	44.0	4.2	33.2	13.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	123.2	2.1	74.4	0.6	96.7	0.1
Delay (s)	181.2	30.2	118.5	4.8	129.9	13.7
Level of Service	F	C	F	A	F	B
Approach Delay (s)		96.5	60.0		97.8	
Approach LOS		F	E		F	

Intersection Summary				
HCM Average Control Delay	83.9	HCM Level of Service	F	
HCM Volume to Capacity ratio	1.17			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	10.6	
Intersection Capacity Utilization	104.1%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	155	1096	995	104	25	165
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	172	1218	1106	116	28	183
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1221				2726	1163
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1221				2726	1163
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	70				0	23
cM capacity (veh/h)	567				16	237

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	1390	1221	211
Volume Left	172	0	28
Volume Right	0	116	183
cSH	567	1700	83
Volume to Capacity	0.30	0.72	2.53
Queue Length 95th (ft)	32	0	498
Control Delay (s)	14.1	0.0	802.3
Lane LOS	B		F
Approach Delay (s)	14.1	0.0	802.3
Approach LOS			F

Intersection Summary			
Average Delay	66.9		
Intersection Capacity Utilization	162.6%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	85	690	72	25	455	5	41	1	91	1	3	72
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	94	767	80	28	506	6	46	1	101	1	3	80
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)		1091										
pX, platoon unblocked				0.65			0.65	0.65	0.65	0.65	0.65	
vC, conflicting volume	511			847			1638	1562	807	1621	1599	508
vC1, stage 1 conf vol							996	996		564	564	
vC2, stage 2 conf vol							643	567		1057	1036	
vCu, unblocked vol	511			497			1712	1596	435	1686	1653	508
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			96			75	99	75	99	98	86
cM capacity (veh/h)	1054			695			183	215	404	128	193	565

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	94	847	28	511	148	84
Volume Left	94	0	28	0	46	1
Volume Right	0	80	0	6	101	80
cSH	1054	1700	695	1700	293	504
Volume to Capacity	0.09	0.50	0.04	0.30	0.50	0.17
Queue Length 95th (ft)	7	0	3	0	67	15
Control Delay (s)	8.8	0.0	10.4	0.0	29.2	13.6
Lane LOS	A		B		D	B
Approach Delay (s)	0.9		0.5		29.2	13.6
Approach LOS					D	B

Intersection Summary					
Average Delay	3.8				
Intersection Capacity Utilization	74.3%	ICU Level of Service		D	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	3	70	5	165	0	1015	130	275	1280	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	3	78	6	183	0	1128	144	306	1422	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	3347	3306	1422	3237	3233	1200	1422			1272		
vC1, stage 1 conf vol	2033	2033		1200	1200							
vC2, stage 2 conf vol	1314	1272		2037	2033							
vCu, unblocked vol	3347	3306	1422	3237	3233	1200	1422			1272		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	98	0	87	19	100			44		
cM capacity (veh/h)	0	4	166	31	42	226	479			546		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	3	267	0	1272	306	1422
Volume Left	0	78	0	0	306	0
Volume Right	3	183	0	144	0	0
cSH	166	77	1700	1700	546	1700
Volume to Capacity	0.02	3.47	0.00	0.75	0.56	0.84
Queue Length 95th (ft)	2	Err	0	0	86	0
Control Delay (s)	27.1	Err	0.0	0.0	19.6	0.0
Lane LOS	D	F			C	
Approach Delay (s)	27.1	Err	0.0		3.5	
Approach LOS	D	F				

Intersection Summary					
Average Delay	817.3				
Intersection Capacity Utilization	118.2%	ICU Level of Service		H	
Analysis Period (min)	15				

Queues 2030

13: Pleasant Valley Rd. (SR-49) & Diamond Rd. (SR-49) PM Peak

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	200	1295	22	567	306	128	56	417	350
v/c Ratio	1.03	0.87	0.63	0.95	0.45	1.02	0.34	0.96	0.56
Control Delay	114.4	28.7	108.8	56.6	6.0	128.5	17.6	67.2	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	114.4	28.7	108.8	56.6	6.0	128.5	17.6	67.2	9.1
Queue Length 50th (ft)	~125	340	13	307	10	~77	0	233	19
Queue Length 95th (ft)	#258	#490	#56	#516	67	#190	36	#417	96
Internal Link Dist (ft)		152		260		844			629
Turn Bay Length (ft)	185		105		180		75	335	
Base Capacity (vph)	194	1491	35	610	695	126	163	439	621
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.87	0.63	0.93	0.44	1.02	0.34	0.95	0.56

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues 2030

13: Pleasant Valley Rd. (SR-49) & Diamond Rd. (SR-49) AM Peak

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	82	530	27	680	367	138	60	188	158
v/c Ratio	0.82	0.33	0.33	0.90	0.45	0.75	0.28	0.66	0.42
Control Delay	94.4	12.7	50.5	37.7	4.5	64.3	14.3	42.9	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.4	12.7	50.5	37.7	4.5	64.3	14.3	42.9	11.4
Queue Length 50th (ft)	45	66	14	302	11	73	0	95	9
Queue Length 95th (ft)	#137	137	41	#564	62	#184	37	164	59
Internal Link Dist (ft)		152		260		844			629
Turn Bay Length (ft)	185		105		180		75	335	
Base Capacity (vph)	100	1683	122	887	907	185	217	402	470
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.31	0.22	0.77	0.40	0.75	0.28	0.47	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Appendix G:

Analysis Worksheets for Cumulative (2030) plus Proposed Project Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	40	532	358	88	226	674	507	478	76	363	47
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	0.95	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frt		0.92	0.85	1.00	0.90		1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1428	1346	1504	1423		3072	3167	1417	1583	3112	
Flt Permitted		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1428	1346	1504	1423		3072	3167	1417	1583	3112	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	131	44	591	398	98	251	749	563	531	84	403	52
RTOR Reduction (vph)	0	36	43	0	53	0	0	0	242	0	8	0
Lane Group Flow (vph)	0	358	329	358	336	0	749	563	289	84	447	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Split		pm+ov	Split			Prot		pm+ov	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		30.0	60.0	28.0	28.0		30.0	40.0	68.0	11.0	21.0	
Effective Green, g (s)		30.0	60.0	28.0	28.0		30.0	40.0	68.0	11.0	21.0	
Actuated g/C Ratio		0.24	0.48	0.22	0.22		0.24	0.32	0.54	0.09	0.17	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		343	689	337	319		737	1013	771	139	523	
v/s Ratio Prot		c0.25	0.11	c0.24	0.24		c0.24	0.18	0.08	0.05	c0.14	
v/s Ratio Perm			0.13						0.12			
v/c Ratio		1.04	0.48	1.06	1.05		1.02	0.56	0.37	0.60	0.85	
Uniform Delay, d1		47.5	21.9	48.5	48.5		47.5	35.2	16.3	54.9	50.5	
Progression Factor		1.00	1.00	1.00	1.00		0.56	0.47	2.08	1.00	1.00	
Incremental Delay, d2		60.7	0.5	66.5	65.3		14.3	0.2	0.0	7.2	16.2	
Delay (s)		108.2	22.4	115.0	113.8		40.7	16.8	34.1	62.1	66.7	
Level of Service		F	C	F	F		D	B	C	E	E	
Approach Delay (s)		66.5			114.4			31.5			66.0	
Approach LOS		E			F			C			E	

Intersection Summary				
HCM Average Control Delay	59.0	HCM Level of Service	E	
HCM Volume to Capacity ratio	1.00			
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	90.9%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2
Lane Configurations										
Volume (vph)	187	581	1135	612	505	860	61	293	632	328
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0	7.0	4.0
Lane Util. Factor	0.97	0.88	0.97	0.88	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3042	2469	3042	2469	3042	3136	1403	3042	3136	1403
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3042	2469	3042	2469	3042	3136	1403	3042	3136	1403
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	208	646	1261	680	561	956	68	326	702	364
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	208	646	1261	680	561	956	68	326	702	364
Turn Type	Prot	custom	Prot	custom	Prot		Free	Prot		Free
Protected Phases	3	1	4	5	1	6		5	2	
Permitted Phases							Free			Free
Actuated Green, G (s)	42.0	32.0	42.0	28.0	32.0	34.0	125.0	28.0	30.0	125.0
Effective Green, g (s)	42.0	32.0	42.0	28.0	32.0	34.0	125.0	28.0	30.0	125.0
Actuated g/C Ratio	0.34	0.26	0.34	0.22	0.26	0.27	1.00	0.22	0.24	1.00
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1022	632	1022	553	779	853	1403	681	753	1403
v/s Ratio Prot	0.07	0.26	c0.41	c0.28	0.18	c0.30		0.11	0.22	
v/s Ratio Perm							0.05			0.26
v/c Ratio	0.20	1.02	1.23	1.23	0.72	1.12	0.05	0.48	0.93	0.26
Uniform Delay, d1	29.6	46.5	41.5	48.5	42.4	45.5	0.0	42.2	46.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	0.83	1.00	1.03	0.84	1.00
Incremental Delay, d2	0.1	41.5	113.8	118.5	2.9	68.1	0.1	0.3	12.1	0.2
Delay (s)	29.7	88.0	155.3	167.0	45.2	105.9	0.1	43.7	51.1	0.2
Level of Service	C	F	F	F	D	F	A	D	D	A
Approach Delay (s)						79.9			36.1	
Approach LOS						E			D	

Intersection Summary				
HCM Average Control Delay	95.2	HCM Level of Service	F	
HCM Volume to Capacity ratio	1.20			
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	21.0	
Intersection Capacity Utilization	Err%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: Mother Lode Dr. & Missouri Flat Rd.

2030 plus Proposed Project
AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	387	0	145	0	0	0	74	1039	1167	0	2133	215
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0		4.0				4.0	4.0	4.0		4.0	
Lane Util. Factor	0.97		1.00				1.00	0.95	1.00		0.91	
Frt	1.00		0.85				1.00	1.00	0.85		0.99	
Flt Protected	0.95		1.00				0.95	1.00	1.00		1.00	
Satd. Flow (prot)	3072		1417				1583	3167	1417		4487	
Flt Permitted	0.95		1.00				0.95	1.00	1.00		1.00	
Satd. Flow (perm)	3072		1417				1583	3167	1417		4487	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	430	0	161	0	0	0	82	1154	1297	0	2370	239
RTOR Reduction (vph)	0	0	132	0	0	0	0	0	0	0	7	0
Lane Group Flow (vph)	430	0	29	0	0	0	82	1154	1297	0	2602	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		custom				Prot		Free			
Protected Phases	4						5	2			6	
Permitted Phases			4						Free			
Actuated Green, G (s)	22.9		22.9				10.4	94.1	125.0		79.7	
Effective Green, g (s)	22.9		22.9				10.4	94.1	125.0		79.7	
Actuated g/C Ratio	0.18		0.18				0.08	0.75	1.00		0.64	
Clearance Time (s)	4.0		4.0				4.0	4.0			4.0	
Vehicle Extension (s)	3.0		3.0				3.0	3.0			3.0	
Lane Grp Cap (vph)	563		260				132	2384	1417		2861	
v/s Ratio Prot	0.14						0.05	0.36			0.58	
v/s Ratio Perm			0.02						c0.92			
v/c Ratio	0.76		0.11				0.62	0.48	0.92		0.91	
Uniform Delay, d1	48.5		42.6				55.4	6.0	0.0		19.5	
Progression Factor	1.00		1.00				1.00	1.00	1.00		0.62	
Incremental Delay, d2	6.1		0.2				8.8	0.7	10.7		0.6	
Delay (s)	54.6		42.8				64.2	6.7	10.7		12.7	
Level of Service	D		D				E	A	B		B	
Approach Delay (s)		51.4			0.0			10.6			12.7	
Approach LOS		D			A			B			B	

Intersection Summary				
HCM Average Control Delay	15.8	HCM Level of Service		B
HCM Volume to Capacity ratio	0.92			
Actuated Cycle Length (s)	125.0	Sum of lost time (s)		0.0
Intersection Capacity Utilization	78.3%	ICU Level of Service		D
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: Forni Rd. & Missouri Flat Rd.

2030 plus Proposed Project
AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	286	33	30	73	28	87	125	1907	91	122	1882	274
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	318	37	33	81	31	97	139	2119	101	136	2091	304
RTOR Reduction (vph)	0	0	29	0	0	90	0	0	14	0	0	42
Lane Group Flow (vph)	318	37	4	81	31	7	139	2119	87	136	2091	262
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	12.7	12.4	12.4	6.7	6.4	6.4	11.2	49.0	49.0	11.0	48.8	48.8
Effective Green, g (s)	12.7	12.4	12.4	6.7	6.4	6.4	11.2	49.0	49.0	11.0	48.8	48.8
Actuated g/C Ratio	0.13	0.13	0.13	0.07	0.07	0.07	0.12	0.52	0.52	0.12	0.52	0.52
Clearance Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	3.0	3.0	0.2	3.0	3.0
Lane Grp Cap (vph)	415	220	187	113	113	96	188	1649	738	185	1642	735
v/s Ratio Prot	c0.10	0.02		0.05	c0.02		c0.09	c0.67		0.09	0.66	
v/s Ratio Perm			0.00			0.00			0.06			0.18
v/c Ratio	0.77	0.17	0.02	0.72	0.27	0.07	0.74	1.29	0.12	0.74	1.27	0.36
Uniform Delay, d1	39.3	36.3	35.6	42.8	41.6	41.1	40.0	22.5	11.5	40.1	22.6	13.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.4	0.1	0.0	16.4	0.5	0.1	12.3	133.0	0.1	12.2	128.0	0.3
Delay (s)	46.7	36.4	35.6	59.2	42.1	41.2	52.3	155.6	11.6	52.4	150.6	13.7
Level of Service	D	D	D	E	D	D	D	F	B	D	F	B
Approach Delay (s)		44.8			48.3			143.3			128.9	
Approach LOS		D			D			F			F	

Intersection Summary				
HCM Average Control Delay	126.1	HCM Level of Service		F
HCM Volume to Capacity ratio	0.98			
Actuated Cycle Length (s)	94.1	Sum of lost time (s)		10.0
Intersection Capacity Utilization	93.1%	ICU Level of Service		F
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	2	1	57	4	60	61	2218	61	143	1610	33
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frt		1.00			0.93		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1588			1518		1583	3154		1583	3167	1417
Flt Permitted		0.67			0.84		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1109			1303		1583	3154		1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	26	2	1	63	4	67	68	2464	68	159	1789	37
RTOR Reduction (vph)	0	1	0	0	32	0	0	1	0	0	0	6
Lane Group Flow (vph)	0	28	0	0	102	0	68	2531	0	159	1789	31
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot			Prot		Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4								2
Actuated Green, G (s)		13.5			13.5		18.3	77.1		10.1	68.9	68.9
Effective Green, g (s)		13.5			13.5		18.3	77.1		10.1	68.9	68.9
Actuated g/C Ratio		0.12			0.12		0.16	0.68		0.09	0.61	0.61
Clearance Time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		2.5			2.5		2.5	3.0		2.5	3.0	3.0
Lane Grp Cap (vph)		132			155		255	2139		141	1919	859
v/s Ratio Prot							0.04	c0.80		c0.10	0.56	
v/s Ratio Perm		0.03			c0.08							0.02
v/c Ratio		0.21			0.66		0.27	1.18		1.13	0.93	0.04
Uniform Delay, d1		45.3			47.9		41.8	18.3		51.8	20.3	9.0
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.6			8.7		0.4	87.5		114.2	8.9	0.0
Delay (s)		45.9			56.6		42.2	105.8		166.0	29.2	9.0
Level of Service		D			E		D	F		F	C	A
Approach Delay (s)		45.9			56.6			104.2			39.7	
Approach LOS		D			E			F			D	

Intersection Summary				
HCM Average Control Delay	75.5	HCM Level of Service	E	
HCM Volume to Capacity ratio	1.11			
Actuated Cycle Length (s)	113.7	Sum of lost time (s)	13.0	
Intersection Capacity Utilization	97.8%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	718	459	236	1039	24	578	14	215	3	11	17
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	3167	1417	1583	1667	1417	1583	1432		1583	1513	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	3167	1417	1583	1667	1417	1583	1432		1583	1513	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	798	510	262	1154	27	642	16	239	3	12	19
RTOR Reduction (vph)	0	0	217	0	0	1	0	169	0	0	18	0
Lane Group Flow (vph)	17	798	293	262	1154	26	642	86	0	3	13	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		pm+ov	Prot		Perm	Prot			Prot		
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2			6						
Actuated Green, G (s)	2.9	33.6	58.9	22.0	52.7	52.7	25.3	30.2		0.7	5.6	
Effective Green, g (s)	2.9	33.6	58.9	22.0	52.7	52.7	25.3	30.2		0.7	5.6	
Actuated g/C Ratio	0.03	0.33	0.57	0.21	0.51	0.51	0.25	0.29		0.01	0.05	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	45	1038	870	340	857	729	391	422		11	83	
v/s Ratio Prot	0.01	0.25	0.08	c0.17	c0.69		c0.41	c0.06		0.00	0.01	
v/s Ratio Perm			0.12			0.02						
v/c Ratio	0.38	0.77	0.34	0.77	1.35	0.04	1.64	0.20		0.27	0.16	
Uniform Delay, d1	48.9	31.0	11.5	37.9	24.9	12.3	38.6	27.1		50.6	46.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.2	3.5	0.2	10.3	163.7	0.0	300.2	0.2		13.0	0.9	
Delay (s)	54.2	34.4	11.7	48.2	188.6	12.3	338.8	27.4		63.6	47.1	
Level of Service	D	C	B	D	F	B	F	C		E	D	
Approach Delay (s)		26.0			159.8			250.3			48.5	
Approach LOS		C			F			F			D	

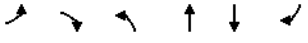
Intersection Summary				
HCM Average Control Delay	132.8	HCM Level of Service	F	
HCM Volume to Capacity ratio	1.30			
Actuated Cycle Length (s)	102.5	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	116.9%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	775	102	23	1219	23	50	15	26	30	3	30
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1583	1667	1417	1583	1662			1590	1403		1508	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	1583	1667	1417	1583	1662			1590	1403		1508	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	66	861	113	26	1354	26	56	17	29	33	3	33
RTOR Reduction (vph)	0	0	20	0	0	0	0	0	26	0	31	0
Lane Group Flow (vph)	66	861	93	26	1380	0	0	73	3	0	38	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	4.1	54.9	54.9	2.2	53.0			7.7	7.7		6.3	
Effective Green, g (s)	4.1	54.9	54.9	2.2	53.0			7.7	7.7		6.3	
Actuated g/C Ratio	0.05	0.63	0.63	0.03	0.61			0.09	0.09		0.07	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	75	1051	893	40	1011			141	124		109	
v/s Ratio Prot	c0.04	0.52		0.02	c0.83			c0.05			c0.03	
v/s Ratio Perm			0.07						0.00			
v/c Ratio	0.88	0.82	0.10	0.65	1.36			0.52	0.02		0.35	
Uniform Delay, d1	41.3	12.3	6.4	42.1	17.0			37.9	36.3		38.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	64.7	5.1	0.1	32.0	170.5			3.2	0.1		2.0	
Delay (s)	106.0	17.4	6.4	74.0	187.5			41.1	36.3		40.4	
Level of Service	F	B	A	E	F			D	D		D	
Approach Delay (s)		21.8			185.4			39.8			40.4	
Approach LOS		C			F			D			D	

Intersection Summary				
HCM Average Control Delay	110.9	HCM Level of Service	F	
HCM Volume to Capacity ratio	1.15			
Actuated Cycle Length (s)	87.1	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	90.7%	ICU Level of Service	E	
Analysis Period (min)	15			

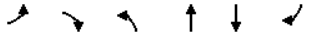
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	180	651	784	244	219	481
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1583	1417	3042	1650	1650	1403
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1583	1417	3042	1650	1650	1403
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	200	723	871	271	243	534
RTOR Reduction (vph)	0	160	0	0	0	374
Lane Group Flow (vph)	200	563	871	271	243	160
Heavy Vehicles (%)	2%	2%	3%	3%	3%	3%
Turn Type		pm+ov	Prot			Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	15.7	44.7	29.0	52.0	19.0	19.0
Effective Green, g (s)	15.7	44.7	29.0	52.0	19.0	19.0
Actuated g/C Ratio	0.21	0.59	0.38	0.69	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	328	912	1165	1133	414	352
v/s Ratio Prot	0.13	c0.24	c0.29	0.16	c0.15	
v/s Ratio Perm		0.16				0.11
v/c Ratio	0.61	0.62	0.75	0.24	0.59	0.46
Uniform Delay, d1	27.2	10.0	20.2	4.4	24.9	24.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	1.3	2.7	0.1	2.1	0.9
Delay (s)	30.4	11.2	22.9	4.5	27.0	24.9
Level of Service	C	B	C	A	C	C
Approach Delay (s)	15.4			18.5	25.6	
Approach LOS	B			B	C	

Intersection Summary				
HCM Average Control Delay	19.4	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	75.7	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	65.0%	ICU Level of Service	C	
Analysis Period (min)	15			

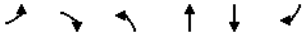
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	7	7	11	413	698	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	8	12	459	776	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				900		
pX, platoon unblocked						
vC, conflicting volume	1261	778	780			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1261	778	780			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	98	99			
cM capacity (veh/h)	184	395	833			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	16	471	780
Volume Left	8	12	0
Volume Right	8	0	4
cSH	251	833	1700
Volume to Capacity	0.06	0.01	0.46
Queue Length 95th (ft)	5	1	0
Control Delay (s)	20.3	0.4	0.0
Lane LOS	C	A	
Approach Delay (s)	20.3	0.4	0.0
Approach LOS	C		

Intersection Summary				
Average Delay		0.4		
Intersection Capacity Utilization		51.3%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	1	0	424	699	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	1	0	471	777	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				358		
pX, platoon unblocked	0.95					
vC, conflicting volume	1251	780	783			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1239	780	783			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	184	394	830			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	1	471	783
Volume Left	0	0	0
Volume Right	1	0	7
cSH	394	1700	1700
Volume to Capacity	0.00	0.28	0.46
Queue Length 95th (ft)	0	0	0
Control Delay (s)	14.2	0.0	0.0
Lane LOS	B		
Approach Delay (s)	14.2	0.0	0.0
Approach LOS	B		

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		51.5%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	59	2	11	11	6	90	38	879	50	14	796	60
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	66	2	12	12	7	100	42	977	56	16	884	67
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked	0.89	0.89	0.89	0.89	0.89		0.89					
vC, conflicting volume	2141	2066	918	2051	2071	1004	951			1032		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2217	2132	849	2116	2138	1004	887			1032		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	94	96	57	83	66	94			98		
cM capacity (veh/h)	15	40	321	28	40	292	680			669		

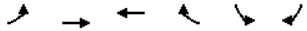
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	80	119	1074	967
Volume Left	66	12	42	16
Volume Right	12	100	56	67
cSH	18	126	680	669
Volume to Capacity	4.49	0.94	0.06	0.02
Queue Length 95th (ft)	Err	156	5	2
Control Delay (s)	Err	131.1	2.0	0.7
Lane LOS	F	F	A	A
Approach Delay (s)	Err	131.1	2.0	0.7
Approach LOS	F	F		

Intersection Summary				
Average Delay	365.4			
Intersection Capacity Utilization	96.7%	ICU Level of Service	F	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	92	205	33	30	330	612	48	59	50	630	53	130
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1568	3070		1583	1667	1417		1630	1417	1568	1475	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1568	3070		1583	1667	1417		1630	1417	1568	1475	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	102	228	37	33	367	680	53	66	56	700	59	144
RTOR Reduction (vph)	0	17	0	0	0	466	0	0	49	0	90	0
Lane Group Flow (vph)	102	248	0	33	367	214	0	119	7	700	113	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			
Actuated Green, G (s)	5.0	25.2		2.0	22.2	22.2		8.6	8.6	20.2	20.2	
Effective Green, g (s)	5.0	25.2		2.0	22.2	22.2		8.6	8.6	20.2	20.2	
Actuated g/C Ratio	0.07	0.36		0.03	0.31	0.31		0.12	0.12	0.29	0.29	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.2		2.7	2.7	3.0	3.0	
Lane Grp Cap (vph)	111	1097		45	525	446		199	173	449	423	
v/s Ratio Prot	c0.07	c0.08		0.02	c0.22			c0.07		c0.45	0.08	
v/s Ratio Perm						0.15			0.00			
v/c Ratio	0.92	0.23		0.73	0.70	0.48		0.60	0.04	1.56	0.27	
Uniform Delay, d1	32.5	15.8		34.0	21.2	19.5		29.3	27.3	25.1	19.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	58.9	0.1		41.0	4.1	0.9		4.3	0.1	262.3	0.3	
Delay (s)	91.5	15.9		75.0	25.3	20.4		33.6	27.4	287.4	19.8	
Level of Service	F	B		E	C	C		C	C	F	B	
Approach Delay (s)		36.9			23.7			31.6			227.3	
Approach LOS		D			C			C			F	

Intersection Summary				
HCM Average Control Delay	99.0	HCM Level of Service	F	
HCM Volume to Capacity ratio	1.06			
Actuated Cycle Length (s)	70.5	Sum of lost time (s)	18.9	
Intersection Capacity Utilization	84.3%	ICU Level of Service	E	
Analysis Period (min)	15			

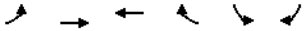
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	320	292	270	154	283	173
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3042	1650	1650	1403	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3042	1650	1650	1403	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	356	324	300	171	314	192
RTOR Reduction (vph)	0	0	0	20	0	92
Lane Group Flow (vph)	356	324	300	151	314	100
Heavy Vehicles (%)	3%	3%	3%	3%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	9.5	26.0	13.5	30.2	16.7	26.2
Effective Green, g (s)	9.5	26.0	13.5	30.2	16.7	26.2
Actuated g/C Ratio	0.19	0.52	0.27	0.60	0.33	0.52
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	575	853	443	842	526	738
v/s Ratio Prot	c0.12	0.20	c0.18	0.06	c0.20	0.03
v/s Ratio Perm				0.05		0.04
v/c Ratio	0.62	0.38	0.68	0.18	0.60	0.14
Uniform Delay, d1	18.7	7.3	16.5	4.5	14.0	6.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.1	3.2	0.1	1.9	0.0
Delay (s)	20.1	7.4	19.7	4.6	15.9	6.2
Level of Service	C	A	B	A	B	A
Approach Delay (s)		14.1	14.2		12.3	
Approach LOS		B	B		B	

Intersection Summary				
HCM Average Control Delay	13.6	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	50.3	Sum of lost time (s)	10.6	
Intersection Capacity Utilization	53.7%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	85	335	793	108	13	130
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	94	372	881	120	14	144
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1001				1502	941
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1001				1502	941
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	86				88	55
cM capacity (veh/h)	688				116	319

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	467	1001	159
Volume Left	94	0	14
Volume Right	0	120	144
cSH	688	1700	275
Volume to Capacity	0.14	0.59	0.58
Queue Length 95th (ft)	12	0	83
Control Delay (s)	3.8	0.0	34.5
Lane LOS	A		D
Approach Delay (s)	3.8	0.0	34.5
Approach LOS			D

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	98.7%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	212	21	45	606	7	9	0	21	1	4	86
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	27	236	23	50	673	8	10	0	23	1	4	96
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)		1091										
pX, platoon unblocked												
vC, conflicting volume	681			259			1172	1082	247	1089	1089	677
vC1, stage 1 conf vol							301	301		777	777	
vC2, stage 2 conf vol							871	781		312	312	
vCu, unblocked vol	681			259			1172	1082	247	1089	1089	677
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			96			96	100	97	100	99	79
cM capacity (veh/h)	911			1306			224	341	792	342	356	453

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	27	259	50	681	33	101
Volume Left	27	0	50	0	10	1
Volume Right	0	23	0	8	23	96
cSH	911	1700	1306	1700	450	446
Volume to Capacity	0.03	0.15	0.04	0.40	0.07	0.23
Queue Length 95th (ft)	2	0	3	0	6	22
Control Delay (s)	9.1	0.0	7.9	0.0	13.6	15.4
Lane LOS	A		A		B	C
Approach Delay (s)	0.8		0.5		13.6	15.4
Approach LOS					B	C

Intersection Summary					
Average Delay	2.3				
Intersection Capacity Utilization	57.1%	ICU Level of Service		B	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	1	61	4	113	0	785	209	83	434	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	1	68	4	126	0	872	232	92	482	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	1667	1771	482	1656	1655	988	482			1104		
vC1, stage 1 conf vol	667	667		988	988							
vC2, stage 2 conf vol	1000	1104		668	667							
vCu, unblocked vol	1667	1771	482	1656	1655	988	482			1104		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	72	98	58	100			85		
cM capacity (veh/h)	73	177	582	238	257	300	1080			632		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	1	198	0	1104	92	482
Volume Left	0	68	0	0	92	0
Volume Right	1	126	0	232	0	0
cSH	582	274	1700	1700	632	1700
Volume to Capacity	0.00	0.72	0.00	0.65	0.15	0.28
Queue Length 95th (ft)	0	127	0	0	13	0
Control Delay (s)	11.2	45.9	0.0	0.0	11.7	0.0
Lane LOS	B	E			B	
Approach Delay (s)	11.2	45.9	0.0		1.9	
Approach LOS	B	E				

Intersection Summary					
Average Delay	5.4				
Intersection Capacity Utilization	94.0%	ICU Level of Service		F	
Analysis Period (min)	15				

HCM Signalized Intersection Capacity Analysis — 2030 plus Proposed Project
1: Plaza Dr. & Missouri Flat Rd. — PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	136	46	616	326	80	205	676	473	480	108	487	67
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	0.95	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frt		0.92	0.85	1.00	0.90		1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1428	1346	1504	1423		3072	3167	1417	1583	3110	
Flt Permitted		0.98	1.00	0.95	0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1428	1346	1504	1423		3072	3167	1417	1583	3110	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	151	51	684	362	89	228	751	526	533	120	541	74
RTOR Reduction (vph)	0	35	34	0	50	0	0	0	315	0	8	0
Lane Group Flow (vph)	0	420	397	326	303	0	751	526	218	120	607	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Split		pm+ov	Split			Prot		pm+ov	Prot		
Protected Phases	4	4	5	8	8		5	2	8	1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		34.0	63.0	26.0	26.0		29.0	27.2	53.2	26.8	25.0	
Effective Green, g (s)		34.0	63.0	26.0	26.0		29.0	27.2	53.2	26.8	25.0	
Actuated g/C Ratio		0.26	0.48	0.20	0.20		0.22	0.21	0.41	0.21	0.19	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		373	652	301	285		685	663	623	326	598	
v/s Ratio Prot		c0.29	0.14	c0.22	0.21		c0.24	0.17	0.07	0.08	c0.20	
v/s Ratio Perm			0.16						0.08			
v/c Ratio		1.13	0.61	1.08	1.06		1.10	0.79	0.35	0.37	1.01	
Uniform Delay, d1		48.0	24.5	52.0	52.0		50.5	48.7	26.5	44.3	52.5	
Progression Factor		1.00	1.00	1.00	1.00		0.73	0.70	0.87	1.00	1.00	
Incremental Delay, d2		85.6	1.6	75.8	70.6		54.7	4.8	0.2	0.7	40.6	
Delay (s)		133.6	26.1	127.8	122.6		91.5	39.0	23.1	45.0	93.1	
Level of Service		F	C	F	F		F	D	C	D	F	
Approach Delay (s)		81.3			125.1			56.1			85.2	
Approach LOS		F			F			E			F	

Intersection Summary				
HCM Average Control Delay	78.2	HCM Level of Service	E	
HCM Volume to Capacity ratio	1.08			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	97.0%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis — 2030 plus Proposed Project
2: EB US-50 Off Ramp & Missouri Flat Rd. — PM Peak

Movement	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2
Lane Configurations										
Volume (vph)	295	936	1064	558	579	775	70	353	682	394
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0	7.0	4.0
Lane Util. Factor	0.97	0.88	0.97	0.88	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3042	2469	3042	2469	3042	3136	1403	3042	3136	1403
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3042	2469	3042	2469	3042	3136	1403	3042	3136	1403
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	328	1040	1182	620	643	861	78	392	758	438
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	328	1040	1182	620	643	861	78	392	758	438
Turn Type	Prot	custom	Prot	custom	Prot		Free	Prot		Free
Protected Phases	3	1	4	5	1	6		5	2	
Permitted Phases							Free			Free
Actuated Green, G (s)	39.0	42.0	39.0	32.0	42.0	38.0	130.0	32.0	28.0	130.0
Effective Green, g (s)	39.0	42.0	39.0	32.0	42.0	38.0	130.0	32.0	28.0	130.0
Actuated g/C Ratio	0.30	0.32	0.30	0.25	0.32	0.29	1.00	0.25	0.22	1.00
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	913	798	913	608	983	917	1403	749	675	1403
v/s Ratio Prot	0.11	c0.42	c0.39	c0.25	0.21	0.27		0.13	0.24	
v/s Ratio Perm							0.06			0.31
v/c Ratio	0.36	1.30	1.29	1.02	0.65	0.94	0.06	0.52	1.12	0.31
Uniform Delay, d1	35.7	44.0	45.5	49.0	37.8	44.9	0.0	42.4	51.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	0.78	0.82	1.00	0.91	0.91	1.00
Incremental Delay, d2	0.2	145.6	140.7	41.6	1.4	16.4	0.1	0.2	62.7	0.2
Delay (s)	35.9	189.6	186.2	90.6	31.0	53.3	0.1	38.9	109.3	0.2
Level of Service	D	F	F	F	C	D	A	D	F	A
Approach Delay (s)						41.6			61.9	
Approach LOS						D			E	

Intersection Summary				
HCM Average Control Delay	102.4	HCM Level of Service	F	
HCM Volume to Capacity ratio	1.27			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	21.0	
Intersection Capacity Utilization	Err%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	424	0	161	0	0	0	85	1001	1334	0	2408	274
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0		4.0				4.0	4.0	4.0		4.0	
Lane Util. Factor	0.97		1.00				1.00	0.95	1.00		0.91	
Frt	1.00		0.85				1.00	1.00	0.85		0.98	
Flt Protected	0.95		1.00				0.95	1.00	1.00		1.00	
Satd. Flow (prot)	3072		1417				1583	3167	1417		4480	
Flt Permitted	0.95		1.00				0.95	1.00	1.00		1.00	
Satd. Flow (perm)	3072		1417				1583	3167	1417		4480	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	471	0	179	0	0	0	94	1112	1482	0	2676	304
RTOR Reduction (vph)	0	0	144	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	471	0	35	0	0	0	94	1112	1482	0	2971	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		custom				Prot		Free			
Protected Phases	4						5	2			6	
Permitted Phases			4						Free			
Actuated Green, G (s)	25.4		25.4				12.6	96.6	130.0		80.0	
Effective Green, g (s)	25.4		25.4				12.6	96.6	130.0		80.0	
Actuated g/C Ratio	0.20		0.20				0.10	0.74	1.00		0.62	
Clearance Time (s)	4.0		4.0				4.0	4.0			4.0	
Vehicle Extension (s)	3.0		3.0				3.0	3.0			3.0	
Lane Grp Cap (vph)	600		277				153	2353	1417		2757	
v/s Ratio Prot	0.15						0.06	0.35			0.66	
v/s Ratio Perm			0.02						c1.05			
v/c Ratio	0.79		0.13				0.61	0.47	1.05		1.08	
Uniform Delay, d1	49.7		43.1				56.4	6.6	65.0		25.0	
Progression Factor	1.00		1.00				1.00	1.00	1.00		0.79	
Incremental Delay, d2	6.7		0.2				7.1	0.7	36.9		35.8	
Delay (s)	56.4		43.4				63.5	7.3	101.9		55.5	
Level of Service	E		D				E	A	F		E	
Approach Delay (s)		52.8			0.0			61.4			55.5	
Approach LOS		D			A			E			E	

Intersection Summary				
HCM Average Control Delay	57.7	HCM Level of Service		E
HCM Volume to Capacity ratio	1.05			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)		0.0
Intersection Capacity Utilization	87.6%	ICU Level of Service		E
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	657	76	71	173	67	206	122	1556	89	196	1932	441
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3072	1667	1417	1583	1667	1417	1583	3167	1417	1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	730	84	79	192	74	229	136	1729	99	218	2147	490
RTOR Reduction (vph)	0	0	70	0	0	211	0	0	19	0	0	69
Lane Group Flow (vph)	730	84	9	192	74	18	136	1729	80	218	2147	421
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	20.0	12.1	12.1	15.7	7.8	7.8	11.6	45.5	45.5	17.0	50.9	50.9
Effective Green, g (s)	20.0	12.1	12.1	15.7	7.8	7.8	11.6	45.5	45.5	17.0	50.9	50.9
Actuated g/C Ratio	0.19	0.11	0.11	0.15	0.07	0.07	0.11	0.43	0.43	0.16	0.48	0.48
Clearance Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	5.0	5.0	3.0	5.0	5.0
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	3.0	3.0	0.2	3.0	3.0
Lane Grp Cap (vph)	583	192	163	236	123	105	174	1368	612	256	1531	685
v/s Ratio Prot	c0.24	0.05		0.12	c0.04		0.09	0.55		c0.14	c0.68	
v/s Ratio Perm			0.01			0.01			0.06			0.30
v/c Ratio	1.25	0.44	0.06	0.81	0.60	0.17	0.78	1.26	0.13	0.85	1.40	0.62
Uniform Delay, d1	42.6	43.4	41.5	43.4	47.2	45.7	45.6	29.9	18.0	42.9	27.2	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	127.1	0.6	0.1	18.0	5.6	0.3	18.7	124.7	0.1	22.1	185.1	1.6
Delay (s)	169.8	44.0	41.6	61.4	52.8	46.0	64.3	154.6	18.1	65.0	212.3	21.6
Level of Service	F	D	D	E	D	D	E	F	B	E	F	C
Approach Delay (s)		146.6			53.0			141.5			168.3	
Approach LOS		F			D			F			F	

Intersection Summary				
HCM Average Control Delay	147.5	HCM Level of Service		F
HCM Volume to Capacity ratio	1.17			
Actuated Cycle Length (s)	105.3	Sum of lost time (s)		10.0
Intersection Capacity Utilization	105.7%	ICU Level of Service		G
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	183	12	9	130	9	137	35	1261	35	153	1719	35
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frt		0.99			0.93		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1586			1519		1583	3154		1583	3167	1417
Flt Permitted		0.53			0.82		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		872			1279		1583	3154		1583	3167	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	203	13	10	144	10	152	39	1401	39	170	1910	39
RTOR Reduction (vph)	0	1	0	0	32	0	0	2	0	0	0	6
Lane Group Flow (vph)	0	225	0	0	274	0	39	1438	0	170	1910	33
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot			Prot		Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4								2
Actuated Green, G (s)		29.1			29.1		3.0	53.6		13.4	64.0	64.0
Effective Green, g (s)		29.1			29.1		3.0	53.6		13.4	64.0	64.0
Actuated g/C Ratio		0.27			0.27		0.03	0.49		0.12	0.59	0.59
Clearance Time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		2.5			2.5		2.5	3.0		2.5	3.0	3.0
Lane Grp Cap (vph)		233			341		44	1550		194	1858	831
v/s Ratio Prot							0.02	0.46		c0.11	c0.60	
v/s Ratio Perm		c0.26			0.21							0.02
v/c Ratio		0.96			0.80		0.89	0.93		0.88	1.03	0.04
Uniform Delay, d1		39.5			37.3		52.9	25.9		47.0	22.5	9.5
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		48.4			12.4		91.8	10.0		32.6	28.4	0.0
Delay (s)		87.9			49.8		144.7	35.9		79.6	50.9	9.6
Level of Service		F			D		F	D		E	D	A
Approach Delay (s)		87.9			49.8			38.8			52.5	
Approach LOS		F			D			D			D	

Intersection Summary				
HCM Average Control Delay	49.3	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.99			
Actuated Cycle Length (s)	109.1	Sum of lost time (s)	9.0	
Intersection Capacity Utilization	89.3%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	845	540	205	895	21	525	13	195	4	14	21
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	3167	1417	1583	1667	1417	1583	1432		1583	1519	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	3167	1417	1583	1667	1417	1583	1432		1583	1519	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	20	939	600	228	994	23	583	14	217	4	16	23
RTOR Reduction (vph)	0	0	226	0	0	1	0	153	0	0	22	0
Lane Group Flow (vph)	20	939	374	228	994	22	583	78	0	4	17	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		pm+ov	Prot		Perm	Prot			Prot		
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2			6						
Actuated Green, G (s)	3.1	40.6	66.7	18.1	55.6	55.6	26.1	31.4		0.8	6.1	
Effective Green, g (s)	3.1	40.6	66.7	18.1	55.6	55.6	26.1	31.4		0.8	6.1	
Actuated g/C Ratio	0.03	0.38	0.62	0.17	0.52	0.52	0.24	0.29		0.01	0.06	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	46	1203	937	268	867	737	386	421		12	87	
v/s Ratio Prot	0.01	0.30	0.10	c0.14	c0.60		c0.37	c0.05		0.00	0.01	
v/s Ratio Perm			0.17			0.02						
v/c Ratio	0.43	0.78	0.40	0.85	1.15	0.03	1.51	0.18		0.33	0.20	
Uniform Delay, d1	51.0	29.2	10.1	43.1	25.7	12.5	40.4	28.2		52.8	48.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.5	3.4	0.3	21.9	79.4	0.0	242.7	0.2		15.7	1.1	
Delay (s)	57.5	32.6	10.3	65.0	105.1	12.5	283.1	28.4		68.5	49.2	
Level of Service	E	C	B	E	F	B	F	C		E	D	
Approach Delay (s)		24.3			96.0			210.8			51.0	
Approach LOS		C			F			F			D	

Intersection Summary				
HCM Average Control Delay	90.5	HCM Level of Service	F	
HCM Volume to Capacity ratio	1.14			
Actuated Cycle Length (s)	106.9	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	105.2%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	855	120	20	1060	20	67	20	35	35	4	35
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1583	1667	1417	1583	1662			1589	1403		1509	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	1583	1667	1417	1583	1662			1589	1403		1509	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	77	950	133	22	1178	22	74	22	39	39	4	39
RTOR Reduction (vph)	0	0	21	0	0	0	0	0	35	0	30	0
Lane Group Flow (vph)	77	950	112	22	1200	0	0	96	4	0	52	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	4.1	56.6	56.6	1.4	53.9			8.8	8.8		7.0	
Effective Green, g (s)	4.1	56.6	56.6	1.4	53.9			8.8	8.8		7.0	
Actuated g/C Ratio	0.05	0.63	0.63	0.02	0.60			0.10	0.10		0.08	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	72	1051	893	25	998			156	137		118	
v/s Ratio Prot	c0.05	c0.57		0.01	c0.72			c0.06			c0.03	
v/s Ratio Perm			0.08						0.00			
v/c Ratio	1.07	0.90	0.13	0.88	1.20			0.62	0.03		0.44	
Uniform Delay, d1	42.9	14.3	6.7	44.1	17.9			38.9	36.6		39.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	126.4	10.8	0.1	127.2	100.6			7.0	0.1		2.6	
Delay (s)	169.3	25.1	6.7	171.3	118.5			45.9	36.7		42.1	
Level of Service	F	C	A	F	F			D	D		D	
Approach Delay (s)		32.6			119.5			43.2			42.1	
Approach LOS		C			F			D			D	

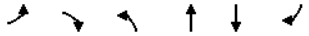
Intersection Summary				
HCM Average Control Delay	74.3	HCM Level of Service	E	
HCM Volume to Capacity ratio	1.10			
Actuated Cycle Length (s)	89.8	Sum of lost time (s)	20.0	
Intersection Capacity Utilization	82.2%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	200	725	675	325	300	425
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1583	1417	3042	1650	1650	1403
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1583	1417	3042	1650	1650	1403
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	222	806	750	361	333	472
RTOR Reduction (vph)	0	116	0	0	0	335
Lane Group Flow (vph)	222	690	750	361	333	137
Heavy Vehicles (%)	2%	2%	3%	3%	3%	3%
Turn Type		pm+ov	Prot			Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	17.5	44.8	27.3	54.5	23.2	23.2
Effective Green, g (s)	17.5	44.8	27.3	54.5	23.2	23.2
Actuated g/C Ratio	0.22	0.56	0.34	0.68	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	346	864	1038	1124	479	407
v/s Ratio Prot	0.14	c0.27	0.25	0.22	c0.20	
v/s Ratio Perm		0.21				0.10
v/c Ratio	0.64	0.80	0.72	0.32	0.70	0.34
Uniform Delay, d1	28.4	14.0	23.0	5.2	25.3	22.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	5.2	2.5	0.2	4.4	0.5
Delay (s)	32.4	19.2	25.6	5.4	29.6	22.8
Level of Service	C	B	C	A	C	C
Approach Delay (s)	22.1			19.0	25.6	
Approach LOS	C			B	C	

Intersection Summary				
HCM Average Control Delay	21.9	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.77			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	74.5%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	25	25	7	518	705	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	28	8	576	783	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				899		
pX, platoon unblocked	0.95					
vC, conflicting volume	1377	786	789			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1371	786	789			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	82	93	99			
cM capacity (veh/h)	151	391	826			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	56	583	789
Volume Left	28	8	0
Volume Right	28	0	6
cSH	218	826	1700
Volume to Capacity	0.25	0.01	0.46
Queue Length 95th (ft)	24	1	0
Control Delay (s)	27.1	0.3	0.0
Lane LOS	D	A	
Approach Delay (s)	27.1	0.3	0.0
Approach LOS	D		

Intersection Summary			
Average Delay		1.2	
Intersection Capacity Utilization		51.8%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	4	0	525	721	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	4	0	583	801	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				356		
pX, platoon unblocked	0.92					
vC, conflicting volume	1389	806	811			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1380	806	811			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	146	380	811			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	4	583	811
Volume Left	0	0	0
Volume Right	4	0	10
cSH	380	1700	1700
Volume to Capacity	0.01	0.34	0.48
Queue Length 95th (ft)	1	0	0
Control Delay (s)	14.6	0.0	0.0
Lane LOS	B		
Approach Delay (s)	14.6	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		53.0%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	200	8	36	9	5	75	48	725	62	20	920	85
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	222	9	40	10	6	83	53	806	69	22	1022	94
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked	0.84	0.84	0.84	0.84	0.84		0.84					
vC, conflicting volume	2147	2095	1069	2105	2108	840	1117			874		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2274	2212	985	2224	2227	840	1041			874		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	72	84	35	82	77	90			97		
cM capacity (veh/h)	14	32	251	15	31	364	555			768		

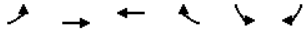
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	271	99	928	1139
Volume Left	222	10	53	22
Volume Right	40	83	69	94
cSH	17	94	555	768
Volume to Capacity	15.99	1.05	0.10	0.03
Queue Length 95th (ft)	Err	160	8	2
Control Delay (s)	Err	191.3	3.0	1.0
Lane LOS	F	F	A	A
Approach Delay (s)	Err	191.3	3.0	1.0
Approach LOS	F	F		

Intersection Summary				
Average Delay	1121.9			
Intersection Capacity Utilization	104.1%	ICU Level of Service	G	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	500	81	25	275	510	45	55	47	900	75	185
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1568	3070		1583	1667	1417		1630	1417	1568	1474	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1568	3070		1583	1667	1417		1630	1417	1568	1474	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	250	556	90	28	306	567	50	61	52	1000	83	206
RTOR Reduction (vph)	0	17	0	0	0	421	0	0	47	0	93	0
Lane Group Flow (vph)	250	629	0	28	306	146	0	111	5	1000	196	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6			3			
Actuated Green, G (s)	11.1	29.4		1.6	19.9	19.9		7.0	7.0	25.0	25.0	
Effective Green, g (s)	11.1	29.4		1.6	19.9	19.9		7.0	7.0	25.0	25.0	
Actuated g/C Ratio	0.14	0.38		0.02	0.26	0.26		0.09	0.09	0.32	0.32	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.4		3.0	3.0	4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.2		2.7	2.7	3.0	3.0	
Lane Grp Cap (vph)	225	1165		33	428	364		147	128	506	475	
v/s Ratio Prot	c0.16	0.20		0.02	c0.18			c0.07		c0.64	0.13	
v/s Ratio Perm						0.10			0.00			
v/c Ratio	1.11	0.54		0.85	0.71	0.40		0.76	0.04	1.98	0.41	
Uniform Delay, d1	33.2	18.8		37.8	26.2	23.9		34.4	32.2	26.2	20.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	93.0	0.5		92.4	5.7	0.8		19.1	0.1	446.4	0.6	
Delay (s)	126.2	19.3		130.2	31.9	24.6		53.5	32.3	472.7	21.1	
Level of Service	F	B		F	C	C		D	C	F	C	
Approach Delay (s)		49.1			30.4			46.7			371.4	
Approach LOS		D			C			D			F	

Intersection Summary				
HCM Average Control Delay	171.7	HCM Level of Service	F	
HCM Volume to Capacity ratio	1.29			
Actuated Cycle Length (s)	77.5	Sum of lost time (s)	14.5	
Intersection Capacity Utilization	102.9%	ICU Level of Service	G	
Analysis Period (min)	15			

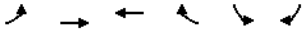
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	534	487	225	128	675	412
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3042	1650	1650	1403	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3042	1650	1650	1403	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	593	541	250	142	750	458
RTOR Reduction (vph)	0	0	0	0	0	108
Lane Group Flow (vph)	593	541	250	142	750	350
Heavy Vehicles (%)	3%	3%	3%	3%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	14.5	39.7	22.2	78.1	55.9	70.4
Effective Green, g (s)	14.5	39.7	22.2	78.1	55.9	70.4
Actuated g/C Ratio	0.14	0.38	0.22	0.76	0.54	0.68
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	427	635	355	1062	857	967
v/s Ratio Prot	c0.19	c0.33	0.15	0.07	c0.47	0.05
v/s Ratio Perm				0.03		0.20
v/c Ratio	1.39	0.85	0.70	0.13	0.88	0.36
Uniform Delay, d1	44.4	29.1	37.5	3.4	20.6	6.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	188.9	10.3	5.1	0.1	10.1	0.1
Delay (s)	233.2	39.4	42.6	3.5	30.7	7.0
Level of Service	F	D	D	A	C	A
Approach Delay (s)		140.8	28.4		21.7	
Approach LOS		F	C		C	

Intersection Summary				
HCM Average Control Delay	72.1	HCM Level of Service	E	
HCM Volume to Capacity ratio	0.93			
Actuated Cycle Length (s)	103.2	Sum of lost time (s)	6.5	
Intersection Capacity Utilization	82.1%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	155	608	661	90	16	165
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	172	676	734	100	18	183
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	834				1804	784
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	834				1804	784
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	78				74	53
cM capacity (veh/h)	795				68	393

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	848	834	201
Volume Left	172	0	18
Volume Right	0	100	183
cSH	795	1700	277
Volume to Capacity	0.22	0.49	0.73
Queue Length 95th (ft)	21	0	129
Control Delay (s)	5.3	0.0	46.2
Lane LOS	A		E
Approach Delay (s)	5.3	0.0	46.2
Approach LOS			E

Intersection Summary			
Average Delay	7.3		
Intersection Capacity Utilization	112.7%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	85	748	74	36	485	5	39	1	91	1	3	72
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	94	831	82	40	539	6	43	1	101	1	3	80
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)		1091										
pX, platoon unblocked				0.89			0.89	0.89	0.89	0.89	0.89	
vC, conflicting volume	544			913			1762	1686	872	1743	1724	542
vC1, stage 1 conf vol							1061	1061		622	622	
vC2, stage 2 conf vol							701	624		1122	1102	
vCu, unblocked vol	544			840			1794	1709	794	1774	1752	542
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			94			75	99	71	99	98	85
cM capacity (veh/h)	1025			707			170	213	345	107	188	541

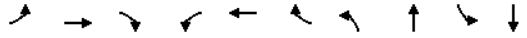
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	94	913	40	544	146	84
Volume Left	94	0	40	0	43	1
Volume Right	0	82	0	6	101	80
cSH	1025	1700	707	1700	263	479
Volume to Capacity	0.09	0.54	0.06	0.32	0.55	0.18
Queue Length 95th (ft)	8	0	4	0	77	16
Control Delay (s)	8.9	0.0	10.4	0.0	34.3	14.1
Lane LOS	A		B		D	B
Approach Delay (s)	0.8		0.7		34.3	14.1
Approach LOS					D	B

Intersection Summary					
Average Delay	4.1				
Intersection Capacity Utilization	77.7%	ICU Level of Service		D	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	3	70	5	130	0	657	175	150	780	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	3	78	6	144	0	730	194	167	867	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	2077	2124	867	2031	2027	827	867			924		
vC1, stage 1 conf vol	1200	1200		827	827							
vC2, stage 2 conf vol	877	924		1203	1200							
vCu, unblocked vol	2077	2124	867	2031	2027	827	867			924		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	49	97	61	100			77		
cM capacity (veh/h)	38	135	351	154	176	371	777			739		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	3	228	0	924	167	867
Volume Left	0	78	0	0	167	0
Volume Right	3	144	0	194	0	0
cSH	351	246	1700	1700	739	1700
Volume to Capacity	0.01	0.93	0.00	0.54	0.23	0.51
Queue Length 95th (ft)	1	204	0	0	22	0
Control Delay (s)	15.4	82.9	0.0	0.0	11.3	0.0
Lane LOS	C	F			B	
Approach Delay (s)	15.4	82.9	0.0		1.8	
Approach LOS	C	F				

Intersection Summary					
Average Delay	9.5				
Intersection Capacity Utilization	90.0%	ICU Level of Service		E	
Analysis Period (min)	15				

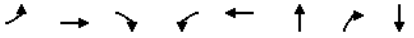


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	20	939	600	228	994	23	583	231	4	39
v/c Ratio	0.19	0.79	0.52	0.81	1.09	0.03	1.43	0.39	0.06	0.31
Control Delay	50.3	34.6	2.4	63.5	80.9	13.9	237.2	6.7	51.8	32.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.3	34.6	2.4	63.5	80.9	13.9	237.2	6.7	51.8	32.6
Queue Length 50th (ft)	13	295	0	149	~720	5	~539	6	3	10
Queue Length 95th (ft)	38	395	39	#291	#1148	23	#777	65	14	43
Internal Link Dist (ft)		191			298			499		239
Turn Bay Length (ft)	100		250	150		50	150		50	
Base Capacity (vph)	251	1194	1151	283	916	781	408	868	63	498
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.79	0.52	0.81	1.09	0.03	1.43	0.27	0.06	0.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	77	950	133	22	1200	96	39	82
v/c Ratio	1.01	0.84	0.14	0.29	1.20	0.48	0.19	0.45
Control Delay	154.6	26.6	6.6	53.6	123.4	45.9	14.1	34.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	154.6	26.6	6.6	53.6	123.4	45.9	14.1	34.2
Queue Length 50th (ft)	~49	386	14	12	~874	51	0	26
Queue Length 95th (ft)	#152	#920	55	39	#1276	105	29	73
Internal Link Dist (ft)		2376			452	290		465
Turn Bay Length (ft)	150		200	100			100	
Base Capacity (vph)	76	1126	976	76	998	534	498	600
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.84	0.14	0.29	1.20	0.18	0.08	0.14

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	222	806	750	361	333	472
v/c Ratio	0.65	0.83	0.73	0.32	0.71	0.64
Control Delay	40.9	18.3	30.0	6.8	37.0	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.9	18.3	30.0	6.8	37.0	7.2
Queue Length 50th (ft)	106	205	171	63	153	0
Queue Length 95th (ft)	208	496	303	140	295	82
Internal Link Dist (ft)	308			610	276	
Turn Bay Length (ft)	150		200			
Base Capacity (vph)	570	1098	1379	1394	704	869
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.73	0.54	0.26	0.47	0.54

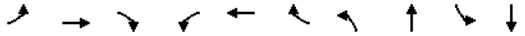
Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	250	646	28	306	567	111	52	1000	289
v/c Ratio	1.11	0.54	0.68	0.73	0.73	0.74	0.29	1.96	0.51
Control Delay	127.7	19.6	108.8	37.3	8.3	67.0	15.8	461.1	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	127.7	19.6	108.8	37.3	8.3	67.0	15.8	461.1	15.3
Queue Length 50th (ft)	~138	120	14	134	0	53	0	~751	54
Queue Length 95th (ft)	#311	168	#66	216	80	#152	34	#1099	144
Internal Link Dist (ft)		152		260		844			629
Turn Bay Length (ft)	185		105		180		75	335	
Base Capacity (vph)	225	1681	41	710	929	149	177	510	572
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.11	0.38	0.68	0.43	0.61	0.74	0.29	1.96	0.51

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	17	798	510	262	1154	27	642	255	3	31
v/c Ratio	0.16	0.79	0.47	0.73	1.27	0.03	1.55	0.42	0.05	0.25
Control Delay	49.3	36.9	2.4	50.1	154.3	13.2	288.1	7.0	50.7	31.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	36.9	2.4	50.1	154.3	13.2	288.1	7.0	50.7	31.8
Queue Length 50th (ft)	11	246	0	165	~927	6	~626	7	2	8
Queue Length 95th (ft)	33	332	41	#303	#1360	25	#874	71	12	38
Internal Link Dist (ft)		191			298			499		239
Turn Bay Length (ft)	100		250	150		50	150		50	
Base Capacity (vph)	265	1160	1075	365	908	773	414	900	66	519
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.69	0.47	0.72	1.27	0.03	1.55	0.28	0.05	0.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	66	861	113	26	1380	73	29	69
v/c Ratio	0.85	0.77	0.12	0.33	1.35	0.41	0.16	0.40
Control Delay	113.4	22.1	6.1	54.2	187.6	44.2	15.6	30.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	113.4	22.1	6.1	54.2	187.6	44.2	15.6	30.4
Queue Length 50th (ft)	37	381	13	14	~1048	38	0	19
Queue Length 95th (ft)	#126	#756	43	#46	#1452	83	25	60
Internal Link Dist (ft)		2376			446	290		465
Turn Bay Length (ft)	150		200	100			100	
Base Capacity (vph)	78	1117	967	78	1019	545	500	611
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.77	0.12	0.33	1.35	0.13	0.06	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	200	723	871	271	243	534
v/c Ratio	0.62	0.69	0.75	0.24	0.60	0.74
Control Delay	39.0	8.2	27.5	5.6	33.6	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.0	8.2	27.5	5.6	33.6	10.8
Queue Length 50th (ft)	90	65	175	39	105	13
Queue Length 95th (ft)	186	265	#376	94	204	122
Internal Link Dist (ft)	315			610	278	
Turn Bay Length (ft)	150		200			
Base Capacity (vph)	597	1146	1445	1450	738	903
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.63	0.60	0.19	0.33	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

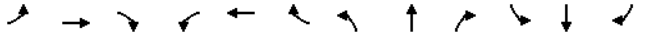
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	102	265	33	367	680	119	56	700	203
v/c Ratio	0.89	0.23	0.35	0.75	0.76	0.58	0.25	1.52	0.39
Control Delay	97.2	14.8	43.0	31.7	8.0	43.6	12.6	269.1	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.2	14.8	43.0	31.7	8.0	43.6	12.6	269.1	11.8
Queue Length 50th (ft)	44	32	14	139	0	48	0	~422	24
Queue Length 95th (ft)	#149	67	43	225	76	#128	32	#720	87
Internal Link Dist (ft)		152		260		844			629
Turn Bay Length (ft)	185		105		180		75	335	
Base Capacity (vph)	115	1836	139	1016	1129	215	236	461	522
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.14	0.24	0.36	0.60	0.55	0.24	1.52	0.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Appendix H:

Analysis Worksheets for Mitigated Conditions



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	598	276	230	815	14	418	11	67	2	8	12
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	3167	1417	1583	1667	1417	1583	1452		1583	1519	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	3167	1417	1583	1667	1417	1583	1452		1583	1519	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	10	664	307	256	906	16	464	12	74	2	9	13
RTOR Reduction (vph)	0	0	132	0	0	1	0	53	0	0	13	0
Lane Group Flow (vph)	10	664	175	256	906	15	464	33	0	2	9	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		pm+ov	Prot		Perm	Prot			Prot		
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2			6						
Actuated Green, G (s)	1.2	28.5	53.0	20.9	48.2	48.2	24.5	26.8		1.0	3.3	
Effective Green, g (s)	1.2	28.5	53.0	20.9	48.2	48.2	24.5	26.8		1.0	3.3	
Actuated g/C Ratio	0.01	0.31	0.57	0.22	0.52	0.52	0.26	0.29		0.01	0.04	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	20	968	867	355	862	733	416	418		17	54	
v/s Ratio Prot	0.01	0.21	0.05	c0.16	c0.54		c0.29	0.02		0.00	c0.01	
v/s Ratio Perm			0.07			0.01						
v/c Ratio	0.50	0.69	0.20	0.72	1.05	0.02	1.12	0.08		0.12	0.18	
Uniform Delay, d1	45.7	28.4	9.8	33.5	22.5	11.0	34.4	24.2		45.7	43.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	18.3	2.0	0.1	7.1	44.9	0.0	79.3	0.1		3.1	1.6	
Delay (s)	64.0	30.5	9.9	40.5	67.4	11.0	113.7	24.3		48.7	45.2	
Level of Service	E	C	A	D	E	B	F	C		D	D	
Approach Delay (s)		24.4			60.8			99.7			45.5	
Approach LOS		C			E			F			D	

Intersection Summary				
HCM Average Control Delay	55.4	HCM Level of Service	E	
HCM Volume to Capacity ratio	1.04			
Actuated Cycle Length (s)	93.2	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	93.8%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	573	64	17	1000	17	38	5	15	17	2	21
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1583	1667	1417	1583	1662			1537	1363		1459	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	1583	1667	1417	1583	1662			1537	1363		1459	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	637	71	19	1111	19	42	6	17	19	2	23
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	16	0	22	0
Lane Group Flow (vph)	33	637	58	19	1130	0	0	48	1	0	22	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	6%	6%	6%	6%	6%	6%
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	3.2	74.5	74.5	1.6	72.9			7.7	7.7		5.2	
Effective Green, g (s)	3.2	74.5	74.5	1.6	72.9			7.7	7.7		5.2	
Actuated g/C Ratio	0.03	0.71	0.71	0.02	0.69			0.07	0.07		0.05	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	48	1183	1005	24	1154			113	100		72	
v/s Ratio Prot	c0.02	0.38		0.01	c0.68			c0.03			c0.02	
v/s Ratio Perm			0.04						0.00			
v/c Ratio	0.69	0.54	0.06	0.79	0.98			0.42	0.01		0.31	
Uniform Delay, d1	50.4	7.2	4.6	51.5	15.3			46.5	45.1		48.2	
Progression Factor	1.00	1.00	1.00	0.84	0.59			1.00	1.00		1.00	
Incremental Delay, d2	33.8	1.8	0.1	86.4	20.2			2.6	0.0		2.4	
Delay (s)	84.2	8.9	4.7	129.8	29.3			49.1	45.2		50.6	
Level of Service	F	A	A	F	C			D	D		D	
Approach Delay (s)		11.9			30.9			48.1			50.6	
Approach LOS		B			C			D			D	

Intersection Summary				
HCM Average Control Delay	24.8	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.84			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	75.9%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Volume (vph)	138	467	11	652	146	175	382
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1583	1417		2956	1604	1604	1363
Flt Permitted	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (perm)	1583	1417		2956	1604	1604	1363
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	153	519	12	724	162	194	424
RTOR Reduction (vph)	0	437	0	0	0	0	348
Lane Group Flow (vph)	153	82	0	736	162	194	76
Heavy Vehicles (%)	2%	2%	6%	6%	6%	6%	6%
Turn Type		Perm	Prot	Prot			Perm
Protected Phases	4		5	5	2	6	
Permitted Phases		4					6
Actuated Green, G (s)	16.5	16.5		57.8	80.5	18.7	18.7
Effective Green, g (s)	16.5	16.5		57.8	80.5	18.7	18.7
Actuated g/C Ratio	0.16	0.16		0.55	0.77	0.18	0.18
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	249	223		1627	1230	286	243
v/s Ratio Prot	c0.10			c0.25	0.10	c0.12	
v/s Ratio Perm		0.06					0.06
v/c Ratio	0.61	0.37		0.45	0.13	0.68	0.31
Uniform Delay, d1	41.3	39.6		14.1	3.2	40.3	37.5
Progression Factor	0.79	3.47		1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.9		0.9	0.0	6.3	0.7
Delay (s)	36.6	138.1		15.0	3.2	46.6	38.3
Level of Service	D	F		B	A	D	D
Approach Delay (s)	115.0				12.9	40.9	
Approach LOS	F				B	D	

Intersection Summary				
HCM Average Control Delay	52.2	HCM Level of Service		D
HCM Volume to Capacity ratio	0.53			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)		12.0
Intersection Capacity Utilization	73.8%	ICU Level of Service		D
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	21	0	0	53	32	756	17	18	592	43
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	23	0	0	59	36	840	19	20	658	48
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked	0.91	0.91	0.91	0.91	0.91		0.91					
vC, conflicting volume	1692	1652	682	1642	1666	849	706			859		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1711	1667	600	1656	1683	849	627			859		
tC, single (s)	7.2	6.6	6.3	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	100	95	100	100	83	96			97		
cM capacity (veh/h)	50	80	449	63	78	355	851			765		

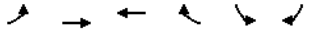
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	23	59	36	859	20	706
Volume Left	0	0	36	0	20	0
Volume Right	23	59	0	19	0	48
cSH	449	355	851	1700	765	1700
Volume to Capacity	0.05	0.17	0.04	0.51	0.03	0.42
Queue Length 95th (ft)	4	15	3	0	2	0
Control Delay (s)	13.5	17.2	9.4	0.0	9.8	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	13.5	17.2	0.4		0.3	
Approach LOS	B	C				

Intersection Summary				
Average Delay	1.1			
Intersection Capacity Utilization	56.0%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	135	25	23	270	350	38	46	49	525	46	81
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.4		4.0	4.0	4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1524	2975		1583	1667	1417		1630	1417	1524	1450	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1524	2975		1583	1667	1417		1630	1417	1524	1450	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	76	150	28	26	300	389	42	51	54	583	51	90
RTOR Reduction (vph)	0	16	0	0	0	288	0	0	50	0	53	0
Lane Group Flow (vph)	76	162	0	26	300	101	0	93	4	583	88	0
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	2%	2%	2%	6%	6%	6%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	5.1	24.3		2.0	21.2	21.2		6.1	6.1	34.1	34.1	
Effective Green, g (s)	5.1	24.3		2.0	21.2	21.2		6.1	6.1	34.1	34.1	
Actuated g/C Ratio	0.06	0.30		0.02	0.26	0.26		0.07	0.07	0.42	0.42	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.4		4.0	4.0	4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.2		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	95	882		39	431	366		121	105	634	603	
v/s Ratio Prot	c0.05	0.05		0.02	c0.18			c0.06		c0.38	0.06	
v/s Ratio Perm						0.07			0.00			
v/c Ratio	0.80	0.18		0.67	0.70	0.27		0.77	0.04	0.92	0.15	
Uniform Delay, d1	37.9	21.5		39.7	27.5	24.3		37.3	35.2	22.7	14.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	34.9	0.1		28.5	4.9	0.4		24.9	0.1	18.4	0.1	
Delay (s)	72.9	21.6		68.2	32.4	24.7		62.1	35.4	41.1	15.0	
Level of Service	E	C		E	C	C		E	D	D	B	
Approach Delay (s)		36.9			29.5			52.3			36.0	
Approach LOS		D			C			D			D	

Intersection Summary				
HCM Average Control Delay	34.9	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.83			
Actuated Cycle Length (s)	82.0	Sum of lost time (s)	15.5	
Intersection Capacity Utilization	71.0%	ICU Level of Service	C	
Analysis Period (min)	15			

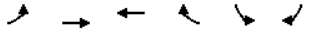
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	210	255	216	89	189	117
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2956	1604	1604	1363	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	2956	1604	1604	1363	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	233	283	240	99	210	130
RTOR Reduction (vph)	0	0	0	13	0	71
Lane Group Flow (vph)	233	283	240	86	210	59
Heavy Vehicles (%)	6%	6%	6%	6%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	6.3	15.9	6.6	14.5	7.9	14.2
Effective Green, g (s)	6.3	15.9	6.6	14.5	7.9	14.2
Actuated g/C Ratio	0.20	0.51	0.21	0.46	0.25	0.45
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	593	812	337	629	398	641
v/s Ratio Prot	c0.08	0.18	c0.15	0.03	c0.13	0.02
v/s Ratio Perm				0.03		0.02
v/c Ratio	0.39	0.35	0.71	0.14	0.53	0.09
Uniform Delay, d1	10.9	4.6	11.5	4.9	10.1	4.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	5.8	0.1	1.4	0.0
Delay (s)	11.0	4.7	17.3	5.0	11.6	4.9
Level of Service	B	A	B	A	B	A
Approach Delay (s)		7.6	13.7		9.0	
Approach LOS		A	B		A	

Intersection Summary				
HCM Average Control Delay	9.7	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.55			
Actuated Cycle Length (s)	31.4	Sum of lost time (s)	10.6	
Intersection Capacity Utilization	41.2%	ICU Level of Service	A	
Analysis Period (min)	15			

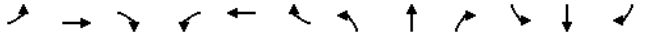
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	57	184	504	72	17	110
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	63	204	560	80	19	122
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	640				931	600
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	640				931	600
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	93				93	76
cM capacity (veh/h)	925				276	501

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	268	640	141
Volume Left	63	0	19
Volume Right	0	80	122
cSH	925	1700	452
Volume to Capacity	0.07	0.38	0.31
Queue Length 95th (ft)	5	0	33
Control Delay (s)	2.7	0.0	16.6
Lane LOS	A		C
Approach Delay (s)	2.7	0.0	16.6
Approach LOS			C

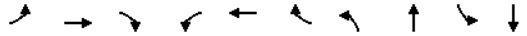
Intersection Summary				
Average Delay		2.9		
Intersection Capacity Utilization		67.5%	ICU Level of Service	C
Analysis Period (min)		15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	3	39	2	102	0	429	114	47	306	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	3	43	2	113	0	477	127	52	340	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	1036	1048	340	988	984	540	340			603		
vC1, stage 1 conf vol	444	444		540	540							
vC2, stage 2 conf vol	591	603		448	444							
vCu, unblocked vol	1036	1048	340	988	984	540	340			603		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.2	5.6		6.1	5.5							
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	90	99	79	100			95		
cM capacity (veh/h)	303	375	693	422	423	542	1219			974		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	3	159	0	603	52	340
Volume Left	0	43	0	0	52	0
Volume Right	3	113	0	127	0	0
cSH	693	501	1700	1700	974	1700
Volume to Capacity	0.00	0.32	0.00	0.35	0.05	0.20
Queue Length 95th (ft)	0	34	0	0	4	0
Control Delay (s)	10.2	15.5	0.0	0.0	8.9	0.0
Lane LOS	B	C			A	
Approach Delay (s)	10.2	15.5	0.0		1.2	
Approach LOS	B	C				

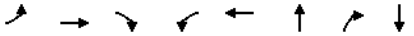
Intersection Summary				
Average Delay		2.6		
Intersection Capacity Utilization		62.5%	ICU Level of Service	B
Analysis Period (min)		15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	10	664	307	256	906	16	464	86	2	22
v/c Ratio	0.09	0.72	0.31	0.67	0.98	0.02	1.04	0.17	0.02	0.18
Control Delay	45.2	33.5	2.0	41.9	46.2	10.9	86.8	9.8	45.0	31.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.2	33.5	2.0	41.9	46.2	10.9	86.8	9.8	45.0	31.0
Queue Length 50th (ft)	5	161	0	112	358	3	235	4	1	4
Queue Length 95th (ft)	24	264	34	#276	#961	17	#595	45	9	31
Internal Link Dist (ft)		405			469			499		239
Turn Bay Length (ft)	100		250	325		50	275		50	
Base Capacity (vph)	317	1269	995	429	927	788	448	723	317	598
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.52	0.31	0.60	0.98	0.02	1.04	0.12	0.01	0.04

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	33	637	71	19	1130	48	17	44
v/c Ratio	0.55	0.50	0.06	0.32	0.91	0.38	0.13	0.35
Control Delay	82.7	10.1	3.7	53.6	23.2	52.9	20.9	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.7	10.1	3.7	53.6	23.2	52.9	20.9	34.6
Queue Length 50th (ft)	22	155	4	13	~816	31	0	14
Queue Length 95th (ft)	#69	386	25	m27	#1158	67	21	48
Internal Link Dist (ft)		519			335	290		465
Turn Bay Length (ft)	150		200	100			100	
Base Capacity (vph)	60	1273	1093	60	1244	395	363	461
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.50	0.06	0.32	0.91	0.12	0.05	0.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	153	519	736	162	194	424
v/c Ratio	0.62	0.79	0.45	0.13	0.68	0.72
Control Delay	41.3	20.3	17.7	4.3	51.7	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.3	20.3	17.7	4.3	51.7	10.9
Queue Length 50th (ft)	98	113	141	22	123	0
Queue Length 95th (ft)	152	325	268	59	182	87
Internal Link Dist (ft)	426			610	279	
Turn Bay Length (ft)	150		350			
Base Capacity (vph)	422	758	1628	1230	489	710
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.68	0.45	0.13	0.40	0.60

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	76	178	26	300	389	93	54	583	141
v/c Ratio	0.78	0.19	0.31	0.75	0.61	0.75	0.34	0.90	0.21
Control Delay	90.1	20.8	50.0	42.0	7.6	76.5	18.3	41.7	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.1	20.8	50.0	42.0	7.6	76.5	18.3	41.7	7.4
Queue Length 50th (ft)	42	30	14	151	0	51	0	269	15
Queue Length 95th (ft)	#129	63	40	240	71	#143	36	#504	52
Internal Link Dist (ft)		215		260		844			629
Turn Bay Length (ft)	180		105		180		75	425	
Base Capacity (vph)	97	954	121	522	711	124	158	754	763
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.19	0.21	0.57	0.55	0.75	0.34	0.77	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	233	283	240	99	210	130
v/c Ratio	0.40	0.39	0.54	0.11	0.36	0.16
Control Delay	20.6	8.1	16.9	1.7	12.4	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	8.1	16.9	1.7	12.4	1.9
Queue Length 50th (ft)	20	28	39	3	30	0
Queue Length 95th (ft)	#73	80	99	9	84	16
Internal Link Dist (ft)		1271	1500		1899	
Turn Bay Length (ft)	135			150		165
Base Capacity (vph)	585	1451	1188	1308	1018	804
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.20	0.20	0.08	0.21	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	703	325	200	624	12	463	10	74	2	10	15
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	3167	1417	1583	1667	1417	1583	1446		1583	1515	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	3167	1417	1583	1667	1417	1583	1446		1583	1515	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	781	361	222	693	13	514	11	82	2	11	17
RTOR Reduction (vph)	0	0	144	0	0	1	0	56	0	0	16	0
Lane Group Flow (vph)	11	781	217	222	693	12	514	37	0	2	12	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		pm+ov	Prot		Perm	Prot			Prot		
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2			6						
Actuated Green, G (s)	1.4	33.4	60.8	18.9	50.9	50.9	27.4	31.8		1.1	5.5	
Effective Green, g (s)	1.4	33.4	60.8	18.9	50.9	50.9	27.4	31.8		1.1	5.5	
Actuated g/C Ratio	0.01	0.33	0.60	0.19	0.50	0.50	0.27	0.31		0.01	0.05	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	22	1045	907	296	838	713	429	454		17	82	
v/s Ratio Prot	0.01	0.25	0.06	c0.14	c0.42		c0.32	0.03		0.00	c0.01	
v/s Ratio Perm			0.09			0.01						
v/c Ratio	0.50	0.75	0.24	0.75	0.83	0.02	1.20	0.08		0.12	0.15	
Uniform Delay, d1	49.6	30.1	9.4	38.9	21.4	12.6	36.9	24.4		49.6	45.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.8	3.0	0.1	10.2	6.7	0.0	109.8	0.1		3.1	0.8	
Delay (s)	66.3	33.1	9.6	49.1	28.1	12.6	146.7	24.5		52.7	46.4	
Level of Service	E	C	A	D	C	B	F	C		D	D	
Approach Delay (s)		26.1			32.9			128.0			46.8	
Approach LOS		C			C			F			D	

Intersection Summary

HCM Average Control Delay	51.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	101.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	669	75	15	761	15	50	6	20	20	2	25
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1583	1667	1417	1583	1662			1536	1363		1456	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	1583	1667	1417	1583	1662			1536	1363		1456	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	743	83	17	846	17	56	7	22	22	2	28
RTOR Reduction (vph)	0	0	14	0	0	0	0	0	20	0	26	0
Lane Group Flow (vph)	39	743	69	17	863	0	0	63	2	0	26	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	6%	6%	6%	6%	6%	6%
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	4.8	72.3	72.3	1.6	69.1			8.6	8.6		6.5	
Effective Green, g (s)	4.8	72.3	72.3	1.6	69.1			8.6	8.6		6.5	
Actuated g/C Ratio	0.05	0.69	0.69	0.02	0.66			0.08	0.08		0.06	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	72	1148	976	24	1094			126	112		90	
v/s Ratio Prot	c0.02	0.45		0.01	c0.52			c0.04			c0.02	
v/s Ratio Perm			0.05						0.00			
v/c Ratio	0.54	0.65	0.07	0.71	0.79			0.50	0.02		0.29	
Uniform Delay, d1	49.0	9.2	5.4	51.5	12.8			46.1	44.3		47.0	
Progression Factor	1.00	1.00	1.00	0.94	0.63			1.00	1.00		1.00	
Incremental Delay, d2	8.1	2.8	0.1	61.2	5.3			3.1	0.1		1.8	
Delay (s)	57.1	12.0	5.5	109.5	13.4			49.2	44.4		48.8	
Level of Service	E	B	A	F	B			D	D		D	
Approach Delay (s)		13.4			15.2			48.0			48.8	
Approach LOS		B			B			D			D	

Intersection Summary				
HCM Average Control Delay	16.8	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.71			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	62.2%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Volume (vph)	169	540	9	462	184	239	329
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1583	1417		2956	1604	1604	1363
Flt Permitted	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (perm)	1583	1417		2956	1604	1604	1363
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	188	600	10	513	204	266	366
RTOR Reduction (vph)	0	490	0	0	0	0	285
Lane Group Flow (vph)	188	110	0	523	204	266	81
Heavy Vehicles (%)	2%	2%	6%	6%	6%	6%	6%
Turn Type		Perm	Prot	Prot			Perm
Protected Phases	4		5	5	2	6	
Permitted Phases		4					6
Actuated Green, G (s)	19.2	19.2		50.6	77.8	23.2	23.2
Effective Green, g (s)	19.2	19.2		50.6	77.8	23.2	23.2
Actuated g/C Ratio	0.18	0.18		0.48	0.74	0.22	0.22
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	289	259		1425	1188	354	301
v/s Ratio Prot	c0.12			c0.18	0.13	c0.17	
v/s Ratio Perm		0.08					0.06
v/c Ratio	0.65	0.42		0.37	0.17	0.75	0.27
Uniform Delay, d1	39.8	38.0		17.1	4.0	38.2	33.9
Progression Factor	0.72	3.17		1.00	1.00	1.00	1.00
Incremental Delay, d2	4.3	0.9		0.7	0.1	8.7	0.5
Delay (s)	32.8	121.3		17.9	4.1	46.9	34.4
Level of Service	C	F		B	A	D	C
Approach Delay (s)	100.1				14.0	39.6	
Approach LOS	F				B	D	

Intersection Summary				
HCM Average Control Delay	53.2	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.52			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	76.4%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis 2010 + PP (Mit for LOS)
12: Lime Kiln Rd. & Diamond Rd. (SR-49) PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	73	0	0	44	40	611	22	25	705	58
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	81	0	0	49	44	679	24	28	783	64
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked	0.87	0.87	0.87	0.87	0.87		0.87					
vC, conflicting volume	1688	1663	816	1700	1683	691	848			703		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1717	1689	709	1731	1712	691	746			703		
tC, single (s)	7.2	6.6	6.3	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	100	78	100	100	89	94			97		
cM capacity (veh/h)	49	72	370	42	70	438	730			876		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	81	49	44	703	28	848
Volume Left	0	0	44	0	28	0
Volume Right	81	49	0	24	0	64
cSH	370	438	730	1700	876	1700
Volume to Capacity	0.22	0.11	0.06	0.41	0.03	0.50
Queue Length 95th (ft)	21	9	5	0	2	0
Control Delay (s)	17.4	14.3	10.2	0.0	9.2	0.0
Lane LOS	C	B	B		A	
Approach Delay (s)	17.4	14.3	0.6		0.3	
Approach LOS	C	B				

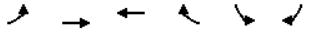
Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	57.1%	ICU Level of Service	B	
Analysis Period (min)	15			

HCM Signalized Intersection Capacity Analysis 2010 + PP (Mit for LOS)
13: Pleasant Valley Rd. (SR-49) & Diamond Rd. (SR-49) PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	330	60	19	225	292	35	43	46	750	65	138
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.4		4.0	4.0	4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1524	2977		1583	1667	1417		1630	1417	1524	1440	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1524	2977		1583	1667	1417		1630	1417	1524	1440	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	189	367	67	21	250	324	39	48	51	833	72	153
RTOR Reduction (vph)	0	11	0	0	0	269	0	0	48	0	59	0
Lane Group Flow (vph)	189	423	0	21	250	55	0	87	3	833	166	0
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	2%	2%	2%	6%	6%	6%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	16.0	35.1		3.1	22.2	22.2		7.0	7.0	69.9	69.9	
Effective Green, g (s)	16.0	35.1		3.1	22.2	22.2		7.0	7.0	69.9	69.9	
Actuated g/C Ratio	0.12	0.27		0.02	0.17	0.17		0.05	0.05	0.54	0.54	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.4		4.0	4.0	4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.2		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	187	800		38	283	241		87	76	816	771	
v/s Ratio Prot	c0.12	0.14		0.01	c0.15			c0.05		c0.55	0.12	
v/s Ratio Perm						0.04			0.00			
v/c Ratio	1.01	0.53		0.55	0.88	0.23		1.00	0.04	1.02	0.22	
Uniform Delay, d1	57.3	40.7		63.1	52.9	46.8		61.8	58.6	30.3	15.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	68.6	0.7		9.5	26.2	0.5		96.5	0.2	36.9	0.1	
Delay (s)	125.9	41.4		72.6	79.2	47.3		158.3	58.8	67.2	16.1	
Level of Service	F	D		E	E	D		F	E	E	B	
Approach Delay (s)		67.0			61.6			121.5			56.3	
Approach LOS		E			E			F			E	

Intersection Summary				
HCM Average Control Delay	64.1	HCM Level of Service	E	
HCM Volume to Capacity ratio	0.99			
Actuated Cycle Length (s)	130.6	Sum of lost time (s)	15.5	
Intersection Capacity Utilization	87.3%	ICU Level of Service	E	
Analysis Period (min)	15			

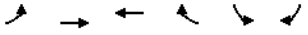
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	350	425	180	103	450	280
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2956	1604	1604	1363	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	2956	1604	1604	1363	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	389	472	200	114	500	311
RTOR Reduction (vph)	0	0	0	12	0	120
Lane Group Flow (vph)	389	472	200	102	500	191
Heavy Vehicles (%)	6%	6%	6%	6%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	10.1	23.0	9.9	32.6	22.7	32.8
Effective Green, g (s)	10.1	23.0	9.9	32.6	22.7	32.8
Actuated g/C Ratio	0.19	0.43	0.19	0.61	0.43	0.62
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	560	692	298	834	674	872
v/s Ratio Prot	0.13	c0.29	0.12	0.05	c0.32	0.04
v/s Ratio Perm				0.02		0.09
v/c Ratio	0.69	0.68	0.67	0.12	0.74	0.22
Uniform Delay, d1	20.2	12.2	20.2	4.3	12.8	4.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	2.2	4.6	0.1	4.5	0.0
Delay (s)	23.2	14.4	24.8	4.4	17.4	4.6
Level of Service	C	B	C	A	B	A
Approach Delay (s)		18.4	17.4		12.5	
Approach LOS		B	B		B	

Intersection Summary				
HCM Average Control Delay	15.8	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.71			
Actuated Cycle Length (s)	53.3	Sum of lost time (s)	7.6	
Intersection Capacity Utilization	59.7%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	103	335	458	51	34	140
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	114	372	509	57	38	156
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	566				1138	537
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	566				1138	537
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	88				81	71
cM capacity (veh/h)	987				197	544

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	487	566	193
Volume Left	114	0	38
Volume Right	0	57	156
cSH	987	1700	405
Volume to Capacity	0.12	0.33	0.48
Queue Length 95th (ft)	10	0	63
Control Delay (s)	3.2	0.0	21.8
Lane LOS	A		C
Approach Delay (s)	3.2	0.0	21.8
Approach LOS			C

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	10	45	2	179	0	388	95	85	550	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	11	50	2	199	0	431	106	94	611	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	1431	1337	611	1295	1284	484	611			537		
vC1, stage 1 conf vol	800	800		484	484							
vC2, stage 2 conf vol	631	537		811	800							
vCu, unblocked vol	1431	1337	611	1295	1284	484	611			537		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.2	5.6		6.1	5.5							
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	98	83	99	66	100			91		
cM capacity (veh/h)	183	294	486	297	321	583	968			1031		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	11	251	0	537	94	611
Volume Left	0	50	0	0	94	0
Volume Right	11	199	0	106	0	0
cSH	486	486	1700	1700	1031	1700
Volume to Capacity	0.02	0.52	0.00	0.32	0.09	0.36
Queue Length 95th (ft)	2	73	0	0	8	0
Control Delay (s)	12.6	20.0	0.0	0.0	8.8	0.0
Lane LOS	B	C			A	
Approach Delay (s)	12.6	20.0	0.0		1.2	
Approach LOS	B	C				

Intersection Summary					
Average Delay		4.0			
Intersection Capacity Utilization		67.6%	ICU Level of Service		C
Analysis Period (min)		15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	11	781	361	222	693	13	514	93	2	28
v/c Ratio	0.10	0.78	0.34	0.70	0.77	0.02	1.12	0.17	0.02	0.23
Control Delay	48.2	35.9	1.8	51.3	26.9	12.8	114.4	8.5	47.0	31.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.2	35.9	1.8	51.3	26.9	12.8	114.4	8.5	47.0	31.6
Queue Length 50th (ft)	7	235	0	136	323	3	~408	4	1	7
Queue Length 95th (ft)	26	318	33	#264	#686	16	#646	44	9	35
Internal Link Dist (ft)		405			469			499		239
Turn Bay Length (ft)	100		250	325		50	275		50	
Base Capacity (vph)	288	1188	1047	323	896	762	458	711	288	547
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.66	0.34	0.69	0.77	0.02	1.12	0.13	0.01	0.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	39	743	83	17	863	63	22	52
v/c Ratio	0.65	0.61	0.08	0.28	0.74	0.45	0.15	0.39
Control Delay	95.0	13.6	4.5	57.1	14.1	54.1	18.6	34.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.0	13.6	4.5	57.1	14.1	54.1	18.6	34.4
Queue Length 50th (ft)	26	213	6	12	457	41	0	16
Queue Length 95th (ft)	#83	534	32	m29	#800	81	23	52
Internal Link Dist (ft)		519			335	290		465
Turn Bay Length (ft)	150		200	100			100	
Base Capacity (vph)	60	1224	1053	60	1170	395	367	463
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.61	0.08	0.28	0.74	0.16	0.06	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	188	600	523	204	266	366
v/c Ratio	0.65	0.80	0.37	0.17	0.75	0.62
Control Delay	36.3	16.9	21.1	5.5	50.7	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.3	16.9	21.1	5.5	50.7	8.3
Queue Length 50th (ft)	119	151	109	34	167	0
Queue Length 95th (ft)	128	414	209	85	234	71
Internal Link Dist (ft)	426			610	279	
Turn Bay Length (ft)	150		350			
Base Capacity (vph)	467	841	1422	1188	489	670
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.71	0.37	0.17	0.54	0.55

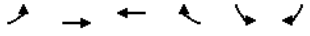
Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	189	434	21	250	324	87	51	833	225
v/c Ratio	1.00	0.53	0.39	0.92	0.65	0.99	0.41	1.01	0.27
Control Delay	122.6	42.3	81.0	91.2	11.5	152.3	25.6	64.9	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	122.6	42.3	81.0	91.2	11.5	152.3	25.6	64.9	7.7
Queue Length 50th (ft)	~163	162	18	209	0	75	0	~741	40
Queue Length 95th (ft)	#321	222	47	#367	91	#188	43	#990	86
Internal Link Dist (ft)		215		260		844			629
Turn Bay Length (ft)	180		105		180		75	425	
Base Capacity (vph)	189	819	73	278	507	88	125	822	836
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.53	0.29	0.90	0.64	0.99	0.41	1.01	0.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	389	472	200	114	500	311
v/c Ratio	0.70	0.69	0.69	0.12	0.75	0.29
Control Delay	30.8	19.2	34.5	2.4	22.4	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	19.2	34.5	2.4	22.4	1.4
Queue Length 50th (ft)	62	121	64	7	130	0
Queue Length 95th (ft)	#138	229	127	18	#306	22
Internal Link Dist (ft)		1271	1500		1899	
Turn Bay Length (ft)	135			150		165
Base Capacity (vph)	631	1220	807	1090	845	1091
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.39	0.25	0.10	0.59	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	658	368	233	922	19	520	13	145	2	10	14
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	3167	1417	1583	1667	1417	3072	1437		1583	1519	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	3167	1417	1583	1667	1417	3072	1437		1583	1519	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	13	731	409	259	1024	21	578	14	161	2	11	16
RTOR Reduction (vph)	0	0	184	0	0	1	0	120	0	0	15	0
Lane Group Flow (vph)	13	731	225	259	1024	20	578	55	0	2	12	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		pm+ov	Prot		Perm	Prot			Prot		
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2			6						
Actuated Green, G (s)	1.3	32.0	51.4	20.8	51.5	51.5	19.4	23.8		1.0	5.4	
Effective Green, g (s)	1.3	32.0	51.4	20.8	51.5	51.5	19.4	23.8		1.0	5.4	
Actuated g/C Ratio	0.01	0.34	0.55	0.22	0.55	0.55	0.21	0.25		0.01	0.06	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	22	1083	839	352	917	780	637	365		17	88	
v/s Ratio Prot	0.01	0.23	0.06	c0.16	c0.61		c0.19	c0.04		0.00	0.01	
v/s Ratio Perm			0.10			0.01						
v/c Ratio	0.59	0.67	0.27	0.74	1.12	0.03	0.91	0.15		0.12	0.14	
Uniform Delay, d1	45.9	26.4	11.2	33.8	21.0	9.6	36.2	27.1		45.9	41.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	36.0	1.7	0.2	7.8	67.2	0.0	16.6	0.2		3.1	0.7	
Delay (s)	81.9	28.0	11.3	41.6	88.2	9.6	52.8	27.3		48.9	42.6	
Level of Service	F	C	B	D	F	A	D	C		D	D	
Approach Delay (s)		22.7			77.7			46.9			43.0	
Approach LOS		C			E			D			D	

Intersection Summary				
HCM Average Control Delay	50.7	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.96			
Actuated Cycle Length (s)	93.6	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	90.8%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	678	83	20	1104	20	44	10	21	24	2	26
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1583	1667	1417	1583	1662			1556	1376		1475	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	1583	1667	1417	1583	1662			1556	1376		1475	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	49	753	92	22	1227	22	49	11	23	27	2	29
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	21	0	27	0
Lane Group Flow (vph)	49	753	77	22	1249	0	0	60	2	0	31	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	4.8	77.0	77.0	1.6	73.8			8.5	8.5		6.9	
Effective Green, g (s)	4.8	77.0	77.0	1.6	73.8			8.5	8.5		6.9	
Actuated g/C Ratio	0.04	0.70	0.70	0.01	0.67			0.08	0.08		0.06	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	69	1167	992	23	1115			120	106		93	
v/s Ratio Prot	c0.03	0.45		0.01	c0.75			c0.04			c0.02	
v/s Ratio Perm			0.05						0.00			
v/c Ratio	0.71	0.65	0.08	0.96	1.12			0.50	0.02		0.33	
Uniform Delay, d1	51.9	9.0	5.2	54.2	18.1			48.7	46.9		49.3	
Progression Factor	1.00	1.00	1.00	0.83	0.58			1.00	1.00		1.00	
Incremental Delay, d2	29.0	2.8	0.2	151.0	64.4			3.3	0.1		2.1	
Delay (s)	80.9	11.8	5.4	196.0	74.9			52.0	47.0		51.4	
Level of Service	F	B	A	F	E			D	D		D	
Approach Delay (s)		14.9			77.0			50.6			51.4	
Approach LOS		B			E			D			D	

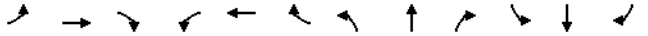
Intersection Summary				
HCM Average Control Delay	51.3	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.98			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	83.0%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Volume (vph)	162	561	14	707	191	197	437
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1583	1417		2984	1619	1619	1376
Flt Permitted	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (perm)	1583	1417		2984	1619	1619	1376
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	180	623	16	786	212	219	486
RTOR Reduction (vph)	0	515	0	0	0	0	392
Lane Group Flow (vph)	180	108	0	802	212	219	94
Heavy Vehicles (%)	2%	2%	5%	5%	5%	5%	5%
Turn Type		Perm	Prot	Prot			Perm
Protected Phases	4		5	5	2	6	
Permitted Phases		4					6
Actuated Green, G (s)	19.0	19.0		57.7	83.0	21.3	21.3
Effective Green, g (s)	19.0	19.0		57.7	83.0	21.3	21.3
Actuated g/C Ratio	0.17	0.17		0.52	0.75	0.19	0.19
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	273	245		1565	1222	313	266
v/s Ratio Prot	c0.11			c0.27	0.13	c0.14	
v/s Ratio Perm		0.08					0.07
v/c Ratio	0.66	0.44		0.51	0.17	0.70	0.35
Uniform Delay, d1	42.5	40.7		17.0	3.8	41.4	38.4
Progression Factor	0.75	3.83		1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7	1.0		1.2	0.1	6.7	0.8
Delay (s)	36.5	157.0		18.2	3.9	48.1	39.2
Level of Service	D	F		B	A	D	D
Approach Delay (s)	130.0				15.2	42.0	
Approach LOS	F				B	D	

Intersection Summary				
HCM Average Control Delay	59.2	HCM Level of Service		E
HCM Volume to Capacity ratio	0.58			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)		12.0
Intersection Capacity Utilization	83.4%	ICU Level of Service		E
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	23	0	0	80	35	832	34	16	702	54
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	26	0	0	89	39	924	38	18	780	60
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked	0.89	0.89	0.89	0.89	0.89		0.89					
vC, conflicting volume	1937	1886	810	1862	1897	943	840			962		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1989	1932	727	1906	1945	943	760			962		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	93	100	100	72	95			97		
cM capacity (veh/h)	27	53	374	40	53	314	748			703		

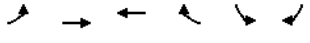
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	26	89	39	962	18	840
Volume Left	0	0	39	0	18	0
Volume Right	26	89	0	38	0	60
cSH	374	314	748	1700	703	1700
Volume to Capacity	0.07	0.28	0.05	0.57	0.03	0.49
Queue Length 95th (ft)	5	28	4	0	2	0
Control Delay (s)	15.3	20.9	10.1	0.0	10.3	0.0
Lane LOS	C	C	B		B	
Approach Delay (s)	15.3	20.9	0.4		0.2	
Approach LOS	C	C				

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	63.4%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	170	29	26	300	450	43	53	50	578	49	101
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.4		4.0	4.0	4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	0.97	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1538	3009		1583	1667	1417		1630	1417	2984	1455	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1538	3009		1583	1667	1417		1630	1417	2984	1455	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	93	189	32	29	333	500	48	59	56	642	54	112
RTOR Reduction (vph)	0	20	0	0	0	345	0	0	52	0	80	0
Lane Group Flow (vph)	93	201	0	29	333	155	0	107	4	642	86	0
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	4.1	20.5		1.7	18.1	18.1		4.1	4.1	16.4	16.4	
Effective Green, g (s)	4.1	20.5		1.7	18.1	18.1		4.1	4.1	16.4	16.4	
Actuated g/C Ratio	0.07	0.35		0.03	0.31	0.31		0.07	0.07	0.28	0.28	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.4		4.0	4.0	4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.2		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	108	1060		46	518	441		115	100	841	410	
v/s Ratio Prot	c0.06	0.07		0.02	c0.20			c0.07		c0.22	0.06	
v/s Ratio Perm						0.11			0.00			
v/c Ratio	0.86	0.19		0.63	0.64	0.35		0.93	0.04	0.76	0.21	
Uniform Delay, d1	26.8	13.1		27.9	17.3	15.5		26.9	25.2	19.1	15.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	45.0	0.1		18.8	2.8	0.5		62.2	0.2	4.1	0.3	
Delay (s)	71.7	13.2		46.8	20.0	16.0		89.1	25.4	23.3	16.2	
Level of Service	E	B		D	C	B		F	C	C	B	
Approach Delay (s)		30.5			18.6			67.2			21.8	
Approach LOS		C			B			E			C	

Intersection Summary				
HCM Average Control Delay	25.3	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	58.2	Sum of lost time (s)	15.5	
Intersection Capacity Utilization	60.8%	ICU Level of Service	B	
Analysis Period (min)	15			

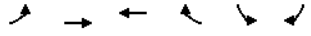
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	265	274	243	129	236	145
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2984	1619	1619	1376	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	2984	1619	1619	1376	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	294	304	270	143	262	161
RTOR Reduction (vph)	0	0	0	3	0	86
Lane Group Flow (vph)	294	304	270	140	262	75
Heavy Vehicles (%)	5%	5%	5%	5%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	5.2	17.8	9.6	21.8	12.2	17.4
Effective Green, g (s)	5.2	17.8	9.6	21.8	12.2	17.4
Actuated g/C Ratio	0.14	0.47	0.26	0.58	0.32	0.46
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	413	766	413	798	514	656
v/s Ratio Prot	c0.10	0.19	c0.17	0.06	c0.17	0.02
v/s Ratio Perm				0.04		0.04
v/c Ratio	0.71	0.40	0.65	0.17	0.51	0.11
Uniform Delay, d1	15.5	6.4	12.5	3.7	10.3	5.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	0.1	2.8	0.1	0.9	0.0
Delay (s)	20.3	6.5	15.3	3.8	11.2	5.8
Level of Service	C	A	B	A	B	A
Approach Delay (s)		13.3	11.4		9.1	
Approach LOS		B	B		A	

Intersection Summary				
HCM Average Control Delay	11.5	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.60			
Actuated Cycle Length (s)	37.6	Sum of lost time (s)	10.6	
Intersection Capacity Utilization	47.4%	ICU Level of Service	A	
Analysis Period (min)	15			

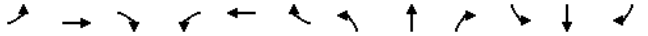
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	71	259	662	85	19	120
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	79	288	736	94	21	133
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	830				1228	783
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	830				1228	783
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	90				88	66
cM capacity (veh/h)	789				177	394

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	367	830	154
Volume Left	79	0	21
Volume Right	0	94	133
cSH	789	1700	337
Volume to Capacity	0.10	0.49	0.46
Queue Length 95th (ft)	8	0	58
Control Delay (s)	3.1	0.0	24.4
Lane LOS	A		C
Approach Delay (s)	3.1	0.0	24.4
Approach LOS			C

Intersection Summary				
Average Delay		3.6		
Intersection Capacity Utilization		83.8%	ICU Level of Service	E
Analysis Period (min)		15		



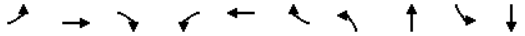
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	2	50	3	126	0	615	161	65	370	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	2	56	3	140	0	683	179	72	411	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	1381	1418	411	1331	1328	773	411			862		
vC1, stage 1 conf vol	556	556		773	773							
vC2, stage 2 conf vol	825	862		558	556							
vCu, unblocked vol	1381	1418	411	1331	1328	773	411			862		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	82	99	65	100			91		
cM capacity (veh/h)	154	264	634	315	328	399	1148			780		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	2	199	0	862	72	411
Volume Left	0	56	0	0	72	0
Volume Right	2	140	0	179	0	0
cSH	634	370	1700	1700	780	1700
Volume to Capacity	0.00	0.54	0.00	0.51	0.09	0.24
Queue Length 95th (ft)	0	76	0	0	8	0
Control Delay (s)	10.7	25.5	0.0	0.0	10.1	0.0
Lane LOS	B	D			B	
Approach Delay (s)	10.7	25.5	0.0		1.5	
Approach LOS	B	D				

Intersection Summary				
Average Delay		3.8		
Intersection Capacity Utilization		79.7%	ICU Level of Service	D
Analysis Period (min)		15		

7: Missouri Flat Rd. & Diamond Springs Pkwy

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	13	731	409	259	1024	21	578	175	2	27
v/c Ratio	0.11	0.70	0.40	0.69	1.04	0.03	0.84	0.34	0.02	0.21
Control Delay	45.5	31.0	2.4	42.4	60.5	9.4	48.0	8.6	45.0	30.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.5	31.0	2.4	42.4	60.5	9.4	48.0	8.6	45.0	30.4
Queue Length 50th (ft)	7	204	0	133	~644	4	170	6	1	6
Queue Length 95th (ft)	28	280	40	#255	#1081	18	#319	65	9	34
Internal Link Dist (ft)		405			469			499		239
Turn Bay Length (ft)	100		250	325		50	275		50	
Base Capacity (vph)	316	1412	1012	446	985	839	685	685	316	597
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.52	0.40	0.58	1.04	0.03	0.84	0.26	0.01	0.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

8: Diamond Springs Pkwy & Throwita Way

AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	49	753	92	22	1249	60	23	58
v/c Ratio	0.84	0.61	0.09	0.38	1.05	0.44	0.16	0.43
Control Delay	133.5	13.4	4.3	58.5	55.0	56.8	19.3	37.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	133.5	13.4	4.3	58.5	55.0	56.8	19.3	37.9
Queue Length 50th (ft)	35	222	7	16	~1045	41	0	20
Queue Length 95th (ft)	#111	549	34	m30	#1406	82	25	60
Internal Link Dist (ft)		448			345	290		465
Turn Bay Length (ft)	150		200	100			100	
Base Capacity (vph)	58	1239	1067	58	1188	382	355	449
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.61	0.09	0.38	1.05	0.16	0.06	0.13

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	180	623	802	212	219	486
v/c Ratio	0.66	0.82	0.51	0.17	0.70	0.74
Control Delay	40.6	20.4	21.3	5.1	52.5	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.6	20.4	21.3	5.1	52.5	10.6
Queue Length 50th (ft)	121	161	179	35	146	0
Queue Length 95th (ft)	160	394	328	84	207	94
Internal Link Dist (ft)	416			610	279	
Turn Bay Length (ft)	150		350			
Base Capacity (vph)	417	832	1565	1221	471	745
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.75	0.51	0.17	0.46	0.65

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	93	221	29	333	500	107	56	642	166
v/c Ratio	0.84	0.20	0.27	0.70	0.66	0.91	0.36	0.74	0.33
Control Delay	85.9	12.8	34.1	27.2	6.6	98.3	16.7	24.6	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.9	12.8	34.1	27.2	6.6	98.3	16.7	24.6	8.9
Queue Length 50th (ft)	33	20	10	100	0	38	0	100	13
Queue Length 95th (ft)	#121	52	34	186	60	#136	31	168	56
Internal Link Dist (ft)		215		260		844			629
Turn Bay Length (ft)	180		105		180		75	425	
Base Capacity (vph)	111	1169	143	648	857	118	155	1079	598
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.19	0.20	0.51	0.58	0.91	0.36	0.59	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
14: Pleasant Valley Rd. (SR-49) & Missouri Flat Rd.

2020 + PP (Mit for LOS)
AM Peak

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	294	304	270	143	262	161
v/c Ratio	0.71	0.40	0.67	0.15	0.52	0.19
Control Delay	33.4	9.2	22.3	2.1	15.2	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	9.2	22.3	2.1	15.2	1.9
Queue Length 50th (ft)	29	34	48	6	41	0
Queue Length 95th (ft)	#113	103	125	13	110	19
Internal Link Dist (ft)		1271	1500		1899	
Turn Bay Length (ft)	135			150		165
Base Capacity (vph)	412	1391	1090	1248	873	859
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.22	0.25	0.11	0.30	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
7: Missouri Flat Rd. & Diamond Springs Pkwy

2020 + PP (Mit for LOS)
PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	774	433	203	703	17	569	12	147	3	12	18
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	3167	1417	1583	1667	1417	3072	1435		1583	1515	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	3167	1417	1583	1667	1417	3072	1435		1583	1515	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	860	481	226	781	19	632	13	163	3	13	20
RTOR Reduction (vph)	0	0	204	0	0	1	0	119	0	0	19	0
Lane Group Flow (vph)	16	860	277	226	781	18	632	57	0	3	14	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		pm+ov	Prot		Perm	Prot			Prot		
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2			6						
Actuated Green, G (s)	2.7	34.1	55.5	19.3	50.7	50.7	21.4	25.9		1.1	5.6	
Effective Green, g (s)	2.7	34.1	55.5	19.3	50.7	50.7	21.4	25.9		1.1	5.6	
Actuated g/C Ratio	0.03	0.35	0.58	0.20	0.53	0.53	0.22	0.27		0.01	0.06	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	44	1120	875	317	877	745	682	386		18	88	
v/s Ratio Prot	0.01	0.27	0.07	c0.14	c0.47		c0.21	c0.04		0.00	0.01	
v/s Ratio Perm			0.13			0.01						
v/c Ratio	0.36	0.77	0.32	0.71	0.89	0.02	0.93	0.15		0.17	0.16	
Uniform Delay, d1	46.0	27.6	10.6	36.0	20.4	11.0	36.7	26.8		47.2	43.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.1	3.2	0.2	7.4	11.2	0.0	18.6	0.2		4.3	0.9	
Delay (s)	51.1	30.9	10.8	43.4	31.6	11.0	55.3	27.0		51.5	44.0	
Level of Service	D	C	B	D	C	B	E	C		D	D	
Approach Delay (s)		24.0			33.8			49.2			44.7	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM Average Control Delay	33.6	HCM Level of Service		C
HCM Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	96.4	Sum of lost time (s)		12.0
Intersection Capacity Utilization	79.5%	ICU Level of Service		D
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	774	98	18	834	18	59	13	28	28	3	30
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1583	1667	1417	1583	1661			1555	1376		1477	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	1583	1667	1417	1583	1661			1555	1376		1477	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	58	860	109	20	927	20	66	14	31	31	3	33
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	28	0	31	0
Lane Group Flow (vph)	58	860	92	20	947	0	0	80	3	0	36	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	6.4	70.7	70.7	1.6	65.9			9.5	9.5		7.2	
Effective Green, g (s)	6.4	70.7	70.7	1.6	65.9			9.5	9.5		7.2	
Actuated g/C Ratio	0.06	0.67	0.67	0.02	0.63			0.09	0.09		0.07	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	96	1122	954	24	1042			141	124		101	
v/s Ratio Prot	c0.04	c0.52		0.01	c0.57			c0.05			c0.02	
v/s Ratio Perm			0.06						0.00			
v/c Ratio	0.60	0.77	0.10	0.83	0.91			0.57	0.02		0.36	
Uniform Delay, d1	48.1	11.6	6.0	51.6	16.9			45.8	43.5		46.7	
Progression Factor	1.00	1.00	1.00	0.88	0.55			1.00	1.00		1.00	
Incremental Delay, d2	10.3	5.0	0.2	101.9	11.8			5.2	0.1		2.2	
Delay (s)	58.3	16.6	6.2	147.1	21.1			50.9	43.6		48.9	
Level of Service	E	B	A	F	C			D	D		D	
Approach Delay (s)		17.9			23.7			48.9			48.9	
Approach LOS		B			C			D			D	

Intersection Summary				
HCM Average Control Delay	23.0	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.78			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	67.6%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Volume (vph)	197	633	12	493	243	270	377
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1583	1417		2984	1619	1619	1376
Flt Permitted	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (perm)	1583	1417		2984	1619	1619	1376
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	219	703	13	548	270	300	419
RTOR Reduction (vph)	0	521	0	0	0	0	319
Lane Group Flow (vph)	219	182	0	561	270	300	100
Heavy Vehicles (%)	2%	2%	5%	5%	5%	5%	5%
Turn Type		Perm	Prot	Prot			Perm
Protected Phases	4		5	5	2	6	
Permitted Phases		4					6
Actuated Green, G (s)	21.5	21.5		46.4	75.5	25.1	25.1
Effective Green, g (s)	21.5	21.5		46.4	75.5	25.1	25.1
Actuated g/C Ratio	0.20	0.20		0.44	0.72	0.24	0.24
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	324	290		1319	1164	387	329
v/s Ratio Prot	c0.14			c0.19	0.17	c0.19	
v/s Ratio Perm		0.13					0.07
v/c Ratio	0.68	0.63		0.43	0.23	0.78	0.30
Uniform Delay, d1	38.5	38.1		20.1	5.0	37.3	32.8
Progression Factor	0.65	2.75		1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	3.1		1.0	0.1	9.4	0.5
Delay (s)	29.2	107.7		21.1	5.1	46.7	33.3
Level of Service	C	F		C	A	D	C
Approach Delay (s)	89.1				15.9	38.9	
Approach LOS	F				B	D	

Intersection Summary				
HCM Average Control Delay	49.9	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.58			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	85.8%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	80	0	0	67	44	681	46	23	818	74
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	89	0	0	74	49	757	51	26	909	82
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked	0.84	0.84	0.84	0.84	0.84		0.84					
vC, conflicting volume	1930	1907	950	1929	1922	782	991			808		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2010	1982	848	2008	2000	782	897			808		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	70	100	100	81	92			97		
cM capacity (veh/h)	27	45	301	24	44	389	628			804		

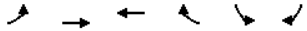
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	89	74	49	808	26	991
Volume Left	0	0	49	0	26	0
Volume Right	89	74	0	51	0	82
cSH	301	389	628	1700	804	1700
Volume to Capacity	0.30	0.19	0.08	0.48	0.03	0.58
Queue Length 95th (ft)	30	17	6	0	2	0
Control Delay (s)	21.9	16.4	11.2	0.0	9.6	0.0
Lane LOS	C	C	B		A	
Approach Delay (s)	21.9	16.4	0.6		0.2	
Approach LOS	C	C				

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	65.3%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	215	415	71	22	250	375	40	49	47	825	70	169
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.4		4.0	4.0	4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	0.97	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1538	3009		1583	1667	1417		1630	1417	2984	1447	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1538	3009		1583	1667	1417		1630	1417	2984	1447	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	239	461	79	24	278	417	44	54	52	917	78	188
RTOR Reduction (vph)	0	15	0	0	0	317	0	0	48	0	96	0
Lane Group Flow (vph)	239	525	0	24	278	100	0	98	4	917	170	0
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	14.5	32.7		2.0	20.2	20.2		6.1	6.1	28.2	28.2	
Effective Green, g (s)	14.5	32.7		2.0	20.2	20.2		6.1	6.1	28.2	28.2	
Actuated g/C Ratio	0.17	0.39		0.02	0.24	0.24		0.07	0.07	0.33	0.33	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.4		4.0	4.0	4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.2		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	264	1164		37	399	339		118	102	996	483	
v/s Ratio Prot	c0.16	0.17		0.02	c0.17			c0.06		c0.31	0.12	
v/s Ratio Perm						0.07			0.00			
v/c Ratio	0.91	0.45		0.65	0.70	0.29		0.83	0.04	0.92	0.35	
Uniform Delay, d1	34.3	19.2		40.9	29.4	26.3		38.7	36.5	27.1	21.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	31.0	0.3		25.7	5.3	0.5		36.7	0.1	13.3	0.4	
Delay (s)	65.3	19.5		66.6	34.7	26.8		75.4	36.6	40.4	21.7	
Level of Service	E	B		E	C	C		E	D	D	C	
Approach Delay (s)		33.6			31.2			62.0			36.2	
Approach LOS		C			C			E			D	

Intersection Summary				
HCM Average Control Delay	35.6	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.84			
Actuated Cycle Length (s)	84.5	Sum of lost time (s)	15.5	
Intersection Capacity Utilization	73.4%	ICU Level of Service	D	
Analysis Period (min)	15			

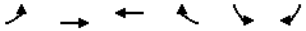
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	442	456	203	141	563	346
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2984	1619	1619	1376	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	2984	1619	1619	1376	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	491	507	226	157	626	384
RTOR Reduction (vph)	0	0	0	9	0	124
Lane Group Flow (vph)	491	507	226	148	626	260
Heavy Vehicles (%)	5%	5%	5%	5%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	14.9	31.3	13.4	47.9	34.5	49.4
Effective Green, g (s)	14.9	31.3	13.4	47.9	34.5	49.4
Actuated g/C Ratio	0.20	0.43	0.18	0.65	0.47	0.67
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	606	690	296	898	744	954
v/s Ratio Prot	c0.16	c0.31	0.14	0.08	c0.40	0.06
v/s Ratio Perm				0.03		0.13
v/c Ratio	0.81	0.73	0.76	0.16	0.84	0.27
Uniform Delay, d1	27.9	17.6	28.5	5.0	17.1	4.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.7	3.5	10.0	0.1	8.7	0.1
Delay (s)	35.6	21.1	38.5	5.1	25.8	4.9
Level of Service	D	C	D	A	C	A
Approach Delay (s)		28.2	24.8		17.8	
Approach LOS		C	C		B	

Intersection Summary				
HCM Average Control Delay	23.3	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.79			
Actuated Cycle Length (s)	73.4	Sum of lost time (s)	6.5	
Intersection Capacity Utilization	71.0%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	129	472	585	71	42	153
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	143	524	650	79	47	170
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	729				1501	689
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	729				1501	689
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	83				58	62
cM capacity (veh/h)	861				112	445

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	668	729	217
Volume Left	143	0	47
Volume Right	0	79	170
cSH	861	1700	271
Volume to Capacity	0.17	0.43	0.80
Queue Length 95th (ft)	15	0	156
Control Delay (s)	4.0	0.0	55.5
Lane LOS	A		F
Approach Delay (s)	4.0	0.0	55.5
Approach LOS			F

Intersection Summary			
Average Delay	9.1		
Intersection Capacity Utilization	98.1%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	7	58	4	217	0	548	135	118	665	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	8	64	4	241	0	609	150	131	739	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	1853	1760	739	1693	1685	684	739			759		
vC1, stage 1 conf vol	1001	1001		684	684							
vC2, stage 2 conf vol	852	759		1009	1001							
vCu, unblocked vol	1853	1760	739	1693	1685	684	739			759		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	98	70	98	46	100			85		
cM capacity (veh/h)	28	201	412	212	237	449	867			853		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	8	310	0	759	131	739
Volume Left	0	64	0	0	131	0
Volume Right	8	241	0	150	0	0
cSH	412	360	1700	1700	853	1700
Volume to Capacity	0.02	0.86	0.00	0.45	0.15	0.43
Queue Length 95th (ft)	1	202	0	0	14	0
Control Delay (s)	13.9	53.2	0.0	0.0	10.0	0.0
Lane LOS	B	F			A	
Approach Delay (s)	13.9	53.2	0.0		1.5	
Approach LOS	B	F				

Intersection Summary					
Average Delay		9.2			
Intersection Capacity Utilization		84.2%	ICU Level of Service		E
Analysis Period (min)		15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	16	860	481	226	781	19	632	176	3	33
v/c Ratio	0.14	0.78	0.45	0.67	0.84	0.02	0.87	0.33	0.03	0.25
Control Delay	47.2	32.5	2.2	47.4	29.6	11.6	50.0	8.2	46.7	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	32.5	2.2	47.4	29.6	11.6	50.0	8.2	46.7	30.8
Queue Length 50th (ft)	9	243	0	127	340	4	192	5	2	7
Queue Length 95th (ft)	33	327	37	#274	#763	18	#357	65	12	39
Internal Link Dist (ft)		405			469			499		239
Turn Bay Length (ft)	100		250	325		50	275		50	
Base Capacity (vph)	285	1497	1069	339	932	794	726	693	285	559
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.57	0.45	0.67	0.84	0.02	0.87	0.25	0.01	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	58	860	109	20	947	80	31	67
v/c Ratio	0.97	0.72	0.11	0.33	0.86	0.50	0.18	0.46
Control Delay	159.8	18.5	5.3	56.3	19.7	54.5	16.6	36.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	159.8	18.5	5.3	56.3	19.7	54.5	16.6	36.1
Queue Length 50th (ft)	40	305	10	14	562	52	0	22
Queue Length 95th (ft)	#123	#802	44	m30	#959	96	28	63
Internal Link Dist (ft)		448			345	290		465
Turn Bay Length (ft)	150		200	100			100	
Base Capacity (vph)	60	1198	1033	60	1107	400	377	473
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.72	0.11	0.33	0.86	0.20	0.08	0.14

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	219	703	561	270	300	419
v/c Ratio	0.68	0.87	0.43	0.23	0.78	0.65
Control Delay	32.3	21.0	24.4	6.6	50.6	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.3	21.0	24.4	6.6	50.6	8.0
Queue Length 50th (ft)	139	235	128	51	188	0
Queue Length 95th (ft)	m132	474	229	116	264	76
Internal Link Dist (ft)	416			610	279	
Turn Bay Length (ft)	150		350			
Base Capacity (vph)	467	880	1318	1164	493	711
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.80	0.43	0.23	0.61	0.59

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

13: Pleasant Valley Rd. (SR-49) & Diamond Rd. (SR-49)

PM Peak

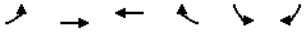
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	239	540	24	278	417	98	52	917	266
v/c Ratio	0.89	0.45	0.30	0.76	0.65	0.82	0.34	0.90	0.45
Control Delay	69.0	19.8	50.2	44.6	8.5	87.9	18.6	40.6	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.0	19.8	50.2	44.6	8.5	87.9	18.6	40.6	13.3
Queue Length 50th (ft)	128	96	13	142	0	54	0	242	47
Queue Length 95th (ft)	#267	166	38	229	77	#151	35	#377	120
Internal Link Dist (ft)		215		260		844			629
Turn Bay Length (ft)	180		105		180		75	425	
Base Capacity (vph)	302	1279	117	462	694	120	153	1094	622
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.42	0.21	0.60	0.60	0.82	0.34	0.84	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

14: Pleasant Valley Rd. (SR-49) & Missouri Flat Rd.

PM Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	491	507	226	157	626	384
v/c Ratio	0.81	0.74	0.77	0.16	0.84	0.34
Control Delay	42.5	25.8	47.9	3.3	31.3	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	25.8	47.9	3.3	31.3	1.5
Queue Length 50th (ft)	119	206	108	17	246	1
Queue Length 95th (ft)	#222	319	181	33	#515	27
Internal Link Dist (ft)		1271	1500		1899	
Turn Bay Length (ft)	135			150		165
Base Capacity (vph)	669	997	565	1076	855	1149
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.51	0.40	0.15	0.73	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	718	459	236	995	24	622	14	223	3	11	17
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	3167	1417	1583	3167	1417	3072	1432		1583	1513	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	3167	1417	1583	3167	1417	3072	1432		1583	1513	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	798	510	262	1106	27	691	16	248	3	12	19
RTOR Reduction (vph)	0	0	207	0	0	3	0	169	0	0	18	0
Lane Group Flow (vph)	17	798	303	262	1106	24	691	95	0	3	13	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		pm+ov	Prot		Perm	Prot			Prot		
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2			6						
Actuated Green, G (s)	2.9	32.9	61.3	20.2	50.2	50.2	28.4	32.8		1.2	5.6	
Effective Green, g (s)	2.9	32.9	61.3	20.2	50.2	50.2	28.4	32.8		1.2	5.6	
Actuated g/C Ratio	0.03	0.32	0.59	0.20	0.49	0.49	0.28	0.32		0.01	0.05	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	45	1011	897	310	1542	690	846	456		18	82	
v/s Ratio Prot	0.01	c0.25	0.09	c0.17	0.35		c0.22	c0.07		0.00	0.01	
v/s Ratio Perm			0.12			0.02						
v/c Ratio	0.38	0.79	0.34	0.85	0.72	0.04	0.82	0.21		0.17	0.16	
Uniform Delay, d1	49.2	31.9	10.6	39.9	20.9	13.8	34.9	25.7		50.5	46.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.2	4.2	0.2	18.6	1.6	0.0	6.1	0.2		4.3	0.9	
Delay (s)	54.5	36.1	10.8	58.6	22.5	13.8	41.1	25.9		54.8	47.4	
Level of Service	D	D	B	E	C	B	D	C		D	D	
Approach Delay (s)		26.6			29.1			36.9			48.1	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM Average Control Delay	30.4	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	103.1	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	73.3%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	783	102	23	1175	23	50	15	26	30	3	30
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1583	3167	1417	1583	3157			1590	1403		1508	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	1583	3167	1417	1583	3157			1590	1403		1508	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	66	870	113	26	1306	26	56	17	29	33	3	33
RTOR Reduction (vph)	0	0	49	0	1	0	0	0	26	0	31	0
Lane Group Flow (vph)	66	870	64	26	1331	0	0	73	3	0	38	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	7.8	29.2	29.2	0.7	22.1			6.3	6.3		4.2	
Effective Green, g (s)	7.8	29.2	29.2	0.7	22.1			6.3	6.3		4.2	
Actuated g/C Ratio	0.14	0.52	0.52	0.01	0.39			0.11	0.11		0.07	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	219	1640	734	20	1237			178	157		112	
v/s Ratio Prot	0.04	c0.27		0.02	c0.42			c0.05			c0.03	
v/s Ratio Perm			0.05						0.00			
v/c Ratio	0.30	0.53	0.09	1.30	1.08			0.41	0.02		0.34	
Uniform Delay, d1	21.9	9.0	6.9	27.8	17.1			23.3	22.3		24.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.8	0.3	0.1	306.7	48.6			1.5	0.1		1.8	
Delay (s)	22.6	9.4	6.9	334.5	65.8			24.9	22.4		26.6	
Level of Service	C	A	A	F	E			C	C		C	
Approach Delay (s)		9.9			70.9			24.1			26.6	
Approach LOS		A			E			C			C	

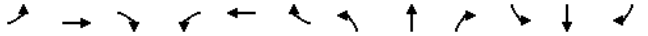
Intersection Summary				
HCM Average Control Delay	43.1	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	61.5%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Volume (vph)	188	651	17	740	236	219	481
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1583	1417		3042	1650	1650	1403
Flt Permitted	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (perm)	1583	1417		3042	1650	1650	1403
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	209	723	19	822	262	243	534
RTOR Reduction (vph)	0	496	0	0	0	0	16
Lane Group Flow (vph)	209	227	0	841	262	243	518
Heavy Vehicles (%)	2%	2%	3%	3%	3%	3%	3%
Turn Type		Perm	Prot	Prot			pm+ov
Protected Phases	4		5	5	2	6	4
Permitted Phases		4					6
Actuated Green, G (s)	23.8	23.8		26.9	48.5	17.6	41.4
Effective Green, g (s)	23.8	23.8		26.9	48.5	17.6	41.4
Actuated g/C Ratio	0.30	0.30		0.33	0.60	0.22	0.52
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	469	420		1019	997	362	793
v/s Ratio Prot	0.13			c0.28	0.16	0.15	c0.19
v/s Ratio Perm		0.16					0.18
v/c Ratio	0.45	0.54		0.83	0.26	0.67	0.65
Uniform Delay, d1	22.9	23.7		24.5	7.5	28.7	14.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	1.4		5.6	0.1	4.8	1.9
Delay (s)	23.6	25.1		30.1	7.6	33.5	16.2
Level of Service	C	C		C	A	C	B
Approach Delay (s)	24.8				24.8	21.6	
Approach LOS	C				C	C	

Intersection Summary			
HCM Average Control Delay	23.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	80.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	26	0	0	107	38	886	52	14	807	66
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	29	0	0	119	42	984	58	16	897	73
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						4						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked												
vC, conflicting volume	1541	2091	485	1606	2099	521	970			1042		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1541	2091	485	1606	2099	521	970			1042		
tC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	95	100	100	76	94			98		
cM capacity (veh/h)	55	47	525	61	46	497	700			657		

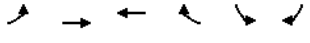
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	29	42	656	386	16	598	372
Volume Left	0	42	0	0	16	0	0
Volume Right	29	0	0	58	0	0	73
cSH	525	700	1700	1700	657	1700	1700
Volume to Capacity	0.05	0.06	0.39	0.23	0.02	0.35	0.22
Queue Length 95th (ft)	4	5	0	0	2	0	0
Control Delay (s)	12.3	10.5	0.0	0.0	10.6	0.0	0.0
Lane LOS	B	B			B		
Approach Delay (s)	12.3	0.4			0.2		
Approach LOS	B						

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	205	33	30	330	612	48	59	50	630	53	145
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.4		4.0	4.0	4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	0.97	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1568	3070		1583	1667	1417		1630	1417	3042	1469	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1568	3070		1583	1667	1417		1630	1417	3042	1469	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	112	228	37	33	367	680	53	66	56	700	59	161
RTOR Reduction (vph)	0	17	0	0	0	471	0	0	51	0	117	0
Lane Group Flow (vph)	112	248	0	33	367	209	0	119	5	700	103	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	5.8	23.9		2.0	20.1	20.1		6.1	6.1	18.0	18.0	
Effective Green, g (s)	5.8	23.9		2.0	20.1	20.1		6.1	6.1	18.0	18.0	
Actuated g/C Ratio	0.09	0.36		0.03	0.31	0.31		0.09	0.09	0.27	0.27	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.4		4.0	4.0	4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.2		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	139	1120		48	512	435		152	132	836	404	
v/s Ratio Prot	c0.07	0.08		0.02	c0.22			c0.07		c0.23	0.07	
v/s Ratio Perm						0.15			0.00			
v/c Ratio	0.81	0.22		0.69	0.72	0.48		0.78	0.04	0.84	0.26	
Uniform Delay, d1	29.3	14.4		31.4	20.2	18.5		29.1	27.0	22.4	18.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	26.4	0.1		27.8	4.8	0.9		22.6	0.1	7.3	0.3	
Delay (s)	55.7	14.5		59.3	25.0	19.3		51.7	27.2	29.7	18.9	
Level of Service	E	B		E	C	B		D	C	C	B	
Approach Delay (s)		26.7			22.5			43.8			27.1	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM Average Control Delay	26.2	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.78			
Actuated Cycle Length (s)	65.5	Sum of lost time (s)	15.5	
Intersection Capacity Utilization	65.9%	ICU Level of Service	C	
Analysis Period (min)	15			

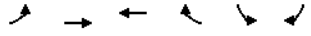
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	320	292	270	169	283	173
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3042	1650	1650	1403	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3042	1650	1650	1403	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	356	324	300	188	314	192
RTOR Reduction (vph)	0	0	0	5	0	82
Lane Group Flow (vph)	356	324	300	183	314	110
Heavy Vehicles (%)	3%	3%	3%	3%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	14.5	31.8	14.3	33.2	18.9	33.4
Effective Green, g (s)	14.5	31.8	14.3	33.2	18.9	33.4
Actuated g/C Ratio	0.25	0.55	0.25	0.57	0.32	0.57
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	757	900	405	799	513	812
v/s Ratio Prot	c0.12	0.20	c0.18	0.07	c0.20	0.03
v/s Ratio Perm				0.06		0.04
v/c Ratio	0.47	0.36	0.74	0.23	0.61	0.14
Uniform Delay, d1	18.6	7.5	20.3	6.2	16.6	5.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	6.3	0.2	2.3	0.0
Delay (s)	18.8	7.6	26.6	6.4	18.9	5.8
Level of Service	B	A	C	A	B	A
Approach Delay (s)		13.5	18.8		13.9	
Approach LOS		B	B		B	

Intersection Summary				
HCM Average Control Delay	15.1	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.61			
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	10.6	
Intersection Capacity Utilization	53.7%	ICU Level of Service	A	
Analysis Period (min)	15			

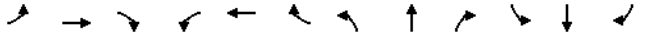
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	85	335	808	108	22	130
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	94	372	898	120	24	144
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1018				1519	958
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1018				1519	958
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	86				78	54
cM capacity (veh/h)	678				113	312

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	467	1018	169
Volume Left	94	0	24
Volume Right	0	120	144
cSH	678	1700	248
Volume to Capacity	0.14	0.60	0.68
Queue Length 95th (ft)	12	0	110
Control Delay (s)	3.9	0.0	45.5
Lane LOS	A		E
Approach Delay (s)	3.9	0.0	45.5
Approach LOS			E

Intersection Summary				
Average Delay		5.7		
Intersection Capacity Utilization		100.1%	ICU Level of Service	G
Analysis Period (min)		15		



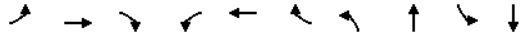
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	1	61	4	150	0	800	209	83	434	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	1	68	4	167	0	889	232	92	482	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			Raised	
Median storage veh)								2			1	
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	1724	1788	482	1673	1672	1005	482			1121		
vC1, stage 1 conf vol	667	667		1005	1005							
vC2, stage 2 conf vol	1058	1121		668	667							
vCu, unblocked vol	1724	1788	482	1673	1672	1005	482			1121		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	71	98	43	100			85		
cM capacity (veh/h)	26	173	582	234	253	293	1080			623		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	1	239	0	1121	92	482
Volume Left	0	68	0	0	92	0
Volume Right	1	167	0	232	0	0
cSH	582	273	1700	1700	623	1700
Volume to Capacity	0.00	0.88	0.00	0.66	0.15	0.28
Queue Length 95th (ft)	0	190	0	0	13	0
Control Delay (s)	11.2	67.6	0.0	0.0	11.8	0.0
Lane LOS	B	F			B	
Approach Delay (s)	11.2	67.6	0.0		1.9	
Approach LOS	B	F				

Intersection Summary				
Average Delay		8.9		
Intersection Capacity Utilization		97.4%	ICU Level of Service	F
Analysis Period (min)		15		

7: Missouri Flat Rd. & Diamond Springs Pkwy

AM Peak



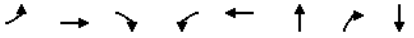
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	17	798	510	262	1106	27	691	264	3	31
v/c Ratio	0.16	0.81	0.47	0.80	0.68	0.04	0.77	0.41	0.03	0.26
Control Delay	49.3	40.3	2.3	58.0	24.0	15.8	38.8	6.0	48.0	31.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	40.3	2.3	58.0	24.0	15.8	38.8	6.0	48.0	31.8
Queue Length 50th (ft)	11	263	0	169	271	7	211	6	2	8
Queue Length 95th (ft)	33	#388	39	#324	#500	28	288	67	12	38
Internal Link Dist (ft)		191			465			499		239
Turn Bay Length (ft)	100		250	325		50	275		50	
Base Capacity (vph)	263	986	1131	329	1633	733	1020	694	526	515
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.81	0.45	0.80	0.68	0.04	0.68	0.38	0.01	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

8: Diamond Springs Pkwy & Throwita Way

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	66	870	113	26	1332	73	29	69
v/c Ratio	0.50	0.45	0.13	0.20	0.96	0.29	0.12	0.28
Control Delay	43.1	11.7	4.3	29.8	37.7	24.7	10.7	17.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	11.7	4.3	29.8	37.7	24.7	10.7	17.5
Queue Length 50th (ft)	22	91	2	8	~280	22	0	11
Queue Length 95th (ft)	#80	#224	31	30	#454	56	19	43
Internal Link Dist (ft)		430			345	290		465
Turn Bay Length (ft)	175		200	100			100	
Base Capacity (vph)	133	1918	898	133	1390	899	806	1022
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.45	0.13	0.20	0.96	0.08	0.04	0.07

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	209	723	841	262	243	534
v/c Ratio	0.45	0.79	0.84	0.26	0.68	0.66
Control Delay	29.2	10.3	35.0	8.7	41.2	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	10.3	35.0	8.7	41.2	16.7
Queue Length 50th (ft)	89	7	215	65	126	176
Queue Length 95th (ft)	180	148	#332	103	212	310
Internal Link Dist (ft)	416			610	281	
Turn Bay Length (ft)	150		350			
Base Capacity (vph)	580	966	1314	1386	691	806
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.75	0.64	0.19	0.35	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	112	265	33	367	680	119	56	700	220
v/c Ratio	0.79	0.23	0.32	0.77	0.76	0.76	0.30	0.81	0.41
Control Delay	70.9	14.1	38.5	33.1	8.4	65.1	14.3	31.2	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.9	14.1	38.5	33.1	8.4	65.1	14.3	31.2	9.3
Queue Length 50th (ft)	46	30	13	136	0	49	0	134	18
Queue Length 95th (ft)	#134	66	39	226	87	#141	31	#225	70
Internal Link Dist (ft)		200		260		844			629
Turn Bay Length (ft)	180		105		180		75	425	
Base Capacity (vph)	149	1208	151	596	943	156	186	967	577
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.22	0.22	0.62	0.72	0.76	0.30	0.72	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	356	324	300	188	314	192
v/c Ratio	0.47	0.36	0.75	0.21	0.61	0.20
Control Delay	24.2	10.2	34.2	4.2	23.0	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	10.2	34.2	4.2	23.0	1.6
Queue Length 50th (ft)	53	56	94	20	88	0
Queue Length 95th (ft)	126	145	205	38	189	22
Internal Link Dist (ft)		1271	1500		1899	
Turn Bay Length (ft)	135			150		165
Base Capacity (vph)	754	1547	1224	1403	1526	967
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.21	0.25	0.13	0.21	0.20

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	845	540	205	786	21	675	13	220	4	14	21
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	3167	1417	1583	3167	1417	3072	1430		1583	1519	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	3167	1417	1583	3167	1417	3072	1430		1583	1519	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	20	939	600	228	873	23	750	14	244	4	16	23
RTOR Reduction (vph)	0	0	209	0	0	3	0	161	0	0	22	0
Lane Group Flow (vph)	20	939	391	228	873	20	750	97	0	4	17	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		pm+ov	Prot		Perm	Prot			Prot		
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2			6						
Actuated Green, G (s)	3.1	37.7	69.2	15.1	49.7	49.7	31.5	36.3		1.2	6.0	
Effective Green, g (s)	3.1	37.7	69.2	15.1	49.7	49.7	31.5	36.3		1.2	6.0	
Actuated g/C Ratio	0.03	0.35	0.65	0.14	0.47	0.47	0.30	0.34		0.01	0.06	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	46	1123	976	225	1481	663	910	488		18	86	
v/s Ratio Prot	0.01	c0.30	0.12	c0.14	0.28		c0.24	c0.07		0.00	0.01	
v/s Ratio Perm			0.16			0.01						
v/c Ratio	0.43	0.84	0.40	1.01	0.59	0.03	0.82	0.20		0.22	0.20	
Uniform Delay, d1	50.7	31.5	8.8	45.6	20.8	15.3	34.8	24.7		52.1	47.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.5	5.5	0.3	63.5	0.6	0.0	6.1	0.2		6.2	1.2	
Delay (s)	57.2	37.0	9.0	109.1	21.4	15.3	40.9	24.9		58.3	49.0	
Level of Service	E	D	A	F	C	B	D	C		E	D	
Approach Delay (s)		26.5			39.1			36.8			49.9	
Approach LOS		C			D			D			D	

Intersection Summary					
HCM Average Control Delay	33.3	HCM Level of Service		C	
HCM Volume to Capacity ratio	0.79				
Actuated Cycle Length (s)	106.3	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	77.0%	ICU Level of Service		D	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	880	120	20	910	20	67	20	35	35	4	35
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1583	3167	1417	1583	3157			1589	1403		1509	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	1583	3167	1417	1583	3157			1589	1403		1509	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	77	978	133	22	1011	22	74	22	39	39	4	39
RTOR Reduction (vph)	0	0	36	0	1	0	0	0	35	0	36	0
Lane Group Flow (vph)	77	978	97	22	1032	0	0	96	4	0	46	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	6.4	69.4	69.4	1.6	64.6			10.3	10.3		7.7	
Effective Green, g (s)	6.4	69.4	69.4	1.6	64.6			10.3	10.3		7.7	
Actuated g/C Ratio	0.06	0.66	0.66	0.02	0.62			0.10	0.10		0.07	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	96	2093	937	24	1942			156	138		111	
v/s Ratio Prot	c0.05	0.31		0.01	c0.33			c0.06			c0.03	
v/s Ratio Perm			0.07						0.00			
v/c Ratio	0.80	0.47	0.10	0.92	0.53			0.62	0.03		0.41	
Uniform Delay, d1	48.7	8.7	6.5	51.6	11.5			45.4	42.8		46.5	
Progression Factor	1.00	1.00	1.00	0.90	0.50			1.00	1.00		1.00	
Incremental Delay, d2	36.6	0.8	0.2	131.3	0.9			7.0	0.1		2.5	
Delay (s)	85.3	9.5	6.7	178.0	6.7			52.5	42.9		49.0	
Level of Service	F	A	A	F	A			D	D		D	
Approach Delay (s)		14.1			10.3			49.7			49.0	
Approach LOS		B			B			D			D	

Intersection Summary				
HCM Average Control Delay	15.6	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.55			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	54.6%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Volume (vph)	225	725	14	525	300	300	425
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1583	1417		3042	1650	1650	1403
Flt Permitted	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (perm)	1583	1417		3042	1650	1650	1403
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	250	806	16	583	333	333	472
RTOR Reduction (vph)	0	455	0	0	0	0	34
Lane Group Flow (vph)	250	351	0	599	333	333	438
Heavy Vehicles (%)	2%	2%	3%	3%	3%	3%	3%
Turn Type		Perm	Prot	Prot			pm+ov
Protected Phases	4		5	5	2	6	4
Permitted Phases		4					6
Actuated Green, G (s)	28.9	28.9		38.3	68.1	25.8	54.7
Effective Green, g (s)	28.9	28.9		38.3	68.1	25.8	54.7
Actuated g/C Ratio	0.28	0.28		0.36	0.65	0.25	0.52
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	436	390		1110	1070	405	784
v/s Ratio Prot	0.16			c0.20	0.20	c0.20	0.15
v/s Ratio Perm		c0.25					0.16
v/c Ratio	0.57	0.90		0.54	0.31	0.82	0.56
Uniform Delay, d1	32.7	36.7		26.4	8.1	37.4	17.0
Progression Factor	0.69	1.94		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	21.4		1.9	0.2	12.6	0.9
Delay (s)	24.2	92.5		28.3	8.3	50.1	17.9
Level of Service	C	F		C	A	D	B
Approach Delay (s)	76.3				21.1	31.2	
Approach LOS	E				C	C	

Intersection Summary				
HCM Average Control Delay	44.9	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	95.0%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	86	0	0	89	48	750	70	20	929	90
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	96	0	0	99	53	833	78	22	1032	100
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						4						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked												
vC, conflicting volume	1650	2144	566	1635	2156	456	1132			911		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1650	2144	566	1635	2156	456	1132			911		
tC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	79	100	100	82	91			97		
cM capacity (veh/h)	48	42	465	48	41	549	607			737		

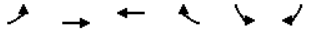
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	96	53	556	356	22	688	444
Volume Left	0	53	0	0	22	0	0
Volume Right	96	0	0	78	0	0	100
cSH	465	607	1700	1700	737	1700	1700
Volume to Capacity	0.21	0.09	0.33	0.21	0.03	0.40	0.26
Queue Length 95th (ft)	19	7	0	0	2	0	0
Control Delay (s)	14.7	11.5	0.0	0.0	10.0	0.0	0.0
Lane LOS	B	B			B		
Approach Delay (s)	14.7	0.6			0.2		
Approach LOS	B						

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	44.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	258	500	81	25	275	510	45	55	47	900	75	235
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.4		4.0	4.0	4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	0.97	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1568	3070		1583	1667	1417		1630	1417	3042	1463	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1568	3070		1583	1667	1417		1630	1417	3042	1463	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	287	556	90	28	306	567	50	61	52	1000	83	261
RTOR Reduction (vph)	0	13	0	0	0	430	0	0	48	0	126	0
Lane Group Flow (vph)	287	633	0	28	306	137	0	111	4	1000	218	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	16.0	35.3		2.2	21.5	21.5		6.0	6.0	30.1	30.1	
Effective Green, g (s)	16.0	35.3		2.2	21.5	21.5		6.0	6.0	30.1	30.1	
Actuated g/C Ratio	0.18	0.40		0.02	0.24	0.24		0.07	0.07	0.34	0.34	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.4		4.0	4.0	4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.2		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	282	1216		39	402	342		110	95	1028	494	
v/s Ratio Prot	c0.18	0.21		0.02	c0.18			c0.07		c0.33	0.15	
v/s Ratio Perm						0.10			0.00			
v/c Ratio	1.02	0.52		0.72	0.76	0.40		1.01	0.04	0.97	0.44	
Uniform Delay, d1	36.5	20.5		43.1	31.4	28.4		41.5	38.8	29.1	23.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	58.2	0.4		40.9	8.4	0.8		88.3	0.2	21.6	0.6	
Delay (s)	94.8	20.9		84.0	39.8	29.2		129.8	39.0	50.7	23.6	
Level of Service	F	C		F	D	C		F	D	D	C	
Approach Delay (s)		43.6			34.5			100.8			43.7	
Approach LOS		D			C			F			D	

Intersection Summary				
HCM Average Control Delay	44.0	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.92			
Actuated Cycle Length (s)	89.1	Sum of lost time (s)	15.5	
Intersection Capacity Utilization	80.6%	ICU Level of Service	D	
Analysis Period (min)	15			

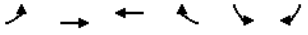
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	534	487	225	178	675	412
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3042	1650	1650	1403	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3042	1650	1650	1403	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	593	541	250	198	750	458
RTOR Reduction (vph)	0	0	0	5	0	85
Lane Group Flow (vph)	593	541	250	193	750	373
Heavy Vehicles (%)	3%	3%	3%	3%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	19.1	38.6	16.5	62.6	46.1	65.2
Effective Green, g (s)	19.1	38.6	16.5	62.6	46.1	65.2
Actuated g/C Ratio	0.21	0.42	0.18	0.68	0.50	0.71
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	629	690	295	952	791	1001
v/s Ratio Prot	c0.19	c0.33	0.15	0.10	c0.47	0.08
v/s Ratio Perm				0.04		0.19
v/c Ratio	0.94	0.78	0.85	0.20	0.95	0.37
Uniform Delay, d1	36.1	23.2	36.7	5.5	22.0	5.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.5	5.4	18.9	0.1	20.4	0.1
Delay (s)	58.5	28.6	55.6	5.7	42.3	5.5
Level of Service	E	C	E	A	D	A
Approach Delay (s)		44.3	33.5		28.4	
Approach LOS		D	C		C	

Intersection Summary				
HCM Average Control Delay	35.7	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.89			
Actuated Cycle Length (s)	92.3	Sum of lost time (s)	6.5	
Intersection Capacity Utilization	82.1%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	155	608	711	90	49	165
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	172	676	790	100	54	183
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	890				1860	840
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	890				1860	840
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	77				12	50
cM capacity (veh/h)	757				62	365

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	848	890	238
Volume Left	172	0	54
Volume Right	0	100	183
cSH	757	1700	173
Volume to Capacity	0.23	0.52	1.38
Queue Length 95th (ft)	22	0	359
Control Delay (s)	5.6	0.0	252.6
Lane LOS	A		F
Approach Delay (s)	5.6	0.0	252.6
Approach LOS			F

Intersection Summary			
Average Delay	32.8		
Intersection Capacity Utilization	117.7%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	3	70	5	255	0	707	175	150	780	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	3	78	6	283	0	786	194	167	867	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			Raised	
Median storage veh)								2			1	
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	2272	2180	867	2086	2083	883	867			980		
vC1, stage 1 conf vol	1200	1200		883	883							
vC2, stage 2 conf vol	1072	980		1203	1200							
vCu, unblocked vol	2272	2180	867	2086	2083	883	867			980		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	48	97	18	100			76		
cM capacity (veh/h)	4	125	351	150	172	345	777			704		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	3	367	0	980	167	867
Volume Left	0	78	0	0	167	0
Volume Right	3	283	0	194	0	0
cSH	351	267	1700	1700	704	1700
Volume to Capacity	0.01	1.37	0.00	0.58	0.24	0.51
Queue Length 95th (ft)	1	488	0	0	23	0
Control Delay (s)	15.4	226.7	0.0	0.0	11.7	0.0
Lane LOS	C	F			B	
Approach Delay (s)	15.4	226.7	0.0		1.9	
Approach LOS	C	F				

Intersection Summary					
Average Delay	35.7				
Intersection Capacity Utilization	101.6%	ICU Level of Service		G	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	20	939	600	228	873	23	750	258	4	39
v/c Ratio	0.19	0.85	0.51	0.96	0.56	0.03	0.78	0.38	0.04	0.31
Control Delay	50.3	40.0	2.2	94.5	22.1	15.5	38.9	5.7	48.5	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.3	40.0	2.2	94.5	22.1	15.5	38.9	5.7	48.5	32.5
Queue Length 50th (ft)	13	310	0	~155	196	5	236	6	3	10
Queue Length 95th (ft)	38	#448	36	#323	340	24	321	65	14	43
Internal Link Dist (ft)		191			465			499		239
Turn Bay Length (ft)	100		250	325		50	275		50	
Base Capacity (vph)	253	1107	1179	237	1564	703	982	679	506	501
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.85	0.51	0.96	0.56	0.03	0.76	0.38	0.01	0.08

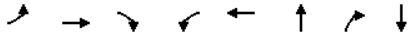
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
8: Diamond Springs Pkwy & Throwita Way

2030 + PP (Mit for LOS)
PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	77	978	133	22	1033	96	39	82
v/c Ratio	1.28	0.44	0.13	0.37	0.50	0.54	0.20	0.50
Control Delay	252.0	10.8	3.6	58.9	6.8	54.7	15.1	36.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	252.0	10.8	3.6	58.9	6.8	54.7	15.1	36.7
Queue Length 50th (ft)	~66	135	5	16	67	62	0	28
Queue Length 95th (ft)	#163	289	38	m27	275	110	30	73
Internal Link Dist (ft)		430			345	290		465
Turn Bay Length (ft)	175		200	100			100	
Base Capacity (vph)	60	2237	1032	60	2062	409	390	487
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.28	0.44	0.13	0.37	0.50	0.23	0.10	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues
9: Diamond Springs Pkwy & Diamond Rd. (SR-49)

2030 + PP (Mit for LOS)
PM Peak

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	250	806	599	333	333	472
v/c Ratio	0.58	0.95	0.54	0.31	0.82	0.58
Control Delay	27.7	36.1	30.4	9.5	53.7	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.7	36.1	30.4	9.5	53.7	14.7
Queue Length 50th (ft)	141	346	169	96	210	153
Queue Length 95th (ft)	145	#729	246	145	295	209
Internal Link Dist (ft)	416			610	281	
Turn Bay Length (ft)	150		350			
Base Capacity (vph)	467	861	1115	1073	503	809
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.94	0.54	0.31	0.66	0.58

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

13: Pleasant Valley Rd. (SR-49) & Diamond Rd. (SR-49)

PM Peak

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	287	646	28	306	567	111	52	1000	344
v/c Ratio	1.00	0.51	0.36	0.82	0.75	0.98	0.36	0.95	0.55
Control Delay	90.9	21.4	53.4	50.7	9.7	126.6	19.2	48.3	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.9	21.4	53.4	50.7	9.7	126.6	19.2	48.3	14.0
Queue Length 50th (ft)	~176	123	16	161	0	~66	0	285	65
Queue Length 95th (ft)	#332	206	43	#281	101	#173	35	#419	151
Internal Link Dist (ft)		200		260		844			629
Turn Bay Length (ft)	180		105		180		75	425	
Base Capacity (vph)	288	1255	109	421	782	113	146	1066	636
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.51	0.26	0.73	0.73	0.98	0.36	0.94	0.54

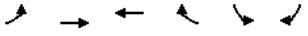
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

14: Pleasant Valley Rd. (SR-49) & Missouri Flat Rd.

PM Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	593	541	250	198	750	458
v/c Ratio	0.94	0.79	0.85	0.19	0.95	0.41
Control Delay	62.6	32.4	61.7	4.2	46.2	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	32.4	61.7	4.2	46.2	3.0
Queue Length 50th (ft)	177	266	142	29	398	24
Queue Length 95th (ft)	#317	396	226	49	#739	76
Internal Link Dist (ft)		1271	1500		1899	
Turn Bay Length (ft)	135			150		165
Base Capacity (vph)	628	832	438	1018	791	1128
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.65	0.57	0.19	0.95	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	658	368	233	922	19	520	13	145	2	10	14
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	3167	1417	1583	3167	1417	3072	1437		1583	1519	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	3167	1417	1583	3167	1417	3072	1437		1583	1519	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	13	731	409	259	1024	21	578	14	161	2	11	16
RTOR Reduction (vph)	0	0	181	0	0	2	0	119	0	0	15	0
Lane Group Flow (vph)	13	731	228	259	1024	19	578	56	0	2	12	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		pm+ov	Prot		Perm	Prot			Prot		
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2			6						
Actuated Green, G (s)	1.3	28.6	49.9	20.2	47.5	47.5	21.3	23.6		1.1	3.4	
Effective Green, g (s)	1.3	28.6	49.9	20.2	47.5	47.5	21.3	23.6		1.1	3.4	
Actuated g/C Ratio	0.01	0.32	0.56	0.23	0.53	0.53	0.24	0.26		0.01	0.04	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	23	1012	853	357	1681	752	731	379		19	58	
v/s Ratio Prot	0.01	c0.23	0.06	c0.16	0.32		c0.19	c0.04		0.00	0.01	
v/s Ratio Perm			0.10			0.01						
v/c Ratio	0.57	0.72	0.27	0.73	0.61	0.02	0.79	0.15		0.11	0.20	
Uniform Delay, d1	43.8	26.9	10.3	32.1	14.6	10.0	32.0	25.3		43.7	41.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	28.1	2.6	0.2	7.2	0.6	0.0	5.8	0.2		2.4	1.7	
Delay (s)	71.9	29.5	10.5	39.2	15.2	10.0	37.8	25.4		46.2	43.4	
Level of Service	E	C	B	D	B	A	D	C		D	D	
Approach Delay (s)		23.2			19.9			35.0			43.6	
Approach LOS		C			B			C			D	

Intersection Summary				
HCM Average Control Delay	24.8	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	89.5	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	68.0%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	678	83	20	1104	20	44	10	21	24	2	26
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1583	1667	1417	1583	3158			1556	1376		1475	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	1583	1667	1417	1583	3158			1556	1376		1475	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	49	753	92	22	1227	22	49	11	23	27	2	29
RTOR Reduction (vph)	0	0	15	0	1	0	0	0	21	0	27	0
Lane Group Flow (vph)	49	753	77	22	1248	0	0	60	2	0	31	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	4.8	77.0	77.0	1.6	73.8			8.5	8.5		6.9	
Effective Green, g (s)	4.8	77.0	77.0	1.6	73.8			8.5	8.5		6.9	
Actuated g/C Ratio	0.04	0.70	0.70	0.01	0.67			0.08	0.08		0.06	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	69	1167	992	23	2119			120	106		93	
v/s Ratio Prot	c0.03	c0.45		0.01	0.40			c0.04			c0.02	
v/s Ratio Perm			0.05						0.00			
v/c Ratio	0.71	0.65	0.08	0.96	0.59			0.50	0.02		0.33	
Uniform Delay, d1	51.9	9.0	5.2	54.2	9.8			48.7	46.9		49.3	
Progression Factor	1.00	1.00	1.00	0.91	0.31			1.00	1.00		1.00	
Incremental Delay, d2	29.0	2.8	0.2	151.0	1.0			3.3	0.1		2.1	
Delay (s)	80.9	11.8	5.4	200.1	4.0			52.0	47.0		51.4	
Level of Service	F	B	A	F	A			D	D		D	
Approach Delay (s)		14.9			7.4			50.6			51.4	
Approach LOS		B			A			D			D	

Intersection Summary				
HCM Average Control Delay	13.0	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.62			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	57.6%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Volume (vph)	162	561	14	707	191	197	437
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1583	1417		2984	1619	1619	1376
Flt Permitted	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (perm)	1583	1417		2984	1619	1619	1376
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	180	623	16	786	212	219	486
RTOR Reduction (vph)	0	515	0	0	0	0	392
Lane Group Flow (vph)	180	108	0	802	212	219	94
Heavy Vehicles (%)	2%	2%	5%	5%	5%	5%	5%
Turn Type		Perm	Prot	Prot			Perm
Protected Phases	4		5	5	2	6	
Permitted Phases		4					6
Actuated Green, G (s)	19.0	19.0		57.7	83.0	21.3	21.3
Effective Green, g (s)	19.0	19.0		57.7	83.0	21.3	21.3
Actuated g/C Ratio	0.17	0.17		0.52	0.75	0.19	0.19
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	273	245		1565	1222	313	266
v/s Ratio Prot	c0.11			c0.27	0.13	c0.14	
v/s Ratio Perm		0.08					0.07
v/c Ratio	0.66	0.44		0.51	0.17	0.70	0.35
Uniform Delay, d1	42.5	40.7		17.0	3.8	41.4	38.4
Progression Factor	0.73	3.48		1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7	1.0		1.2	0.1	6.7	0.8
Delay (s)	35.6	142.9		18.2	3.9	48.1	39.2
Level of Service	D	F		B	A	D	D
Approach Delay (s)	118.8				15.2	42.0	
Approach LOS	F				B	D	

Intersection Summary				
HCM Average Control Delay	55.7	HCM Level of Service		E
HCM Volume to Capacity ratio	0.58			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)		12.0
Intersection Capacity Utilization	83.4%	ICU Level of Service		E
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	23	0	0	80	35	832	34	16	702	54
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	26	0	0	89	39	924	38	18	780	60
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked	0.89	0.89	0.89	0.89	0.89		0.89					
vC, conflicting volume	1937	1886	810	1862	1897	943	840			962		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1989	1932	727	1906	1945	943	760			962		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	93	100	100	72	95			97		
cM capacity (veh/h)	27	53	374	40	53	314	748			703		

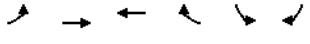
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	26	89	39	962	18	840
Volume Left	0	0	39	0	18	0
Volume Right	26	89	0	38	0	60
cSH	374	314	748	1700	703	1700
Volume to Capacity	0.07	0.28	0.05	0.57	0.03	0.49
Queue Length 95th (ft)	5	28	4	0	2	0
Control Delay (s)	15.3	20.9	10.1	0.0	10.3	0.0
Lane LOS	C	C	B		B	
Approach Delay (s)	15.3	20.9	0.4		0.2	
Approach LOS	C	C				

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	63.4%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	170	29	26	300	450	43	53	50	578	49	101
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.1		4.0	3.0	4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	0.97	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1538	3009		1583	1667	1417		1630	1417	2984	1455	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1538	3009		1583	1667	1417		1630	1417	2984	1455	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	93	189	32	29	333	500	48	59	56	642	54	112
RTOR Reduction (vph)	0	17	0	0	0	215	0	0	47	0	79	0
Lane Group Flow (vph)	93	204	0	29	333	285	0	107	9	642	87	0
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Turn Type	Prot			Prot		pm+ov	Split		pm+ov	Split		
Protected Phases	5	2		1	6	4	8	8	1	4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	6.1	21.7		3.4	19.0	39.4		8.1	11.5	20.4	20.4	
Effective Green, g (s)	6.1	21.7		3.4	19.0	39.4		8.1	11.5	20.4	20.4	
Actuated g/C Ratio	0.09	0.31		0.05	0.27	0.57		0.12	0.17	0.30	0.30	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.1		4.0	3.0	4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.0		3.0	0.2	3.0	3.0	
Lane Grp Cap (vph)	136	945		78	458	808		191	236	881	430	
v/s Ratio Prot	c0.06	c0.07		0.02	c0.20	0.10		c0.07	0.00	c0.22	0.06	
v/s Ratio Perm						0.10			0.00			
v/c Ratio	0.68	0.22		0.37	0.73	0.35		0.56	0.04	0.73	0.20	
Uniform Delay, d1	30.6	17.4		31.8	22.7	8.0		28.8	24.2	21.9	18.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	10.8	0.1		1.1	5.8	0.3		3.7	0.0	3.0	0.2	
Delay (s)	41.3	17.6		32.9	28.5	8.3		32.5	24.2	24.9	18.5	
Level of Service	D	B		C	C	A		C	C	C	B	
Approach Delay (s)		24.6			16.9			29.7			23.6	
Approach LOS		C			B			C			C	

Intersection Summary				
HCM Average Control Delay	21.5	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	69.1	Sum of lost time (s)	19.9	
Intersection Capacity Utilization	60.8%	ICU Level of Service	B	
Analysis Period (min)	15			

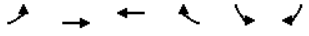
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	265	274	243	129	236	145
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2984	1619	1619	1376	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	2984	1619	1619	1376	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	294	304	270	143	262	161
RTOR Reduction (vph)	0	0	0	3	0	86
Lane Group Flow (vph)	294	304	270	140	262	75
Heavy Vehicles (%)	5%	5%	5%	5%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	5.2	17.8	9.6	21.8	12.2	17.4
Effective Green, g (s)	5.2	17.8	9.6	21.8	12.2	17.4
Actuated g/C Ratio	0.14	0.47	0.26	0.58	0.32	0.46
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	413	766	413	798	514	656
v/s Ratio Prot	c0.10	0.19	c0.17	0.06	c0.17	0.02
v/s Ratio Perm				0.04		0.04
v/c Ratio	0.71	0.40	0.65	0.17	0.51	0.11
Uniform Delay, d1	15.5	6.4	12.5	3.7	10.3	5.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	0.1	2.8	0.1	0.9	0.0
Delay (s)	20.3	6.5	15.3	3.8	11.2	5.8
Level of Service	C	A	B	A	B	A
Approach Delay (s)		13.3	11.4		9.1	
Approach LOS		B	B		A	

Intersection Summary				
HCM Average Control Delay	11.5	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.60			
Actuated Cycle Length (s)	37.6	Sum of lost time (s)	10.6	
Intersection Capacity Utilization	47.4%	ICU Level of Service	A	
Analysis Period (min)	15			

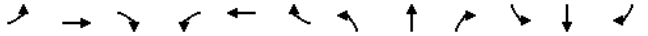
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	71	259	662	85	19	120
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	79	288	736	94	21	133
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	830				1228	783
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	830				1228	783
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	90				88	66
cM capacity (veh/h)	789				177	394

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	367	830	154
Volume Left	79	0	21
Volume Right	0	94	133
cSH	789	1700	337
Volume to Capacity	0.10	0.49	0.46
Queue Length 95th (ft)	8	0	58
Control Delay (s)	3.1	0.0	24.4
Lane LOS	A		C
Approach Delay (s)	3.1	0.0	24.4
Approach LOS			C

Intersection Summary				
Average Delay			3.6	
Intersection Capacity Utilization			83.8%	ICU Level of Service E
Analysis Period (min)			15	



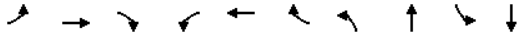
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	2	50	3	126	0	615	161	65	370	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	2	56	3	140	0	683	179	72	411	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	1381	1418	411	1331	1328	773	411			862		
vC1, stage 1 conf vol	556	556		773	773							
vC2, stage 2 conf vol	825	862		558	556							
vCu, unblocked vol	1381	1418	411	1331	1328	773	411			862		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	82	99	65	100			91		
cM capacity (veh/h)	154	264	634	315	328	399	1148			780		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	2	199	0	862	72	411
Volume Left	0	56	0	0	72	0
Volume Right	2	140	0	179	0	0
cSH	634	370	1700	1700	780	1700
Volume to Capacity	0.00	0.54	0.00	0.51	0.09	0.24
Queue Length 95th (ft)	0	76	0	0	8	0
Control Delay (s)	10.7	25.5	0.0	0.0	10.1	0.0
Lane LOS	B	D			B	
Approach Delay (s)	10.7	25.5	0.0		1.5	
Approach LOS	B	D				

Intersection Summary				
Average Delay			3.8	
Intersection Capacity Utilization			79.7%	ICU Level of Service D
Analysis Period (min)			15	

7: Missouri Flat Rd. & Diamond Springs Pkwy

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	13	731	409	259	1024	21	578	175	2	27
v/c Ratio	0.11	0.76	0.40	0.67	0.57	0.03	0.73	0.33	0.02	0.20
Control Delay	42.2	32.3	2.2	41.4	14.5	9.7	36.9	7.7	42.0	28.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.2	32.3	2.2	41.4	14.5	9.7	36.9	7.7	42.0	28.5
Queue Length 50th (ft)	6	163	0	111	127	3	128	5	1	5
Queue Length 95th (ft)	26	274	38	#276	337	19	#267	59	8	33
Internal Link Dist (ft)		405			469			499		239
Turn Bay Length (ft)	100		250	325		50	275		50	
Base Capacity (vph)	310	1201	1024	387	1811	812	789	739	310	604
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.61	0.40	0.67	0.57	0.03	0.73	0.24	0.01	0.04

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

8: Diamond Springs Pkwy & Throwita Way

AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	49	753	92	22	1249	60	23	58
v/c Ratio	0.84	0.61	0.09	0.38	0.55	0.44	0.16	0.43
Control Delay	133.5	13.4	4.3	62.5	4.1	56.8	19.3	37.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	133.5	13.4	4.3	62.5	4.1	56.8	19.3	37.9
Queue Length 50th (ft)	35	222	7	16	63	41	0	20
Queue Length 95th (ft)	#111	549	34	m30	124	82	25	60
Internal Link Dist (ft)		448			840	290		465
Turn Bay Length (ft)	150		200	100			100	
Base Capacity (vph)	58	1239	1067	58	2256	382	355	449
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.61	0.09	0.38	0.55	0.16	0.06	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	180	623	802	212	219	486
v/c Ratio	0.66	0.82	0.51	0.17	0.70	0.74
Control Delay	39.7	19.3	21.3	5.1	52.5	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.7	19.3	21.3	5.1	52.5	10.6
Queue Length 50th (ft)	121	161	179	35	146	0
Queue Length 95th (ft)	141	419	328	84	207	94
Internal Link Dist (ft)	840			610	279	
Turn Bay Length (ft)	150		350			
Base Capacity (vph)	417	832	1565	1221	471	745
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.75	0.51	0.17	0.46	0.65

Intersection Summary

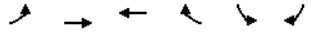
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	93	221	29	333	500	107	56	642	166
v/c Ratio	0.59	0.23	0.30	0.72	0.46	0.56	0.15	0.73	0.33
Control Delay	47.7	17.2	42.6	35.7	2.2	46.5	8.8	28.2	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.7	17.2	42.6	35.7	2.2	46.5	8.8	28.2	10.2
Queue Length 50th (ft)	41	33	13	134	0	47	0	134	18
Queue Length 95th (ft)	89	64	40	#284	34	#126	28	205	65
Internal Link Dist (ft)		215		260		844			629
Turn Bay Length (ft)	180		105		180		75	425	
Base Capacity (vph)	515	1659	169	532	1163	198	443	1134	623
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.13	0.17	0.63	0.43	0.54	0.13	0.57	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues 2020 + PP (Mit for Queuing)

14: Pleasant Valley Rd. (SR-49) & Missouri Flat Rd. AM Peak



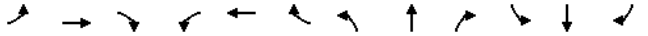
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	294	304	270	143	262	161
v/c Ratio	0.71	0.40	0.67	0.15	0.52	0.19
Control Delay	33.4	9.2	22.3	2.1	15.2	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	9.2	22.3	2.1	15.2	1.9
Queue Length 50th (ft)	29	34	48	6	41	0
Queue Length 95th (ft)	#113	103	125	13	110	19
Internal Link Dist (ft)		1271	1500		1899	
Turn Bay Length (ft)	135			150		165
Base Capacity (vph)	412	1391	1090	1248	873	859
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.22	0.25	0.11	0.30	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis 2020 + PP (Mit for Queuing)

7: Missouri Flat Rd. & Diamond Springs Pkwy PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	774	433	203	703	17	569	12	147	3	12	18
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	3167	1417	1583	3167	1417	3072	1435		1583	1515	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	3167	1417	1583	3167	1417	3072	1435		1583	1515	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	860	481	226	781	19	632	13	163	3	13	20
RTOR Reduction (vph)	0	0	189	0	0	3	0	116	0	0	19	0
Lane Group Flow (vph)	16	860	292	226	781	16	632	60	0	3	14	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		pm+ov	Prot		Perm	Prot			Prot		
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2			6						
Actuated Green, G (s)	1.5	35.1	58.3	16.1	49.7	49.7	23.2	27.7		1.2	5.7	
Effective Green, g (s)	1.5	35.1	58.3	16.1	49.7	49.7	23.2	27.7		1.2	5.7	
Actuated g/C Ratio	0.02	0.37	0.61	0.17	0.52	0.52	0.24	0.29		0.01	0.06	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	25	1157	919	265	1638	733	742	414		20	90	
v/s Ratio Prot	0.01	c0.27	0.08	c0.14	0.25		c0.21	c0.04		0.00	0.01	
v/s Ratio Perm			0.13			0.01						
v/c Ratio	0.64	0.74	0.32	0.85	0.48	0.02	0.85	0.14		0.15	0.16	
Uniform Delay, d1	47.0	26.6	9.2	38.8	14.9	11.3	34.8	25.4		46.9	42.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	44.6	2.6	0.2	22.4	0.2	0.0	9.3	0.2		3.5	0.8	
Delay (s)	91.6	29.2	9.4	61.2	15.1	11.3	44.1	25.6		50.4	43.7	
Level of Service	F	C	A	E	B	B	D	C		D	D	
Approach Delay (s)		22.9			25.2			40.1			44.3	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM Average Control Delay	28.2	HCM Level of Service		C
HCM Volume to Capacity ratio	0.72			
Actuated Cycle Length (s)	96.1	Sum of lost time (s)		12.0
Intersection Capacity Utilization	71.3%	ICU Level of Service		C
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	774	98	18	834	18	59	13	28	28	3	30
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1583	1667	1417	1583	3157			1555	1376		1477	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	1583	1667	1417	1583	3157			1555	1376		1477	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	58	860	109	20	927	20	66	14	31	31	3	33
RTOR Reduction (vph)	0	0	15	0	1	0	0	0	28	0	31	0
Lane Group Flow (vph)	58	860	94	20	946	0	0	80	3	0	36	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	6.4	84.7	84.7	1.6	79.9			10.2	10.2		7.5	
Effective Green, g (s)	6.4	84.7	84.7	1.6	79.9			10.2	10.2		7.5	
Actuated g/C Ratio	0.05	0.71	0.71	0.01	0.67			0.08	0.08		0.06	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	84	1177	1000	21	2102			132	117		92	
v/s Ratio Prot	c0.04	c0.52		0.01	0.30			c0.05			c0.02	
v/s Ratio Perm			0.07						0.00			
v/c Ratio	0.69	0.73	0.09	0.95	0.45			0.61	0.02		0.39	
Uniform Delay, d1	55.8	10.7	5.6	59.2	9.6			53.0	50.3		54.1	
Progression Factor	1.00	1.00	1.00	0.98	0.38			1.00	1.00		1.00	
Incremental Delay, d2	21.7	4.0	0.2	162.0	0.6			7.6	0.1		2.7	
Delay (s)	77.5	14.7	5.7	219.9	4.3			60.6	50.4		56.8	
Level of Service	E	B	A	F	A			E	D		E	
Approach Delay (s)		17.3			8.8			57.8			56.8	
Approach LOS		B			A			E			E	

Intersection Summary				
HCM Average Control Delay	16.8	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	65.6%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Volume (vph)	197	633	12	493	243	270	377
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1583	1417		2984	1619	1619	1376
Flt Permitted	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (perm)	1583	1417		2984	1619	1619	1376
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	219	703	13	548	270	300	419
RTOR Reduction (vph)	0	509	0	0	0	0	324
Lane Group Flow (vph)	219	194	0	561	270	300	95
Heavy Vehicles (%)	2%	2%	5%	5%	5%	5%	5%
Turn Type		Perm	Prot	Prot			Perm
Protected Phases	4		5	5	2	6	
Permitted Phases		4					6
Actuated Green, G (s)	25.4	25.4		55.5	86.6	27.1	27.1
Effective Green, g (s)	25.4	25.4		55.5	86.6	27.1	27.1
Actuated g/C Ratio	0.21	0.21		0.46	0.72	0.23	0.23
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	335	300		1380	1168	366	311
v/s Ratio Prot	c0.14			c0.19	0.17	c0.19	
v/s Ratio Perm		0.14					0.07
v/c Ratio	0.65	0.65		0.41	0.23	0.82	0.30
Uniform Delay, d1	43.3	43.2		21.3	5.6	44.1	38.6
Progression Factor	0.71	2.42		1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	3.6		0.9	0.1	13.4	0.6
Delay (s)	34.1	108.2		22.2	5.7	57.5	39.2
Level of Service	C	F		C	A	E	D
Approach Delay (s)	90.6				16.9	46.8	
Approach LOS	F				B	D	

Intersection Summary				
HCM Average Control Delay	53.1	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.57			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	85.8%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis — 2020 + PP (Mit for Queuing)
12: Lime Kiln Rd. & Diamond Rd. (SR-49) — PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	80	0	0	67	44	681	46	23	818	74
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	89	0	0	74	49	757	51	26	909	82
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked	0.84	0.84	0.84	0.84	0.84		0.84					
vC, conflicting volume	1930	1907	950	1929	1922	782	991			808		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2013	1985	844	2011	2004	782	893			808		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	70	100	100	81	92			97		
cM capacity (veh/h)	27	45	301	23	44	389	626			804		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	89	74	49	808	26	991
Volume Left	0	0	49	0	26	0
Volume Right	89	74	0	51	0	82
cSH	301	389	626	1700	804	1700
Volume to Capacity	0.30	0.19	0.08	0.48	0.03	0.58
Queue Length 95th (ft)	30	17	6	0	2	0
Control Delay (s)	21.9	16.4	11.2	0.0	9.6	0.0
Lane LOS	C	C	B		A	
Approach Delay (s)	21.9	16.4	0.6		0.2	
Approach LOS	C	C				

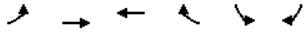
Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	65.3%	ICU Level of Service	C	
Analysis Period (min)	15			

HCM Signalized Intersection Capacity Analysis — 2020 + PP (Mit for Queuing)
13: Pleasant Valley Rd. (SR-49) & Diamond Rd. (SR-49) — PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	215	415	71	22	250	375	40	49	47	825	70	169
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.1		4.0	3.0	4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	0.97	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1538	3009		1583	1667	1417		1630	1417	2984	1447	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1538	3009		1583	1667	1417		1630	1417	2984	1447	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	239	461	79	24	278	417	44	54	52	917	78	188
RTOR Reduction (vph)	0	16	0	0	0	162	0	0	46	0	88	0
Lane Group Flow (vph)	239	524	0	24	278	255	0	98	6	917	178	0
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Turn Type	Prot			Prot		pm+ov	Split		pm+ov	Split		
Protected Phases	5	2		1	6	4	8	8	1	4	4	
Permitted Phases						6			8			
Actuated Green, G (s)	14.8	29.7		3.3	18.2	44.1		6.0	9.3	25.9	25.9	
Effective Green, g (s)	14.8	29.7		3.3	18.2	44.1		6.0	9.3	25.9	25.9	
Actuated g/C Ratio	0.18	0.37		0.04	0.23	0.55		0.07	0.12	0.32	0.32	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.1		4.0	3.0	4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.0		3.0	0.2	3.0	3.0	
Lane Grp Cap (vph)	283	1112		65	377	777		122	164	961	466	
v/s Ratio Prot	c0.16	0.17		0.02	c0.17	0.11		c0.06	0.00	c0.31	0.12	
v/s Ratio Perm						0.07			0.00			
v/c Ratio	0.84	0.47		0.37	0.74	0.33		0.80	0.04	0.95	0.38	
Uniform Delay, d1	31.7	19.4		37.5	28.9	10.0		36.6	31.6	26.7	21.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	19.3	0.3		1.3	7.4	0.2		30.5	0.0	18.8	0.5	
Delay (s)	51.0	19.7		38.8	36.3	10.2		67.1	31.6	45.5	21.6	
Level of Service	D	B		D	D	B		E	C	D	C	
Approach Delay (s)		29.3			21.3			54.8			40.1	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM Average Control Delay	33.1	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.85			
Actuated Cycle Length (s)	80.4	Sum of lost time (s)	15.5	
Intersection Capacity Utilization	73.4%	ICU Level of Service	D	
Analysis Period (min)	15			

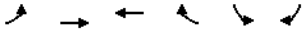
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	442	456	203	141	563	346
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2984	1619	1619	1376	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	2984	1619	1619	1376	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	491	507	226	157	626	384
RTOR Reduction (vph)	0	0	0	9	0	124
Lane Group Flow (vph)	491	507	226	148	626	260
Heavy Vehicles (%)	5%	5%	5%	5%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	14.9	31.3	13.4	47.9	34.5	49.4
Effective Green, g (s)	14.9	31.3	13.4	47.9	34.5	49.4
Actuated g/C Ratio	0.20	0.43	0.18	0.65	0.47	0.67
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	606	690	296	898	744	954
v/s Ratio Prot	c0.16	c0.31	0.14	0.08	c0.40	0.06
v/s Ratio Perm				0.03		0.13
v/c Ratio	0.81	0.73	0.76	0.16	0.84	0.27
Uniform Delay, d1	27.9	17.6	28.5	5.0	17.1	4.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.7	3.5	10.0	0.1	8.7	0.1
Delay (s)	35.6	21.1	38.5	5.1	25.8	4.9
Level of Service	D	C	D	A	C	A
Approach Delay (s)		28.2	24.8		17.8	
Approach LOS		C	C		B	

Intersection Summary				
HCM Average Control Delay	23.3	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.79			
Actuated Cycle Length (s)	73.4	Sum of lost time (s)	6.5	
Intersection Capacity Utilization	71.0%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	129	472	585	71	42	153
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	143	524	650	79	47	170
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	729				1501	689
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	729				1501	689
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	83				58	62
cM capacity (veh/h)	861				112	445

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	668	729	217
Volume Left	143	0	47
Volume Right	0	79	170
cSH	861	1700	271
Volume to Capacity	0.17	0.43	0.80
Queue Length 95th (ft)	15	0	156
Control Delay (s)	4.0	0.0	55.5
Lane LOS	A		F
Approach Delay (s)	4.0	0.0	55.5
Approach LOS			F

Intersection Summary			
Average Delay	9.1		
Intersection Capacity Utilization	98.1%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	7	58	4	217	0	548	135	118	665	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	8	64	4	241	0	609	150	131	739	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	1853	1760	739	1693	1685	684	739			759		
vC1, stage 1 conf vol	1001	1001		684	684							
vC2, stage 2 conf vol	852	759		1009	1001							
vCu, unblocked vol	1853	1760	739	1693	1685	684	739			759		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	98	70	98	46	100			85		
cM capacity (veh/h)	28	201	412	212	237	449	867			853		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	8	310	0	759	131	739
Volume Left	0	64	0	0	131	0
Volume Right	8	241	0	150	0	0
cSH	412	360	1700	1700	853	1700
Volume to Capacity	0.02	0.86	0.00	0.45	0.15	0.43
Queue Length 95th (ft)	1	202	0	0	14	0
Control Delay (s)	13.9	53.2	0.0	0.0	10.0	0.0
Lane LOS	B	F			A	
Approach Delay (s)	13.9	53.2	0.0		1.5	
Approach LOS	B	F				

Intersection Summary					
Average Delay		9.2			
Intersection Capacity Utilization		84.2%	ICU Level of Service		E
Analysis Period (min)		15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	16	860	481	226	781	19	632	176	3	33
v/c Ratio	0.14	0.77	0.44	0.79	0.44	0.02	0.79	0.32	0.03	0.25
Control Delay	44.1	31.8	2.1	58.4	14.5	10.7	41.1	7.0	43.0	28.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	31.8	2.1	58.4	14.5	10.7	41.1	7.0	43.0	28.9
Queue Length 50th (ft)	9	238	0	132	133	3	186	5	2	7
Queue Length 95th (ft)	30	326	36	#268	248	18	#286	57	11	37
Internal Link Dist (ft)		405			469			499		239
Turn Bay Length (ft)	100		250	325		50	275		50	
Base Capacity (vph)	285	1175	1097	285	1757	789	795	721	285	558
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.73	0.44	0.79	0.44	0.02	0.79	0.24	0.01	0.06

Intersection Summary
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

8: Diamond Springs Pkwy & Throwita Way

PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	58	860	109	20	947	80	31	67
v/c Ratio	0.73	0.69	0.10	0.38	0.42	0.54	0.19	0.49
Control Delay	102.5	16.8	4.8	73.2	4.6	64.0	18.4	41.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	102.5	16.8	4.8	73.2	4.6	64.0	18.4	41.9
Queue Length 50th (ft)	45	317	11	16	61	60	0	26
Queue Length 95th (ft)	#120	#839	43	m35	120	109	29	71
Internal Link Dist (ft)		448			840	290		465
Turn Bay Length (ft)	150		200	100			100	
Base Capacity (vph)	79	1244	1070	53	2229	350	334	418
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.69	0.10	0.38	0.42	0.23	0.09	0.16

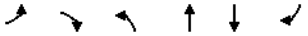
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

9: Diamond Springs Pkwy & Diamond Rd. (SR-49)

PM Peak



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	219	703	561	270	300	419
v/c Ratio	0.65	0.87	0.41	0.23	0.82	0.66
Control Delay	36.6	21.2	26.0	7.9	61.9	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.6	21.2	26.0	7.9	61.9	8.9
Queue Length 50th (ft)	161	250	141	56	219	0
Queue Length 95th (ft)	m140	540	263	153	313	88
Internal Link Dist (ft)	840			610	279	
Turn Bay Length (ft)	150		350			
Base Capacity (vph)	567	922	1380	1168	433	675
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.76	0.41	0.23	0.69	0.62

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

13: Pleasant Valley Rd. (SR-49) & Diamond Rd. (SR-49)

PM Peak

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	239	540	24	278	417	98	52	917	266
v/c Ratio	0.83	0.47	0.29	0.76	0.42	0.60	0.19	0.94	0.47
Control Delay	55.9	19.9	48.7	44.9	3.4	55.7	10.9	47.6	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.9	19.9	48.7	44.9	3.4	55.7	10.9	47.6	16.6
Queue Length 50th (ft)	122	105	13	135	12	51	0	~269	55
Queue Length 95th (ft)	207	156	39	#260	59	#132	30	#437	143
Internal Link Dist (ft)		215		260		844			629
Turn Bay Length (ft)	180		105		180		75	425	
Base Capacity (vph)	445	1441	146	460	1000	171	332	980	563
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.37	0.16	0.60	0.42	0.57	0.16	0.94	0.47

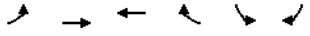
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

14: Pleasant Valley Rd. (SR-49) & Missouri Flat Rd.

PM Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	491	507	226	157	626	384
v/c Ratio	0.81	0.74	0.77	0.16	0.84	0.34
Control Delay	42.5	25.8	47.9	3.3	31.3	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	25.8	47.9	3.3	31.3	1.5
Queue Length 50th (ft)	119	206	108	17	246	1
Queue Length 95th (ft)	#222	319	181	33	#515	27
Internal Link Dist (ft)		1271	1500		1899	
Turn Bay Length (ft)	135			150		165
Base Capacity (vph)	669	997	565	1076	855	1149
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.51	0.40	0.15	0.73	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	718	459	236	995	24	622	14	223	3	11	17
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	3167	1417	1583	3167	1417	3072	1432		1583	1513	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	3167	1417	1583	3167	1417	3072	1432		1583	1513	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	798	510	262	1106	27	691	16	248	3	12	19
RTOR Reduction (vph)	0	0	207	0	0	3	0	169	0	0	18	0
Lane Group Flow (vph)	17	798	303	262	1106	24	691	95	0	3	13	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		pm+ov	Prot		Perm	Prot			Prot		
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2			6						
Actuated Green, G (s)	2.9	32.9	61.3	20.2	50.2	50.2	28.4	32.8		1.2	5.6	
Effective Green, g (s)	2.9	32.9	61.3	20.2	50.2	50.2	28.4	32.8		1.2	5.6	
Actuated g/C Ratio	0.03	0.32	0.59	0.20	0.49	0.49	0.28	0.32		0.01	0.05	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	45	1011	897	310	1542	690	846	456		18	82	
v/s Ratio Prot	0.01	c0.25	0.09	c0.17	0.35		c0.22	c0.07		0.00	0.01	
v/s Ratio Perm			0.12			0.02						
v/c Ratio	0.38	0.79	0.34	0.85	0.72	0.04	0.82	0.21		0.17	0.16	
Uniform Delay, d1	49.2	31.9	10.6	39.9	20.9	13.8	34.9	25.7		50.5	46.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.2	4.2	0.2	18.6	1.6	0.0	6.1	0.2		4.3	0.9	
Delay (s)	54.5	36.1	10.8	58.6	22.5	13.8	41.1	25.9		54.8	47.4	
Level of Service	D	D	B	E	C	B	D	C		D	D	
Approach Delay (s)		26.6			29.1			36.9			48.1	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM Average Control Delay	30.4	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	103.1	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	73.3%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	783	102	23	1175	23	50	15	26	30	3	30
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1583	3167	1417	1583	3157			1590	1403		1508	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	1583	3167	1417	1583	3157			1590	1403		1508	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	66	870	113	26	1306	26	56	17	29	33	3	33
RTOR Reduction (vph)	0	0	32	0	1	0	0	0	27	0	31	0
Lane Group Flow (vph)	66	870	81	26	1331	0	0	73	2	0	38	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	5.6	75.0	75.0	2.4	71.8			9.2	9.2		7.4	
Effective Green, g (s)	5.6	75.0	75.0	2.4	71.8			9.2	9.2		7.4	
Actuated g/C Ratio	0.05	0.68	0.68	0.02	0.65			0.08	0.08		0.07	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	81	2159	966	35	2061			133	117		101	
v/s Ratio Prot	c0.04	0.27		0.02	c0.42			c0.05			c0.03	
v/s Ratio Perm			0.06						0.00			
v/c Ratio	0.81	0.40	0.08	0.74	0.65			0.55	0.02		0.38	
Uniform Delay, d1	51.7	7.7	5.9	53.5	11.5			48.4	46.3		49.1	
Progression Factor	1.00	1.00	1.00	1.02	0.88			1.00	1.00		1.00	
Incremental Delay, d2	44.4	0.6	0.2	45.4	1.1			4.6	0.1		2.4	
Delay (s)	96.1	8.2	6.1	99.9	11.2			53.0	46.3		51.5	
Level of Service	F	A	A	F	B			D	D		D	
Approach Delay (s)		13.5			12.9			51.1			51.5	
Approach LOS		B			B			D			D	

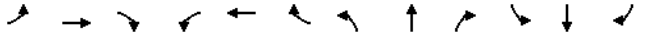
Intersection Summary				
HCM Average Control Delay	15.7	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	61.5%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Volume (vph)	188	651	17	740	236	219	481
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1583	1417		3042	1650	1650	1403
Flt Permitted	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (perm)	1583	1417		3042	1650	1650	1403
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	209	723	19	822	262	243	534
RTOR Reduction (vph)	0	518	0	0	0	0	20
Lane Group Flow (vph)	209	205	0	841	262	243	514
Heavy Vehicles (%)	2%	2%	3%	3%	3%	3%	3%
Turn Type		Perm	Prot	Prot			pm+ov
Protected Phases	4		5	5	2	6	4
Permitted Phases		4					6
Actuated Green, G (s)	29.9	29.9		46.6	72.1	21.5	51.4
Effective Green, g (s)	29.9	29.9		46.6	72.1	21.5	51.4
Actuated g/C Ratio	0.27	0.27		0.42	0.66	0.20	0.47
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	430	385		1289	1082	323	707
v/s Ratio Prot	0.13			c0.28	0.16	0.15	c0.20
v/s Ratio Perm		0.14					0.17
v/c Ratio	0.49	0.53		0.65	0.24	0.75	0.73
Uniform Delay, d1	33.6	34.1		25.2	7.8	41.7	23.6
Progression Factor	0.73	3.54		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	1.3		2.6	0.1	9.5	3.7
Delay (s)	25.3	122.1		27.8	7.9	51.3	27.4
Level of Service	C	F		C	A	D	C
Approach Delay (s)	100.4				23.1	34.9	
Approach LOS	F				C	C	

Intersection Summary				
HCM Average Control Delay	52.0	HCM Level of Service		D
HCM Volume to Capacity ratio	0.69			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)		8.0
Intersection Capacity Utilization	92.1%	ICU Level of Service		F
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	26	0	0	107	38	886	52	14	807	66
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	29	0	0	119	42	984	58	16	897	73
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						4						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked												
vC, conflicting volume	1541	2091	485	1606	2099	521	970			1042		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1541	2091	485	1606	2099	521	970			1042		
tC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	95	100	100	76	94			98		
cM capacity (veh/h)	55	47	525	61	46	497	700			657		

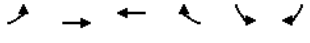
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	29	42	656	386	16	598	372
Volume Left	0	42	0	0	16	0	0
Volume Right	29	0	0	58	0	0	73
cSH	525	700	1700	1700	657	1700	1700
Volume to Capacity	0.05	0.06	0.39	0.23	0.02	0.35	0.22
Queue Length 95th (ft)	4	5	0	0	2	0	0
Control Delay (s)	12.3	10.5	0.0	0.0	10.6	0.0	0.0
Lane LOS	B	B			B		
Approach Delay (s)	12.3	0.4			0.2		
Approach LOS	B						

Intersection Summary					
Average Delay	Err				
Intersection Capacity Utilization	43.3%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	205	33	30	330	612	48	59	50	630	53	145
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.1		4.0		4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		0.95		0.97	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		0.95		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1568	3070		1583	1667	1417		2970		3042	1469	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (perm)	1568	3070		1583	1667	1417		2970		3042	1469	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	112	228	37	33	367	680	53	66	56	700	59	161
RTOR Reduction (vph)	0	18	0	0	0	249	0	53	0	0	95	0
Lane Group Flow (vph)	112	247	0	33	367	431	0	122	0	700	125	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Prot			Prot		pm+ov	Split			Split		
Protected Phases	5	2		1	6	4	8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	6.4	25.8		2.0	21.4	41.6		3.0		20.2	20.2	
Effective Green, g (s)	6.4	25.8		2.0	21.4	41.6		3.0		20.2	20.2	
Actuated g/C Ratio	0.10	0.39		0.03	0.32	0.63		0.05		0.30	0.30	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.1		4.0		4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	151	1191		48	536	886		134		924	446	
v/s Ratio Prot	c0.07	0.08		0.02	c0.22	0.15		c0.04		c0.23	0.08	
v/s Ratio Perm						0.16						
v/c Ratio	0.74	0.21		0.69	0.68	0.49		0.91		0.76	0.28	
Uniform Delay, d1	29.2	13.5		31.9	19.6	6.7		31.6		20.9	17.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	15.7	0.1		27.8	3.7	0.4		50.1		3.6	0.3	
Delay (s)	44.9	13.6		59.8	23.3	7.1		81.7		24.5	18.0	
Level of Service	D	B		E	C	A		F		C	B	
Approach Delay (s)		22.9			14.2			81.7			23.0	
Approach LOS		C			B			F			C	

Intersection Summary				
HCM Average Control Delay	23.3	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	66.5	Sum of lost time (s)	15.5	
Intersection Capacity Utilization	64.7%	ICU Level of Service	C	
Analysis Period (min)	15			

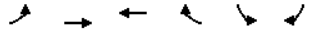
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	320	292	270	169	283	173
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3042	1650	1650	1403	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3042	1650	1650	1403	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	356	324	300	188	314	192
RTOR Reduction (vph)	0	0	0	1	0	102
Lane Group Flow (vph)	356	324	300	187	314	90
Heavy Vehicles (%)	3%	3%	3%	3%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	5.2	18.8	10.6	24.0	13.4	18.6
Effective Green, g (s)	5.2	18.8	10.6	24.0	13.4	18.6
Actuated g/C Ratio	0.13	0.47	0.27	0.60	0.34	0.47
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	397	779	439	846	533	662
v/s Ratio Prot	c0.12	0.20	c0.18	0.07	c0.20	0.02
v/s Ratio Perm				0.06		0.05
v/c Ratio	0.90	0.42	0.68	0.22	0.59	0.14
Uniform Delay, d1	17.0	6.9	13.1	3.6	10.9	6.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.6	0.1	3.5	0.2	1.8	0.0
Delay (s)	38.6	7.0	16.6	3.8	12.7	6.1
Level of Service	D	A	B	A	B	A
Approach Delay (s)		23.6	11.6		10.2	
Approach LOS		C	B		B	

Intersection Summary			
HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	39.8	Sum of lost time (s)	10.6
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

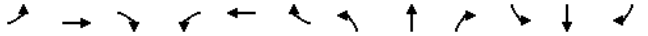
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	85	335	808	108	22	130
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	94	372	898	120	24	144
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1018				1519	958
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1018				1519	958
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	86				78	54
cM capacity (veh/h)	678				113	312

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	467	1018	169
Volume Left	94	0	24
Volume Right	0	120	144
cSH	678	1700	248
Volume to Capacity	0.14	0.60	0.68
Queue Length 95th (ft)	12	0	110
Control Delay (s)	3.9	0.0	45.5
Lane LOS	A		E
Approach Delay (s)	3.9	0.0	45.5
Approach LOS			E

Intersection Summary				
Average Delay		5.7		
Intersection Capacity Utilization		100.1%	ICU Level of Service	G
Analysis Period (min)		15		



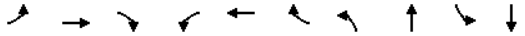
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	1	61	4	150	0	800	209	83	434	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	1	68	4	167	0	889	232	92	482	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			Raised	
Median storage veh)								2			1	
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	1724	1788	482	1673	1672	1005	482			1121		
vC1, stage 1 conf vol	667	667		1005	1005							
vC2, stage 2 conf vol	1058	1121		668	667							
vCu, unblocked vol	1724	1788	482	1673	1672	1005	482			1121		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	71	98	43	100			85		
cM capacity (veh/h)	26	173	582	234	253	293	1080			623		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	1	239	0	1121	92	482
Volume Left	0	68	0	0	92	0
Volume Right	1	167	0	232	0	0
cSH	582	273	1700	1700	623	1700
Volume to Capacity	0.00	0.88	0.00	0.66	0.15	0.28
Queue Length 95th (ft)	0	190	0	0	13	0
Control Delay (s)	11.2	67.6	0.0	0.0	11.8	0.0
Lane LOS	B	F			B	
Approach Delay (s)	11.2	67.6	0.0		1.9	
Approach LOS	B	F				

Intersection Summary				
Average Delay		8.9		
Intersection Capacity Utilization		97.4%	ICU Level of Service	F
Analysis Period (min)		15		

Queues 2030 + PP (Mit for Queuing)

7: Missouri Flat Rd. & Diamond Springs Pkwy AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	17	798	510	262	1106	27	691	264	3	31
v/c Ratio	0.16	0.81	0.47	0.80	0.68	0.04	0.77	0.41	0.03	0.26
Control Delay	49.3	40.3	2.3	58.0	24.0	15.8	38.8	6.0	48.0	31.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	40.3	2.3	58.0	24.0	15.8	38.8	6.0	48.0	31.8
Queue Length 50th (ft)	11	263	0	169	271	7	211	6	2	8
Queue Length 95th (ft)	33	#388	39	#324	#500	28	288	67	12	38
Internal Link Dist (ft)		191			465			499		239
Turn Bay Length (ft)	100		250	325		50	275		50	
Base Capacity (vph)	263	986	1131	329	1633	733	1020	694	526	515
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.81	0.45	0.80	0.68	0.04	0.68	0.38	0.01	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues 2030 + PP (Mit for Queuing)

8: Diamond Springs Pkwy & Throwita Way AM Peak

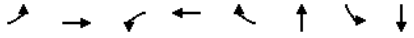
Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	66	870	113	26	1332	73	29	69
v/c Ratio	1.14	0.38	0.11	0.45	0.62	0.49	0.18	0.47
Control Delay	209.4	9.5	2.7	70.5	11.8	57.2	17.7	38.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	209.4	9.5	2.7	70.5	11.8	57.2	17.7	38.5
Queue Length 50th (ft)	~55	142	3	19	337	50	0	25
Queue Length 95th (ft)	#146	231	28	m28	493	94	28	67
Internal Link Dist (ft)		430			840	290		465
Turn Bay Length (ft)	175		200	100			100	
Base Capacity (vph)	58	2276	1047	58	2155	390	366	462
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.38	0.11	0.45	0.62	0.19	0.08	0.15

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	209	723	841	262	243	534
v/c Ratio	0.48	0.80	0.65	0.24	0.75	0.74
Control Delay	28.6	18.2	29.4	8.5	56.0	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.6	18.2	29.4	8.5	56.0	26.2
Queue Length 50th (ft)	125	302	239	69	163	268
Queue Length 95th (ft)	131	583	347	107	233	349
Internal Link Dist (ft)	840			610	281	
Turn Bay Length (ft)			350			
Base Capacity (vph)	432	904	1289	1081	480	716
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.80	0.65	0.24	0.51	0.75

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	112	265	33	367	680	175	700	220
v/c Ratio	0.63	0.21	0.32	0.71	0.57	0.91	0.74	0.40
Control Delay	44.5	12.4	39.0	30.1	2.7	72.6	27.4	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.5	12.4	39.0	30.1	2.7	72.6	27.4	10.8
Queue Length 50th (ft)	45	27	13	130	2	26	132	25
Queue Length 95th (ft)	91	61	39	#267	36	#89	#231	82
Internal Link Dist (ft)		200		260		844		629
Turn Bay Length (ft)	180		105		180		425	
Base Capacity (vph)	782	2210	173	546	1185	192	949	552
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.12	0.19	0.67	0.57	0.91	0.74	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
14: Pleasant Valley Rd. (SR-49) & Missouri Flat Rd.

2030 + PP (Mit for Queuing)
AM Peak

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	356	324	300	188	314	192
v/c Ratio	0.90	0.42	0.70	0.19	0.59	0.22
Control Delay	52.8	9.7	23.4	2.2	17.1	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.8	9.7	23.4	2.2	17.1	2.0
Queue Length 50th (ft)	40	42	58	8	54	0
Queue Length 95th (ft)	#144	111	140	17	139	22
Internal Link Dist (ft)		1271	1500		1899	
Turn Bay Length (ft)	135			150		165
Base Capacity (vph)	396	1351	1049	1243	825	872
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.24	0.29	0.15	0.38	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
7: Missouri Flat Rd. & Diamond Springs Pkwy

2030 + PP (Mit for Queuing)
PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	845	540	205	786	21	675	13	220	4	14	21
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	3167	1417	1583	3167	1417	3072	1430		1583	1519	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	3167	1417	1583	3167	1417	3072	1430		1583	1519	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	20	939	600	228	873	23	750	14	244	4	16	23
RTOR Reduction (vph)	0	0	209	0	0	3	0	161	0	0	22	0
Lane Group Flow (vph)	20	939	391	228	873	20	750	97	0	4	17	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		pm+ov	Prot		Perm	Prot			Prot		
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2			6						
Actuated Green, G (s)	3.1	37.7	69.2	15.1	49.7	49.7	31.5	36.3		1.2	6.0	
Effective Green, g (s)	3.1	37.7	69.2	15.1	49.7	49.7	31.5	36.3		1.2	6.0	
Actuated g/C Ratio	0.03	0.35	0.65	0.14	0.47	0.47	0.30	0.34		0.01	0.06	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	46	1123	976	225	1481	663	910	488		18	86	
v/s Ratio Prot	0.01	c0.30	0.12	c0.14	0.28		c0.24	c0.07		0.00	0.01	
v/s Ratio Perm			0.16			0.01						
v/c Ratio	0.43	0.84	0.40	1.01	0.59	0.03	0.82	0.20		0.22	0.20	
Uniform Delay, d1	50.7	31.5	8.8	45.6	20.8	15.3	34.8	24.7		52.1	47.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.5	5.5	0.3	63.5	0.6	0.0	6.1	0.2		6.2	1.2	
Delay (s)	57.2	37.0	9.0	109.1	21.4	15.3	40.9	24.9		58.3	49.0	
Level of Service	E	D	A	F	C	B	D	C		E	D	
Approach Delay (s)		26.5			39.1			36.8			49.9	
Approach LOS		C			D			D			D	

Intersection Summary				
HCM Average Control Delay	33.3	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.79			
Actuated Cycle Length (s)	106.3	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	77.0%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	880	120	20	910	20	67	20	35	35	4	35
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1583	3167	1417	1583	3157			1589	1403		1509	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	1583	3167	1417	1583	3157			1589	1403		1509	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	77	978	133	22	1011	22	74	22	39	39	4	39
RTOR Reduction (vph)	0	0	35	0	1	0	0	0	35	0	34	0
Lane Group Flow (vph)	77	978	98	22	1032	0	0	96	4	0	48	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	7.6	80.7	80.7	2.4	75.5			12.6	12.6		8.3	
Effective Green, g (s)	7.6	80.7	80.7	2.4	75.5			12.6	12.6		8.3	
Actuated g/C Ratio	0.06	0.67	0.67	0.02	0.63			0.10	0.10		0.07	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	100	2130	953	32	1986			167	147		104	
v/s Ratio Prot	c0.05	0.31		0.01	c0.33			c0.06			c0.03	
v/s Ratio Perm			0.07						0.00			
v/c Ratio	0.77	0.46	0.10	0.69	0.52			0.57	0.03		0.46	
Uniform Delay, d1	55.3	9.3	6.9	58.4	12.3			51.1	48.2		53.7	
Progression Factor	1.00	1.00	1.00	0.95	0.45			1.00	1.00		1.00	
Incremental Delay, d2	29.8	0.7	0.2	40.5	0.8			4.7	0.1		3.2	
Delay (s)	85.2	10.0	7.1	96.0	6.3			55.9	48.3		56.9	
Level of Service	F	B	A	F	A			E	D		E	
Approach Delay (s)		14.6			8.2			53.7			56.9	
Approach LOS		B			A			D			E	

Intersection Summary				
HCM Average Control Delay	15.4	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.54			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	54.6%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Volume (vph)	225	725	14	525	300	300	425
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1583	1417		3042	1650	1650	1403
Flt Permitted	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (perm)	1583	1417		3042	1650	1650	1403
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	250	806	16	583	333	333	472
RTOR Reduction (vph)	0	404	0	0	0	0	21
Lane Group Flow (vph)	250	402	0	599	333	333	451
Heavy Vehicles (%)	2%	2%	3%	3%	3%	3%	3%
Turn Type		Perm	Prot	Prot			pm+ov
Protected Phases	4		5	5	2	6	4
Permitted Phases		4					6
Actuated Green, G (s)	38.8	38.8		41.2	73.2	28.0	66.8
Effective Green, g (s)	38.8	38.8		41.2	73.2	28.0	66.8
Actuated g/C Ratio	0.32	0.32		0.34	0.61	0.23	0.56
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	512	458		1044	1007	385	828
v/s Ratio Prot	0.16			c0.20	0.20	c0.20	0.18
v/s Ratio Perm		c0.28					0.15
v/c Ratio	0.49	0.88		0.57	0.33	0.86	0.54
Uniform Delay, d1	32.6	38.4		32.2	11.4	44.2	16.9
Progression Factor	0.68	1.68		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	16.0		2.3	0.2	17.9	0.7
Delay (s)	22.8	80.4		34.5	11.6	62.1	17.7
Level of Service	C	F		C	B	E	B
Approach Delay (s)	66.8				26.3	36.0	
Approach LOS	E				C	D	

Intersection Summary				
HCM Average Control Delay	44.4	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.76			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	95.0%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
12: Lime Kiln Rd. & Diamond Rd. (SR-49)

2030 + PP (Mit for Queuing)
PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	86	0	0	89	48	750	70	20	929	90
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	96	0	0	99	53	833	78	22	1032	100
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						4						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											690	
pX, platoon unblocked												
vC, conflicting volume	1650	2144	566	1635	2156	456	1132			911		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1650	2144	566	1635	2156	456	1132			911		
tC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	79	100	100	82	91			97		
cM capacity (veh/h)	48	42	465	48	41	549	607			737		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	96	53	556	356	22	688	444
Volume Left	0	53	0	0	22	0	0
Volume Right	96	0	0	78	0	0	100
cSH	465	607	1700	1700	737	1700	1700
Volume to Capacity	0.21	0.09	0.33	0.21	0.03	0.40	0.26
Queue Length 95th (ft)	19	7	0	0	2	0	0
Control Delay (s)	14.7	11.5	0.0	0.0	10.0	0.0	0.0
Lane LOS	B	B			B		
Approach Delay (s)	14.7	0.6			0.2		
Approach LOS	B						

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	44.5%	ICU Level of Service	A	
Analysis Period (min)	15			

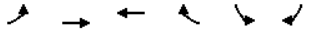
HCM Signalized Intersection Capacity Analysis
13: Pleasant Valley Rd. (SR-49) & Diamond Rd. (SR-49)

2030 + PP (Mit for Queuing)
PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	258	500	81	25	275	510	45	55	47	900	75	235
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.1		4.0		4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		0.95		0.97	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		0.95		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98		0.95	1.00	
Satd. Flow (prot)	1568	3070		1583	1667	1417		2970		3042	1463	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98		0.95	1.00	
Satd. Flow (perm)	1568	3070		1583	1667	1417		2970		3042	1463	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	287	556	90	28	306	567	50	61	52	1000	83	261
RTOR Reduction (vph)	0	15	0	0	0	163	0	50	0	0	115	0
Lane Group Flow (vph)	287	631	0	28	306	404	0	113	0	1000	229	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Prot			Prot		pm+ov	Split			Split		
Protected Phases	5	2		1	6	4	8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	16.3	34.1		2.0	19.8	40.1		3.0		20.3	20.3	
Effective Green, g (s)	16.3	34.1		2.0	19.8	40.1		3.0		20.3	20.3	
Actuated g/C Ratio	0.22	0.46		0.03	0.26	0.54		0.04		0.27	0.27	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.1		4.0		4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	341	1398		42	441	759		119		824	397	
v/s Ratio Prot	c0.18	0.21		0.02	c0.18	0.14		c0.04		c0.33	0.16	
v/s Ratio Perm						0.14						
v/c Ratio	0.84	0.45		0.67	0.69	0.53		0.95		1.21	0.58	
Uniform Delay, d1	28.1	14.0		36.1	24.8	11.3		35.9		27.3	23.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	16.3	0.2		26.8	4.8	0.7		66.8		107.2	2.0	
Delay (s)	44.3	14.2		62.9	29.6	12.0		102.6		134.5	25.6	
Level of Service	D	B		E	C	B		F		F	C	
Approach Delay (s)		23.5			19.6			102.6			106.7	
Approach LOS		C			B			F			F	

Intersection Summary				
HCM Average Control Delay	59.8	HCM Level of Service	E	
HCM Volume to Capacity ratio	0.92			
Actuated Cycle Length (s)	74.9	Sum of lost time (s)	15.5	
Intersection Capacity Utilization	79.4%	ICU Level of Service	D	
Analysis Period (min)	15			

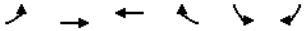
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	534	487	225	178	675	412
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3042	1650	1650	1403	1583	1417
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3042	1650	1650	1403	1583	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	593	541	250	198	750	458
RTOR Reduction (vph)	0	0	0	5	0	85
Lane Group Flow (vph)	593	541	250	193	750	373
Heavy Vehicles (%)	3%	3%	3%	3%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	5	2	6	4	4	5
Permitted Phases				6		4
Actuated Green, G (s)	19.1	38.6	16.5	62.6	46.1	65.2
Effective Green, g (s)	19.1	38.6	16.5	62.6	46.1	65.2
Actuated g/C Ratio	0.21	0.42	0.18	0.68	0.50	0.71
Clearance Time (s)	3.0	4.1	4.1	3.5	3.5	3.0
Vehicle Extension (s)	0.2	0.2	0.2	3.5	3.5	0.2
Lane Grp Cap (vph)	629	690	295	952	791	1001
v/s Ratio Prot	c0.19	c0.33	0.15	0.10	c0.47	0.08
v/s Ratio Perm				0.04		0.19
v/c Ratio	0.94	0.78	0.85	0.20	0.95	0.37
Uniform Delay, d1	36.1	23.2	36.7	5.5	22.0	5.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.5	5.4	18.9	0.1	20.4	0.1
Delay (s)	58.5	28.6	55.6	5.7	42.3	5.5
Level of Service	E	C	E	A	D	A
Approach Delay (s)		44.3	33.5		28.4	
Approach LOS		D	C		C	

Intersection Summary				
HCM Average Control Delay	35.7	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.89			
Actuated Cycle Length (s)	92.3	Sum of lost time (s)	6.5	
Intersection Capacity Utilization	82.1%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	155	608	711	90	49	165
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	172	676	790	100	54	183
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	890				1860	840
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	890				1860	840
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	77				12	50
cM capacity (veh/h)	757				62	365

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	848	890	238
Volume Left	172	0	54
Volume Right	0	100	183
cSH	757	1700	173
Volume to Capacity	0.23	0.52	1.38
Queue Length 95th (ft)	22	0	359
Control Delay (s)	5.6	0.0	252.6
Lane LOS	A		F
Approach Delay (s)	5.6	0.0	252.6
Approach LOS			F

Intersection Summary			
Average Delay	32.8		
Intersection Capacity Utilization	117.7%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	3	70	5	255	0	707	175	150	780	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	3	78	6	283	0	786	194	167	867	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			Raised	
Median storage veh)								2			1	
Upstream signal (ft)											579	
pX, platoon unblocked												
vC, conflicting volume	2272	2180	867	2086	2083	883	867			980		
vC1, stage 1 conf vol	1200	1200		883	883							
vC2, stage 2 conf vol	1072	980		1203	1200							
vCu, unblocked vol	2272	2180	867	2086	2083	883	867			980		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	48	97	18	100			76		
cM capacity (veh/h)	4	125	351	150	172	345	777			704		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	3	367	0	980	167	867
Volume Left	0	78	0	0	167	0
Volume Right	3	283	0	194	0	0
cSH	351	267	1700	1700	704	1700
Volume to Capacity	0.01	1.37	0.00	0.58	0.24	0.51
Queue Length 95th (ft)	1	488	0	0	23	0
Control Delay (s)	15.4	226.7	0.0	0.0	11.7	0.0
Lane LOS	C	F			B	
Approach Delay (s)	15.4	226.7	0.0		1.9	
Approach LOS	C	F				

Intersection Summary					
Average Delay	35.7				
Intersection Capacity Utilization	101.6%	ICU Level of Service		G	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	20	939	600	228	873	23	750	258	4	39
v/c Ratio	0.19	0.85	0.51	0.96	0.56	0.03	0.78	0.38	0.04	0.31
Control Delay	50.3	40.0	2.2	94.5	22.1	15.5	38.9	5.7	48.5	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.3	40.0	2.2	94.5	22.1	15.5	38.9	5.7	48.5	32.5
Queue Length 50th (ft)	13	310	0	~155	196	5	236	6	3	10
Queue Length 95th (ft)	38	#448	36	#323	340	24	321	65	14	43
Internal Link Dist (ft)		191			465			499		239
Turn Bay Length (ft)	100		250	325		50	275		50	
Base Capacity (vph)	253	1107	1179	237	1564	703	982	679	506	501
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.85	0.51	0.96	0.56	0.03	0.76	0.38	0.01	0.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

8: Diamond Springs Pkwy & Throwita Way

PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	77	978	133	22	1033	96	39	82
v/c Ratio	0.97	0.45	0.13	0.42	0.50	0.57	0.21	0.54
Control Delay	151.8	11.2	3.4	73.3	6.4	64.0	16.8	43.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	151.8	11.2	3.4	73.3	6.4	64.0	16.8	43.6
Queue Length 50th (ft)	61	184	7	18	74	72	0	34
Queue Length 95th (ft)	#162	296	37	m31	156	124	33	84
Internal Link Dist (ft)		430			840	290		465
Turn Bay Length (ft)	175		200	100			100	
Base Capacity (vph)	79	2194	1014	53	2051	358	346	430
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.45	0.13	0.42	0.50	0.27	0.11	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

9: Diamond Springs Pkwy & Diamond Rd. (SR-49)

PM Peak

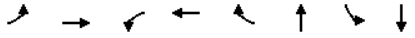
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	250	806	599	333	333	472
v/c Ratio	0.49	0.94	0.57	0.33	0.86	0.56
Control Delay	24.4	33.1	37.7	13.9	65.7	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.4	33.1	37.7	13.9	65.7	14.9
Queue Length 50th (ft)	149	471	207	128	245	167
Queue Length 95th (ft)	141	#753	293	204	#357	212
Internal Link Dist (ft)	840			610	281	
Turn Bay Length (ft)			350			
Base Capacity (vph)	607	911	1045	1007	440	847
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.88	0.57	0.33	0.76	0.56

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

13: Pleasant Valley Rd. (SR-49) & Diamond Rd. (SR-49)

PM Peak



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	287	646	28	306	567	163	1000	344
v/c Ratio	0.82	0.45	0.31	0.75	0.58	0.94	1.19	0.66
Control Delay	46.9	14.0	45.0	39.9	6.8	84.5	123.7	21.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.9	14.0	45.0	39.9	6.8	84.5	123.7	21.6
Queue Length 50th (ft)	127	83	13	128	44	27	~300	74
Queue Length 95th (ft)	214	154	41	#269	160	#100	#491	#218
Internal Link Dist (ft)		200		260		844		629
Turn Bay Length (ft)	180		105		180		425	
Base Capacity (vph)	696	1968	153	485	972	173	843	520
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.33	0.18	0.63	0.58	0.94	1.19	0.66

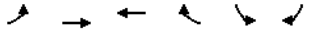
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

14: Pleasant Valley Rd. (SR-49) & Missouri Flat Rd.

PM Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	593	541	250	198	750	458
v/c Ratio	0.94	0.79	0.85	0.19	0.95	0.41
Control Delay	62.6	32.4	61.7	4.2	46.2	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	32.4	61.7	4.2	46.2	3.0
Queue Length 50th (ft)	177	266	142	29	398	24
Queue Length 95th (ft)	#317	396	226	49	#739	76
Internal Link Dist (ft)		1271	1500		1899	
Turn Bay Length (ft)	135			150		165
Base Capacity (vph)	628	832	438	1018	791	1128
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.65	0.57	0.19	0.95	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

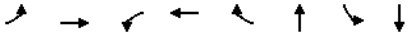
HCM Signalized Intersection Capacity Analysis — 2030 + PP (Mit for Queuing) Alt. 1
13: Pleasant Valley Rd. (SR-49) & Diamond Rd. (SR-49) — PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	258	500	81	25	275	510	45	55	47	900	75	235
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.1		4.0		4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		0.95		0.97	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		0.95		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98		0.95	1.00	
Satd. Flow (prot)	1568	3070		1583	1667	1417		2970		3042	1463	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98		0.95	1.00	
Satd. Flow (perm)	1568	3070		1583	1667	1417		2970		3042	1463	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	287	556	90	28	306	567	50	61	52	1000	83	261
RTOR Reduction (vph)	0	13	0	0	0	119	0	50	0	0	116	0
Lane Group Flow (vph)	287	633	0	28	306	448	0	113	0	1000	228	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Prot			Prot		pm+ov	Split			Split		
Protected Phases	5 13	2		1	6	4	8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	20.6	41.6		2.3	19.3	46.4		4.0		27.1	27.1	
Effective Green, g (s)	20.6	41.6		2.3	19.3	46.4		4.0		27.1	27.1	
Actuated g/C Ratio	0.23	0.46		0.03	0.21	0.51		0.04		0.30	0.30	
Clearance Time (s)		4.4		3.0	4.4	4.1		4.0		4.1	4.1	
Vehicle Extension (s)		3.2		0.2	3.2	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	357	1411		40	356	727		131		911	438	
v/s Ratio Prot	c0.18	0.21		0.02	c0.18	0.18		c0.04		c0.33	0.16	
v/s Ratio Perm						0.13						
v/c Ratio	0.80	0.45		0.70	0.86	0.62		0.86		1.10	0.52	
Uniform Delay, d1	33.0	16.6		43.8	34.3	15.7		43.0		31.7	26.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	11.7	0.2		35.2	18.4	1.6		40.8		60.2	1.1	
Delay (s)	44.7	16.9		78.9	52.7	17.3		83.8		91.9	27.4	
Level of Service	D	B		E	D	B		F		F	C	
Approach Delay (s)		25.5			31.2			83.8			75.4	
Approach LOS		C			C			F			E	

Intersection Summary				
HCM Average Control Delay	49.9	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.92			
Actuated Cycle Length (s)	90.5	Sum of lost time (s)	18.5	
Intersection Capacity Utilization	79.4%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Queues — 2030 + PP (Mit for Queuing) Alt. 1
13: Pleasant Valley Rd. (SR-49) & Diamond Rd. (SR-49) — PM Peak



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	287	646	28	306	567	163	1000	344
v/c Ratio	0.83	0.44	0.35	0.84	0.66	0.89	1.08	0.61
Control Delay	39.6	16.8	54.2	55.5	9.2	73.4	83.8	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.6	16.8	54.2	55.5	9.2	73.4	83.8	19.6
Queue Length 50th (ft)	88	107	16	164	63	33	~333	83
Queue Length 95th (ft)	#171	185	44	#320	165	#101	#496	192
Internal Link Dist (ft)		200		260		844		629
Turn Bay Length (ft)	180		105		180		425	
Base Capacity (vph)	444	1507	125	397	863	184	930	562
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.43	0.22	0.77	0.66	0.89	1.08	0.61

Intersection Summary

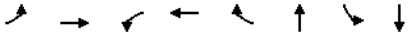
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	258	500	81	25	275	510	45	55	47	900	75	235
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	3.0	4.4		3.0	4.4	4.1		4.0		4.1	4.1	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		0.95		0.97	1.00	
Frt	1.00	0.98		1.00	1.00	0.85		0.95		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98		0.95	1.00	
Satd. Flow (prot)	1568	3070		1583	1667	1417		2970		3042	1463	
Flt Permitted	0.28	1.00		0.95	1.00	1.00		0.98		0.95	1.00	
Satd. Flow (perm)	456	3070		1583	1667	1417		2970		3042	1463	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	287	556	90	28	306	567	50	61	52	1000	83	261
RTOR Reduction (vph)	0	14	0	0	0	123	0	48	0	0	122	0
Lane Group Flow (vph)	287	632	0	28	306	444	0	115	0	1000	222	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	pm+pt			Prot		pm+ov	Split			Split		
Protected Phases	5	2		1	6	4	8	8		4	4	
Permitted Phases	2					6						
Actuated Green, G (s)	38.7	33.5		2.2	20.7	51.0		6.0		30.3	30.3	
Effective Green, g (s)	38.7	33.5		2.2	20.7	51.0		6.0		30.3	30.3	
Actuated g/C Ratio	0.44	0.38		0.03	0.24	0.58		0.07		0.35	0.35	
Clearance Time (s)	3.0	4.4		3.0	4.4	4.1		4.0		4.1	4.1	
Vehicle Extension (s)	0.2	3.2		0.2	3.2	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	392	1175		40	394	826		204		1053	507	
v/s Ratio Prot	c0.13	0.21		0.02	0.18	0.19		c0.04		c0.33	0.15	
v/s Ratio Perm	c0.20					0.13						
v/c Ratio	0.73	0.54		0.70	0.78	0.54		0.56		0.95	0.44	
Uniform Delay, d1	17.9	21.0		42.3	31.2	11.1		39.5		27.9	22.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	6.0	0.5		35.2	9.4	0.7		3.5		16.8	0.6	
Delay (s)	23.9	21.5		77.5	40.6	11.8		43.0		44.6	22.6	
Level of Service	C	C		E	D	B		D		D	C	
Approach Delay (s)		22.2			23.6			43.0			39.0	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM Average Control Delay	30.4	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.79			
Actuated Cycle Length (s)	87.5	Sum of lost time (s)	11.1	
Intersection Capacity Utilization	79.4%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	287	646	28	306	567	163	1000	344
v/c Ratio	0.72	0.53	0.35	0.84	0.57	0.64	0.93	0.54
Control Delay	26.9	22.0	52.6	53.8	6.9	40.3	44.2	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.9	22.0	52.6	53.8	6.9	40.3	44.2	14.2
Queue Length 50th (ft)	103	125	16	167	70	33	288	67
Queue Length 95th (ft)	166	210	43	#299	157	#76	#424	155
Internal Link Dist (ft)		200		260		844		629
Turn Bay Length (ft)	180		105		180		425	
Base Capacity (vph)	439	1269	130	412	1009	258	1110	652
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.51	0.22	0.74	0.56	0.63	0.90	0.53

Intersection Summary
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Appendix I:

Traffic Signal Warrant Worksheets

Scenario Report

Scenario:	2010 AM
Command:	Default Command
Volume:	Existing AM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 10 Diamond Rd. @ Truck St.	No / No	??? / ???
# 11 Diamond Rd. @ Bradley Dr.	No / No	??? / ???
# 12 Diamond Rd. @ Lime Kiln Rd.	No / No	??? / ???
# 15 Pleasant Valley Rd. @ China Garden	No / Yes	??? / ???
# 16 Pleasant Valley Rd. @ Racquet Way	No / No	??? / ???
# 17 Missouri Flat Rd. @ China Garden Rd	No / No	??? / ???

Peak Hour Delay Signal Warrant Report

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	3	227		0		0	294		11		7		0		7	0		0		0
ApproachDel:	xxxxxx					xxxxxx					11.1					xxxxxx				

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=14]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=549]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	3	227		0		0	294		11		7		0		7	0		0		0

Major Street Volume: 535
Minor Approach Volume: 14
Minor Approach Volume Threshold: 386

Peak Hour Delay Signal Warrant Report

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	22		236		0	0		245		15	11		0		24	0		0		0
ApproachDel:	xxxxxx					xxxxxx					10.7					xxxxxx				

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=35]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=553]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	22		236		0	0		245		15	11		0		24	0		0		0

Major Street Volume: 518
Minor Approach Volume: 35
Minor Approach Volume Threshold: 395

Peak Hour Delay Signal Warrant Report

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	31	193		15	12	225		29	23	3		10	7	4		2
ApproachDel:	xxxxxx				xxxxxx				12.6				12.8			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=36]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=554]
FAIL - Total volume less than 800 for intersection
with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=13]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=554]
FAIL - Total volume less than 800 for intersection
with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	31	193		15	12	225		29	23	3		10	7	4		2

Major Street Volume: 505
Minor Approach Volume: 36
Minor Approach Volume Threshold: 402

Peak Hour Delay Signal Warrant Report

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	11		0	110	57	396		0	0	1044		61
ApproachDel:	xxxxxx				34.6				xxxxxx				xxxxxx			

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=121]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1679]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	11		0	110	57	396		0	0	1044		61

Major Street Volume: 1558
Minor Approach Volume: 121
Minor Approach Volume Threshold: 101

Peak Hour Delay Signal Warrant Report

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	7		0	16	1		4	59	20		175	18	25		506	4
ApproachDel:	12.5				12.7				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=23]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=835]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=64]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=835]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	7		0	16	1		4	59	20		175	18	25		506	4

Major Street Volume: 748
Minor Approach Volume: 64
Minor Approach Volume Threshold: 385

Peak Hour Delay Signal Warrant Report

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	0	598		143	111	334		0	0		0	0	39		2	126
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				26.3			

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=167]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1353]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	0	598		143	111	334		0	0		0	0	39		2	126

Major Street Volume: 1186
Minor Approach Volume: 167
Minor Approach Volume Threshold: 226

Scenario Report

Scenario:	2010 PM
Command:	Default Command
Volume:	Existing PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 10 Diamond Rd. @ Truck St.	No / No	??? / ???
# 11 Diamond Rd. @ Bradley Dr.	No / No	??? / ???
# 12 Diamond Rd. @ Lime Kiln Rd.	No / No	??? / ???
# 15 Pleasant Valley Rd. @ China Garden	No / Yes	??? / ???
# 16 Pleasant Valley Rd. @ Racquet Way	No / No	??? / ???
# 17 Missouri Flat Rd. @ China Garden Rd	No / Yes	??? / ???

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Peak Hour Delay Signal Warrant Report

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	4	325		0	0	400		15	25		0	25	0		0	0
ApproachDel:	xxxxxx				xxxxxx				13.3				xxxxxx			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=50]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=794]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	4	325		0	0	400		15	25		0	25	0		0	0

Major Street Volume: 744
Minor Approach Volume: 50
Minor Approach Volume Threshold: 298

Peak Hour Delay Signal Warrant Report

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	28	304		0		0	400		25		25		0		55	0		0		0
ApproachDel:	xxxxxx					xxxxxx					13.2					xxxxxx				

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=80]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=837]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	28	304		0		0	400		25		25		0		55	0		0		0

Major Street Volume: 757
Minor Approach Volume: 80
Minor Approach Volume Threshold: 294

Peak Hour Delay Signal Warrant Report

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	40	251		20	20	385		50	79		9	35	6		3	2
ApproachDel:	xxxxxx				xxxxxx				20.9				16.9			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.7]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=123]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=900]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=11]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=900]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	40	251		20	20	385		50	79		9	35	6		3	2

Major Street Volume: 766
Minor Approach Volume: 123
Minor Approach Volume Threshold: 290

Peak Hour Delay Signal Warrant Report

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	14		0	140	103	720		0	0	870		51
ApproachDel:	xxxxxx				37.1				xxxxxx				xxxxxx			

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=154]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1898]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	14		0	140	103	720		0	0	870		51

Major Street Volume: 1744
Minor Approach Volume: 154
Minor Approach Volume Threshold: 71 [less than minimum of 100]

Peak Hour Delay Signal Warrant Report

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	30		1	70	1		3	50	70	620		62	20	405		3
ApproachDel:	27.7				12.8				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.8]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=101]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1335]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=54]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1335]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	30		1	70	1		3	50	70	620		62	20	405		3

Major Street Volume: 1180
Minor Approach Volume: 101
Minor Approach Volume Threshold: 228

Peak Hour Delay Signal Warrant Report

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	1	0	0	1	0	1	0	0	1	0	0	0	1!	0	0	0	0	1!	0	0
Final Vol.:	0	500		120		200	600		0		0	0		0		45	2		145	
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					47.4				

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=2.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=192]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1612]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	1	0	0	1	0	1	0	0	1	0	0	0	1!	0	0	0	0	1!	0	0
Final Vol.:	0	500		120		200	600		0		0	0		0		45	2		145	

Major Street Volume: 1420
Minor Approach Volume: 192
Minor Approach Volume Threshold: 164

Scenario Report

Scenario:	2010 + PP AM
Command:	Default Command
Volume:	Existing + PP AM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 10 Diamond Rd. @ Truck St.	No / No	??? / ???
# 11 Diamond Rd. @ Bradley Dr.	No / No	??? / ???
# 12 Diamond Rd. @ Lime Kiln Rd.	No / No	??? / ???
# 15 Pleasant Valley Rd. @ China Garden	No / No	??? / ???
# 16 Pleasant Valley Rd. @ Racquet Way	No / No	??? / ???
# 17 Missouri Flat Rd. @ China Garden Rd	No / No	??? / ???

Peak Hour Delay Signal Warrant Report

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	7	277		0		0	557		1		4		0		3	0		0		0
ApproachDel:	xxxxxx					xxxxxx					14.2					xxxxxx				

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=7]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=849]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	7	277		0		0	557		1		4		0		3	0		0		0

Major Street Volume: 842
Minor Approach Volume: 7
Minor Approach Volume Threshold: 265

Peak Hour Delay Signal Warrant Report

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1	0 0	0	0	0	1 0	0	0	0	0 1	0	0	0	0 0
Final Vol.:	0	284		0	0	556		4	0	0		1	0	0		0
ApproachDel:	xxxxxx				xxxxxx				11.8				xxxxxx			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=845]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1	0 0	0	0	0	1 0	0	0	0	0 1	0	0	0	0 0
Final Vol.:	0	284		0	0	556		4	0	0		1	0	0		0

Major Street Volume: 844
Minor Approach Volume: 1
Minor Approach Volume Threshold: 265

Peak Hour Delay Signal Warrant Report

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	32	751		16	18	585		39	44		1	10	7		4	42
ApproachDel:	xxxxxx				xxxxxx				74.4				22.6			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=55]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1549]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=53]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1549]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	32	751		16	18	585		39	44		1	10	7		4	42

Major Street Volume: 1441
Minor Approach Volume: 55
Minor Approach Volume Threshold: 122

Peak Hour Delay Signal Warrant Report

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	1	0		
Final Vol.:	0		0		0	11		0		110	57		184		0	0		504		61
ApproachDel:	xxxxxx					14.1					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=121]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=927]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	1	0		
Final Vol.:	0		0		0	11		0		110	57		184		0	0		504		61

Major Street Volume: 806
Minor Approach Volume: 121
Minor Approach Volume Threshold: 277

Peak Hour Delay Signal Warrant Report

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	7		0	16	1		4	36	20		173	18	25		506	4
ApproachDel:	12.2				12.6				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=23]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=810]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=41]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=810]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	7		0	16	1		4	36	20		173	18	25		506	4

Major Street Volume: 746
Minor Approach Volume: 41
Minor Approach Volume Threshold: 386

Peak Hour Delay Signal Warrant Report

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	0	0 1	0	0	1!	0 0
Final Vol.:	0	418		114	47	306		0	0		0	0	3		39	2 74
ApproachDel:	xxxxxx				xxxxxx				9.9				17.2			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=3]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1003]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=115]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1003]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	0	0 1	0	0	1!	0 0
Final Vol.:	0	418		114	47	306		0	0		0	0	3		39	2 74

Major Street Volume: 885
Minor Approach Volume: 115
Minor Approach Volume Threshold: 327

Scenario Report

Scenario:	2010 + PP PM
Command:	Default Command
Volume:	Existing + PP PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 10 Diamond Rd. @ Truck St.	No / No	??? / ???
# 11 Diamond Rd. @ Bradley Dr.	No / No	??? / ???
# 12 Diamond Rd. @ Lime Kiln Rd.	Yes / Yes	??? / ???
# 15 Pleasant Valley Rd. @ China Garden	No / No	??? / ???
# 16 Pleasant Valley Rd. @ Racquet Way	No / No	??? / ???
# 17 Missouri Flat Rd. @ China Garden Rd	No / No	??? / ???

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Peak Hour Delay Signal Warrant Report

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	9		344		0	0		561		1	14		0		10	0		0		0
ApproachDel:	xxxxxx					xxxxxx					15.5					xxxxxx				

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=24]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=939]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	9		344		0	0		561		1	14		0		10	0		0		0

Major Street Volume: 915
Minor Approach Volume: 24
Minor Approach Volume Threshold: 243

Peak Hour Delay Signal Warrant Report

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1	0 0	0	0	0	1 0	0	0	0	0 1	0	0	0	0 0
Final Vol.:	0	353		0	0	566		5	0	0		2	0	0		0
ApproachDel:	xxxxxx				xxxxxx				11.9				xxxxxx			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=926]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1	0 0	0	0	0	1 0	0	0	0	0 1	0	0	0	0 0
Final Vol.:	0	353		0	0	566		5	0	0		2	0	0		0

Major Street Volume: 924
Minor Approach Volume: 2
Minor Approach Volume Threshold: 240

Peak Hour Delay Signal Warrant Report

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	40	593		20	25	699		55	150		2	35	6		3	35
ApproachDel:	xxxxxx				xxxxxx				444.6				20.8			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=23.1]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=187]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1663]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=44]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1663]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	40	593		20	25	699		55	150		2	35	6		3	35

Major Street Volume: 1432
Minor Approach Volume: 187
Minor Approach Volume Threshold: 124

Peak Hour Delay Signal Warrant Report

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	1	0		
Final Vol.:	0		0		0	14		0		140	103		335		0	0		420		51
ApproachDel:	xxxxxx					14.1					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=154]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1063]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	1	0		
Final Vol.:	0		0		0	14		0		140	103		335		0	0		420		51

Major Street Volume: 909
Minor Approach Volume: 154
Minor Approach Volume Threshold: 245

Peak Hour Delay Signal Warrant Report

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	30		1	70	1		3	30	70		610	62	20		405	3
ApproachDel:	26.2				13.4				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.7]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=101]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1305]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=34]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1305]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	30		1	70	1		3	30	70		610	62	20		405	3

Major Street Volume: 1170
Minor Approach Volume: 101
Minor Approach Volume Threshold: 231

Peak Hour Delay Signal Warrant Report

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	0	0 1	0	0	1!	0 0
Final Vol.:	0	350		95	85	550		0	0		0	10	45		2	85
ApproachDel:	xxxxxx				xxxxxx				11.8				23.2			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1222]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.9]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=132]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1222]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	0	0 1	0	0	1!	0 0
Final Vol.:	0	350		95	85	550		0	0		0	10	45		2	85

Major Street Volume: 1080
Minor Approach Volume: 132
Minor Approach Volume Threshold: 258

Scenario Report

Scenario:	2020 AM
Command:	Default Command
Volume:	2020 AM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 10 Diamond Rd. @ Truck St.	No / No	??? / ???
# 11 Diamond Rd. @ Bradley Dr.	No / No	??? / ???
# 12 Diamond Rd. @ Lime Kiln Rd.	No / No	??? / ???
# 15 Pleasant Valley Rd. @ China Garden	No / Yes	??? / ???
# 16 Pleasant Valley Rd. @ Racquet Way	No / No	??? / ???
# 17 Missouri Flat Rd. @ China Garden Rd	Yes / Yes	??? / ???

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Peak Hour Delay Signal Warrant Report

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	4	325		0	0	353		15	15		0	13	0		0	0
ApproachDel:	xxxxxx				xxxxxx				12.5				xxxxxx			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=28]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=725]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	4	325		0	0	353		15	15		0	13	0		0	0

Major Street Volume: 697
Minor Approach Volume: 28
Minor Approach Volume Threshold: 316

Peak Hour Delay Signal Warrant Report

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	30	316		0	0	346		20	13		0	24	0		0	0
ApproachDel:	xxxxxx				xxxxxx				12.2				xxxxxx			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=37]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=749]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	30	316		0	0	346		20	13		0	24	0		0	0

Major Street Volume: 712
Minor Approach Volume: 37
Minor Approach Volume Threshold: 310

Peak Hour Delay Signal Warrant Report

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	42	309		23	14	322		34	30		4	13	10		5	7
ApproachDel:	xxxxxx				xxxxxx				16.6				15.4			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=47]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=813]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=22]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=813]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	42	309		23	14	322		34	30		4	13	10		5	7

Major Street Volume: 744
Minor Approach Volume: 47
Minor Approach Volume Threshold: 298

Peak Hour Delay Signal Warrant Report

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	15		0	120	71		500	0	0		1119	93
ApproachDel:	xxxxxx				56.9				xxxxxx				xxxxxx			

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=2.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=135]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1918]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	15		0	120	71		500	0	0		1119	93

Major Street Volume: 1783
Minor Approach Volume: 135
Minor Approach Volume Threshold: 65 [less than minimum of 100]

Peak Hour Delay Signal Warrant Report

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	8		0	19	1		4	72	22		185	19	28		538	5
ApproachDel:	13.1				13.2				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=27]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=901]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=77]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=901]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	8		0	19	1		4	72	22		185	19	28		538	5

Major Street Volume: 797
Minor Approach Volume: 77
Minor Approach Volume Threshold: 363

Peak Hour Delay Signal Warrant Report

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	1	0	0	1	0	1	0	0	1	0	0	0	0	0	1	0	0	1!	0	0
Final Vol.:	0	905		149		132	523		0		0		0		1	50		3		134
ApproachDel:	xxxxxx					xxxxxx					11.5					270.0				

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1897]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=14.0]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=187]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1897]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	1	0	0	1	0	1	0	0	1	0	0	0	0	0	1	0	0	1!	0	0
Final Vol.:	0	905		149		132	523		0		0		0		1	50		3		134

Major Street Volume: 1709
Minor Approach Volume: 187
Minor Approach Volume Threshold: 100

Scenario Report

Scenario:	2020 PM
Command:	Default Command
Volume:	2020 PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 10 Diamond Rd. @ Truck St.	No / No	??? / ???
# 11 Diamond Rd. @ Bradley Dr.	No / No	??? / ???
# 12 Diamond Rd. @ Lime Kiln Rd.	No / No	??? / ???
# 15 Pleasant Valley Rd. @ China Garden	Yes / Yes	??? / ???
# 16 Pleasant Valley Rd. @ Racquet Way	No / No	??? / ???
# 17 Missouri Flat Rd. @ China Garden Rd	Yes / Yes	??? / ???

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Peak Hour Delay Signal Warrant Report

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	6	431		0		0	480		20		55		0		49	0		0		0
ApproachDel:	xxxxxx					xxxxxx					17.7					xxxxxx				

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=104]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1041]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	6	431		0		0	480		20		55		0		49	0		0		0

Major Street Volume: 937
Minor Approach Volume: 104
Minor Approach Volume Threshold: 237

Peak Hour Delay Signal Warrant Report

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	39	407		0		0	496		33		30		0		55	0		0		0
ApproachDel:	xxxxxx					xxxxxx					16.3					xxxxxx				

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=85]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1060]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	39	407		0		0	496		33		30		0		55	0		0		0

Major Street Volume: 975
Minor Approach Volume: 85
Minor Approach Volume Threshold: 226

Peak Hour Delay Signal Warrant Report

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	0 1!	0	0	0 1!	0	0	0 1!	0	0	0 1!	0
Final Vol.:	55	295	30	24	470	58	102	12	43	8	4	6
ApproachDel:	xxxxxx			xxxxxx			37.2			19.6		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=157]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1107]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=18]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1107]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	0 1!	0	0	0 1!	0	0	0 1!	0	0	0 1!	0
Final Vol.:	55	295	30	24	470	58	102	12	43	8	4	6

Major Street Volume: 932
Minor Approach Volume: 157
Minor Approach Volume Threshold: 238

Peak Hour Delay Signal Warrant Report

****

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

****

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	1	0		
Final Vol.:	0		0		0	20		0		153	129		908		0	0		933		78
ApproachDel:	xxxxxx					99.4					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop]

Signal Warrant Rule #1: [vehicle-hours=4.8]

SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.

Signal Warrant Rule #2: [approach volume=173]

SUCCEED - Approach volume greater than or equal to 100 for one lane approach.

Signal Warrant Rule #3: [approach count=3][total volume=2221]

SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

****

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	1	0		
Final Vol.:	0		0		0	20		0		153	129		908		0	0		933		78

Major Street Volume: 2048

Minor Approach Volume: 173

Minor Approach Volume Threshold: 28 [less than minimum of 100]

Peak Hour Delay Signal Warrant Report

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	36		1	81	1		3	61	78	655		67	23	430		4
ApproachDel:	37.8				13.2				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=118]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1440]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=65]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1440]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	36		1	81	1		3	61	78	655		67	23	430		4

Major Street Volume: 1257
Minor Approach Volume: 118
Minor Approach Volume Threshold: 206

Peak Hour Delay Signal Warrant Report

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1	0 0	1 0	1	0 0	1 0	0	0 0	0 1	0	0 1!	0 0
Final Vol.:	0	758	125	238	940	0	0	0	2	58	4	155
ApproachDel:	xxxxxx			xxxxxx			16.2			1047.0		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2280]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=63.1]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=217]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2280]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1	0 0	1 0	1	0 0	1 0	0	0 0	0 1	0	0 1!	0 0
Final Vol.:	0	758	125	238	940	0	0	0	2	58	4	155

Major Street Volume: 2061
Minor Approach Volume: 217
Minor Approach Volume Threshold: 36 [less than minimum of 100]

Scenario Report

Scenario:	2020 + PP AM
Command:	Default Command
Volume:	2020 + PP AM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 10 Diamond Rd. @ Truck St.	No / No	??? / ???
# 11 Diamond Rd. @ Bradley Dr.	No / No	??? / ???
# 12 Diamond Rd. @ Lime Kiln Rd.	No / No	??? / ???
# 15 Pleasant Valley Rd. @ China Garden	No / No	??? / ???
# 16 Pleasant Valley Rd. @ Racquet Way	No / No	??? / ???
# 17 Missouri Flat Rd. @ China Garden Rd	No / No	??? / ???

Peak Hour Delay Signal Warrant Report

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	9	344			0	0	633			2	5		0		5	0		0		0
ApproachDel:	xxxxxx					xxxxxx					15.7					xxxxxx				

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=998]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	9	344			0	0	633			2	5		0		5	0		0		0

Major Street Volume: 988
Minor Approach Volume: 10
Minor Approach Volume Threshold: 223

Peak Hour Delay Signal Warrant Report

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
Final Vol.:	0	353		0		0	633		5		0		0		1	0		0		0
ApproachDel:	xxxxxx					xxxxxx					12.5					xxxxxx				

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=992]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
Final Vol.:	0	353		0		0	633		5		0		0		1	0		0		0

Major Street Volume: 991
Minor Approach Volume: 1
Minor Approach Volume Threshold: 222

Peak Hour Delay Signal Warrant Report

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1! 0	0	0	0	1! 0	0	0	0	1! 0	0	0	0	1! 0	0
Final Vol.:	35	826		33	16	693		49	52		1	10	9		5	66
ApproachDel:	xxxxxx				xxxxxx				211.1				30.2			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=3.7]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=63]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1795]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.7]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=80]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1795]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1! 0	0	0	0	1! 0	0	0	0	1! 0	0	0	0	1! 0	0
Final Vol.:	35	826		33	16	693		49	52		1	10	9		5	66

Major Street Volume: 1652
Minor Approach Volume: 80
Minor Approach Volume Threshold: 86 [less than minimum of 100]

Peak Hour Delay Signal Warrant Report

****

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

****

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	12		0	120	71		259	0	0		649	85
ApproachDel:	xxxxxx				17.9				xxxxxx				xxxxxx			

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.7]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=132]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1196]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

****

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	12		0	120	71		259	0	0		649	85

Major Street Volume: 1064
Minor Approach Volume: 132
Minor Approach Volume Threshold: 203

Peak Hour Delay Signal Warrant Report

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	8		0	19	1		4	61	22		192	19	35		556	5
ApproachDel:	13.4				13.4				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=27]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=922]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=66]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=922]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	8		0	19	1		4	61	22		192	19	35		556	5

Major Street Volume: 829
Minor Approach Volume: 66
Minor Approach Volume Threshold: 349

Peak Hour Delay Signal Warrant Report

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	1	0	0	1	0	1	0	0	1	0	0	0	0	0	1	0	0	1!	0	0
Final Vol.:	0	602		161		65	370		0		0		0		2	50		3		93
ApproachDel:	xxxxxx					xxxxxx					10.3					32.9				

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1346]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=146]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1346]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	1	0	0	1	0	1	0	0	1	0	0	0	0	0	1	0	0	1!	0	0
Final Vol.:	0	602		161		65	370		0		0		0		2	50		3		93

Major Street Volume: 1198
Minor Approach Volume: 146
Minor Approach Volume Threshold: 223

Scenario Report

Scenario:	2020 + PP PM
Command:	Default Command
Volume:	2020 + PP PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

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Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 10 Diamond Rd. @ Truck St.	No / No	??? / ???
# 11 Diamond Rd. @ Bradley Dr.	No / No	??? / ???
# 12 Diamond Rd. @ Lime Kiln Rd.	Yes / Yes	??? / ???
# 15 Pleasant Valley Rd. @ China Garden	No / Yes	??? / ???
# 16 Pleasant Valley Rd. @ Racquet Way	No / No	??? / ???
# 17 Missouri Flat Rd. @ China Garden Rd	No / Yes	??? / ???

Peak Hour Delay Signal Warrant Report

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Lanes:	0	1	0	0	0		0	0	0	1	0		0	0	1!	0	0		0	0	0	0	0	
Final Vol.:	13	427		0			0	633		3			20		0		18		0		0		0	
ApproachDel:	xxxxxx						xxxxxx						18.1						xxxxxx					

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=38]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1114]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Lanes:	0	1	0	0	0		0	0	0	1	0		0	0	1!	0	0		0	0	0	0	0	
Final Vol.:	13	427		0			0	633		3			20		0		18		0		0		0	

Major Street Volume: 1076
Minor Approach Volume: 38
Minor Approach Volume Threshold: 200

Peak Hour Delay Signal Warrant Report

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1	0 0	0	0	0	1 0	0	0	0	0 1	0	0	0	0 0
Final Vol.:	0	440		0	0	644		7	0		0	3	0		0	0
ApproachDel:	xxxxxx				xxxxxx				12.6				xxxxxx			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=3]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1094]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1	0 0	0	0	0	1 0	0	0	0	0 1	0	0	0	0 0
Final Vol.:	0	440		0	0	644		7	0		0	3	0		0	0

Major Street Volume: 1091
Minor Approach Volume: 3
Minor Approach Volume Threshold: 196

Peak Hour Delay Signal Warrant Report

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	44	659		41	23	810		70	175		5	36	8		4	55
ApproachDel:	xxxxxx				xxxxxx				1068.0				27.6			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=64.1]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=216]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1930]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=67]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1930]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	44	659		41	23	810		70	175		5	36	8		4	55

Major Street Volume: 1647
Minor Approach Volume: 216
Minor Approach Volume Threshold: 86 [less than minimum of 100]

Peak Hour Delay Signal Warrant Report

****

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

****

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound				West Bound			
Movement:	L	- T	- R	L	- T	- R	L	- T	- R		L	- T	- R	
Control:	Stop Sign			Stop Sign			Uncontrolled				Uncontrolled			
Lanes:	0	0 0	0	0	0 1!	0	0	1 0	0	0	0	0 0	1	0
Final Vol.:	0	0	0	15	0	153	129	472	0		0	541	71	
ApproachDel:	xxxxxx			18.5			xxxxxx				xxxxxx			

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.9]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=168]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1381]
SUCCEED - Total volume greater than or equal to 650 for intersection
with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

****

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound			South Bound			East Bound				West Bound			
Movement:	L	- T	- R	L	- T	- R	L	- T	- R		L	- T	- R	
Control:	Stop Sign			Stop Sign			Uncontrolled				Uncontrolled			
Lanes:	0	0 0	0	0	0 1!	0	0	1 0	0	0	0	0 0	1	0
Final Vol.:	0	0	0	15	0	153	129	472	0		0	541	71	

Major Street Volume: 1213
Minor Approach Volume: 168
Minor Approach Volume Threshold: 168

Peak Hour Delay Signal Warrant Report

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1! 0	0	0	0	1! 0	0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	35		1	81	1		3	51	78	679		68	28	445		4
ApproachDel:	40.4				13.8				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=117]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1474]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=55]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1474]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1! 0	0	0	0	1! 0	0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	35		1	81	1		3	51	78	679		68	28	445		4

Major Street Volume: 1302
Minor Approach Volume: 117
Minor Approach Volume Threshold: 194

Peak Hour Delay Signal Warrant Report

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	0	0 1	0	0	1!	0 0
Final Vol.:	0	504		135	118	665		0	0		0	7	58		4	108
ApproachDel:	xxxxxx				xxxxxx				12.9				81.1			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=7]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1599]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=3.8]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=170]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1599]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	0	0 1	0	0	1!	0 0
Final Vol.:	0	504		135	118	665		0	0		0	7	58		4	108

Major Street Volume: 1422
Minor Approach Volume: 170
Minor Approach Volume Threshold: 164

Scenario Report

Scenario:	2030 AM
Command:	Default Command
Volume:	2030 AM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 10 Diamond Rd. @ Truck St.	No / No	??? / ???
# 11 Diamond Rd. @ Bradley Dr.	No / No	??? / ???
# 12 Diamond Rd. @ Lime Kiln Rd.	No / No	??? / ???
# 15 Pleasant Valley Rd. @ China Garden	Yes / Yes	??? / ???
# 16 Pleasant Valley Rd. @ Racquet Way	No / No	??? / ???
# 17 Missouri Flat Rd. @ China Garden Rd	Yes / Yes	??? / ???

Peak Hour Delay Signal Warrant Report

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	6	405		0	0	412		18	23		0	19	0		0	0
ApproachDel:	xxxxxx				xxxxxx				14.3				xxxxxx			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=42]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=883]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	6	405		0	0	412		18	23		0	19	0		0	0

Major Street Volume: 841
Minor Approach Volume: 42
Minor Approach Volume Threshold: 266

Peak Hour Delay Signal Warrant Report

****

Intersection #11 Diamond Rd. @ Bradley Dr.

****

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	39	396		0		0	407		24		15		0		24	0		0		0
ApproachDel:	xxxxxx					xxxxxx					13.7					xxxxxx				

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=39]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=905]
SUCCEED - Total volume greater than or equal to 650 for intersection
with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #11 Diamond Rd. @ Bradley Dr.

****

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	39	396		0		0	407		24		15		0		24	0		0		0

Major Street Volume: 866
Minor Approach Volume: 39
Minor Approach Volume Threshold: 258

Peak Hour Delay Signal Warrant Report

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1!	0	0	0 0 1!	0	0	0 0 1!	0	0	0 0 1!	0	0
Final Vol.:	54	386	31	16	377	38	37	4	15	12	6	12
ApproachDel:	xxxxxx			xxxxxx			21.5			17.8		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=56]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=988]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=30]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=988]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1!	0	0	0 0 1!	0	0	0 0 1!	0	0	0 0 1!	0	0
Final Vol.:	54	386	31	16	377	38	37	4	15	12	6	12

Major Street Volume: 902
Minor Approach Volume: 56
Minor Approach Volume Threshold: 247

Peak Hour Delay Signal Warrant Report

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	20		0	130	85	603		0	0	1194		125
ApproachDel:	xxxxxx				124.4				xxxxxx				xxxxxx			

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=5.2]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=150]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2157]
SUCCEED - Total volume greater than or equal to 650 for intersection
with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	20		0	130	85	603		0	0	1194		125

Major Street Volume: 2007
Minor Approach Volume: 150
Minor Approach Volume Threshold: 34 [less than minimum of 100]

Peak Hour Delay Signal Warrant Report

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1! 0	0	0	0	1! 0	0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	10		0	21	1		4	86	24	195		20	31	569		6
ApproachDel:	14.5				13.9				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=31]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=967]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=91]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=967]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1! 0	0	0	0	1! 0	0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	10		0	21	1		4	86	24	195		20	31	569		6

Major Street Volume: 845
Minor Approach Volume: 91
Minor Approach Volume Threshold: 343

Peak Hour Delay Signal Warrant Report

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	1	0	0	1	0	1	0	0	1	0	0	0	0	0	1	0	0	1!	0	0
Final Vol.:	0	1213		155		153	712		0		0		0		1	61		4		143
ApproachDel:	xxxxxx					xxxxxx					13.3					1409.3				

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2442]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=81.4]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=208]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2442]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	1	0	0	1	0	1	0	0	1	0	0	0	0	0	1	0	0	1!	0	0
Final Vol.:	0	1213		155		153	712		0		0		0		1	61		4		143

Major Street Volume: 2233
Minor Approach Volume: 208
Minor Approach Volume Threshold: 8 [less than minimum of 100]

Scenario Report

Scenario:	2030 PM
Command:	Default Command
Volume:	2030 PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 10 Diamond Rd. @ Truck St.	No / No	??? / ???
# 11 Diamond Rd. @ Bradley Dr.	No / No	??? / ???
# 12 Diamond Rd. @ Lime Kiln Rd.	Yes / No	??? / ???
# 15 Pleasant Valley Rd. @ China Garden	Yes / Yes	??? / ???
# 16 Pleasant Valley Rd. @ Racquet Way	No / No	??? / ???
# 17 Missouri Flat Rd. @ China Garden Rd	Yes / Yes	??? / ???

Peak Hour Delay Signal Warrant Report

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	8	537		0		0	560		25		85		0		72	0		0		0
ApproachDel:	xxxxxx					xxxxxx					28.4					xxxxxx				

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=157]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1287]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	8	537		0		0	560		25		85		0		72	0		0		0

Major Street Volume: 1130
Minor Approach Volume: 157
Minor Approach Volume Threshold: 187

Peak Hour Delay Signal Warrant Report

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	50	510		0	0	592		40	35		0	55	0		0	0
ApproachDel:	xxxxxx				xxxxxx				21.5				xxxxxx			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=90]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1282]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	50	510		0	0	592		40	35		0	55	0		0	0

Major Street Volume: 1192
Minor Approach Volume: 90
Minor Approach Volume Threshold: 173

Peak Hour Delay Signal Warrant Report

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	70	338		40	27	555		65	125	15		50	10	5		10
ApproachDel:	xxxxxx				xxxxxx				106.2				24.2			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=5.6]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=190]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1310]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=25]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1310]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	70	338		40	27	555		65	125	15		50	10	5		10

Major Street Volume: 1095
Minor Approach Volume: 190
Minor Approach Volume Threshold: 195

Peak Hour Delay Signal Warrant Report

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	1	0		
Final Vol.:	0		0		0	25		0		165	155		1096		0	0		995		104
ApproachDel:	xxxxxx					324.5					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=17.1]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=190]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2540]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	1	0		
Final Vol.:	0		0		0	25		0		165	155		1096		0	0		995		104

Major Street Volume: 2350
Minor Approach Volume: 190
Minor Approach Volume Threshold: -8 [less than minimum of 100]

Peak Hour Delay Signal Warrant Report

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	41		1	91	1		3	72	85		690	72	25		455	5
ApproachDel:	55.8				13.8				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=2.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=133]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1541]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=76]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1541]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	41		1	91	1		3	72	85		690	72	25		455	5

Major Street Volume: 1332
Minor Approach Volume: 133
Minor Approach Volume Threshold: 186

Peak Hour Delay Signal Warrant Report

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	1	0	0	1	0	1	0	0	1	0	0	0	0	0	1	0	0	1!	0	0
Final Vol.:	0	1015		130		275	1280		0		0		0		3	70		5		165
ApproachDel:	xxxxxx					xxxxxx					22.9					5408.0				

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=3]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2943]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=360.5]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=240]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2943]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	1	0	0	1	0	1	0	0	1	0	0	0	0	0	1	0	0	1!	0	0
Final Vol.:	0	1015		130		275	1280		0		0		0		3	70		5		165

Major Street Volume: 2700
Minor Approach Volume: 240
Minor Approach Volume Threshold: -57 [less than minimum of 100]

Scenario Report

Scenario:	2030 + PP AM
Command:	Default Command
Volume:	2030 + PP AM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 10 Diamond Rd. @ Truck St.	No / No	??? / ???
# 11 Diamond Rd. @ Bradley Dr.	No / No	??? / ???
# 12 Diamond Rd. @ Lime Kiln Rd.	No / Yes	??? / ???
# 15 Pleasant Valley Rd. @ China Garden	No / No	??? / ???
# 16 Pleasant Valley Rd. @ Racquet Way	No / No	??? / ???
# 17 Missouri Flat Rd. @ China Garden Rd	Yes / Yes	??? / ???

Peak Hour Delay Signal Warrant Report

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	1	0	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Final Vol.:	11	413		0	0	698		4	7		0	7	0		0	0
ApproachDel:	xxxxxx				xxxxxx				17.7				xxxxxx			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=14]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1140]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	11		413		0	0		698		4	7		0		7	0		0		0

Major Street Volume: 1126
Minor Approach Volume: 14
Minor Approach Volume Threshold: 188

Peak Hour Delay Signal Warrant Report

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
Final Vol.:	0		424		0	0		699		6	0		0		1	0		0		0
ApproachDel:	xxxxxx					xxxxxx					13.2					xxxxxx				

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1130]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
Final Vol.:	0	424		0		0	699		6		0		0		1	0		0		0

Major Street Volume: 1129
Minor Approach Volume: 1
Minor Approach Volume Threshold: 187

Peak Hour Delay Signal Warrant Report

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	1!	0	0	0	0	1!	0	0	0	0	1!	0	0	0	0	1!	0	0
Final Vol.:	38	879		50		14	796		60		59		2		11	11		6		90
ApproachDel:	xxxxxx					xxxxxx					554.8					45.7				

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=11.1]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=72]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2016]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=107]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2016]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	38		879	50	14		796	60	59		2	11	11		6	90

Major Street Volume: 1837
Minor Approach Volume: 107
Minor Approach Volume Threshold: 57 [less than minimum of 100]

Peak Hour Delay Signal Warrant Report

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	13		0	130	85		335	0	0		793	108
ApproachDel:	xxxxxx				24.6				xxxxxx				xxxxxx			

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=143]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1464]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	1	0		
Final Vol.:	0		0		0	13		0		130	85		335		0	0		793		108

Major Street Volume: 1321
Minor Approach Volume: 143
Minor Approach Volume Threshold: 145

Peak Hour Delay Signal Warrant Report

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	1!	0	0	0	0	1!	0	0	1	0	0	1	0	1	0	0	1	0
Final Vol.:	9		0		21	1		4		86	24		212		21	45		606		7
ApproachDel:	15.2					14.5					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=30]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1036]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=91]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1036]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	9		0	21	1		4	86	24		212	21	45		606	7

Major Street Volume: 915
Minor Approach Volume: 91
Minor Approach Volume Threshold: 315

Peak Hour Delay Signal Warrant Report

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	0	0 1	0	0	1!	0 0
Final Vol.:	0		785	209	83		434	0	0		0	1	61		4	113
ApproachDel:	xxxxxx				xxxxxx				10.8				126.0			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1690]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=6.2]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=178]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1690]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	0	0 1	0	0	1!	0 0
Final Vol.:	0	785		209	83	434		0	0		0	1	61		4	113

Major Street Volume: 1511
Minor Approach Volume: 178
Minor Approach Volume Threshold: 143

Scenario Report

Scenario:	2030 + PP PM
Command:	Default Command
Volume:	2030 + PP PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 10 Diamond Rd. @ Truck St.	No / No	??? / ???
# 11 Diamond Rd. @ Bradley Dr.	No / No	??? / ???
# 12 Diamond Rd. @ Lime Kiln Rd.	Yes / Yes	??? / ???
# 15 Pleasant Valley Rd. @ China Garden	No / Yes	??? / ???
# 16 Pleasant Valley Rd. @ Racquet Way	No / No	??? / ???
# 17 Missouri Flat Rd. @ China Garden Rd	Yes / Yes	??? / ???

Peak Hour Delay Signal Warrant Report

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	7		518		0	0		705		5	25		0		25	0		0		0
ApproachDel:	xxxxxx					xxxxxx					21.4					xxxxxx				

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=50]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1285]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0	1!	0	0	0	0	0	0	0
Final Vol.:	7		518		0	0		705		5	25		0		25	0		0		0

Major Street Volume: 1235
Minor Approach Volume: 50
Minor Approach Volume Threshold: 163

Peak Hour Delay Signal Warrant Report

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1	0 0	0	0	0	1 0	0	0	0	0 1	0	0	0	0 0
Final Vol.:	0	525		0	0	721		9	0	0		4	0	0		0
ApproachDel:	xxxxxx				xxxxxx				13.5				xxxxxx			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=4]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1259]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1	0 0	0	0	0	1 0	0	0	0	0 1	0	0	0	0 0
Final Vol.:	0	525		0	0	721		9	0	0		4	0	0		0

Major Street Volume: 1255
Minor Approach Volume: 4
Minor Approach Volume Threshold: 159

Peak Hour Delay Signal Warrant Report

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	48	725		62	20	920		85	200		8	36	9		5	75
ApproachDel:	xxxxxx				xxxxxx				2183.6				41.0			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=148.0]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=244]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2193]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=89]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2193]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Final Vol.:	48	725		62	20	920		85	200		8	36	9		5	75

Major Street Volume: 1860
Minor Approach Volume: 244
Minor Approach Volume Threshold: 54 [less than minimum of 100]

Peak Hour Delay Signal Warrant Report

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	1	0		
Final Vol.:	0		0		0	16		0		165	155		608		0	0		661		90
ApproachDel:	xxxxxx					27.7					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=181]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1695]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	0	1	0	0	0	0	1	0		
Final Vol.:	0		0		0	16		0		165	155		608		0	0		661		90

Major Street Volume: 1514
Minor Approach Volume: 181
Minor Approach Volume Threshold: 109

Peak Hour Delay Signal Warrant Report

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	39		1	91	1		3	72	85		748	74	36		485	5
ApproachDel:	75.8				14.6				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=2.8]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=131]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1640]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=76]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1640]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	39		1	91	1		3	72	85		748	74	36		485	5

Major Street Volume: 1433
Minor Approach Volume: 131
Minor Approach Volume Threshold: 161

Peak Hour Delay Signal Warrant Report

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	0	0 1	0	0	1!	0 0
Final Vol.:	0	657		175	150	780		0	0		0	3	70		5	130
ApproachDel:	xxxxxx				xxxxxx				14.1				439.2			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=3]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1970]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=25.0]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=205]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1970]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	0	0 1	0	0	1!	0 0
Final Vol.:	0	657		175	150	780		0	0		0	3	70		5	130

Major Street Volume: 1762
Minor Approach Volume: 205
Minor Approach Volume Threshold: 90 [less than minimum of 100]

Scenario Report

Scenario:	2010 + PP AM_Mit
Command:	Default Command
Volume:	Existing + PP AM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 10 Diamond Rd. @ Truck St.	No / No	??? / ???
# 11 Diamond Rd. @ Bradley Dr.	No / No	??? / ???
# 12 Diamond Rd. @ Lime Kiln Rd.	No / No	??? / ???
# 15 Pleasant Valley Rd. @ China Garden	No / No	??? / ???
# 16 Pleasant Valley Rd. @ Racquet Way	No / No	??? / ???
# 17 Missouri Flat Rd. @ China Garden Rd	No / No	??? / ???

Peak Hour Delay Signal Warrant Report

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	1 0	0	0	1 0		0	0 1! 0	0	0	0 0	0
Final Vol.:	7	270	0	0	557	1	4	0	3	0	0	0
ApproachDel:	xxxxxx			xxxxxx			14.2			xxxxxx		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=7]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=842]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	1 0	0	0	1 0		0	0 1! 0	0	0	0 0	0
Final Vol.:	7	270	0	0	557	1	4	0	3	0	0	0

Major Street Volume: 835
Minor Approach Volume: 7
Minor Approach Volume Threshold: 267

Peak Hour Delay Signal Warrant Report

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1	0 0	0	0	0	1 0	0	0	0	0 1	0	0	0	0 0
Final Vol.:	0	277		0	0	556		4	0	0		1	0	0		0
ApproachDel:	xxxxxx				xxxxxx				11.8				xxxxxx			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=838]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1	0 0	0	0	0	1 0	0	0	0	0 1	0	0	0	0 0
Final Vol.:	0	277		0	0	556		4	0	0		1	0	0		0

Major Street Volume: 837
Minor Approach Volume: 1
Minor Approach Volume Threshold: 267

Peak Hour Delay Signal Warrant Report

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	1!	1 0	0	0	0	0 1	0	0	1!	0 1
Final Vol.:	32	753		17	18	592		43	0		0	33	0		0	53
ApproachDel:	xxxxxx				xxxxxx				10.2				14.4			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=33]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1541]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=2][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=53]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1541]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	1!	1 0	0	0	0	0 1	0	0	1!	0 1
Final Vol.:	32	753		17	18	592		43	0		0	33	0		0	53

Major Street Volume: 1455
Minor Approach Volume: 53
Minor Approach Volume Threshold: 213

Peak Hour Delay Signal Warrant Report

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	11		0	110	57		184	0	0		515	61
ApproachDel:	xxxxxx				14.2				xxxxxx				xxxxxx			

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=121]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=938]
SUCCEED - Total volume greater than or equal to 650 for intersection
with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	11		0	110	57		184	0	0		515	61

Major Street Volume: 817
Minor Approach Volume: 121
Minor Approach Volume Threshold: 273

Peak Hour Delay Signal Warrant Report

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	7		0	16	1		4	36	20		173	18	25		506	4
ApproachDel:	12.2				12.6				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=23]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=810]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=41]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=810]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	7		0	16	1		4	36	20		173	18	25		506	4

Major Street Volume: 746
Minor Approach Volume: 41
Minor Approach Volume Threshold: 386

Peak Hour Delay Signal Warrant Report

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1	0 0	1 0	1	0 0	1 0	0	0 0	0 1	0	0 1!	0 0
Final Vol.:	0	429	114	47	306	0	0	0	3	39	2	96
ApproachDel:	xxxxxx			xxxxxx			9.9			17.5		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=3]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1036]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.7]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=137]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1036]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1	0 0	1 0	1	0 0	1 0	0	0 0	0 1	0	0 1!	0 0
Final Vol.:	0	429	114	47	306	0	0	0	3	39	2	96

Major Street Volume: 896
Minor Approach Volume: 137
Minor Approach Volume Threshold: 323

Scenario Report

Scenario:	2010 + PP PM_Mit
Command:	Default Command
Volume:	Existing + PP PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 10 Diamond Rd. @ Truck St.	No / No	??? / ???
# 11 Diamond Rd. @ Bradley Dr.	No / No	??? / ???
# 12 Diamond Rd. @ Lime Kiln Rd.	No / No	??? / ???
# 15 Pleasant Valley Rd. @ China Garden	No / Yes	??? / ???
# 16 Pleasant Valley Rd. @ Racquet Way	No / No	??? / ???
# 17 Missouri Flat Rd. @ China Garden Rd	No / No	??? / ???

Peak Hour Delay Signal Warrant Report

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	1 0	0	0	1 0		0	0 1! 0	0	0	0 0	0
Final Vol.:	6	317	0	0	561	1	14	0	10	0	0	0
ApproachDel:	xxxxxx			xxxxxx			15.2			xxxxxx		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=24]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=909]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	1 0	0	0	1 0		0	0 1! 0	0	0	0 0	0
Final Vol.:	6	317	0	0	561	1	14	0	10	0	0	0

Major Street Volume: 885
Minor Approach Volume: 24
Minor Approach Volume Threshold: 252

Peak Hour Delay Signal Warrant Report

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 0	1	0	0 0 0	0	1	0 0 0	0	0
Final Vol.:	0	323	0	0	566	5	0	0	2	0	0	0
ApproachDel:	xxxxxx			xxxxxx			11.9			xxxxxx		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=896]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 0	1	0	0 0 0	0	1	0 0 0	0	0
Final Vol.:	0	323	0	0	566	5	0	0	2	0	0	0

Major Street Volume: 894
Minor Approach Volume: 2
Minor Approach Volume Threshold: 249

Peak Hour Delay Signal Warrant Report

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	1!	1 0	0	0	0	0 1	0	0	1!	0 1
Final Vol.:	40	629		22	25	705		58	0	0		111	0	0		44
ApproachDel:	xxxxxx				xxxxxx				11.4				12.9			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=111]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1634]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=2][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=44]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1634]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	1!	1 0	0	0	0	0 1	0	0	1!	0 1
Final Vol.:	40	629		22	25	705		58	0	0		111	0	0		44

Major Street Volume: 1479
Minor Approach Volume: 111
Minor Approach Volume Threshold: 150

Peak Hour Delay Signal Warrant Report

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	14		0	140	103	335		0	0	420		458
ApproachDel:	xxxxxx				18.7				xxxxxx				xxxxxx			

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.8]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=154]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1470]
SUCCEED - Total volume greater than or equal to 650 for intersection
with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	14		0	140	103	335		0	0	420		458

Major Street Volume: 1316
Minor Approach Volume: 154
Minor Approach Volume Threshold: 146

Peak Hour Delay Signal Warrant Report

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1! 0	0	0	0	1! 0	0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	30		1	70	1		3	30	70	610		62	20	405		3
ApproachDel:	26.2				13.4				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.7]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=101]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1305]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=34]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1305]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1! 0	0	0	0	1! 0	0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	30		1	70	1		3	30	70	610		62	20	405		3

Major Street Volume: 1170
Minor Approach Volume: 101
Minor Approach Volume Threshold: 231

Peak Hour Delay Signal Warrant Report

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1	0 0	1 0	1	0 0	1 0	0	0 0	0 1	0	0 1!	0 0
Final Vol.:	0	388	95	85	550	0	0	0	10	45	2	161
ApproachDel:	xxxxxx			xxxxxx			11.8			25.5		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1336]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=208]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1336]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1	0 0	1 0	1	0 0	1 0	0	0 0	0 1	0	0 1!	0 0
Final Vol.:	0	388	95	85	550	0	0	0	10	45	2	161

Major Street Volume: 1118
Minor Approach Volume: 208
Minor Approach Volume Threshold: 246

Scenario Report

Scenario:	2020 + PP AM_Mit
Command:	Default Command
Volume:	2020 + PP AM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 10 Diamond Rd. @ Truck St.	No / No	??? / ???
# 11 Diamond Rd. @ Bradley Dr.	No / No	??? / ???
# 12 Diamond Rd. @ Lime Kiln Rd.	No / No	??? / ???
# 15 Pleasant Valley Rd. @ China Garden	No / No	??? / ???
# 16 Pleasant Valley Rd. @ Racquet Way	No / No	??? / ???
# 17 Missouri Flat Rd. @ China Garden Rd	No / No	??? / ???

Peak Hour Delay Signal Warrant Report

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	1 0	0	0	0	0 1	0	0 1! 0	0	0	0 0	0 0
Final Vol.:	9	337	0	0	633	2	5	0	5	0	0	0
ApproachDel:	xxxxxx			xxxxxx			15.6			xxxxxx		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=991]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	1 0	0	0	0	0 1	0	0 1! 0	0	0	0 0	0 0
Final Vol.:	9	337	0	0	633	2	5	0	5	0	0	0

Major Street Volume: 981
Minor Approach Volume: 10
Minor Approach Volume Threshold: 225

Peak Hour Delay Signal Warrant Report

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 0	1	0	0 0 0	0	1	0 0 0	0	0
Final Vol.:	0	346	0	0	633	5	0	0	1	0	0	0
ApproachDel:	xxxxxx			xxxxxx			12.5			xxxxxx		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=985]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 0	1	0	0 0 0	0	1	0 0 0	0	0
Final Vol.:	0	346	0	0	633	5	0	0	1	0	0	0

Major Street Volume: 984
Minor Approach Volume: 1
Minor Approach Volume Threshold: 224

Peak Hour Delay Signal Warrant Report

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	1!	1 0	0	0	0	0 1	0	0	1!	0 1
Final Vol.:	35	839		34	16	704		49	0		0	37	0		0	77
ApproachDel:	xxxxxx				xxxxxx				10.6				16.2			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=37]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1791]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=2][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=77]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1791]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	1!	1 0	0	0	0	0 1	0	0	1!	0 1
Final Vol.:	35	839		34	16	704		49	0		0	37	0		0	77

Major Street Volume: 1677
Minor Approach Volume: 77
Minor Approach Volume Threshold: 152

Peak Hour Delay Signal Warrant Report

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	12		0	120	71		259	0	0		662	85
ApproachDel:	xxxxxx				18.2				xxxxxx				xxxxxx			

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.7]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=132]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1209]
SUCCEED - Total volume greater than or equal to 650 for intersection
with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	12		0	120	71		259	0	0		662	85

Major Street Volume: 1077
Minor Approach Volume: 132
Minor Approach Volume Threshold: 200

Peak Hour Delay Signal Warrant Report

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1! 0	0	0	0	1! 0	0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	8		0	19	1		4	61	22		192	19	35		556	5
ApproachDel:	13.4				13.4				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=27]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=922]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=66]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=922]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1! 0	0	0	0	1! 0	0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	8		0	19	1		4	61	22		192	19	35		556	5

Major Street Volume: 829
Minor Approach Volume: 66
Minor Approach Volume Threshold: 349

Peak Hour Delay Signal Warrant Report

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1	0 0	1 0	1	0 0	1 0	0	0 0	0 1	0	0 1!	0 0
Final Vol.:	0	614	161	65	370	0	0	0	2	50	3	119
ApproachDel:	xxxxxx			xxxxxx			10.3			35.6		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1384]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.7]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=172]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1384]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	1	0 0	1 0	1	0 0	1 0	0	0 0	0 1	0	0 1!	0 0
Final Vol.:	0	614	161	65	370	0	0	0	2	50	3	119

Major Street Volume: 1210
Minor Approach Volume: 172
Minor Approach Volume Threshold: 219

Scenario Report

Scenario:	2020 + PP PM_Mit
Command:	Default Command
Volume:	2020 + PP PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 10 Diamond Rd. @ Truck St.	No / No	??? / ???
# 11 Diamond Rd. @ Bradley Dr.	No / No	??? / ???
# 12 Diamond Rd. @ Lime Kiln Rd.	No / Yes	??? / ???
# 15 Pleasant Valley Rd. @ China Garden	No / Yes	??? / ???
# 16 Pleasant Valley Rd. @ Racquet Way	No / No	??? / ???
# 17 Missouri Flat Rd. @ China Garden Rd	Yes / Yes	??? / ???

Peak Hour Delay Signal Warrant Report

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	1 0	0 0	0	0 0	1 0	0	0 1!	0 0	0	0 0	0 0
Final Vol.:	13	374	0	0	633	3	20	0	18	0	0	0
ApproachDel:	xxxxxx			xxxxxx			17.3			xxxxxx		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=38]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1061]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	1 0	0 0	0	0 0	1 0	0	0 1!	0 0	0	0 0	0 0
Final Vol.:	13	374	0	0	633	3	20	0	18	0	0	0

Major Street Volume: 1023
Minor Approach Volume: 38
Minor Approach Volume Threshold: 213

Peak Hour Delay Signal Warrant Report

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1	0 0	0	0	0	1 0	0	0	0	0 1	0	0	0	0 0
Final Vol.:	0	387		0	0	644		7	0		0	3	0		0	0
ApproachDel:	xxxxxx				xxxxxx				12.6				xxxxxx			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=3]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1041]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	1	0 0	0	0	0	1 0	0	0	0	0 1	0	0	0	0 0
Final Vol.:	0	387		0	0	644		7	0		0	3	0		0	0

Major Street Volume: 1038
Minor Approach Volume: 3
Minor Approach Volume Threshold: 209

Peak Hour Delay Signal Warrant Report

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	1!	1 0	0	0	0	0 1	0	0	1!	0 1
Final Vol.:	44	659		41	23	822		70	0	0		126	0	0		67
ApproachDel:	xxxxxx				xxxxxx				12.3				13.5			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=126]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1852]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=2][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=67]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1852]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	1!	1 0	0	0	0	0 1	0	0	1!	0 1
Final Vol.:	44	659		41	23	822		70	0	0		126	0	0		67

Major Street Volume: 1659
Minor Approach Volume: 126
Minor Approach Volume Threshold: 110

Peak Hour Delay Signal Warrant Report

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	15		0	153	129		472	0	0		586	71
ApproachDel:	xxxxxx				19.9				xxxxxx				xxxxxx			

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.9]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=168]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1426]
SUCCEED - Total volume greater than or equal to 650 for intersection
with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	15		0	153	129		472	0	0		586	71

Major Street Volume: 1258
Minor Approach Volume: 168
Minor Approach Volume Threshold: 158

Peak Hour Delay Signal Warrant Report

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1! 0	0	0	0	1! 0	0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	35		1	81	1		3	51	78	679		68	28	445		4
ApproachDel:	40.4				13.8				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=117]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1474]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=55]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1474]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1! 0	0	0	0	1! 0	0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	35		1	81	1		3	51	78	679		68	28	445		4

Major Street Volume: 1302
Minor Approach Volume: 117
Minor Approach Volume Threshold: 194

Peak Hour Delay Signal Warrant Report

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	0	0 1	0	0	1!	0 0
Final Vol.:	0	549		135	118	665		0	0		0	0	7		58	4 198
ApproachDel:	xxxxxx				xxxxxx				12.9				134.2			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=7]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1734]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=9.7]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=260]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1734]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	0	0 1	0	0	1!	0 0
Final Vol.:	0	549		135	118	665		0	0		0	0	7		58	4 198

Major Street Volume: 1467
Minor Approach Volume: 260
Minor Approach Volume Threshold: 153

Scenario Report

Scenario:	2030 + PP AM_Mit
Command:	Default Command
Volume:	2030 + PP AM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 10 Diamond Rd. @ Truck St.	No / No	??? / ???
# 11 Diamond Rd. @ Bradley Dr.	No / No	??? / ???
# 12 Diamond Rd. @ Lime Kiln Rd.	No / Yes	??? / ???
# 15 Pleasant Valley Rd. @ China Garden	No / Yes	??? / ???
# 16 Pleasant Valley Rd. @ Racquet Way	No / No	??? / ???
# 17 Missouri Flat Rd. @ China Garden Rd	Yes / Yes	??? / ???

Peak Hour Delay Signal Warrant Report

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	1 0	0 0	0	0 0	1 0	0	0 1! 0	0 0	0	0 0	0 0
Final Vol.:	11	403	0	0	698	4	7	0	7	0	0	0
ApproachDel:	xxxxxx			xxxxxx			17.6			xxxxxx		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=14]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1130]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	1 0	0 0	0	0 0	1 0	0	0 1! 0	0 0	0	0 0	0 0
Final Vol.:	11	403	0	0	698	4	7	0	7	0	0	0

Major Street Volume: 1116
Minor Approach Volume: 14
Minor Approach Volume Threshold: 190

Peak Hour Delay Signal Warrant Report

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 0	1	0	0 0 0	0	1	0 0 0	0	0
Final Vol.:	0	414	0	0	699	6	0	0	1	0	0	0
ApproachDel:	xxxxxx			xxxxxx			13.2			xxxxxx		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1120]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 0	1	0	0 0 0	0	1	0 0 0	0	0
Final Vol.:	0	414	0	0	699	6	0	0	1	0	0	0

Major Street Volume: 1119
Minor Approach Volume: 1
Minor Approach Volume Threshold: 189

Peak Hour Delay Signal Warrant Report

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	1	1 0	1	0	1	1 0	0	0	0	0 1	0	0	0	0 1
Final Vol.:	38		894	52	14		807	66	0		0	43	0		0	107
ApproachDel:	xxxxxx				xxxxxx				11.8				13.2			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=43]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2021]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=107]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2021]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	1	1 0	1	0	1	1 0	0	0	0	0 1	0	0	0	0 1
Final Vol.:	38		894	52	14		807	66	0		0	43	0		0	107

Major Street Volume: 1871
Minor Approach Volume: 107
Minor Approach Volume Threshold: 69 [less than minimum of 100]

Peak Hour Delay Signal Warrant Report

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	13		0	130	85	335		0	0	808		108
ApproachDel:	xxxxxx				25.3				xxxxxx				xxxxxx			

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=143]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1479]
SUCCEED - Total volume greater than or equal to 650 for intersection
with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	13		0	130	85	335		0	0	808		108

Major Street Volume: 1336
Minor Approach Volume: 143
Minor Approach Volume Threshold: 142

Peak Hour Delay Signal Warrant Report

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	9		0	21	1		4	86	24		212	21	45		606	7
ApproachDel:	15.2				14.5				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=30]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1036]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=91]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1036]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	9		0	21	1		4	86	24		212	21	45		606	7

Major Street Volume: 915
Minor Approach Volume: 91
Minor Approach Volume Threshold: 315

Peak Hour Delay Signal Warrant Report

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	0	0 1	0	0	1!	0 0
Final Vol.:	0	800		209	83	434		0	0		0	0	1	61	4	142
ApproachDel:	xxxxxx				xxxxxx				10.8				156.3			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=1]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1734]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=9.0]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=207]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1734]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	0	0 1	0	0	1!	0 0
Final Vol.:	0	800		209	83	434		0	0		0	0	1	61	4	142

Major Street Volume: 1526
Minor Approach Volume: 207
Minor Approach Volume Threshold: 139

Scenario Report

Scenario:	2030 + PP PM_Mit
Command:	Default Command
Volume:	2030 + PP PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 10 Diamond Rd. @ Truck St.	No / No	??? / ???
# 11 Diamond Rd. @ Bradley Dr.	No / No	??? / ???
# 12 Diamond Rd. @ Lime Kiln Rd.	No / Yes	??? / ???
# 15 Pleasant Valley Rd. @ China Garden	No / Yes	??? / ???
# 16 Pleasant Valley Rd. @ Racquet Way	No / No	??? / ???
# 17 Missouri Flat Rd. @ China Garden Rd	Yes / Yes	??? / ???

Peak Hour Delay Signal Warrant Report

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	1 0	0 0	0	0 0	1 0	0	0 1!	0 0	0	0 0	0 0
Final Vol.:	7	469	0	0	705	5	25	0	25	0	0	0
ApproachDel:	xxxxxx			xxxxxx			20.5			xxxxxx		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=50]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1236]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #10 Diamond Rd. @ Truck St.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0	1 0	0 0	0	0 0	1 0	0	0 1!	0 0	0	0 0	0 0
Final Vol.:	7	469	0	0	705	5	25	0	25	0	0	0

Major Street Volume: 1186
Minor Approach Volume: 50
Minor Approach Volume Threshold: 174

Peak Hour Delay Signal Warrant Report

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 0	1	0	0 0 0	0	1	0 0 0	0	0
Final Vol.:	0	476	0	0	721	9	0	0	4	0	0	0
ApproachDel:	xxxxxx			xxxxxx			13.5			xxxxxx		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=4]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1210]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #11 Diamond Rd. @ Bradley Dr.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 0	1	0	0 0 0	0	1	0 0 0	0	0
Final Vol.:	0	476	0	0	721	9	0	0	4	0	0	0

Major Street Volume: 1206
Minor Approach Volume: 4
Minor Approach Volume Threshold: 169

Peak Hour Delay Signal Warrant Report

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	1	1 0	1	0	1	1 0	0	0	0	0 1	0	0	0	0 1
Final Vol.:	48	775		70	20	929		90	0	0	144		0	0	89	
ApproachDel:	xxxxxx				xxxxxx				14.7				12.2			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=144]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2165]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=89]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2165]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #12 Diamond Rd. @ Lime Kiln Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	1	1 0	1	0	1	1 0	0	0	0	0 1	0	0	0	0 1
Final Vol.:	48	775		70	20	929		90	0	0	144		0	0	89	

Major Street Volume: 1932
Minor Approach Volume: 144
Minor Approach Volume Threshold: 58 [less than minimum of 100]

Peak Hour Delay Signal Warrant Report

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	16		0	165	155	608		0	0	711		90
ApproachDel:	xxxxxx				31.3				xxxxxx				xxxxxx			

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=181]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1745]
SUCCEED - Total volume greater than or equal to 650 for intersection
with less than four approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #15 Pleasant Valley Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	0	1 0
Final Vol.:	0		0	0	16		0	165	155	608		0	0	711		90

Major Street Volume: 1564
Minor Approach Volume: 181
Minor Approach Volume Threshold: 100

Peak Hour Delay Signal Warrant Report

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1! 0	0	0	0	1! 0	0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	39		1	91	1		3	72	85		748	74	36		485	5
ApproachDel:	75.8				14.6				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=2.8]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=131]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1640]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=76]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1640]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #16 Pleasant Valley Rd. @ Racquet Way

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1! 0	0	0	0	1! 0	0	1	0	0	1 0	1	0	0	1 0
Final Vol.:	39		1	91	1		3	72	85		748	74	36		485	5

Major Street Volume: 1433
Minor Approach Volume: 131
Minor Approach Volume Threshold: 161

Peak Hour Delay Signal Warrant Report

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	0	0 1	0	0	1!	0 0
Final Vol.:	0	707		175	150	780		0	0		0	0	3		70	5 230
ApproachDel:	xxxxxx				xxxxxx				14.1				601.8			

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=3]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2120]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=51.0]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=305]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2120]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #17 Missouri Flat Rd. @ China Garden Rd.

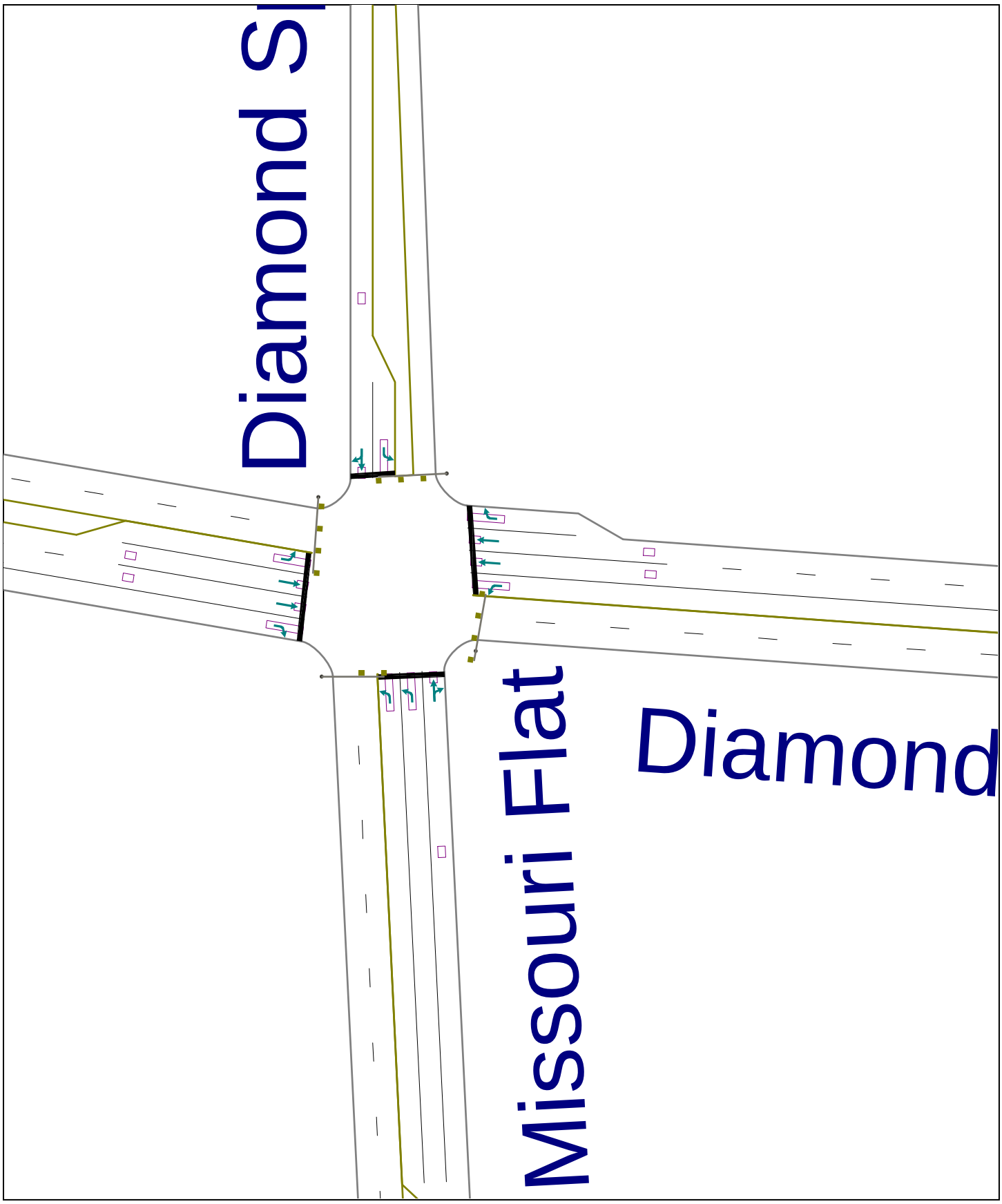
Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	0	0 1	0	0	1!	0 0
Final Vol.:	0	707		175	150	780		0	0		0	0	3		70	5 230

Major Street Volume: 1812
Minor Approach Volume: 305
Minor Approach Volume Threshold: 80 [less than minimum of 100]

Appendix J:

Conceptual Ultimate Diamond Springs Parkway and Diamond Road (SR-49) Roadway Configuration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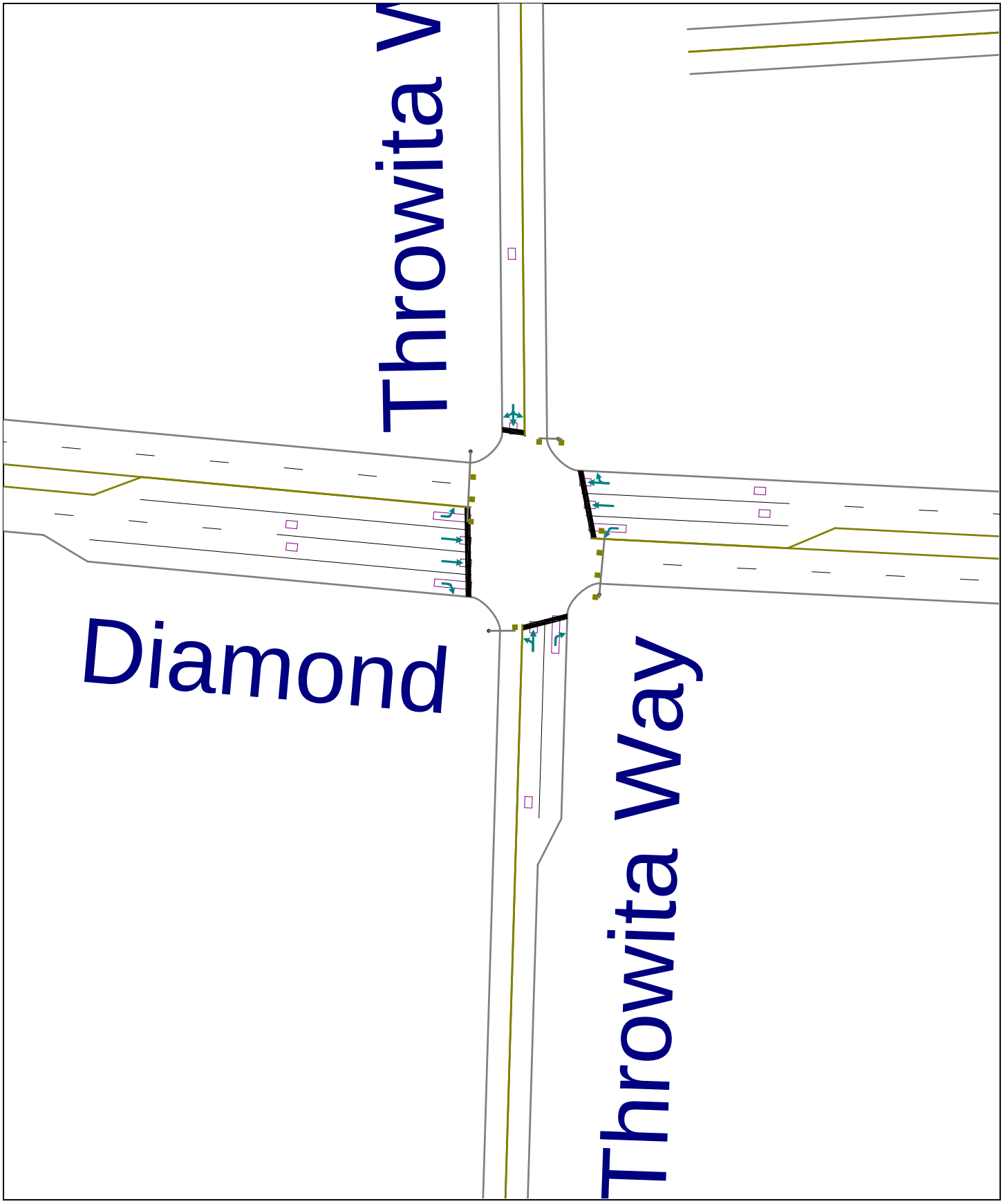
Missouri Flat
Diamond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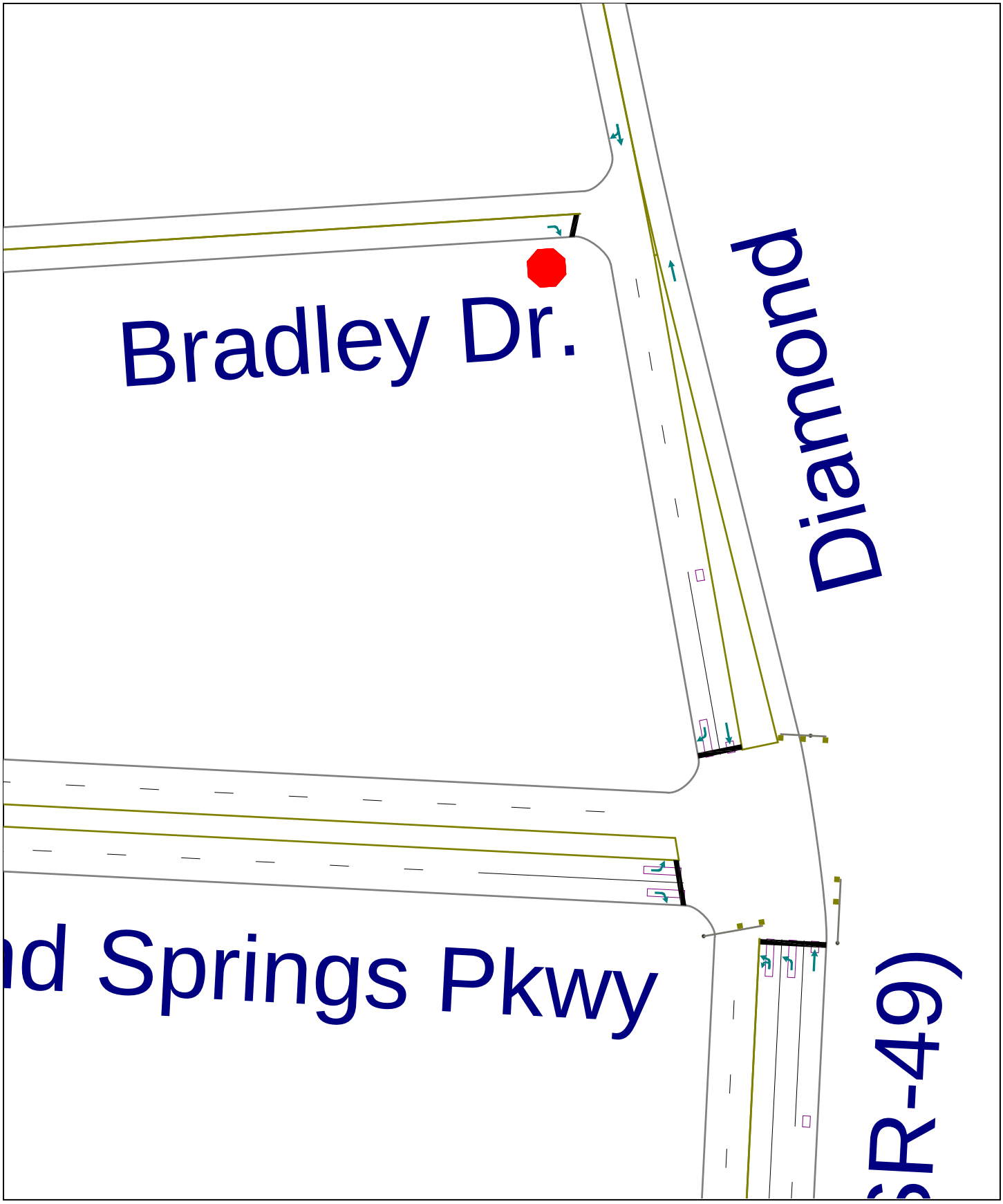
Diamond
Throwita Way


Bradley Dr.
Diamond
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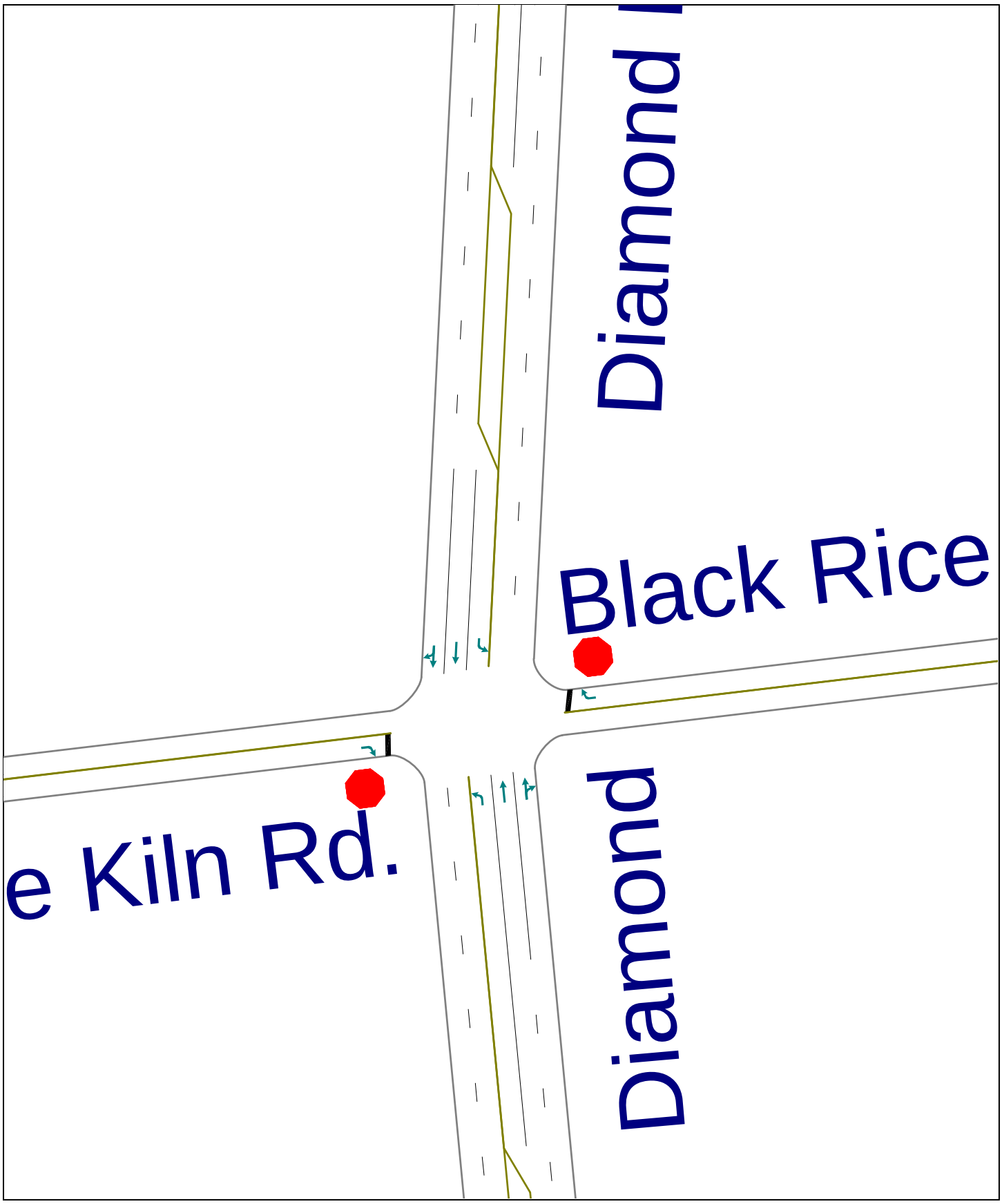
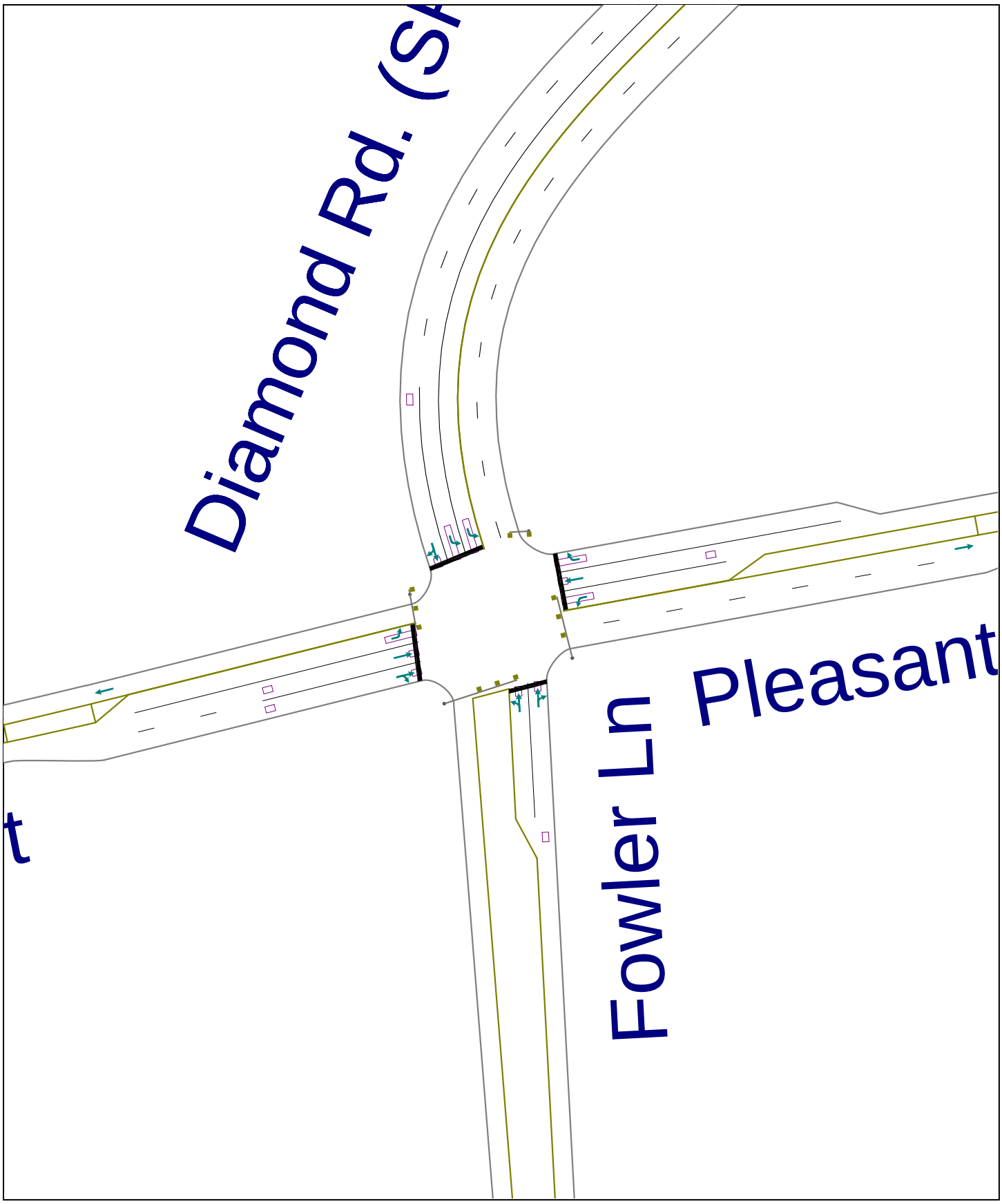
SR-49)


Diamond
Black Rice
e Kiln Rd.
Diamond


Diamond Rd. (SR
Fowler Ln
Pleasant
t

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

Kimley-Horn
and Associates, Inc.

May 18, 2010

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

Suite 150
11060 White Rock Road
Rancho Cordova, California
95670

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

Dear Ms. Maxwell:

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

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

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

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

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

TEL 916 858 5800
FAX 916 858 5805

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

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

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

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

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

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

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

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

Very truly yours,

KIMLEY-HORN AND ASSOCIATES, INC.

Matthew D. Weir, P.E., T.E., PTOE
Project Manager
PE No. C70216 & TR2424

M.3 - Supplemental Plus Project Figures, June 28, 2010

Kimley-Horn
and Associates, Inc.

Suite 150
11060 White Rock Road
Rancho Cordova, California
95670

June 28, 2010

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

Re: Supplemental Plus Project Volume Figures
Diamond Springs Parkway TIA

Dear Ms. Maxwell:

As requested, I am writing to provide supplemental plus proposed project volume figures as documented in the *Diamond Springs Parkway Traffic Impact Analysis*, dated May 6, 2010, as approved by Caltrans. We are providing this consolidated information to simplify the readers' interpretation of the study conclusions.

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

Very truly yours,

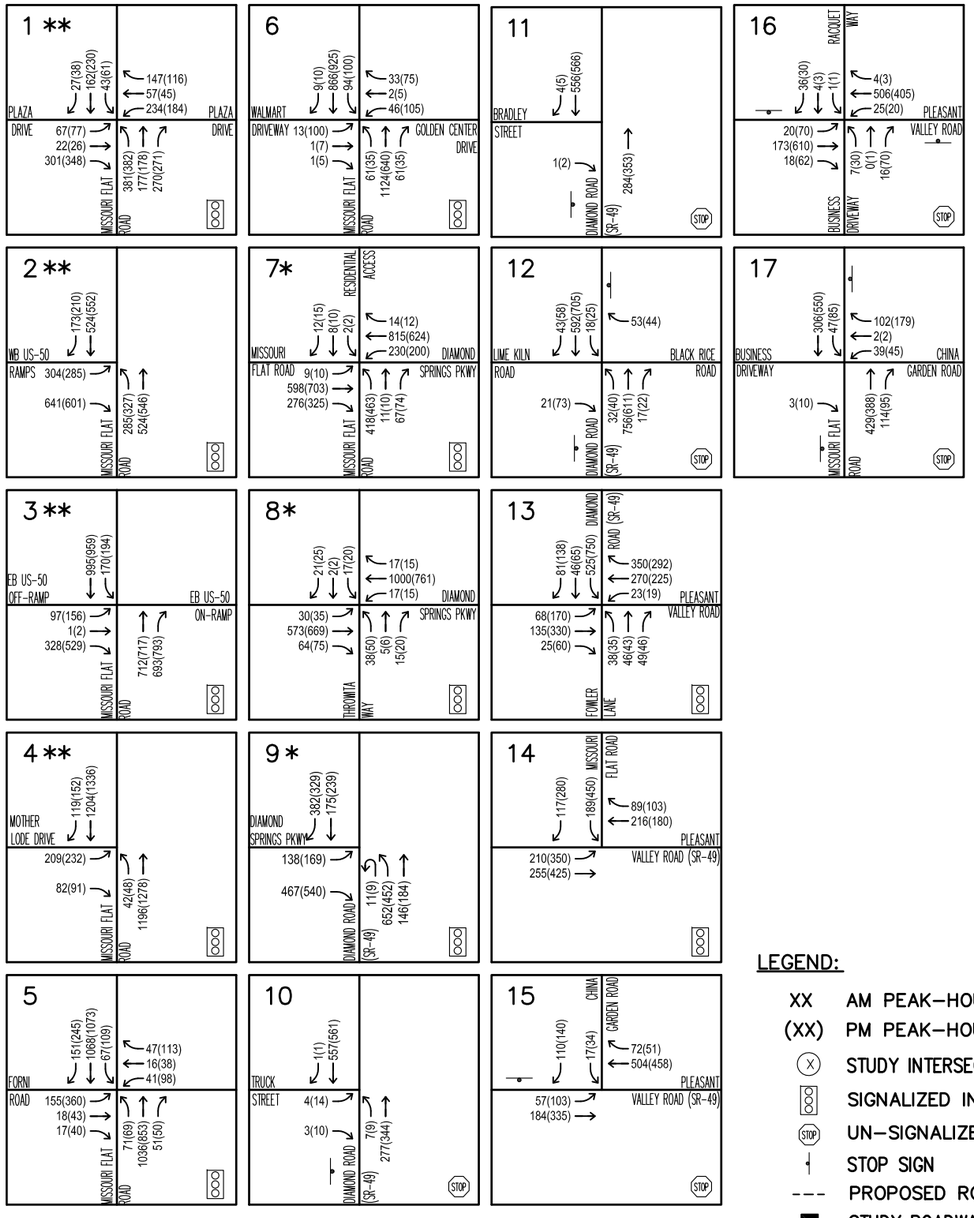
KIMLEY-HORN AND ASSOCIATES, INC.

Matthew D. Weir, P.E., T.E., PTOE
Project Manager
PE No. C70216 & TR2424

Attachments:

Figure A – Existing (2010) Plus Proposed Project Peak-Hour Volume Figure
Figure B – Cumulative (2030) Plus Proposed Project Peak-Hour Volume Figure

TEL 916 858 5800
FAX 916 858 5805



LEGEND:

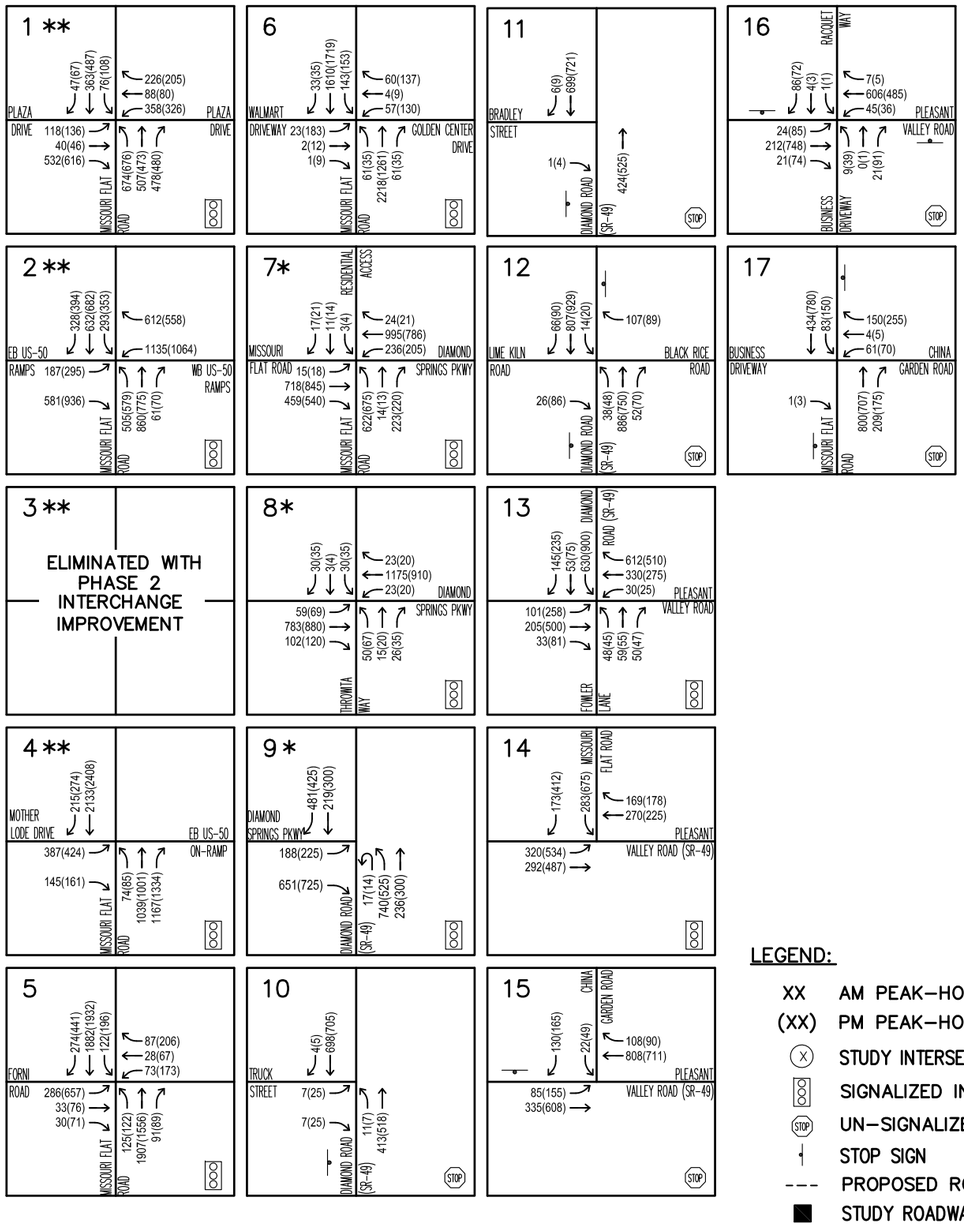
- XX AM PEAK–HOUR TRAFFIC VOLUME
- (XX) PM PEAK–HOUR TRAFFIC VOLUME
- (X) STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP UN–SIGNALIZED INTERSECTION
- STOP SIGN
- --- PROPOSED ROADWAY
- ■ STUDY ROADWAY SEGMENT
- * INTERSECTION FOR PLUS PROJECT SCENARIOS ONLY
- ** ASSUMES MISSOURI FLAT INTERCHANGE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

Kimley-Horn and Associates, Inc.

FIGURE A

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

DIAMOND SPRINGS PARKWAY
EL DORADO COUNTY, CA



LEGEND:

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

Kimley-Horn and Associates, Inc.

FIGURE B

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

DIAMOND SPRINGS PARKWAY
EL DORADO COUNTY, CA