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Middletown Apartments, LP

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Re: *Transportation Impact Study*
Middletown Apartments
Placerville, California

Date: October 31, 2023

We have prepared this Transportation Impact Study (TIS) for the proposed Middletown Apartments project located along Middletown Road in Placerville, California (the “Project” or “Proposed Project”). We understand the Project contemplates the construction of a new, 82-unit multifamily housing complex on a vacant parcel near the Middletown Road intersection with Cold Springs Road. The purpose of this evaluation is to assess localized traffic conditions and identify the project’s resulting traffic operating considerations.

Study Facilities and Analysis Methodology

Study Facilities

Exhibit 1 depicts the location of the project site. **Exhibit 2** shows the project site plan as provided.

Exhibit 3 illustrates the broad project trip distribution and **Exhibit 4** illustrates the study facilities, traffic control, and lane configurations. A weekday peak-hour Level of Service (LOS) analysis was completed for the following intersections:

1. Forni Road @ US-50 EB Ramps/Lo Hi Way
2. Placerville Drive/Forni Road @ US 50 WB Off-Ramp
3. Placerville Drive @ US-50 WB On-Ramp/Fair Lane
4. Placerville Drive @ Green Valley Road/Ray Lawyer Drive
5. Placerville Drive @ Pierroz Road
6. Pierroz Road @ Cold Springs Road
7. Cold Springs Road @ Middletown Road
8. Cold Springs Road @ Placerville Drive
9. Placerville Drive @ US-50 WB Off-Ramp
10. Middletown Road @ Project Driveway (West)
11. Middletown Road @ Project Driveway (East)

Additionally, the weekday peak-hour LOS analysis was completed for the following roadway segments:

1. Placerville Drive, between Pierroz Road and Vicini Drive
2. Placerville Drive, between Cold Springs Road and the US-50 WB Off-Ramp

This traffic evaluation was performed in accordance with the El Dorado County’s published procedures¹ and the City of Placerville’s General Plan² policies.

¹ *Transportation Impact Study Guidelines*, El Dorado County Community Development Agency, November 2014.

² *General Plan*, City of Placerville, Revised December 2004.

Level of Service Definitions

Analysis of transportation facility operations is often based on the concept of Level of Service (LOS). The LOS of a facility is a quantitative measure used to describe operational conditions. LOS ranges from A, which represents minimal delay, to F, which represents heavy delay and a facility that is operating at or near its functional capacity. Levels of Service for this study were determined using methods defined in the *Highway Capacity Manual (HCM), 6th Edition*.

Intersection Analysis

The HCM includes procedures for analyzing side-street stop controlled (SSSC), all-way stop controlled (AWSC), and signalized intersections. The SSSC procedure defines LOS as a function of average control delay for each minor street approach or 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)	Average Control Delay (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, 6th Edition*

* Applied to the worst lane/lane group(s) for SSSC

LOS for the study intersections was determined using the Synchro[®] traffic analysis software. Synchro 11 uses HCM6 methodology to analyze intersection delay and LOS. Due to the close spacing and shared controller of the Placerville Drive/Forni Road and US-50 WB Ramps/Fair Lane intersections, levels of service for Intersections #2-3 were determined using the SimTraffic[®] micro-simulation analysis software.

Roadway Segment Analysis

The HCM also includes procedures for analyzing roadway segments. presents roadway segment LOS definitions as defined in the HCM. Roadway segments are assessed using the appropriate two-lane and multi-lane highway designations per HCM7 using HCS2023 software. **Table 2** presents roadway segment LOS definitions as defined in the HCM.

Table 2 – Roadway Segment Level of Service Criteria

Level of Service (LOS)	Two-Lane Highway*	Multi-Lane Highway*
	Follower Density (followers/mile)	Density (pc/mi/ln)
A	≤ 2.5	≤ 11
B	> 2.5 – 5.0	> 11 – 18
C	> 5.0 – 10.0	> 18 – 26
D	> 10.0 – 15.0	> 26 – 35
E	> 15.0	> 35 – 45
F	Exceeds Capacity (v/c > 1.0)	Exceeds Capacity OR > 45

Source: Highway Capacity Manual, 7th Edition

* LOS definition is for lower speed highways (speed limit less than 50 mph)

Analysis Scenarios

This LOS analysis was conducted for the weekday AM and PM peak-hour of the following scenarios:

- A. Existing (2023) Conditions
- B. Existing (2023) plus Project Conditions
- C. Cumulative (2043) Conditions
- D. Cumulative (2043) plus Project Conditions

Assessment of Proposed Project

Trip Generation

The project proposes to construct a new, 82-unit multifamily housing complex on a vacant parcel adjacent to the Middletown Road intersection with Cold Springs Road (see **Exhibit 2**). To best assess the number of trips anticipated to be generated by the proposed project, land uses included in the *Trip Generation Manual, 11th Edition*, published by the Institute of Transportation Engineers (ITE) were examined, including Land Use Code 220 (Multifamily Housing (Low-Rise)). The anticipated trip generation characteristics for the proposed project are depicted in **Table 3**. As demonstrated, the proposed project is anticipated to generate 123 new AM peak-hour trips and 166 new PM peak-hour trips.

Table 3 – Proposed Project Trip Generation

Land Use (ITE Code)	Size (# Units)	Weekday Trips	Weekday AM Peak-Hour				Weekday PM Peak-Hour					
			Total Trips	In		Out		Total Trips	In		Out	
				%	Trips	%	Trips		%	Trips	%	Trips
Multifamily Housing (Low-Rise) (220) ¹	82	1,671	123	26%	32	74%	91	166	63%	104	37%	62
Total Project Trips		1,671	123		32		91	166		104		62

Source: ¹ Trip Generation Manual, 11th Edition

Trip Distribution

The distribution of project traffic to the adjacent roadway network was developed based on the site’s anticipated user behavior and roadway facility characteristics. The project trip distribution is shown in **Exhibit 3**. Project trips were assigned to the study intersections and the surrounding roadway network according to these patterns.

Technical Analysis Scenarios

In-person counts were collected on March 2, 2023 to establish a baseline while local schools were in session. Existing (2023) peak-hour traffic volumes are illustrated in **Exhibit 6**. Proposed project traffic was added to the Existing (2023) peak-hour traffic volumes to establish the Existing (2023) plus Project peak-hour traffic volumes (shown in **Exhibit 7**). Analysis worksheets for Existing (2023) and Existing (2023) plus Project conditions are provided in **Attachment B** and **Attachment C** respectively.

Peak-hour traffic volumes for Cumulative (2043) conditions were obtained through the use of the El Dorado County Travel Demand Model (EDC TDM). Projected growth was determined by interpolating between the model’s base year (2018) and future year (2040) and applying the growth factor to Existing (2023) counts to reach Cumulative (2043) conditions. Cumulative (2043) peak-hour traffic volumes are illustrated in **Exhibit 8**. Proposed project traffic was added to the Cumulative (2043) peak-hour traffic volumes to establish the Cumulative (2043) plus Project peak-hour traffic volumes (shown in **Exhibit 9**). Analysis worksheets for Cumulative (2043) and Cumulative (2043) plus Project conditions are provided in **Attachment D** and **Attachment E**, respectively.

Peak-Hour Level of Service Analysis

Table 4 presents the peak-hour intersection LOS analysis results for both Existing (2023) and Existing (2023) plus Proposed Project conditions.

Table 4 – Intersection Levels of Service Summary, Existing and Existing plus Proposed Project

ID	Intersection	LOS Threshold	Control	Peak Hour	Existing		Existing plus Proposed Project	
					Delay (sec)	LOS	Delay (sec)	LOS
1	Forni Rd @ US-50 EB Ramps/Lo Hi Way	D	AWSC	AM	15.6	C	16.1	C
				PM	29.4	D	34.8	D
2	Placerville Dr/Forni Rd @ US 50 WB Off-Ramp	D	Signal	AM	16.0	B	18.7	B
				PM	51.3	D	48.3	D
3	Placerville Dr @ US-50 WB On-Ramp/Fair Ln	D	Signal	AM	5.7	A	6.0	A
				PM	8.5	A	7.9	A
4	Placerville Dr @ Green Valley Rd/Ray Lawyer Dr	D	Signal	AM	23.3	C	23.2	C
				PM	30.7	C	32.0	C
5	Placerville Dr @ Pierroz Rd	D	SSSC	AM	6.1(14.8 SB)	B	7.2(16.7 SB)	C
				PM	5.8(17.7 SB)	C	6.9(19.9 SB)	C
6	Pierroz Rd @ Cold Springs Rd	D	AWSC	AM	10.2	B	11.0	B
				PM	11.9	B	13.4	B
7	Cold Springs Rd @ Middletown Rd	D	AWSC	AM	9.9	A	11.5	B
				PM	11.6	B	14.2	B
8	Cold Springs Rd @ Placerville Dr	D	Signal	AM	38.8	D	41.5	D
				PM	42.6	D	46.9	D
9	Placerville Dr @ US-50 WB Off-Ramp	D	SSSC	AM	3(10 WB)	B	2.9(10 WB)	B
				PM	2.9(11.5 WB)	B	3.3(12 WB)	B
10	Middletown Rd @ Project Driveway (West)	D	SSSC	AM	-	-	0.2(7.7 WB)	B
				PM	-	-	0.3(8.4 WB)	B
11	Middletown Rd @ Project Driveway (East)	D	SSSC	AM	-	-	3.6(9.9 NB)	A
				PM	-	-	2(10.7 NB)	B

Note: Side Street Stop Controlled (SSSC) reported as intersection delay followed by worst approach's delay.

Table 5 presents the peak-hour intersection LOS analysis results for Cumulative (2043) and Cumulative (2043) plus Proposed Project conditions.

Table 5 – Intersection Levels of Service Summary, Cumulative and Cumulative plus Proposed Project

ID	Intersection	LOS Threshold	Control	Peak Hour	Cumulative		Cumulative plus Proposed Project	
					Delay (sec)	LOS	Delay (sec)	LOS
1	Forni Rd @ US-50 EB Ramps/Lo Hi Way	D	AWSC	AM	17.2	C	17.2	C
				PM	49.4	E	56.1	F
2	Placerville Dr/Forni Rd @ US 50 WB Off-Ramp	D	Signal	AM	29.4	C	32.3	C
				PM	41.7	D	43.1	D
3	Placerville Dr @ US-50 WB On-Ramp/Fair Ln	D	Signal	AM	7.7	A	8.3	A
				PM	13.0	B	13.1	B
4	Placerville Dr @ Green Valley Rd/Ray Lawyer Dr	D	Signal	AM	23.8	C	23.7	C
				PM	32.5	C	33.0	C
5	Placerville Dr @ Pierroz Rd	D	SSSC	AM	5.9(13 SB)	B	6.6(14.0 SB)	C
				PM	5.6(15.6 SB)	C	6.4(16.9 SB)	C
6	Pierroz Rd @ Cold Springs Rd	D	AWSC	AM	20.2	C	21.9	C
				PM	69.9	F	70.8	F
7	Cold Springs Rd @ Middletown Rd	D	AWSC	AM	9.6	A	10.8	B
				PM	10.9	B	12.6	B
8	Cold Springs Rd @ Placerville Dr	D	Signal	AM	39.1	D	40.3	D
				PM	39.5	D	41.6	D
9	Placerville Dr @ US-50 WB Off-Ramp	D	SSSC	AM	3.1(9.8 WB)	B	3.1(9.9 WB)	B
				PM	2.7(10.9 WB)	B	3(11.1 WB)	B
10	Middletown Rd @ Project Driveway (West)	D	SSSC	AM	-	-	1.8(7.3 WB)	A
				PM	-	-	1.3(7.4 NB)	A
11	Middletown Rd @ Project Driveway (East)	D	SSSC	AM	-	-	8.7(8.9 NB)	A
				PM	-	-	8.6(8.8 NB)	A

Notes: **Bold** represents unacceptable operations. Shaded represents a project induced deficiency. Side Street Stop Controlled (SSSC) reported as intersection delay followed by worst approach's delay.

Roadway Segment Level of Service Analysis

Table 6 and Table 7 presents the roadway segment operating conditions for all analysis scenarios. As indicated in Table 6 and Table 7, the roadway segments operate from LOS C to LOS E. Analysis worksheets for Placerville Drive between Pierroz Road and Vicini Drive, and Placerville Drive between Cold Springs Road and the US-50 WB Off-Ramp are provided in Attachment F and Attachment G, respectively.

Table 6 – Segment LOS Results Existing (2023) and Existing (2023) plus Project

Segment	Location	LOS Threshold	Peak-Hour	Analysis Direction	Existing (2023)		Existing plus Project (2023)	
					LOS	Density	LOS	Density
1	Placerville Drive between Pierroz Road and Vicini Drive	D	AM	EB	C	9.9	D	10.4
			AM	WB	D	11.9	D	13.3
			PM	EB	D	14.1	E	15.7
			PM	WB	D	12.9	D	13.9
2	Placerville Drive between Cold Springs Road and US-50 WB Off-Ramp	D	AM	EB	C	6.2	C	6.8
			AM	WB	C	6.3	C	6.5
			PM	EB	C	8.7	C	9.2
			PM	WB	C	7.5	C	8.2

Note: Density is reported as vehicles per mile per lane (veh/mi/lane). **Bold** represents unacceptable operations. Shaded represents a project induced deficiency.

Table 7 – Segment LOS Results Cumulative (2043) and Cumulative (2043) plus Project

Segment	Location	LOS Threshold	Peak-Hour	Analysis Direction	Cumulative (2043)		Cumulative plus Project (2043)	
					LOS	Density	LOS	Density
1	Placerville Drive between Pierroz Road and Vicini Drive	D	AM	EB	D	12.0	D	12.4
			AM	WB	D	12.8	D	14.2
			PM	EB	E	15.8	E	17.5
			PM	WB	D	14.2	E	15.1
2	Placerville Drive between Cold Springs Road and US-50 WB Off-Ramp	D	AM	EB	C	6.4	C	7.1
			AM	WB	C	6.9	C	7.1
			PM	EB	C	9.1	C	9.6
			PM	WB	C	7.8	C	8.6

Note: Density is reported as vehicles per mile per lane (veh/mi/lane).
Bold represents unacceptable operations. Shaded represents a project induced deficiency.

Off-Site Queueing Evaluation

A queuing evaluation was conducted to evaluate the capacity of existing turn lanes at the study intersections. Synchro reports were used to conduct the queuing analysis. The 95th percentile vehicle queues were compared against the existing vehicle storage lengths at select intersection movements to determine if the queues are anticipated to exceed their available storage. The available storage for the Cumulative and Cumulative plus Project Conditions were informed by the *Placerville Drive Transportation Analysis Report*³ (TAR). **Table 8** presents the results of the queuing evaluation for the project intersection movements that are anticipated to increase with the proposed project. The addition of the proposed project results in the following:

- An increase in the eastbound left-turn queue at Intersection #4 where queue was already exceeding the available storage under the AM and PM peak-hours for the Existing (2023) Condition and the PM peak-hours for the Cumulative (2043) Condition.
- An increase in the westbound left-turn queue at Intersection #6 to exceed the available storage capacity during the AM and PM peak-hours for the Cumulative (2043) Condition.
- An increase in the southbound left-turn queue at Intersection #8 where queue was already exceeding the available storage under the AM and PM peak-hours for the Existing (2023) Condition and Cumulative (2043) Condition.

³ *Placerville Drive Bicycle and Pedestrian Facilities Transportation Analysis Report*, Fehr & Peers, March 2020.

Table 8 – Intersection Queueing Evaluation Results

Intersection / Analysis Scenario	Movement	AM Peak-Hour		PM Peak-Hour	
		Available Storage (ft)	95 th % Queue (ft)	Available Storage (ft)	95 th % Queue (ft)
#4, Placerville Dr @ Green Valley Rd/Ray Lawyer Dr		EBL			
Existing (2023)		50	163	50	223
Existing (2023) plus Proposed Project			171		271
Cumulative (2043)		450	180	450	310
Cumulative (2043) plus Proposed Project			180		324
#6, Pierroz Rd @ Cold Springs Rd		WBL			
Existing (2023)		50	50	50	50
Existing (2023) plus Proposed Project			50		50
Cumulative (2043)			50		50
Cumulative (2043) plus Proposed Project			75		75
#8, Cold Springs Rd @ Placerville Dr		SBL			
Existing (2023)		85	151	85	174
Existing (2023) plus Proposed Project			185		199
Cumulative (2043)			173		186
Cumulative (2043) plus Proposed Project			199		212
#10, Middletown Rd @ Project Driveway (West)		WBL			
Existing (2023) plus Proposed Project		60	25	60	25
Cumulative (2043) plus Proposed Project			25		25
#11, Middletown Rd @ Project Driveway (East)		WBL			
Existing (2023) plus Proposed Project		90	25	90	25
Cumulative (2043) plus Proposed Project			25		25

Note: Shaded cells represent locations where queue exceeds capacity by >1 vehicle length (25 feet)

Deficiencies and Improvements

Standards of Significance

Project deficiencies were determined by comparing conditions with the proposed project to those without the project. Deficiencies for intersections are created when traffic from the proposed project causes the LOS to fall below a specific threshold. The City’s standards² specify the following:

“Peak period traffic conditions of Service levels C or D or better are frequently considered to be within the range of acceptable congestion of delay for urban communities”.

For facilities that fail to meet the above listed standards for peak-hour LOS or volume capacity ratios without the proposed project and the project will worsen conditions on the road or highway, then the deficiency shall be considered project induced. The term “worsen” is defined as follows per the El Dorado County Transportation Impact Study Guidelines¹.

- A. 2 percent increase in traffic during the a.m. peak hour, p.m. peak hour, or daily, or
- B. The addition of 100 or more daily trips, or
- C. The addition of 10 or more trips during the a.m. peak hour or the p.m. peak hour”

The study facilities for this evaluation are located within the Placerville Community Region and are, therefore, required to operate within the specified threshold of LOS D. As reflected in **Table 5**, the addition of the Proposed Project results in deficient conditions at Intersection #1 and Intersection #6 during the PM Peak Hour under the Cumulative conditions and Roadway Segment #1 under the Existing and Cumulative conditions. The following is a discussion of each deficiency and its associated improvement.

Deficiencies:

D1. Intersection #1, Forni Road @ US-50 EB Ramps/Lo Hi Way

As shown in **Table 5**, this intersection operates at LOS E during the PM peak-hour without the project, and at LOS F with the addition of the Project in the Cumulative and Cumulative plus Project Conditions, respectively.

D2. Intersection #6, Pierroz Road @ Cold Springs Road

As shown in **Table 5**, this intersection operates at LOS F during the PM peak-hour without the project, and the project contributes more than 10 peak-hour trips to the intersection during the PM peak-hour.

D3. Roadway Segment #1, Placerville Drive, between Pierroz Road and Vicini Drive

As shown in **Table 6**, this roadway segment operates at LOS D during the PM peak-hour without the project, and LOS E with the addition of the project in Existing and Existing plus Project Conditions, respectively. As shown in **Table 7**, this roadway segment operates at LOS D and LOS E during the PM peak-hour without the project, and LOS E with the addition of the project in Cumulative and Cumulative plus Project Conditions, respectively. The project contributes more than 10 peak-hour trips to the roadway segment during the PM peak-hour.

D4. Intersection #8, Cold Springs Road @ Placerville Drive

As shown in **Table 8**, the project contributes to a deficient queuing condition on the southbound left turn lane under Existing plus Project and Cumulative plus Project Conditions.

Improvements:

I1. Intersection #1, Forni Road @ US-50 EB Ramps/Lo Hi Way

The deficiency at this intersection during the PM peak-hour will be improved in the future as a part of the Western Placerville Interchange Phase 3 project. Because the project induced deficiency is anticipated to occur in the Cumulative (2043) condition, the project's payment of Traffic Impact Mitigation (TIM) Fees is considered to adequately improve this deficient condition.

I2. Intersection #6, Pierroz Road @ Cold Springs Road

Based on our coordination with the City, there are currently no planned improvements at this intersection. However, the City is in the process of updating their Traffic Impact Mitigation Fee program and may include signalization of the intersection in the latest update. The City acknowledges this as a future deficiency and will address this intersection at a later time.

I3. Roadway Segment #1, Placerville Drive, between Pierroz Road and Vicini Drive

While there are not currently planned improvements to widen Placerville Drive along this roadway segment, the City is in the process of designing multi-modal improvements to enhance this corridor. It is important to note that the Project itself is providing frontage multi-modal improvements on Cold Springs Road. The City intends on connecting the sidewalk from the Project's frontage improvements to the City's multi-modal improvements along Placerville Drive. To address this deficiency the Project shall be responsible for 50% of the hard cost of construction for the improvements connecting the Project frontage sidewalk to Placerville Drive.

I4. Intersection #8, Cold Springs Road @ Placerville Drive

The southbound left storage capacity along Cold Springs Road could be improved by extending the turn pocket to 200' to accommodate existing and project traffic. The Project will design the lane extension as a part of its off-site improvement plans.

Other Considerations

Signal Warrant Analysis

The need for a traffic signal control was assessed for Study Intersections #1, #5, #6, #7, and #9 using the peak-hour warrant analysis methodology in Section 4C the *California Manual on Uniform Traffic Control Devices (CMUTCD), 2014 Edition*. Peak hour signal warrant analysis worksheets for Existing (2023),

Existing (2023) plus Project, Cumulative (2043), and Cumulative (2043) plus Project are included in **Attachment H, Attachment I, Attachment J, and Attachment K**, respectively. As shown in **Table 9**, Intersection #6 meets the peak-hour signal warrant with and without the addition of the Project trips under Existing conditions. Under Cumulative conditions, Intersection #5 and Intersection #6 satisfy the peak-hour signal warrant with and without the addition of the Project trips.

Table 9 – Peak-Hour Signal Warrant Summary Existing (2023) and Existing (2023) plus Project

ID	Intersection	Control	Peak Hour	Signal Warranted?	
				Existing (2023)	Existing (2023) plus Project
1	Forni Rd @ US-50 EB Ramps/Lo Hi Wy	AWSC	AM	No	No
			PM	No	No
5	Placerville Dr @ Pierroz Rd	SSSC	AM	No	No
			PM	Yes	Yes
6	Pierroz Rd @ Cold Springs Rd	AWSC	AM	No	No
			PM	No	Yes
7	Cold Springs Rd @ Middletown Rd	AWSC	AM	No	No
			PM	No	No
9	Placerville Dr @ US-50 WB Off-Ramp	SSSC	AM	No	No
			PM	No	No

Table 10 – Peak-Hour Signal Warrant Summary Cumulative (2043) and Cumulative (2043) plus Project

ID	Intersection	Control	Peak Hour	Signal Warranted?	
				Cumulative (2043)	Cumulative (2043) plus Project
1	Forni Rd @ US-50 EB Ramps/Lo Hi Wy	AWSC	AM	No	No
			PM	No	No
5	Placerville Dr @ Pierroz Rd	SSSC	AM	Yes	Yes
			PM	Yes	Yes
6	Pierroz Rd @ Cold Springs Rd	AWSC	AM	Yes	Yes
			PM	Yes	Yes
7	Cold Springs Rd @ Middletown Rd	AWSC	AM	No	No
			PM	No	No
9	Placerville Dr @ US-50 WB Off-Ramp	SSSC	AM	No	No
			PM	No	No

Cold Springs Road and Middletown Road Intersection Layout

Additional consideration was given to the layout of the Cold Springs Road intersection with Middletown Road, due to its angled approach legs. Safety and intersection operations were both considered in this analysis.

Based on collision data gathered from the Statewide Integrated Traffic Records System (SWITRS) online database, there have been no collisions in the vicinity of the intersection in the five-year period between January 1, 2017 and December 31, 2021. The intersection is controlled as an all-way-stop and does not present any operational deficiencies in any of the analyzed project scenarios. No changes to the existing intersection layout are recommended at this time.

On-Site Transportation Review

In accordance with the County’s *Guidelines*¹, the following aspects of the Project were evaluated:

1. *Existence of any current traffic problems in the local area such as a high-crash location, non-*

standard intersection or roadway, or an intersection in need of a traffic signal

According to the collision data gathered from the Statewide Integrated Traffic Records System (SWITRS) online database, Middletown Road near the proposed project driveways, experienced three (3) accidents during a five-year period between January 1, 2017, and December 31, 2021. The accidents resulted in three (3) injuries and no fatalities. **Table 11** presents each collision by type recorded.

Table 11 – Collision History Summary

Collision #	Severity	Collision Type	Primary Collision Factor	Location
1	Injury - Complaint of Pain	Sideswipe	Unsafe Speed	60' East of Middletown Road and Poplar Lane
2	Injury - Complaint of Pain	Hit Object	Other Than Driver	7' West of Middletown Road and Panning Way
3	Injury - Complaint of Pain	Overtuned	Unsafe Speed	27' East of Middletown Road and Panning Way

2. Proximity of proposed site driveway to other driveways or intersections

Access to the site is provided at one (2) proposed driveways on Middletown Road. These access points will be sufficient to serve delivery trucks, fire trucks, and other oversized vehicles. A detailed description of the site access point is listed below:

- One full access driveway along Middletown Road:
The driveway will be located approximately 220-feet east of Cold Springs Road. The driveway will be located across from Poplar Lane.
- One full access driveway along Middletown Road:
The driveway will be located approximately 380-feet east of Cold Springs Road. The driveway will be located on the horizontal curve section of Middletown Road east of Poplar Lane.

Primary emergency access to the Project site will be via both Middletown Road driveways.

3. Adequacy of vehicle parking relative to both the anticipated demand and zoning code requirements

The required parking is anticipated to be accommodated on-site. Per City of Placerville Code⁴, the Project is required to provide 1.5 parking stalls per dwelling unit, equating to 123 parking stalls. Per the site plan (**Exhibit 2**), the Project is shown to include 112 parking stalls.

The development, however, is located within 0.5 miles of a transit stop and thus qualifies for a parking reduction, per AB 2097. The City’s Development Services Department has determined they would accept a minimum of 105 parking stalls.

4. Adequacy of the project site design to convey all vehicle types

The site will include access which is anticipated to accommodate the circulation needs of all vehicle types, including fire access. The Project will be using the proposed access driveways from Middletown Road. The proposed project is considered to allow for adequate on-site circulation for all vehicle types.

5. Adequacy of sight distance on-site

An evaluation of sight distance was considered for the proposed site access driveway intersections along Middletown Road based on observed horizontal and vertical geometric conditions. This evaluation was performed in accordance with the guidelines presented in the *Geometric Design of Highways and Streets*, published by the American Association of State Highway and Transportation Officials (AASHTO), and the *Highway Design Manual*, published by

⁴ Section 10-4-4, *City of Placerville Code of Ordinances*, December 14, 2021.

Caltrans. The minimum corner sight distance of 335-feet under case B1 was not observed at the driveway intersection, which will be located on a horizontal curve section of Middletown Road.

Although corner sight distances that exceed stopping sight distances along the major road are desirable, the minimum required sight distance for entering or crossing vehicles is the stopping sight distance along the major road. **Table 12** shows the minimum stopping sight distance required along the major road (Middletown Road) for vehicles entering the road from the project egress driveway to make a turn onto the major roadway.

Table 12 – Stopping Sight Distance

Approach	Condition	SSD (Required)	
		Avg. Time Gap	Distance
Westbound (Project Egress Driveway)	Observed	6.24	274.99
	Required ¹	200	

Notes: SSD = Stopping Sight Distance, Acceptable, Unacceptable
¹ Per Caltrans' Highway Design Manual, Table 201.1

Other Transportation-Related Deficiencies and Improvement Considerations

In accordance with the City's General Plan Policies¹, the Project was evaluated against the following *General Plan* goals:

- **Emergency Vehicle Access**
*Fire Safe Regulations*⁵ state that on-site roadways shall “provide for safe access for emergency wildland fire equipment and civilian evacuation concurrently and shall provide unobstructed traffic circulation during a wildfire emergency...”. As shown by the lane widths in the Project site plan (Exhibit 2), the Project site will allow fire access. As such, the proposed Project is considered to allow for adequate access and on-site circulation for emergency vehicles.
- **Deliveries of Goods and Services**
 The proposed Project is considered to allow for adequate on-site circulation for all vehicle types, including delivery vehicles for goods and services. Delivery vehicles will be able to circulate the site via the project driveway and parking lot.
- **Traffic Safety consistent with General Plan Transportation Element Goal C: “To minimize Traffic accidents and hazards.”**
 Based on discussion with the City, access to the site from the East on Middletown Road was evaluated. Due to the relatively low volume of project trips expected to make this movement and overall low volumes on the roadway, it was determined a left-turn lane was not warranted, per the thresholds documented by ITE⁶.
- **Access to Public Transit Services consistent with General Plan Housing Element Goal E, Policy E.1: “The City will work with the El Dorado Transit Authority to expand public transportation and alternative transportation infrastructure.”**
 Public transit access is provided proximate to the Project site. El Dorado Transit operates *Bus Route 50X: 50 Express* along Placerville Drive with a stop approximately 250 feet west of the intersection of Placerville Drive and Cold Springs Road⁷. The bus stop is located approximately 0.3 miles from the project site. While Route 20 operates on an hourly schedule from 6:00 AM to 7:00 PM (Monday-Friday), regular service at the stop proximate to the Project site ends at 5:38 PM in

⁵ *Fire Safe Regulations*, Title 14 Natural Resources, Division 1.5 Department of Forestry, Chapter 7 – Fire Protection, Subchapter 2 SRA Safe Regulations, Article 2 Emergency Access, El Dorado County Building Department.

⁶ *ITE Transportation and Land Development, 2nd Edition*, Stover & Koepke, 2002.

⁷ *Route 50X: 50 Express*, El Dorado County Transit, accessed March 20, 2023.

the Westbound direction and at 5:15 PM in the Eastbound direction. The project will provide connectivity to the transit stop on Placerville Drive via proposed sidewalks and Class II bike lanes.

El Dorado Transit also operates *Bus Route 20: Placerville* along Canal Street with a stop at the southeast corner of the intersection of Canal Street and Hilltop Drive (Edwin Markham Elementary School)⁸. The bus stop is located approximately 0.6 miles from the project site. While Route 20 operates on an hourly schedule from 6:30 AM to 7:25 PM (Monday-Friday), regular service at the stop proximate to the Project site requires a call for pickup at least one hour in advance of the scheduled time.

- ***Transportation System Management consistent with General Plan Transportation Element Goal A: “To provide a circulation system that is correlated and adequate to support existing and proposed land uses, thereby providing for the efficient movement of goods and services within and through Placerville.”***

The proposed Project has sole use of the proposed access driveways. Trips generated by the Project are anticipated to be split between local and distance trips. As a result, the proposed Project has the anticipated net effect of marginally increasing travel demand on the City road system.

- ***Non-Motorized Transportation consistent with General Plan Transportation Element Goal E and F: “To provide a safe and secure bicycle route system.” And “To promote convenient and safe pedestrian circulation.”***

Dedicated bicycle facilities do not presently exist proximate to the Project site. Per Figure 8-7 of the *City of Placerville Active Transportation Plan*, Class II bicycle lanes are proposed to be installed along Cold Springs Road from Pierroz Road to Placerville Drive. The project proposes sidewalks and Class II bicycle lanes on Middletown Road along the project frontage, as shown in the site plan in **Exhibit 2**.

The proposed project improvements will provide connectivity from the project site to improvements to be constructed as a part of the Placerville Drive Bicycle and Pedestrian Facilities project (CIP 41816). Connectivity with the project site may see an increase of non-motorized trips.

- ***Complete street implementation shall be considered wherever possible***

The project proposes sidewalks and Class II bicycle lanes on Middletown Road along the project frontage, as shown in the site plan in **Exhibit 2**.

Conclusions

The following are the primary conclusions based on the analyses discussed herein:

- Under the cumulative scenarios, the proposed project trips induce a delay and LOS deficiency at Intersection #1. The project’s payment of Traffic Impact Fees (TIF) is considered to adequately improve deficient conditions at Intersection #1.
- Under the cumulative scenarios, the proposed project trips induce a delay and LOS deficiency at Intersection #6. The City acknowledges this as a future deficiency and will address this intersection at a later time.
- Under existing and cumulative scenarios, the proposed project trips induce a capacity and LOS deficiency at Roadway Segment #1. To address this deficiency the Project shall be responsible for 50% of the hard cost of construction for the improvements connecting the Project frontage sidewalk to Placerville Drive.
- Under existing and cumulative scenarios, the proposed project trips contribute to a 95th percentile vehicle queue that exceeds the available storage at the southbound left -turn queue at

⁸ *Route 20: Placerville*, El Dorado County Transit, accessed March 20, 2023.

Intersection #8 (Cold Springs Road @ Placerville Drive). The Project will design the lane extension as a part of its off-site improvement plans.

Attachments

Exhibit 1 – Project Vicinity Map

Exhibit 2 – Project Site Plan

Exhibit 3 – Project Trip Distribution

Exhibit 4 – Study Facilities with Lane Geometry and Traffic Control

Exhibit 5 – Study Facilities with Project Trip Assignments

Exhibit 6 – Study Facilities with Existing TMCs

Exhibit 7 – Study Facilities with Existing PP TMCs

Exhibit 8 – Study Facilities with Cumulative TMCs

Exhibit 9 – Study Facilities with Cumulative PP TMCs

Attachment A – Trip Generation Background Data and Calculations

Attachment B – Analysis Worksheets for Existing (2023) Conditions

Attachment C – Analysis Worksheets for Existing (2023) plus Project Conditions

Attachment D – Analysis Worksheets for Cumulative (2043) Conditions

Attachment E – Analysis Worksheets for Cumulative (2043) plus Project Conditions

Attachment F – HCS Reports for Placerville Drive, between Pierroz Road and Vicini Drive (all scenarios)

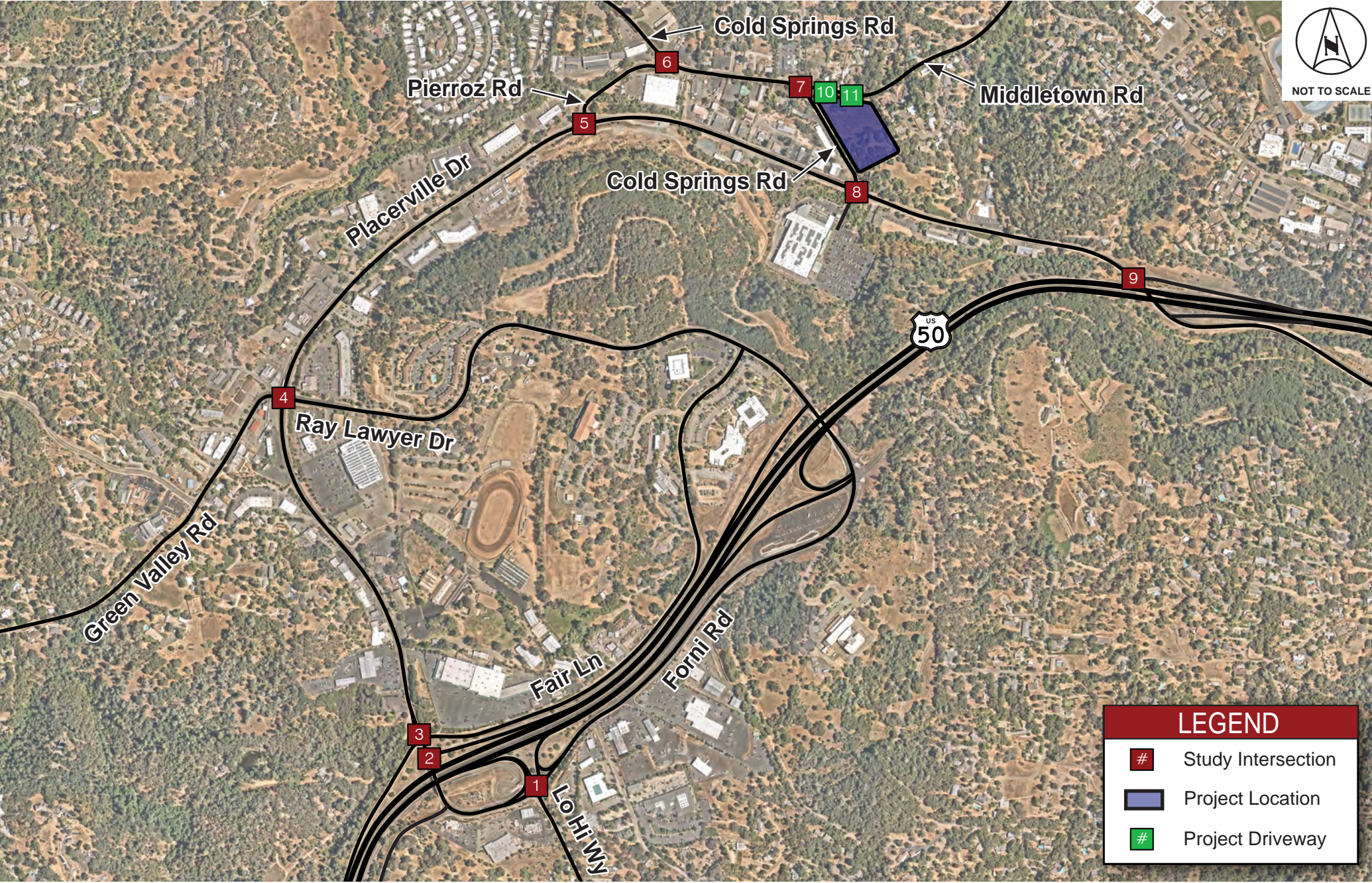
Attachment G – HCS Reports for Placerville Drive, between Cold Springs Road and US-50 WB Off-Ramp (all scenarios)

Attachment H – Peak-Hour Signal Warrants for Existing (2023) Conditions

Attachment I – Peak-Hour Signal Warrants for Existing (2023) plus Project Conditions

Attachment J – Peak- Hour Signal Warrants for Cumulative (2043) Conditions

Attachment K – Peak-Hour Signal Warrants for Cumulative (2043) plus Project Conditions



LEGEND

- # Study Intersection
- Project Location
- # Project Driveway

Middletown Apartments - Traffic Study

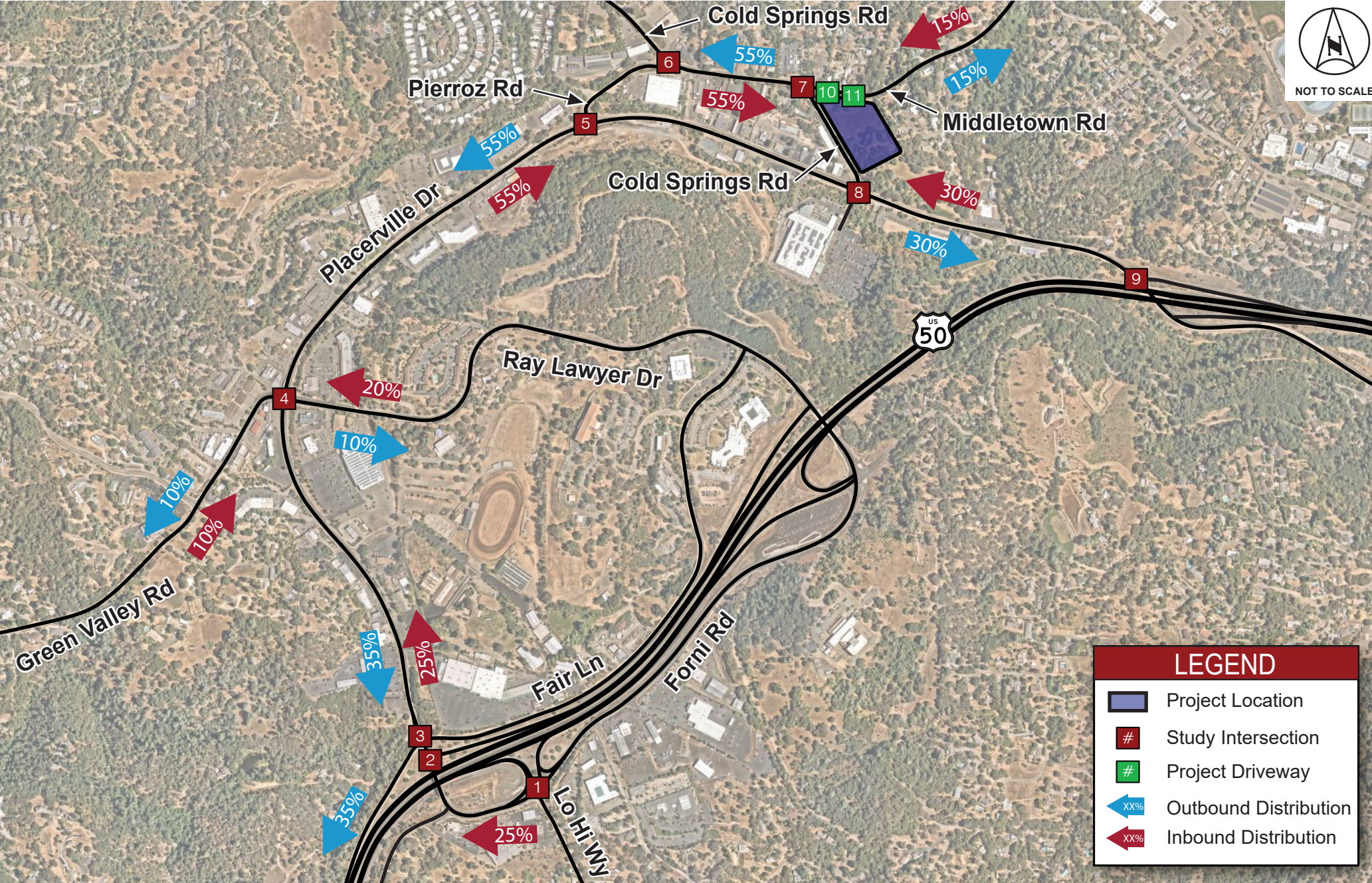


PHILIPP ENGINEERING, INC. 2023
 SCALE: 1"=30'
 2ND SUBMITTAL
 DESIGNED BY: VAB
 CHECKED BY: VAB
 PROJECT NAME/LOCATION: MIDDLETOWN APARTMENTS
 PLACE/VILLE: FLACERVILLE
 DRAWING TITLE: SITE PLAN
 ISSUE DATE: 10/24/2023
 PROJECT NO.: 20220430
 SHEET NO.: SP1
 OF 22

DRAFT PLANS - NOT FOR CONSTRUCTION



NOT TO SCALE

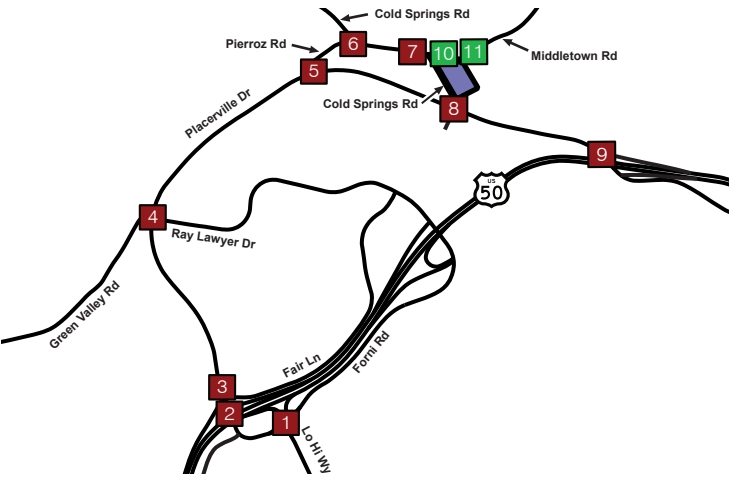
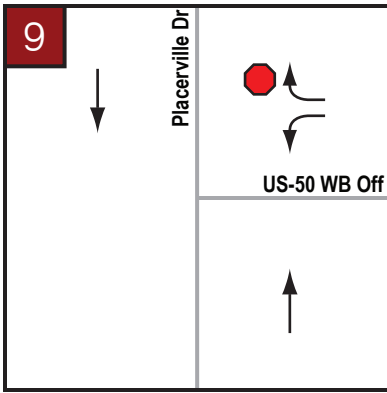
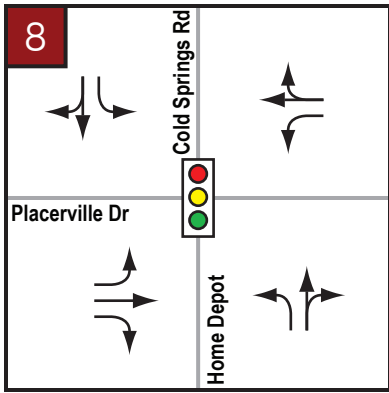
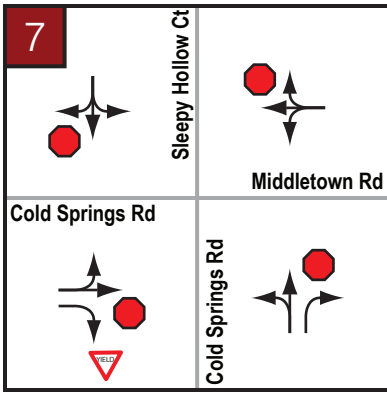
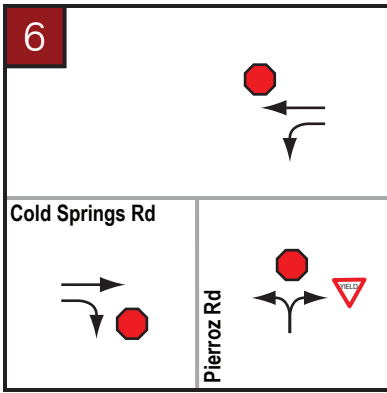
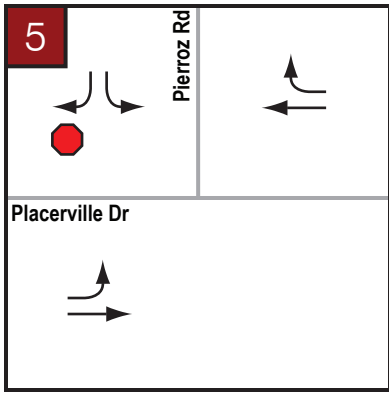
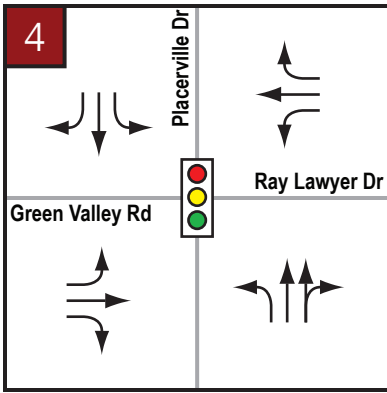
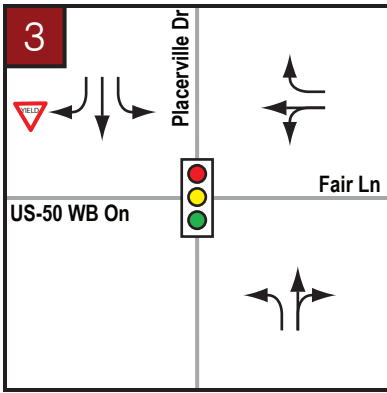
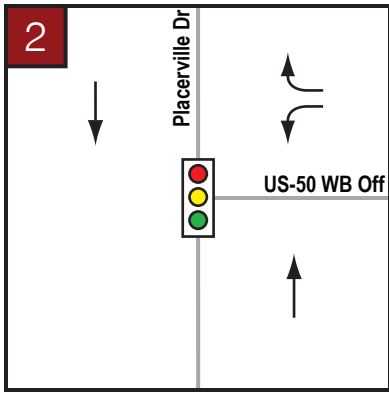
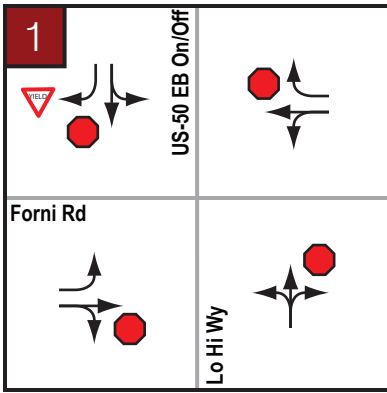


LEGEND

- Project Location
- Study Intersection
- Project Driveway
- Outbound Distribution
- Inbound Distribution



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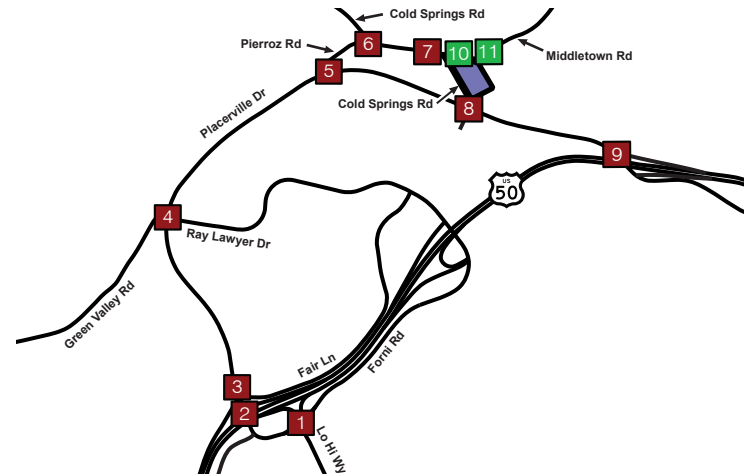
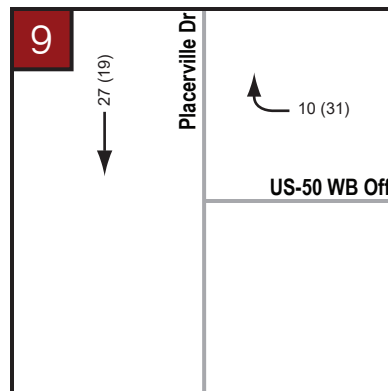
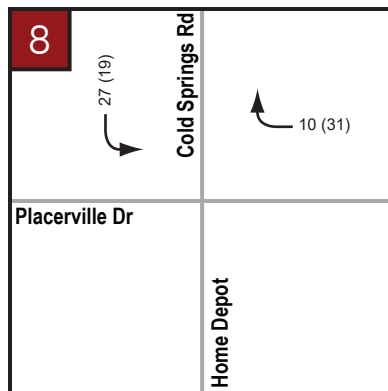
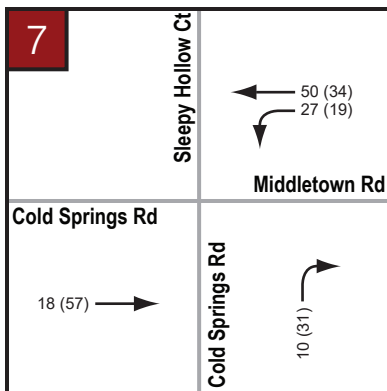
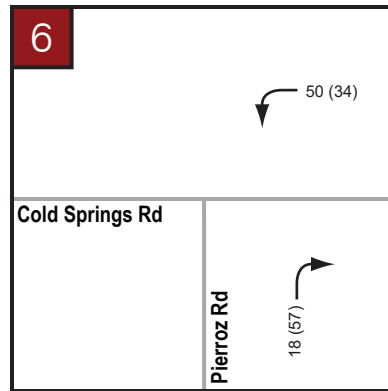
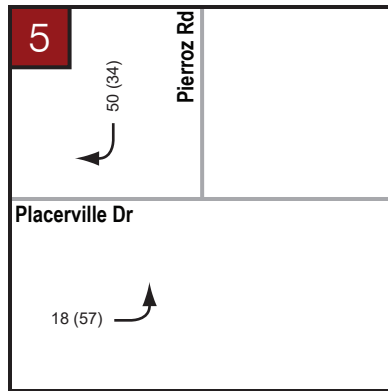
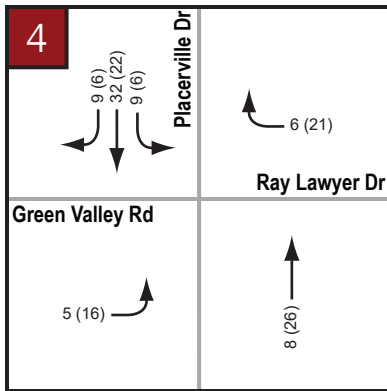
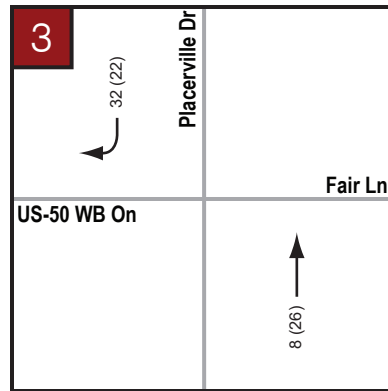
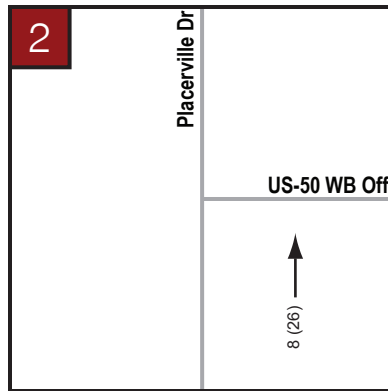
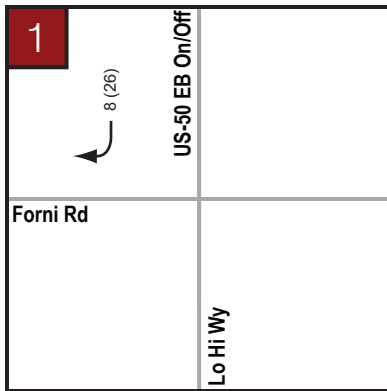


LEGEND

- # Study Intersection
- # Project Driveway
- Signalized Control
- Stop Control



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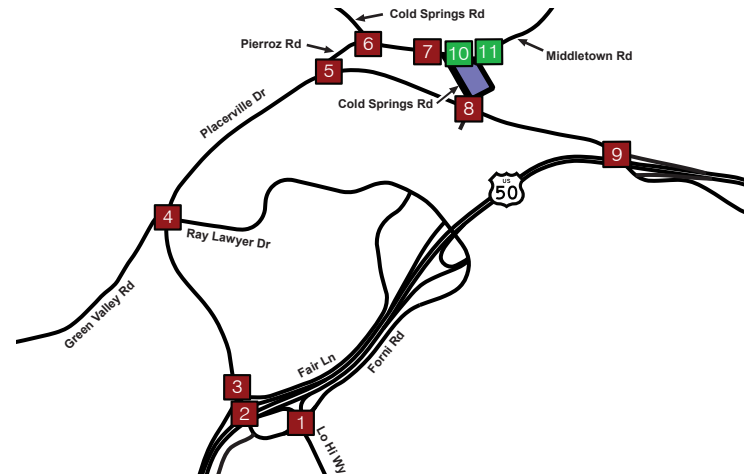
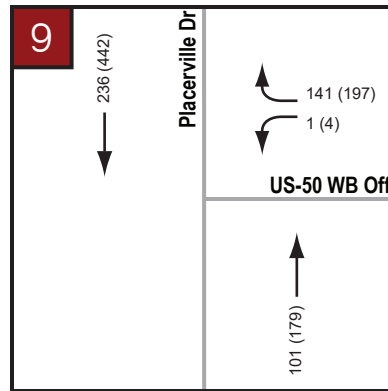
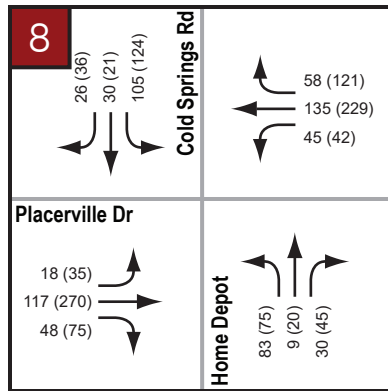
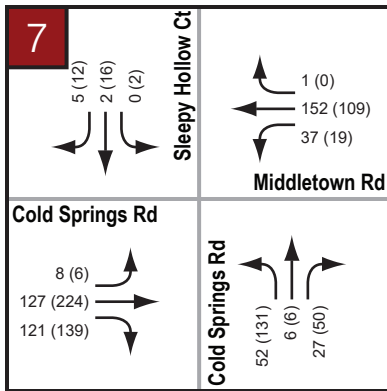
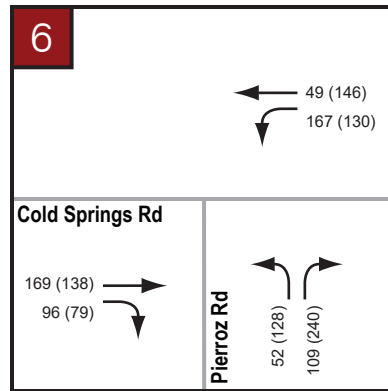
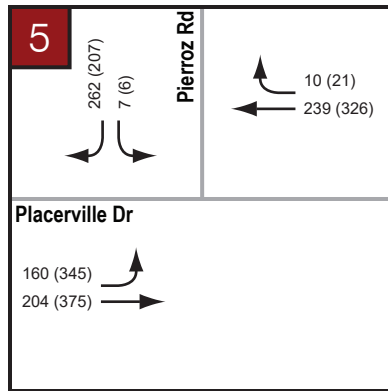
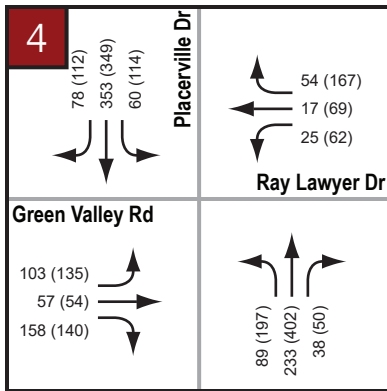
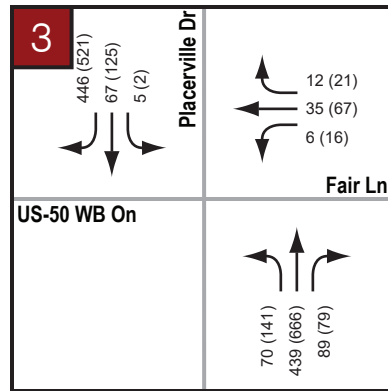
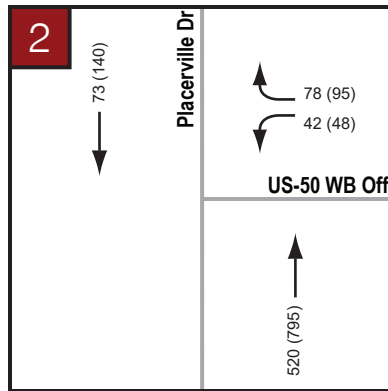
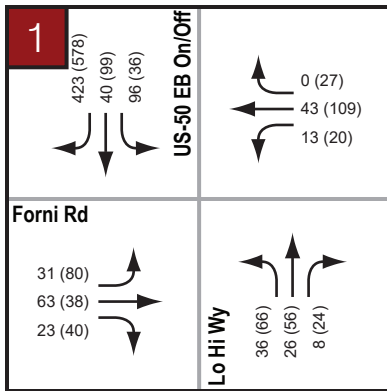


LEGEND

- Project Location
- Study Intersection
- Project Driveway
- XX (XX) AM (PM) Peak-Hour Volumes



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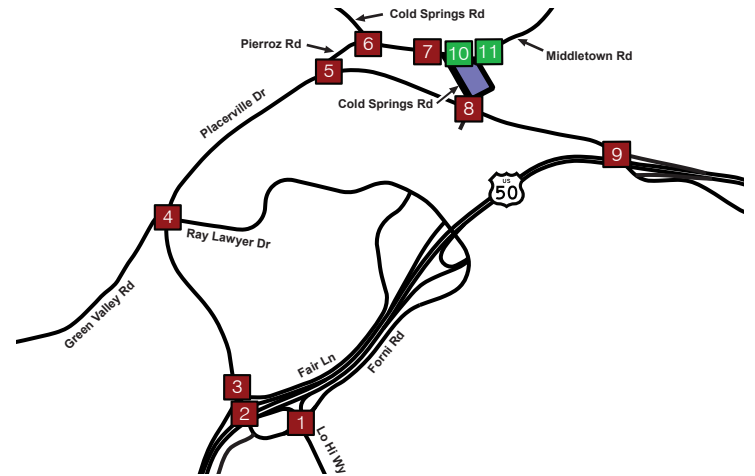
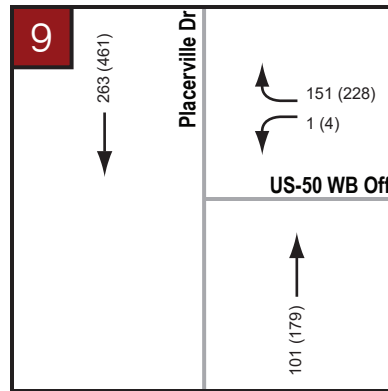
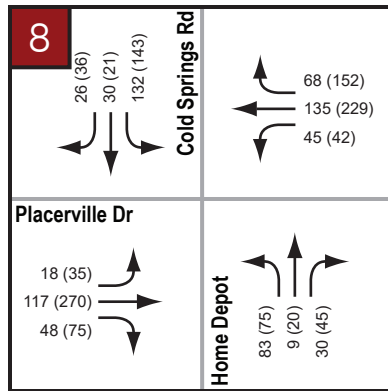
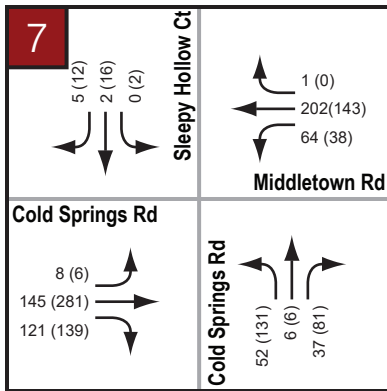
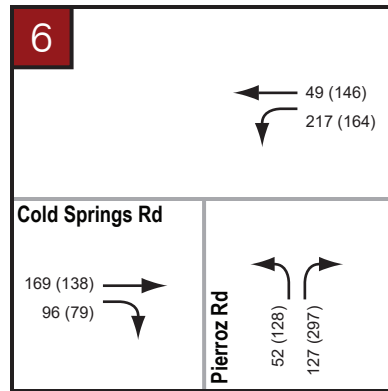
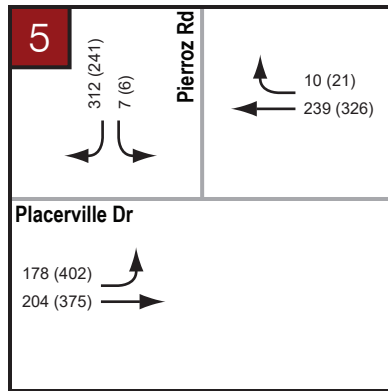
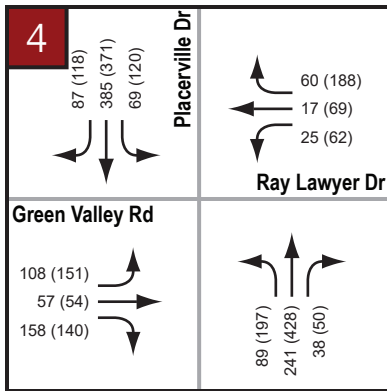
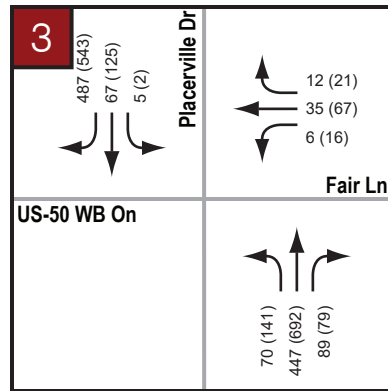
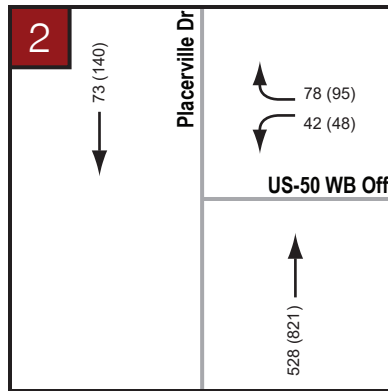
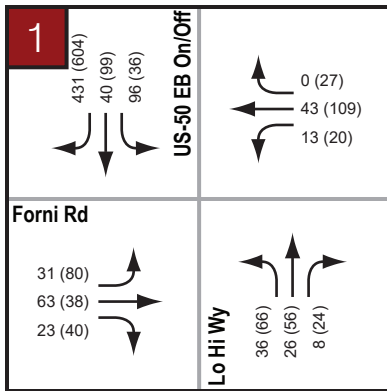


LEGEND

- # Study Intersection
- # Project Driveway
- Signalized Control
- Stop Control
- XX (XX) AM (PM) Peak-Hour Volumes



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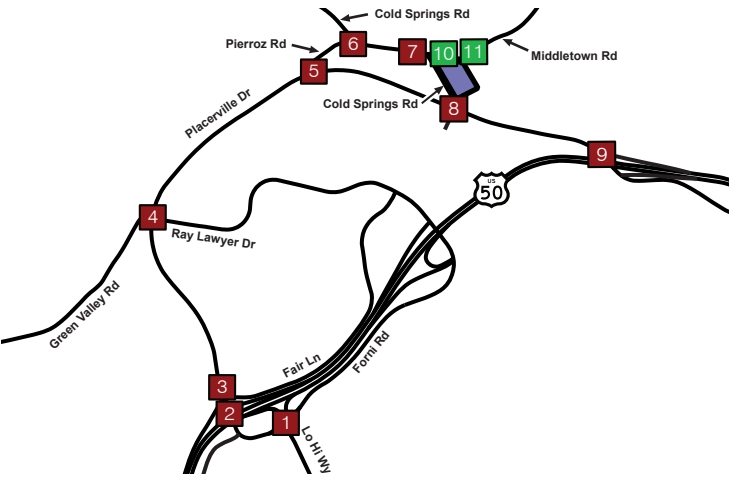
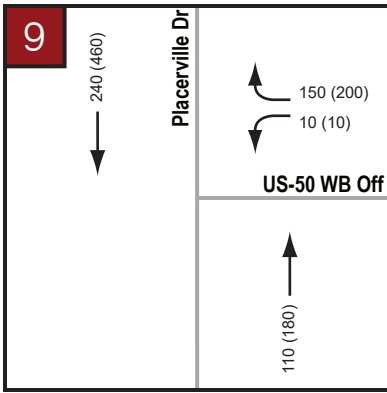
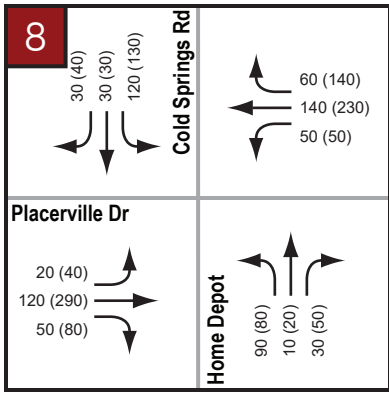
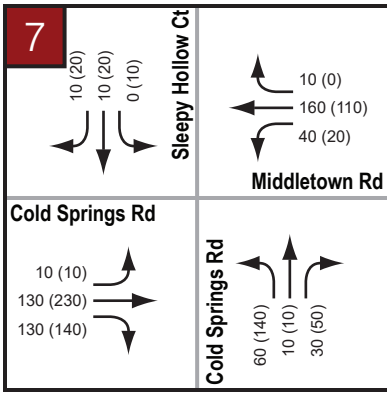
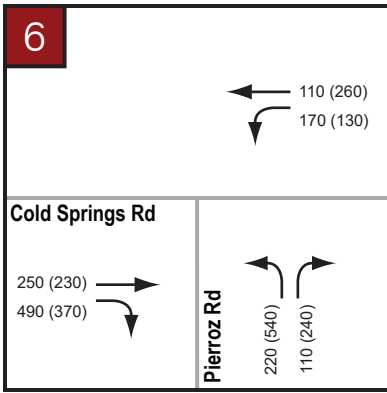
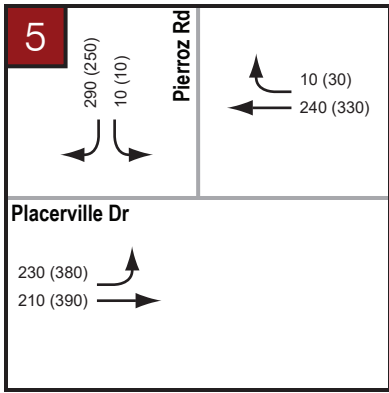
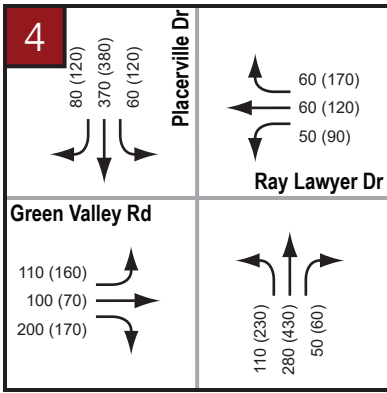
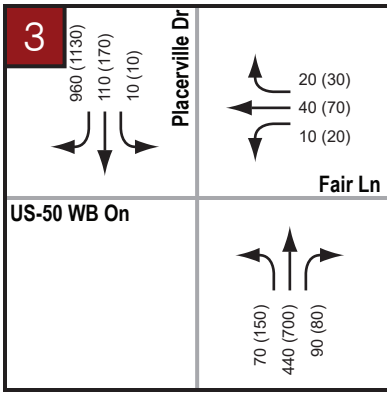
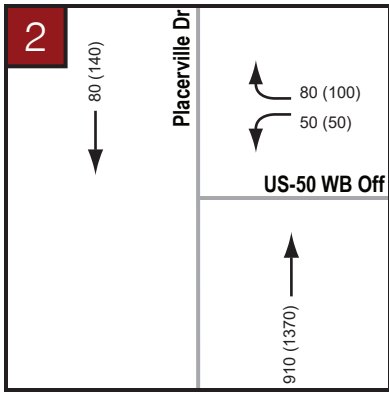
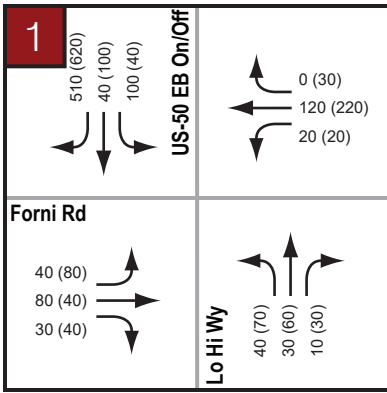


LEGEND

- # Study Intersection
- # Project Driveway
- Signalized Control
- Stop Control
- XX (XX) AM (PM) Peak-Hour Volumes



NOT TO SCALE

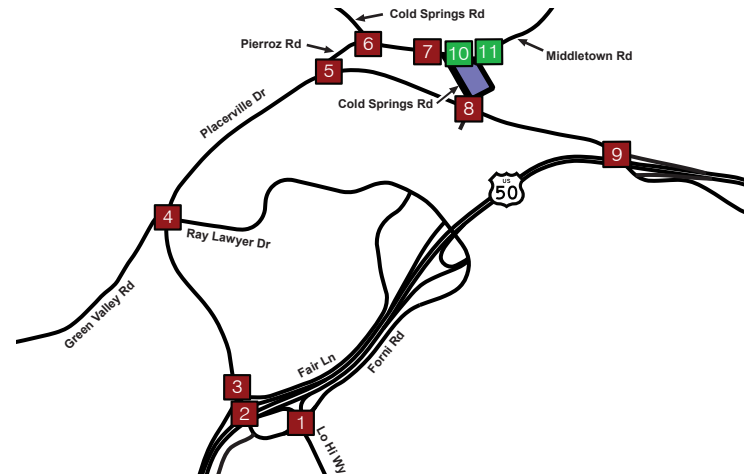
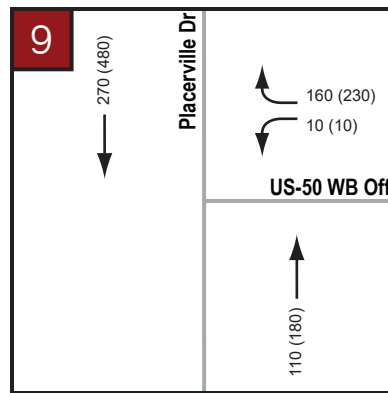
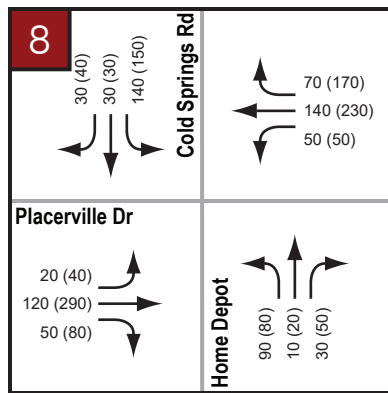
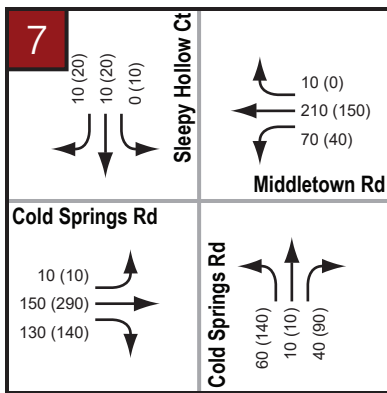
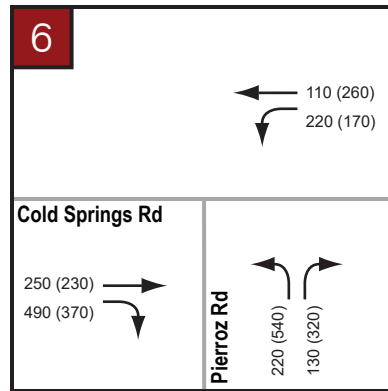
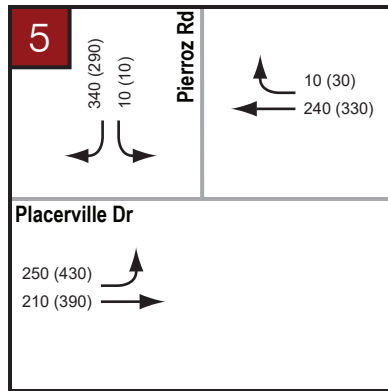
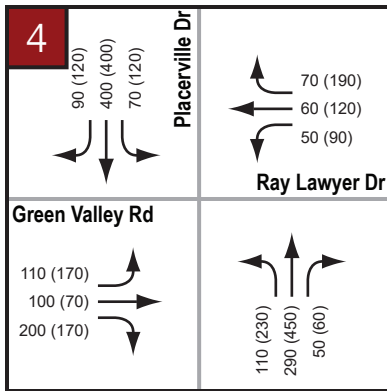
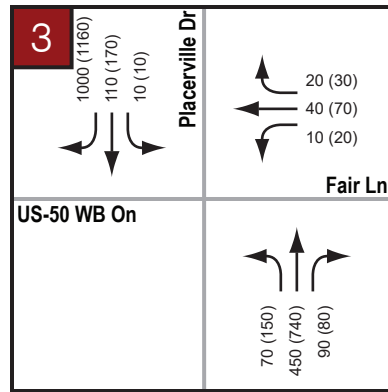
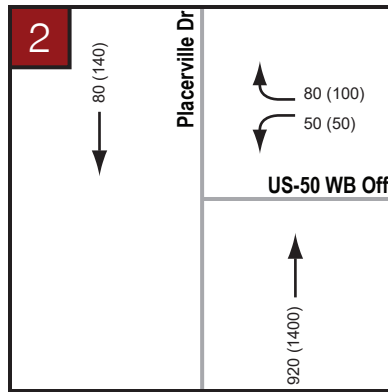
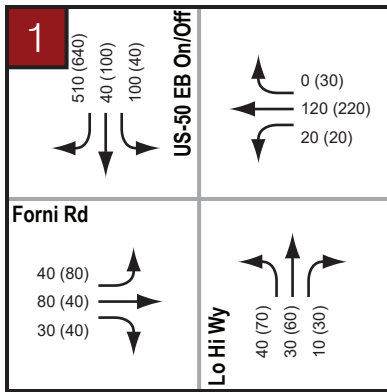


LEGEND

- # Study Intersection
- # Project Driveway
- Signalized Control
- Stop Control
- XX (XX) AM (PM) Peak-Hour Volumes



NOT TO SCALE



LEGEND

- # Study Intersection
- # Project Driveway
- Signalized Control
- Stop Control
- XX (XX) AM (PM) Peak-Hour Volumes

Attachment A

Trip Generation Background Data and Calculations

National Data & Surveying Services Intersection Turning Movement Count

Location: US-50 EB Ramps/Lo Hi Way & Forni Rd
City: Placerville
Control: 4-Way Stop

Project ID: 23-070029-001
Date: 3/2/2023

Data - Totals

NS/EW Streets:	US-50 EB Ramps/Lo Hi Way				US-50 EB Ramps/Lo Hi Way				Forni Rd				Forni Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0.3 NL	0.3 NT	0.3 NR	0 NU	0.5 SL	0.5 ST	1 SR	0 SU	1 EL	0.5 ET	0.5 ER	0 EU	0 WL	1 WT	1 WR	0 WU	
6:00 AM	4	2	1	0	6	7	22	0	1	0	2	0	0	2	0	0	47
6:15 AM	2	3	1	0	3	7	25	0	2	1	2	0	0	2	0	0	48
6:30 AM	8	4	0	0	4	10	43	0	1	4	6	0	1	1	0	0	82
6:45 AM	5	4	3	0	9	9	58	0	2	9	4	0	0	5	0	0	108
7:00 AM	6	5	2	0	11	7	48	0	2	7	1	0	1	4	0	0	94
7:15 AM	9	6	2	0	18	13	52	0	2	13	3	0	3	3	0	0	124
7:30 AM	6	2	4	0	19	6	74	1	1	18	3	0	0	5	0	0	139
7:45 AM	3	3	7	0	38	13	102	0	4	28	5	0	2	4	0	0	209
8:00 AM	9	4	2	0	28	6	98	0	4	15	9	0	2	12	0	0	189
8:15 AM	12	7	1	0	24	11	93	0	5	16	3	0	2	10	0	0	184
8:30 AM	6	6	3	0	24	16	109	0	7	15	6	0	6	9	0	0	207
8:45 AM	9	9	2	0	20	7	123	0	15	17	5	0	3	12	0	0	222
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	79	55	28	0	204	112	847	1	46	143	49	0	20	69	0	0	1653
	48.77%	33.95%	17.28%	0.00%	17.53%	9.62%	72.77%	0.09%	19.33%	60.08%	20.59%	0.00%	22.47%	77.53%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	36	26	8	0	96	40	423	0	31	63	23	0	13	43	0	0	802
PEAK HR FACTOR :	0.750	0.722	0.667	0.000	0.857	0.625	0.860	0.000	0.517	0.926	0.639	0.000	0.542	0.896	0.000	0.000	0.903
	0.875				0.932				0.791				0.933				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0.3 NL	0.3 NT	0.3 NR	0 NU	0.5 SL	0.5 ST	1 SR	0 SU	1 EL	0.5 ET	0.5 ER	0 EU	0 WL	1 WT	1 WR	0 WU	
4:00 PM	15	15	3	0	8	24	153	0	24	11	9	0	5	16	3	0	286
4:15 PM	19	12	6	0	6	20	162	1	13	15	11	0	2	21	3	0	291
4:30 PM	7	11	3	0	9	15	134	0	21	9	9	0	4	30	8	0	260
4:45 PM	15	12	3	0	6	26	159	0	16	14	11	0	3	19	8	0	292
5:00 PM	18	14	10	0	15	23	146	1	21	10	13	0	5	42	9	0	327
5:15 PM	17	16	8	0	11	25	145	0	22	6	7	0	9	20	6	0	292
5:30 PM	16	14	3	0	3	25	128	0	21	8	9	0	3	28	4	0	262
5:45 PM	9	13	1	0	2	26	117	0	20	3	12	0	1	11	6	0	221
6:00 PM	15	21	3	0	4	36	124	0	20	6	12	0	4	10	3	0	258
6:15 PM	12	20	2	0	6	21	107	0	10	2	11	0	2	3	1	0	197
6:30 PM	20	10	3	0	1	19	76	0	21	2	11	0	2	7	0	0	172
6:45 PM	11	11	1	1	0	22	95	0	14	3	7	0	0	9	1	0	175
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	174	169	46	1	71	282	1546	2	223	89	122	0	40	216	52	0	3033
	44.62%	43.33%	11.79%	0.26%	3.73%	14.83%	81.33%	0.11%	51.38%	20.51%	28.11%	0.00%	12.99%	70.13%	16.88%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	66	56	24	0	35	99	578	1	80	38	40	0	20	109	27	0	1173
PEAK HR FACTOR :	0.917	0.875	0.600	0.000	0.583	0.952	0.909	0.250	0.909	0.679	0.769	0.000	0.556	0.649	0.750	0.000	0.897
	0.869				0.933				0.898				0.696				

National Data & Surveying Services Intersection Turning Movement Count

Location: Placerville Dr/Forni Rd & US-50 WB Off Ramp
City: Placerville
Control: Signalized

Project ID: 23-070029-002
Date: 3/2/2023

Data - Totals

NS/EW Streets:	Placerville Dr/Forni Rd				Placerville Dr/Forni Rd				US-50 WB Off Ramp				US-50 WB Off Ramp				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	1 WL	0 WT	1 WR	0 WU	
6:00 AM	0	30	0	0	0	2	0	0	0	0	0	0	0	0	7	0	39
6:15 AM	0	30	0	0	0	4	0	0	0	0	0	0	1	0	4	0	39
6:30 AM	0	55	0	0	0	7	0	0	0	0	0	0	5	0	11	0	78
6:45 AM	0	73	0	0	0	5	0	0	0	0	0	0	10	0	17	0	105
7:00 AM	0	59	0	0	0	7	0	0	0	0	0	0	5	0	16	0	87
7:15 AM	0	63	0	0	0	12	0	0	0	0	0	0	7	0	12	0	94
7:30 AM	0	88	0	0	0	16	0	0	0	0	0	0	10	0	17	0	131
7:45 AM	0	112	0	0	0	17	0	0	0	0	0	0	18	0	29	0	176
8:00 AM	0	127	0	0	0	12	0	0	0	0	0	0	15	0	16	0	170
8:15 AM	0	121	0	0	0	18	0	0	0	0	0	0	8	0	18	0	165
8:30 AM	0	123	0	0	0	17	0	0	0	0	0	0	8	0	22	0	170
8:45 AM	0	149	0	0	0	26	0	0	0	0	0	0	11	0	22	0	208
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	1030	0	0	0	143	0	0	0	0	0	0	98	0	191	0	1462
	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					33.91%	0.00%	66.09%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	520	0	0	0	73	0	0	0	0	0	0	42	0	78	0	713
PEAK HR FACTOR :	0.000	0.872	0.000	0.000	0.000	0.702	0.000	0.000	0.000	0.000	0.000	0.000	0.700	0.000	0.886	0.000	0.857
	0.872				0.702								0.909				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	1 WL	0 WT	1 WR	0 WU	
4:00 PM	0	193	0	0	0	34	0	0	0	0	0	0	11	0	29	0	267
4:15 PM	0	212	0	0	0	24	0	0	0	0	0	0	11	0	27	0	274
4:30 PM	0	186	0	0	0	39	0	0	0	0	0	0	10	0	31	0	266
4:45 PM	0	196	0	0	0	34	0	0	0	0	0	0	16	0	20	0	266
5:00 PM	0	201	0	0	0	43	0	0	0	0	0	0	11	0	17	0	272
5:15 PM	0	206	0	0	0	27	0	0	0	0	0	0	19	0	19	0	271
5:30 PM	0	183	0	0	0	27	0	0	0	0	0	0	11	0	15	0	236
5:45 PM	0	154	0	0	0	41	0	0	0	0	0	0	12	0	15	0	222
6:00 PM	0	163	0	0	0	34	0	0	0	0	0	0	17	0	17	0	231
6:15 PM	0	133	0	0	0	21	0	0	0	0	0	0	10	0	14	0	178
6:30 PM	0	117	0	0	0	28	0	0	0	0	0	0	19	0	7	0	171
6:45 PM	0	120	0	0	0	22	0	0	0	0	0	0	17	0	14	0	173
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	2064	0	0	0	374	0	0	0	0	0	0	164	0	225	0	2827
	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					42.16%	0.00%	57.84%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	795	0	0	0	140	0	0	0	0	0	0	48	0	95	0	1078
PEAK HR FACTOR :	0.000	0.938	0.000	0.000	0.000	0.814	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.766	0.000	0.984
	0.938				0.814								0.872				

National Data & Surveying Services Intersection Turning Movement Count

Location: Placerville Dr & US-50 WB On-Ramp/Fair Ln
City: Placerville
Control: Signalized

Project ID: 23-070029-003
Date: 3/2/2023

Data - Totals

NS/EW Streets:	Placerville Dr				Placerville Dr				US-50 WB On-Ramp/Fair Ln				US-50 WB On-Ramp/Fair Ln				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1 NL	1 NT	0 NR	0 NU	1 SL	1 ST	1 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0.5 WL	0.5 WT	1 WR	0 WU	TOTAL
6:00 AM	5	26	6	0	0	2	47	0	0	0	0	0	3	0	0	0	89
6:15 AM	6	24	4	0	0	3	57	0	0	0	0	0	1	1	3	0	99
6:30 AM	7	49	10	0	0	7	68	0	0	0	0	0	1	1	0	0	142
6:45 AM	11	66	13	0	1	4	53	0	0	0	0	0	1	4	1	0	154
7:00 AM	9	51	15	0	1	6	82	0	0	0	0	0	1	10	4	0	179
7:15 AM	11	46	18	0	0	11	95	0	0	0	0	0	1	4	1	0	187
7:30 AM	12	76	16	0	1	17	98	0	0	0	0	0	0	5	1	0	226
7:45 AM	7	100	35	0	0	16	112	0	0	0	0	0	0	8	1	0	279
8:00 AM	22	94	26	0	1	13	116	0	0	0	0	0	2	0	3	0	277
8:15 AM	16	110	14	0	2	14	99	0	0	0	0	0	1	10	2	0	268
8:30 AM	11	112	21	0	0	16	113	0	0	0	0	0	2	9	3	0	287
8:45 AM	21	123	28	0	2	24	118	0	0	0	0	0	1	16	4	0	337
TOTAL VOLUMES :	NL 138	NT 877	NR 206	NU 0	SL 8	ST 133	SR 1058	SU 0	EL 0	ET 0	ER 0	EU 0	WL 10	WT 71	WR 23	WU 0	TOTAL 2524
APPROACH %'s :	11.30%	71.83%	16.87%	0.00%	0.67%	11.09%	88.24%	0.00%	0.00%	0.00%	0.00%	0.00%	9.62%	68.27%	22.12%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	70	439	89	0	5	67	446	0	0	0	0	0	6	35	12	0	1169
PEAK HR FACTOR :	0.795	0.892	0.795	0.000	0.625	0.698	0.945	0.000	0.000	0.000	0.000	0.000	0.750	0.547	0.750	0.000	0.867
	0.869				0.899								0.631				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1 NL	1 NT	0 NR	0 NU	1 SL	1 ST	1 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0.5 WL	0.5 WT	1 WR	0 WU	TOTAL
4:00 PM	32	166	24	0	3	32	135	0	0	0	0	0	3	17	10	0	422
4:15 PM	36	186	16	0	1	19	124	0	0	0	0	0	4	11	2	0	399
4:30 PM	28	162	28	0	1	35	117	0	0	0	0	0	5	18	6	0	400
4:45 PM	30	172	14	0	0	30	135	0	0	0	0	0	3	14	5	0	403
5:00 PM	47	146	21	0	0	41	145	0	0	0	0	0	4	24	8	0	436
5:15 PM	43	174	12	0	0	17	117	0	0	0	0	0	8	21	4	0	396
5:30 PM	38	148	12	0	2	25	110	0	0	0	0	0	4	8	7	0	354
5:45 PM	25	132	12	0	0	37	94	0	0	0	0	0	3	7	5	0	315
6:00 PM	26	134	20	0	1	25	70	0	0	0	0	0	8	7	0	0	291
6:15 PM	18	106	21	0	2	20	88	0	0	0	0	0	1	10	4	0	270
6:30 PM	29	87	10	0	0	25	60	0	0	0	0	0	3	9	7	0	230
6:45 PM	20	92	20	0	0	15	52	0	0	0	0	0	7	10	2	0	218
TOTAL VOLUMES :	NL 372	NT 1705	NR 210	NU 0	SL 10	ST 321	SR 1247	SU 0	EL 0	ET 0	ER 0	EU 0	WL 53	WT 156	WR 60	WU 0	TOTAL 4134
APPROACH %'s :	16.27%	74.55%	9.18%	0.00%	0.63%	20.34%	79.02%	0.00%	0.00%	0.00%	0.00%	0.00%	19.70%	57.99%	22.30%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	141	666	79	0	2	125	521	0	0	0	0	0	16	67	21	0	1638
PEAK HR FACTOR :	0.750	0.895	0.705	0.000	0.500	0.762	0.898	0.000	0.000	0.000	0.000	0.000	0.800	0.698	0.656	0.000	0.939
	0.931				0.871								0.722				

National Data & Surveying Services Intersection Turning Movement Count

Location: Placerville Dr & Green Valley Rd/Ray Lawyer Dr
City: Placerville
Control: Signalized

Project ID: 23-070029-004
Date: 3/2/2023

Data - Totals

NS/EW Streets:	Placerville Dr				Placerville Dr				Green Valley Rd/Ray Lawyer Dr				Green Valley Rd/Ray Lawyer Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	1.5 NT	0.5 NR	0 NU	1 SL	1 ST	1 SR	0 SU	1 EL	1 ET	1 ER	0 EU	1 WL	1 WT	1 WR	0 WU	
6:00 AM	4	17	4	0	2	28	6	0	7	2	20	0	0	1	1	0	92
6:15 AM	3	17	2	0	6	34	2	0	4	3	23	0	1	0	1	0	96
6:30 AM	5	33	2	0	3	44	3	0	6	3	27	0	5	0	5	0	136
6:45 AM	18	30	3	0	8	32	3	0	17	4	28	0	0	1	1	0	145
7:00 AM	9	26	4	0	8	52	5	0	8	5	35	0	4	0	9	0	165
7:15 AM	11	25	2	0	13	63	11	0	13	6	41	0	5	1	4	0	195
7:30 AM	20	38	1	0	9	78	13	0	12	15	43	0	2	6	8	0	245
7:45 AM	16	62	2	0	13	71	11	0	17	17	42	0	6	4	12	0	273
8:00 AM	20	50	8	0	14	82	18	0	13	13	47	0	6	0	7	0	278
8:15 AM	29	60	10	0	12	75	17	0	23	11	39	0	1	7	8	0	292
8:30 AM	19	63	9	0	13	94	19	0	29	16	34	0	4	5	20	0	325
8:45 AM	21	60	11	0	21	102	24	0	38	17	38	0	14	5	19	0	370
TOTAL VOLUMES :	NL 175	NT 481	NR 58	NU 0	SL 122	ST 755	SR 132	SU 0	EL 187	ET 112	ER 417	EU 0	WL 48	WT 30	WR 95	WU 0	TOTAL 2612
APPROACH %'s :	24.51%	67.37%	8.12%	0.00%	12.09%	74.83%	13.08%	0.00%	26.12%	15.64%	58.24%	0.00%	27.75%	17.34%	54.91%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	89	233	38	0	60	353	78	0	103	57	158	0	25	17	54	0	1265
PEAK HR FACTOR :	0.767	0.925	0.864	0.000	0.714	0.865	0.813	0.000	0.678	0.838	0.840	0.000	0.446	0.607	0.675	0.000	0.855
	0.909				0.835				0.855				0.632				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	1.5 NT	0.5 NR	0 NU	1 SL	1 ST	1 SR	0 SU	1 EL	1 ET	1 ER	0 EU	1 WL	1 WT	1 WR	0 WU	
4:00 PM	48	92	11	0	32	92	28	0	44	8	37	0	18	18	52	0	480
4:15 PM	55	98	12	0	26	85	21	0	24	17	29	0	11	16	42	0	436
4:30 PM	51	101	17	0	25	89	33	0	30	14	33	0	14	22	41	0	470
4:45 PM	43	111	10	0	31	83	30	0	37	15	41	0	19	13	32	0	465
5:00 PM	36	97	3	0	26	95	26	0	31	13	31	0	23	25	53	0	459
5:15 PM	61	102	12	0	15	91	28	0	33	10	29	0	11	21	38	0	451
5:30 PM	38	85	16	0	14	97	21	0	31	8	20	0	7	12	26	0	375
5:45 PM	36	72	9	0	21	69	23	0	23	14	26	0	12	12	20	0	337
6:00 PM	37	79	9	0	4	49	19	0	28	4	24	0	17	11	15	0	296
6:15 PM	35	64	11	0	19	62	20	0	14	9	25	0	14	9	16	0	298
6:30 PM	27	55	3	0	6	48	12	0	14	5	12	0	7	15	20	0	224
6:45 PM	24	65	4	0	11	41	8	0	18	8	14	0	13	10	18	0	234
TOTAL VOLUMES :	NL 491	NT 1021	NR 117	NU 0	SL 230	ST 901	SR 269	SU 0	EL 327	ET 125	ER 321	EU 0	WL 166	WT 184	WR 373	WU 0	TOTAL 4525
APPROACH %'s :	30.14%	62.68%	7.18%	0.00%	16.43%	64.36%	19.21%	0.00%	42.30%	16.17%	41.53%	0.00%	22.96%	25.45%	51.59%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	197	402	50	0	114	349	112	0	135	54	140	0	62	69	167	0	1851
PEAK HR FACTOR :	0.895	0.905	0.735	0.000	0.891	0.948	0.848	0.000	0.767	0.794	0.854	0.000	0.816	0.784	0.803	0.000	0.964
	0.960				0.946				0.884				0.847				

National Data & Surveying Services Intersection Turning Movement Count

Location: Pierroz Rd & Placerville Dr
City: Placerville
Control: 1-Way Stop(SB)

Project ID: 23-070029-005
Date: 3/2/2023

Data - Totals

NS/EW Streets:	Pierroz Rd				Pierroz Rd				Placerville Dr				Placerville Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	1 SL	0 ST	1 SR	0 SU	1 EL	1 ET	0 ER	0 EU	0 WL	1 WT	1 WR	0 WU	
6:00 AM	0	0	0	0	3	0	26	0	6	14	0	0	0	16	2	0	67
6:15 AM	0	0	0	0	2	0	29	0	8	7	0	0	0	13	3	0	62
6:30 AM	0	0	0	0	2	0	35	0	13	19	0	0	0	19	1	0	89
6:45 AM	0	0	0	0	0	0	27	0	11	19	0	0	0	20	1	0	78
7:00 AM	0	0	0	0	2	0	37	0	24	19	0	0	0	27	3	0	112
7:15 AM	0	0	0	0	2	0	55	0	18	30	0	0	0	34	0	0	139
7:30 AM	0	0	0	0	3	0	61	0	16	41	0	0	0	39	5	0	165
7:45 AM	0	0	0	0	1	0	64	0	29	48	0	0	0	52	1	0	195
8:00 AM	0	0	0	0	1	0	59	0	28	41	0	0	0	49	4	0	182
8:15 AM	0	0	0	0	1	0	63	0	36	54	0	0	0	56	2	0	212
8:30 AM	0	0	0	0	2	0	69	0	52	50	0	0	0	58	3	0	234
8:45 AM	0	0	0	0	3	0	71	0	44	59	0	0	0	76	1	0	254
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	0	0	0	22	0	596	0	285	401	0	0	0	459	26	0	1789
					3.56%	0.00%	96.44%	0.00%	41.55%	58.45%	0.00%	0.00%	0.00%	94.64%	5.36%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	7	0	262	0	160	204	0	0	0	239	10	0	882
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.583	0.000	0.923	0.000	0.769	0.864	0.000	0.000	0.000	0.786	0.625	0.000	0.868
						0.909				0.883				0.808			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	1 SL	0 ST	1 SR	0 SU	1 EL	1 ET	0 ER	0 EU	0 WL	1 WT	1 WR	0 WU	
4:00 PM	0	0	0	0	1	0	50	0	83	110	0	0	0	85	4	0	333
4:15 PM	0	0	0	0	3	0	51	0	88	75	0	0	0	81	4	0	302
4:30 PM	0	0	0	0	1	0	56	0	91	83	0	0	0	72	6	0	309
4:45 PM	0	0	0	0	1	0	50	0	83	107	0	0	0	88	7	0	336
5:00 PM	0	0	0	0	4	0	47	0	81	92	0	0	0	79	3	0	306
5:15 PM	0	0	0	0	1	0	51	0	76	111	0	0	0	73	2	0	314
5:30 PM	0	0	0	0	2	0	46	0	73	84	0	0	0	67	6	0	278
5:45 PM	0	0	0	0	1	0	47	0	59	65	0	0	0	59	7	0	238
6:00 PM	0	0	0	0	1	0	28	0	62	62	0	0	0	46	6	0	205
6:15 PM	0	0	0	0	3	0	48	0	50	54	0	0	0	48	5	0	208
6:30 PM	0	0	0	0	3	0	29	0	42	41	0	0	0	35	1	0	151
6:45 PM	0	0	0	0	1	0	20	0	55	55	0	0	0	39	3	0	173
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	0	0	0	22	0	523	0	843	939	0	0	0	772	54	0	3153
					4.04%	0.00%	95.96%	0.00%	47.31%	52.69%	0.00%	0.00%	0.00%	93.46%	6.54%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	6	0	207	0	345	375	0	0	0	326	21	0	1280
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.500	0.000	0.924	0.000	0.948	0.852	0.000	0.000	0.000	0.926	0.750	0.000	0.952
						0.934				0.933				0.913			

National Data & Surveying Services Intersection Turning Movement Count

Location: Pierroz Rd & Cold Springs Rd
City: Placerville
Control: 3-Way Stop(NB/EB/WB)

Project ID: 23-070029-006
Date: 3/2/2023

Data - Totals

NS/EW Streets:	Pierroz Rd				Pierroz Rd				Cold Springs Rd				Cold Springs Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	1 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	1 ER	0 EU	1 WL	1 WT	0 WR	0 WU	
6:00 AM	5	0	3	0	0	0	0	0	0	4	14	0	13	8	0	0	47
6:15 AM	5	0	6	0	0	0	0	0	0	12	12	0	20	5	0	0	60
6:30 AM	5	0	7	0	0	0	0	0	0	28	27	0	11	11	0	0	89
6:45 AM	5	1	6	0	0	0	0	0	0	16	15	0	15	7	0	0	65
7:00 AM	11	1	12	0	0	0	0	0	0	16	21	0	17	4	0	0	82
7:15 AM	8	0	12	0	0	0	0	0	0	16	25	0	31	11	0	0	103
7:30 AM	14	0	8	0	0	0	0	0	0	28	23	0	41	15	0	0	129
7:45 AM	8	0	22	0	0	0	0	0	0	31	32	0	39	24	0	0	156
8:00 AM	14	0	17	0	0	0	0	0	0	33	18	0	40	9	1	0	132
8:15 AM	11	0	25	0	0	0	0	0	0	49	26	0	38	7	0	0	156
8:30 AM	17	0	36	0	0	1	0	0	1	45	27	0	41	17	0	0	185
8:45 AM	10	1	31	0	1	0	0	0	0	42	25	0	48	16	0	0	174
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	113	3	185	0	1	1	0	0	1	320	265	0	354	134	1	0	1378
	37.54%	1.00%	61.46%	0.00%	50.00%	50.00%	0.00%	0.00%	0.17%	54.61%	45.22%	0.00%	72.39%	27.40%	0.20%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	52	1	109	0	1	1	0	0	1	169	96	0	167	49	1	0	647
PEAK HR FACTOR :	0.765	0.250	0.757	0.000	0.250	0.250	0.000	0.000	0.250	0.862	0.889	0.000	0.870	0.721	0.250	0.000	0.874
	0.764				0.500				0.887				0.848				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	1 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	1 ER	0 EU	1 WL	1 WT	0 WR	0 WU	
4:00 PM	33	0	51	0	0	0	0	0	0	34	16	0	34	26	0	0	194
4:15 PM	37	0	62	0	1	0	0	0	0	36	21	0	30	39	0	0	226
4:30 PM	27	0	70	0	0	0	0	0	0	41	19	0	39	29	0	0	225
4:45 PM	29	0	58	0	0	0	1	0	0	26	24	0	24	35	0	0	197
5:00 PM	35	0	50	0	0	1	0	0	0	35	15	0	37	43	0	0	216
5:15 PM	35	1	48	0	2	0	1	0	0	27	20	0	32	41	1	0	208
5:30 PM	33	0	41	0	1	0	0	0	0	26	17	0	32	31	1	0	182
5:45 PM	31	0	38	0	0	1	0	0	0	28	18	0	27	28	0	0	171
6:00 PM	38	0	31	0	0	0	0	0	0	22	9	0	18	29	0	0	147
6:15 PM	19	0	34	0	0	0	0	0	0	14	23	0	28	22	0	0	140
6:30 PM	18	0	26	0	0	0	0	0	0	15	15	0	16	17	0	0	107
6:45 PM	24	1	31	0	0	0	0	0	0	11	11	0	9	16	0	0	103
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	359	2	540	0	4	2	2	0	0	315	208	0	326	356	2	0	2116
	39.84%	0.22%	59.93%	0.00%	50.00%	25.00%	25.00%	0.00%	0.00%	60.23%	39.77%	0.00%	47.66%	52.05%	0.29%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	128	0	240	0	1	1	1	0	0	138	79	0	130	146	0	0	864
PEAK HR FACTOR :	0.865	0.000	0.857	0.000	0.250	0.250	0.250	0.000	0.000	0.841	0.823	0.000	0.833	0.849	0.000	0.000	0.956
	0.929				0.750				0.904				0.863				

National Data & Surveying Services Intersection Turning Movement Count

Location: Cold Springs Rd/Sleepy Hollow Ct & Cold Springs Rd/Middletown Rd
City: Placerville
Control: 4-Way Stop

Project ID: 23-070029-007
Date: 3/2/2023

Data - Totals

NS/EW Streets:	Cold Springs Rd/Sleepy Hollow Ct				Cold Springs Rd/Sleepy Hollow Ct				Cold Springs Rd/Middletown Rd				Cold Springs Rd/Middletown Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	1 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0.5 EL	0.5 ET	1 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
6:00 AM	9	0	2	0	0	0	0	0	0	3	4	0	0	11	0	0	29
6:15 AM	5	0	0	0	0	0	1	0	0	7	8	0	4	18	0	0	43
6:30 AM	7	0	1	0	0	0	0	0	0	6	26	0	3	13	0	0	56
6:45 AM	5	0	1	0	0	0	1	0	0	4	19	0	5	15	0	0	50
7:00 AM	6	0	0	0	0	1	0	0	0	9	15	0	5	14	0	0	50
7:15 AM	8	1	1	0	0	1	0	0	1	9	15	0	1	32	0	0	69
7:30 AM	16	1	2	0	0	0	0	0	0	7	26	0	3	39	0	0	94
7:45 AM	23	0	8	0	0	0	0	0	2	14	26	0	6	38	1	0	118
8:00 AM	10	1	6	0	0	0	2	0	1	14	30	0	6	32	0	0	102
8:15 AM	13	2	3	0	0	0	3	0	0	29	40	0	9	31	0	0	130
8:30 AM	13	1	7	0	0	1	0	0	3	43	30	0	13	42	0	0	153
8:45 AM	16	2	11	0	0	1	0	0	4	41	21	0	9	47	1	0	153
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	131	8	42	0	0	4	7	0	11	186	260	0	64	332	2	0	1047
	72.38%	4.42%	23.20%	0.00%	0.00%	36.36%	63.64%	0.00%	2.41%	40.70%	56.89%	0.00%	16.08%	83.42%	0.50%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	52	6	27	0	0	2	5	0	8	127	121	0	37	152	1	0	538
PEAK HR FACTOR :	0.813	0.750	0.614	0.000	0.000	0.500	0.417	0.000	0.500	0.738	0.756	0.000	0.712	0.809	0.250	0.000	0.879
	0.733				0.583				0.842				0.833				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	1 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0.5 EL	0.5 ET	1 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
4:00 PM	25	1	13	0	2	5	1	0	5	46	35	0	7	26	2	0	168
4:15 PM	35	1	16	0	0	3	1	0	1	61	33	0	5	30	0	0	186
4:30 PM	25	2	7	0	0	3	3	0	4	61	43	0	6	28	0	0	182
4:45 PM	32	3	13	0	2	4	5	0	0	49	30	0	3	19	0	0	160
5:00 PM	39	0	14	0	0	6	3	0	1	53	33	0	5	32	0	0	186
5:15 PM	34	1	10	0	0	1	0	0	0	49	35	0	4	33	2	0	169
5:30 PM	24	0	9	0	0	5	1	0	1	44	18	0	3	31	0	0	136
5:45 PM	22	0	5	0	0	1	1	0	2	42	23	0	4	27	0	0	127
6:00 PM	30	0	7	0	0	0	1	0	0	29	25	0	2	14	0	0	108
6:15 PM	18	1	3	0	1	1	4	0	1	28	16	0	6	24	0	0	103
6:30 PM	16	1	3	0	0	0	1	0	1	26	13	0	3	14	0	0	78
6:45 PM	12	0	5	0	0	0	0	0	1	31	10	0	3	14	0	0	76
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	312	10	105	0	5	29	21	0	17	519	314	0	51	292	4	0	1679
	73.07%	2.34%	24.59%	0.00%	9.09%	52.73%	38.18%	0.00%	2.00%	61.06%	36.94%	0.00%	14.70%	84.15%	1.15%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	131	6	50	0	2	16	12	0	6	224	139	0	19	109	0	0	714
PEAK HR FACTOR :	0.840	0.500	0.781	0.000	0.250	0.667	0.600	0.000	0.375	0.918	0.808	0.000	0.792	0.852	0.000	0.000	0.960
	0.882				0.682				0.854				0.865				

National Data & Surveying Services Intersection Turning Movement Count

Location: Cold Springs Rd & Placerville Dr
City: Placerville
Control: Signalized

Project ID: 23-070029-008
Date: 3/2/2023

Data - Totals

NS/EW Streets:	Cold Springs Rd				Cold Springs Rd				Placerville Dr				Placerville Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	1 NT	0 NR	0 NU	1 SL	0.5 ST	0.5 SR	0 SU	1 EL	1 ET	1 ER	0 EU	1 WL	1 WT	0 WR	0 WU	
6:00 AM	3	2	2	0	3	0	0	0	1	6	1	0	2	12	8	0	40
6:15 AM	2	0	0	0	9	1	3	0	1	6	0	0	1	9	4	0	36
6:30 AM	3	1	1	0	24	4	1	0	0	10	11	0	4	16	7	0	82
6:45 AM	5	3	4	0	16	6	2	0	0	10	7	0	5	15	3	0	76
7:00 AM	9	1	3	0	17	1	2	0	0	15	4	0	6	23	5	0	86
7:15 AM	8	0	3	0	13	1	2	0	0	18	12	0	6	20	10	0	93
7:30 AM	11	0	4	0	22	4	4	0	2	23	10	0	6	28	20	0	134
7:45 AM	11	1	5	0	18	6	6	0	5	21	18	0	8	42	23	0	164
8:00 AM	16	1	4	0	22	9	4	0	5	25	10	0	8	34	12	0	150
8:15 AM	22	1	7	0	39	4	6	0	4	28	14	0	13	32	12	0	182
8:30 AM	22	3	12	0	27	9	7	0	3	32	13	0	13	33	16	0	190
8:45 AM	23	4	7	0	17	8	9	0	6	32	11	0	11	36	18	0	182
TOTAL VOLUMES :	NL 135	NT 17	NR 52	NU 0	SL 227	ST 53	SR 46	SU 0	EL 27	ET 226	ER 111	EU 0	WL 83	WT 300	WR 138	WU 0	TOTAL 1415
APPROACH %'s :	66.18%	8.33%	25.49%	0.00%	69.63%	16.26%	14.11%	0.00%	7.42%	62.09%	30.49%	0.00%	15.93%	57.58%	26.49%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	83	9	30	0	105	30	26	0	18	117	48	0	45	135	58	0	704
PEAK HR FACTOR :	0.902	0.563	0.625	0.000	0.673	0.833	0.722	0.000	0.750	0.914	0.857	0.000	0.865	0.938	0.806	0.000	0.926
	0.824				0.821				0.934				0.915				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	1 NT	0 NR	0 NU	1 SL	0.5 ST	0.5 SR	0 SU	1 EL	1 ET	1 ER	0 EU	1 WL	1 WT	0 WR	0 WU	
4:00 PM	19	2	12	0	31	3	12	0	9	87	17	0	12	58	29	0	291
4:15 PM	20	5	11	0	29	9	7	0	10	60	15	0	9	64	36	0	275
4:30 PM	14	4	9	0	39	4	10	0	6	55	21	0	9	53	24	0	248
4:45 PM	22	9	13	0	25	5	7	0	10	68	22	0	12	54	32	0	279
5:00 PM	16	5	12	0	30	4	12	0	12	67	15	0	12	57	36	0	278
5:15 PM	12	2	10	0	26	5	9	0	12	84	14	0	9	49	29	0	261
5:30 PM	15	4	11	0	22	3	3	0	11	61	17	0	9	44	19	0	219
5:45 PM	17	4	12	0	18	4	4	0	3	57	6	0	6	42	22	0	195
6:00 PM	13	3	14	0	17	4	6	0	3	48	14	0	7	28	30	0	187
6:15 PM	11	4	9	0	18	2	7	0	4	45	7	0	4	34	14	0	159
6:30 PM	8	1	5	0	11	1	2	0	4	36	9	0	4	25	15	0	121
6:45 PM	5	2	6	0	9	2	3	0	4	40	12	0	4	33	12	0	132
TOTAL VOLUMES :	NL 172	NT 45	NR 124	NU 0	SL 275	ST 46	SR 82	SU 0	EL 88	ET 708	ER 169	EU 0	WL 97	WT 541	WR 298	WU 0	TOTAL 2645
APPROACH %'s :	50.44%	13.20%	36.36%	0.00%	68.24%	11.41%	20.35%	0.00%	9.12%	73.37%	17.51%	0.00%	10.36%	57.80%	31.84%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	75	20	45	0	124	21	36	0	35	270	75	0	42	229	121	0	1093
PEAK HR FACTOR :	0.852	0.556	0.865	0.000	0.795	0.583	0.750	0.000	0.875	0.776	0.852	0.000	0.875	0.895	0.840	0.000	0.939
	0.795				0.854				0.841				0.899				

National Data & Surveying Services Intersection Turning Movement Count

Location: Placerville Dr & US-50 WB Off Ramp
City: Placerville
Control: 1-Way Stop(WB)

Project ID: 23-070029-009
Date: 3/2/2023

Data - Totals

NS/EW Streets:	Placerville Dr				Placerville Dr				US-50 WB Off Ramp				US-50 WB Off Ramp				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
6:00 AM	0	8	0	0	0	9	0	0	0	0	0	0	0	0	14	0	31
6:15 AM	0	4	0	0	0	13	0	0	0	0	0	0	1	0	8	0	26
6:30 AM	0	6	0	0	0	31	0	0	0	0	0	0	0	0	20	0	57
6:45 AM	0	12	0	0	0	34	0	0	0	0	0	0	0	0	14	0	60
7:00 AM	0	14	0	0	0	32	0	0	0	0	0	0	0	0	25	0	71
7:15 AM	0	15	0	0	0	36	0	0	0	0	0	0	0	0	21	0	72
7:30 AM	0	22	0	0	0	43	0	0	0	0	0	0	1	0	32	0	98
7:45 AM	0	27	0	0	0	38	0	0	0	0	0	0	1	0	45	0	111
8:00 AM	0	17	0	0	0	52	0	0	0	0	0	0	1	0	34	0	104
8:15 AM	0	19	0	0	0	64	0	0	0	0	0	0	0	0	37	0	120
8:30 AM	0	29	0	0	0	62	0	0	0	0	0	0	0	0	34	0	125
8:45 AM	0	36	0	0	0	58	0	0	0	0	0	0	0	0	36	0	130
TOTAL VOLUMES :	0	209	0	0	0	472	0	0	0	0	0	0	4	0	320	0	1005
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					1.23%	0.00%	98.77%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	101	0	0	0	236	0	0	0	0	0	0	1	0	141	0	479
PEAK HR FACTOR :	0.000	0.701	0.000	0.000	0.000	0.922	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.953	0.000	0.921
	0.701				0.922								0.959				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
4:00 PM	0	53	0	0	0	127	0	0	0	0	0	0	3	0	42	0	225
4:15 PM	0	46	0	0	0	99	0	0	0	0	0	0	1	0	59	0	205
4:30 PM	0	36	0	0	0	93	0	0	0	0	0	0	0	0	44	0	173
4:45 PM	0	44	0	0	0	123	0	0	0	0	0	0	0	0	52	0	219
5:00 PM	0	43	0	0	0	102	0	0	0	0	0	0	0	0	48	0	193
5:15 PM	0	40	0	0	0	114	0	0	0	0	0	0	0	0	48	0	202
5:30 PM	0	32	0	0	0	101	0	0	0	0	0	0	1	0	35	0	169
5:45 PM	0	25	0	0	0	85	0	0	0	0	0	0	0	0	39	0	149
6:00 PM	0	24	0	0	0	78	0	0	0	0	0	0	2	0	38	0	142
6:15 PM	0	21	0	0	0	73	0	0	0	0	0	0	0	0	29	0	123
6:30 PM	0	23	0	0	0	49	0	0	0	0	0	0	0	0	18	0	90
6:45 PM	0	27	0	0	0	57	0	0	0	0	0	0	0	0	19	0	103
TOTAL VOLUMES :	0	414	0	0	0	1101	0	0	0	0	0	0	7	0	471	0	1993
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					1.46%	0.00%	98.54%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	179	0	0	0	442	0	0	0	0	0	0	4	0	197	0	822
PEAK HR FACTOR :	0.000	0.844	0.000	0.000	0.000	0.870	0.000	0.000	0.000	0.000	0.000	0.000	0.333	0.000	0.835	0.000	0.913
	0.844				0.870								0.838				

Prepared by NDS/ATD

VOLUME

Placerville Dr W/O Pierroz Rd

Day: Thursday
Date: 3/2/2023

City: Placerville
Project #: CA23_070030_001

DAILY TOTALS					NB	SB	EB	WB	Total
					0	0	6,522	6,875	13,397

AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00			2	2	4	12:00			145	160	305
00:15			0	0	0	12:15			145	148	293
00:30			0	1	1	12:30			119	171	290
00:45			0	2	1	12:45			127	536	291
					4				164	643	1179
01:00			1	0	1	13:00			141	132	273
01:15			0	2	2	13:15			152	140	292
01:30			0	2	2	13:30			132	157	289
01:45			0	1	0	13:45			155	580	316
					4				161	590	1170
02:00			2	2	4	14:00			150	167	317
02:15			1	3	4	14:15			164	136	300
02:30			0	1	1	14:30			164	145	309
02:45			0	3	1	14:45			148	626	301
					7				153	601	1227
03:00			0	4	4	15:00			188	150	338
03:15			0	1	1	15:15			155	161	316
03:30			1	2	3	15:30			193	172	365
03:45			0	1	7	15:45			173	709	354
					14				181	664	1373
04:00			0	2	2	16:00			192	137	329
04:15			2	3	5	16:15			165	129	294
04:30			0	5	5	16:30			171	133	304
04:45			2	4	10	16:45			188	716	326
					20				138	537	1253
05:00			0	8	8	17:00			182	127	309
05:15			4	17	21	17:15			182	124	306
05:30			2	19	21	17:30			149	113	262
05:45			2	8	21	17:45			123	636	223
					65				100	464	1100
06:00			12	42	54	18:00			125	75	200
06:15			17	42	59	18:15			96	88	184
06:30			33	54	87	18:30			80	63	143
06:45			32	94	47	18:45			106	407	164
					185				58	284	691
07:00			44	65	109	19:00			82	40	122
07:15			48	88	136	19:15			54	25	79
07:30			58	102	160	19:30			28	30	58
07:45			79	229	117	19:45			17	181	45
					372				28	123	304
08:00			65	109	174	20:00			15	27	42
08:15			93	116	209	20:15			7	24	31
08:30			107	128	235	20:30			20	19	39
08:45			99	364	148	20:45			9	51	24
					501				15	85	136
09:00			99	131	230	21:00			9	13	22
09:15			104	126	230	21:15			4	9	13
09:30			90	120	210	21:30			4	10	14
09:45			103	396	140	21:45			3	20	11
					517				8	40	60
10:00			109	134	243	22:00			0	8	8
10:15			110	126	236	22:15			1	5	6
10:30			93	146	239	22:30			4	4	8
10:45			125	437	133	22:45			1	6	6
					539				5	22	28
11:00			123	139	262	23:00			2	6	8
11:15			118	141	259	23:15			4	9	13
11:30			115	137	252	23:30			1	6	7
11:45			150	506	152	23:45			2	9	6
					569				4	25	34
TOTALS			2045	2797	4842	TOTALS			4477	4078	8555
SPLIT %			42.2%	57.8%	36.1%	SPLIT %			52.3%	47.7%	63.9%

DAILY TOTALS					NB	SB	EB	WB	Total
					0	0	6,522	6,875	13,397

AM Peak Hour			11:45	11:45	11:45	PM Peak Hour			15:30	15:00	15:00
AM Pk Volume			559	631	1190	PM Pk Volume			723	664	1373
Pk Hr Factor			0.932	0.923	0.975	Pk Hr Factor			0.937	0.917	0.940
7 - 9 Volume	0	0	593	873	1466	4 - 6 Volume	0	0	1352	1001	2353
7 - 9 Peak Hour			08:00	08:00	08:00	4 - 6 Peak Hour			16:30	16:00	16:00
7 - 9 Pk Volume	0	0	364	501	865	4 - 6 Pk Volume	0	0	723	537	1253
Pk Hr Factor	0.000	0.000	0.850	0.846	0.876	Pk Hr Factor	0.000	0.000	0.961	0.973	0.952

Prepared by NDS/ATD

VOLUME

Placerville Dr E/O Cold Springs Rd

Day: Thursday
Date: 3/2/2023

City: Placerville
Project #: CA23_070030_002

DAILY TOTALS					NB	SB					Total			
					0	0	EB	WB			9,307			
							4,664	4,643						
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL			
00:00			2	2	4	12:00			109	107	216			
00:15			2	0	2	12:15			96	105	201			
00:30			0	3	3	12:30			84	110	194			
00:45			1	5	2	7	12:45		88	377	116	438	204	815
01:00			1	1	2	13:00			104	106	210			
01:15			3	3	6	13:15			91	117	208			
01:30			1	2	3	13:30			92	105	197			
01:45			1	6	1	7	13:45		116	403	117	445	233	848
02:00			0	2	2	14:00			106	99	205			
02:15			0	2	2	14:15			117	90	207			
02:30			3	2	5	14:30			120	91	211			
02:45			1	4	1	7	14:45		109	452	108	388	217	840
03:00			1	1	2	15:00			112	118	230			
03:15			1	3	4	15:15			94	124	218			
03:30			2	2	4	15:30			137	111	248			
03:45			4	8	1	7	15:45		127	470	113	466	240	936
04:00			3	1	4	16:00			135	99	234			
04:15			4	2	6	16:15			101	106	207			
04:30			3	4	7	16:30			101	84	185			
04:45			6	16	5	12	16:45		110	447	93	382	203	829
05:00			6	2	8	17:00			108	102	210			
05:15			3	8	11	17:15			121	89	210			
05:30			10	6	16	17:30			93	71	164			
05:45			10	29	10	26	17:45		86	408	69	331	155	739
06:00			12	23	35	18:00			78	64	142			
06:15			16	15	31	18:15			72	50	122			
06:30			34	28	62	18:30			52	42	94			
06:45			32	94	24	90	18:45		55	257	46	202	101	459
07:00			33	34	67	19:00			49	51	100			
07:15			34	38	72	19:15			28	31	59			
07:30			52	53	105	19:30			36	44	80			
07:45			45	164	74	199	19:45		39	152	21	147	60	299
08:00			51	54	105	20:00			32	27	59			
08:15			71	53	124	20:15			21	21	42			
08:30			65	61	126	20:30			26	20	46			
08:45			58	245	72	240	20:45		17	96	16	84	33	180
09:00			77	84	161	21:00			16	8	24			
09:15			71	83	154	21:15			13	7	20			
09:30			79	90	169	21:30			17	14	31			
09:45			65	292	79	336	21:45		5	51	5	34	10	85
10:00			86	102	188	22:00			2	8	10			
10:15			72	85	157	22:15			13	9	22			
10:30			62	82	144	22:30			6	2	8			
10:45			82	302	91	360	22:45		8	29	3	22	11	51
11:00			73	102	175	23:00			1	9	10			
11:15			83	95	178	23:15			2	4	6			
11:30			80	87	167	23:30			4	3	7			
11:45			108	344	108	392	23:45		6	13	5	21	11	34
TOTALS			1509	1683	3192	TOTALS			3155	2960	6115			
SPLIT %			47.3%	52.7%	34.3%	SPLIT %			51.6%	48.4%	65.7%			

DAILY TOTALS					NB	SB					Total
					0	0	EB	WB			9,307
							4,664	4,643			

AM Peak Hour			11:45	11:45	11:45	PM Peak Hour			15:30	15:00	15:15
AM Pk Volume			397	430	827	PM Pk Volume			500	466	940
Pk Hr Factor			0.911	0.977	0.957	Pk Hr Factor			0.912	0.940	0.948
7 - 9 Volume	0	0	409	439	848	4 - 6 Volume	0	0	855	713	1568
7 - 9 Peak Hour			08:00	07:45	08:00	4 - 6 Peak Hour			16:00	16:15	16:00
7 - 9 Pk Volume	0	0	245	242	485	4 - 6 Pk Volume	0	0	447	385	829
Pk Hr Factor	0.000	0.000	0.863	0.818	0.933	Pk Hr Factor	0.000	0.000	0.828	0.908	0.886

Attachment B

Analysis Worksheets for Existing (2023) Conditions

Middletown Apartments TIS
 1: Lo Hi Way/US-50 EB Ramps & Forni Road

Existing
 Timing Plan: AM Peak Hour

Intersection	
Intersection Delay, s/veh	15.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷			↶	↷		↷			↶	↷
Traffic Vol, veh/h	31	63	23	13	43	0	36	26	8	96	40	423
Future Vol, veh/h	31	63	23	13	43	0	36	26	8	96	40	423
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.86	0.75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	84	31	17	57	0	48	35	11	128	47	564
Number of Lanes	1	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	10.7	10.8	10.4	17.8
HCM LOS	B	B	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	51%	100%	0%	23%	0%	71%	0%
Vol Thru, %	37%	0%	73%	77%	100%	29%	0%
Vol Right, %	11%	0%	27%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	70	31	86	56	0	136	423
LT Vol	36	31	0	13	0	96	0
Through Vol	26	0	63	43	0	40	0
RT Vol	8	0	23	0	0	0	423
Lane Flow Rate	93	41	115	75	0	175	564
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.16	0.082	0.205	0.143	0	0.282	0.745
Departure Headway (Hd)	6.178	7.135	6.437	6.911	6.793	5.815	4.754
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	581	503	557	519	0	621	767
Service Time	4.214	4.873	4.175	4.655	4.536	3.515	2.454
HCM Lane V/C Ratio	0.16	0.082	0.206	0.145	0	0.282	0.735
HCM Control Delay	10.4	10.5	10.8	10.8	9.5	10.8	20
HCM Lane LOS	B	B	B	B	N	B	C
HCM 95th-tile Q	0.6	0.3	0.8	0.5	0	1.2	6.8

Middletown Apartments TIS
 2: Placerville Drive & US-50 WB Off Ramp

Existing
 Timing Plan: AM Peak Hour



Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	56	104	598	97
v/c Ratio	0.35	0.44	0.50	0.08
Control Delay	46.6	14.7	11.2	0.6
Queue Delay	0.0	0.1	55.6	0.1
Total Delay	46.6	14.8	66.7	0.7
Queue Length 50th (ft)	30	0	157	2
Queue Length 95th (ft)	62	30	267	2
Internal Link Dist (ft)	238		277	29
Turn Bay Length (ft)	85			
Base Capacity (vph)	499	521	1193	1665
Starvation Cap Reductn	0	0	0	909
Spillback Cap Reductn	0	46	760	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.11	0.22	1.38	0.13
Intersection Summary				

HCM 6th Edition methodology does not support clustered intersections.

Middletown Apartments TIS
 3: Placerville Drive & US-50 WB On Ramp/Fair Lane

Existing
 Timing Plan: AM Peak Hour



Lane Group	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	55	16	88	606	7	89	595
v/c Ratio	0.32	0.07	0.31	0.43	0.06	0.09	0.38
Control Delay	46.3	0.7	35.8	1.8	45.4	11.5	0.7
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	46.3	0.7	35.9	1.9	45.4	11.5	0.7
Queue Length 50th (ft)	30	0	46	7	4	24	0
Queue Length 95th (ft)	63	0	88	75	16	44	0
Internal Link Dist (ft)	134			29		196	
Turn Bay Length (ft)		40	40		100		
Base Capacity (vph)	762	699	896	1739	403	1172	1583
Starvation Cap Reductn	0	0	205	249	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.02	0.13	0.41	0.02	0.08	0.38
Intersection Summary							

HCM 6th Edition methodology does not support clustered intersections.

Middletown Apartments TIS
 4: Placerville Drive & Green Valley Road/Ray Lawyer Drive

Existing
 Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	137	76	211	30	23	72	116	297	80	471	90
v/c Ratio	0.73	0.30	0.53	0.52	0.07	0.20	0.64	0.19	0.56	0.57	0.12
Control Delay	77.3	55.2	11.7	82.6	46.8	4.3	74.7	23.0	75.2	34.5	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.3	55.2	11.7	82.6	46.8	4.3	74.7	23.0	75.2	34.5	10.0
Queue Length 50th (ft)	112	58	0	23	16	0	95	74	66	301	9
Queue Length 95th (ft)	163	97	29	61	38	1	151	136	110	416	49
Internal Link Dist (ft)		124			295			221		192	
Turn Bay Length (ft)	50		50	65		65	190		145		145
Base Capacity (vph)	343	462	552	85	462	471	368	1603	439	895	798
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.16	0.38	0.35	0.05	0.15	0.32	0.19	0.18	0.53	0.11

Intersection Summary

Middletown Apartments TIS
 4: Placerville Drive & Green Valley Road/Ray Lawyer Drive

Existing
 Timing Plan: AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↖	↗	↗	↖	↗	↗	↖↗		↗	↖	↗
Traffic Volume (veh/h)	103	57	158	25	17	54	89	233	38	60	353	78
Future Volume (veh/h)	103	57	158	25	17	54	89	233	38	60	353	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	137	76	211	30	23	72	116	253	44	80	471	90
Peak Hour Factor	0.75	0.75	0.75	0.84	0.75	0.75	0.77	0.92	0.86	0.75	0.75	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	273	299	253	214	299	253	147	1898	325	104	1125	953
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.08	0.63	0.63	0.06	0.60	0.60
Sat Flow, veh/h	1301	1870	1585	1092	1870	1585	1781	3033	520	1781	1870	1585
Grp Volume(v), veh/h	137	76	211	30	23	72	116	147	150	80	471	90
Grp Sat Flow(s),veh/h/ln	1301	1870	1585	1092	1870	1585	1781	1777	1777	1781	1870	1585
Q Serve(g_s), s	9.2	3.3	11.8	2.3	1.0	3.7	5.8	3.1	3.2	4.0	12.3	2.2
Cycle Q Clear(g_c), s	10.1	3.3	11.8	5.5	1.0	3.7	5.8	3.1	3.2	4.0	12.3	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	273	299	253	214	299	253	147	1112	1112	104	1125	953
V/C Ratio(X)	0.50	0.25	0.83	0.14	0.08	0.28	0.79	0.13	0.14	0.77	0.42	0.09
Avail Cap(c_a), veh/h	506	634	537	410	634	537	506	1112	1112	604	1125	953
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	33.7	37.3	36.1	32.7	33.8	41.2	7.0	7.0	42.5	9.7	7.7
Incr Delay (d2), s/veh	0.5	0.2	2.8	0.1	0.0	0.2	3.5	0.2	0.3	4.5	1.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	1.5	4.7	0.6	0.4	1.4	2.7	1.1	1.2	1.9	4.9	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.5	33.8	40.0	36.2	32.7	34.1	44.7	7.2	7.3	46.9	10.9	7.9
LnGrp LOS	D	C	D	D	C	C	D	A	A	D	B	A
Approach Vol, veh/h		424			125			413			641	
Approach Delay, s/veh		38.1			34.3			17.8			14.9	
Approach LOS		D			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.9	62.3		19.2	12.2	60.1		19.2				
Change Period (Y+Rc), s	4.6	5.1		4.6	4.6	5.1		4.6				
Max Green Setting (Gmax), s	31.0	55.0		31.0	26.0	55.0		31.0				
Max Q Clear Time (g_c+I1), s	6.0	5.2		7.5	7.8	14.3		13.8				
Green Ext Time (p_c), s	0.1	1.2		0.2	0.1	2.2		0.8				
Intersection Summary												
HCM 6th Ctrl Delay				23.3								
HCM 6th LOS				C								

Middletown Apartments TIS
5: Placerville Drive & Pierroz Road

Existing
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	6.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↘
Traffic Vol, veh/h	160	204	239	10	7	262
Future Vol, veh/h	160	204	239	10	7	262
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	55	0	65
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	213	272	319	13	9	349

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	332	0	-	0	1017 319
Stage 1	-	-	-	-	319 -
Stage 2	-	-	-	-	698 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1227	-	-	-	263 722
Stage 1	-	-	-	-	737 -
Stage 2	-	-	-	-	494 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1227	-	-	-	217 722
Mov Cap-2 Maneuver	-	-	-	-	217 -
Stage 1	-	-	-	-	609 -
Stage 2	-	-	-	-	494 -

Approach	EB	WB	SB
HCM Control Delay, s	3.8	0	14.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1227	-	-	-	217	722
HCM Lane V/C Ratio	0.174	-	-	-	0.043	0.484
HCM Control Delay (s)	8.6	-	-	-	22.3	14.6
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.6	-	-	-	0.1	2.7

Middletown Apartments TIS
6: Pierroz Road & Cold Springs Road

Existing
Timing Plan: AM Peak Hour

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	169	96	167	49	52	109
Future Vol, veh/h	169	96	167	49	52	109
Peak Hour Factor	0.75	0.75	0.89	0.75	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	225	128	188	65	68	143
Number of Lanes	1	1	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10	10.8	9.7
HCM LOS	A	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	0%	100%	0%
Vol Thru, %	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	109	169	96	167	49
LT Vol	52	0	0	0	167	0
Through Vol	0	0	169	0	0	49
RT Vol	0	109	0	96	0	0
Lane Flow Rate	68	143	225	128	188	65
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.123	0.21	0.338	0.167	0.311	0.099
Departure Headway (Hd)	6.482	5.272	5.395	4.689	5.965	5.46
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	549	674	662	758	599	650
Service Time	4.268	3.057	3.171	2.464	3.751	3.246
HCM Lane V/C Ratio	0.124	0.212	0.34	0.169	0.314	0.1
HCM Control Delay	10.2	9.5	10.9	8.4	11.5	8.9
HCM Lane LOS	B	A	B	A	B	A
HCM 95th-tile Q	0.4	0.8	1.5	0.6	1.3	0.3

Middletown Apartments TIS
 7: Cold Springs Road & Middletown Road & Sleepy Hollow Court

Existing
 Timing Plan: AM Peak Hour

Intersection												
Intersection Delay, s/veh	9.9											
Intersection LOS	A											

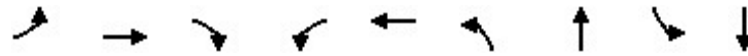
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔			↔	↔		↔	
Traffic Vol, veh/h	8	127	121	37	152	1	52	6	27	0	2	5
Future Vol, veh/h	8	127	121	37	152	1	52	6	27	0	2	5
Peak Hour Factor	0.75	0.75	0.75	0.76	0.75	0.75	0.81	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	169	161	49	203	1	64	8	36	0	3	7
Number of Lanes	0	1	1	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	2
HCM Control Delay	9	11.4	9.5	8.8
HCM LOS	A	B	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	90%	0%	6%	0%	19%	0%
Vol Thru, %	10%	0%	94%	0%	80%	29%
Vol Right, %	0%	100%	0%	100%	1%	71%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	58	27	135	121	190	7
LT Vol	52	0	8	0	37	0
Through Vol	6	0	127	0	152	2
RT Vol	0	27	0	121	1	5
Lane Flow Rate	72	36	180	161	253	9
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.128	0.052	0.257	0.197	0.369	0.015
Departure Headway (Hd)	6.375	5.214	5.141	4.407	5.26	5.664
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	560	683	697	812	682	627
Service Time	4.138	2.977	2.884	2.149	3.306	3.743
HCM Lane V/C Ratio	0.129	0.053	0.258	0.198	0.371	0.014
HCM Control Delay	10.1	8.3	9.7	8.2	11.4	8.8
HCM Lane LOS	B	A	A	A	B	A
HCM 95th-tile Q	0.4	0.2	1	0.7	1.7	0

Middletown Apartments TIS
 8: Home Depot/Cold Springs Road & Placerville Drive

Existing
 Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	24	156	64	52	257	92	52	140	71
v/c Ratio	0.25	0.24	0.11	0.44	0.38	0.59	0.09	0.65	0.11
Control Delay	65.3	32.5	4.6	69.0	30.4	70.6	13.5	67.4	19.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.3	32.5	4.6	69.0	30.4	70.6	13.5	67.4	19.4
Queue Length 50th (ft)	19	91	0	41	147	73	7	110	23
Queue Length 95th (ft)	43	133	11	83	194	135	28	151	48
Internal Link Dist (ft)		421			370		173		145
Turn Bay Length (ft)	140		95	110		70		85	
Base Capacity (vph)	303	638	595	303	672	317	591	303	655
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	0.08	0.24	0.11	0.17	0.38	0.29	0.09	0.46	0.11

Intersection Summary

Middletown Apartments TIS
 8: Home Depot/Cold Springs Road & Placerville Drive

Existing
 Timing Plan: AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	117	48	45	135	58	83	9	30	105	30	26
Future Volume (veh/h)	18	117	48	45	135	58	83	9	30	105	30	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	156	64	52	180	77	92	12	40	140	40	31
Peak Hour Factor	0.75	0.75	0.75	0.86	0.75	0.75	0.90	0.75	0.75	0.75	0.75	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	49	666	564	74	460	197	116	132	439	169	369	286
Arrive On Green	0.03	0.36	0.36	0.04	0.37	0.37	0.07	0.35	0.35	0.10	0.38	0.38
Sat Flow, veh/h	1781	1870	1585	1781	1243	532	1781	379	1264	1781	977	757
Grp Volume(v), veh/h	24	156	64	52	0	257	92	0	52	140	0	71
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1775	1781	0	1643	1781	0	1734
Q Serve(g_s), s	1.6	6.9	3.2	3.4	0.0	12.6	6.0	0.0	2.5	9.1	0.0	3.1
Cycle Q Clear(g_c), s	1.6	6.9	3.2	3.4	0.0	12.6	6.0	0.0	2.5	9.1	0.0	3.1
Prop In Lane	1.00		1.00	1.00		0.30	1.00		0.77	1.00		0.44
Lane Grp Cap(c), veh/h	49	666	564	74	0	656	116	0	571	169	0	654
V/C Ratio(X)	0.49	0.23	0.11	0.70	0.00	0.39	0.79	0.00	0.09	0.83	0.00	0.11
Avail Cap(c_a), veh/h	317	666	564	317	0	656	332	0	571	317	0	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.6	26.7	25.5	55.8	0.0	27.4	54.4	0.0	26.0	52.4	0.0	23.9
Incr Delay (d2), s/veh	2.7	0.8	0.4	4.4	0.0	1.8	4.5	0.0	0.3	9.7	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.3	1.3	1.6	0.0	5.7	2.8	0.0	1.0	4.5	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.3	27.5	25.9	60.3	0.0	29.2	58.9	0.0	26.3	62.2	0.0	24.2
LnGrp LOS	E	C	C	E	A	C	E	A	C	E	A	C
Approach Vol, veh/h		244			309			144			211	
Approach Delay, s/veh		30.2			34.4			47.1			49.4	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.5	47.1	12.3	49.1	7.9	48.7	15.8	45.6				
Change Period (Y+Rc), s	4.6	5.1	4.6	4.6	4.6	5.1	4.6	4.6				
Max Green Setting (Gmax), s	21.0	42.0	22.0	41.0	21.0	42.0	21.0	41.0				
Max Q Clear Time (g_c+I1), s	5.4	8.9	8.0	5.1	3.6	14.6	11.1	4.5				
Green Ext Time (p_c), s	0.0	0.7	0.1	0.2	0.0	1.0	0.2	0.2				
Intersection Summary												
HCM 6th Ctrl Delay				38.8								
HCM 6th LOS				D								

Middletown Apartments TIS
 9: Placerville Drive & US-50 WB Off Ramp

Existing
 Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑			↑
Traffic Vol, veh/h	1	141	101	0	0	236
Future Vol, veh/h	1	141	101	0	0	236
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	188	135	0	0	315

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	450	135	0	-	-	-
Stage 1	135	-	-	-	-	-
Stage 2	315	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	567	914	-	0	0	-
Stage 1	891	-	-	0	0	-
Stage 2	740	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	567	914	-	-	-	-
Mov Cap-2 Maneuver	567	-	-	-	-	-
Stage 1	891	-	-	-	-	-
Stage 2	740	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	-	567	914
HCM Lane V/C Ratio	-	0.002	0.206
HCM Control Delay (s)	-	11.4	10
HCM Lane LOS	-	B	B
HCM 95th %tile Q(veh)	-	0	0.8

Middletown Apartments TIS
 1: Lo Hi Way/US-50 EB Ramps & Forni Road

Existing
 Timing Plan: PM Peak Hour

Intersection	
Intersection Delay, s/veh	29.4
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷			↶	↷		↷			↶	↷
Traffic Vol, veh/h	80	38	40	20	109	27	66	56	24	36	99	578
Future Vol, veh/h	80	38	40	20	109	27	66	56	24	36	99	578
Peak Hour Factor	0.75	0.75	0.91	0.77	0.75	0.75	0.92	0.88	0.75	0.75	0.75	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	107	51	44	26	145	36	72	64	32	48	132	608
Number of Lanes	1	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	12.7	14	13.9	41
HCM LOS	B	B	B	E

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	45%	100%	0%	16%	0%	27%	0%
Vol Thru, %	38%	0%	49%	84%	0%	73%	0%
Vol Right, %	16%	0%	51%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	146	80	78	129	27	135	578
LT Vol	66	80	0	20	0	36	0
Through Vol	56	0	38	109	0	99	0
RT Vol	24	0	40	0	27	0	578
Lane Flow Rate	167	107	95	171	36	180	608
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.336	0.241	0.19	0.365	0.069	0.326	0.959
Departure Headway (Hd)	7.223	8.129	7.245	7.668	6.868	6.519	5.674
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	497	442	495	469	521	554	645
Service Time	5.268	5.879	4.994	5.418	4.617	4.219	3.374
HCM Lane V/C Ratio	0.336	0.242	0.192	0.365	0.069	0.325	0.943
HCM Control Delay	13.9	13.5	11.7	14.8	10.1	12.3	49.5
HCM Lane LOS	B	B	B	B	B	B	E
HCM 95th-tile Q	1.5	0.9	0.7	1.7	0.2	1.4	13.6

Middletown Apartments TIS
 2: Placerville Drive & US-50 WB Off Ramp

Existing
 Timing Plan: PM Peak Hour



Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	64	127	846	187
v/c Ratio	0.27	0.39	0.76	0.17
Control Delay	43.1	11.2	22.1	0.9
Queue Delay	0.0	0.1	59.1	0.1
Total Delay	43.1	11.3	81.1	1.0
Queue Length 50th (ft)	36	0	359	3
Queue Length 95th (ft)	71	30	677	4
Internal Link Dist (ft)	238		277	29
Turn Bay Length (ft)	85			
Base Capacity (vph)	461	506	1110	1607
Starvation Cap Reductn	0	0	0	683
Spillback Cap Reductn	0	62	827	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.14	0.29	2.99	0.20
Intersection Summary				

HCM 6th Edition methodology does not support clustered intersections.

Middletown Apartments TIS
 3: Placerville Drive & US-50 WB On Ramp/Fair Lane

Existing
 Timing Plan: PM Peak Hour



Lane Group	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	110	28	188	845	3	167	686
v/c Ratio	0.54	0.11	0.50	0.60	0.03	0.19	0.43
Control Delay	53.8	1.0	35.7	3.3	51.0	17.1	0.9
Queue Delay	0.0	0.0	0.3	0.3	0.0	0.0	0.0
Total Delay	53.8	1.0	36.0	3.7	51.0	17.1	0.9
Queue Length 50th (ft)	65	0	107	17	2	57	0
Queue Length 95th (ft)	114	0	167	262	11	99	0
Internal Link Dist (ft)	134			29		196	
Turn Bay Length (ft)		40	40		100		
Base Capacity (vph)	703	651	843	1632	372	1083	1583
Starvation Cap Reductn	0	0	281	298	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.04	0.33	0.63	0.01	0.15	0.43

Intersection Summary

HCM 6th Edition methodology does not support clustered intersections.

Middletown Apartments TIS
 4: Placerville Drive & Green Valley Road/Ray Lawyer Drive

Existing
 Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	180	72	182	73	92	223	219	509	152	392	118
v/c Ratio	0.89	0.25	0.45	1.49	0.24	0.44	0.85	0.37	0.75	0.58	0.19
Control Delay	101.6	58.8	11.1	339.8	53.7	9.1	90.7	33.4	87.0	43.7	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.6	58.8	11.1	339.8	53.7	9.1	90.7	33.4	87.0	43.7	15.2
Queue Length 50th (ft)	178	64	0	~103	79	0	217	186	151	323	30
Queue Length 95th (ft)	223	96	36	#202	113	28	#330	254	184	440	80
Internal Link Dist (ft)		124			295			221		192	
Turn Bay Length (ft)	50		50	65		65	190		145		145
Base Capacity (vph)	224	321	424	49	384	503	305	1382	364	742	675
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.22	0.43	1.49	0.24	0.44	0.72	0.37	0.42	0.53	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.

Middletown Apartments TIS
 4: Placerville Drive & Green Valley Road/Ray Lawyer Drive

Existing
 Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	54	140	62	69	167	197	402	50	114	349	112
Future Volume (veh/h)	135	54	140	62	69	167	197	402	50	114	349	112
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	180	72	182	73	92	223	219	442	67	152	392	118
Peak Hour Factor	0.75	0.75	0.77	0.85	0.75	0.75	0.90	0.91	0.75	0.75	0.89	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	264	422	358	285	422	358	251	1674	252	183	940	797
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.14	0.54	0.54	0.10	0.50	0.50
Sat Flow, veh/h	1065	1870	1585	1126	1870	1585	1781	3097	467	1781	1870	1585
Grp Volume(v), veh/h	180	72	182	73	92	223	219	253	256	152	392	118
Grp Sat Flow(s),veh/h/ln	1065	1870	1585	1126	1870	1585	1781	1777	1786	1781	1870	1585
Q Serve(g_s), s	18.1	3.4	11.0	6.1	4.4	13.9	13.2	8.3	8.4	9.2	14.4	4.4
Cycle Q Clear(g_c), s	22.5	3.4	11.0	9.5	4.4	13.9	13.2	8.3	8.4	9.2	14.4	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.26	1.00		1.00
Lane Grp Cap(c), veh/h	264	422	358	285	422	358	251	961	966	183	940	797
V/C Ratio(X)	0.68	0.17	0.51	0.26	0.22	0.62	0.87	0.26	0.27	0.83	0.42	0.15
Avail Cap(c_a), veh/h	276	445	377	350	530	449	423	961	966	505	940	797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	34.1	37.0	37.9	34.5	38.1	46.1	13.4	13.5	48.2	17.1	14.6
Incr Delay (d2), s/veh	5.1	0.1	0.4	0.2	0.1	0.7	5.1	0.7	0.7	3.7	1.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	1.6	4.3	1.7	2.0	5.4	6.2	3.4	3.5	4.2	6.4	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.7	34.2	37.4	38.1	34.6	38.8	51.2	14.1	14.1	51.9	18.5	15.0
LnGrp LOS	D	C	D	D	C	D	D	B	B	D	B	B
Approach Vol, veh/h		434			388			728			662	
Approach Delay, s/veh		41.6			37.7			25.3			25.5	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.8	64.3		29.3	20.0	60.1		29.3				
Change Period (Y+Rc), s	4.6	5.1		4.6	4.6	5.1		4.6				
Max Green Setting (Gmax), s	31.0	55.0		31.0	26.0	55.0		26.0				
Max Q Clear Time (g_c+I1), s	11.2	10.4		15.9	15.2	16.4		24.5				
Green Ext Time (p_c), s	0.2	2.1		0.8	0.2	1.8		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				30.7								
HCM 6th LOS				C								

Middletown Apartments TIS
5: Placerville Drive & Pierroz Road

Existing
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	5.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↘
Traffic Vol, veh/h	345	375	326	21	6	207
Future Vol, veh/h	345	375	326	21	6	207
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	55	0	65
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	460	500	435	28	8	276

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	463	0	-	0	1855 435
Stage 1	-	-	-	-	435 -
Stage 2	-	-	-	-	1420 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1098	-	-	-	81 621
Stage 1	-	-	-	-	653 -
Stage 2	-	-	-	-	223 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1098	-	-	-	47 621
Mov Cap-2 Maneuver	-	-	-	-	47 -
Stage 1	-	-	-	-	379 -
Stage 2	-	-	-	-	223 -

Approach	EB	WB	SB
HCM Control Delay, s	5.1	0	17.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1098	-	-	-	47	621
HCM Lane V/C Ratio	0.419	-	-	-	0.17	0.444
HCM Control Delay (s)	10.6	-	-	-	96.7	15.4
HCM Lane LOS	B	-	-	-	F	C
HCM 95th %tile Q(veh)	2.1	-	-	-	0.6	2.3

Middletown Apartments TIS
6: Pierroz Road & Cold Springs Road

Existing
Timing Plan: PM Peak Hour

Intersection	
Intersection Delay, s/veh	11.9
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	138	79	130	146	128	240
Future Vol, veh/h	138	79	130	146	128	240
Peak Hour Factor	0.75	0.75	0.82	0.75	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	184	105	159	195	149	279
Number of Lanes	1	1	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	11.1	12.1	12.4
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	0%	100%	0%
Vol Thru, %	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	128	240	138	79	130	146
LT Vol	128	0	0	0	130	0
Through Vol	0	0	138	0	0	146
RT Vol	0	240	0	79	0	0
Lane Flow Rate	149	279	184	105	159	195
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.281	0.432	0.322	0.164	0.295	0.335
Departure Headway (Hd)	6.786	5.573	6.307	5.595	6.696	6.188
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	530	645	570	640	537	580
Service Time	4.528	3.315	4.051	3.339	4.437	3.929
HCM Lane V/C Ratio	0.281	0.433	0.323	0.164	0.296	0.336
HCM Control Delay	12.2	12.5	12	9.4	12.2	12
HCM Lane LOS	B	B	B	A	B	B
HCM 95th-tile Q	1.1	2.2	1.4	0.6	1.2	1.5

Middletown Apartments TIS
 7: Cold Springs Road & Middletown Road & Sleepy Hollow Court

Existing
 Timing Plan: PM Peak Hour

Intersection												
Intersection Delay, s/veh	11.6											
Intersection LOS	B											

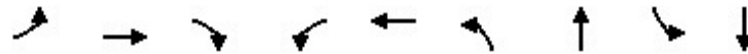
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↕			↖	↗		↕	
Traffic Vol, veh/h	6	224	139	19	109	0	131	6	50	2	16	12
Future Vol, veh/h	6	224	139	19	109	0	131	6	50	2	16	12
Peak Hour Factor	0.75	0.75	0.75	0.81	0.75	0.75	0.84	0.75	0.78	0.75	0.75	0.75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	299	185	23	145	0	156	8	64	3	21	16
Number of Lanes	0	1	1	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	2
HCM Control Delay	11.9	11.5	11.5	10
HCM LOS	B	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	96%	0%	3%	0%	15%	7%
Vol Thru, %	4%	0%	97%	0%	85%	53%
Vol Right, %	0%	100%	0%	100%	0%	40%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	137	50	230	139	128	30
LT Vol	131	0	6	0	19	2
Through Vol	6	0	224	0	109	16
RT Vol	0	50	0	139	0	12
Lane Flow Rate	164	64	307	185	169	40
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.309	0.099	0.481	0.254	0.283	0.072
Departure Headway (Hd)	6.779	5.584	5.648	4.928	6.046	6.435
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	531	642	641	730	596	557
Service Time	4.51	3.315	3.371	2.651	4.076	4.474
HCM Lane V/C Ratio	0.309	0.1	0.479	0.253	0.284	0.072
HCM Control Delay	12.5	8.9	13.5	9.3	11.5	10
HCM Lane LOS	B	A	B	A	B	A
HCM 95th-tile Q	1.3	0.3	2.6	1	1.2	0.2

Middletown Apartments TIS
 8: Home Depot/Cold Springs Road & Placerville Drive

Existing
 Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	47	360	85	49	466	88	79	165	75
v/c Ratio	0.41	0.57	0.14	0.42	0.76	0.58	0.13	0.71	0.11
Control Delay	69.1	39.8	8.1	69.2	46.1	71.0	14.5	70.0	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.1	39.8	8.1	69.2	46.1	71.0	14.5	70.0	13.0
Queue Length 50th (ft)	38	244	2	39	332	71	15	131	14
Queue Length 95th (ft)	67	298	39	80	388	122	40	174	42
Internal Link Dist (ft)		421			370		173		145
Turn Bay Length (ft)	140		95	110		70		85	
Base Capacity (vph)	300	632	590	300	612	314	603	300	662
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	0.16	0.57	0.14	0.16	0.76	0.28	0.13	0.55	0.11

Intersection Summary

Middletown Apartments TIS
 8: Home Depot/Cold Springs Road & Placerville Drive

Existing
 Timing Plan: PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	270	75	42	229	121	75	20	45	124	21	36
Future Volume (veh/h)	35	270	75	42	229	121	75	20	45	124	21	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	360	85	49	305	161	88	27	52	165	27	48
Peak Hour Factor	0.75	0.75	0.88	0.85	0.75	0.75	0.85	0.75	0.87	0.75	0.79	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	71	656	556	72	405	214	111	196	377	195	235	417
Arrive On Green	0.04	0.35	0.35	0.04	0.35	0.35	0.06	0.34	0.34	0.11	0.39	0.39
Sat Flow, veh/h	1781	1870	1585	1781	1152	608	1781	572	1101	1781	604	1073
Grp Volume(v), veh/h	47	360	85	49	0	466	88	0	79	165	0	75
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1761	1781	0	1672	1781	0	1677
Q Serve(g_s), s	3.1	18.5	4.4	3.3	0.0	28.0	5.8	0.0	3.9	10.9	0.0	3.4
Cycle Q Clear(g_c), s	3.1	18.5	4.4	3.3	0.0	28.0	5.8	0.0	3.9	10.9	0.0	3.4
Prop In Lane	1.00		1.00	1.00		0.35	1.00		0.66	1.00		0.64
Lane Grp Cap(c), veh/h	71	656	556	72	0	618	111	0	572	195	0	652
V/C Ratio(X)	0.67	0.55	0.15	0.68	0.00	0.75	0.79	0.00	0.14	0.85	0.00	0.11
Avail Cap(c_a), veh/h	312	656	556	312	0	618	327	0	572	312	0	652
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.8	31.3	26.7	56.7	0.0	34.3	55.4	0.0	27.2	52.4	0.0	23.4
Incr Delay (d2), s/veh	4.0	3.3	0.6	4.2	0.0	8.3	4.7	0.0	0.5	11.5	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	8.9	1.8	1.5	0.0	13.3	2.8	0.0	1.7	5.5	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.7	34.6	27.3	61.0	0.0	42.6	60.0	0.0	27.7	63.9	0.0	23.8
LnGrp LOS	E	C	C	E	A	D	E	A	C	E	A	C
Approach Vol, veh/h		492			515			167			240	
Approach Delay, s/veh		35.8			44.3			44.7			51.3	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.4	47.1	12.1	51.2	9.3	47.2	17.7	45.6				
Change Period (Y+Rc), s	4.6	5.1	4.6	4.6	4.6	5.1	4.6	4.6				
Max Green Setting (Gmax), s	21.0	42.0	22.0	41.0	21.0	42.0	21.0	41.0				
Max Q Clear Time (g_c+I1), s	5.3	20.5	7.8	5.4	5.1	30.0	12.9	5.9				
Green Ext Time (p_c), s	0.0	1.5	0.1	0.3	0.0	1.6	0.3	0.3				
Intersection Summary												
HCM 6th Ctrl Delay			42.6									
HCM 6th LOS			D									

Middletown Apartments TIS
 9: Placerville Drive & US-50 WB Off Ramp

Existing
 Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	2.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑			↑
Traffic Vol, veh/h	4	197	179	0	0	442
Future Vol, veh/h	4	197	179	0	0	442
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	84	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	263	213	0	0	589

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	802	213	0	-	-	-
Stage 1	213	-	-	-	-	-
Stage 2	589	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	353	827	-	0	0	-
Stage 1	823	-	-	0	0	-
Stage 2	554	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	353	827	-	-	-	-
Mov Cap-2 Maneuver	353	-	-	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	554	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	-	353	827
HCM Lane V/C Ratio	-	0.015	0.318
HCM Control Delay (s)	-	15.4	11.4
HCM Lane LOS	-	C	B
HCM 95th %tile Q(veh)	-	0	1.4

Attachment C

Analysis Worksheets for Existing (2023) plus Project Conditions

Middletown Apartments TIS
 1: Lo Hi Way/US-50 EB Ramps & Forni Road

Existing PP
 Timing Plan: AM Peak Hour

Intersection	
Intersection Delay, s/veh	16.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	31	63	23	13	43	0	36	26	8	96	40	431
Future Vol, veh/h	31	63	23	13	43	0	36	26	8	96	40	431
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.86	0.75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	84	31	17	57	0	48	35	11	128	47	575
Number of Lanes	1	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	10.8	10.9	10.4	18.5
HCM LOS	B	B	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	51%	100%	0%	23%	0%	71%	0%
Vol Thru, %	37%	0%	73%	77%	100%	29%	0%
Vol Right, %	11%	0%	27%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	70	31	86	56	0	136	431
LT Vol	36	31	0	13	0	96	0
Through Vol	26	0	63	43	0	40	0
RT Vol	8	0	23	0	0	0	431
Lane Flow Rate	93	41	115	75	0	175	575
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.161	0.082	0.206	0.144	0	0.282	0.76
Departure Headway (Hd)	6.191	7.158	6.459	6.936	6.817	5.82	4.759
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	580	501	555	517	0	621	764
Service Time	4.23	4.9	4.201	4.682	4.564	3.52	2.459
HCM Lane V/C Ratio	0.16	0.082	0.207	0.145	0	0.282	0.753
HCM Control Delay	10.4	10.5	10.9	10.9	9.6	10.8	20.9
HCM Lane LOS	B	B	B	B	N	B	C
HCM 95th-tile Q	0.6	0.3	0.8	0.5	0	1.2	7.2

Middletown Apartments TIS
 2: Placerville Drive & US-50 WB Off Ramp

Existing PP
 Timing Plan: AM Peak Hour



Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	56	104	607	97
v/c Ratio	0.35	0.44	0.51	0.08
Control Delay	47.0	14.9	11.2	0.6
Queue Delay	0.0	0.1	55.3	0.1
Total Delay	47.0	15.0	66.4	0.6
Queue Length 50th (ft)	30	0	161	1
Queue Length 95th (ft)	63	30	264	2
Internal Link Dist (ft)	238		277	29
Turn Bay Length (ft)	85			
Base Capacity (vph)	499	521	1194	1667
Starvation Cap Reductn	0	0	0	910
Spillback Cap Reductn	0	46	748	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.11	0.22	1.36	0.13

Intersection Summary

HCM 6th Edition methodology does not support clustered intersections.

Middletown Apartments TIS
 3: Placerville Drive & US-50 WB On Ramp/Fair Lane

Existing PP
 Timing Plan: AM Peak Hour



Lane Group	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	55	16	88	615	7	89	637
v/c Ratio	0.32	0.07	0.31	0.44	0.06	0.09	0.40
Control Delay	46.1	0.7	35.5	1.9	45.2	11.3	0.8
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	46.1	0.7	35.6	2.0	45.2	11.3	0.8
Queue Length 50th (ft)	30	0	46	7	4	24	0
Queue Length 95th (ft)	62	0	87	75	16	43	0
Internal Link Dist (ft)	134			29		196	
Turn Bay Length (ft)		40	40		100		
Base Capacity (vph)	763	700	898	1742	403	1173	1583
Starvation Cap Reductn	0	0	198	235	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.02	0.13	0.41	0.02	0.08	0.40
Intersection Summary							

HCM 6th Edition methodology does not support clustered intersections.

Middletown Apartments TIS
 4: Placerville Drive & Green Valley Road/Ray Lawyer Drive

Existing PP
 Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	144	76	211	30	23	80	116	306	92	513	100
v/c Ratio	0.76	0.30	0.53	0.52	0.07	0.23	0.65	0.19	0.59	0.62	0.14
Control Delay	80.0	55.1	11.8	81.3	46.5	5.1	74.9	23.5	74.9	35.8	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.0	55.1	11.8	81.3	46.5	5.1	74.9	23.5	74.9	35.8	10.7
Queue Length 50th (ft)	118	58	0	23	16	0	96	78	76	339	13
Queue Length 95th (ft)	171	96	29	59	38	6	148	139	121	450	55
Internal Link Dist (ft)		124			295			221		192	
Turn Bay Length (ft)	50		50	65		65	190		145		145
Base Capacity (vph)	288	389	497	87	464	474	369	1581	441	897	800
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.20	0.42	0.34	0.05	0.17	0.31	0.19	0.21	0.57	0.13

Intersection Summary

Middletown Apartments TIS
 4: Placerville Drive & Green Valley Road/Ray Lawyer Drive

Existing PP
 Timing Plan: AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗↘		↖	↗	↘
Traffic Volume (veh/h)	108	57	158	25	17	60	89	241	38	69	385	87
Future Volume (veh/h)	108	57	158	25	17	60	89	241	38	69	385	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	144	76	211	30	23	80	116	262	44	92	513	100
Peak Hour Factor	0.75	0.75	0.75	0.84	0.75	0.75	0.77	0.92	0.86	0.75	0.75	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	271	298	252	214	298	252	147	1884	312	119	1126	954
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.08	0.62	0.62	0.07	0.60	0.60
Sat Flow, veh/h	1291	1870	1585	1092	1870	1585	1781	3051	506	1781	1870	1585
Grp Volume(v), veh/h	144	76	211	30	23	80	116	151	155	92	513	100
Grp Sat Flow(s),veh/h/ln	1291	1870	1585	1092	1870	1585	1781	1777	1779	1781	1870	1585
Q Serve(g_s), s	9.8	3.3	11.8	2.3	1.0	4.1	5.8	3.2	3.3	4.6	13.8	2.5
Cycle Q Clear(g_c), s	10.7	3.3	11.8	5.5	1.0	4.1	5.8	3.2	3.3	4.6	13.8	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		1.00
Lane Grp Cap(c), veh/h	271	298	252	214	298	252	147	1097	1099	119	1126	954
V/C Ratio(X)	0.53	0.26	0.84	0.14	0.08	0.32	0.79	0.14	0.14	0.77	0.46	0.10
Avail Cap(c_a), veh/h	433	532	451	410	634	538	507	1097	1099	604	1126	954
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	33.7	37.3	36.1	32.7	34.0	41.1	7.3	7.3	42.0	10.0	7.7
Incr Delay (d2), s/veh	0.6	0.2	2.8	0.1	0.0	0.3	3.5	0.3	0.3	4.0	1.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	1.5	4.7	0.6	0.4	1.6	2.7	1.2	1.2	2.1	5.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.9	33.8	40.1	36.2	32.8	34.3	44.7	7.6	7.6	46.0	11.3	8.0
LnGrp LOS	D	C	D	D	C	C	D	A	A	D	B	A
Approach Vol, veh/h		431			133			422			705	
Approach Delay, s/veh		38.3			34.5			17.8			15.4	
Approach LOS		D			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.7	61.6		19.1	12.1	60.1		19.1				
Change Period (Y+Rc), s	4.6	5.1		4.6	4.6	5.1		4.6				
Max Green Setting (Gmax), s	31.0	55.0		31.0	26.0	55.0		26.0				
Max Q Clear Time (g_c+I1), s	6.6	5.3		7.5	7.8	15.8		13.8				
Green Ext Time (p_c), s	0.1	1.2		0.2	0.1	2.4		0.7				
Intersection Summary												
HCM 6th Ctrl Delay				23.3								
HCM 6th LOS				C								

Middletown Apartments TIS
5: Placerville Drive & Pierroz Road

Existing PP
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	7.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↘
Traffic Vol, veh/h	178	204	239	10	7	312
Future Vol, veh/h	178	204	239	10	7	312
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	55	0	65
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	237	272	319	13	9	416

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	332	0	-	0	1065 319
Stage 1	-	-	-	-	319 -
Stage 2	-	-	-	-	746 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1227	-	-	-	246 722
Stage 1	-	-	-	-	737 -
Stage 2	-	-	-	-	469 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1227	-	-	-	199 722
Mov Cap-2 Maneuver	-	-	-	-	199 -
Stage 1	-	-	-	-	595 -
Stage 2	-	-	-	-	469 -

Approach	EB	WB	SB
HCM Control Delay, s	4	0	16.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1227	-	-	-	199	722
HCM Lane V/C Ratio	0.193	-	-	-	0.047	0.576
HCM Control Delay (s)	8.6	-	-	-	24	16.5
HCM Lane LOS	A	-	-	-	C	C
HCM 95th %tile Q(veh)	0.7	-	-	-	0.1	3.7

Middletown Apartments TIS
6: Pierroz Road & Cold Springs Road

Existing PP
Timing Plan: AM Peak Hour

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	169	96	217	49	52	127
Future Vol, veh/h	169	96	217	49	52	127
Peak Hour Factor	0.75	0.75	0.89	0.75	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	225	128	244	65	68	167
Number of Lanes	1	1	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10.4	12.3	10.3
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	0%	100%	0%
Vol Thru, %	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	127	169	96	217	49
LT Vol	52	0	0	0	217	0
Through Vol	0	0	169	0	0	49
RT Vol	0	127	0	96	0	0
Lane Flow Rate	68	167	225	128	244	65
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.128	0.257	0.353	0.175	0.417	0.103
Departure Headway (Hd)	6.74	5.527	5.641	4.933	6.154	5.649
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	533	652	640	728	588	636
Service Time	4.465	3.252	3.362	2.654	3.876	3.37
HCM Lane V/C Ratio	0.128	0.256	0.352	0.176	0.415	0.102
HCM Control Delay	10.5	10.2	11.4	8.7	13.2	9
HCM Lane LOS	B	B	B	A	B	A
HCM 95th-tile Q	0.4	1	1.6	0.6	2	0.3

Middletown Apartments TIS
 7: Cold Springs Road & Middletown Road & Sleepy Hollow Court

Existing PP
 Timing Plan: AM Peak Hour

Intersection												
Intersection Delay, s/veh	11.5											
Intersection LOS	B											

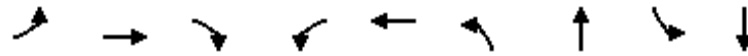
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕			↕	↕		↕	
Traffic Vol, veh/h	8	145	121	64	202	1	52	6	37	0	2	5
Future Vol, veh/h	8	145	121	64	202	1	52	6	37	0	2	5
Peak Hour Factor	0.75	0.75	0.75	0.76	0.75	0.75	0.81	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	193	161	84	269	1	64	8	49	0	3	7
Number of Lanes	0	1	1	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	2
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	2	2	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	2	1	1	2
HCM Control Delay	9.5	14.3	9.8	9.2
HCM LOS	A	B	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	90%	0%	5%	0%	24%	0%
Vol Thru, %	10%	0%	95%	0%	76%	29%
Vol Right, %	0%	100%	0%	100%	0%	71%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	58	37	153	121	267	7
LT Vol	52	0	8	0	64	0
Through Vol	6	0	145	0	202	2
RT Vol	0	37	0	121	1	5
Lane Flow Rate	72	49	204	161	355	9
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.134	0.076	0.3	0.204	0.527	0.016
Departure Headway (Hd)	6.681	5.517	5.289	4.557	5.347	6.142
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	533	643	675	781	671	586
Service Time	4.473	3.308	3.053	2.321	3.411	4.142
HCM Lane V/C Ratio	0.135	0.076	0.302	0.206	0.529	0.015
HCM Control Delay	10.5	8.8	10.3	8.5	14.3	9.2
HCM Lane LOS	B	A	B	A	B	A
HCM 95th-tile Q	0.5	0.2	1.3	0.8	3.1	0

Middletown Apartments TIS
 8: Home Depot/Cold Springs Road & Placerville Drive

Existing PP
 Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	24	156	64	52	271	92	52	176	71
v/c Ratio	0.25	0.25	0.11	0.44	0.41	0.59	0.09	0.73	0.11
Control Delay	66.3	33.5	4.6	70.2	31.6	71.9	13.7	71.1	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.3	33.5	4.6	70.2	31.6	71.9	13.7	71.1	19.1
Queue Length 50th (ft)	20	95	0	42	161	75	7	141	23
Queue Length 95th (ft)	43	133	11	83	203	135	28	185	48
Internal Link Dist (ft)		421			370		173		145
Turn Bay Length (ft)	140		95	110		70		85	
Base Capacity (vph)	298	627	586	298	660	312	581	298	672
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	0.08	0.25	0.11	0.17	0.41	0.29	0.09	0.59	0.11

Intersection Summary

Middletown Apartments TIS
 8: Home Depot/Cold Springs Road & Placerville Drive

Existing PP
 Timing Plan: AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	18	117	48	45	135	68	83	9	30	132	30	26
Future Volume (veh/h)	18	117	48	45	135	68	83	9	30	132	30	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	156	64	52	180	91	92	12	40	176	40	31
Peak Hour Factor	0.75	0.75	0.75	0.86	0.75	0.75	0.90	0.75	0.75	0.75	0.75	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	49	650	551	73	423	214	116	129	429	206	381	295
Arrive On Green	0.03	0.35	0.35	0.04	0.36	0.36	0.07	0.34	0.34	0.12	0.39	0.39
Sat Flow, veh/h	1781	1870	1585	1781	1171	592	1781	379	1264	1781	977	757
Grp Volume(v), veh/h	24	156	64	52	0	271	92	0	52	176	0	71
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1764	1781	0	1643	1781	0	1734
Q Serve(g_s), s	1.6	7.2	3.3	3.5	0.0	14.0	6.2	0.0	2.6	11.7	0.0	3.1
Cycle Q Clear(g_c), s	1.6	7.2	3.3	3.5	0.0	14.0	6.2	0.0	2.6	11.7	0.0	3.1
Prop In Lane	1.00		1.00	1.00		0.34	1.00		0.77	1.00		0.44
Lane Grp Cap(c), veh/h	49	650	551	73	0	637	116	0	558	206	0	676
V/C Ratio(X)	0.49	0.24	0.12	0.71	0.00	0.43	0.79	0.00	0.09	0.86	0.00	0.11
Avail Cap(c_a), veh/h	310	650	551	310	0	637	324	0	558	310	0	676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.9	28.0	26.8	57.2	0.0	29.1	55.7	0.0	27.2	52.4	0.0	23.4
Incr Delay (d2), s/veh	2.8	0.9	0.4	4.7	0.0	2.1	4.6	0.0	0.3	13.9	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.4	1.3	1.7	0.0	6.3	2.9	0.0	1.1	6.0	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.7	28.9	27.2	61.9	0.0	31.2	60.3	0.0	27.5	66.3	0.0	23.8
LnGrp LOS	E	C	C	E	A	C	E	A	C	E	A	C
Approach Vol, veh/h		244			323			144			247	
Approach Delay, s/veh		31.6			36.1			48.4			54.1	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	47.1	12.5	51.7	7.9	48.7	18.5	45.6				
Change Period (Y+Rc), s	4.6	5.1	4.6	4.6	4.6	5.1	4.6	4.6				
Max Green Setting (Gmax), s	21.0	42.0	22.0	41.0	21.0	42.0	21.0	41.0				
Max Q Clear Time (g_c+I1), s	5.5	9.2	8.2	5.1	3.6	16.0	13.7	4.6				
Green Ext Time (p_c), s	0.0	0.7	0.1	0.2	0.0	1.1	0.3	0.2				
Intersection Summary												
HCM 6th Ctrl Delay			41.5									
HCM 6th LOS			D									

Middletown Apartments TIS
 9: Placerville Drive & US-50 WB Off Ramp

Existing PP
 Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	2.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑			↑
Traffic Vol, veh/h	1	151	101	0	0	263
Future Vol, veh/h	1	151	101	0	0	263
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	201	135	0	0	351

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	486	135	0	-	-	-
Stage 1	135	-	-	-	-	-
Stage 2	351	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	540	914	-	0	0	-
Stage 1	891	-	-	0	0	-
Stage 2	713	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	540	914	-	-	-	-
Mov Cap-2 Maneuver	540	-	-	-	-	-
Stage 1	891	-	-	-	-	-
Stage 2	713	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	-	540	914
HCM Lane V/C Ratio	-	0.002	0.22
HCM Control Delay (s)	-	11.7	10
HCM Lane LOS	-	B	B
HCM 95th %tile Q(veh)	-	0	0.8

Middletown Apartments TIS
 10: Driveway (West) & Middletown Road

Existing PP
 Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	182	27	5	0	0	0
Future Vol, veh/h	182	27	5	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	198	29	5	0	0	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	227	0	223
Stage 1	-	-	-	-	213
Stage 2	-	-	-	-	10
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1341	-	765
Stage 1	-	-	-	-	823
Stage 2	-	-	-	-	1013
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1341	-	762
Mov Cap-2 Maneuver	-	-	-	-	762
Stage 1	-	-	-	-	823
Stage 2	-	-	-	-	1009

Approach	EB	WB	NB
HCM Control Delay, s	0	7.7	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1341	-
HCM Lane V/C Ratio	-	-	-	0.004	-
HCM Control Delay (s)	0	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

Middletown Apartments TIS
 11: Driveway (East) & Middletown Road

Existing PP
 Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	3.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	155	0	0	0	77	14
Future Vol, veh/h	155	0	0	0	77	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	168	0	0	0	84	15

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	169 168
Stage 1	-	-	-	-	168 -
Stage 2	-	-	-	-	1 -
Critical Hdwy	-	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	-	0	0	-	821 876
Stage 1	-	0	0	-	862 -
Stage 2	-	0	0	-	1022 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	821 876
Mov Cap-2 Maneuver	-	-	-	-	821 -
Stage 1	-	-	-	-	862 -
Stage 2	-	-	-	-	1022 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	829	-	-
HCM Lane V/C Ratio	0.119	-	-
HCM Control Delay (s)	9.9	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-

Middletown Apartments TIS
 1: Lo Hi Way/US-50 EB Ramps & Forni Road

Existing PP
 Timing Plan: PM Peak Hour

Intersection	
Intersection Delay, s/veh	34.8
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	80	38	40	20	109	27	66	56	24	36	99	604
Future Vol, veh/h	80	38	40	20	109	27	66	56	24	36	99	604
Peak Hour Factor	0.75	0.75	0.91	0.77	0.75	0.75	0.92	0.88	0.75	0.75	0.75	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	107	51	44	26	145	36	72	64	32	48	132	636
Number of Lanes	1	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	12.8	14.2	14	49.7
HCM LOS	B	B	B	E

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	45%	100%	0%	16%	0%	27%	0%
Vol Thru, %	38%	0%	49%	84%	0%	73%	0%
Vol Right, %	16%	0%	51%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	146	80	78	129	27	135	604
LT Vol	66	80	0	20	0	36	0
Through Vol	56	0	38	109	0	99	0
RT Vol	24	0	40	0	27	0	604
Lane Flow Rate	167	107	95	171	36	180	636
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.339	0.243	0.192	0.369	0.069	0.327	1.005
Departure Headway (Hd)	7.281	8.208	7.323	7.747	6.947	6.537	5.691
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	494	437	489	464	515	553	642
Service Time	5.327	5.96	5.074	5.497	4.696	4.237	3.391
HCM Lane V/C Ratio	0.338	0.245	0.194	0.369	0.07	0.325	0.991
HCM Control Delay	14	13.6	11.8	15	10.2	12.4	60.3
HCM Lane LOS	B	B	B	B	B	B	F
HCM 95th-tile Q	1.5	0.9	0.7	1.7	0.2	1.4	15.6

Middletown Apartments TIS
 2: Placerville Drive & US-50 WB Off Ramp

Existing PP
 Timing Plan: PM Peak Hour



Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	64	127	873	187
v/c Ratio	0.27	0.39	0.79	0.17
Control Delay	43.5	11.3	22.9	0.9
Queue Delay	0.0	0.1	58.4	0.1
Total Delay	43.5	11.5	81.3	1.0
Queue Length 50th (ft)	36	0	381	3
Queue Length 95th (ft)	71	30	707	4
Internal Link Dist (ft)	238		277	29
Turn Bay Length (ft)	85			
Base Capacity (vph)	462	507	1112	1610
Starvation Cap Reductn	0	0	0	686
Spillback Cap Reductn	0	61	819	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.14	0.28	2.98	0.20
Intersection Summary				

HCM 6th Edition methodology does not support clustered intersections.

Middletown Apartments TIS
 3: Placerville Drive & US-50 WB On Ramp/Fair Lane

Existing PP
 Timing Plan: PM Peak Hour



Lane Group	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	110	28	188	874	3	167	714
v/c Ratio	0.53	0.11	0.50	0.62	0.03	0.19	0.45
Control Delay	53.3	1.0	35.5	3.7	50.5	16.8	0.9
Queue Delay	0.0	0.0	0.3	0.4	0.0	0.0	0.0
Total Delay	53.3	1.0	35.8	4.0	50.5	16.8	0.9
Queue Length 50th (ft)	65	0	107	17	2	57	0
Queue Length 95th (ft)	113	0	165	361	11	98	0
Internal Link Dist (ft)	134			29		196	
Turn Bay Length (ft)		40	40		100		
Base Capacity (vph)	704	652	844	1637	373	1085	1583
Starvation Cap Reductn	0	0	277	286	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.04	0.33	0.65	0.01	0.15	0.45
Intersection Summary							

HCM 6th Edition methodology does not support clustered intersections.

Middletown Apartments TIS
 4: Placerville Drive & Green Valley Road/Ray Lawyer Drive

Existing PP
 Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	201	72	182	73	92	251	219	537	160	417	124
v/c Ratio	0.92	0.23	0.44	1.52	0.24	0.48	0.85	0.40	0.76	0.62	0.20
Control Delay	106.1	58.2	10.7	350.2	54.2	9.1	91.8	35.1	87.8	46.0	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	106.1	58.2	10.7	350.2	54.2	9.1	91.8	35.1	87.8	46.0	16.0
Queue Length 50th (ft)	203	64	0	~103	79	0	217	201	159	350	34
Queue Length 95th (ft)	#271	96	36	#202	113	26	#330	272	192	473	86
Internal Link Dist (ft)		124			295			221		192	
Turn Bay Length (ft)	50		50	65		65	190		145		145
Base Capacity (vph)	221	316	420	48	378	521	301	1349	358	731	665
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.23	0.43	1.52	0.24	0.48	0.73	0.40	0.45	0.57	0.19

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.

Middletown Apartments TIS
 4: Placerville Drive & Green Valley Road/Ray Lawyer Drive

Existing PP
 Timing Plan: PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↖	↗	↖	↖	↕		↖	↗	↖
Traffic Volume (veh/h)	151	54	140	62	69	188	197	428	50	120	371	118
Future Volume (veh/h)	151	54	140	62	69	188	197	428	50	120	371	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	201	72	182	73	92	251	219	470	67	160	417	124
Peak Hour Factor	0.75	0.75	0.77	0.85	0.75	0.75	0.90	0.91	0.75	0.75	0.89	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	267	439	372	294	439	372	250	1654	235	191	928	786
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.14	0.53	0.53	0.11	0.50	0.50
Sat Flow, veh/h	1038	1870	1585	1126	1870	1585	1781	3124	443	1781	1870	1585
Grp Volume(v), veh/h	201	72	182	73	92	251	219	266	271	160	417	124
Grp Sat Flow(s),veh/h/ln	1038	1870	1585	1126	1870	1585	1781	1777	1791	1781	1870	1585
Q Serve(g_s), s	21.4	3.4	11.0	6.1	4.4	16.0	13.4	9.2	9.3	9.8	16.0	4.7
Cycle Q Clear(g_c), s	25.8	3.4	11.0	9.5	4.4	16.0	13.4	9.2	9.3	9.8	16.0	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	267	439	372	294	439	372	250	941	948	191	928	786
V/C Ratio(X)	0.75	0.16	0.49	0.25	0.21	0.68	0.88	0.28	0.29	0.84	0.45	0.16
Avail Cap(c_a), veh/h	267	439	372	345	523	443	418	941	948	498	928	786
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	33.8	36.7	37.6	34.2	38.6	46.7	14.4	14.5	48.6	18.1	15.3
Incr Delay (d2), s/veh	10.2	0.1	0.4	0.2	0.1	2.0	5.7	0.8	0.8	3.7	1.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	1.6	4.3	1.7	2.0	6.4	6.3	3.8	3.9	4.5	7.2	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.8	33.8	37.1	37.7	34.3	40.6	52.4	15.2	15.2	52.3	19.7	15.7
LnGrp LOS	D	C	D	D	C	D	D	B	B	D	B	B
Approach Vol, veh/h		455			416			756			701	
Approach Delay, s/veh		44.4			38.7			26.0			26.4	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.5	63.8		30.6	20.2	60.1		30.6				
Change Period (Y+Rc), s	4.6	5.1		4.6	4.6	5.1		4.6				
Max Green Setting (Gmax), s	31.0	55.0		31.0	26.0	55.0		26.0				
Max Q Clear Time (g_c+I1), s	11.8	11.3		18.0	15.4	18.0		27.8				
Green Ext Time (p_c), s	0.2	2.2		0.8	0.2	1.9		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				32.0								
HCM 6th LOS				C								

Intersection						
Int Delay, s/veh	6.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↘
Traffic Vol, veh/h	402	375	326	21	6	241
Future Vol, veh/h	402	375	326	21	6	241
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	55	0	65
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	536	500	435	28	8	321

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	463	0	0 2007 435
Stage 1	-	-	- 435 -
Stage 2	-	-	- 1572 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1098	-	- 65 621
Stage 1	-	-	- 653 -
Stage 2	-	-	- 188 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1098	-	- 33 621
Mov Cap-2 Maneuver	-	-	- 33 -
Stage 1	-	-	- 334 -
Stage 2	-	-	- 188 -

Approach	EB	WB	SB
HCM Control Delay, s	5.9	0	19.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1098	-	-	-	33	621
HCM Lane V/C Ratio	0.488	-	-	-	0.242	0.517
HCM Control Delay (s)	11.4	-	-	-	146	16.8
HCM Lane LOS	B	-	-	-	F	C
HCM 95th %tile Q(veh)	2.8	-	-	-	0.8	3

Middletown Apartments TIS
6: Pierroz Road & Cold Springs Road

Existing PP
Timing Plan: PM Peak Hour

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	138	79	164	146	128	297
Future Vol, veh/h	138	79	164	146	128	297
Peak Hour Factor	0.75	0.75	0.82	0.75	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	184	105	200	195	149	345
Number of Lanes	1	1	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	11.7	13.3	14.5
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	0%	100%	0%
Vol Thru, %	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	128	297	138	79	164	146
LT Vol	128	0	0	0	164	0
Through Vol	0	0	138	0	0	146
RT Vol	0	297	0	79	0	0
Lane Flow Rate	149	345	184	105	200	195
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.287	0.549	0.337	0.172	0.385	0.347
Departure Headway (Hd)	6.937	5.723	6.6	5.886	6.922	6.413
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	518	629	543	607	520	559
Service Time	4.688	3.474	4.358	3.644	4.676	4.167
HCM Lane V/C Ratio	0.288	0.548	0.339	0.173	0.385	0.349
HCM Control Delay	12.5	15.3	12.7	9.9	14	12.6
HCM Lane LOS	B	C	B	A	B	B
HCM 95th-tile Q	1.2	3.3	1.5	0.6	1.8	1.5

Middletown Apartments TIS
 7: Cold Springs Road & Middletown Road & Sleepy Hollow Court

Existing PP
 Timing Plan: PM Peak Hour

Intersection												
Intersection Delay, s/veh	14.2											
Intersection LOS	B											

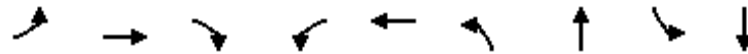
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕			↕	↕		↕	
Traffic Vol, veh/h	6	281	139	38	143	0	131	6	81	2	16	12
Future Vol, veh/h	6	281	139	38	143	0	131	6	81	2	16	12
Peak Hour Factor	0.75	0.75	0.75	0.81	0.75	0.75	0.84	0.75	0.78	0.75	0.75	0.75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	375	185	47	191	0	156	8	104	3	21	16
Number of Lanes	0	1	1	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	2
HCM Control Delay	15.5	13.9	12.1	10.7
HCM LOS	C	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	96%	0%	2%	0%	21%	7%
Vol Thru, %	4%	0%	98%	0%	79%	53%
Vol Right, %	0%	100%	0%	100%	0%	40%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	137	81	287	139	181	30
LT Vol	131	0	6	0	38	2
Through Vol	6	0	281	0	143	16
RT Vol	0	81	0	139	0	12
Lane Flow Rate	164	104	383	185	238	40
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.328	0.173	0.629	0.268	0.418	0.078
Departure Headway (Hd)	7.201	6.002	5.917	5.198	6.331	7.006
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	498	596	608	689	568	509
Service Time	4.953	3.753	3.66	2.94	4.379	5.078
HCM Lane V/C Ratio	0.329	0.174	0.63	0.269	0.419	0.079
HCM Control Delay	13.5	10	18.2	9.8	13.9	10.7
HCM Lane LOS	B	A	C	A	B	B
HCM 95th-tile Q	1.4	0.6	4.4	1.1	2.1	0.3

Middletown Apartments TIS
 8: Home Depot/Cold Springs Road & Placerville Drive

Existing PP
 Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	47	360	85	49	508	88	79	191	75
v/c Ratio	0.42	0.58	0.15	0.43	0.84	0.58	0.14	0.76	0.11
Control Delay	69.9	40.7	8.2	70.0	52.5	71.9	14.6	72.7	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.9	40.7	8.2	70.0	52.5	71.9	14.6	72.7	13.0
Queue Length 50th (ft)	39	253	2	40	385	73	16	154	14
Queue Length 95th (ft)	67	298	39	80	428	122	40	199	42
Internal Link Dist (ft)		421			370		173		145
Turn Bay Length (ft)	140		95	110		70		85	
Base Capacity (vph)	296	623	583	296	603	310	596	296	673
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	0.16	0.58	0.15	0.17	0.84	0.28	0.13	0.65	0.11

Intersection Summary

Middletown Apartments TIS
8: Home Depot/Cold Springs Road & Placerville Drive

Existing PP
Timing Plan: PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	270	75	42	229	152	75	20	45	143	21	36
Future Volume (veh/h)	35	270	75	42	229	152	75	20	45	143	21	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	360	85	49	305	203	88	27	52	191	27	48
Peak Hour Factor	0.75	0.75	0.88	0.85	0.75	0.75	0.85	0.75	0.87	0.75	0.79	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	70	645	547	71	362	241	111	192	370	220	240	427
Arrive On Green	0.04	0.34	0.34	0.04	0.35	0.35	0.06	0.34	0.34	0.12	0.40	0.40
Sat Flow, veh/h	1781	1870	1585	1781	1048	697	1781	572	1101	1781	604	1073
Grp Volume(v), veh/h	47	360	85	49	0	508	88	0	79	191	0	75
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1745	1781	0	1672	1781	0	1677
Q Serve(g_s), s	3.2	19.0	4.5	3.3	0.0	32.7	5.9	0.0	4.0	12.8	0.0	3.4
Cycle Q Clear(g_c), s	3.2	19.0	4.5	3.3	0.0	32.7	5.9	0.0	4.0	12.8	0.0	3.4
Prop In Lane	1.00		1.00	1.00		0.40	1.00		0.66	1.00		0.64
Lane Grp Cap(c), veh/h	70	645	547	71	0	603	111	0	563	220	0	667
V/C Ratio(X)	0.67	0.56	0.16	0.69	0.00	0.84	0.79	0.00	0.14	0.87	0.00	0.11
Avail Cap(c_a), veh/h	307	645	547	307	0	603	322	0	563	307	0	667
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.7	32.4	27.6	57.7	0.0	36.8	56.3	0.0	28.1	52.4	0.0	23.1
Incr Delay (d2), s/veh	4.1	3.5	0.6	4.4	0.0	13.5	4.7	0.0	0.5	17.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	9.2	1.8	1.6	0.0	16.1	2.8	0.0	1.7	6.8	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.9	35.8	28.2	62.1	0.0	50.3	61.0	0.0	28.7	69.4	0.0	23.5
LnGrp LOS	E	D	C	E	A	D	E	A	C	E	A	C
Approach Vol, veh/h		492			557			167			266	
Approach Delay, s/veh		37.0			51.3			45.7			56.4	
Approach LOS		D			D			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.5	47.1	12.2	53.1	9.4	47.2	19.7	45.6				
Change Period (Y+Rc), s	4.6	5.1	4.6	4.6	4.6	5.1	4.6	4.6				
Max Green Setting (Gmax), s	21.0	42.0	22.0	41.0	21.0	42.0	21.0	41.0				
Max Q Clear Time (g_c+I1), s	5.3	21.0	7.9	5.4	5.2	34.7	14.8	6.0				
Green Ext Time (p_c), s	0.0	1.5	0.1	0.3	0.0	1.4	0.3	0.3				
Intersection Summary												
HCM 6th Ctrl Delay			46.9									
HCM 6th LOS			D									

Middletown Apartments TIS
 9: Placerville Drive & US-50 WB Off Ramp

Existing PP
 Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	3.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑			↑
Traffic Vol, veh/h	4	228	179	0	0	461
Future Vol, veh/h	4	228	179	0	0	461
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	84	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	304	213	0	0	615

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	828	213	0	-	-	-
Stage 1	213	-	-	-	-	-
Stage 2	615	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	341	827	-	0	0	-
Stage 1	823	-	-	0	0	-
Stage 2	539	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	341	827	-	-	-	-
Mov Cap-2 Maneuver	341	-	-	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	539	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	-	341	827
HCM Lane V/C Ratio	-	0.016	0.368
HCM Control Delay (s)	-	15.7	11.9
HCM Lane LOS	-	C	B
HCM 95th %tile Q(veh)	-	0	1.7

Middletown Apartments TIS
 10: Driveway (West) & Middletown Road

Existing PP
 Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	364	88	16	0	0	0
Future Vol, veh/h	364	88	16	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	396	96	17	0	0	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	492	0	478
Stage 1	-	-	-	-	444
Stage 2	-	-	-	-	34
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1071	-	546
Stage 1	-	-	-	-	646
Stage 2	-	-	-	-	988
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1071	-	537
Mov Cap-2 Maneuver	-	-	-	-	537
Stage 1	-	-	-	-	646
Stage 2	-	-	-	-	972

Approach	EB	WB	NB
HCM Control Delay, s	0	8.4	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1071	-
HCM Lane V/C Ratio	-	-	-	0.016	-
HCM Control Delay (s)	0	-	-	8.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0.1	-

Middletown Apartments TIS
 11: Driveway (East) & Middletown Road

Existing PP
 Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	276	0	0	0	53	9
Future Vol, veh/h	276	0	0	0	53	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	300	0	0	0	58	10

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	301 300
Stage 1	-	-	-	-	300 -
Stage 2	-	-	-	-	1 -
Critical Hdwy	-	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	-	0	0	-	691 740
Stage 1	-	0	0	-	752 -
Stage 2	-	0	0	-	1022 -
Platoon blocked, %	-				-
Mov Cap-1 Maneuver	-	-	-	-	691 740
Mov Cap-2 Maneuver	-	-	-	-	691 -
Stage 1	-	-	-	-	752 -
Stage 2	-	-	-	-	1022 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	698	-	-
HCM Lane V/C Ratio	0.097	-	-
HCM Control Delay (s)	10.7	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-

Attachment D

Analysis Worksheets for Cumulative (2043) Conditions

Middletown Apartments TIS
 1: Lo Hi Way/US-50 EB Ramps & Forni Road

Cumulative
 Timing Plan: AM Peak Hour

Intersection	
Intersection Delay, s/veh	17.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱			↰	↱		↕			↰	↱
Traffic Vol, veh/h	40	80	30	20	120	0	40	30	10	100	40	510
Future Vol, veh/h	40	80	30	20	120	0	40	30	10	100	40	510
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	87	33	22	130	0	43	33	11	109	43	554
Number of Lanes	1	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	11.1	12.5	10.9	20.4
HCM LOS	B	B	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	50%	100%	0%	14%	0%	71%	0%
Vol Thru, %	38%	0%	73%	86%	100%	29%	0%
Vol Right, %	12%	0%	27%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	40	110	140	0	140	510
LT Vol	40	40	0	20	0	100	0
Through Vol	30	0	80	120	0	40	0
RT Vol	10	0	30	0	0	0	510
Lane Flow Rate	87	43	120	152	0	152	554
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.159	0.088	0.22	0.292	0	0.258	0.775
Departure Headway (Hd)	6.563	7.323	6.62	6.904	6.831	6.1	5.032
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	545	489	542	519	0	589	721
Service Time	4.621	5.079	4.375	4.659	4.586	3.837	2.769
HCM Lane V/C Ratio	0.16	0.088	0.221	0.293	0	0.258	0.768
HCM Control Delay	10.9	10.8	11.2	12.5	9.6	11	23
HCM Lane LOS	B	B	B	B	N	B	C
HCM 95th-tile Q	0.6	0.3	0.8	1.2	0	1	7.5

Middletown Apartments TIS
 2: Placerville Drive & US-50 WB Off Ramp

Cumulative
 Timing Plan: AM Peak Hour



Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	54	87	989	87
v/c Ratio	0.35	0.40	0.82	0.07
Control Delay	47.3	15.4	20.9	0.6
Queue Delay	0.0	0.0	51.9	0.1
Total Delay	47.3	15.5	72.8	0.7
Queue Length 50th (ft)	29	0	357	1
Queue Length 95th (ft)	74	46	#762	3
Internal Link Dist (ft)	238		277	29
Turn Bay Length (ft)	85			
Base Capacity (vph)	502	511	1199	1627
Starvation Cap Reductn	0	0	0	939
Spillback Cap Reductn	0	34	648	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.11	0.18	1.79	0.13

Intersection Summary

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

HCM 6th Edition methodology does not support clustered intersections.

Middletown Apartments TIS
 3: Placerville Drive & US-50 WB On Ramp/Fair Lane

Cumulative
 Timing Plan: AM Peak Hour



Lane Group	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	54	22	76	576	11	120	1043
v/c Ratio	0.32	0.10	0.27	0.41	0.09	0.11	0.66
Control Delay	46.2	0.9	33.5	0.9	45.4	11.0	2.2
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Total Delay	46.2	0.9	33.6	1.3	45.4	11.0	2.2
Queue Length 50th (ft)	29	0	42	3	6	31	0
Queue Length 95th (ft)	75	0	m63	m46	26	66	0
Internal Link Dist (ft)	134			29		196	
Turn Bay Length (ft)		40	40		100		
Base Capacity (vph)	764	702	896	1749	405	1180	1583
Starvation Cap Reductn	0	0	193	654	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.03	0.11	0.53	0.03	0.10	0.66

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Edition methodology does not support clustered intersections.

Middletown Apartments TIS
 4: Placerville Drive & Green Valley Road/Ray Lawyer Drive

Cumulative
 Timing Plan: AM Peak Hour



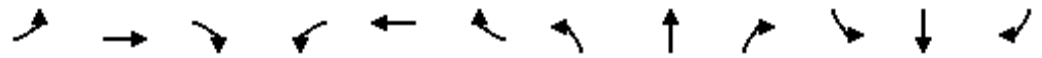
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	120	109	217	54	65	65	120	358	65	402	87
v/c Ratio	0.73	0.48	0.65	1.00	0.15	0.15	0.68	0.23	0.52	0.53	0.13
Control Delay	83.1	62.7	26.6	177.4	45.9	1.9	78.9	23.9	77.8	35.3	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.1	62.7	26.6	177.4	45.9	1.9	78.9	23.9	77.8	35.3	9.0
Queue Length 50th (ft)	103	90	48	48	46	0	103	97	56	264	7
Queue Length 95th (ft)	180	159	139	#158	99	8	181	157	114	435	48
Internal Link Dist (ft)		124			295			221		192	
Turn Bay Length (ft)	50		50	65		65	190		145		145
Base Capacity (vph)	256	358	432	54	427	445	340	1579	406	827	743
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.30	0.50	1.00	0.15	0.15	0.35	0.23	0.16	0.49	0.12

Intersection Summary

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

Middletown Apartments TIS
 4: Placerville Drive & Green Valley Road/Ray Lawyer Drive

Cumulative
 Timing Plan: AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↑	↗	↖	↑↔		↖	↑	↗
Traffic Volume (veh/h)	110	100	200	50	60	60	110	280	50	60	370	80
Future Volume (veh/h)	110	100	200	50	60	60	110	280	50	60	370	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	109	217	54	65	65	120	304	54	65	402	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	246	305	259	196	305	259	152	1900	333	94	1116	946
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.09	0.63	0.63	0.05	0.60	0.60
Sat Flow, veh/h	1260	1870	1585	1054	1870	1585	1781	3021	530	1781	1870	1585
Grp Volume(v), veh/h	120	109	217	54	65	65	120	177	181	65	402	87
Grp Sat Flow(s),veh/h/ln	1260	1870	1585	1054	1870	1585	1781	1777	1775	1781	1870	1585
Q Serve(g_s), s	8.4	4.8	12.2	4.4	2.8	3.3	6.1	3.8	3.9	3.3	10.2	2.2
Cycle Q Clear(g_c), s	11.2	4.8	12.2	9.2	2.8	3.3	6.1	3.8	3.9	3.3	10.2	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	246	305	259	196	305	259	152	1117	1116	94	1116	946
V/C Ratio(X)	0.49	0.36	0.84	0.28	0.21	0.25	0.79	0.16	0.16	0.69	0.36	0.09
Avail Cap(c_a), veh/h	395	527	447	378	629	533	502	1117	1116	599	1116	946
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	34.3	37.4	38.4	33.4	33.7	41.4	7.1	7.1	42.9	9.6	7.9
Incr Delay (d2), s/veh	0.6	0.3	2.8	0.3	0.1	0.2	3.5	0.3	0.3	3.4	0.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	2.2	4.9	1.1	1.3	1.3	2.8	1.4	1.4	1.5	4.1	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.8	34.5	40.2	38.6	33.6	33.8	44.9	7.4	7.4	46.3	10.5	8.1
LnGrp LOS	D	C	D	D	C	C	D	A	A	D	B	A
Approach Vol, veh/h		446			184			478			554	
Approach Delay, s/veh		38.4			35.2			16.8			14.3	
Approach LOS		D			D			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	63.1		19.7	12.4	60.1		19.7				
Change Period (Y+Rc), s	4.6	5.1		4.6	4.6	5.1		4.6				
Max Green Setting (Gmax), s	31.0	55.0		31.0	26.0	55.0		26.0				
Max Q Clear Time (g_c+I1), s	5.3	5.9		11.2	8.1	12.2		14.2				
Green Ext Time (p_c), s	0.1	1.4		0.4	0.1	1.8		0.8				
Intersection Summary												
HCM 6th Ctrl Delay											23.8	
HCM 6th LOS											C	

Middletown Apartments TIS
5: Placerville Drive & Pierroz Road

Cumulative
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	5.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↗	↖	↖	↖
Traffic Vol, veh/h	230	210	240	10	10	290
Future Vol, veh/h	230	210	240	10	10	290
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	55	0	65
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	250	228	261	11	11	315

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	272	0	-	0	989
Stage 1	-	-	-	-	261
Stage 2	-	-	-	-	728
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1291	-	-	-	778
Stage 1	-	-	-	-	783
Stage 2	-	-	-	-	478
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1291	-	-	-	778
Mov Cap-2 Maneuver	-	-	-	-	221
Stage 1	-	-	-	-	631
Stage 2	-	-	-	-	478

Approach	EB	WB	SB
HCM Control Delay, s	4.4	0	13
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1291	-	-	-	221	778
HCM Lane V/C Ratio	0.194	-	-	-	0.049	0.405
HCM Control Delay (s)	8.5	-	-	-	22.1	12.7
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.7	-	-	-	0.2	2

Middletown Apartments TIS
6: Pierroz Road & Cold Springs Road

Cumulative
Timing Plan: AM Peak Hour

Intersection	
Intersection Delay, s/veh	20.2
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	250	490	170	110	220	110
Future Vol, veh/h	250	490	170	110	220	110
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	272	533	185	120	239	120
Number of Lanes	1	1	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	24.7	13.5	15.8
HCM LOS	C	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	0%	100%	0%
Vol Thru, %	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	220	110	250	490	170	110
LT Vol	220	0	0	0	170	0
Through Vol	0	0	250	0	0	110
RT Vol	0	110	0	490	0	0
Lane Flow Rate	239	120	272	533	185	120
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.51	0.214	0.477	0.829	0.379	0.228
Departure Headway (Hd)	7.677	6.456	6.313	5.601	7.386	6.874
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	469	554	568	644	484	519
Service Time	5.446	4.224	4.079	3.366	5.169	4.657
HCM Lane V/C Ratio	0.51	0.217	0.479	0.828	0.382	0.231
HCM Control Delay	18.2	11	14.8	29.8	14.7	11.7
HCM Lane LOS	C	B	B	D	B	B
HCM 95th-tile Q	2.8	0.8	2.6	8.8	1.7	0.9

Middletown Apartments TIS
 7: Cold Springs Road & Middletown Road & Sleepy Hollow Court

Cumulative
 Timing Plan: AM Peak Hour

Intersection												
Intersection Delay, s/veh	9.6											
Intersection LOS	A											

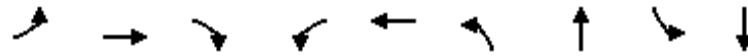
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔			↔	↔		↔	
Traffic Vol, veh/h	10	130	130	40	160	10	60	10	30	0	10	10
Future Vol, veh/h	10	130	130	40	160	10	60	10	30	0	10	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	141	141	43	174	11	65	11	33	0	11	11
Number of Lanes	0	1	1	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	2
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	2	2	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	2	1	1	2
HCM Control Delay	8.7	10.9	9.4	8.9
HCM LOS	A	B	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	86%	0%	7%	0%	19%	0%
Vol Thru, %	14%	0%	93%	0%	76%	50%
Vol Right, %	0%	100%	0%	100%	5%	50%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	70	30	140	130	210	20
LT Vol	60	0	10	0	40	0
Through Vol	10	0	130	0	160	10
RT Vol	0	30	0	130	10	10
Lane Flow Rate	76	33	152	141	228	22
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.131	0.046	0.218	0.173	0.331	0.034
Departure Headway (Hd)	6.221	5.082	5.159	4.419	5.226	5.638
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	574	701	695	810	687	631
Service Time	3.98	2.84	2.898	2.158	3.268	3.707
HCM Lane V/C Ratio	0.132	0.047	0.219	0.174	0.332	0.035
HCM Control Delay	9.9	8.1	9.3	8.1	10.9	8.9
HCM Lane LOS	A	A	A	A	B	A
HCM 95th-tile Q	0.4	0.1	0.8	0.6	1.4	0.1

Middletown Apartments TIS
 8: Home Depot/Cold Springs Road & Placerville Drive

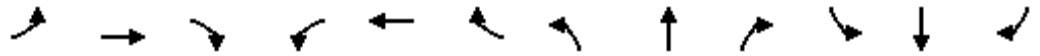
Cumulative
 Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	22	130	54	54	217	98	44	130	66
v/c Ratio	0.23	0.20	0.09	0.45	0.32	0.60	0.08	0.63	0.10
Control Delay	64.6	31.7	3.0	68.8	28.6	70.5	14.1	66.8	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.6	31.7	3.0	68.8	28.6	70.5	14.1	66.8	17.1
Queue Length 50th (ft)	17	74	0	43	118	77	6	101	17
Queue Length 95th (ft)	48	138	15	90	203	141	36	173	54
Internal Link Dist (ft)		421			370		173		145
Turn Bay Length (ft)	140		95	110		70		85	
Base Capacity (vph)	304	641	597	304	678	319	589	304	641
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	0.07	0.20	0.09	0.18	0.32	0.31	0.07	0.43	0.10
Intersection Summary									

Middletown Apartments TIS
 8: Home Depot/Cold Springs Road & Placerville Drive

Cumulative
 Timing Plan: AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	120	50	50	140	60	90	10	30	120	30	30
Future Volume (veh/h)	20	120	50	50	140	60	90	10	30	120	30	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	130	54	54	152	65	98	11	33	130	33	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	669	567	75	465	199	123	144	432	159	317	317
Arrive On Green	0.03	0.36	0.36	0.04	0.37	0.37	0.07	0.35	0.35	0.09	0.37	0.37
Sat Flow, veh/h	1781	1870	1585	1781	1243	532	1781	412	1236	1781	858	858
Grp Volume(v), veh/h	22	130	54	54	0	217	98	0	44	130	0	66
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1775	1781	0	1648	1781	0	1716
Q Serve(g_s), s	1.4	5.6	2.7	3.5	0.0	10.2	6.4	0.0	2.1	8.4	0.0	3.0
Cycle Q Clear(g_c), s	1.4	5.6	2.7	3.5	0.0	10.2	6.4	0.0	2.1	8.4	0.0	3.0
Prop In Lane	1.00		1.00	1.00		0.30	1.00		0.75	1.00		0.50
Lane Grp Cap(c), veh/h	47	669	567	75	0	664	123	0	576	159	0	634
V/C Ratio(X)	0.47	0.19	0.10	0.72	0.00	0.33	0.80	0.00	0.08	0.82	0.00	0.10
Avail Cap(c_a), veh/h	319	669	567	319	0	664	334	0	576	319	0	634
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.3	26.0	25.0	55.5	0.0	26.2	53.8	0.0	25.5	52.5	0.0	24.2
Incr Delay (d2), s/veh	2.7	0.6	0.3	4.7	0.0	1.3	4.4	0.0	0.3	9.8	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.6	1.1	1.7	0.0	4.6	3.0	0.0	0.9	4.2	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.1	26.6	25.4	60.2	0.0	27.5	58.2	0.0	25.8	62.3	0.0	24.6
LnGrp LOS	E	C	C	E	A	C	E	A	C	E	A	C
Approach Vol, veh/h		206			271			142				196
Approach Delay, s/veh		29.8			34.0			48.2				49.6
Approach LOS		C			C			D				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	47.1	12.7	48.0	7.7	49.0	15.1	45.6				
Change Period (Y+Rc), s	4.6	5.1	4.6	4.6	4.6	5.1	4.6	4.6				
Max Green Setting (Gmax), s	21.0	42.0	22.0	41.0	21.0	42.0	21.0	41.0				
Max Q Clear Time (g_c+I1), s	5.5	7.6	8.4	5.0	3.4	12.2	10.4	4.1				
Green Ext Time (p_c), s	0.0	0.6	0.1	0.2	0.0	0.8	0.2	0.1				

Intersection Summary												
HCM 6th Ctrl Delay											39.1	
HCM 6th LOS											D	

Middletown Apartments TIS
 9: Placerville Drive & US-50 WB Off Ramp

Cumulative
 Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	3.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑			↑
Traffic Vol, veh/h	10	150	110	0	0	240
Future Vol, veh/h	10	150	110	0	0	240
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	163	120	0	0	261

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	381	120	0	-	-	-
Stage 1	120	-	-	-	-	-
Stage 2	261	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	621	931	-	0	0	-
Stage 1	905	-	-	0	0	-
Stage 2	783	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	621	931	-	-	-	-
Mov Cap-2 Maneuver	621	-	-	-	-	-
Stage 1	905	-	-	-	-	-
Stage 2	783	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBT
Capacity (veh/h)	- 621 931	-
HCM Lane V/C Ratio	- 0.018 0.175	-
HCM Control Delay (s)	- 10.9 9.7	-
HCM Lane LOS	- B A	-
HCM 95th %tile Q(veh)	- 0.1 0.6	-

Middletown Apartments TIS
 1: Lo Hi Way/US-50 EB Ramps & Forni Road

Cumulative
 Timing Plan: PM Peak Hour

Intersection	
Intersection Delay, s/veh	49.4
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱			↰	↱		↕			↰	↱
Traffic Vol, veh/h	80	40	40	20	220	30	70	60	30	40	100	620
Future Vol, veh/h	80	40	40	20	220	30	70	60	30	40	100	620
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	87	43	43	22	239	33	76	65	33	43	109	674
Number of Lanes	1	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	12.8	18.5	14.9	75.3
HCM LOS	B	C	B	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	44%	100%	0%	8%	0%	29%	0%
Vol Thru, %	38%	0%	50%	92%	0%	71%	0%
Vol Right, %	19%	0%	50%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	160	80	80	240	30	140	620
LT Vol	70	80	0	20	0	40	0
Through Vol	60	0	40	220	0	100	0
RT Vol	30	0	40	0	30	0	620
Lane Flow Rate	174	87	87	261	33	152	674
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.358	0.2	0.179	0.544	0.061	0.284	1.099
Departure Headway (Hd)	7.692	8.67	7.79	7.843	7.079	6.727	5.87
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	471	417	463	462	509	533	613
Service Time	5.692	6.37	5.49	5.543	4.779	4.495	3.638
HCM Lane V/C Ratio	0.369	0.209	0.188	0.565	0.065	0.285	1.1
HCM Control Delay	14.9	13.5	12.2	19.5	10.2	12.2	89.5
HCM Lane LOS	B	B	B	C	B	B	F
HCM 95th-tile Q	1.6	0.7	0.6	3.2	0.2	1.2	20

Middletown Apartments TIS
 2: Placerville Drive & US-50 WB Off Ramp

Cumulative
 Timing Plan: PM Peak Hour



Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	54	109	1489	152
v/c Ratio	0.25	0.38	1.32	0.13
Control Delay	43.7	12.3	170.0	0.8
Queue Delay	0.0	0.1	8.6	0.1
Total Delay	43.7	12.4	178.6	0.9
Queue Length 50th (ft)	30	0	~1158	2
Queue Length 95th (ft)	76	51	#1786	4
Internal Link Dist (ft)	238		277	29
Turn Bay Length (ft)	85			
Base Capacity (vph)	471	501	1132	1625
Starvation Cap Reductn	0	0	0	768
Spillback Cap Reductn	0	51	790	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.11	0.24	4.35	0.18

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.

HCM 6th Edition methodology does not support clustered intersections.

Middletown Apartments TIS
 3: Placerville Drive & US-50 WB On Ramp/Fair Lane

Cumulative
 Timing Plan: PM Peak Hour



Lane Group	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	98	33	163	848	11	185	1228
v/c Ratio	0.49	0.14	0.47	0.60	0.10	0.20	0.78
Control Delay	51.4	1.2	32.3	1.8	50.4	15.7	3.8
Queue Delay	0.0	0.0	0.2	2.8	0.0	0.0	0.0
Total Delay	51.4	1.2	32.5	4.6	50.4	15.7	3.8
Queue Length 50th (ft)	56	0	97	5	6	60	0
Queue Length 95th (ft)	124	0	m93	m67	28	126	0
Internal Link Dist (ft)	134			29		196	
Turn Bay Length (ft)		40	40		100		
Base Capacity (vph)	717	664	860	1675	381	1107	1583
Starvation Cap Reductn	0	0	268	685	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.05	0.28	0.86	0.03	0.17	0.78

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Edition methodology does not support clustered intersections.

Middletown Apartments TIS
 4: Placerville Drive & Green Valley Road/Ray Lawyer Drive

Cumulative
 Timing Plan: PM Peak Hour



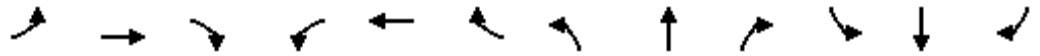
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	174	76	185	98	130	185	250	532	130	413	130
v/c Ratio	0.90	0.26	0.46	2.04	0.34	0.43	0.90	0.37	0.72	0.62	0.21
Control Delay	105.2	59.7	11.1	559.1	56.4	18.3	95.7	32.1	88.6	46.0	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	105.2	59.7	11.1	559.1	56.4	18.3	95.7	32.1	88.6	46.0	16.3
Queue Length 50th (ft)	175	69	0	~158	116	38	253	193	132	354	37
Queue Length 95th (ft)	#310	122	72	#285	184	115	#406	260	200	475	89
Internal Link Dist (ft)		124			295			221		192	
Turn Bay Length (ft)	50		50	65		65	190		145		145
Base Capacity (vph)	213	316	422	48	378	433	301	1451	358	731	667
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.24	0.44	2.04	0.34	0.43	0.83	0.37	0.36	0.56	0.19

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.

Middletown Apartments TIS
 4: Placerville Drive & Green Valley Road/Ray Lawyer Drive

Cumulative
 Timing Plan: PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↑	↗	↖	↑↔		↖	↑	↗
Traffic Volume (veh/h)	160	70	170	90	120	170	230	430	60	120	380	120
Future Volume (veh/h)	160	70	170	90	120	170	230	430	60	120	380	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	174	76	185	98	130	185	250	467	65	130	413	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	430	364	284	430	364	280	1738	241	159	910	771
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.16	0.55	0.55	0.09	0.49	0.49
Sat Flow, veh/h	1065	1870	1585	1118	1870	1585	1781	3135	434	1781	1870	1585
Grp Volume(v), veh/h	174	76	185	98	130	185	250	264	268	130	413	130
Grp Sat Flow(s),veh/h/ln	1065	1870	1585	1118	1870	1585	1781	1777	1792	1781	1870	1585
Q Serve(g_s), s	18.3	3.7	11.5	8.7	6.5	11.5	15.6	8.8	8.9	8.1	16.5	5.2
Cycle Q Clear(g_c), s	24.8	3.7	11.5	12.4	6.5	11.5	15.6	8.8	8.9	8.1	16.5	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	247	430	364	284	430	364	280	985	994	159	910	771
V/C Ratio(X)	0.70	0.18	0.51	0.34	0.30	0.51	0.89	0.27	0.27	0.82	0.45	0.17
Avail Cap(c_a), veh/h	247	430	364	334	513	434	410	985	994	488	910	771
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.3	35.0	38.0	39.9	36.0	38.0	46.7	13.2	13.2	50.6	19.1	16.3
Incr Delay (d2), s/veh	7.5	0.1	0.5	0.3	0.1	0.4	12.0	0.7	0.7	3.9	1.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	1.7	4.5	2.4	3.0	4.5	7.8	3.6	3.7	3.8	7.4	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.8	35.0	38.4	40.2	36.2	38.4	58.8	13.8	13.9	54.5	20.8	16.7
LnGrp LOS	D	D	D	D	D	D	E	B	B	D	C	B
Approach Vol, veh/h		435			413			782			673	
Approach Delay, s/veh		44.0			38.1			28.2			26.5	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.7	67.8		30.6	22.4	60.1		30.6				
Change Period (Y+Rc), s	4.6	5.1		4.6	4.6	5.1		4.6				
Max Green Setting (Gmax), s	31.0	55.0		31.0	26.0	55.0		26.0				
Max Q Clear Time (g_c+I1), s	10.1	10.9		14.4	17.6	18.5		26.8				
Green Ext Time (p_c), s	0.2	2.2		0.9	0.2	1.9		0.0				

Intersection Summary

HCM 6th Ctrl Delay	32.5
HCM 6th LOS	C

Middletown Apartments TIS
5: Placerville Drive & Pierroz Road

Cumulative
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	5.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↗	↖	↖	↖
Traffic Vol, veh/h	380	390	330	30	10	250
Future Vol, veh/h	380	390	330	30	10	250
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	55	0	65
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	413	424	359	33	11	272

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	392	0	-	0	1609 359
Stage 1	-	-	-	-	359 -
Stage 2	-	-	-	-	1250 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1167	-	-	-	115 685
Stage 1	-	-	-	-	707 -
Stage 2	-	-	-	-	270 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1167	-	-	-	74 685
Mov Cap-2 Maneuver	-	-	-	-	74 -
Stage 1	-	-	-	-	457 -
Stage 2	-	-	-	-	270 -

Approach	EB	WB	SB
HCM Control Delay, s	4.8	0	15.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1167	-	-	-	74	685
HCM Lane V/C Ratio	0.354	-	-	-	0.147	0.397
HCM Control Delay (s)	9.8	-	-	-	61.9	13.7
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	1.6	-	-	-	0.5	1.9

Middletown Apartments TIS
6: Pierroz Road & Cold Springs Road

Cumulative
Timing Plan: PM Peak Hour

Intersection	
Intersection Delay, s/veh	69.9
Intersection LOS	F

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	230	370	130	260	540	240
Future Vol, veh/h	230	370	130	260	540	240
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	250	402	141	283	587	261
Number of Lanes	1	1	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	26.7	21.4	127.4
HCM LOS	D	C	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	0%	100%	0%
Vol Thru, %	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	540	240	230	370	130	260
LT Vol	540	0	0	0	130	0
Through Vol	0	0	230	0	0	260
RT Vol	0	240	0	370	0	0
Lane Flow Rate	587	261	250	402	141	283
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	1.306	0.491	0.527	0.77	0.328	0.617
Departure Headway (Hd)	8.008	6.781	8.231	7.505	9.044	8.524
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	458	532	440	487	400	427
Service Time	5.757	4.53	5.931	5.205	6.744	6.224
HCM Lane V/C Ratio	1.282	0.491	0.568	0.825	0.352	0.663
HCM Control Delay	176.9	15.9	19.7	31.1	16.1	24
HCM Lane LOS	F	C	C	D	C	C
HCM 95th-tile Q	25.6	2.7	3	6.7	1.4	4

Middletown Apartments TIS
 7: Cold Springs Road & Middletown Road & Sleepy Hollow Court

Cumulative
 Timing Plan: PM Peak Hour

Intersection												
Intersection Delay, s/veh	10.9											
Intersection LOS	B											

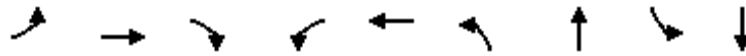
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔			↔	↔		↔	
Traffic Vol, veh/h	10	230	140	20	110	0	140	10	50	10	20	20
Future Vol, veh/h	10	230	140	20	110	0	140	10	50	10	20	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	250	152	22	120	0	152	11	54	11	22	22
Number of Lanes	0	1	1	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	2
HCM Control Delay	10.9	10.8	11.2	9.8
HCM LOS	B	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	93%	0%	4%	0%	15%	20%
Vol Thru, %	7%	0%	96%	0%	85%	40%
Vol Right, %	0%	100%	0%	100%	0%	40%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	150	50	240	140	130	50
LT Vol	140	0	10	0	20	10
Through Vol	10	0	230	0	110	20
RT Vol	0	50	0	140	0	20
Lane Flow Rate	163	54	261	152	141	54
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.296	0.081	0.407	0.207	0.234	0.093
Departure Headway (Hd)	6.537	5.357	5.622	4.894	5.953	6.167
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	551	669	644	738	603	581
Service Time	4.268	3.087	3.322	2.594	3.981	4.203
HCM Lane V/C Ratio	0.296	0.081	0.405	0.206	0.234	0.093
HCM Control Delay	12	8.6	12.1	8.9	10.8	9.8
HCM Lane LOS	B	A	B	A	B	A
HCM 95th-tile Q	1.2	0.3	2	0.8	0.9	0.3

Middletown Apartments TIS
 8: Home Depot/Cold Springs Road & Placerville Drive

Cumulative
 Timing Plan: PM Peak Hour

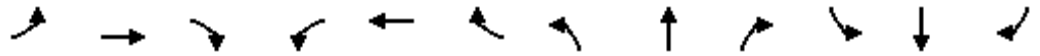


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	43	315	87	54	402	87	76	141	76
v/c Ratio	0.39	0.49	0.15	0.45	0.64	0.57	0.13	0.66	0.12
Control Delay	68.2	37.3	8.5	69.2	39.3	70.4	13.4	67.6	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.2	37.3	8.5	69.2	39.3	70.4	13.4	67.6	14.9
Queue Length 50th (ft)	34	204	3	43	262	69	12	111	17
Queue Length 95th (ft)	77	326	43	90	415	128	52	186	56
Internal Link Dist (ft)		421			370		173		145
Turn Bay Length (ft)	140		95	110		70		85	
Base Capacity (vph)	302	637	594	302	624	317	604	302	655
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	0.14	0.49	0.15	0.18	0.64	0.27	0.13	0.47	0.12

Intersection Summary

Middletown Apartments TIS
 8: Home Depot/Cold Springs Road & Placerville Drive

Cumulative
 Timing Plan: PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	40	290	80	50	230	140	80	20	50	130	30	40
Future Volume (veh/h)	40	290	80	50	230	140	80	20	50	130	30	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	315	87	54	250	152	87	22	54	141	33	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	665	563	75	391	238	110	167	409	170	281	366
Arrive On Green	0.04	0.36	0.36	0.04	0.36	0.36	0.06	0.35	0.35	0.10	0.38	0.38
Sat Flow, veh/h	1781	1870	1585	1781	1089	662	1781	480	1178	1781	737	960
Grp Volume(v), veh/h	43	315	87	54	0	402	87	0	76	141	0	76
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1751	1781	0	1658	1781	0	1697
Q Serve(g_s), s	2.8	15.4	4.4	3.5	0.0	22.6	5.7	0.0	3.7	9.2	0.0	3.4
Cycle Q Clear(g_c), s	2.8	15.4	4.4	3.5	0.0	22.6	5.7	0.0	3.7	9.2	0.0	3.4
Prop In Lane	1.00		1.00	1.00		0.38	1.00		0.71	1.00		0.57
Lane Grp Cap(c), veh/h	68	665	563	75	0	629	110	0	575	170	0	646
V/C Ratio(X)	0.63	0.47	0.15	0.72	0.00	0.64	0.79	0.00	0.13	0.83	0.00	0.12
Avail Cap(c_a), veh/h	317	665	563	317	0	629	332	0	575	317	0	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.0	29.5	26.0	55.9	0.0	31.5	54.7	0.0	26.4	52.5	0.0	23.7
Incr Delay (d2), s/veh	3.5	2.4	0.6	4.8	0.0	4.9	4.6	0.0	0.5	9.7	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	7.4	1.8	1.7	0.0	10.3	2.7	0.0	1.6	4.6	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.5	31.9	26.6	60.7	0.0	36.4	59.3	0.0	26.9	62.2	0.0	24.1
LnGrp LOS	E	C	C	E	A	D	E	A	C	E	A	C
Approach Vol, veh/h		445			456			163			217	
Approach Delay, s/veh		33.6			39.3			44.2			48.9	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	47.1	11.9	49.6	9.1	47.5	15.9	45.6				
Change Period (Y+Rc), s	4.6	5.1	4.6	4.6	4.6	5.1	4.6	4.6				
Max Green Setting (Gmax), s	21.0	42.0	22.0	41.0	21.0	42.0	21.0	41.0				
Max Q Clear Time (g_c+l1), s	5.5	17.4	7.7	5.4	4.8	24.6	11.2	5.7				
Green Ext Time (p_c), s	0.0	1.3	0.1	0.3	0.0	1.6	0.2	0.3				

Intersection Summary

HCM 6th Ctrl Delay	39.5
HCM 6th LOS	D

Middletown Apartments TIS
 9: Placerville Drive & US-50 WB Off Ramp

Cumulative
 Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑			↑
Traffic Vol, veh/h	10	200	180	0	0	460
Future Vol, veh/h	10	200	180	0	0	460
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	217	196	0	0	500

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	696	196	0	-	-	-
Stage 1	196	-	-	-	-	-
Stage 2	500	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	408	845	-	0	0	-
Stage 1	837	-	-	0	0	-
Stage 2	609	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	408	845	-	-	-	-
Mov Cap-2 Maneuver	408	-	-	-	-	-
Stage 1	837	-	-	-	-	-
Stage 2	609	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBT
Capacity (veh/h)	- 408 845	-
HCM Lane V/C Ratio	- 0.027 0.257	-
HCM Control Delay (s)	- 14.1 10.7	-
HCM Lane LOS	- B B	-
HCM 95th %tile Q(veh)	- 0.1 1	-

Attachment E

Analysis Worksheets for Cumulative (2043) plus Project Conditions

Middletown Apartments TIS
 1: Lo Hi Way/US-50 EB Ramps & Forni Road

Cumulative PP
 Timing Plan: AM Peak Hour

Intersection	
Intersection Delay, s/veh	17.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	40	80	30	20	120	0	40	30	10	100	40	510
Future Vol, veh/h	40	80	30	20	120	0	40	30	10	100	40	510
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	87	33	22	130	0	43	33	11	109	43	554
Number of Lanes	1	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	11.1	12.5	10.9	20.4
HCM LOS	B	B	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	50%	100%	0%	14%	0%	71%	0%
Vol Thru, %	38%	0%	73%	86%	100%	29%	0%
Vol Right, %	12%	0%	27%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	40	110	140	0	140	510
LT Vol	40	40	0	20	0	100	0
Through Vol	30	0	80	120	0	40	0
RT Vol	10	0	30	0	0	0	510
Lane Flow Rate	87	43	120	152	0	152	554
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.159	0.088	0.22	0.292	0	0.258	0.775
Departure Headway (Hd)	6.563	7.323	6.62	6.904	6.831	6.1	5.032
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	545	489	542	519	0	589	721
Service Time	4.621	5.079	4.375	4.659	4.586	3.837	2.769
HCM Lane V/C Ratio	0.16	0.088	0.221	0.293	0	0.258	0.768
HCM Control Delay	10.9	10.8	11.2	12.5	9.6	11	23
HCM Lane LOS	B	B	B	B	N	B	C
HCM 95th-tile Q	0.6	0.3	0.8	1.2	0	1	7.5

Middletown Apartments TIS
 2: Placerville Drive & US-50 WB Off Ramp

Cumulative PP
 Timing Plan: AM Peak Hour



Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	54	87	1000	87
v/c Ratio	0.35	0.40	0.83	0.07
Control Delay	47.3	15.4	21.5	0.6
Queue Delay	0.0	0.0	51.7	0.1
Total Delay	47.3	15.5	73.2	0.7
Queue Length 50th (ft)	29	0	366	1
Queue Length 95th (ft)	74	46	#778	3
Internal Link Dist (ft)	238		277	29
Turn Bay Length (ft)	85			
Base Capacity (vph)	502	511	1198	1626
Starvation Cap Reductn	0	0	0	939
Spillback Cap Reductn	0	34	642	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.11	0.18	1.80	0.13

Intersection Summary

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

HCM 6th Edition methodology does not support clustered intersections.

Middletown Apartments TIS
 3: Placerville Drive & US-50 WB On Ramp/Fair Lane

Cumulative PP
 Timing Plan: AM Peak Hour



Lane Group	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	54	22	76	587	11	120	1076
v/c Ratio	0.32	0.10	0.27	0.42	0.09	0.11	0.68
Control Delay	46.2	0.9	33.5	0.9	45.5	11.0	2.4
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Total Delay	46.2	0.9	33.6	1.3	45.5	11.0	2.4
Queue Length 50th (ft)	29	0	42	3	6	31	0
Queue Length 95th (ft)	74	0	m63	m47	26	66	0
Internal Link Dist (ft)	134			29		196	
Turn Bay Length (ft)		40	40		100		
Base Capacity (vph)	764	702	896	1750	405	1180	1583
Starvation Cap Reductn	0	0	193	650	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.03	0.11	0.53	0.03	0.10	0.68

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Edition methodology does not support clustered intersections.

Middletown Apartments TIS
 4: Placerville Drive & Green Valley Road/Ray Lawyer Drive

Cumulative PP
 Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	120	109	217	54	65	76	120	369	76	435	98
v/c Ratio	0.73	0.48	0.65	1.00	0.15	0.17	0.68	0.25	0.57	0.57	0.14
Control Delay	83.1	62.7	26.6	177.4	45.9	3.9	78.9	25.3	78.5	36.6	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.1	62.7	26.6	177.4	45.9	3.9	78.9	25.3	78.5	36.6	10.4
Queue Length 50th (ft)	103	90	48	48	46	0	103	102	65	292	13
Queue Length 95th (ft)	180	159	139	#158	99	19	181	164	127	479	58
Internal Link Dist (ft)		124			295			221		192	
Turn Bay Length (ft)	50		50	65		65	190		145		145
Base Capacity (vph)	256	358	432	54	427	445	340	1501	406	827	743
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.30	0.50	1.00	0.15	0.17	0.35	0.25	0.19	0.53	0.13

Intersection Summary

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

Middletown Apartments TIS
 4: Placerville Drive & Green Valley Road/Ray Lawyer Drive

Cumulative PP
 Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	100	200	50	60	70	110	290	50	70	400	90
Future Volume (veh/h)	110	100	200	50	60	70	110	290	50	70	400	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	109	217	54	65	76	120	315	54	76	435	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	244	305	259	196	305	259	152	1902	322	99	1116	945
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.09	0.63	0.63	0.06	0.60	0.60
Sat Flow, veh/h	1248	1870	1585	1054	1870	1585	1781	3039	515	1781	1870	1585
Grp Volume(v), veh/h	120	109	217	54	65	76	120	183	186	76	435	98
Grp Sat Flow(s),veh/h/ln	1248	1870	1585	1054	1870	1585	1781	1777	1778	1781	1870	1585
Q Serve(g_s), s	8.5	4.8	12.2	4.4	2.8	3.9	6.1	4.0	4.0	3.9	11.3	2.5
Cycle Q Clear(g_c), s	11.3	4.8	12.2	9.2	2.8	3.9	6.1	4.0	4.0	3.9	11.3	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	244	305	259	196	305	259	152	1112	1112	99	1116	945
V/C Ratio(X)	0.49	0.36	0.84	0.28	0.21	0.29	0.79	0.16	0.17	0.76	0.39	0.10
Avail Cap(c_a), veh/h	392	527	447	378	629	533	502	1112	1112	599	1116	945
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	34.3	37.4	38.4	33.4	33.9	41.4	7.2	7.2	42.9	9.8	8.0
Incr Delay (d2), s/veh	0.6	0.3	2.8	0.3	0.1	0.2	3.5	0.3	0.3	4.5	1.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	2.2	4.9	1.1	1.3	1.5	2.8	1.5	1.5	1.8	4.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.9	34.5	40.2	38.6	33.6	34.1	44.9	7.5	7.5	47.5	10.8	8.2
LnGrp LOS	D	C	D	D	C	C	D	A	A	D	B	A
Approach Vol, veh/h		446			195			489			609	
Approach Delay, s/veh		38.5			35.2			16.7			15.0	
Approach LOS		D			D			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.7	62.8		19.7	12.4	60.1		19.7				
Change Period (Y+Rc), s	4.6	5.1		4.6	4.6	5.1		4.6				
Max Green Setting (Gmax), s	31.0	55.0		31.0	26.0	55.0		26.0				
Max Q Clear Time (g_c+I1), s	5.9	6.0		11.2	8.1	13.3		14.2				
Green Ext Time (p_c), s	0.1	1.5		0.4	0.1	2.0		0.8				
Intersection Summary												
HCM 6th Ctrl Delay				23.7								
HCM 6th LOS				C								

Intersection						
Int Delay, s/veh	6.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↘
Traffic Vol, veh/h	250	210	240	10	10	340
Future Vol, veh/h	250	210	240	10	10	340
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	55	0	65
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	272	228	261	11	11	370

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	272	0	-	0	1033 261
Stage 1	-	-	-	-	261 -
Stage 2	-	-	-	-	772 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1291	-	-	-	258 778
Stage 1	-	-	-	-	783 -
Stage 2	-	-	-	-	456 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1291	-	-	-	204 778
Mov Cap-2 Maneuver	-	-	-	-	204 -
Stage 1	-	-	-	-	618 -
Stage 2	-	-	-	-	456 -

Approach	EB	WB	SB
HCM Control Delay, s	4.6	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1291	-	-	-	204	778
HCM Lane V/C Ratio	0.21	-	-	-	0.053	0.475
HCM Control Delay (s)	8.5	-	-	-	23.6	13.7
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.8	-	-	-	0.2	2.6

Middletown Apartments TIS
6: Pierroz Road & Cold Springs Road

Cumulative PP
Timing Plan: AM Peak Hour

Intersection	
Intersection Delay, s/veh	21.9
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	250	490	220	110	220	130
Future Vol, veh/h	250	490	220	110	220	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	272	533	239	120	239	141
Number of Lanes	1	1	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	27.4	15.7	16.2
HCM LOS	D	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	0%	100%	0%
Vol Thru, %	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	220	130	250	490	220	110
LT Vol	220	0	0	0	220	0
Through Vol	0	0	250	0	0	110
RT Vol	0	130	0	490	0	0
Lane Flow Rate	239	141	272	533	239	120
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.52	0.259	0.49	0.855	0.498	0.232
Departure Headway (Hd)	7.831	6.608	6.491	5.778	7.492	6.98
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	459	541	552	623	478	511
Service Time	5.609	4.385	4.269	3.555	5.284	4.772
HCM Lane V/C Ratio	0.521	0.261	0.493	0.856	0.5	0.235
HCM Control Delay	18.9	11.7	15.4	33.5	17.6	11.9
HCM Lane LOS	C	B	C	D	C	B
HCM 95th-tile Q	2.9	1	2.7	9.5	2.7	0.9

Middletown Apartments TIS
 7: Cold Springs Road & Middletown Road & Sleepy Hollow Court

Cumulative PP
 Timing Plan: AM Peak Hour

Intersection												
Intersection Delay, s/veh	10.8											
Intersection LOS	B											

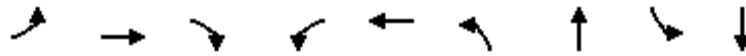
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕			↕	↕		↕	
Traffic Vol, veh/h	10	150	130	70	210	10	60	10	40	0	10	10
Future Vol, veh/h	10	150	130	70	210	10	60	10	40	0	10	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	163	141	76	228	11	65	11	43	0	11	11
Number of Lanes	0	1	1	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	2
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	2	2	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	2	1	1	2
HCM Control Delay	9.2	13	9.6	9.3
HCM LOS	A	B	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	86%	0%	6%	0%	24%	0%
Vol Thru, %	14%	0%	94%	0%	72%	50%
Vol Right, %	0%	100%	0%	100%	3%	50%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	70	40	160	130	290	20
LT Vol	60	0	10	0	70	0
Through Vol	10	0	150	0	210	10
RT Vol	0	40	0	130	10	10
Lane Flow Rate	76	43	174	141	315	22
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.137	0.065	0.255	0.178	0.465	0.037
Departure Headway (Hd)	6.493	5.351	5.283	4.547	5.311	6.049
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	549	663	677	783	675	595
Service Time	4.276	3.133	3.045	2.308	3.371	4.049
HCM Lane V/C Ratio	0.138	0.065	0.257	0.18	0.467	0.037
HCM Control Delay	10.3	8.5	9.9	8.3	13	9.3
HCM Lane LOS	B	A	A	A	B	A
HCM 95th-tile Q	0.5	0.2	1	0.6	2.5	0.1

Middletown Apartments TIS
 8: Home Depot/Cold Springs Road & Placerville Drive

Cumulative PP
 Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	22	130	54	54	228	98	44	152	66
v/c Ratio	0.23	0.21	0.09	0.45	0.34	0.60	0.08	0.68	0.10
Control Delay	65.4	32.4	3.0	69.5	29.3	71.4	14.3	69.0	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.4	32.4	3.0	69.5	29.3	71.4	14.3	69.0	17.0
Queue Length 50th (ft)	18	76	0	43	127	78	6	120	17
Queue Length 95th (ft)	48	138	14	90	213	141	36	199	54
Internal Link Dist (ft)		421			370		173		145
Turn Bay Length (ft)	140		95	110		70		85	
Base Capacity (vph)	301	634	592	301	670	315	584	301	651
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	0.07	0.21	0.09	0.18	0.34	0.31	0.08	0.50	0.10

Intersection Summary

Middletown Apartments TIS
8: Home Depot/Cold Springs Road & Placerville Drive

Cumulative PP
Timing Plan: AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	120	50	50	140	70	90	10	30	140	30	30
Future Volume (veh/h)	20	120	50	50	140	70	90	10	30	140	30	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	130	54	54	152	76	98	11	33	152	33	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	46	660	559	75	434	217	123	142	426	182	324	324
Arrive On Green	0.03	0.35	0.35	0.04	0.37	0.37	0.07	0.34	0.34	0.10	0.38	0.38
Sat Flow, veh/h	1781	1870	1585	1781	1176	588	1781	412	1236	1781	858	858
Grp Volume(v), veh/h	22	130	54	54	0	228	98	0	44	152	0	66
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1764	1781	0	1648	1781	0	1716
Q Serve(g_s), s	1.4	5.8	2.7	3.6	0.0	11.1	6.5	0.0	2.1	10.0	0.0	3.0
Cycle Q Clear(g_c), s	1.4	5.8	2.7	3.6	0.0	11.1	6.5	0.0	2.1	10.0	0.0	3.0
Prop In Lane	1.00		1.00	1.00		0.33	1.00		0.75	1.00		0.50
Lane Grp Cap(c), veh/h	46	660	559	75	0	651	123	0	568	182	0	648
V/C Ratio(X)	0.47	0.20	0.10	0.72	0.00	0.35	0.80	0.00	0.08	0.84	0.00	0.10
Avail Cap(c_a), veh/h	314	660	559	314	0	651	329	0	568	314	0	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.2	26.8	25.8	56.3	0.0	27.2	54.6	0.0	26.3	52.5	0.0	24.0
Incr Delay (d2), s/veh	2.8	0.7	0.3	4.8	0.0	1.5	4.4	0.0	0.3	9.7	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.7	1.1	1.7	0.0	5.0	3.0	0.0	0.9	4.9	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.9	27.5	26.1	61.2	0.0	28.7	59.0	0.0	26.5	62.2	0.0	24.3
LnGrp LOS	E	C	C	E	A	C	E	A	C	E	A	C
Approach Vol, veh/h		206			282			142				218
Approach Delay, s/veh		30.6			34.9			49.0				50.7
Approach LOS		C			C			D				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	47.1	12.8	49.5	7.7	49.0	16.7	45.6				
Change Period (Y+Rc), s	4.6	5.1	4.6	4.6	4.6	5.1	4.6	4.6				
Max Green Setting (Gmax), s	21.0	42.0	22.0	41.0	21.0	42.0	21.0	41.0				
Max Q Clear Time (g_c+I1), s	5.6	7.8	8.5	5.0	3.4	13.1	12.0	4.1				
Green Ext Time (p_c), s	0.0	0.5	0.1	0.2	0.0	0.9	0.2	0.1				
Intersection Summary												
HCM 6th Ctrl Delay			40.3									
HCM 6th LOS			D									

Middletown Apartments TIS
 9: Placerville Drive & US-50 WB Off Ramp

Cumulative PP
 Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	3.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑			↑
Traffic Vol, veh/h	10	160	110	0	0	270
Future Vol, veh/h	10	160	110	0	0	270
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	174	120	0	0	293

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	413	120	0	-	-	-
Stage 1	120	-	-	-	-	-
Stage 2	293	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	595	931	-	0	0	-
Stage 1	905	-	-	0	0	-
Stage 2	757	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	595	931	-	-	-	-
Mov Cap-2 Maneuver	595	-	-	-	-	-
Stage 1	905	-	-	-	-	-
Stage 2	757	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	-	595	931
HCM Lane V/C Ratio	-	0.018	0.187
HCM Control Delay (s)	-	11.2	9.8
HCM Lane LOS	-	B	A
HCM 95th %tile Q(veh)	-	0.1	0.7

Intersection						
Int Delay, s/veh	1.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	30	10	0	0	0
Future Vol, veh/h	0	30	10	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	33	11	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	33	0	39
Stage 1	-	-	-	-	17
Stage 2	-	-	-	-	22
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1579	-	973
Stage 1	-	-	-	-	1006
Stage 2	-	-	-	-	1001
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1579	-	966
Mov Cap-2 Maneuver	-	-	-	-	966
Stage 1	-	-	-	-	1006
Stage 2	-	-	-	-	994

Approach	EB	WB	NB
HCM Control Delay, s	0	7.3	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1579	-
HCM Lane V/C Ratio	-	-	-	0.007	-
HCM Control Delay (s)	0	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

Middletown Apartments TIS
 11: Driveway (East) & Middletown Road

Cumulative PP
 Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	8.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Traffic Vol, veh/h	0	0	0	0	80	20
Future Vol, veh/h	0	0	0	0	80	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	87	22

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	2 1
Stage 1	-	-	-	-	1 -
Stage 2	-	-	-	-	1 -
Critical Hdwy	-	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	-	0	0	-	1021 1084
Stage 1	-	0	0	-	1022 -
Stage 2	-	0	0	-	1022 -
Platoon blocked, %	-				-
Mov Cap-1 Maneuver	-	-	-	-	1021 1084
Mov Cap-2 Maneuver	-	-	-	-	1021 -
Stage 1	-	-	-	-	1022 -
Stage 2	-	-	-	-	1022 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	1033	-	-
HCM Lane V/C Ratio	0.105	-	-
HCM Control Delay (s)	8.9	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-

Middletown Apartments TIS
 1: Lo Hi Way/US-50 EB Ramps & Forni Road

Cumulative PP
 Timing Plan: PM Peak Hour

Intersection	
Intersection Delay, s/veh	56.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷			↶	↷		↷			↶	↷
Traffic Vol, veh/h	80	40	40	20	220	30	70	60	30	40	100	640
Future Vol, veh/h	80	40	40	20	220	30	70	60	30	40	100	640
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	87	43	43	22	239	33	76	65	33	43	109	696
Number of Lanes	1	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	2
HCM Control Delay	13	18.6	15	86.4
HCM LOS	B	C	B	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	44%	100%	0%	8%	0%	29%	0%
Vol Thru, %	38%	0%	50%	92%	0%	71%	0%
Vol Right, %	19%	0%	50%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	160	80	80	240	30	140	640
LT Vol	70	80	0	20	0	40	0
Through Vol	60	0	40	220	0	100	0
RT Vol	30	0	40	0	30	0	640
Lane Flow Rate	174	87	87	261	33	152	696
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.358	0.2	0.18	0.544	0.061	0.285	1.137
Departure Headway (Hd)	7.733	8.733	7.852	7.904	7.139	6.741	5.884
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	468	414	460	459	505	533	619
Service Time	5.733	6.433	5.552	5.604	4.839	4.497	3.64
HCM Lane V/C Ratio	0.372	0.21	0.189	0.569	0.065	0.285	1.124
HCM Control Delay	15	13.6	12.3	19.6	10.3	12.2	102.6
HCM Lane LOS	B	B	B	C	B	B	F
HCM 95th-tile Q	1.6	0.7	0.6	3.2	0.2	1.2	22.1



Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	54	109	1522	152
v/c Ratio	0.23	0.36	1.36	0.14
Control Delay	42.9	11.8	190.1	0.7
Queue Delay	0.0	0.1	8.9	0.1
Total Delay	42.9	11.9	198.9	0.8
Queue Length 50th (ft)	30	0	~1224	2
Queue Length 95th (ft)	76	51	#1836	3
Internal Link Dist (ft)	238		277	29
Turn Bay Length (ft)	85			
Base Capacity (vph)	465	497	1119	1606
Starvation Cap Reductn	0	0	0	756
Spillback Cap Reductn	0	50	786	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.12	0.24	4.57	0.18

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.

HCM 6th Edition methodology does not support clustered intersections.

Middletown Apartments TIS
 3: Placerville Drive & US-50 WB On Ramp/Fair Lane

Cumulative PP
 Timing Plan: PM Peak Hour



Lane Group	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	98	33	163	880	11	185	1250
v/c Ratio	0.49	0.14	0.45	0.62	0.10	0.20	0.79
Control Delay	52.1	1.2	32.2	2.1	50.7	16.1	4.1
Queue Delay	0.0	0.0	0.2	4.3	0.0	0.0	0.0
Total Delay	52.1	1.2	32.5	6.4	50.7	16.1	4.1
Queue Length 50th (ft)	57	0	98	6	6	61	0
Queue Length 95th (ft)	124	0	m90	m68	28	126	0
Internal Link Dist (ft)	134			29		196	
Turn Bay Length (ft)		40	40		100		
Base Capacity (vph)	708	657	851	1656	376	1094	1583
Starvation Cap Reductn	0	0	281	682	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.05	0.29	0.90	0.03	0.17	0.79

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Edition methodology does not support clustered intersections.

Middletown Apartments TIS
 4: Placerville Drive & Green Valley Road/Ray Lawyer Drive

Cumulative PP
 Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	185	76	185	98	130	207	250	554	130	435	130
v/c Ratio	0.90	0.25	0.45	1.96	0.40	0.51	0.88	0.37	0.71	0.63	0.20
Control Delay	102.0	56.7	10.6	523.4	59.4	20.1	91.5	29.9	85.6	43.8	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	102.0	56.7	10.6	523.4	59.4	20.1	91.5	29.9	85.6	43.8	15.5
Queue Length 50th (ft)	181	66	0	~151	116	42	242	190	127	358	36
Queue Length 95th (ft)	#324	117	71	#276	186	127	#385	256	194	483	86
Internal Link Dist (ft)		124			295			221		192	
Turn Bay Length (ft)	50		50	65		65	190		145		145
Base Capacity (vph)	220	327	430	50	327	408	310	1496	371	755	686
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.23	0.43	1.96	0.40	0.51	0.81	0.37	0.35	0.58	0.19

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.

Middletown Apartments TIS
 4: Placerville Drive & Green Valley Road/Ray Lawyer Drive

Cumulative PP
 Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	70	170	90	120	190	230	450	60	120	400	120
Future Volume (veh/h)	170	70	170	90	120	190	230	450	60	120	400	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	185	76	185	98	130	207	250	489	65	130	435	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	244	430	364	284	430	364	280	1749	232	159	910	771
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.16	0.55	0.55	0.09	0.49	0.49
Sat Flow, veh/h	1043	1870	1585	1118	1870	1585	1781	3154	418	1781	1870	1585
Grp Volume(v), veh/h	185	76	185	98	130	207	250	275	279	130	435	130
Grp Sat Flow(s),veh/h/ln	1043	1870	1585	1118	1870	1585	1781	1777	1795	1781	1870	1585
Q Serve(g_s), s	19.5	3.7	11.5	8.7	6.5	13.1	15.6	9.2	9.3	8.1	17.6	5.2
Cycle Q Clear(g_c), s	26.0	3.7	11.5	12.4	6.5	13.1	15.6	9.2	9.3	8.1	17.6	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	244	430	364	284	430	364	280	985	995	159	910	771
V/C Ratio(X)	0.76	0.18	0.51	0.34	0.30	0.57	0.89	0.28	0.28	0.82	0.48	0.17
Avail Cap(c_a), veh/h	244	430	364	284	430	364	410	985	995	488	910	771
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	35.0	38.0	39.9	36.0	38.6	46.7	13.3	13.3	50.6	19.4	16.3
Incr Delay (d2), s/veh	11.8	0.1	0.5	0.3	0.1	1.3	12.0	0.7	0.7	3.9	1.8	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	1.7	4.5	2.4	3.0	5.2	7.8	3.8	3.9	3.8	8.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.8	35.0	38.4	40.2	36.2	39.9	58.8	14.0	14.0	54.5	21.2	16.7
LnGrp LOS	E	D	D	D	D	D	E	B	B	D	C	B
Approach Vol, veh/h		446			435			804			695	
Approach Delay, s/veh		46.3			38.9			27.9			26.6	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.7	67.8		30.6	22.4	60.1		30.6				
Change Period (Y+Rc), s	4.6	5.1		4.6	4.6	5.1		4.6				
Max Green Setting (Gmax), s	31.0	55.0		26.0	26.0	55.0		26.0				
Max Q Clear Time (g_c+I1), s	10.1	11.3		15.1	17.6	19.6		28.0				
Green Ext Time (p_c), s	0.2	2.3		0.8	0.2	2.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				33.0								
HCM 6th LOS				C								

Intersection						
Int Delay, s/veh	6.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↘
Traffic Vol, veh/h	430	390	330	30	10	290
Future Vol, veh/h	430	390	330	30	10	290
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	55	0	65
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	467	424	359	33	11	315

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	392	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1167	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1167	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	5.3	0	16.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1167	-	-	-	59	685
HCM Lane V/C Ratio	0.401	-	-	-	0.184	0.46
HCM Control Delay (s)	10.1	-	-	-	79.3	14.7
HCM Lane LOS	B	-	-	-	F	B
HCM 95th %tile Q(veh)	2	-	-	-	0.6	2.4

Middletown Apartments TIS
6: Pierroz Road & Cold Springs Road

Cumulative PP
Timing Plan: PM Peak Hour

Intersection	
Intersection Delay, s/veh	70.8
Intersection LOS	F

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	230	370	170	260	540	300
Future Vol, veh/h	230	370	170	260	540	300
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	250	402	185	283	587	326
Number of Lanes	1	1	1	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	28.3	22.2	126.1
HCM LOS	D	C	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	100%	0%	0%	0%	100%	0%
Vol Thru, %	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	540	300	230	370	170	260
LT Vol	540	0	0	0	170	0
Through Vol	0	0	230	0	0	260
RT Vol	0	300	0	370	0	0
Lane Flow Rate	587	326	250	402	185	283
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	1.324	0.624	0.538	0.788	0.434	0.625
Departure Headway (Hd)	8.122	6.894	8.357	7.631	9.117	8.597
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	446	522	435	479	397	424
Service Time	5.881	4.652	6.057	5.331	6.817	6.297
HCM Lane V/C Ratio	1.316	0.625	0.575	0.839	0.466	0.667
HCM Control Delay	184.7	20.5	20.4	33.2	18.6	24.6
HCM Lane LOS	F	C	C	D	C	C
HCM 95th-tile Q	26.2	4.2	3.1	7.1	2.1	4.1

Middletown Apartments TIS
 7: Cold Springs Road & Middletown Road & Sleepy Hollow Court

Cumulative PP
 Timing Plan: PM Peak Hour

Intersection												
Intersection Delay, s/veh	12.6											
Intersection LOS	B											

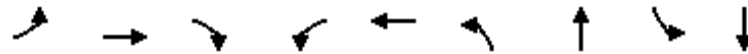
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕			↕	↕		↕	
Traffic Vol, veh/h	10	290	140	40	150	0	140	10	90	10	20	20
Future Vol, veh/h	10	290	140	40	150	0	140	10	90	10	20	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	315	152	43	163	0	152	11	98	11	22	22
Number of Lanes	0	1	1	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	2
HCM Control Delay	13.3	12.7	11.6	10.5
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	93%	0%	3%	0%	21%	20%
Vol Thru, %	7%	0%	97%	0%	79%	40%
Vol Right, %	0%	100%	0%	100%	0%	40%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	150	90	300	140	190	50
LT Vol	140	0	10	0	40	10
Through Vol	10	0	290	0	150	20
RT Vol	0	90	0	140	0	20
Lane Flow Rate	163	98	326	152	207	54
Geometry Grp	7	7	7	7	6	6
Degree of Util (X)	0.314	0.156	0.531	0.217	0.358	0.101
Departure Headway (Hd)	6.939	5.754	5.867	5.142	6.233	6.695
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	518	622	616	698	576	534
Service Time	4.683	3.498	3.601	2.876	4.273	4.753
HCM Lane V/C Ratio	0.315	0.158	0.529	0.218	0.359	0.101
HCM Control Delay	12.8	9.6	15.1	9.3	12.7	10.5
HCM Lane LOS	B	A	C	A	B	B
HCM 95th-tile Q	1.3	0.5	3.1	0.8	1.6	0.3

Middletown Apartments TIS
 8: Home Depot/Cold Springs Road & Placerville Drive

Cumulative PP
 Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	43	315	87	54	435	87	76	163	76
v/c Ratio	0.39	0.50	0.15	0.45	0.71	0.57	0.13	0.71	0.11
Control Delay	68.9	38.0	8.6	70.0	42.1	71.0	13.6	70.1	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.9	38.0	8.6	70.0	42.1	71.0	13.6	70.1	14.8
Queue Length 50th (ft)	35	208	3	44	295	70	12	130	17
Queue Length 95th (ft)	77	326	43	90	455	128	52	212	56
Internal Link Dist (ft)		421			370		173		145
Turn Bay Length (ft)	140		95	110		70		85	
Base Capacity (vph)	299	630	589	299	617	314	598	299	664
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	0.14	0.50	0.15	0.18	0.71	0.28	0.13	0.55	0.11
Intersection Summary									

Middletown Apartments TIS
8: Home Depot/Cold Springs Road & Placerville Drive

Cumulative PP
Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	290	80	50	230	170	80	20	50	150	30	40
Future Volume (veh/h)	40	290	80	50	230	170	80	20	50	150	30	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	315	87	54	250	185	87	22	54	163	33	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	655	555	74	354	262	110	164	403	193	286	373
Arrive On Green	0.04	0.35	0.35	0.04	0.35	0.35	0.06	0.34	0.34	0.11	0.39	0.39
Sat Flow, veh/h	1781	1870	1585	1781	998	739	1781	480	1178	1781	737	960
Grp Volume(v), veh/h	43	315	87	54	0	435	87	0	76	163	0	76
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1737	1781	0	1658	1781	0	1697
Q Serve(g_s), s	2.9	15.8	4.5	3.6	0.0	25.9	5.8	0.0	3.8	10.8	0.0	3.4
Cycle Q Clear(g_c), s	2.9	15.8	4.5	3.6	0.0	25.9	5.8	0.0	3.8	10.8	0.0	3.4
Prop In Lane	1.00		1.00	1.00		0.43	1.00		0.71	1.00		0.57
Lane Grp Cap(c), veh/h	68	655	555	74	0	615	110	0	567	193	0	659
V/C Ratio(X)	0.63	0.48	0.16	0.73	0.00	0.71	0.79	0.00	0.13	0.85	0.00	0.12
Avail Cap(c_a), veh/h	312	655	555	312	0	615	327	0	567	312	0	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.8	30.4	26.8	56.8	0.0	33.4	55.5	0.0	27.2	52.5	0.0	23.5
Incr Delay (d2), s/veh	3.6	2.5	0.6	4.9	0.0	6.7	4.7	0.0	0.5	11.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	7.6	1.8	1.7	0.0	12.0	2.7	0.0	1.6	5.4	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.4	32.9	27.4	61.7	0.0	40.1	60.1	0.0	27.7	63.6	0.0	23.8
LnGrp LOS	E	C	C	E	A	D	E	A	C	E	A	C
Approach Vol, veh/h		445			489			163			239	
Approach Delay, s/veh		34.5			42.5			45.0			50.9	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	47.1	12.0	51.1	9.2	47.5	17.6	45.6				
Change Period (Y+Rc), s	4.6	5.1	4.6	4.6	4.6	5.1	4.6	4.6				
Max Green Setting (Gmax), s	21.0	42.0	22.0	41.0	21.0	42.0	21.0	41.0				
Max Q Clear Time (g_c+I1), s	5.6	17.8	7.8	5.4	4.9	27.9	12.8	5.8				
Green Ext Time (p_c), s	0.0	1.3	0.1	0.3	0.0	1.6	0.3	0.3				
Intersection Summary												
HCM 6th Ctrl Delay			41.6									
HCM 6th LOS			D									

Middletown Apartments TIS
 9: Placerville Drive & US-50 WB Off Ramp

Cumulative PP
 Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑			↑
Traffic Vol, veh/h	10	230	180	0	0	480
Future Vol, veh/h	10	230	180	0	0	480
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	250	196	0	0	522

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	718	196	0	-	-	-
Stage 1	196	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	396	845	-	0	0	-
Stage 1	837	-	-	0	0	-
Stage 2	595	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	396	845	-	-	-	-
Mov Cap-2 Maneuver	396	-	-	-	-	-
Stage 1	837	-	-	-	-	-
Stage 2	595	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	-	396	845
HCM Lane V/C Ratio	-	0.027	0.296
HCM Control Delay (s)	-	14.3	11
HCM Lane LOS	-	B	B
HCM 95th %tile Q(veh)	-	0.1	1.2

Middletown Apartments TIS
 10: Driveway (West) & Middletown Road

Cumulative PP
 Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	90	20	0	0	0
Future Vol, veh/h	0	90	20	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	98	22	0	0	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	98	0	93 49
Stage 1	-	-	-	-	49 -
Stage 2	-	-	-	-	44 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1495	-	907 1020
Stage 1	-	-	-	-	973 -
Stage 2	-	-	-	-	978 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1495	-	893 1020
Mov Cap-2 Maneuver	-	-	-	-	893 -
Stage 1	-	-	-	-	973 -
Stage 2	-	-	-	-	963 -

Approach	EB	WB	NB
HCM Control Delay, s	0	7.4	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1495	-
HCM Lane V/C Ratio	-	-	-	0.015	-
HCM Control Delay (s)	0	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

Middletown Apartments TIS
 11: Driveway (East) & Middletown Road

Cumulative PP
 Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	8.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	0	0	0	0	60	10
Future Vol, veh/h	0	0	0	0	60	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	65	11

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	2 1
Stage 1	-	-	-	-	1 -
Stage 2	-	-	-	-	1 -
Critical Hdwy	-	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	-	0	0	-	1021 1084
Stage 1	-	0	0	-	1022 -
Stage 2	-	0	0	-	1022 -
Platoon blocked, %	-				-
Mov Cap-1 Maneuver	-	-	-	-	1021 1084
Mov Cap-2 Maneuver	-	-	-	-	1021 -
Stage 1	-	-	-	-	1022 -
Stage 2	-	-	-	-	1022 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	1030	-	-
HCM Lane V/C Ratio	0.074	-	-
HCM Control Delay (s)	8.8	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-

Attachment F

HCS Reports for Placerville Drive, between Pierroz Road and Vicini Drive (all scenarios)

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	3/21/2023
Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive W/O Pierroz - Existing AM EB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	600	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.93	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.35

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.8

Vehicle Results

Average Speed, mi/h	37.8	Percent Followers, %	62.4
Segment Travel Time, minutes	1.59	Follower Density (FD), followers/mi/ln	9.9
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	140	0.19	9.9	C

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	3/21/2023
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Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive W/O Pierroz - Existing AM WB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	684	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.40

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.7

Vehicle Results

Average Speed, mi/h	37.7	Percent Followers, %	65.7
Segment Travel Time, minutes	1.59	Follower Density (FD), followers/mi/ln	11.9
Vehicle LOS	D		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	158	0.23	11.9	D

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	3/21/2023
Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive W/O Pierroz - Existing PM EB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	772	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.45

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.5

Vehicle Results

Average Speed, mi/h	37.5	Percent Followers, %	68.8
Segment Travel Time, minutes	1.60	Follower Density (FD), followers/mi/ln	14.1
Vehicle LOS	D		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	181	0.28	14.1	D

HCS Two-Lane Highway Report

Project Information

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Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive W/O Pierroz - Existing PM WB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	724	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.43

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	12.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.6

Vehicle Results

Average Speed, mi/h	37.6	Percent Followers, %	67.2
Segment Travel Time, minutes	1.60	Follower Density (FD), followers/mi/ln	12.9
Vehicle LOS	D		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	166	0.25	12.9	D

HCS Two-Lane Highway Report

Project Information

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Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive W/O Pierroz - ExistingPP AM EB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	619	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.93	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.36

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	10.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.8

Vehicle Results

Average Speed, mi/h	37.8	Percent Followers, %	63.2
Segment Travel Time, minutes	1.59	Follower Density (FD), followers/mi/ln	10.4
Vehicle LOS	D		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	144	0.20	10.4	D

HCS Two-Lane Highway Report

Project Information

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Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	738	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.43

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	13.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.6

Vehicle Results

Average Speed, mi/h	37.6	Percent Followers, %	67.7
Segment Travel Time, minutes	1.60	Follower Density (FD), followers/mi/ln	13.3
Vehicle LOS	D		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	170	0.26	13.3	D

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	10/24/2023
Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive W/O Pierroz - ExistingPP PM EB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	832	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.49

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	15.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.4

Vehicle Results

Average Speed, mi/h	37.4	Percent Followers, %	70.7
Segment Travel Time, minutes	1.60	Follower Density (FD), followers/mi/ln	15.7
Vehicle LOS	E		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	195	0.31	15.7	E

HCS Two-Lane Highway Report

Project Information

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Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive W/O Pierroz - ExistingPP PM WB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	761	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.45

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	13.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.5

Vehicle Results

Average Speed, mi/h	37.5	Percent Followers, %	68.5
Segment Travel Time, minutes	1.60	Follower Density (FD), followers/mi/ln	13.9
Vehicle LOS	D		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	175	0.27	13.9	D

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	3/21/2023
Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive W/O Pierroz - Cumulative AM EB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	685	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.40

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	12.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.7

Vehicle Results

Average Speed, mi/h	37.7	Percent Followers, %	65.8
Segment Travel Time, minutes	1.59	Follower Density (FD), followers/mi/ln	12.0
Vehicle LOS	D		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	158	0.23	12.0	D

HCS Two-Lane Highway Report

Project Information

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Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	717	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.42

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	12.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.6

Vehicle Results

Average Speed, mi/h	37.6	Percent Followers, %	67.0
Segment Travel Time, minutes	1.60	Follower Density (FD), followers/mi/ln	12.8
Vehicle LOS	D		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	165	0.24	12.8	D

HCS Two-Lane Highway Report

Project Information

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Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive W/O Pierroz - Cumulative PM EB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	837	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.49

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	15.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.4

Vehicle Results

Average Speed, mi/h	37.4	Percent Followers, %	70.9
Segment Travel Time, minutes	1.60	Follower Density (FD), followers/mi/ln	15.8
Vehicle LOS	E		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	193	0.31	15.8	E

HCS Two-Lane Highway Report

Project Information

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Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	772	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.45

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.5

Vehicle Results

Average Speed, mi/h	37.5	Percent Followers, %	68.8
Segment Travel Time, minutes	1.60	Follower Density (FD), followers/mi/ln	14.2
Vehicle LOS	D		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	178	0.27	14.2	D

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	10/24/2023
Agency		Analysis Year	2043
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive W/O Pierroz - CumulativePP AM EB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	704	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.41

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	12.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.6

Vehicle Results

Average Speed, mi/h	37.6	Percent Followers, %	66.5
Segment Travel Time, minutes	1.59	Follower Density (FD), followers/mi/ln	12.4
Vehicle LOS	D		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	162	0.24	12.4	D

HCS Two-Lane Highway Report

Project Information

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Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive W/O Pierroz - CumulativePP AM WB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	772	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.45

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.5

Vehicle Results

Average Speed, mi/h	37.5	Percent Followers, %	68.8
Segment Travel Time, minutes	1.60	Follower Density (FD), followers/mi/ln	14.2
Vehicle LOS	D		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	178	0.27	14.2	D

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	10/24/2023
Agency		Analysis Year	2043
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive W/O Pierroz - CumulativePP PM EB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	899	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.53

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.4

Vehicle Results

Average Speed, mi/h	37.4	Percent Followers, %	72.6
Segment Travel Time, minutes	1.61	Follower Density (FD), followers/mi/ln	17.5
Vehicle LOS	E		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	207	0.34	17.5	E

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	10/24/2023
Agency		Analysis Year	2043
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive W/O Pierroz - CumulativePP PM WB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	809	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	15.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.5

Vehicle Results

Average Speed, mi/h	37.5	Percent Followers, %	70.0
Segment Travel Time, minutes	1.60	Follower Density (FD), followers/mi/ln	15.1
Vehicle LOS	E		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	186	0.29	15.1	E

Attachment G

HCS Reports for Placerville Drive, between Cold Springs Road and US-50 WB Off-Ramp (all scenarios)

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	3/21/2023
Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive E/O Cold Springs- Existing AM EB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	436	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.91	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.26

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	6.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	38.1

Vehicle Results

Average Speed, mi/h	38.1	Percent Followers, %	54.3
Segment Travel Time, minutes	1.57	Follower Density (FD), followers/mi/ln	6.2
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	99	0.11	6.2	C

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	3/21/2023
Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive E/O Cold Springs- Existing AM WB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	440	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.98	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.26

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	6.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	38.1

Vehicle Results

Average Speed, mi/h	38.1	Percent Followers, %	54.5
Segment Travel Time, minutes	1.57	Follower Density (FD), followers/mi/ln	6.3
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	108	0.12	6.3	C

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	3/21/2023
Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive E/O Cold Springs- Existing PM EB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	548	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.91	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.32

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	8.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.9

Vehicle Results

Average Speed, mi/h	37.9	Percent Followers, %	60.1
Segment Travel Time, minutes	1.58	Follower Density (FD), followers/mi/ln	8.7
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	125	0.16	8.7	C

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	3/21/2023
Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive E/O Cold Springs- Existing PM WB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	496	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.29

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	38.0

Vehicle Results

Average Speed, mi/h	38.0	Percent Followers, %	57.5
Segment Travel Time, minutes	1.58	Follower Density (FD), followers/mi/ln	7.5
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	117	0.14	7.5	C

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	3/21/2023
Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive E/O Cold Springs- Existing PP AM EB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	465	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.91	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.27

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	6.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	38.0

Vehicle Results

Average Speed, mi/h	38.0	Percent Followers, %	55.9
Segment Travel Time, minutes	1.58	Follower Density (FD), followers/mi/ln	6.8
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	106	0.13	6.8	C

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	3/21/2023
Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive E/O Cold Springs- Existing PP AM WB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	450	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.98	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.26

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	6.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	38.1

Vehicle Results

Average Speed, mi/h	38.1	Percent Followers, %	55.1
Segment Travel Time, minutes	1.58	Follower Density (FD), followers/mi/ln	6.5
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	110	0.13	6.5	C

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	3/21/2023
Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive E/O Cold Springs- Existing PP PM EB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	569	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.91	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.33

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.8

Vehicle Results

Average Speed, mi/h	37.8	Percent Followers, %	61.0
Segment Travel Time, minutes	1.59	Follower Density (FD), followers/mi/ln	9.2
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	130	0.17	9.2	C

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	3/21/2023
Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive E/O Cold Springs- Existing PP PM WB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	529	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.31

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	8.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.9

Vehicle Results

Average Speed, mi/h	37.9	Percent Followers, %	59.2
Segment Travel Time, minutes	1.58	Follower Density (FD), followers/mi/ln	8.2
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	124	0.16	8.2	C

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	3/21/2023
Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive E/O Cold Springs- Cumulative AM EB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	446	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.26

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	6.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	38.1

Vehicle Results

Average Speed, mi/h	38.1	Percent Followers, %	54.8
Segment Travel Time, minutes	1.58	Follower Density (FD), followers/mi/ln	6.4
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	103	0.12	6.4	C

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	3/21/2023
Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive E/O Cold Springs- Cumulative AM WB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	467	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.27

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	6.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	38.0

Vehicle Results

Average Speed, mi/h	38.0	Percent Followers, %	56.0
Segment Travel Time, minutes	1.58	Follower Density (FD), followers/mi/ln	6.9
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	108	0.13	6.9	C

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	3/21/2023
Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive E/O Cold Springs- Cumulative PM EB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	565	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.33

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.9

Vehicle Results

Average Speed, mi/h	37.9	Percent Followers, %	60.9
Segment Travel Time, minutes	1.58	Follower Density (FD), followers/mi/ln	9.1
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	130	0.17	9.1	C

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	3/21/2023
Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive E/O Cold Springs- Cumulative PM WB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	511	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.30

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	38.0

Vehicle Results

Average Speed, mi/h	38.0	Percent Followers, %	58.3
Segment Travel Time, minutes	1.58	Follower Density (FD), followers/mi/ln	7.8
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	118	0.15	7.8	C

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	3/21/2023
Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive E/O Cold Springs- Cumulative PP AM EB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	475	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.28

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	38.0

Vehicle Results

Average Speed, mi/h	38.0	Percent Followers, %	56.4
Segment Travel Time, minutes	1.58	Follower Density (FD), followers/mi/ln	7.1
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	109	0.13	7.1	C

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	3/21/2023
Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive E/O Cold Springs- Cumulative PP AM WB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	478	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.28

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	38.0

Vehicle Results

Average Speed, mi/h	38.0	Percent Followers, %	56.6
Segment Travel Time, minutes	1.58	Follower Density (FD), followers/mi/ln	7.1
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	110	0.13	7.1	C

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	3/21/2023
Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive E/O Cold Springs- Cumulative PP PM EB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	586	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.34

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.8

Vehicle Results

Average Speed, mi/h	37.8	Percent Followers, %	61.8
Segment Travel Time, minutes	1.59	Follower Density (FD), followers/mi/ln	9.6
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	135	0.18	9.6	C

HCS Two-Lane Highway Report

Project Information

Analyst	Kimley-Horn	Date	3/21/2023
Agency		Analysis Year	2023
Jurisdiction	City of Placerville	Time Analyzed	Placerville Drive E/O Cold Springs- Cumulative PP PM WB
Project Description	Middletown Apartments TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	35	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	545	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.32

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	39.8
Speed Slope Coefficient (m)	2.71914	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39622	PF Power Coefficient (p)	0.69691
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	8.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	37.9

Vehicle Results

Average Speed, mi/h	37.9	Percent Followers, %	59.9
Segment Travel Time, minutes	1.58	Follower Density (FD), followers/mi/ln	8.6
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	125	0.16	8.6	C

Attachment H

Peak-Hour Signal Warrants for Existing (2023) Conditions

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions AM

Intersection: Forni Road AND Lo Hi Way/US-50 EB Ramps

Comments:

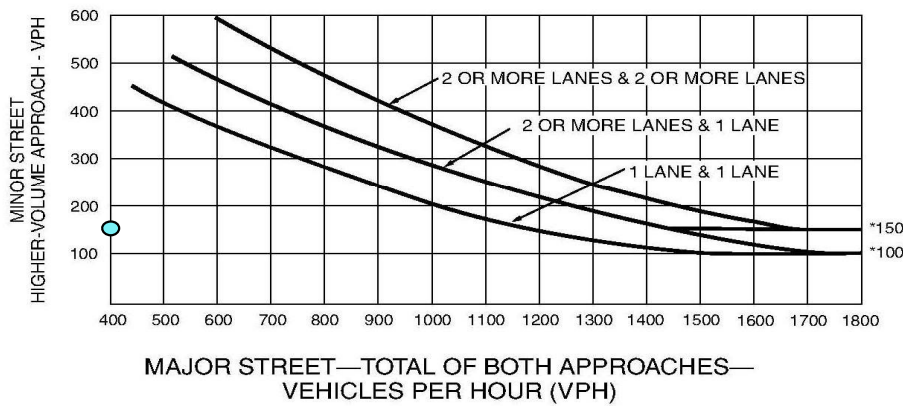
	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u>			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1.	The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>		No
2.	The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>		Yes
3.	The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.		No

<u>PART B</u>	SATISFIED	No
---------------	-----------	----

APPROACH LANES	One	2 or More
Both Approaches - Major Street		173
Highest Approach - Minor Street	136	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet
 Warrant 3: Peak Hour
 Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions PM
 Intersection: Forni Road AND Lo Hi Way/US-50 EB Ramps
 Comments:

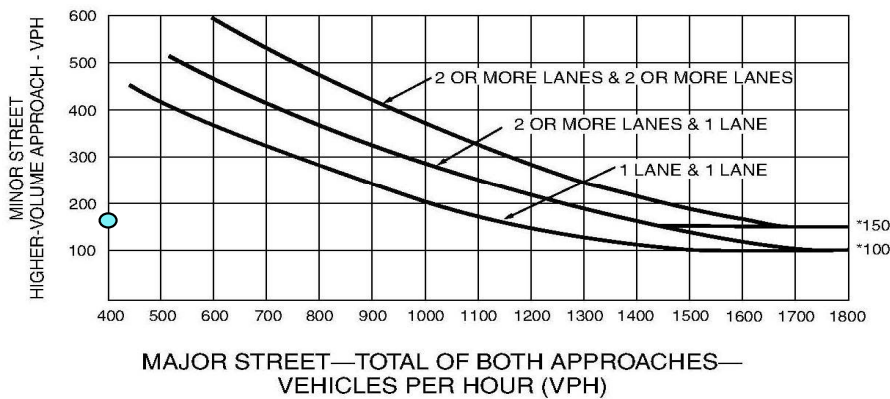
	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u> (All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			No

<u>PART B</u>	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street		314
Highest Approach - Minor Street	146	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions AM

Intersection: Placerville Drive AND Pierroz Road

Comments:

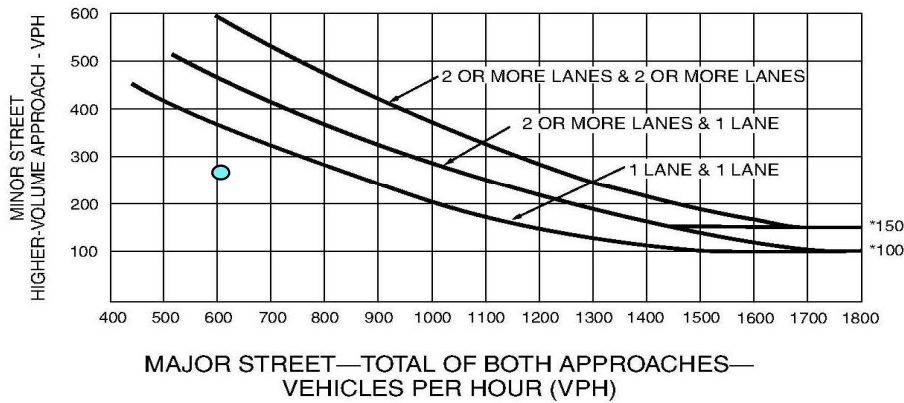
	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u>			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1.	The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>		No
2.	The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>		Yes
3.	The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.		Yes

<u>PART B</u>	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	613	
Highest Approach - Minor Street	269	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet
 Warrant 3: Peak Hour
 Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions PM
 Intersection: Placerville Drive AND Pierroz Road
 Comments:

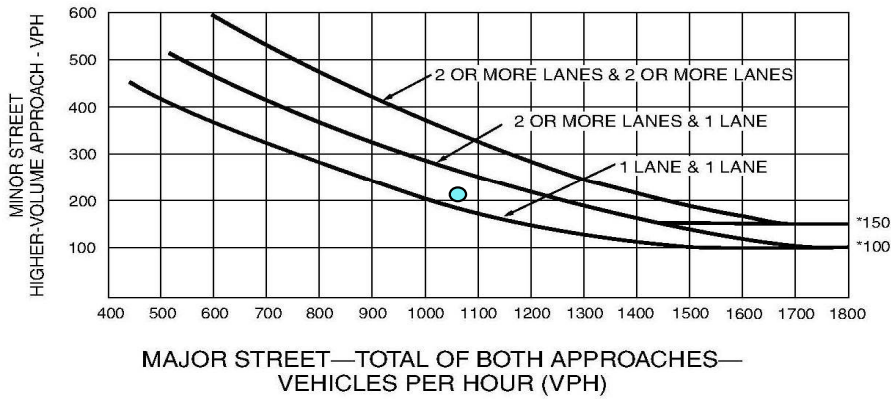
	PART A or PART B	SATISFIED	YES
PART A (All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			Yes

PART B	SATISFIED	Yes
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	1067	
Highest Approach - Minor Street	213	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions AM

Intersection: Cold Springs Road AND Pierroz Road

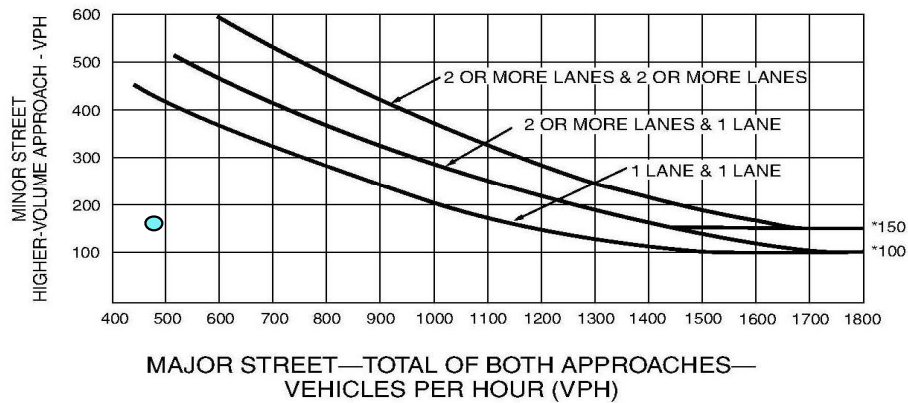
Comments:

	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u> (All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			No

<u>PART B</u>	SATISFIED	No									
<table border="1"> <thead> <tr> <th>APPROACH LANES</th> <th>One</th> <th>2 or More</th> </tr> </thead> <tbody> <tr> <td>Both Approaches - Major Street</td> <td>483</td> <td></td> </tr> <tr> <td>Highest Approach - Minor Street</td> <td>162</td> <td></td> </tr> </tbody> </table>	APPROACH LANES	One	2 or More	Both Approaches - Major Street	483		Highest Approach - Minor Street	162			
APPROACH LANES	One	2 or More									
Both Approaches - Major Street	483										
Highest Approach - Minor Street	162										

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet
 Warrant 3: Peak Hour
 Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions PM
 Intersection: Cold Springs Road AND Pierroz Road
 Comments:

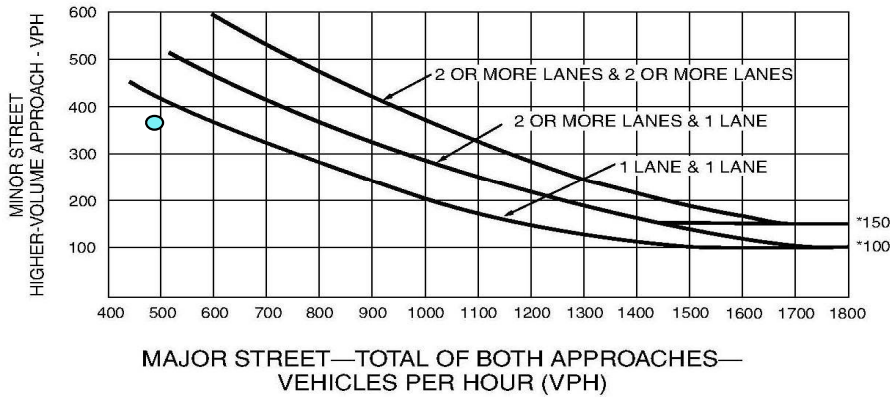
	PART A or PART B	SATISFIED	NO
PART A			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			Yes

PART B	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	493	
Highest Approach - Minor Street	368	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions AM

Intersection: Cold Springs Road AND Middletown Road

Comments:

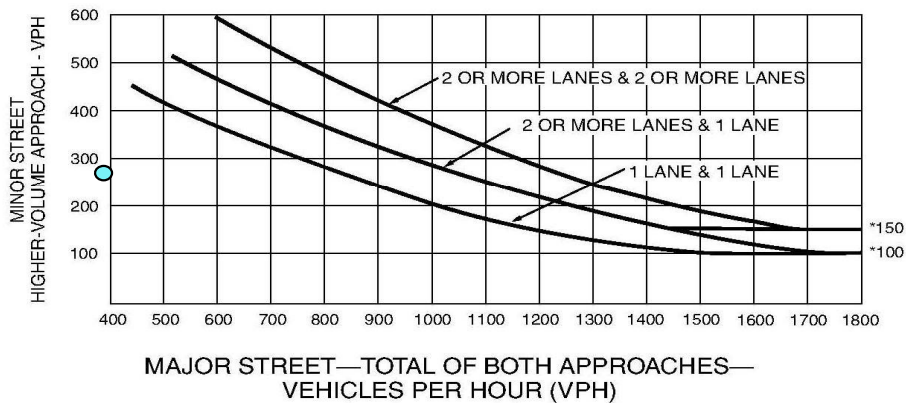
	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u> (All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			No

<u>PART B</u>	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	92	
Highest Approach - Minor Street	256	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet
 Warrant 3: Peak Hour
 Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions PM
 Intersection: Cold Springs Road AND Middletown Road
 Comments:

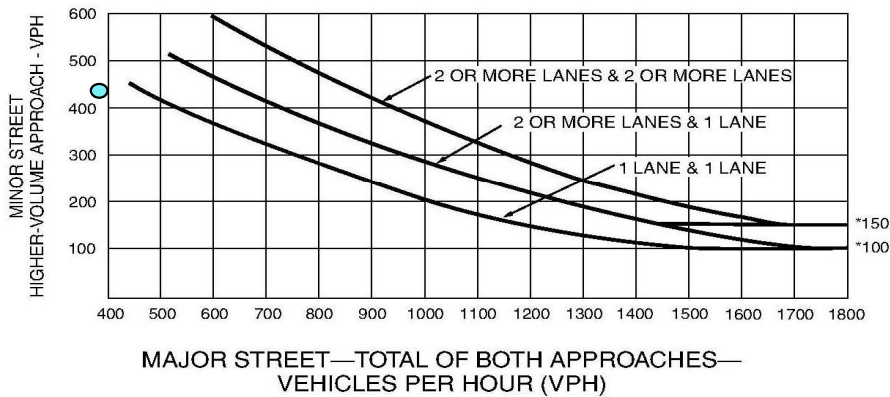
	PART A or PART B	SATISFIED	NO
PART A (All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			No

PART B	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	217	
Highest Approach - Minor Street	369	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions AM

Intersection: Placerville Drive AND US-50 WB Off-Ramp

Comments:

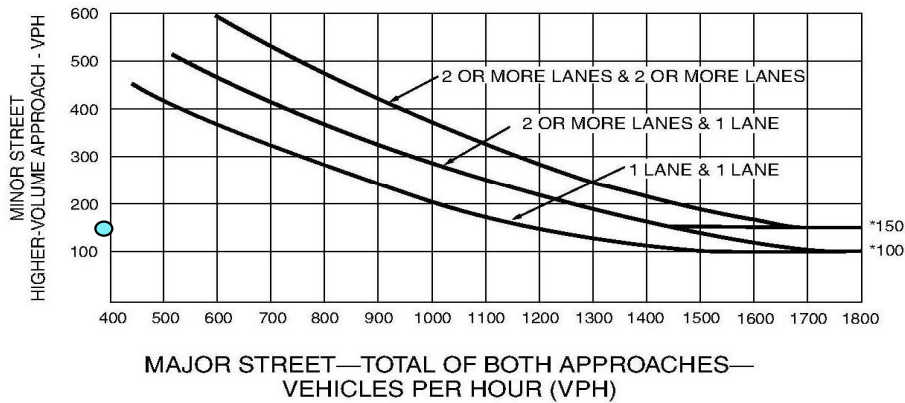
	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u>			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1.	The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>		No
2.	The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>		Yes
3.	The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.		No

<u>PART B</u>	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	337	
Highest Approach - Minor Street	142	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions PM

Intersection: Placerville Drive AND US-50 WB Off-Ramp

Comments:

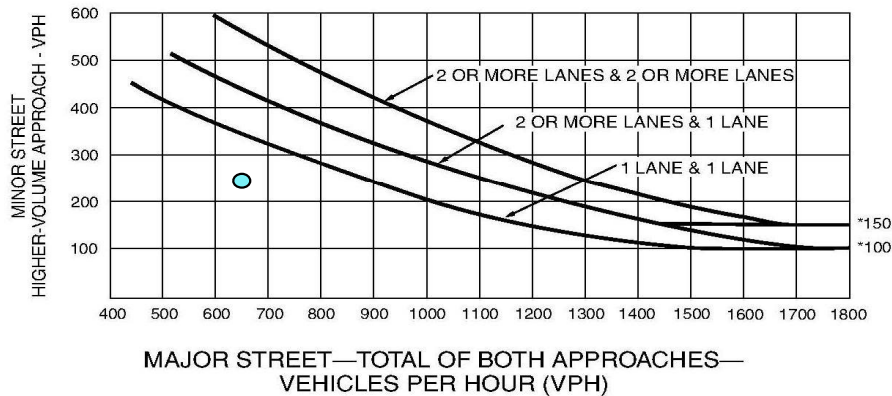
	PART A or PART B	SATISFIED	NO
PART A			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1.	The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>		No
2.	The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>		Yes
3.	The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.		Yes

PART B	SATISFIED	No
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APPROACH LANES	One 2 or More	
	Both Approaches - Major Street	621
Highest Approach - Minor Street	201	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Attachment I

Peak-Hour Signal Warrants for Existing (2023) plus Project Conditions

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions AM

Intersection: Forni Road AND Lo Hi Way/US-50 EB Ramps

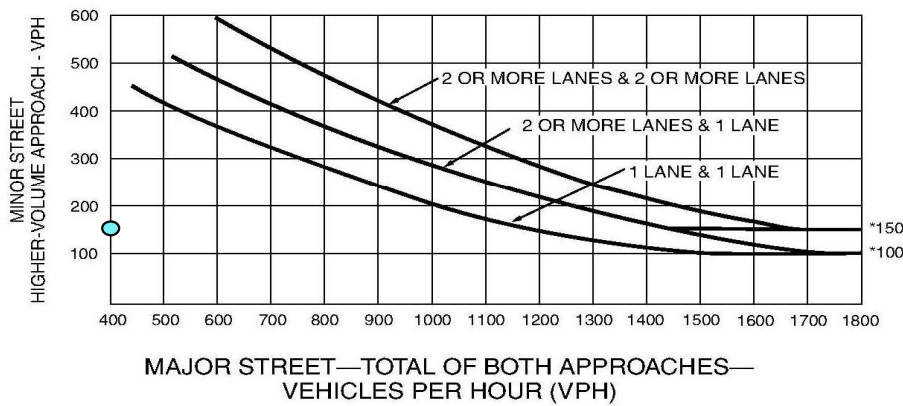
Comments:

	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u>			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1.	The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>		No
2.	The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>		Yes
3.	The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.		No

<u>PART B</u>	SATISFIED	No									
<table border="1"> <thead> <tr> <th>APPROACH LANES</th> <th>One</th> <th>2 or More</th> </tr> </thead> <tbody> <tr> <td>Both Approaches - Major Street</td> <td></td> <td>173</td> </tr> <tr> <td>Highest Approach - Minor Street</td> <td>136</td> <td></td> </tr> </tbody> </table>	APPROACH LANES	One	2 or More	Both Approaches - Major Street		173	Highest Approach - Minor Street	136			
APPROACH LANES	One	2 or More									
Both Approaches - Major Street		173									
Highest Approach - Minor Street	136										

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet
 Warrant 3: Peak Hour
 Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions PM
 Intersection: Forni Road AND Lo Hi Way/US-50 EB Ramps
 Comments:

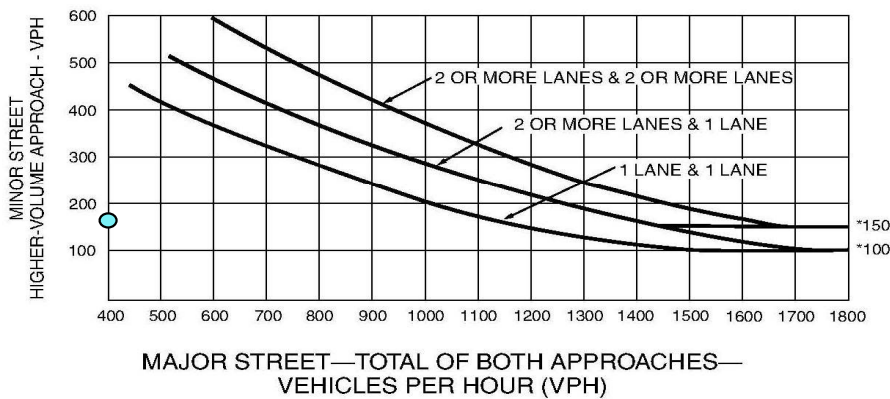
	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u> (All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			No

<u>PART B</u>	SATISFIED	No
---------------	-----------	----

APPROACH LANES	One 2 or More	
	Both Approaches - Major Street	
Highest Approach - Minor Street	146	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions AM

Intersection: Placerville Drive AND Pierroz Road

Comments:

	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u> (All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			Yes

<u>PART B</u>	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	631	
Highest Approach - Minor Street	319	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet
 Warrant 3: Peak Hour
 Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions PM
 Intersection: Placerville Drive AND Pierroz Road
 Comments:

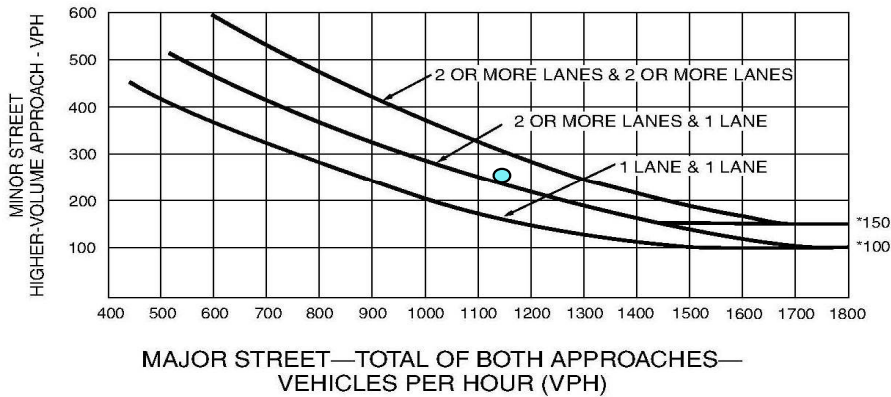
	PART A or PART B	SATISFIED	YES
PART A (All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			Yes

PART B	SATISFIED	Yes
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	1124	
Highest Approach - Minor Street	247	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions AM

Intersection: Cold Springs Road AND Pierroz Road

Comments:

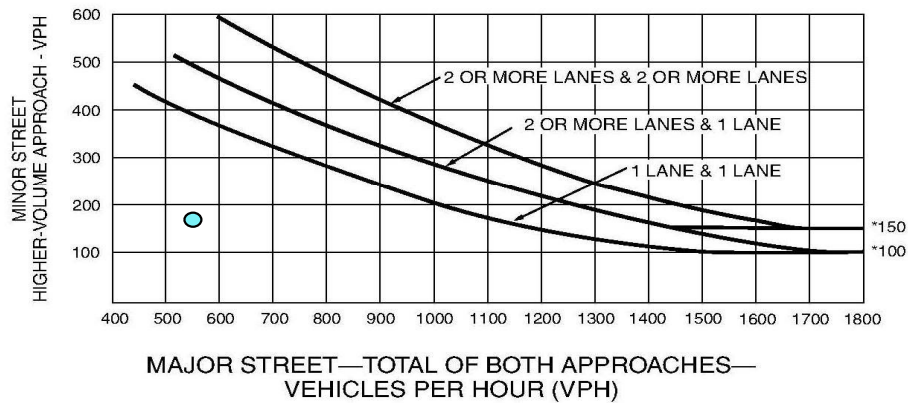
	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u> (All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			Yes

<u>PART B</u>	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	533	
Highest Approach - Minor Street	180	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet
 Warrant 3: Peak Hour
 Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions PM
 Intersection: Cold Springs Road AND Pierroz Road
 Comments:

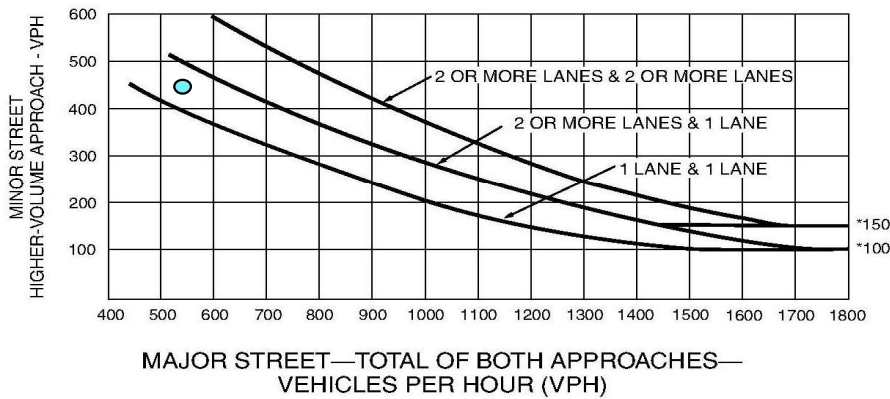
	PART A or PART B	SATISFIED	YES
PART A			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1.	The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>		No
2.	The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>		Yes
3.	The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.		Yes

PART B	SATISFIED	Yes
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APPROACH LANES	One 2 or More	
	Both Approaches - Major Street	527
Highest Approach - Minor Street	425	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions AM

Intersection: Cold Springs Road AND Middletown Road

Comments:

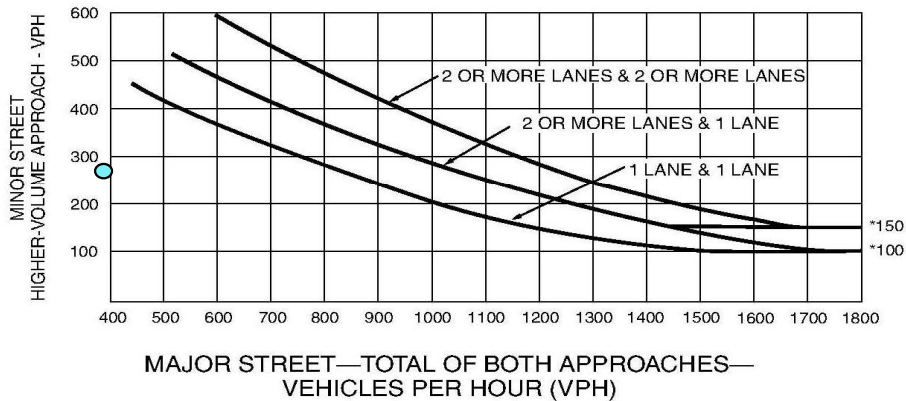
	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u> (All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			No

<u>PART B</u>	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	102	
Highest Approach - Minor Street	274	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet
 Warrant 3: Peak Hour
 Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions PM
 Intersection: Cold Springs Road AND Middletown Road
 Comments:

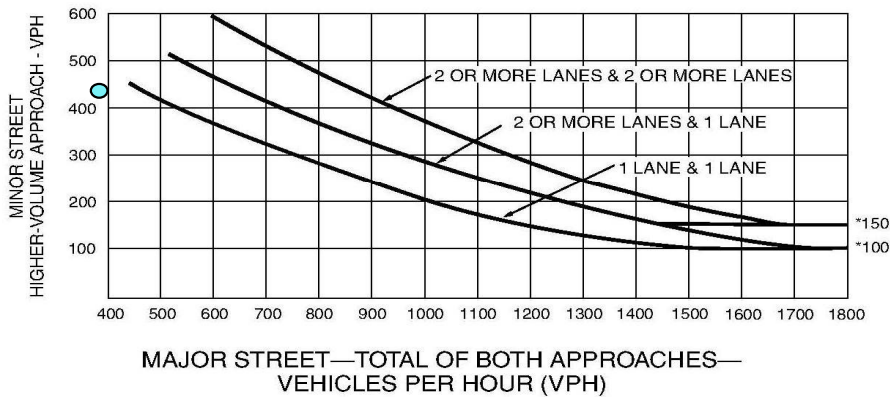
	PART A or PART B	SATISFIED	NO
PART A (All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			Yes

PART B	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	248	
Highest Approach - Minor Street	426	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions AM

Intersection: Placerville Drive AND US-50 WB Off-Ramp

Comments:

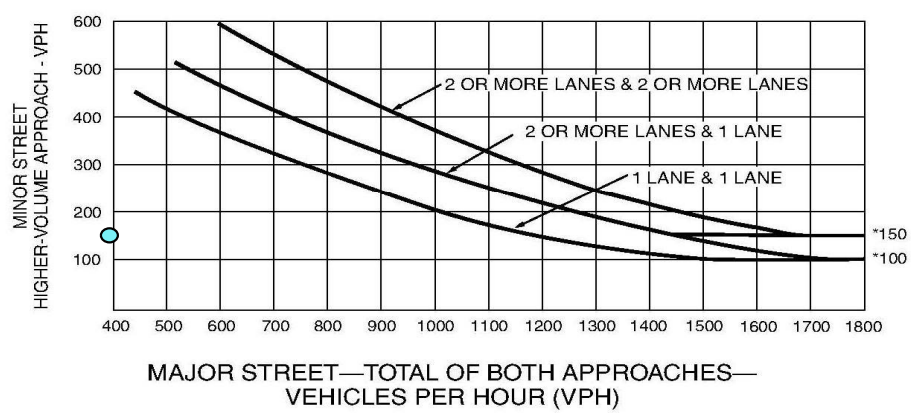
	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u>			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1.	The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>		No
2.	The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>		Yes
3.	The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.		No

<u>PART B</u>	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	364	
Highest Approach - Minor Street	152	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet
 Warrant 3: Peak Hour
 Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions PM
 Intersection: Placerville Drive AND US-50 WB Off-Ramp
 Comments:

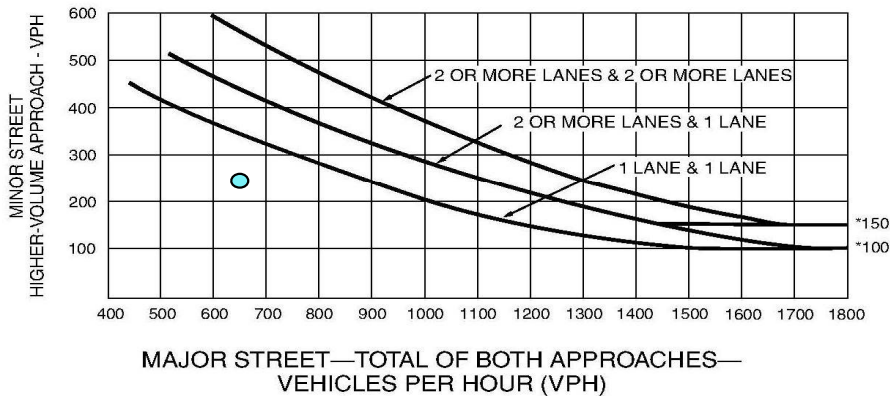
	PART A or PART B	SATISFIED	NO
PART A			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1.	The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>		No
2.	The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>		Yes
3.	The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.		Yes

PART B	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	640	
Highest Approach - Minor Street	232	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Attachment J

Peak- Hour Signal Warrants for Cumulative (2043) Conditions

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions AM

Intersection: Forni Road AND Lo Hi Way/US-50 EB Ramps

Comments:

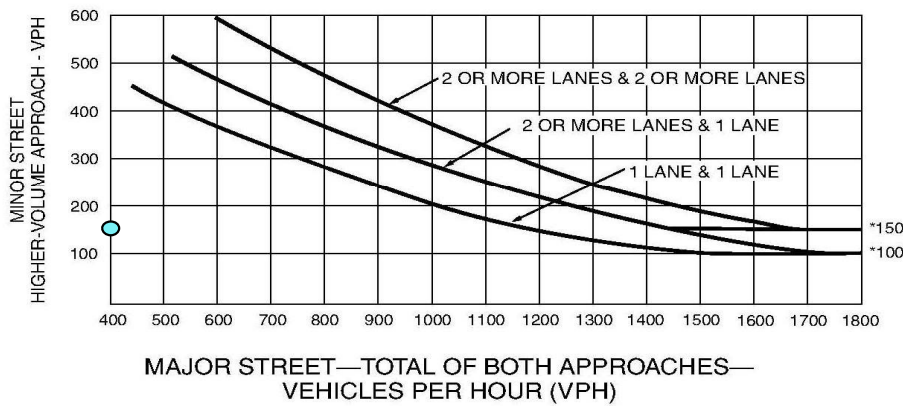
	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u>			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1.	The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>		No
2.	The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>		Yes
3.	The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.		No

<u>PART B</u>	SATISFIED	No
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APPROACH LANES	2 or More	
	One	
Both Approaches - Major Street		290
Highest Approach - Minor Street	140	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet
 Warrant 3: Peak Hour
 Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions PM
 Intersection: Forni Road AND Lo Hi Way/US-50 EB Ramps
 Comments:

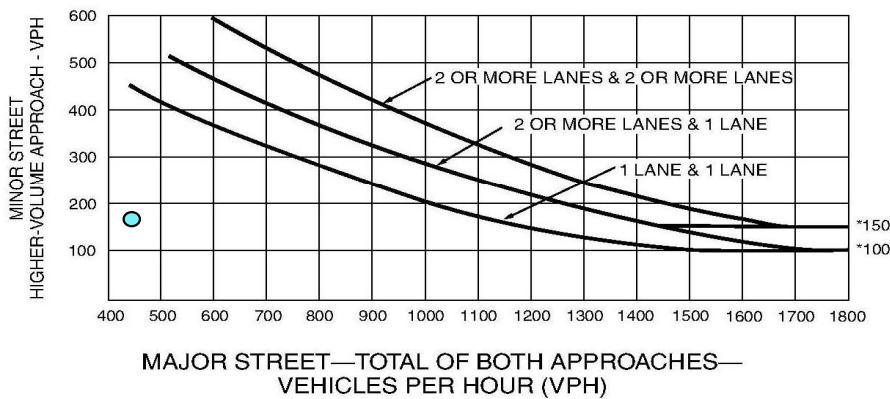
	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u> (All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			No

<u>PART B</u>	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street		430
Highest Approach - Minor Street	160	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions AM

Intersection: Placerville Drive AND Pierroz Road

Comments:

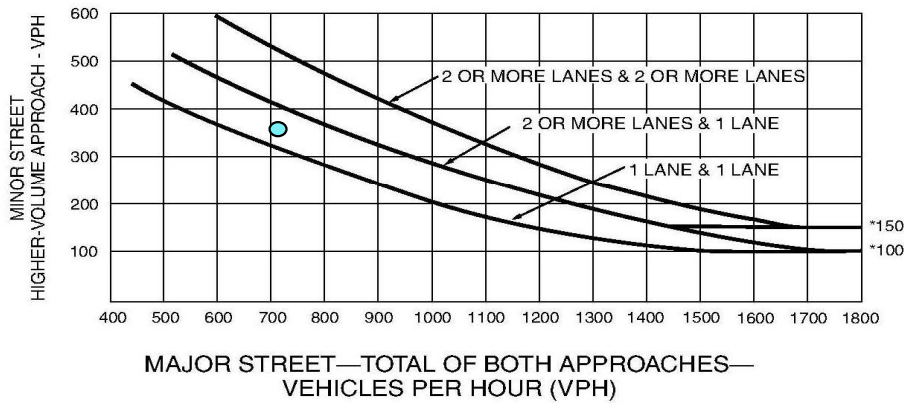
	<u>PART A</u> or <u>PART B</u>	SATISFIED	YES
<u>PART A</u>			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			Yes

<u>PART B</u>	SATISFIED	Yes
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	710	
Highest Approach - Minor Street	360	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet
 Warrant 3: Peak Hour
 Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions PM
 Intersection: Placerville Drive AND Pierroz Road
 Comments:

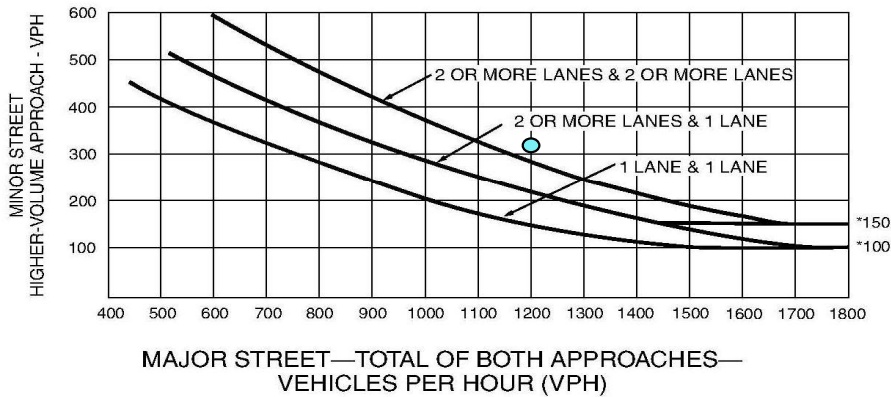
	PART A or PART B	SATISFIED	YES
PART A			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1.	The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>		No
2.	The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>		Yes
3.	The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.		Yes

PART B	SATISFIED	Yes
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APPROACH LANES	One 2 or More	
	Both Approaches - Major Street	1200
Highest Approach - Minor Street	310	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions AM

Intersection: Cold Springs Road AND Pierroz Road

Comments:

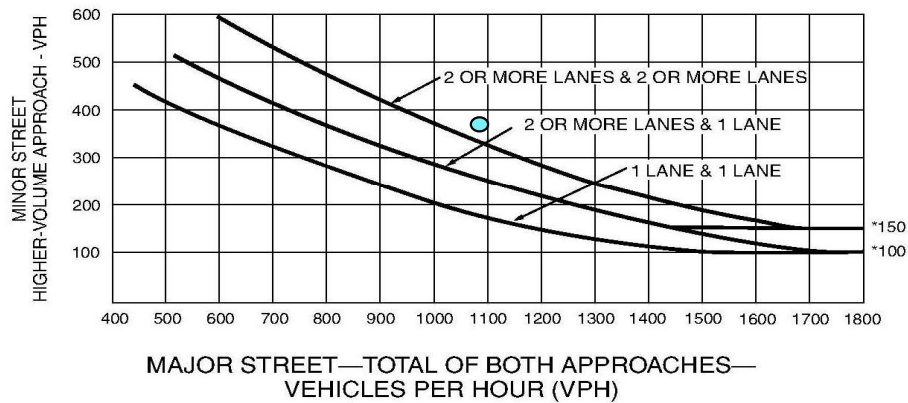
	<u>PART A</u> or <u>PART B</u>	SATISFIED	YES
<u>PART A</u>			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			Yes

<u>PART B</u>	SATISFIED	Yes
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	1090	
Highest Approach - Minor Street	360	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet
 Warrant 3: Peak Hour
 Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions PM
 Intersection: Cold Springs Road AND Pierroz Road
 Comments:

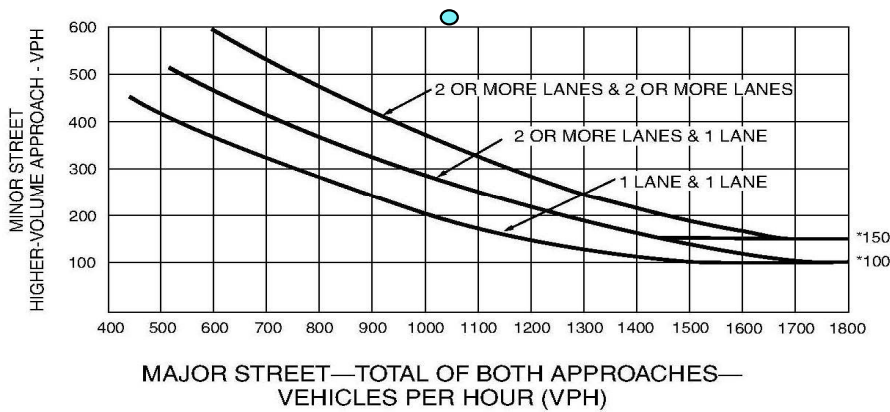
	PART A or PART B	SATISFIED	YES
PART A			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	YES
1.	The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>		Yes
2.	The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>		Yes
3.	The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.		Yes

PART B	SATISFIED	Yes
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	1040	
Highest Approach - Minor Street	860	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions AM

Intersection: Cold Springs Road AND Middletown Road

Comments:

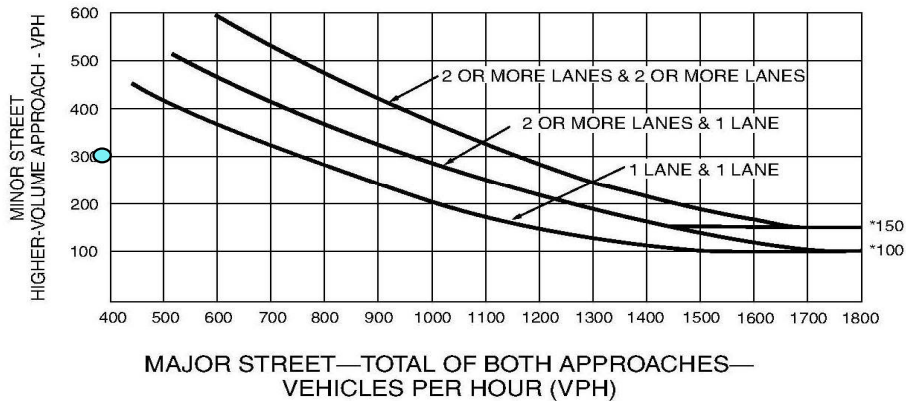
	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u> (All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			No

<u>PART B</u>	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	120	
Highest Approach - Minor Street	270	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet
 Warrant 3: Peak Hour
 Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions PM
 Intersection: Cold Springs Road AND Middletown Road
 Comments:

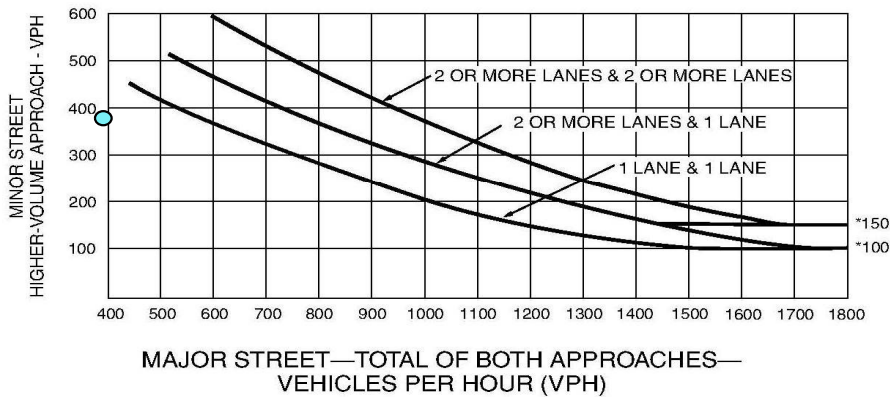
	PART A or PART B	SATISFIED	NO
PART A (All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			No

PART B	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	250	
Highest Approach - Minor Street	380	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions AM

Intersection: Placerville Drive AND US-50 WB Off-Ramp

Comments:

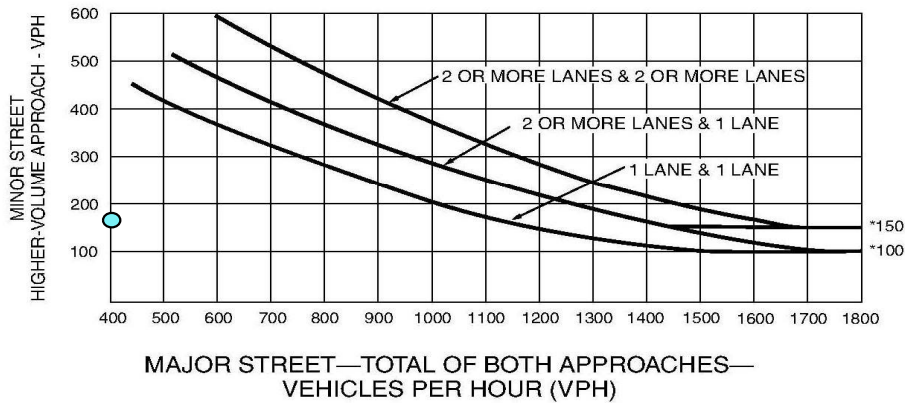
	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u>			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1.	The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>		No
2.	The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>		Yes
3.	The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.		No

<u>PART B</u>	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	350	
Highest Approach - Minor Street	160	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet
 Warrant 3: Peak Hour
 Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions PM
 Intersection: Placerville Drive AND US-50 WB Off-Ramp
 Comments:

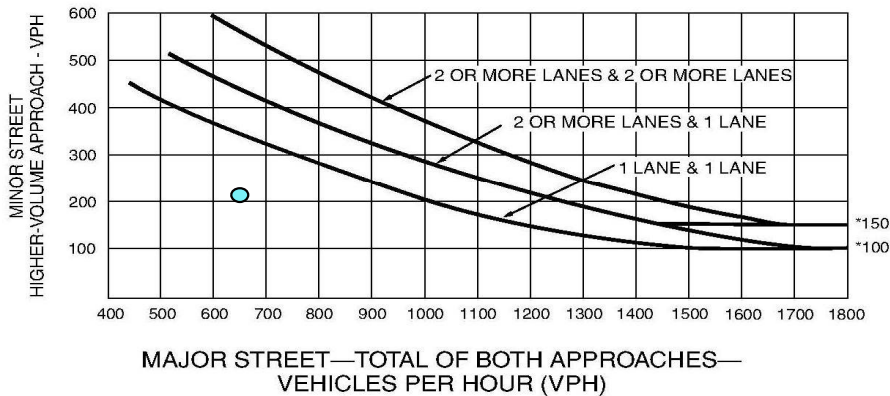
	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
PART A			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1.	The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>		No
2.	The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>		Yes
3.	The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.		Yes

<u>PART B</u>	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	640	
Highest Approach - Minor Street	210	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Attachment K

Peak-Hour Signal Warrants for Cumulative (2043) plus Project Conditions

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions AM

Intersection: Forni Road AND Lo Hi Way/US-50 EB Ramps

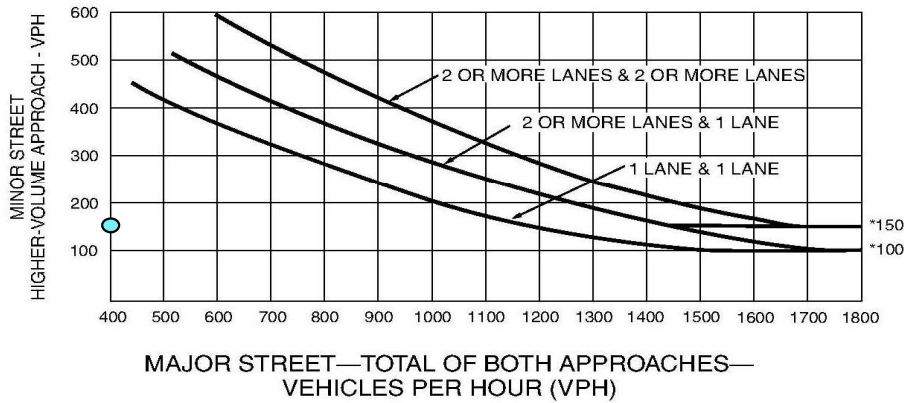
Comments:

	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u>			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1.	The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>		No
2.	The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>		Yes
3.	The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.		No

<u>PART B</u>	SATISFIED	No									
<table border="1"> <thead> <tr> <th>APPROACH LANES</th> <th>One</th> <th>2 or More</th> </tr> </thead> <tbody> <tr> <td>Both Approaches - Major Street</td> <td></td> <td>290</td> </tr> <tr> <td>Highest Approach - Minor Street</td> <td>140</td> <td></td> </tr> </tbody> </table>	APPROACH LANES	One	2 or More	Both Approaches - Major Street		290	Highest Approach - Minor Street	140			
APPROACH LANES	One	2 or More									
Both Approaches - Major Street		290									
Highest Approach - Minor Street	140										

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet
 Warrant 3: Peak Hour
 Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions PM
 Intersection: Forni Road AND Lo Hi Way/US-50 EB Ramps
 Comments:

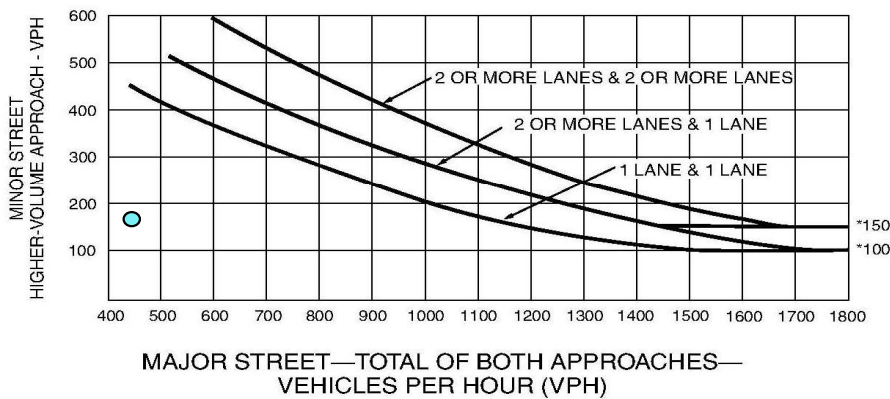
	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u> (All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			No

<u>PART B</u>	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street		430
Highest Approach - Minor Street	160	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions AM

Intersection: Placerville Drive AND Pierroz Road

Comments:

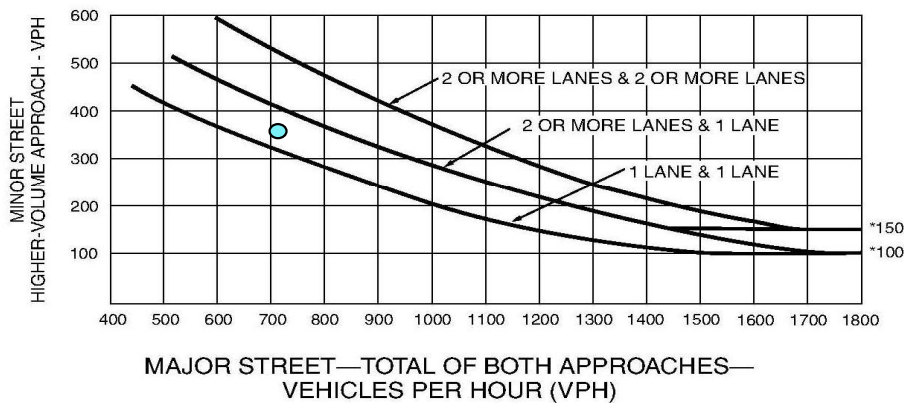
	<u>PART A</u> or <u>PART B</u>	SATISFIED	YES
<u>PART A</u>			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			Yes

<u>PART B</u>	SATISFIED	Yes
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	710	
Highest Approach - Minor Street	350	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet
 Warrant 3: Peak Hour
 Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions PM
 Intersection: Placerville Drive AND Pierroz Road
 Comments:

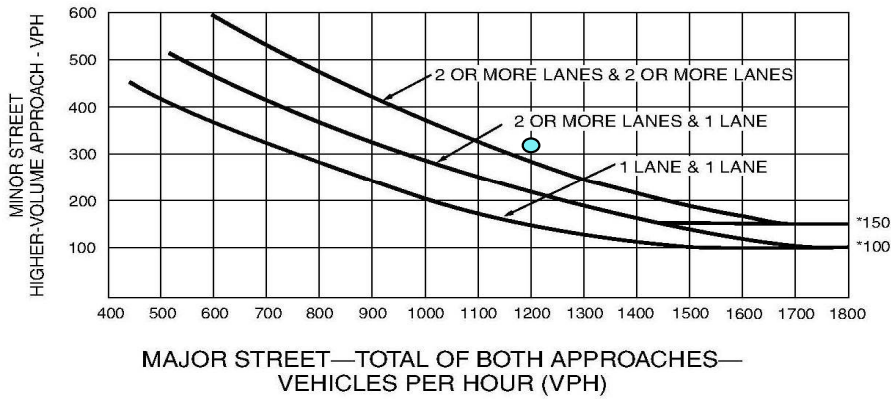
	PART A or PART B	SATISFIED	YES
PART A			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1.	The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>		No
2.	The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>		Yes
3.	The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.		Yes

PART B	SATISFIED	Yes
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	1180	
Highest Approach - Minor Street	300	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions AM

Intersection: Cold Springs Road AND Pierroz Road

Comments:

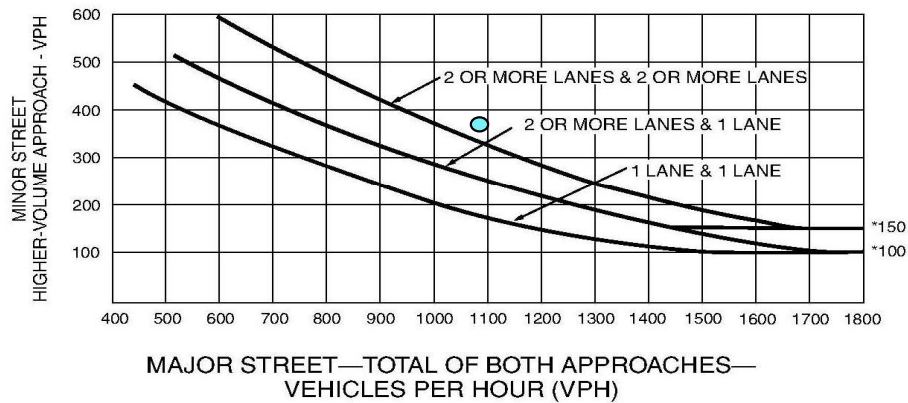
	<u>PART A</u> or <u>PART B</u>	SATISFIED	YES
<u>PART A</u> (All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			Yes

<u>PART B</u>	SATISFIED	Yes
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	1070	
Highest Approach - Minor Street	350	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet
 Warrant 3: Peak Hour
 Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions PM
 Intersection: Cold Springs Road AND Pierroz Road
 Comments:

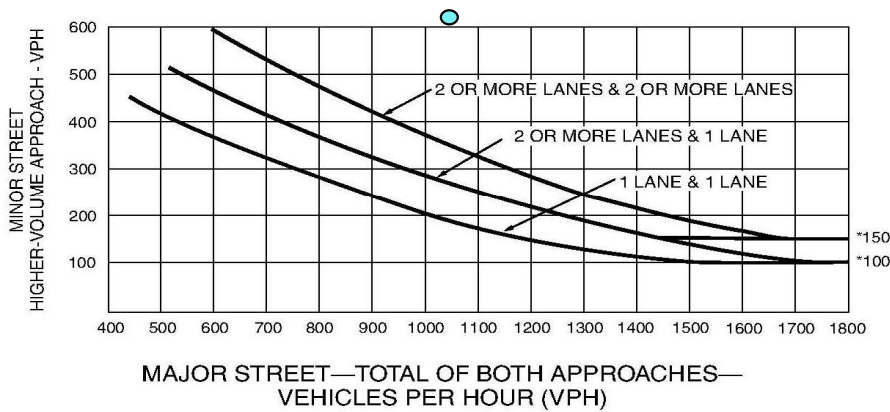
	PART A or PART B	SATISFIED	YES
PART A			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	YES
1.	The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>		Yes
2.	The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>		Yes
3.	The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.		Yes

PART B	SATISFIED	Yes
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	1030	
Highest Approach - Minor Street	840	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions AM

Intersection: Cold Springs Road AND Middletown Road

Comments:

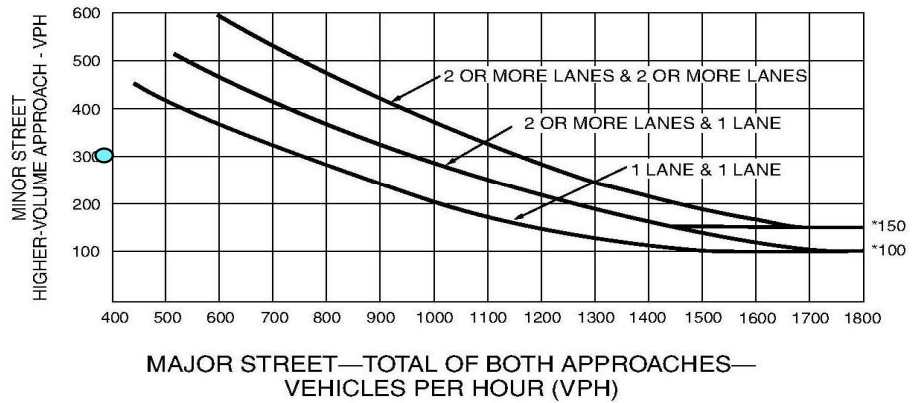
	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u> (All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			No

<u>PART B</u>	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	130	
Highest Approach - Minor Street	300	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions PM

Intersection: Cold Springs Road AND Middletown Road

Comments:

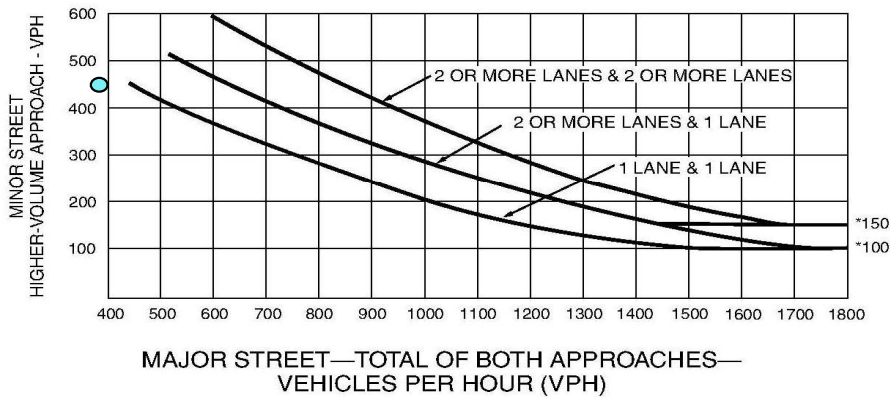
	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u> (All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			Yes

<u>PART B</u>	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	290	
Highest Approach - Minor Street	440	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet

Warrant 3: Peak Hour

Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions AM

Intersection: Placerville Drive AND US-50 WB Off-Ramp

Comments:

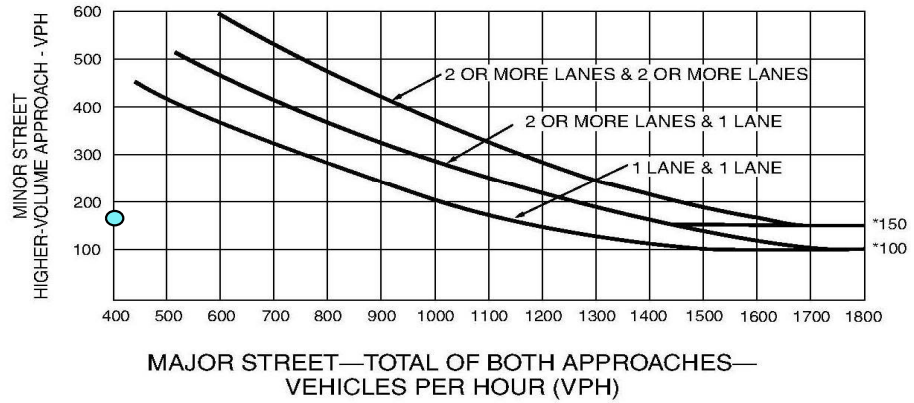
	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u>			
(All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1.	The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>		No
2.	The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>		Yes
3.	The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.		No

<u>PART B</u>	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	380	
Highest Approach - Minor Street	170	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet
 Warrant 3: Peak Hour
 Source: MUTCD 2014 California Supplement

Scenario: Existing Plus Project Conditions PM
 Intersection: Placerville Drive AND US-50 WB Off-Ramp
 Comments:

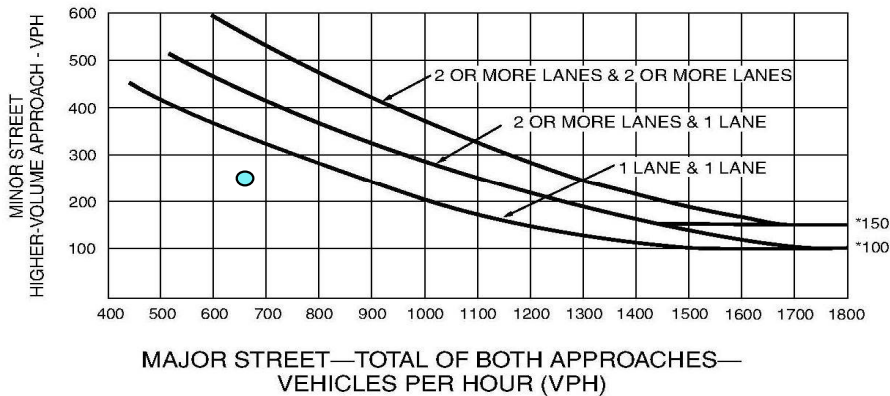
	<u>PART A</u> or <u>PART B</u>	SATISFIED	NO
<u>PART A</u> (All parts 1, 2, and 3 below must be satisfied)		SATISFIED	NO
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle hours for a two-lane approach; <u>AND</u>			No
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>			Yes
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersection with four or more approaches or 650 vph for intersection with less than four approaches.			Yes

<u>PART B</u>	SATISFIED	No
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APPROACH LANES	One	2 or More
Both Approaches - Major Street	660	
Highest Approach - Minor Street	240	

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above applicable curves in MUTCD Figure 4C-3.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.