



Southeast Corner of Prosperity Avenue/West Street – City of Tulare

Traffic Impact Study

Prepared for:

TAE, Inc.

Final Report

October 2019





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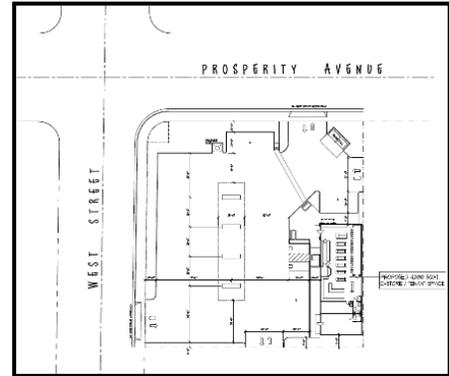
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Appendix C – California MUTCD Peak Hour Warrant 3 Worksheets
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1. Introduction

This report has been prepared to present the results of a Traffic Impact Study (TIS) prepared by GHD for a proposed convenience store and gasoline fueling station located at the southeast corner of Prosperity Avenue/West Street in Tulare, California (see Figure 1). The proposed retail development, herein called **Project**, would include a 4,200 square foot convenience store (mini-mart) with 16 vehicle fueling positions and off-sale beer and wine liquor license.

It is anticipated that the primary users of this project be local residents, students from neighboring schools, park users and employees of nearby industrial center. It is also anticipated that employees at the mini-mart would live nearby.





TAE Inc., Architecture/Planning
Project Vicinity Map

Project No. 11197916
 Revision No. -
 Date 07/02/2019

FIGURE 1

2. Existing Roadway System

Roadways that provide primary circulation in the vicinity of the project site include Prosperity Avenue, Pleasant Avenue and West Street.

2.1 Transportation Setting

The following roadways provide primary circulation within the Study Area. The following roadway characteristics were attained referencing the City of Tulare General Plan Circulation Element and Google Earth.

Prosperity Avenue is a minor arterial roadway that runs in an east-west direction. This 2-lane roadway, also known as Avenue 240, extends throughout the entire City. Near the study area, Prosperity Avenue provides access to local residences, businesses and agricultural uses.

Pleasant Avenue is an east-west oriented primary collector in the City of Tulare. Within the study area, Pleasant Avenue (Avenue 236) is a 2-lane undivided street that extends from Enterprise Street to the west and Gem Street east of State Route 99. This road serves many land uses, including residential, educational, recreational and agricultural.

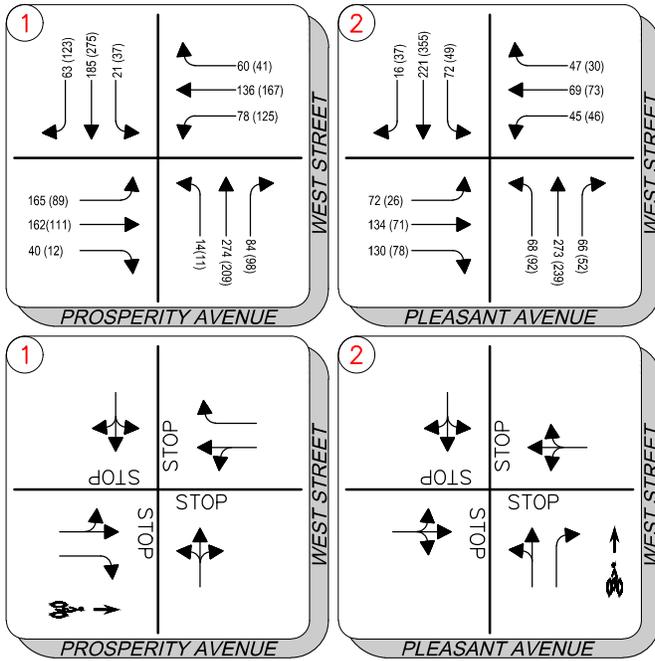
West Street is a minor arterial that traverses in a north-south direction. Within the study area, West Street is a 2-lane undivided roadway that extends from Paige Avenue to Avenue 260. Primary land uses along this corridor include residential, agricultural and pockets of retail at major intersections.

2.1.1 Study Intersections

The following intersections and road segments were identified in coordination with the City of Tulare.

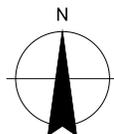
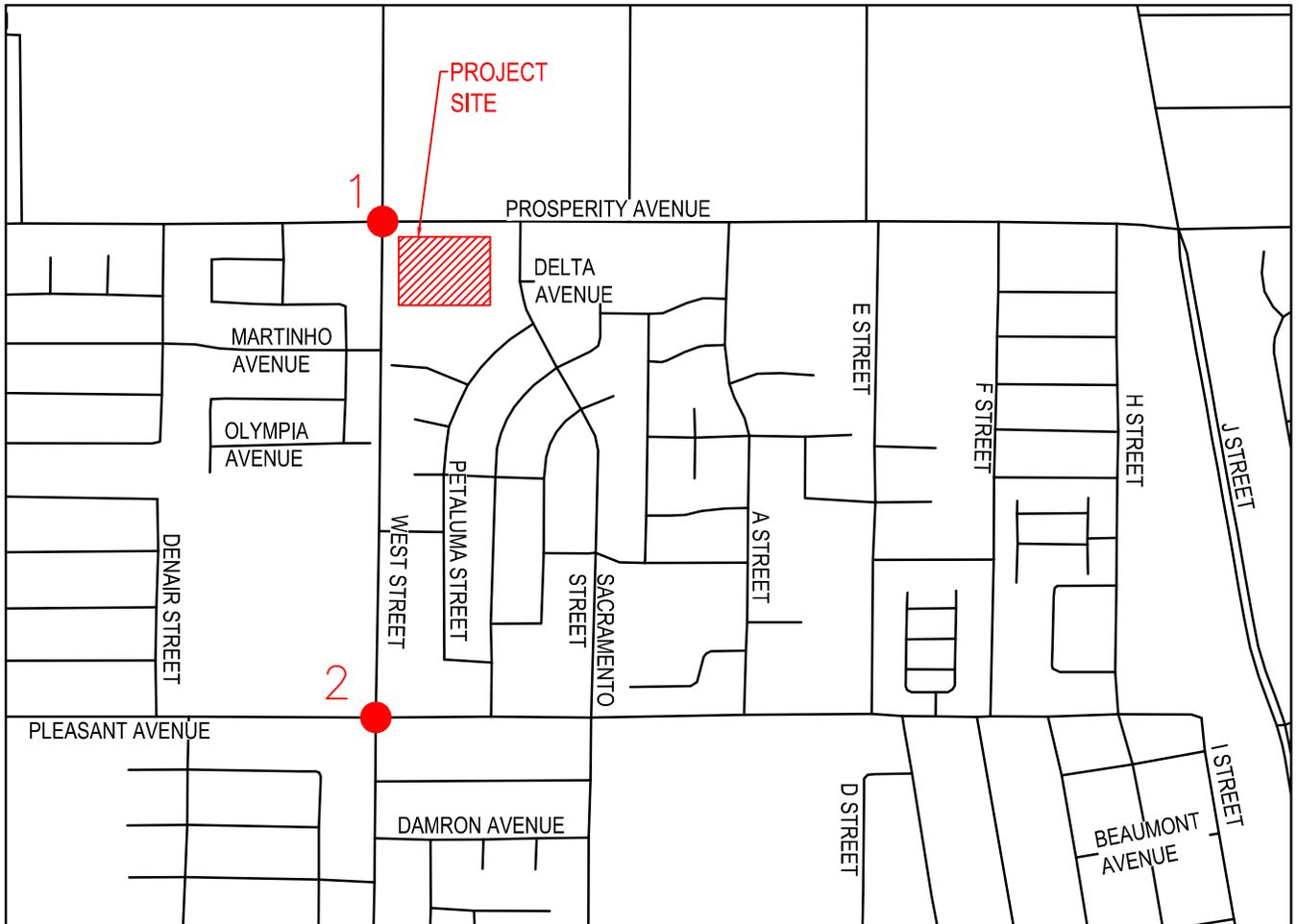
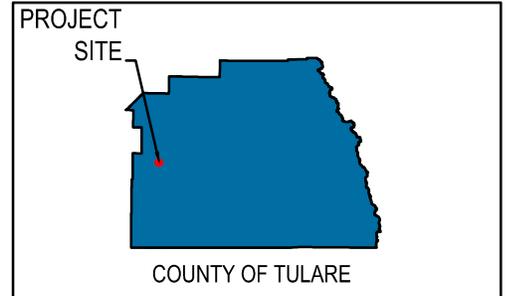
- Prosperity Avenue/ West Street (Intersection #1)
- Pleasant Avenue/West Street (Intersection #2)
- Prosperity Avenue/Driveway #1 (with project only)
- Driveway #2/West Street (with project only)

Intersection peak hour turning movement counts were collected by Metro Traffic Data, Inc., on Thursday, September 5th, 2019 for intersection #1. Additional traffic count data from the *TCAG Annual Intersection Monitoring Program – 2017 Intersection Monitoring Report* was used for peak hour turning movements counts for Intersection #2, per direction from the city's traffic engineer. Figure 2 presents the Existing intersection lane geometrics, traffic controls and Existing weekday AM and PM peak hour volumes.



LEGEND:

- BICYCLE LANE
- VEHICLE LANE
- XX - AM PEAK HOUR TRAFFIC VOLUMES
- (XX) - PM PEAK HOUR TRAFFIC VOLUMES



TAE Inc.
TRAFFIC IMPACT STUDY

EXISTING LANE GEOMETRICS AND
 CONTROL AND PEAK HOUR TRAFFIC
 VOLUMES

Project No. 11197916
 Report No. 001
 Date 09.19.19

FIGURE 2

3. Level of Service Methodologies and Guidelines

The following section presents a summary of the general level of service (LOS) methodologies and guidelines used in the analysis of intersections.

3.1 General LOS Methodologies

Intersection LOS was calculated for all control types (e.g. signalization, stop sign controlled) using the *Synchro 10* (Trafficware) integrated computer software program. LOS determinations are presented on a letter grade scale from “A” to “F”, whereby LOS “A” represents “free-flow” conditions and LOS “F” represents over capacity conditions.

3.1.1 Intersection LOS Methodologies

For All-Way Stop Control (AWSC) and signalized (future) intersections, overall intersection delays and LOS are average values for all intersection movements. For Two-Way Stop-Control (TWSC) intersections, LOS is based upon worst approach delay. Table 3.1 presents the delay-based LOS criteria for different types of intersection control.

3.2 Agency LOS Guidelines

3.2.1 City of Tulare LOS Guidelines¹

TR-P2.3: Level of Service Standard. The City shall maintain Level of Service of “D,” as defined in the Highway Capacity Manual (published by the Transportation Research Board of the National Research Council), as the minimum desirable service level at which freeways, arterial streets, collector streets and their intersections should operate.

Therefore, LOS “D” is the minimum standard that will be used for all intersection control types in this report.

¹ Tulare General Plan for the City of Tulare, October 7, 2014

Table 3.1 – Level of Service (LOS) Criteria for Intersections

Level of Service	Type of Flow	Delay	Maneuverability	Stopped Delay/Vehicle		
				Signalized	Un-signalized	All-Way Stop
A	Stable Flow	Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase not stopping at all.	Turning movements are easily made, and nearly all drivers find freedom of operation.	<10.0	<10.0	<10.0
B	Stable Flow	Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	>10.0	>10.0	>10.0
				and	and	and
C	Stable Flow	Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted	<20.0	<15.0	<15.0
				and	and	and
D	Approaching Unstable Flow	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	Maneuverability is severely limited during short periods due to temporary back-ups.	>20.0	>15.0	>15.0
				<35.0	<25.0	<25.0
E	Unstable Flow	Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.	There are typically long queues of vehicles waiting upstream of the intersection.	>35.0	>25.0	>25.0
				<55.0	<35.0	<35.0
F	Forced Flow	Generally considered to be unacceptable to most drivers. Often occurs with over saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	>55.0	>35.0	>35.0
				<80.0	<50.0	<50.0
F	Forced Flow	Generally considered to be unacceptable to most drivers. Often occurs with over saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	>80.0	>50.0	>50.0
				>80.0	>50.0	>50.0

References: Highway Capacity Manual 6th Edition

3.3 Intersection Operation Analysis Software

The *Synchro 10* software suite was used to analyze the LOS analysis for signalized/unsignalized intersections analyzed within this study. This software is based upon the latest assumptions provided in the *Highway Capacity Manual* (HCM), 6th Edition.

3.4 Technical Analysis Parameters

This Traffic Impact Analysis (TIA) provides evaluation of traffic operating conditions by incorporating appropriate heavy vehicle adjustment factors, peak hour factors (PHF), and signal timings and reports the resulting intersection delays and LOS as estimated using *Synchro 10*. The following section describes all technical parameters incorporated into intersection analysis.

Table 3.7 presents technical parameters which were applied to study intersections during the analysis.

Table 3.7 – Intersection LOS: Technical Analysis Parameters

Technical Parameters	Assumption
% Trucks	Intersection Approach, based on Existing Counts, min 2%
PHF for Existing	Intersection Approach, based on Existing Counts
PHF for Approve Pending and Future Conditions Scenarios	Intersection Overall, 0.92 or higher
Signal Timings	Based on Agency timing plans
Grade	2% or less at all intersections

Additionally, in terms of factors that affect how a road or intersection operates, PHFs are a significant measure of how concentrated traffic is during the busiest portion of the peak hour. A PHF at a given intersection is the sum of the traffic entering the intersection over the busiest 60 minutes divided by four times the entering volume of the busiest 15-minutes within the hour.

A PHF of 1.0 means traffic levels are evenly spread out over the whole hour, where a lower number means traffic spikes for a short period. However, issues of concern have occurred between existing conditions, where actual PHF is applied, and with Existing plus Approved/Pending Projects/Existing plus Project, where a default values much closer to 1.0 are used. In some instances, such as in this report, intersection delay improves after adding approved/pending projects as a result of the higher PHF. This is solely attributable to the PHF.

4. Existing Conditions

The *Existing* conditions is the analysis scenario in which current operations at study locations are analyzed and establishes the baseline traffic conditions.

4.1 Intersection Operations

Existing weekday AM and PM peak hour intersection traffic operations were quantified utilizing the Existing traffic volumes, intersection lane geometrics and control. Table 4.1 presents intersection operations for the *Existing* conditions.

Table 4.1 – Existing Peak Hour Conditions Intersection Operations

#	Intersection	Control Type ^{1,2}	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS ²	Warrant Met? ³	Delay	LOS ²	Warrant Met? ³
1	Prosperity Avenue/West Street	AWSC	D	81.0	F	Yes	46.8	E	Yes
2	Pleasant Avenue/West Street	AWSC	D	43.9	E	Yes	27.1	D	No

Notes:

1. AWSC = All Way Stop Control
2. LOS = Delay based on average of all approaches for AWSC
3. Warrant = Based on California MUTCD Warrant 3
4. **Bold** = Unacceptable Conditions

As presented in Table 4.1, both of the study intersections are currently operating at unacceptable LOS “E” or worse conditions during AM and/or PM Peak hour conditions. In addition, these stop-controlled intersections currently meet the California MUTCD Warrant 3 under Existing conditions.

Mitigation measures are discussed in the mitigation section of this report.

5. Approved/Pending Projects

The City of Tulare provided details on two Approved/Pending subdivisions that are planned within the vicinity of the project. These subdivisions include the following:

- Villa Toscana – 24 lot single-family subdivision located on the south side of Olema Avenue, west of West Street.
- Oak Crest/Shenandoah – 206 lot single-family subdivision located on the north side of Tulare Avenue west of where Cross Avenue and Tulare Avenue join.

5.1 Approved/Pending Projects Trip Generation

Table 5.1 identifies estimated Approved/Pending Projects trip generation calculations. As shown in Table 5.1, the Approved/Pending Projects are estimated to generate approximately 1,992 daily trips, including 156 AM and 209 PM peak hour trips. Trips were distributed throughout western

Tulare focusing on trip matching between the subdivisions (trip generator) and employment centers, parks/schools, shopping opportunities, and regional thoroughfares (trip attractors). Figure 3 shows Approved/Pending Projects trip distribution.

Table 5.1 – Existing plus Approved/Pending Project Trip Generation

Land Use Category (ITE Code)	Unit ¹	Daily Trip Rate/Unit ²	AM Peak Hour Trip Rate/Unit			PM Peak Hour Trip Rate/Unit		
			Total	In %	Out %	Total	In %	Out %
Single Family Detached Housing (210)	DU	9.44	0.74	25%	75%	0.99	63%	37%
Project Name	Quantity (Units)	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			Total	In	Out	Total	In	Out
Subdivision Development 1	187	1,765	138	35	104	185	117	68
Villa Toscana Phase 2	24	227	18	4	13	24	15	9
Net New Project Trips		1,992	156	39	117	209	132	77

Notes:
 1. 1 ksf = 1,000 square feet DU = dwelling unit
 2. Trip rates based on ITE Trip Generation Manual 10th edition fitted-curve equations or average rates

5.2 Approved/Pending Projects Intersection Operations

Existing plus Approved/Pending Projects conditions were estimated by superimposing trips from Table 5.1 onto Existing traffic volumes. Figure 4 presents the Existing plus Approved/Pending intersection lane geometrics, traffic controls and Existing weekday AM and PM peak hour volumes. Existing plus Approved/Pending Projects intersection LOS is shown in Table 5.2.

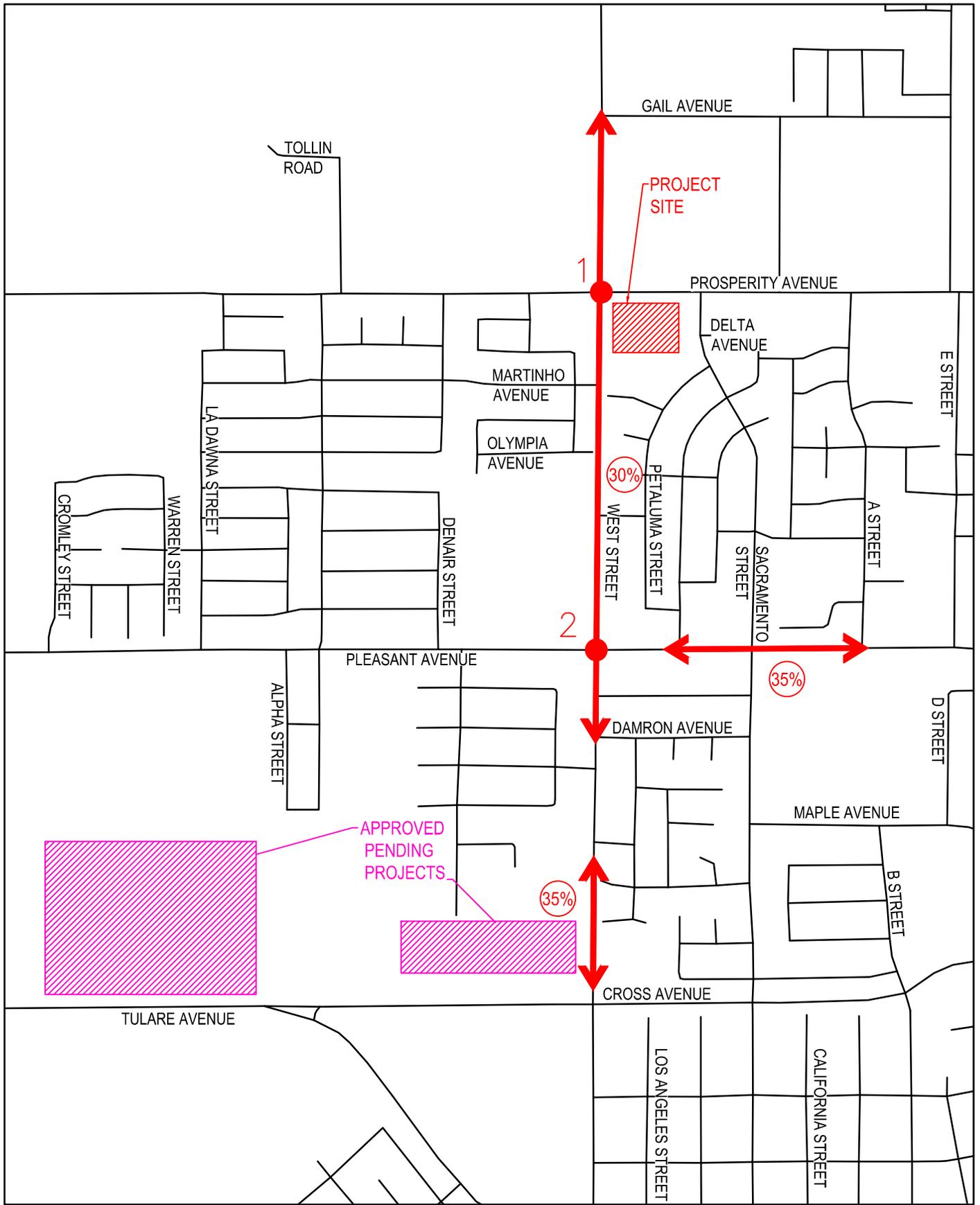
Table 5.2 – Existing plus Approved/Pending Project Intersection Level of Service

#	Intersection	Control Type ^{1,2}	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS ²	Warrant Met? ³	Delay	LOS ²	Warrant Met? ³
1	Prosperity Avenue/West Street	AWSC	D	37.0	E	Yes	47.6	E	Yes
2	Pleasant Avenue/West	AWSC	D	26.9	D	Yes	25.0	C	—

Notes:
 1. AWSC = All Way Stop Control
 2. LOS = Delay based on average of all approached for AWSC
 3. Warrant = Based on California MUTCD Warrant 3, Dash (—) indicates no warrant analysis was conducted do to acceptable delay and LOS
 4. **Bold** = Unacceptable Conditions

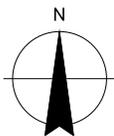
As shown in Table 5.2, Intersection #1 (Prosperity Avenue/West Street) is forecasted to operate at unacceptable LOS “E” conditions under Existing plus Approve Pending scenario. In addition, this stop-controlled intersection is projected to meet the California MUTCD Warrant 3.

Mitigation measures are discussed in the mitigation section of this report.



LEGEND:

-  TRIP DISTRIBUTION PERCENTAGE
-  TRIP DISTRIBUTION
-  INTERSECTION NODE

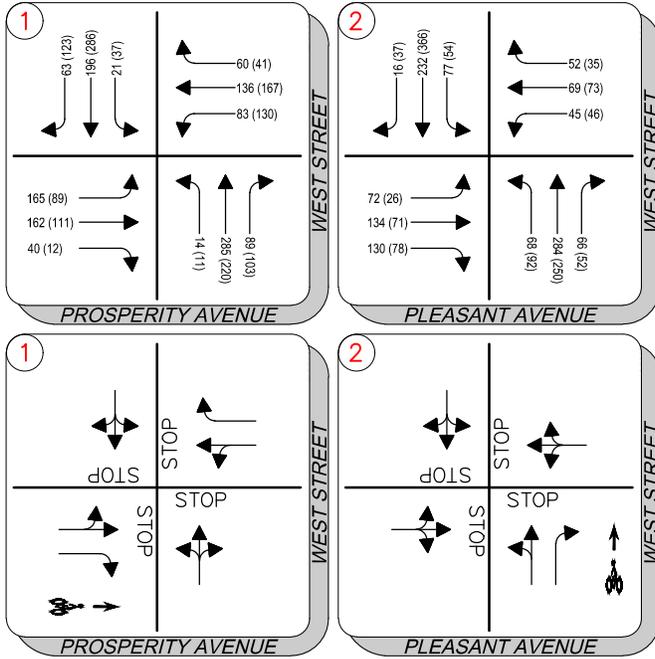


TAE Inc.
TRAFFIC IMPACT STUDY

**APPROVED/PENDING PROJECTS TRIP
 DISTRIBUTION**

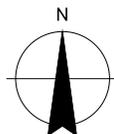
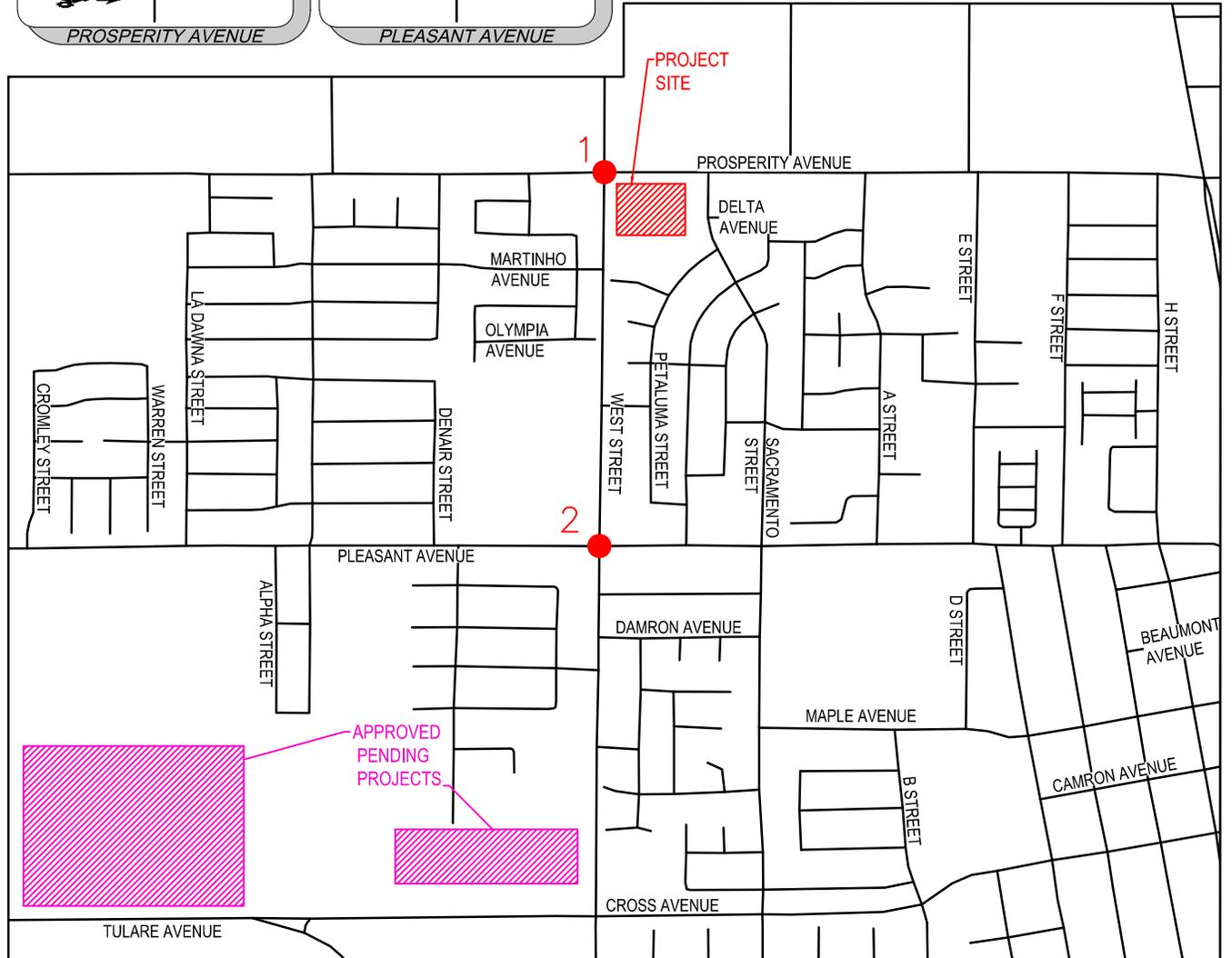
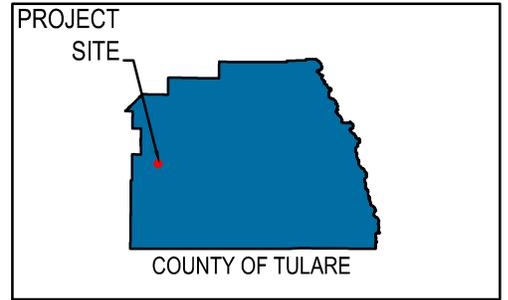
Project No. 11197916
 Report No. 001
 Date 09.19.19

FIGURE 3



LEGEND:

- BICYCLE LANE
- VEHICLE LANE
- XX - AM PEAK HOUR TRAFFIC VOLUMES
- (XX) - PM PEAK HOUR TRAFFIC VOLUMES



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TRAFFIC IMPACT STUDY

EXISTING + APPROVED/PENDING PROJECTS
 LANE GEOMETRICS AND CONTROL AND
 PEAK HOUR TRAFFIC VOLUMES

Project No. 11197916
 Report No. 001
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FIGURE 4

6. Existing plus Approved/Pending Projects plus Project

6.1 Project Description

For analysis purposes, the proposed Project will be completed in a single phase. The term "Project", as used in this report, refers to the development as follows:

- Location: Southeast corner of Prosperity Avenue and West Street
- Land Use Quantities
 - Convenience store - 4,200 square feet
 - Vehicle fueling positions (VFP) – 16
- Project Driveways
 - One full-access driveway on Prosperity Avenue
 - One full-access driveway on West Street

6.2 Project Trip Generation

Project trip generation forecasts were derived using the *Institute of Transportation Engineers (ITE) Trip Generation Manual 10th Edition* fitted-curve equations. Table 6.1 presents a summary of the land use and quantities for the proposed project, along with the corresponding ITE land use code from which trip generation characteristics were established.

Table 6.1 – Project Trip Generation

Land Use Category (ITE Code)	Unit	Daily Rate/Unit	AM Peak Hour Rate/Unit			PM Peak Hour Rate/Unit		
			Total	In %	Out %	Total	In %	Out %
Gas/Service Station with Convenience Market (945)	VFP	205.00	12.47	51%	49%	13.99	51%	49%
Project Name	Quantity	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
Mini-Market with Fueling Stations	16	3,280	200	102	98	224	114	110
<i>Pass-by Trip Reduction %</i>	<i>50%</i>	<i>-1,640</i>	<i>-100</i>	<i>-51</i>	<i>-49</i>	<i>-112</i>	<i>-57</i>	<i>-55</i>
Net New project Trips		1,640	100	51	49	112	57	55

Notes:

1. 1 ksf = 1,000 square feet, VFP=Vehicle Fueling Positions

2. Trip rates based on ITE Trip Generation Manual 10th edition fitted-curve equations

3. Pass-by trip reduction percentage based upon ITE Trip Generation Handbook, Table E.37

As shown in Table 6.1, the project is estimated to generate 1,640 net new daily trips, including 100 AM peak hour trips and 112 PM peak hour trips. A pass-by trip reduction was applied to the gross trips to account for existing trips on the roadway system stopping at the convenience store while traveling to/from primary origin/destination.

The use of 50% pass-by reduction factor for gas/service station with convenience market (ITE Code 945) is conservatively estimated based upon Table E.37 in the ITE *Trip Generation Handbook (3rd Edition)*. For this land use, Table E.37 identifies a range of pass-by reductions that range between 56% during the PM peak and 62% during the AM peak.

6.3 Project Trip Distribution

The Project directional trip distribution and specific assignment of project-generated trips were established based upon discussions with the City, the geographic location of the project, an understanding of existing and projected future traffic flows and travel patterns within the vicinity of the project site. Figure 5 shows expected project trip distribution.

6.4 Project Site Access

Access to the project site is provided via two (2) project driveways. The first project driveway is located on the south side Prosperity Avenue, just east of West Street; the second project driveway is located on the east side of West Street, just south of Prosperity Avenue. Exhibit 1 presents the Project Site Plan and shows the two project driveways.

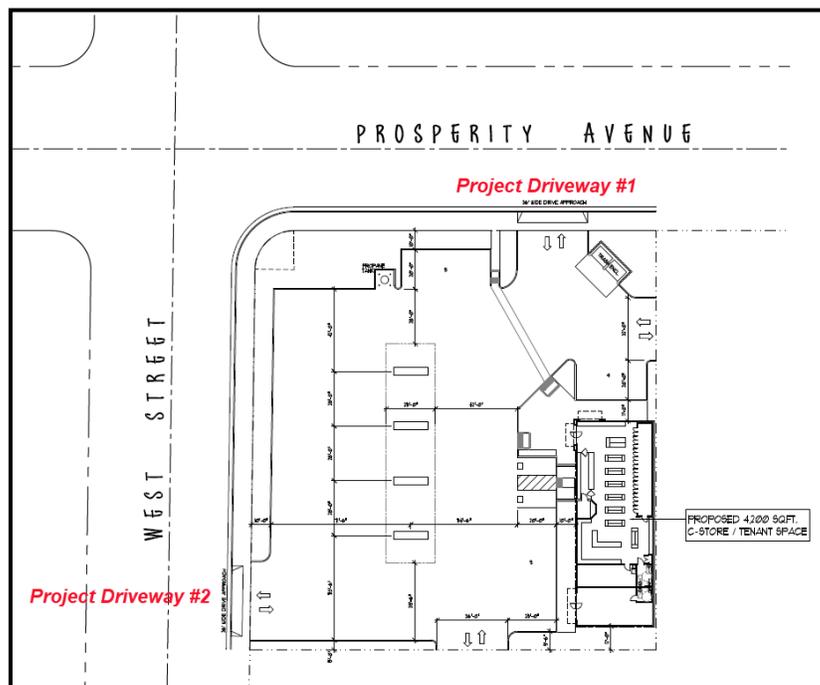
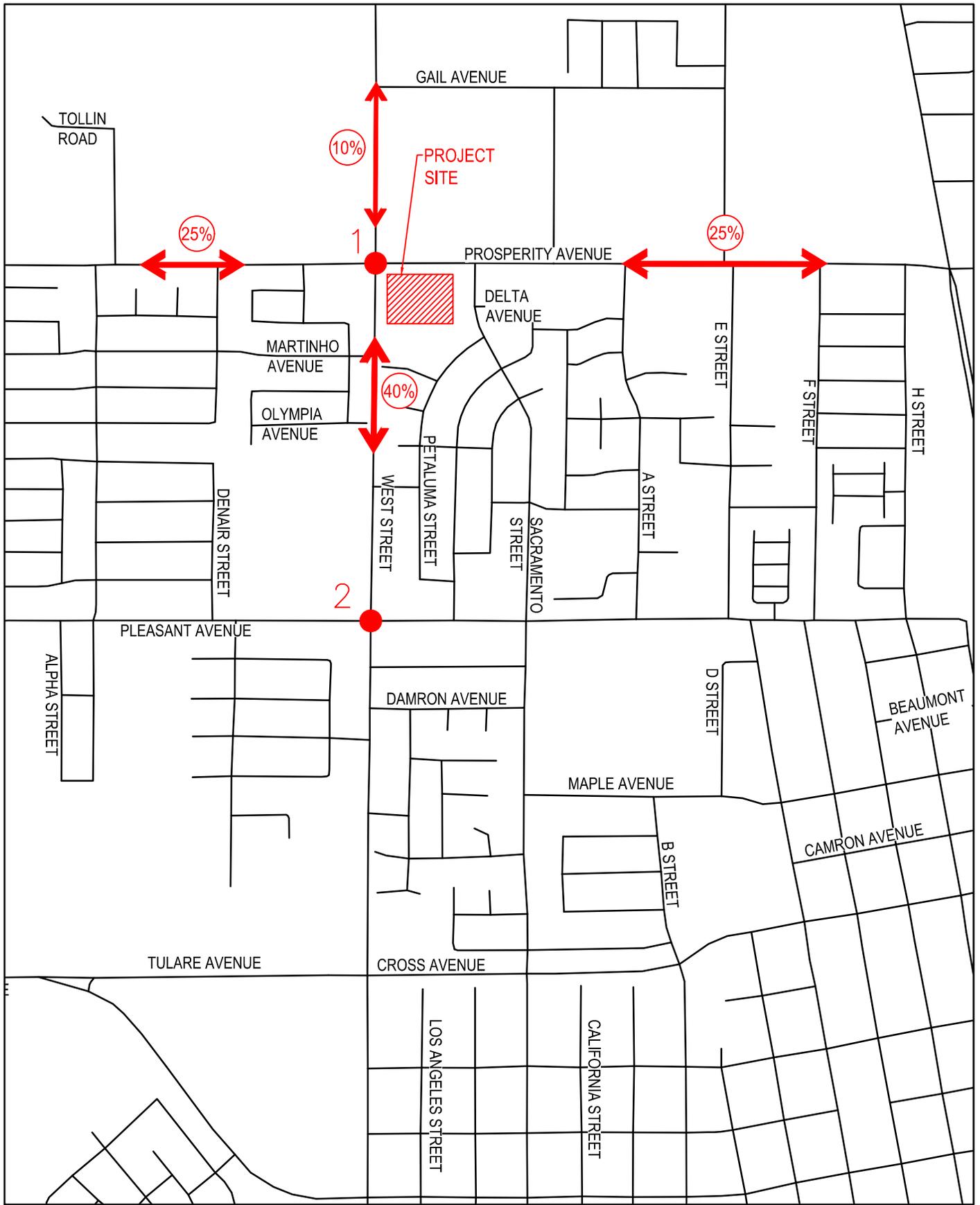
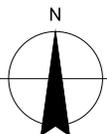


Exhibit 1 - Project Site Plan/Driveways



LEGEND:

- TRIP DISTRIBUTION PERCENTAGE
- TRIP DISTRIBUTION
- INTERSECTION NODE



TAE Inc.
TRAFFIC IMPACT STUDY
PROJECT TRIP DISTRIBUTION

Project No. 11197916
 Report No. 001
 Date 09.19.19

FIGURE 5

6.5 Intersection Operations

Existing plus Approved/Pending Projects plus Project weekday AM and PM peak hour intersection traffic operations were quantified by superimposing traffic generated by the proposed Project onto Existing plus Approved/Pending Projects conditions (reference Figure 6). Table 7.1 presents a summary of the Existing plus Approved/Pending Projects plus Project study intersection LOS conditions.

Table 7.1 – Existing plus Approved/Pending Projects plus Project Intersection Level of Service

#	Intersection	Control Type ^{1,2}	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS ²	Warrant Met? ³	Delay	LOS ²	Warrant Met? ³
1	Prosperity Avenue/West Street	AWSC	D	49.6	E	Yes	58.6	F	Yes
2	Pleasant Avenue /West Street	AWSC	D	31.4	D	Yes	31.9	D	No
3	Prosperity Avenue/Driveway #1	TWSC	D	11.7	B	—	11.9	B	—
4	Driveway #2/West Street	TWSC	D	14.8	B	—	15.6	C	—

Notes:

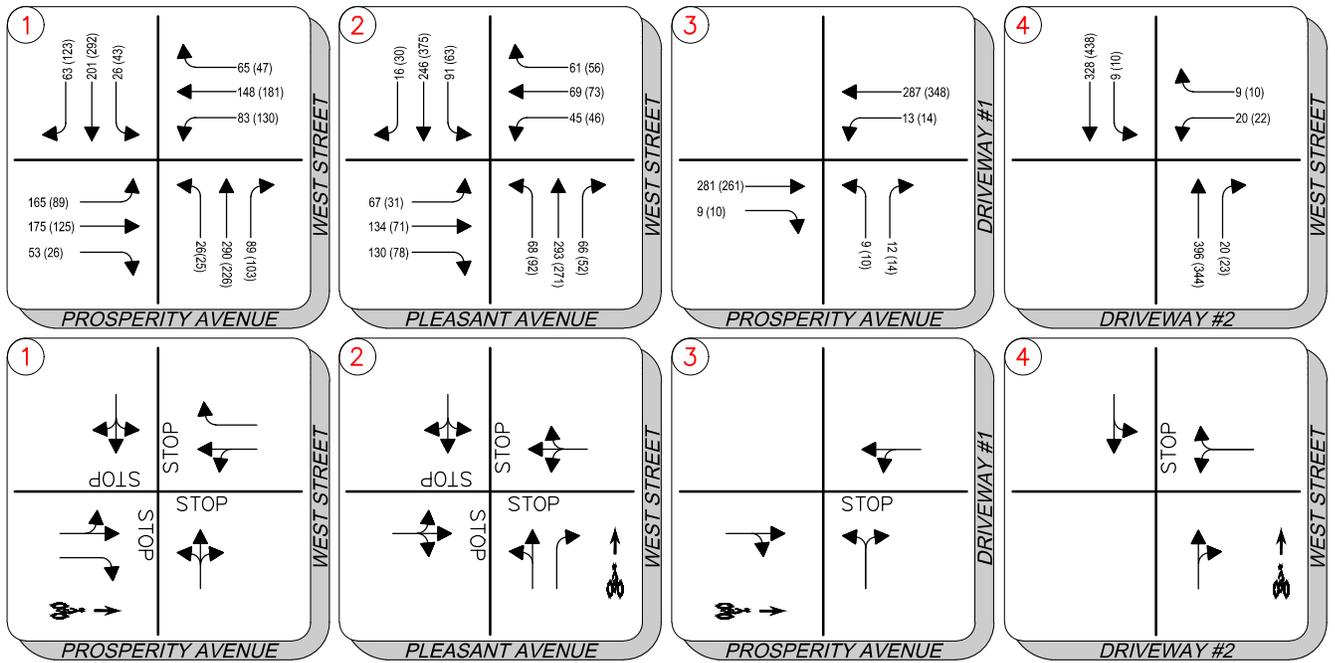
1. TWSC = Two Way Stop Control; AWSC = All Way Stop Control

2. LOS = Delay based on worst minor approach for TWSC intersections; average of all approached for AWSC

3. Warrant = Based on California MUTCD Warrant 3, Dash (—) indicates no warrant analysis was conducted do to acceptable delay and LOS

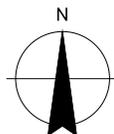
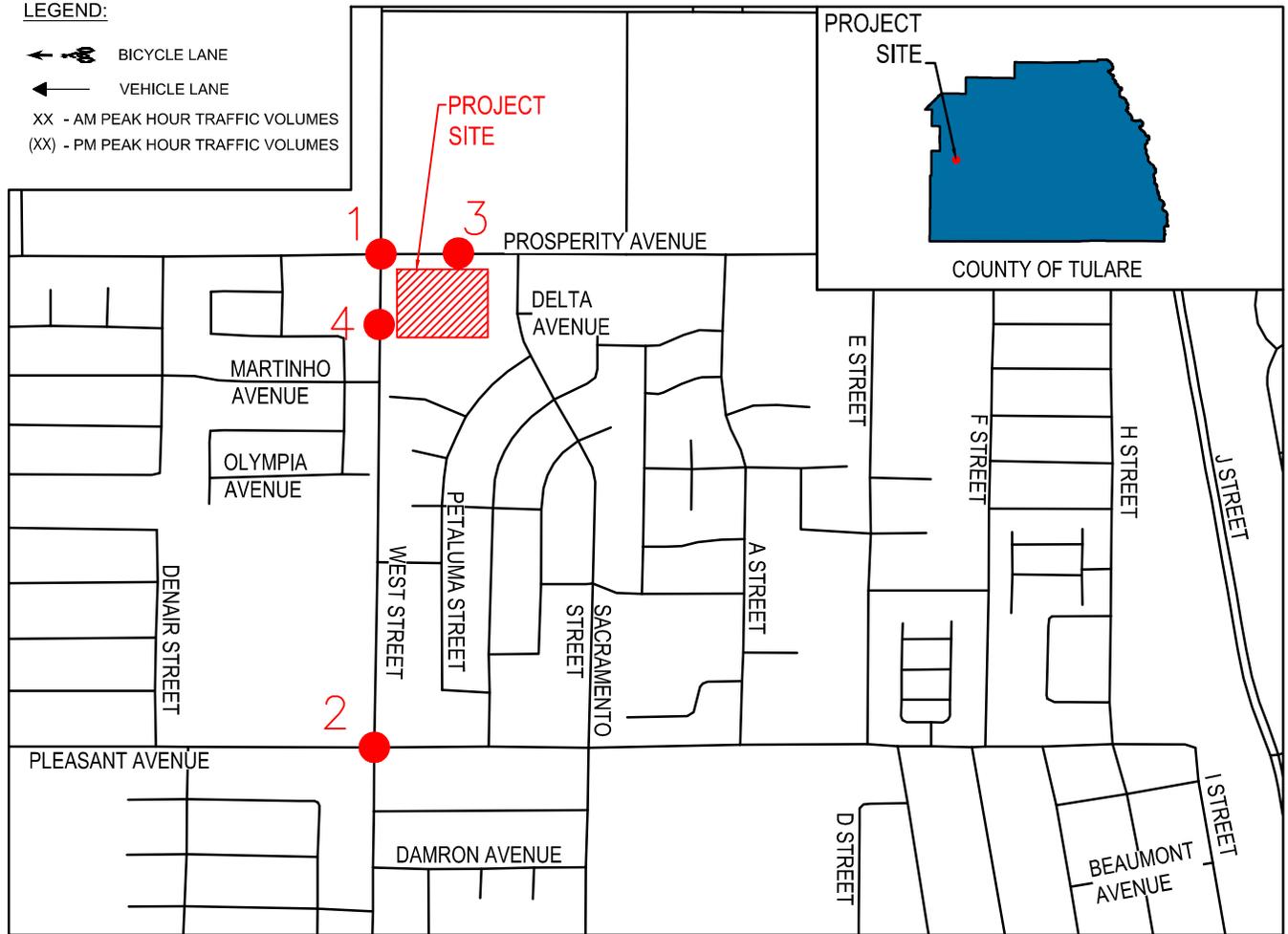
4. **Bold** = Unacceptable Conditions

As presented in Table 7.1, two study intersections are projected to operate at unacceptable LOS “D” or worst conditions during AM and/or PM peak hour conditions. In addition, these stop-controlled intersections are projected to meet the California MUTCD Warrant 3 under Existing plus Approved/Pending Projects plus Project conditions.



LEGEND:

- BICYCLE LANE
- VEHICLE LANE
- XX - AM PEAK HOUR TRAFFIC VOLUMES
- (XX) - PM PEAK HOUR TRAFFIC VOLUMES



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TRAFFIC IMPACT STUDY
 EXISTING + APPROVED/PENDING PROJECTS +
 PROJECT LANE GEOMETRICS AND CONTROL
 AND PEAK HOUR TRAFFIC VOLUMES

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FIGURE 6

7. Cumulative (2040) Conditions

Year 2015 (base calibrated/validated) and 2040 daily traffic forecasts were provided by the Tulare County Association of Governments (TCAG). GHD developed future year (2040) traffic volumes utilizing the *TCAG Regional Travel Demand Forecast Model*, which uses *CUBE* software.

The latest General Plan land use and circulation elements are included in TCAG's future models. GHD used the Model's 2015 and 2040 (Cumulative) traffic forecasts to identify the incremental change in traffic volumes by approach and applied the factor to known traffic counts to predict 2040 traffic volumes. The count delta method forecasts adjustment is based upon the difference of recent counts from interpolation resulting from base and forecast year. Following this process, GHD checked the forecasted turning movements for reasonableness and made adjustments where necessary. For example, if the Model's forecasted volumes were lower than 1.5% annual growth rate, GHD adjusted these upward to reflect historical citywide population growth between 2007 and 2017.

7.1 Intersection Operations

Cumulative traffic volumes were forecasted and are shown in Figure 7. Table 7.1 presents a summary of the Cumulative study intersection LOS conditions.

Table 7.1 – Cumulative Intersection Level of Service

#	Intersection	Control Type ^{1,2}	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met? ³	Delay	LOS	Warrant Met? ³
1	Prosperity Avenue/West Street	AWSC	D	160.9	F	Yes	191.0	F	Yes
2	Pleasant Avenue/West Street	AWSC	D	144.9	F	Yes	115.9	F	Yes

Notes:

1. AWSC = All Way Stop Control

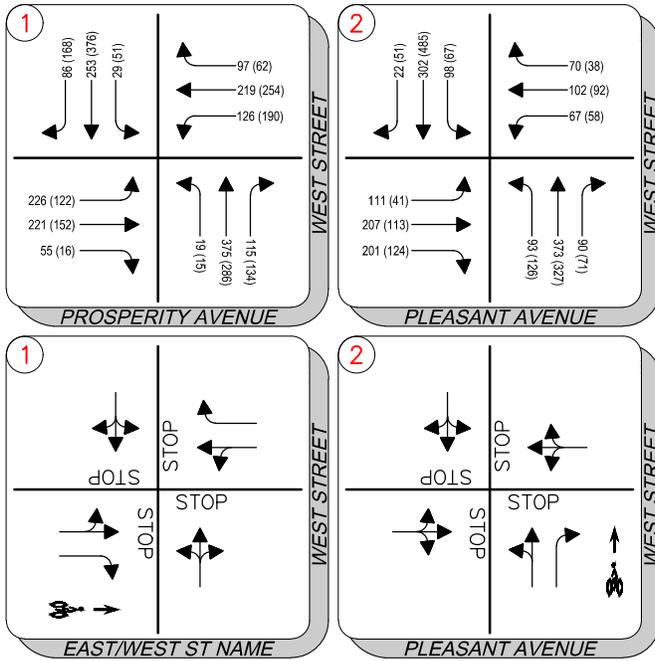
2. LOS = Delay based on average of all approached for AWSC

3. Warrant = Based on California MUTCD Warrant 3

4. **Bold** = Unacceptable Conditions

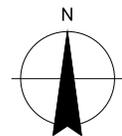
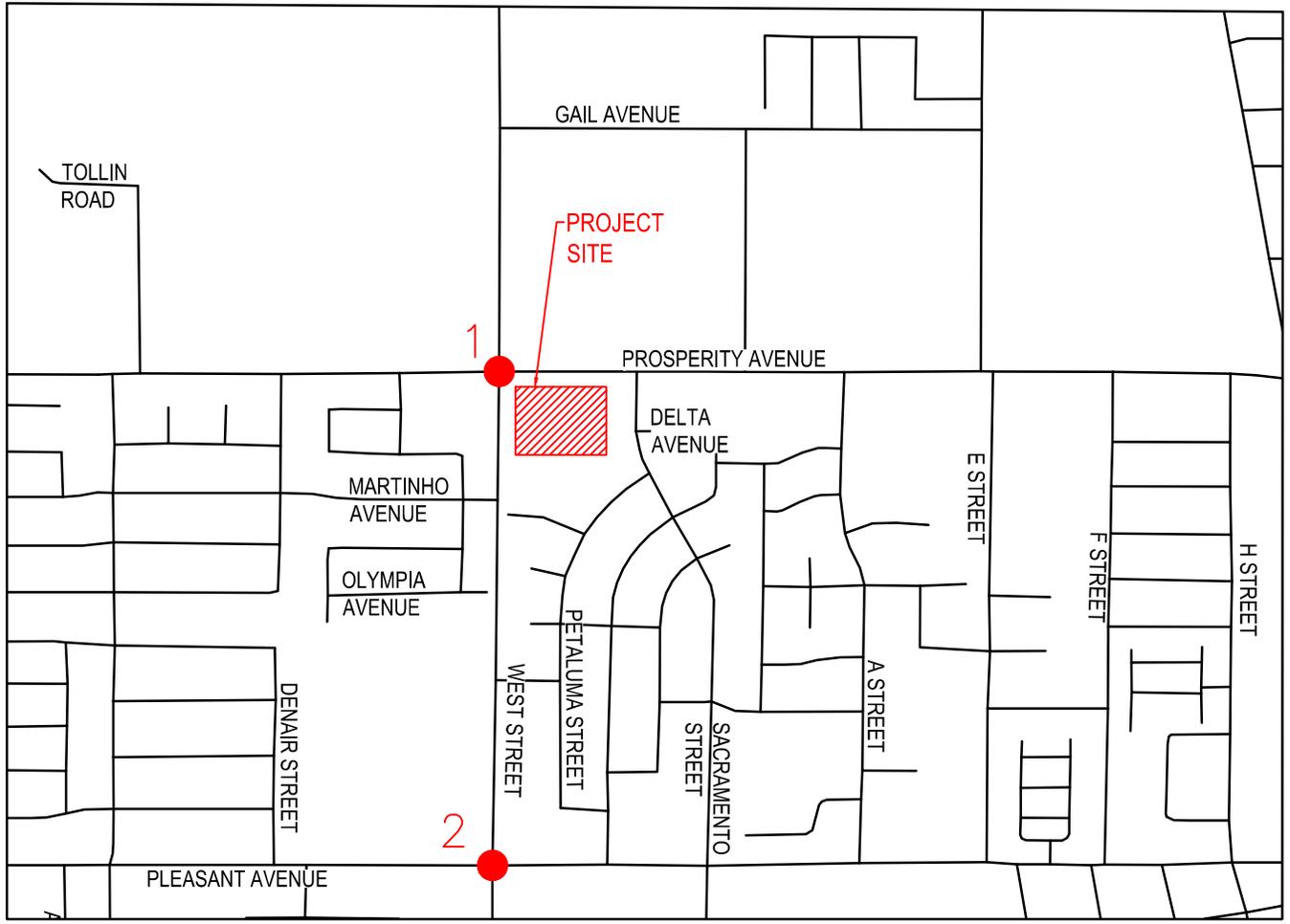
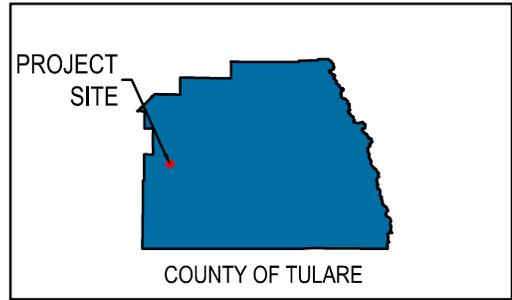
As shown in Table 7.1, the two study intersections are projected to operate at unacceptable LOS “F” or worst conditions under the Cumulative scenario. This is primarily a result of planned growth in Tulare that is anticipated to occur during the next 20 years. The all-way stop-controlled intersections are projected to meet the California MUTCD Peak Hour Warrant 3 standards for signalized intersections under Cumulative conditions.

Mitigation measures are discussed in a subsequent section of this report.



LEGEND:

- BICYCLE LANE
- VEHICLE LANE
- XX - AM PEAK HOUR TRAFFIC VOLUMES
- (XX) - PM PEAK HOUR TRAFFIC VOLUMES



TAE Inc.
TRAFFIC IMPACT STUDY

CUMULATIVE LANE GEOMETRICS AND
 CONTROL AND PEAK HOUR TRAFFIC
 VOLUMES

Project No. 11197916
 Report No. 001
 Date 09.19.19

FIGURE 7

8. Cumulative plus Project Conditions

Cumulative plus Project conditions were simulated by superimposing traffic generated by the Project onto Cumulative base (2040) conditions and forecasted traffic volumes.

8.1 Cumulative plus Project Intersection Operations

Cumulative plus Project traffic volumes were forecasted and are shown in Figure 8. Table 8.1 presents Cumulative plus Project study intersection LOS conditions.

Table 8.1 – Cumulative plus Project Intersection Level of Service

#	Intersection	Control Type ^{1,2}	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met? ³	Delay	LOS	Warrant Met? ³
1	Prosperity Avenue/West Street	AWSC	D	174.7	F	Yes	205.1	F	Yes
2	Pleasant Avenue/West Street	AWSC	D	158.9	F	Yes	140.9	F	Yes
3	Prosperity Avenue/Driveway #1	TWSC	D	14.0	B	—	14.2	B	—
4	Driveway #2/West Street	TWSC	D	19.0	C	—	20.6	C	—

Notes:

1. AWSC = All Way Stop Control

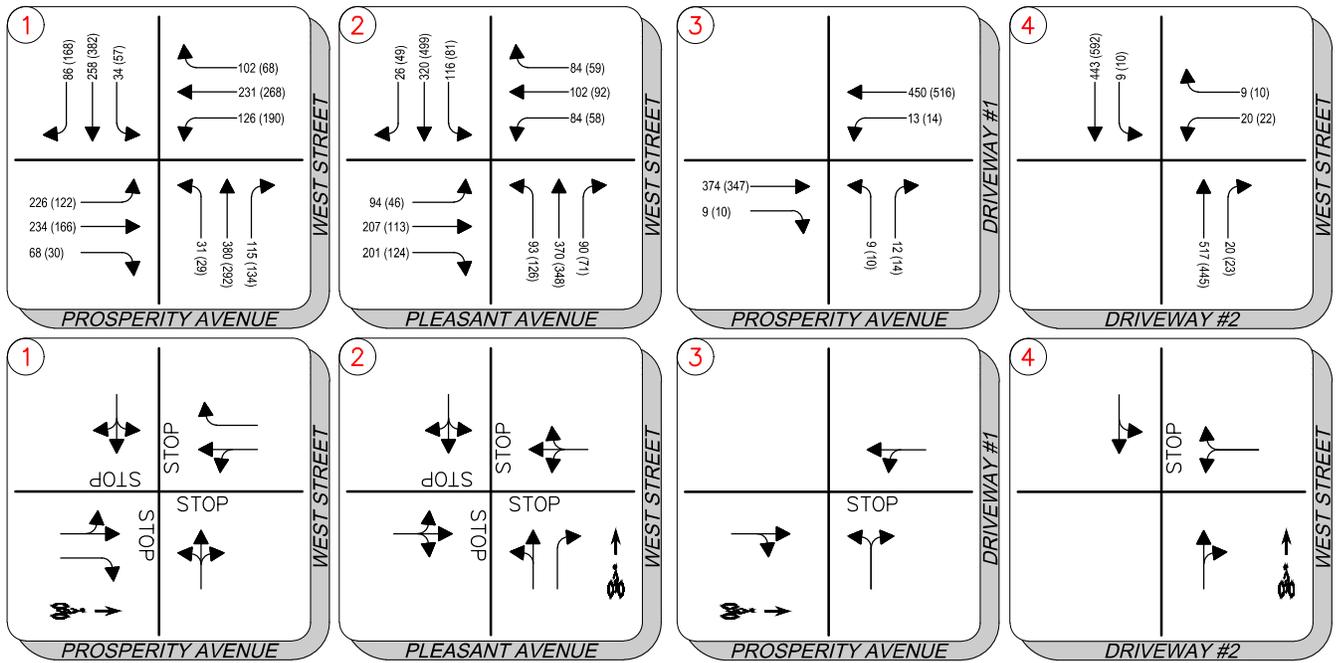
2. LOS = Delay based on average of all approached for signal

3. Warrant = Based on California MUTCD Warrant 3, Dash (—) indicates no warrant analysis was conducted do to acceptable delay and LOS

4. **Bold** = Unacceptable Conditions

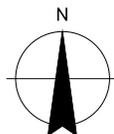
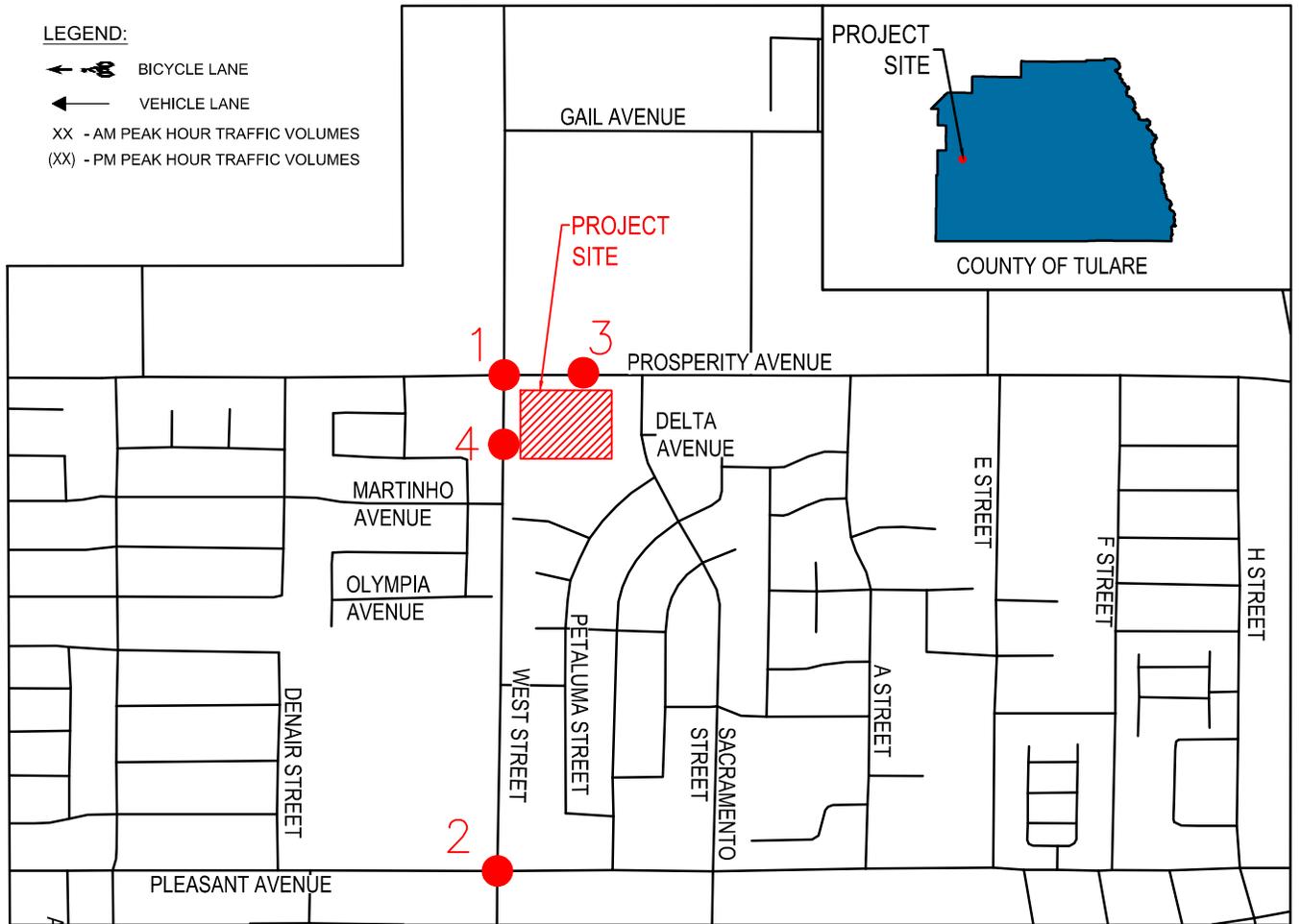
As indicated in Table 8.1, Intersection #1 (Prosperity Avenue/West Street) and Intersection #2 (Pleasant Avenue/West Street) are forecasted to operate at LOS “F” conditions under Cumulative plus Project conditions. Both of the intersections are also projected to meet the California MUTCD Peak Hour Warrant 3.

All mitigation measures are discussed in the following section of this report.



LEGEND:

- BICYCLE LANE
- VEHICLE LANE
- XX - AM PEAK HOUR TRAFFIC VOLUMES
- (XX) - PM PEAK HOUR TRAFFIC VOLUMES



TAE Inc.
TRAFFIC IMPACT STUDY
 CUMULATIVE + PROJECT LANE
 GEOMETRICS AND CONTROL AND
 PEAK TRAFFIC VOLUMES

Project No. 11197916
 Report No. 001
 Date 09.19.19

FIGURE 8

9. Recommended Mitigation Measures

This section presents a list of potential mitigation measures to be considered for the study intersections based upon the results of the analysis presented in this report. Mitigation measures have been developed for worst case scenarios to achieve acceptable LOS conditions. The study intersections are projected to operate at acceptable LOS conditions if recommended mitigation measures are implemented. Figure 9 identifies Mitigated Lane Geometrics and Control. The following alternatives are described below:

For **project driveways** (*Intersection #3 and #4*), based upon comments received from the Planning Director's Review (Staff Report, March 5, 2012), the applicant must comply with conditions established by the Public Works/Engineering Department. According to the site plan, the driveways are shown to be full access (each driveway has one lane for ingress and one lane for egress) with 36' width.

9.1 Existing Conditions

Under *Existing Conditions*, two (2) intersections currently operate at unacceptable LOS "E" or worst conditions. As such the following mitigation measures are recommended.

Prosperity Avenue/West Street (#1): Install traffic signal and widen all approaches to include left-turn lanes. The left turn pockets are recommended to be a minimum of 125 feet for EB and WB movements and a minimum of 100 feet for NB and SB movements. This intersection is forecasted to operate at LOS "F" conditions during the AM peak hour (worst case scenario) and is anticipated to meet the CA MUTCD Warrant 3 (Peak Hour). With Installation of a traffic signal to include left-turn lanes for all approaches, this intersection is forecasted to operate at LOS "A" with 6.6 seconds of delay. The delay is based upon existing PHF values as presented in the traffic count worksheets. It should be noted that intersection improvements will include right-of-way impacts, particularly on the northwest corner, and utility pole relocations.

Pleasant Avenue/West Street (#2): Install traffic signal. This intersection is forecasted to operate at LOS "E" conditions during the AM peak hour (worst case scenario) and is anticipated to meet the CA MUTCD Warrant 3 (Peak Hour). With Installation of a traffic signal to existing road geometrics and permitted phasing on all approaches, this intersection is forecasted to operate at LOS "A" with 8.7 seconds of delay.

#	Intersection	Control Type	Peak Hour ¹	Delay (s)	LOS
1	Prosperity Avenue/West Street	Signal	AM	6.6 6.3 ²	A B
2	Pleasant Avenue/West Street	Signal	AM	8.7	A

1. Worst case scenario
2. With PHF of 0.92

9.2 Existing plus Approved/Pending Projects Conditions

Under *Existing plus Approve/Pending Project Conditions*, one (1) intersection is forecasted to operate at unacceptable LOS "E" or worst conditions. As such the following mitigation measures are recommended.

Prosperity Avenue/West Street (#1): Install traffic signal and widen all approaches to include left-turn channelization (turn lanes). The left turn pockets are recommended to be a minimum of 125 feet for EB and WB movements and a minimum of 100 feet for NB and SB movements. This intersection is forecasted to operate at LOS “E” conditions during the PM peak hour (worst case scenario) and is anticipated to meet the CA MUTCD Warrant 3 (Peak Hour). With Installation of a traffic signal to include left-turn lanes for all approaches, this intersection is forecasted to operate at LOS “A” with 7.2 seconds of delay. It should be noted that intersection improvements will include right-of-way impacts, particularly on the northwest corner, and utility pole relocations.

#	Intersection	Control Type	Peak Hour ¹	Delay (s)	LOS
1	Prosperity Avenue/West Street	Signal	PM	7.2	A

1. Worst case scenario

9.3 Existing plus Approved/Pending Projects plus Project Conditions

Under *Existing plus Approve/Pending plus Project Conditions*, two (2) intersections are projected to operate at unacceptable LOS “D” or worst conditions. As such the following mitigation measures are recommended.

Prosperity Avenue/West Street (#1): Install traffic signal and widen all approaches to include left-turn channelization (turn lanes). The left turn pockets are recommended to be a minimum of 125 feet for EB and WB movements and a minimum of 100 feet for NB and SB movements. This intersection is forecasted to operate at LOS “F” conditions during the PM peak hour (worst case scenario) and is anticipated to meet the CA MUTCD Warrant 3 (Peak Hour). With Installation of a traffic signal to include left-turn lanes for all approaches, this intersection is forecasted to operate at LOS “A” with 7.9 seconds of delay. It should be noted that intersection improvements will include right-of-way impacts, particularly on the northwest corner, and utility pole relocations.

Pleasant Avenue/West Street (#2): Install traffic signal. This intersection is forecasted to operate at LOS “E” conditions during the AM peak hour (worst case scenario) and is anticipated to meet the CA MUTCD Warrant 3 (Peak Hour). With Installation of a traffic signal to existing road geometrics, this intersection is forecasted to operate at LOS “A” with 6.6 seconds of delay.

#	Intersection	Control Type	Peak Hour ¹	Delay (s)	LOS
1	Prosperity Avenue/West Street	Signal	PM	7.9	A
2	Pleasant Avenue/West Street	Signal	AM	6.6	A

1. Worst case scenario

9.4 Cumulative (2040) Conditions

Under *Cumulative (2040) Conditions*, two (2) intersections are anticipated to operate at unacceptable LOS “E” or worst conditions. As such the following mitigation measures are recommended.

Prosperity Avenue/West Street (#1): Install traffic signal and widen all approaches to include left-turn channelization (turn lanes). The left turn pockets are recommended to be a minimum of 125 feet for EB and WB movements and a minimum of 100 feet for NB and SB movements. This intersection is forecasted to operate at LOS “F” conditions during the PM peak hour (worst case scenario) and is anticipated to meet the CA MUTCD Warrant 3 (Peak Hour). With Installation of a traffic signal to include left-turn lanes for all approaches, this intersection is forecasted to operate at LOS “A” with 10.4 seconds of delay. It should be noted that intersection improvements will include right-of-way impacts, particularly on the northwest corner, and utility pole relocations.

Pleasant Avenue/West Street (#2): Install traffic signal. This intersection is forecasted to operate at LOS “F” conditions during the AM peak hour (worst case scenario) and is anticipated to meet the CA MUTCD Warrant 3 (Peak Hour). With Installation of a traffic signal to existing road geometrics, this intersection is forecasted to operate at LOS “B” with 18.9 seconds of delay.

#	Intersection	Control Type	Peak Hour ¹	Delay (s)	LOS
1	Prosperity Avenue/West Street	Signal	PM	10.4	A
2	Pleasant Avenue/West Street	Signal	AM	18.9	B

1. Worst case scenario

9.5 Cumulative plus Project Conditions

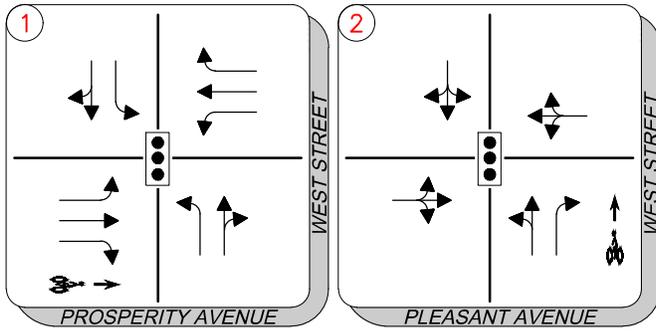
Under *Cumulative plus Project Conditions*, two (2) intersections are forecasted to operate at unacceptable LOS “F” conditions. As such the following mitigation measures are recommended.

Prosperity Avenue/West Street (#1): Install traffic signal and widen all approaches to include left-turn channelization (turn lanes). The left turn pockets are recommended to be a minimum of 125 feet for EB and WB movements and a minimum of 100 feet for NB and SB movements. This intersection is forecasted to operate at LOS “F” conditions during the PM peak hour (worst case scenario) and is anticipated to meet the CA MUTCD Warrant 3 (Peak Hour). With Installation of a traffic signal to include left-turn lanes for all approaches, this intersection is forecasted to operate at LOS “B” with 13.2 seconds of delay. It should be noted that intersection improvements will include right-of-way impacts, particularly on the northwest corner, and utility pole relocations.

Pleasant Avenue/West Street (#2): Install traffic signal. This intersection is forecasted to operate at LOS “F” conditions during the AM peak hour (worst case scenario) and is anticipated to meet the CA MUTCD Warrant 3 (Peak Hour). With Installation of a traffic signal to existing road geometrics, this intersection is forecasted to operate at LOS “B” with 22.0 seconds of delay.

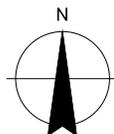
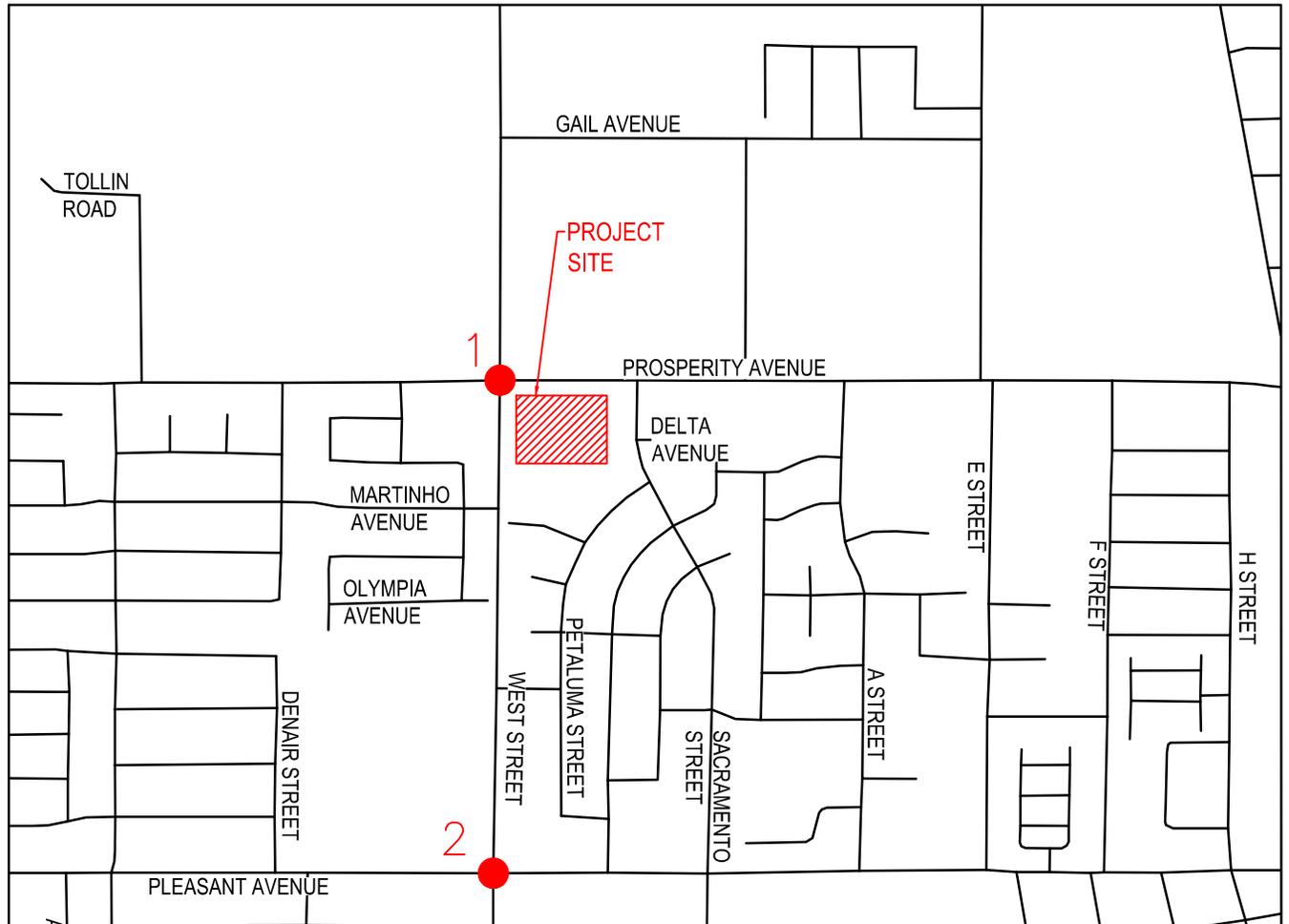
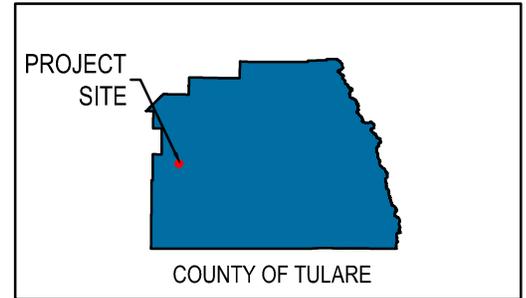
#	Intersection	Control Type	Peak Hour ¹	Delay (s)	LOS
1	Prosperity Avenue/West Street	Signal	PM	13.2	B
2	Pleasant Avenue/West Street	Signal	AM	22.0	B

1. Worst case scenario



LEGEND:

- BICYCLE LANE
- VEHICLE LANE
- TRAFFIC SIGNAL



TAE Inc.
TRAFFIC IMPACT STUDY

**MITIGATED LANE GEOMETRICS
AND CONTROL**

Project No. 11197916
Report No. 001
Date 09.19.19

FIGURE 9

10. Pro Rata Share

The project applicant is charged with all improvement costs identified in this report that would benefit the proposed project, i.e., “plus Project” impacts. In circumstances where a project proponent will be receiving a substantial benefit from the identified improvements, the project should take full responsibility toward providing the necessary infrastructure, as is the case with CEQA mitigation measures.²

Table 10.1 includes a worksheet that identifies the pro-rata share calculations (Weekday PM Peak Hour Pro-Rata Share Calculations) as documented in the Caltrans *Guide for the Preparation of Traffic Impact Studies* (December 2002). The method for calculating equitable mitigation measures is as follows:

$$P=T/(T_B - T_E)$$

Where:

P = The equitable share for the proposed project’s traffic impact.

T = The vehicle trips generated by the project during the peak hour of adjacent State highway facility in vehicles per hour (vph).

T_B = The forecasted traffic volume on a impacted State highway facility at the time of general plan build-out (e.g., 20 year model or the furthest future model date feasible), vph.

T_E = The traffic volume existing on the impacted State highway facility plus other approved projects that will generate traffic that has yet to be constructed/opened, vph.

² Caltrans *Guide for the Preparation of Traffic Impact Studies* (December 2002).

Table 10.1: Pro Rata Share Calculations

#	Intersection	Project Trips (T)	Existing+Approved Pending Trips (T _E)	Forecasted Traffic Trips (T _B)	Pro Rata % (P)
1	Prosperity Avenue/West Street	80	1,330	1,827	16.1%
2	Pleasant Avenue/West Street	91	1,180	1,594	22.0%

As shown in Pro-Rata Share Calculations, the proposed project will generate a portion of PM peak hour trips that will contribute to the deficiencies identified in this report. Table 10.1 further breaks down pro-rata share percentages for each intersection. The intersection located on the southeast corner of Intersection #1 captures fewer project trips than Intersection #2. This is a result of driveway locations along West Street and Prosperity Avenue are fully accessible without the need to impact the movements at the intersection. According to the methodology described in the *Caltrans Guide for the Preparation of Traffic Impact Studies*, Table 10.1 is neither intended as nor does it establish a legal standard for determining equitable responsibility and cost of the project's traffic impact; the intent is to provide:

1. A starting point for early discussions to address traffic mitigation equitably;
2. A means for calculating the equitable share for mitigating traffic impacts; and
3. A means for establishing rough proportionality [Dolan vs. City of Tigard, 1994, 512 U.S. 374 (114 S. Ct. 2309)].

Appendix

Appendix A – AM and PM Peak Hour Traffic Counts

Appendix B – Synchro 10 Worksheet Output Files

Appendix C – California MUTCD Peak Hour Warrant 3 Worksheets

Appendix D – Mitigation Synchro 10 LOS Output Worksheets

Appendix A
AM and PM Peak Hour Traffic Counts



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 310 N. Irwin Street - Suite 20
 Hanford, CA 93230
 800-975-6938 Phone/Fax
 www.metrotrafficdata.com

Turning Movement Report

Prepared For:

GHD
 30 River Park Place West Ste 220
 Fresno, CA 93720

LOCATION West St @ Prosperity Ave
COUNTY Tulare
COLLECTION DATE Thursday, September 05, 2019

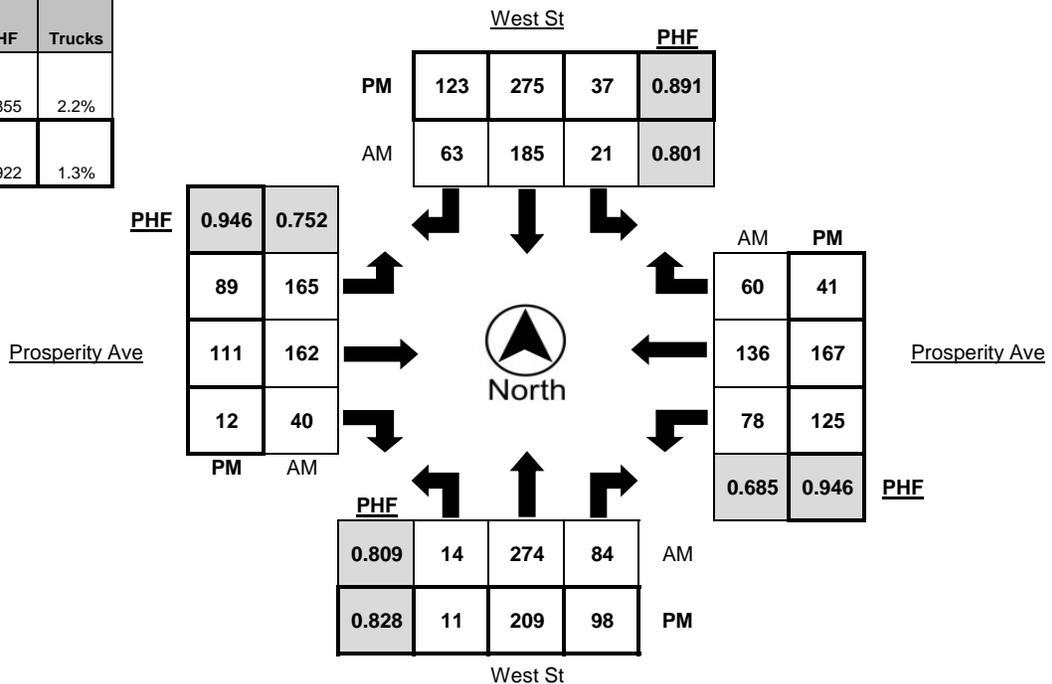
LATITUDE 36.2257
LONGITUDE -119.3667
WEATHER Clear

Time	Northbound				Southbound				Eastbound				Westbound			
	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
7:00 AM - 7:15 AM	1	58	5	1	3	18	10	1	31	24	1	0	6	14	9	2
7:15 AM - 7:30 AM	0	71	13	2	2	27	8	0	44	32	1	3	6	15	21	3
7:30 AM - 7:45 AM	6	89	20	2	2	41	12	0	50	45	7	1	14	29	15	2
7:45 AM - 8:00 AM	3	70	33	7	7	56	21	0	51	57	14	1	16	32	15	3
8:00 AM - 8:15 AM	2	54	17	3	5	53	17	1	36	37	10	0	29	52	19	2
8:15 AM - 8:30 AM	3	61	14	4	7	35	13	1	28	23	9	1	19	23	11	0
8:30 AM - 8:45 AM	1	58	17	0	3	25	2	1	34	19	2	0	14	15	13	1
8:45 AM - 9:00 AM	2	49	12	2	6	15	6	1	16	20	2	0	9	15	7	2
TOTAL	18	510	131	21	35	270	89	5	290	257	46	6	113	195	110	15

Time	Northbound				Southbound				Eastbound				Westbound			
	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
4:00 PM - 4:15 PM	7	51	15	1	7	69	21	0	17	21	5	1	27	40	7	3
4:15 PM - 4:30 PM	5	44	18	1	10	61	26	1	19	39	4	1	25	38	10	0
4:30 PM - 4:45 PM	5	50	19	2	11	70	23	5	21	35	7	0	26	39	6	1
4:45 PM - 5:00 PM	4	47	30	1	10	57	23	1	22	28	3	0	35	42	11	1
5:00 PM - 5:15 PM	1	46	18	2	10	64	34	1	20	27	4	0	27	44	8	0
5:15 PM - 5:30 PM	2	52	22	1	12	73	30	3	24	26	2	0	36	41	11	3
5:30 PM - 5:45 PM	4	64	28	2	5	81	36	1	23	30	3	0	27	40	11	1
5:45 PM - 6:00 PM	1	52	14	0	13	75	18	1	17	45	4	1	27	38	8	1
TOTAL	29	406	164	10	78	550	211	13	163	251	32	3	230	322	72	10

PEAK HOUR	Northbound				Southbound				Eastbound				Westbound			
	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
7:30 AM - 8:30 AM	14	274	84	16	21	185	63	2	165	162	40	3	78	136	60	7
4:45 PM - 5:45 PM	11	209	98	6	37	275	123	6	89	111	12	0	125	167	41	5

	PHF	Trucks
AM	0.855	2.2%
PM	0.922	1.3%





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 30 River Park Place West Ste 220
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LOCATION West St @ Prosperity Ave
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COLLECTION DATE Thursday, September 05, 2019

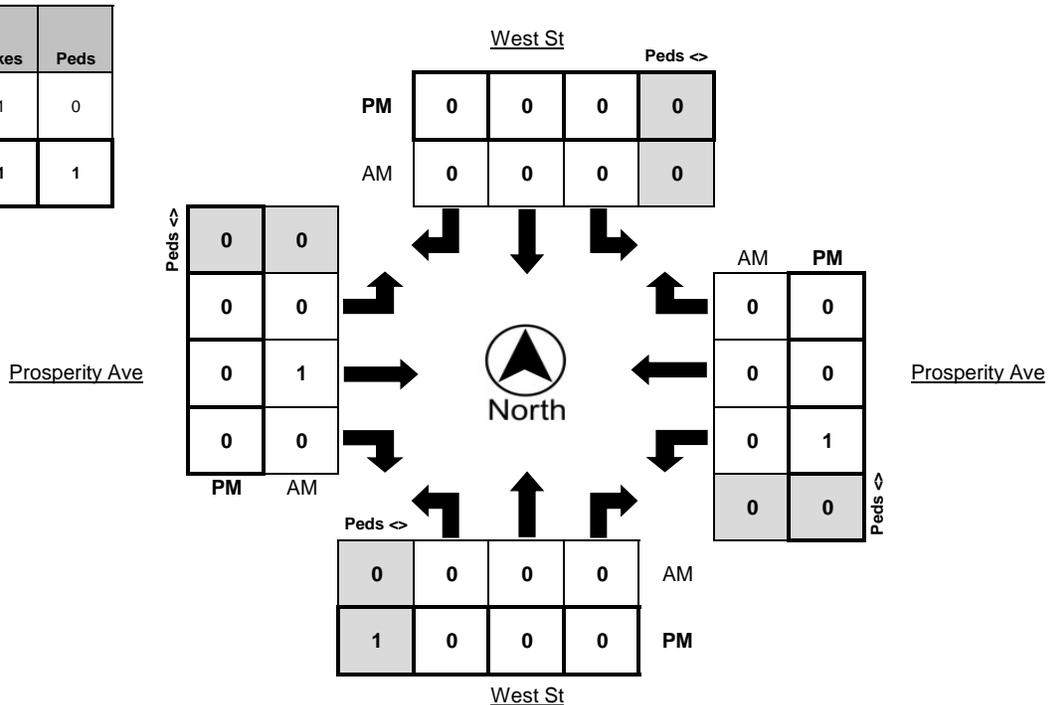
LATITUDE 36.2257
LONGITUDE -119.3667
WEATHER Clear

Time	Northbound Bikes				N.Leg Peds	Southbound Bikes				S.Leg Peds	Eastbound Bikes				E.Leg Peds	Westbound Bikes				W.Leg Peds
	Left	Thru	Right			Left	Thru	Right			Left	Thru	Right			Left	Thru	Right		
7:00 AM - 7:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	

Time	Northbound Bikes				N.Leg Peds	Southbound Bikes				S.Leg Peds	Eastbound Bikes				E.Leg Peds	Westbound Bikes				W.Leg Peds
	Left	Thru	Right			Left	Thru	Right			Left	Thru	Right			Left	Thru	Right		
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	

PEAK HOUR	Northbound Bikes				N.Leg Peds	Southbound Bikes				S.Leg Peds	Eastbound Bikes				E.Leg Peds	Westbound Bikes				W.Leg Peds
	Left	Thru	Right			Left	Thru	Right			Left	Thru	Right			Left	Thru	Right		
7:30 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	
4:45 PM - 5:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	

	Bikes	Peds
AM Peak Total	1	0
PM Peak Total	1	1





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Turning Movement Report

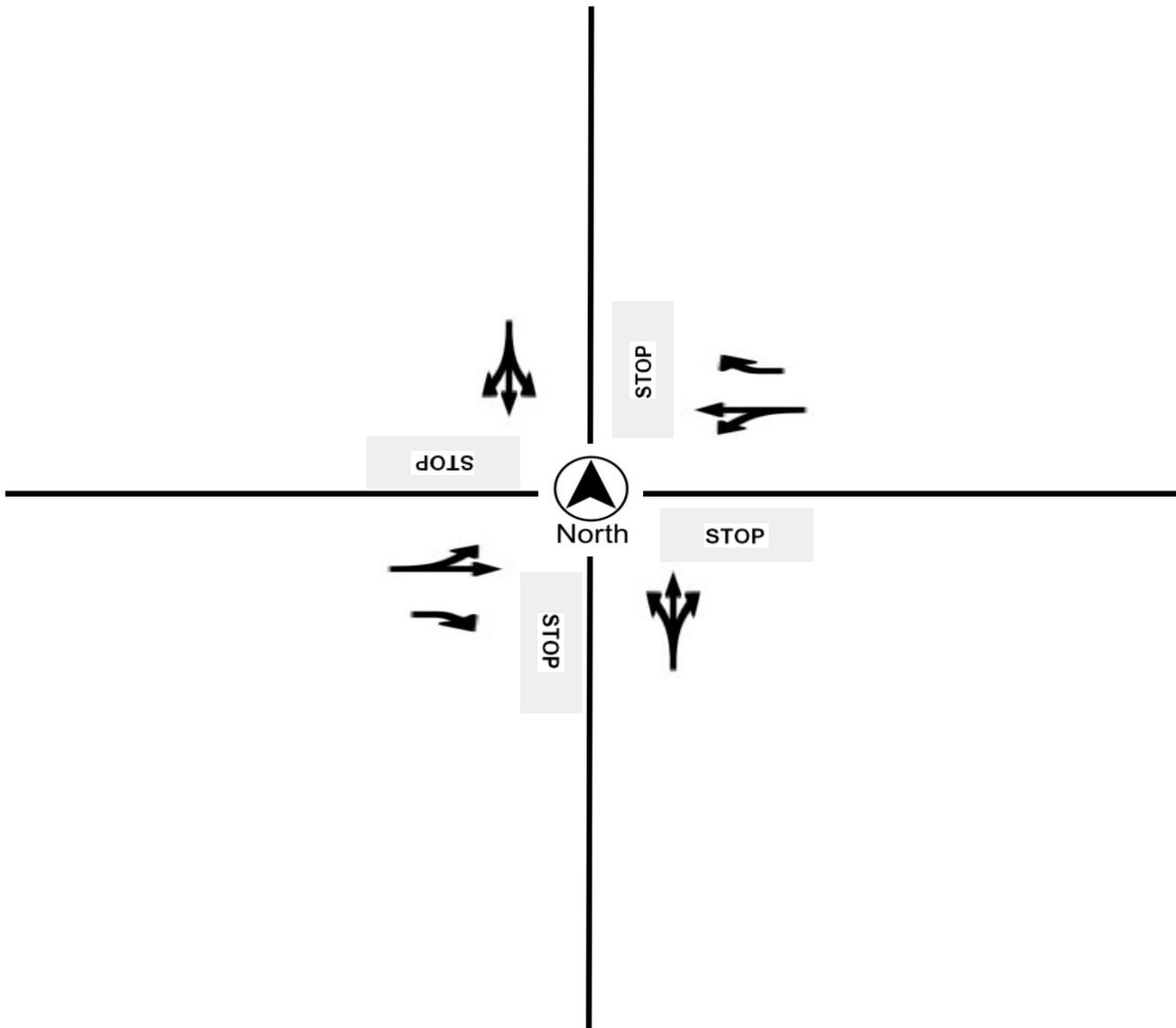
Prepared For:

GHD
30 River Park Place West Ste 220
Fresno, CA 93720

LOCATION _____ West St @ Prosperity Ave
COUNTY _____ Tulare
COLLECTION DATE _____ Thursday, September 05, 2019
CYCLE TIME _____ N/A

N/S STREET _____ West St
E/W STREET _____ Prosperity Ave
WEATHER _____ Clear
CONTROL TYPE _____ All-Way Stop

COMMENTS



Next Section

HCS+: Unsignalized Intersections Release 5.6

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: Mark Hays
Agency/Co.: TCAG
Date Performed: 5/17/2017
Analysis Time Period: AM Peak
Intersection: Pleasant @ West
Jurisdiction: Tulare
Units: U. S. Customary
Analysis Year: 2017
Project ID: 2017 Intersection Monitoring
East/West Street: Pleasant Ave
North/South Street: West St

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	72	134	130	45	69	47	68	273	66	72	221	16
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LT	R	LTR	
PHF	0.76		0.73		0.89	0.89	0.91	
Flow Rate	441		219		382	74	338	
% Heavy Veh	2		2		2	2	2	
No. Lanes		1		1		2		1
Opposing-Lanes		1		1		1		2
Conflicting-lanes		2		2		1		1
Geometry group		2		2		5		4a
Duration, T	0.25 hrs.							

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane	441		219		382	74	338	
Left-Turn	94		61		76	0	79	
Right-Turn	171		64		0	74	17	
Prop. Left-Turns	0.2		0.3		0.2	0.0	0.2	
Prop. Right-Turns	0.4		0.3		0.0	1.0	0.1	
Prop. Heavy Vehicle	0.0		0.0		0.0	0.0	0.0	
Geometry Group	2		2		5		4a	
Adjustments Exhibit 17-33:								
hLT-adj	0.2		0.2		0.5		0.2	

hRT-adj	-0.6	-0.6	-0.7	-0.6
hHV-adj	1.7	1.7	1.7	1.7
hadj, computed	-0.2	-0.1	0.1	-0.7
			0.1	0.1

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate	441		219		382	74	338	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial	0.39		0.19		0.34	0.07	0.30	
hd, final value	7.80		8.84		8.60	7.76	8.48	
x, final value	0.955		0.538		0.912	0.160	0.796	
Move-up time, m		2.0		2.0		2.3		2.0
Service Time	5.8		6.8		6.3	5.5	6.5	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate	441		219		382	74	338	
Service Time	5.8		6.8		6.3	5.5	6.5	
Utilization, x	0.955		0.538		0.912	0.160	0.796	
Dep. headway, hd	7.80		8.84		8.60	7.76	8.48	
Capacity	459		406		420	463	423	
95% Queue Length	11.6		3.1		9.9	0.6	7.1	
Delay	59.5		21.7		54.1	11.9	37.3	
LOS	F		C		F	B	E	
Approach:								
Delay		59.5		21.7		47.3		37.3
LOS		F		C		E		E
Intersection Delay	44.8							

HCS+: Unsignalized Intersections Release 5.6

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL (AWSC) ANALYSIS

Analyst: Mark Hays
Agency/Co.: TCAG
Date Performed: 5/17/2017
Analysis Time Period: PM Peak
Intersection: Pleasant @ West
Jurisdiction: Tulare
Units: U. S. Customary
Analysis Year: 2017
Project ID: 2017 Intersection Monitoring
East/West Street: Pleasant Ave
North/South Street: West St

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	26	71	78	46	73	30	92	239	52	49	355	37
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LT	R	LTR	
PHF	0.91		0.81		0.83	0.83	0.91	
Flow Rate	191		183		397	62	483	
% Heavy Veh	2		2		2	2	2	
No. Lanes	1		1		2		1	
Opposing-Lanes	1		1		1		2	
Conflicting-lanes	2		2		1		1	
Geometry group	2		2		5		4a	
Duration, T	0.25 hrs.							

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane	191		183		397	62	483	
Left-Turn	28		56		110	0	53	
Right-Turn	85		37		0	62	40	
Prop. Left-Turns	0.1		0.3		0.3	0.0	0.1	
Prop. Right-Turns	0.4		0.2		0.0	1.0	0.1	
Prop. Heavy Vehicle	0.0		0.0		0.0	0.0	0.0	
Geometry Group	2		2		5		4a	
Adjustments Exhibit 17-33:								
hLT-adj	0.2		0.2		0.5		0.2	

hRT-adj	-0.6	-0.6	-0.7	-0.6
hHV-adj	1.7	1.7	1.7	1.7
hadj, computed	-0.2	-0.0	0.2	-0.7
			0.0	

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate	191		183		397	62	483	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial	0.17		0.16		0.35	0.06	0.43	
hd, final value	7.27		7.47		7.05	6.19	6.44	
x, final value	0.386		0.380		0.777	0.107	0.865	
Move-up time, m		2.0		2.0		2.3		2.0
Service Time	5.3		5.5		4.7	3.9	4.4	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate	191		183		397	62	483	
Service Time	5.3		5.5		4.7	3.9	4.4	
Utilization, x	0.386		0.380		0.777	0.107	0.865	
Dep. headway, hd	7.27		7.47		7.05	6.19	6.44	
Capacity	490		482		509	564	562	
95% Queue Length	1.8		1.8		7.0	0.4	9.5	
Delay	14.8		15.0-		30.2	9.6	37.6	
LOS	B		B		D	A	E	
Approach:								
Delay		14.8		15.0-		27.4		37.6
LOS		B		B		D		E
Intersection Delay	27.6							

Appendix B

Synchro 10 LOS Output Worksheets

Existing Conditions

Tulare TIS
1: West Street & Prosperity Avenue

Existing Conditions
AM Peak Hour

Intersection	
Intersection Delay, s/veh	81
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔			↔	
Traffic Vol, veh/h	165	162	40	78	136	60	14	274	84	21	185	63
Future Vol, veh/h	165	162	40	78	136	60	14	274	84	21	185	63
Peak Hour Factor	0.75	0.75	0.75	0.69	0.69	0.69	0.81	0.81	0.81	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	220	216	53	113	197	87	17	338	104	26	231	79
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	106.5	39.7	112.6	49.4
HCM LOS	F	E	F	E

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	4%	50%	0%	36%	0%	8%
Vol Thru, %	74%	50%	0%	64%	0%	69%
Vol Right, %	23%	0%	100%	0%	100%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	372	327	40	214	60	269
LT Vol	14	165	0	78	0	21
Through Vol	274	162	0	136	0	185
RT Vol	84	0	40	0	60	63
Lane Flow Rate	459	436	53	310	87	336
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	1.12	1.128	0.124	0.822	0.209	0.849
Departure Headway (Hd)	9.228	9.9	8.898	10.375	9.442	9.947
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	395	371	405	350	383	367
Service Time	7.228	7.6	6.598	8.075	7.142	7.947
HCM Lane V/C Ratio	1.162	1.175	0.131	0.886	0.227	0.916
HCM Control Delay	112.6	117.9	12.9	46.8	14.6	49.4
HCM Lane LOS	F	F	B	E	B	E
HCM 95th-tile Q	16.1	15.6	0.4	7.2	0.8	7.8

Tulare TIS
2: West Street & Pleasant Avenue

Existing Conditions
AM Peak Hour

Intersection	
Intersection Delay, s/veh	43.9
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	72	134	130	45	69	47	68	273	66	72	221	16
Future Vol, veh/h	72	134	130	45	69	47	68	273	66	72	221	16
Peak Hour Factor	0.76	0.76	0.76	0.73	0.73	0.73	0.89	0.89	0.89	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	176	171	62	95	64	76	307	74	79	243	18
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	58.1	21.7	45.8	37.3
HCM LOS	F	C	E	E

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	0%	21%	28%	23%
Vol Thru, %	80%	0%	40%	43%	72%
Vol Right, %	0%	100%	39%	29%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	341	66	336	161	309
LT Vol	68	0	72	45	72
Through Vol	273	0	134	69	221
RT Vol	0	66	130	47	16
Lane Flow Rate	383	74	442	221	340
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.903	0.158	0.948	0.54	0.797
Departure Headway (Hd)	8.585	7.756	7.829	8.815	8.455
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	425	465	469	410	431
Service Time	6.285	5.456	5.829	6.838	6.455
HCM Lane V/C Ratio	0.901	0.159	0.942	0.539	0.789
HCM Control Delay	52.4	11.9	58.1	21.7	37.3
HCM Lane LOS	F	B	F	C	E
HCM 95th-tile Q	9.6	0.6	11.4	3.1	7.1

Tulare TIS
1: West Street & Prosperity Avenue

Existing Conditions
PM Peak Hour

Intersection	
Intersection Delay, s/veh	46.8
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔			↔	
Traffic Vol, veh/h	89	111	12	125	167	41	11	209	98	37	275	123
Future Vol, veh/h	89	111	12	125	167	41	11	209	98	37	275	123
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.83	0.83	0.83	0.89	0.89	0.89
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	94	117	13	132	176	43	13	252	118	42	309	138
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	21.8	30.7	38.5	76.2
HCM LOS	C	D	E	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	45%	0%	43%	0%	9%
Vol Thru, %	66%	55%	0%	57%	0%	63%
Vol Right, %	31%	0%	100%	0%	100%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	318	200	12	292	41	435
LT Vol	11	89	0	125	0	37
Through Vol	209	111	0	167	0	275
RT Vol	98	0	12	0	41	123
Lane Flow Rate	383	211	13	307	43	489
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.826	0.535	0.029	0.743	0.094	1.028
Departure Headway (Hd)	7.881	9.418	8.451	8.957	8.002	7.574
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	464	385	426	406	451	484
Service Time	5.881	7.118	6.151	6.657	5.702	5.536
HCM Lane V/C Ratio	0.825	0.548	0.031	0.756	0.095	1.01
HCM Control Delay	38.5	22.4	11.4	33.4	11.5	76.2
HCM Lane LOS	E	C	B	D	B	F
HCM 95th-tile Q	7.9	3	0.1	5.9	0.3	14.4

Tulare TIS
2: West Street & Pleasant Avenue

Existing Conditions
PM Peak Hour

Intersection	
Intersection Delay, s/veh	27.1
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	26	71	78	46	73	30	92	239	52	49	355	37
Future Vol, veh/h	26	71	78	46	73	30	92	239	52	49	355	37
Peak Hour Factor	0.91	0.91	0.91	0.81	0.81	0.81	0.83	0.83	0.83	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	78	86	57	90	37	111	288	63	54	390	41
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	14.8	15	27	36.7
HCM LOS	B	B	D	E

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	0%	15%	31%	11%
Vol Thru, %	72%	0%	41%	49%	80%
Vol Right, %	0%	100%	45%	20%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	331	52	175	149	441
LT Vol	92	0	26	46	49
Through Vol	239	0	71	73	355
RT Vol	0	52	78	30	37
Lane Flow Rate	399	63	192	184	485
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.772	0.106	0.384	0.378	0.858
Departure Headway (Hd)	6.965	6.107	7.194	7.392	6.373
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	518	583	496	484	567
Service Time	4.743	3.884	5.292	5.49	4.448
HCM Lane V/C Ratio	0.77	0.108	0.387	0.38	0.855
HCM Control Delay	29.7	9.6	14.8	15	36.7
HCM Lane LOS	D	A	B	B	E
HCM 95th-tile Q	6.9	0.4	1.8	1.7	9.3

Existing+Approve Pending Conditions

Tulare TIS
1: West Street & Prosperity Avenue

Existing + Approved Pending Conditions
AM Peak Hour

Intersection	
Intersection Delay, s/veh	37
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔			↔	
Traffic Vol, veh/h	165	162	40	83	136	60	14	285	89	21	196	63
Future Vol, veh/h	165	162	40	83	136	60	14	285	89	21	196	63
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	179	176	43	90	148	65	15	310	97	23	213	68
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	41.9	21.6	50.1	27.8
HCM LOS	E	C	F	D

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	4%	50%	0%	38%	0%	7%
Vol Thru, %	73%	50%	0%	62%	0%	70%
Vol Right, %	23%	0%	100%	0%	100%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	388	327	40	219	60	280
LT Vol	14	165	0	83	0	21
Through Vol	285	162	0	136	0	196
RT Vol	89	0	40	0	60	63
Lane Flow Rate	422	355	43	238	65	304
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.907	0.857	0.093	0.595	0.146	0.692
Departure Headway (Hd)	7.743	8.68	7.689	9.004	8.075	8.189
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	468	416	465	400	443	441
Service Time	5.801	6.44	5.448	6.771	5.841	6.258
HCM Lane V/C Ratio	0.902	0.853	0.092	0.595	0.147	0.689
HCM Control Delay	50.1	45.6	11.2	24.2	12.2	27.8
HCM Lane LOS	F	E	B	C	B	D
HCM 95th-tile Q	10.1	8.4	0.3	3.7	0.5	5.2

Tulare TIS
2: West Street & Pleasant Avenue

Existing + Approved Pending Conditions
AM Peak Hour

Intersection	
Intersection Delay, s/veh	26.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	72	134	130	45	69	52	68	284	66	77	232	16
Future Vol, veh/h	72	134	130	45	69	52	68	284	66	77	232	16
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	78	146	141	49	75	57	74	309	72	84	252	17
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	26.7	16	31.2	27
HCM LOS	D	C	D	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	19%	0%	21%	27%	24%
Vol Thru, %	81%	0%	40%	42%	71%
Vol Right, %	0%	100%	39%	31%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	352	66	336	166	325
LT Vol	68	0	72	45	77
Through Vol	284	0	134	69	232
RT Vol	0	66	130	52	16
Lane Flow Rate	383	72	365	180	353
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.806	0.135	0.722	0.393	0.718
Departure Headway (Hd)	7.58	6.761	7.116	7.843	7.317
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	478	529	508	456	491
Service Time	5.345	4.525	5.18	5.927	5.386
HCM Lane V/C Ratio	0.801	0.136	0.719	0.395	0.719
HCM Control Delay	35.1	10.6	26.7	16	27
HCM Lane LOS	E	B	D	C	D
HCM 95th-tile Q	7.5	0.5	5.8	1.8	5.7

Tulare TIS
1: West Street & Prosperity Avenue

Existing + Approve Pending Conditions
PM Peak Hour

Intersection	
Intersection Delay, s/veh	47.6
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔			↔	
Traffic Vol, veh/h	89	111	12	130	167	41	11	220	103	37	286	123
Future Vol, veh/h	89	111	12	130	167	41	11	220	103	37	286	123
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	97	121	13	141	182	45	12	239	112	40	311	134
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	22.6	34	36.1	78.4
HCM LOS	C	D	E	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	45%	0%	44%	0%	8%
Vol Thru, %	66%	55%	0%	56%	0%	64%
Vol Right, %	31%	0%	100%	0%	100%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	334	200	12	297	41	446
LT Vol	11	89	0	130	0	37
Through Vol	220	111	0	167	0	286
RT Vol	103	0	12	0	41	123
Lane Flow Rate	363	217	13	323	45	485
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.799	0.554	0.03	0.781	0.098	1.034
Departure Headway (Hd)	8.051	9.468	8.501	8.982	8.022	7.678
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	454	383	424	407	449	480
Service Time	6.051	7.168	6.201	6.682	5.722	5.636
HCM Lane V/C Ratio	0.8	0.567	0.031	0.794	0.1	1.01
HCM Control Delay	36.1	23.3	11.5	37.1	11.6	78.4
HCM Lane LOS	E	C	B	E	B	F
HCM 95th-tile Q	7.2	3.2	0.1	6.7	0.3	14.6

Tulare TIS
2: West Street & Pleasant Avenue

Existing + Approve Pending Conditions
PM Peak Hour

Intersection	
Intersection Delay, s/veh	25
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	26	71	78	46	73	35	92	250	52	54	366	37
Future Vol, veh/h	26	71	78	46	73	35	92	250	52	54	366	37
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	28	77	85	50	79	38	100	272	57	59	398	40
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	14.2	14	22.4	35.2
HCM LOS	B	B	C	E

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	27%	0%	15%	30%	12%
Vol Thru, %	73%	0%	41%	47%	80%
Vol Right, %	0%	100%	45%	23%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	342	52	175	154	457
LT Vol	92	0	26	46	54
Through Vol	250	0	71	73	366
RT Vol	0	52	78	35	37
Lane Flow Rate	372	57	190	167	497
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.705	0.094	0.37	0.336	0.853
Departure Headway (Hd)	6.832	5.979	6.998	7.233	6.179
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	528	596	512	495	586
Service Time	4.598	3.745	5.075	5.314	4.239
HCM Lane V/C Ratio	0.705	0.096	0.371	0.337	0.848
HCM Control Delay	24.4	9.4	14.2	14	35.2
HCM Lane LOS	C	A	B	B	E
HCM 95th-tile Q	5.6	0.3	1.7	1.5	9.3

Existing+Approve Pending+Project Conditions

HCM 6th AWSC
1: West Street & Prosperity Avenue

Tulare TIS
AM + Approved Pending + Project

Intersection	
Intersection Delay, s/veh	49.6
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔			↔	
Traffic Vol, veh/h	165	175	53	83	148	65	26	290	89	26	201	63
Future Vol, veh/h	165	175	53	83	148	65	26	290	89	26	201	63
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	179	190	58	90	161	71	28	315	97	28	218	68
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	52.8	25.3	75.1	34.5
HCM LOS	F	D	F	D

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	6%	49%	0%	36%	0%	9%
Vol Thru, %	72%	51%	0%	64%	0%	69%
Vol Right, %	22%	0%	100%	0%	100%	22%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	405	340	53	231	65	290
LT Vol	26	165	0	83	0	26
Through Vol	290	175	0	148	0	201
RT Vol	89	0	53	0	65	63
Lane Flow Rate	440	370	58	251	71	315
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	1.011	0.925	0.129	0.654	0.167	0.756
Departure Headway (Hd)	8.267	9.212	8.226	9.589	8.665	8.839
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	440	395	438	379	417	413
Service Time	6.266	6.912	5.926	7.289	6.365	6.839
HCM Lane V/C Ratio	1	0.937	0.132	0.662	0.17	0.763
HCM Control Delay	75.1	59.2	12.1	28.7	13.1	34.5
HCM Lane LOS	F	F	B	D	B	D
HCM 95th-tile Q	13.2	10	0.4	4.5	0.6	6.2

Intersection												
Intersection Delay, s/veh	31.4											
Intersection LOS	D											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	67	134	130	45	69	61	68	293	66	91	246	16
Future Vol, veh/h	67	134	130	45	69	61	68	293	66	91	246	16
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	73	146	141	49	75	66	74	318	72	99	267	17
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	28.8	17.4	36.5	34.5
HCM LOS	D	C	E	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	19%	0%	20%	26%	26%
Vol Thru, %	81%	0%	40%	39%	70%
Vol Right, %	0%	100%	39%	35%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	361	66	331	175	353
LT Vol	68	0	67	45	91
Through Vol	293	0	134	69	246
RT Vol	0	66	130	61	16
Lane Flow Rate	392	72	360	190	384
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.849	0.139	0.739	0.434	0.799
Departure Headway (Hd)	7.791	6.972	7.394	8.211	7.497
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	463	511	486	441	480
Service Time	5.584	4.765	5.489	6.211	5.596
HCM Lane V/C Ratio	0.847	0.141	0.741	0.431	0.8
HCM Control Delay	41.2	10.9	28.8	17.4	34.5
HCM Lane LOS	E	B	D	C	D
HCM 95th-tile Q	8.5	0.5	6.1	2.2	7.4

HCM 6th TWSC
3: Driveway 1 & Prosperity Avenue

Tulare TIS
AM + Approved Pending + Project

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Traffic Vol, veh/h	281	9	13	287	9	12
Future Vol, veh/h	281	9	13	287	9	12
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	305	10	14	312	10	13

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	315	0	650
Stage 1	-	-	-	-	310
Stage 2	-	-	-	-	340
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	-	-	1245	-	434
Stage 1	-	-	-	-	744
Stage 2	-	-	-	-	721
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1245	-	428
Mov Cap-2 Maneuver	-	-	-	-	428
Stage 1	-	-	-	-	734
Stage 2	-	-	-	-	721

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	11.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	561	-	-	1245	-
HCM Lane V/C Ratio	0.041	-	-	0.011	-
HCM Control Delay (s)	11.7	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 6th TWSC
4: West Street & Driveway 2

Tulare TIS
AM + Approved Pending + Project

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT			TT
Traffic Vol, veh/h	20	9	396	20	9	328
Future Vol, veh/h	20	9	396	20	9	328
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	10	430	22	10	357

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	818	441	0	0	452	0
Stage 1	441	-	-	-	-	-
Stage 2	377	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	346	616	-	-	1109	-
Stage 1	648	-	-	-	-	-
Stage 2	694	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	342	616	-	-	1109	-
Mov Cap-2 Maneuver	342	-	-	-	-	-
Stage 1	641	-	-	-	-	-
Stage 2	694	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.8	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	397	1109
HCM Lane V/C Ratio	-	-	0.079	0.009
HCM Control Delay (s)	-	-	14.8	8.3
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0

HCM 6th AWSC
1: West Street & Prosperity Avenue

Tulare TIS
PM + Approved Pending + Project

Intersection	
Intersection Delay, s/veh	58.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔			↔	
Traffic Vol, veh/h	89	125	26	130	181	47	25	226	103	43	292	123
Future Vol, veh/h	89	125	26	130	181	47	25	226	103	43	292	123
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, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	97	136	28	141	197	51	27	246	112	47	317	134
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	24.7	40.3	46.1	100.4
HCM LOS	C	E	E	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	7%	42%	0%	42%	0%	9%
Vol Thru, %	64%	58%	0%	58%	0%	64%
Vol Right, %	29%	0%	100%	0%	100%	27%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	354	214	26	311	47	458
LT Vol	25	89	0	130	0	43
Through Vol	226	125	0	181	0	292
RT Vol	103	0	26	0	47	123
Lane Flow Rate	385	233	28	338	51	498
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.865	0.601	0.066	0.834	0.113	1.1
Departure Headway (Hd)	8.476	9.812	8.856	9.325	8.372	7.955
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	431	370	407	392	431	458
Service Time	6.476	7.512	6.556	7.025	6.072	6.021
HCM Lane V/C Ratio	0.893	0.63	0.069	0.862	0.118	1.087
HCM Control Delay	46.1	26.2	12.2	44.6	12.1	100.4
HCM Lane LOS	E	D	B	E	B	F
HCM 95th-tile Q	8.7	3.8	0.2	7.7	0.4	16.7

Intersection												
Intersection Delay, s/veh	31.9											
Intersection LOS	D											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕ ↗			↕	
Traffic Vol, veh/h	31	71	78	46	73	56	92	271	52	63	375	30
Future Vol, veh/h	31	71	78	46	73	56	92	271	52	63	375	30
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, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	34	77	85	50	79	61	100	295	57	68	408	33
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	15.4	15.5	28.6	47.2
HCM LOS	C	C	D	E

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	0%	17%	26%	13%
Vol Thru, %	75%	0%	39%	42%	80%
Vol Right, %	0%	100%	43%	32%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	363	52	180	175	468
LT Vol	92	0	31	46	63
Through Vol	271	0	71	73	375
RT Vol	0	52	78	56	30
Lane Flow Rate	395	57	196	190	509
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.785	0.099	0.402	0.397	0.923
Departure Headway (Hd)	7.158	6.31	7.405	7.505	6.532
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	509	570	485	477	560
Service Time	4.876	4.028	5.471	5.572	4.548
HCM Lane V/C Ratio	0.776	0.1	0.404	0.398	0.909
HCM Control Delay	31.3	9.7	15.4	15.5	47.2
HCM Lane LOS	D	A	C	C	E
HCM 95th-tile Q	7.2	0.3	1.9	1.9	11.4

HCM 6th TWSC
3: Driveway 1 & Prosperity Avenue

Tulare TIS
PM + Approved Pending + Project

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	261	10	14	348	10	14
Future Vol, veh/h	261	10	14	348	10	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	284	11	15	378	11	15

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	295	0	698 290
Stage 1	-	-	-	-	290 -
Stage 2	-	-	-	-	408 -
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	-	-	1266	-	407 749
Stage 1	-	-	-	-	759 -
Stage 2	-	-	-	-	671 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1266	-	401 749
Mov Cap-2 Maneuver	-	-	-	-	401 -
Stage 1	-	-	-	-	748 -
Stage 2	-	-	-	-	671 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	550	-	-	1266	-
HCM Lane V/C Ratio	0.047	-	-	0.012	-
HCM Control Delay (s)	11.9	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T		T			T
Traffic Vol, veh/h	22	10	344	23	10	438
Future Vol, veh/h	22	10	344	23	10	438
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	11	374	25	11	476

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	885	387	0	0	399
Stage 1	387	-	-	-	-
Stage 2	498	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	315	661	-	-	1160
Stage 1	686	-	-	-	-
Stage 2	611	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	311	661	-	-	1160
Mov Cap-2 Maneuver	311	-	-	-	-
Stage 1	677	-	-	-	-
Stage 2	611	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.6	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	373	1160
HCM Lane V/C Ratio	-	-	0.093	0.009
HCM Control Delay (s)	-	-	15.6	8.1
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.3	0

Cumulative Conditions

Tulare TIS
1: West Street & Prosperity Avenue

Cumulative Conditions
AM Peak Hour

Intersection	
Intersection Delay, s/veh	160.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔			↔	
Traffic Vol, veh/h	226	221	55	126	219	97	19	375	115	29	253	86
Future Vol, veh/h	226	221	55	126	219	97	19	375	115	29	253	86
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	246	240	60	137	238	105	21	408	125	32	275	93
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	185.2	78	250.1	103.8
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	4%	51%	0%	37%	0%	8%
Vol Thru, %	74%	49%	0%	63%	0%	69%
Vol Right, %	23%	0%	100%	0%	100%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	509	447	55	345	97	368
LT Vol	19	226	0	126	0	29
Through Vol	375	221	0	219	0	253
RT Vol	115	0	55	0	97	86
Lane Flow Rate	553	486	60	375	105	400
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	1.459	1.347	0.15	1.024	0.262	1.055
Departure Headway (Hd)	10.725	11.407	10.393	12.078	11.134	11.995
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	343	321	347	304	325	308
Service Time	8.725	9.107	8.093	9.778	8.834	9.995
HCM Lane V/C Ratio	1.612	1.514	0.173	1.234	0.323	1.299
HCM Control Delay	250.1	206.2	14.9	95	17.7	103.8
HCM Lane LOS	F	F	B	F	C	F
HCM 95th-tile Q	26.3	21.2	0.5	11.2	1	12

Tulare TIS
2: West Street & Pleasant Avenue

Cumulative Conditions
AM Peak Hour

Intersection	
Intersection Delay, s/veh	144.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	111	207	201	67	102	70	93	373	90	98	302	22
Future Vol, veh/h	111	207	201	67	102	70	93	373	90	98	302	22
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	121	225	218	73	111	76	101	405	98	107	328	24
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	201.5	37.1	153.8	124.8
HCM LOS	F	E	F	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	0%	21%	28%	23%
Vol Thru, %	80%	0%	40%	43%	72%
Vol Right, %	0%	100%	39%	29%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	466	90	519	239	422
LT Vol	93	0	111	67	98
Through Vol	373	0	207	102	302
RT Vol	0	90	201	70	22
Lane Flow Rate	507	98	564	260	459
Geometry Grp	7	7	2	2	5
Degree of Util (X)	1.291	0.228	1.351	0.686	1.138
Departure Headway (Hd)	10.501	9.66	9.613	11.819	10.648
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	350	374	384	309	344
Service Time	8.201	7.36	7.613	9.819	8.648
HCM Lane V/C Ratio	1.449	0.262	1.469	0.841	1.334
HCM Control Delay	180.6	15.2	201.5	37.1	124.8
HCM Lane LOS	F	C	F	E	F
HCM 95th-tile Q	20.5	0.9	24.3	4.7	15.3

Tulare TIS
1: West Street & Prosperity Avenue

Cumulative Conditions
PM Peak Hour

Intersection	
Intersection Delay, s/veh	191
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔			↔	
Traffic Vol, veh/h	122	152	16	190	254	62	15	286	134	51	376	168
Future Vol, veh/h	122	152	16	190	254	62	15	286	134	51	376	168
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	133	165	17	207	276	67	16	311	146	55	409	183
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	52.4	161.4	143.9	318.1
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	45%	0%	43%	0%	9%
Vol Thru, %	66%	55%	0%	57%	0%	63%
Vol Right, %	31%	0%	100%	0%	100%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	435	274	16	444	62	595
LT Vol	15	122	0	190	0	51
Through Vol	286	152	0	254	0	376
RT Vol	134	0	16	0	62	168
Lane Flow Rate	473	298	17	483	67	647
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	1.182	0.823	0.044	1.285	0.162	1.622
Departure Headway (Hd)	11.543	12.628	11.639	11.428	10.454	10.359
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	317	289	310	323	345	356
Service Time	9.543	10.328	9.339	9.128	8.154	8.359
HCM Lane V/C Ratio	1.492	1.031	0.055	1.495	0.194	1.817
HCM Control Delay	143.9	54.6	14.9	181.8	15.2	318.1
HCM Lane LOS	F	F	B	F	C	F
HCM 95th-tile Q	15.8	6.7	0.1	19.1	0.6	33.4

Tulare TIS
2: West Street & Pleasant Avenue

Cumulative Conditions
PM Peak Hour

Intersection	
Intersection Delay, s/veh	115.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	41	113	124	58	92	38	126	327	71	67	485	51
Future Vol, veh/h	41	113	124	58	92	38	126	327	71	67	485	51
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	45	123	135	63	100	41	137	355	77	73	527	55
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	28.8	22.1	90.8	207.2
HCM LOS	D	C	F	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	0%	15%	31%	11%
Vol Thru, %	72%	0%	41%	49%	80%
Vol Right, %	0%	100%	45%	20%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	453	71	278	188	603
LT Vol	126	0	41	58	67
Through Vol	327	0	113	92	485
RT Vol	0	71	124	38	51
Lane Flow Rate	492	77	302	204	655
Geometry Grp	7	7	2	2	5
Degree of Util (X)	1.099	0.154	0.67	0.489	1.381
Departure Headway (Hd)	8.733	7.862	9.131	9.925	7.864
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	419	459	399	366	465
Service Time	6.433	5.562	7.131	7.925	5.864
HCM Lane V/C Ratio	1.174	0.168	0.757	0.557	1.409
HCM Control Delay	103.1	12	28.8	22.1	207.2
HCM Lane LOS	F	B	D	C	F
HCM 95th-tile Q	15.8	0.5	4.7	2.6	29.8

Cumulative+Project Conditions

Tulare TIS
1: West Street & Prosperity Avenue

Cumulative + Project
AM Peak Hour

Intersection	
Intersection Delay, s/veh	174.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔			↔	
Traffic Vol, veh/h	226	234	68	126	231	102	31	380	115	34	258	86
Future Vol, veh/h	226	234	68	126	231	102	31	380	115	34	258	86
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	246	254	74	137	251	111	34	413	125	37	280	93
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	195.9	88.6	271.9	114.4
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	6%	49%	0%	35%	0%	9%
Vol Thru, %	72%	51%	0%	65%	0%	68%
Vol Right, %	22%	0%	100%	0%	100%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	526	460	68	357	102	378
LT Vol	31	226	0	126	0	34
Through Vol	380	234	0	231	0	258
RT Vol	115	0	68	0	102	86
Lane Flow Rate	572	500	74	388	111	411
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	1.509	1.385	0.185	1.068	0.278	1.085
Departure Headway (Hd)	10.973	11.65	10.642	12.307	11.368	12.337
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	337	315	339	299	318	300
Service Time	8.973	9.35	8.342	10.007	9.068	10.337
HCM Lane V/C Ratio	1.697	1.587	0.218	1.298	0.349	1.37
HCM Control Delay	271.9	222.5	15.7	108.7	18.4	114.4
HCM Lane LOS	F	F	C	F	C	F
HCM 95th-tile Q	27.6	22.1	0.7	12.1	1.1	12.6

Tulare TIS
2: West Street & Pleasant Avenue

Cumulative + Project
AM Peak Hour

Intersection												
Intersection Delay, s/veh	158.9											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	94	207	201	84	102	84	93	370	90	116	320	26
Future Vol, veh/h	94	207	201	84	102	84	93	370	90	116	320	26
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	102	225	218	91	111	91	101	402	98	126	348	28
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	199.4	47.4	160.9	177.5
HCM LOS	F	E	F	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	0%	19%	31%	25%
Vol Thru, %	80%	0%	41%	38%	69%
Vol Right, %	0%	100%	40%	31%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	463	90	502	270	462
LT Vol	93	0	94	84	116
Through Vol	370	0	207	102	320
RT Vol	0	90	201	84	26
Lane Flow Rate	503	98	546	293	502
Geometry Grp	7	7	2	2	5
Degree of Util (X)	1.308	0.233	1.34	0.775	1.278
Departure Headway (Hd)	10.979	10.136	10.245	12.277	10.931
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	337	357	360	296	336
Service Time	8.679	7.836	8.245	10.277	8.931
HCM Lane V/C Ratio	1.493	0.275	1.517	0.99	1.494
HCM Control Delay	189.1	15.9	199.4	47.4	177.5
HCM Lane LOS	F	C	F	E	F
HCM 95th-tile Q	20.5	0.9	22.7	6	19.5

Tulare TIS
3: Driveway #1 & Prosperity Avenue

Cumulative + Project
AM Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Traffic Vol, veh/h	374	9	13	450	9	12
Future Vol, veh/h	374	9	13	450	9	12
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	407	10	14	489	10	13

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	417	0	929
Stage 1	-	-	-	-	412
Stage 2	-	-	-	-	517
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	-	-	1142	-	297
Stage 1	-	-	-	-	669
Stage 2	-	-	-	-	598
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1142	-	292
Mov Cap-2 Maneuver	-	-	-	-	292
Stage 1	-	-	-	-	658
Stage 2	-	-	-	-	598

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	14
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	424	-	-	1142	-
HCM Lane V/C Ratio	0.054	-	-	0.012	-
HCM Control Delay (s)	14	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Tulare TIS
4: West Street & Driveway #2

Cumulative + Project
AM Peak Hour

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	20	9	517	20	9	443
Future Vol, veh/h	20	9	517	20	9	443
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	10	562	22	10	482

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1075	573	0	0	584
Stage 1	573	-	-	-	-
Stage 2	502	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	243	519	-	-	991
Stage 1	564	-	-	-	-
Stage 2	608	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	240	519	-	-	991
Mov Cap-2 Maneuver	240	-	-	-	-
Stage 1	556	-	-	-	-
Stage 2	608	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	288	991
HCM Lane V/C Ratio	-	-	0.109	0.01
HCM Control Delay (s)	-	-	19	8.7
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.4	0

Tulare TIS
1: West Street & Prosperity Avenue

Cumulative + Project
PM Peak Hour

Intersection	
Intersection Delay, s/veh	205.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔			↔	
Traffic Vol, veh/h	122	166	30	190	268	68	29	292	134	57	382	168
Future Vol, veh/h	122	166	30	190	268	68	29	292	134	57	382	168
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	133	180	33	207	291	74	32	317	146	62	415	183
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	57.8	175.7	167.6	335.7
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	6%	42%	0%	41%	0%	9%
Vol Thru, %	64%	58%	0%	59%	0%	63%
Vol Right, %	29%	0%	100%	0%	100%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	455	288	30	458	68	607
LT Vol	29	122	0	190	0	57
Through Vol	292	166	0	268	0	382
RT Vol	134	0	30	0	68	168
Lane Flow Rate	495	313	33	498	74	660
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	1.242	0.864	0.082	1.327	0.178	1.66
Departure Headway (Hd)	11.937	12.923	11.943	11.728	10.76	10.759
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	307	282	302	314	336	343
Service Time	9.937	10.623	9.643	9.428	8.46	8.759
HCM Lane V/C Ratio	1.612	1.11	0.109	1.586	0.22	1.924
HCM Control Delay	167.6	62.2	15.7	199.4	15.8	335.7
HCM Lane LOS	F	F	C	F	C	F
HCM 95th-tile Q	17.3	7.4	0.3	20.1	0.6	33.8

Tulare TIS
2: West Street & Pleasant Avenue

Cumulative + Project
PM Peak Hour

Intersection												
Intersection Delay, s/veh	40.9											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	46	113	124	58	92	59	126	348	71	81	499	49
Future Vol, veh/h	46	113	124	58	92	59	126	348	71	81	499	49
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	50	123	135	63	100	64	137	378	77	88	542	53
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	32.6	25.3	115.3	250.2
HCM LOS	D	D	F	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	27%	0%	16%	28%	13%
Vol Thru, %	73%	0%	40%	44%	79%
Vol Right, %	0%	100%	44%	28%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	474	71	283	209	629
LT Vol	126	0	46	58	81
Through Vol	348	0	113	92	499
RT Vol	0	71	124	59	49
Lane Flow Rate	515	77	308	227	684
Geometry Grp	7	7	2	2	5
Degree of Util (X)	1.174	0.158	0.703	0.55	1.48
Departure Headway (Hd)	9.131	8.263	9.67	10.345	8.234
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	402	437	378	352	444
Service Time	6.831	5.963	7.67	8.345	6.234
HCM Lane V/C Ratio	1.281	0.176	0.815	0.645	1.541
HCM Control Delay	130.7	12.5	32.6	25.3	250.2
HCM Lane LOS	F	B	D	D	F
HCM 95th-tile Q	18.1	0.6	5.2	3.2	33.5

Tulare TIS
3: Driveway #1 & Prosperity Avenue

Cumulative + Project
PM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Traffic Vol, veh/h	347	10	14	516	10	14
Future Vol, veh/h	347	10	14	516	10	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	377	11	15	561	11	15

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	388	0	974
Stage 1	-	-	-	-	383
Stage 2	-	-	-	-	591
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	-	-	1170	-	279
Stage 1	-	-	-	-	689
Stage 2	-	-	-	-	553
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1170	-	274
Mov Cap-2 Maneuver	-	-	-	-	274
Stage 1	-	-	-	-	676
Stage 2	-	-	-	-	553

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	14.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	417	-	-	1170	-
HCM Lane V/C Ratio	0.063	-	-	0.013	-
HCM Control Delay (s)	14.2	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Tulare TIS
4: West Street & Driveway #2

Cumulative + Project
PM Peak Hour

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	22	10	445	23	10	592
Future Vol, veh/h	22	10	445	23	10	592
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	11	484	25	11	643

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1162	497	0	0	509
Stage 1	497	-	-	-	-
Stage 2	665	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	216	573	-	-	1056
Stage 1	611	-	-	-	-
Stage 2	511	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	213	573	-	-	1056
Mov Cap-2 Maneuver	213	-	-	-	-
Stage 1	601	-	-	-	-
Stage 2	511	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.6	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	265	1056
HCM Lane V/C Ratio	-	-	0.131	0.01
HCM Control Delay (s)	-	-	20.6	8.4
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.4	0

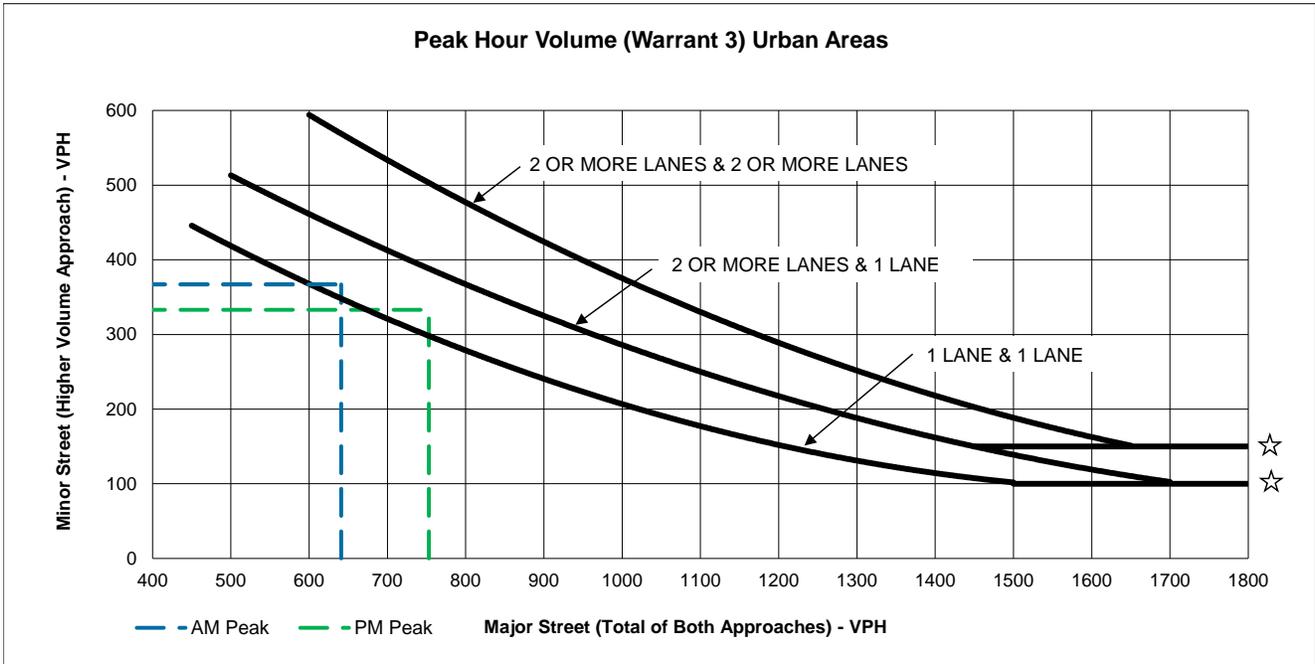
Appendix C

California MUTCD Peak Hour Warrant 3 Worksheets

Existing Conditions

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

* Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation

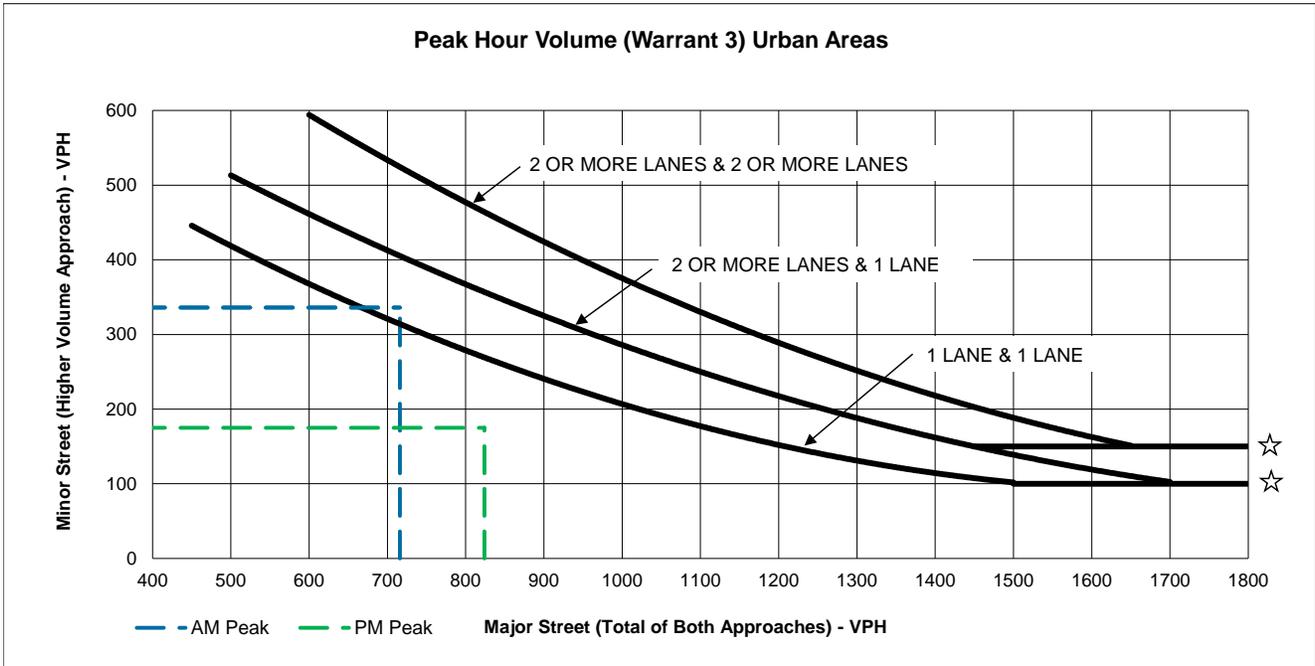


NOTE:
 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

SCENARIO (AM/PM)	Existing Conditions	
	Intersection #1	Number of Lanes
Major Approach	West Street	1
Minor Approach	Prosperity Avenue	1
	AM Peak	PM Peak
Major St. Volume:	641	753
Minor St. Volume:	367	333
Warrant Met?:	Yes	Yes

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

* Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation



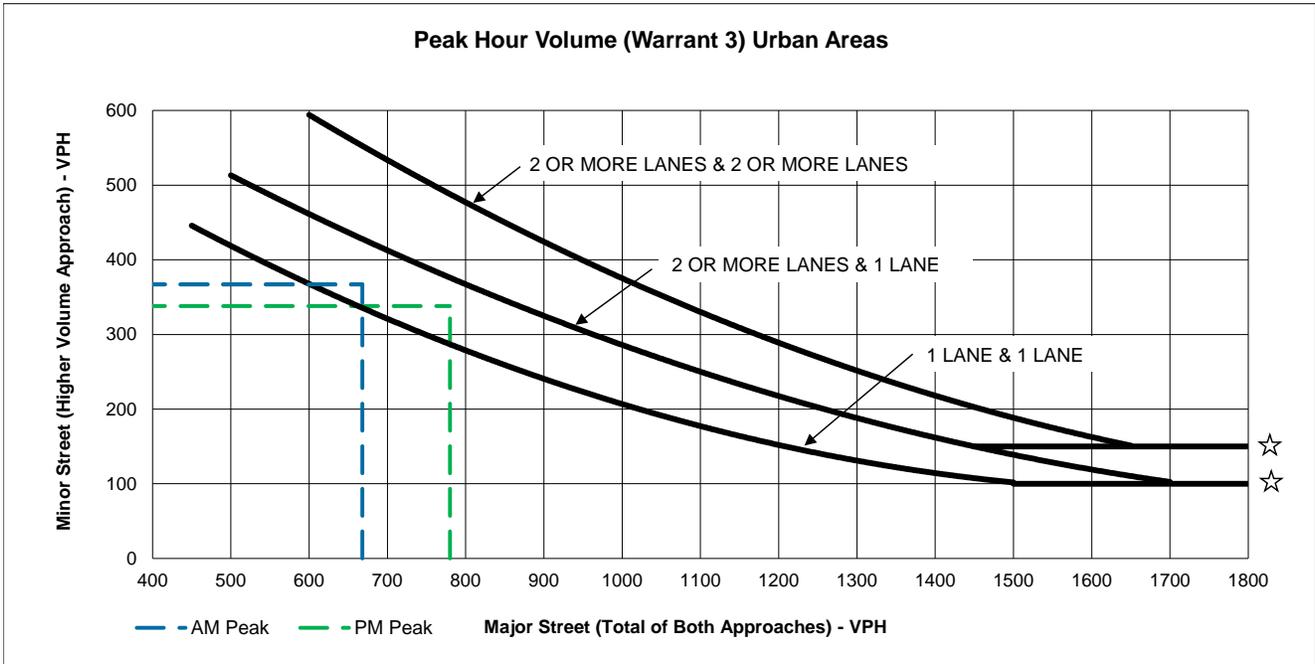
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SCENARIO (AM/PM)	Existing Conditions	
	Intersection #2	Number of Lanes
Major Approach	West Street	1
Minor Approach	Pleasant Avenue	1
	AM Peak	PM Peak
Major St. Volume:	716	824
Minor St. Volume:	336	175
Warrant Met?:	Yes	No

Existing+Approve Pending Conditions

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

* Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation



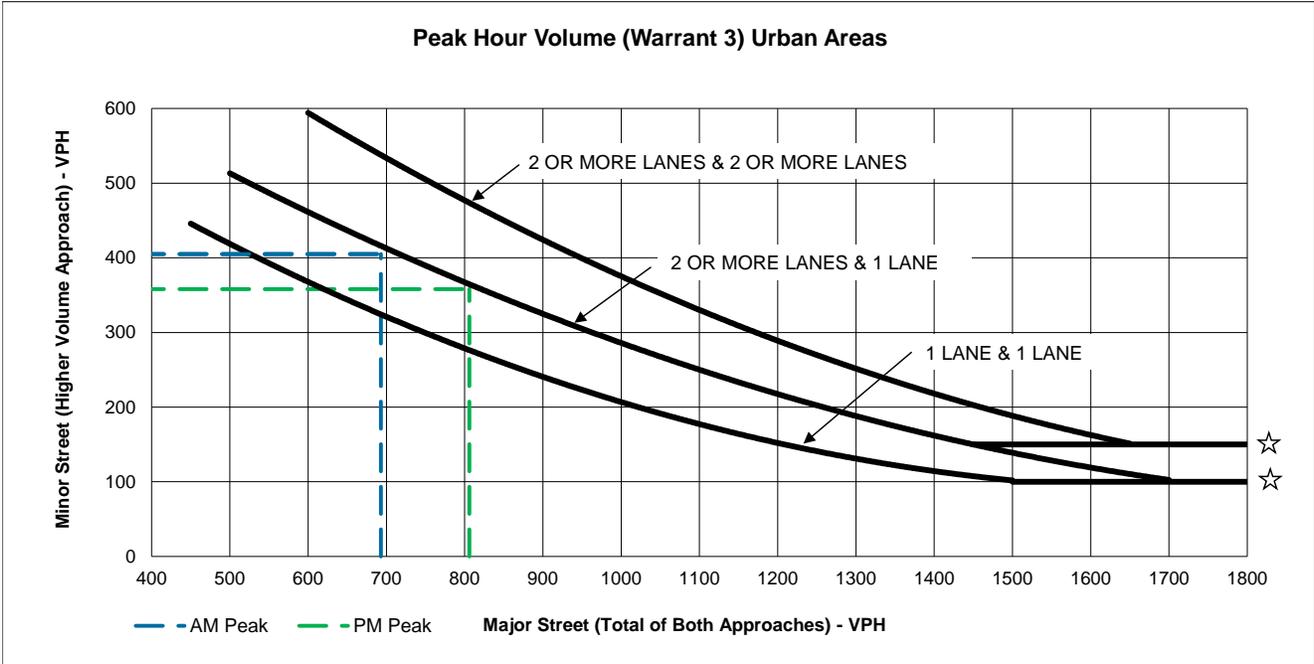
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SCENARIO (AM/PM)	Existing+AP Conditions	
	Intersection #1	Number of Lanes
Major Approach	West Street	1
Minor Approach	Prosperity Avenue	1
	AM Peak	PM Peak
Major St. Volume:	668	780
Minor St. Volume:	367	338
Warrant Met?:	Yes	Yes

Existing+Approve Pending+Project Conditions

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

* Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation

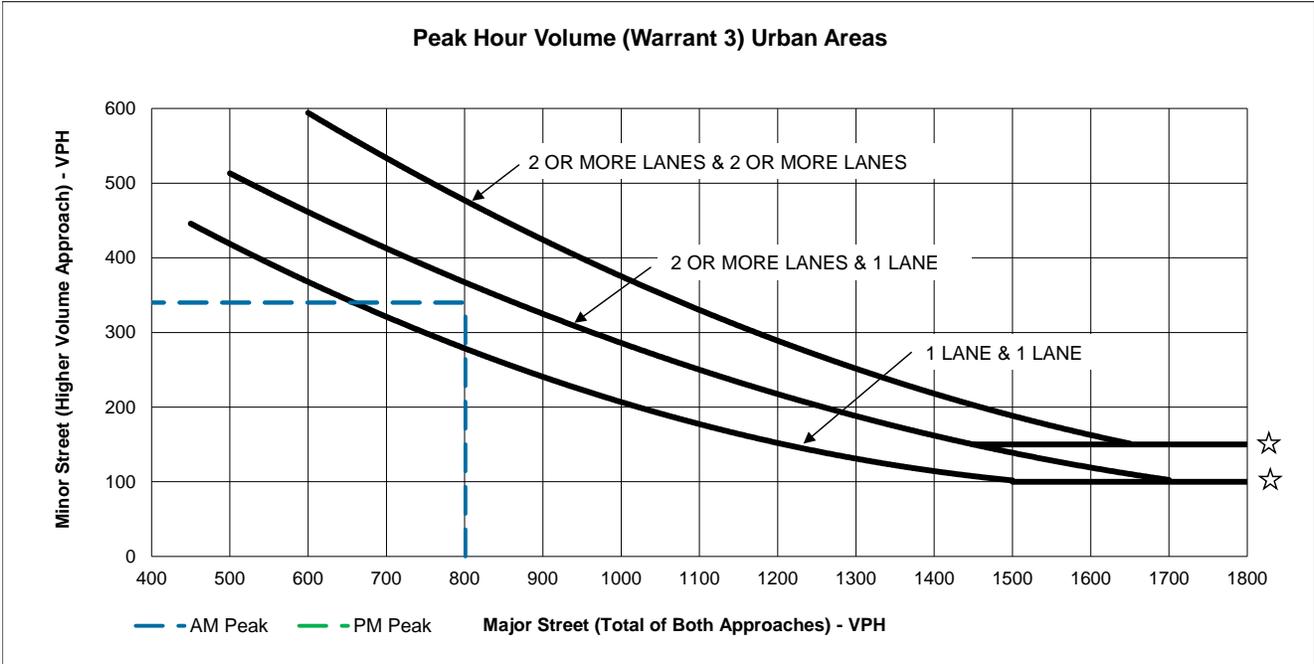


NOTE:
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SCENARIO (AM/PM)	Existing+AP+P Conditions	
	Intersection #1	Number of Lanes
Major Approach	West Street	1
Minor Approach	Prosperity Avenue	1
	AM Peak	PM Peak
Major St. Volume:	693	806
Minor St. Volume:	405	358
Warrant Met?:	Yes	Yes

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

* Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation



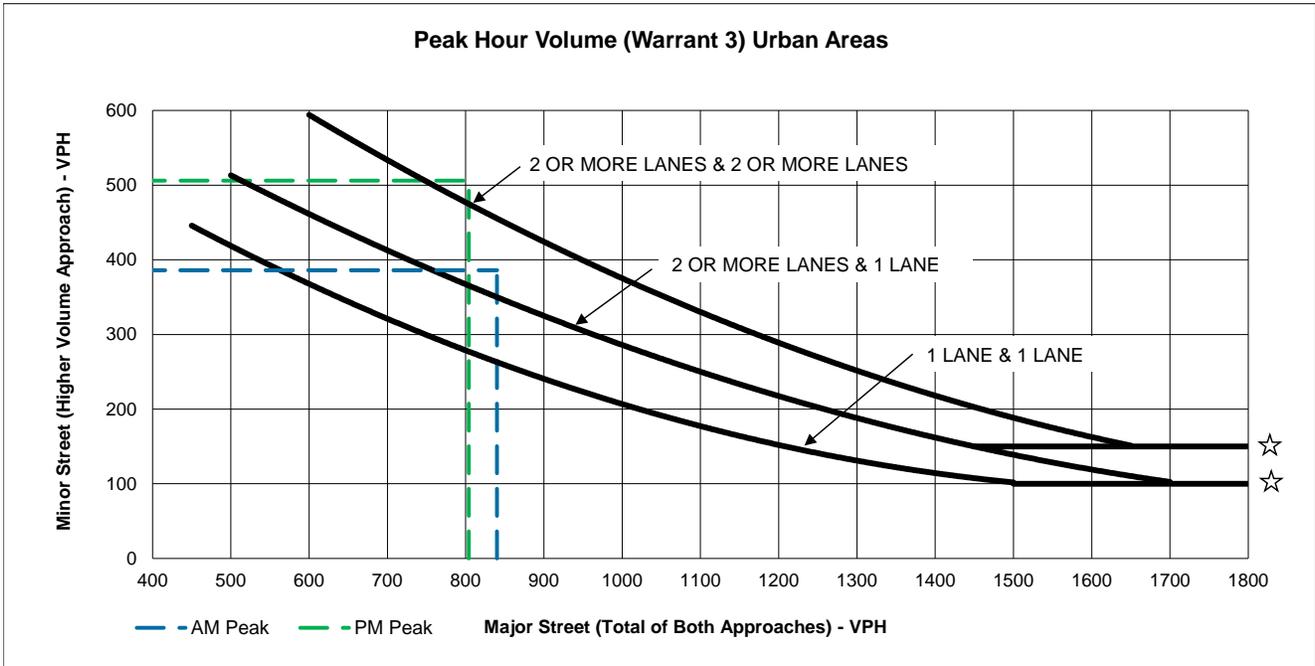
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SCENARIO (AM/PM)	Existing+AP+P Conditions	
	Intersection #2	Number of Lanes
Major Approach	West Street	1
Minor Approach	Prosperity Avenue	1
	AM Peak	PM Peak
Major St. Volume:	801	
Minor St. Volume:	340	
Warrant Met?:	Yes	

Cumulative Conditions

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

* Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation

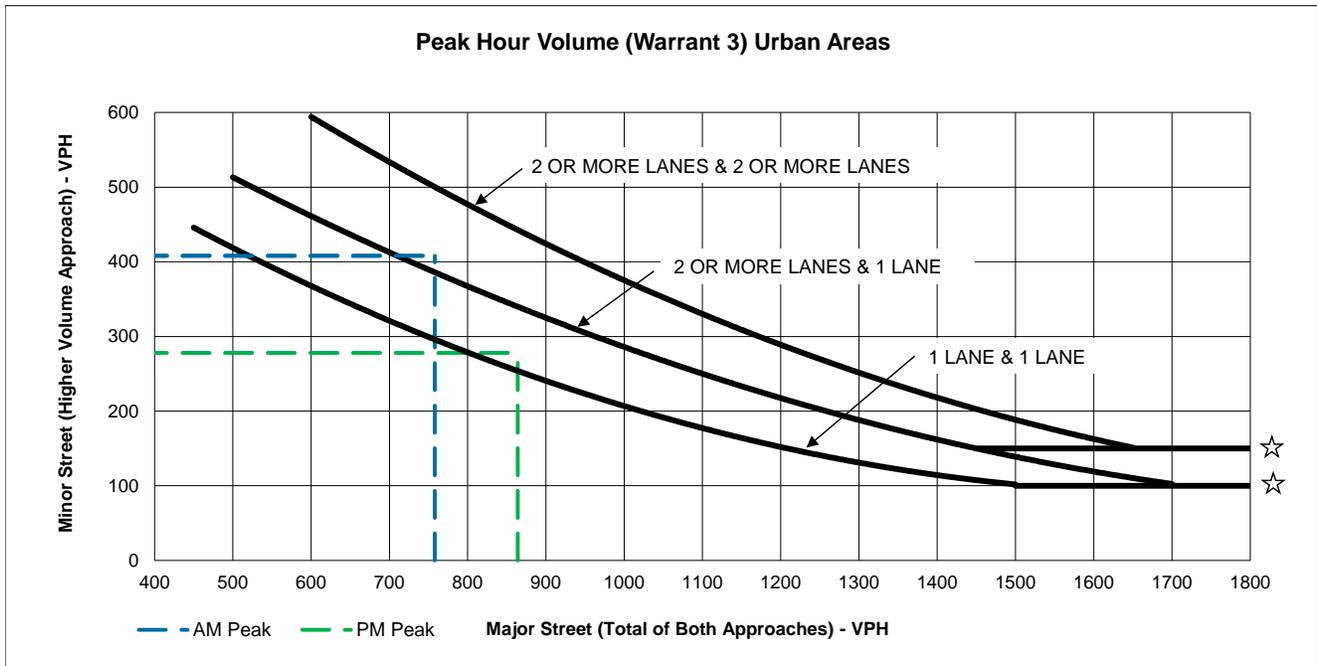


NOTE:
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SCENARIO (AM/PM)	Cumulative Conditions	
	Intersection #1	Number of Lanes
Major Approach	West Street	1
Minor Approach	Prosperity Avenue	1
	AM Peak	PM Peak
Major St. Volume:	840	804
Minor St. Volume:	386	506
Warrant Met?:	Yes	Yes

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

* Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation



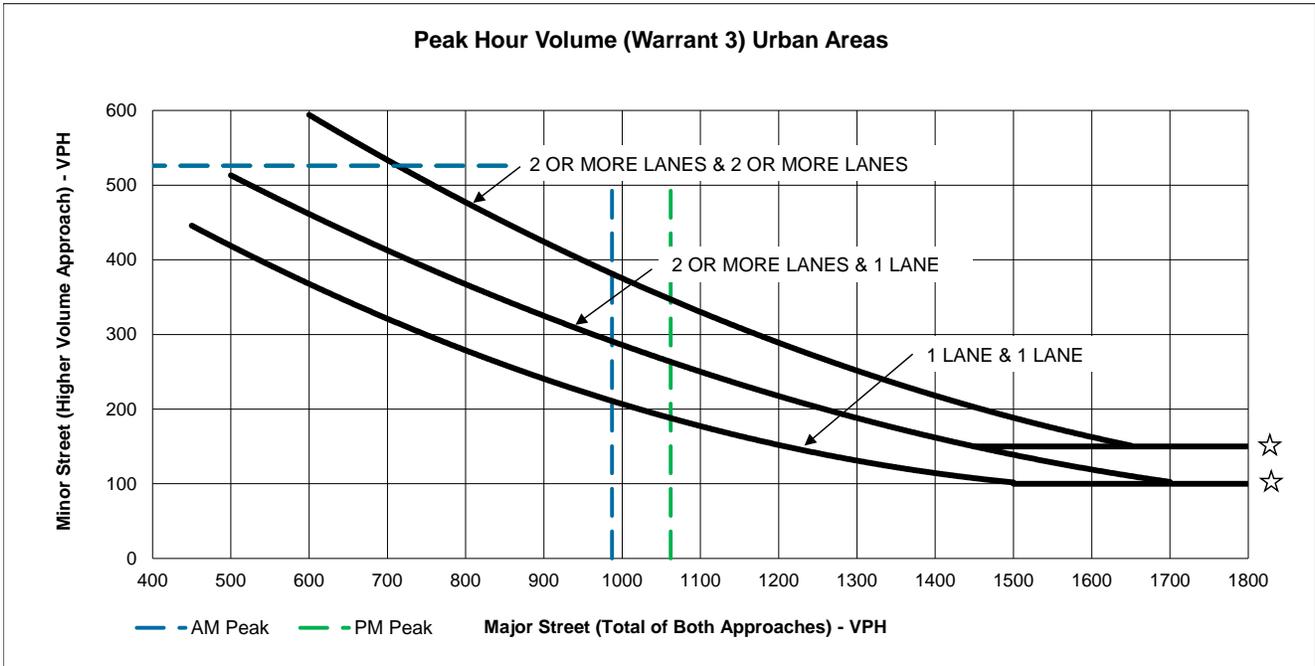
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SCENARIO (AM/PM)	Cumulative Conditions	
	Intersection #2	Number of Lanes
Major Approach	West Street	1
Minor Approach	Pleasant Avenue	1
	AM Peak	PM Peak
Major St. Volume:	758	864
Minor St. Volume:	408	278
Warrant Met?:	Yes	Yes

Cumulative+Project Conditions

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

* Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation



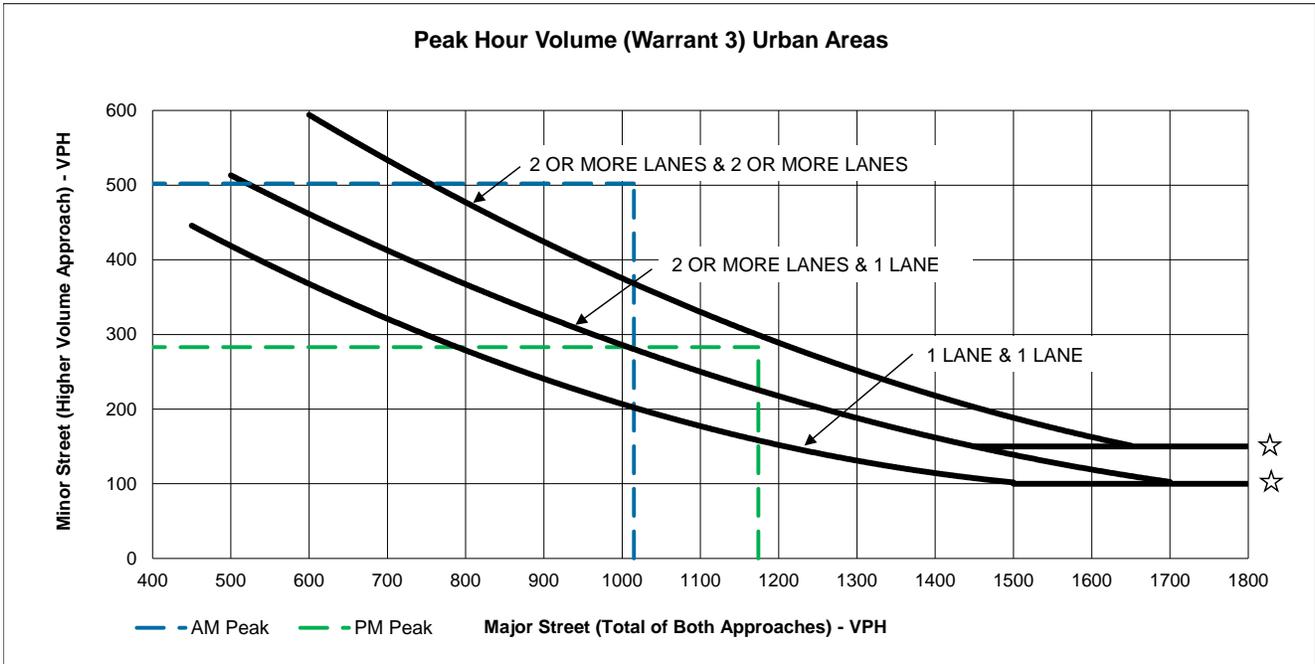
NOTE:

150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

SCENARIO (AM/PM)	Cumulative+P Conditions	
	Intersection #1	Number of Lanes
Major Approach	West Street	1
Minor Approach	Prosperity Avenue	1
	AM Peak	PM Peak
Major St. Volume:	987	1,062
Minor St. Volume:	526	526
Warrant Met?:	Yes	Yes

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

* Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation



NOTE:
 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

SCENARIO (AM/PM)	Cumulative+P Conditions	
	Intersection #2	Number of Lanes
Major Approach	West Street	1
Minor Approach	Pleasant Avenue	1
	AM Peak	PM Peak
Major St. Volume:	1,015	1,174
Minor St. Volume:	502	283
Warrant Met?:	Yes	Yes

Appendix D

Mitigation Synchro 10 LOS Output Worksheets

Existing Conditions

Tulare TIS
1: West Street & Prosperity Avenue

Existing Conditions - Mitigation
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	102	5	30	52	36	11	244	37	17	125	25
Future Volume (veh/h)	124	102	5	30	52	36	11	244	37	17	125	25
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	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	148	121	6	36	62	43	13	290	44	20	149	30
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	623	449	381	585	449	381	639	502	76	519	479	96
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1269	1841	1560	1244	1841	1560	1186	1561	237	1030	1487	299
Grp Volume(v), veh/h	148	121	6	36	62	43	13	0	334	20	0	179
Grp Sat Flow(s),veh/h/ln	1269	1841	1560	1244	1841	1560	1186	0	1798	1030	0	1787
Q Serve(g_s), s	2.1	1.1	0.1	0.5	0.5	0.4	0.2	0.0	3.2	0.3	0.0	1.6
Cycle Q Clear(g_c), s	2.7	1.1	0.1	1.6	0.5	0.4	1.7	0.0	3.2	3.5	0.0	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		0.17
Lane Grp Cap(c), veh/h	623	449	381	585	449	381	639	0	579	519	0	575
V/C Ratio(X)	0.24	0.27	0.02	0.06	0.14	0.11	0.02	0.00	0.58	0.04	0.00	0.31
Avail Cap(c_a), veh/h	1416	1598	1355	1361	1598	1355	1288	0	1561	1082	0	1552
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.2	6.3	5.9	7.0	6.1	6.1	6.0	0.0	5.9	7.3	0.0	5.3
Incr Delay (d2), s/veh	0.2	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.9	0.0	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	0.2	0.2	0.0	0.1	0.1	0.1	0.0	0.0	0.3	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.4	6.7	6.0	7.0	6.3	6.2	6.0	0.0	6.8	7.4	0.0	5.6
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		275			141			347			199	
Approach Delay, s/veh		7.0			6.4			6.7			5.8	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		11.2		9.6		11.2		9.6				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		5.2		4.7		5.5		3.6				
Green Ext Time (p_c), s		1.5		0.9		0.7		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			6.6									
HCM 6th LOS			A									

Tulare TIS
1: West Street & Prosperity Avenue

Existing Conditions - Mitigation
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	102	5	30	52	36	11	244	37	17	125	25
Future Volume (veh/h)	124	102	5	30	52	36	11	244	37	17	125	25
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	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	135	111	5	33	57	39	12	265	40	18	136	27
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	629	420	356	593	420	356	660	486	73	549	464	92
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1279	1841	1560	1256	1841	1560	1204	1562	236	1057	1491	296
Grp Volume(v), veh/h	135	111	5	33	57	39	12	0	305	18	0	163
Grp Sat Flow(s),veh/h/ln	1279	1841	1560	1256	1841	1560	1204	0	1798	1057	0	1787
Q Serve(g_s), s	1.8	1.0	0.0	0.4	0.5	0.4	0.1	0.0	2.7	0.3	0.0	1.4
Cycle Q Clear(g_c), s	2.3	1.0	0.0	1.4	0.5	0.4	1.5	0.0	2.7	3.0	0.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		0.17
Lane Grp Cap(c), veh/h	629	420	356	593	420	356	660	0	559	549	0	556
V/C Ratio(X)	0.21	0.26	0.01	0.06	0.14	0.11	0.02	0.00	0.55	0.03	0.00	0.29
Avail Cap(c_a), veh/h	1515	1696	1437	1464	1696	1437	1394	0	1657	1194	0	1647
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.9	6.2	5.8	6.8	6.0	6.0	5.7	0.0	5.6	6.8	0.0	5.1
Incr Delay (d2), s/veh	0.2	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.8	0.0	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	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.1	6.5	5.9	6.8	6.1	6.1	5.7	0.0	6.4	6.9	0.0	5.4
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		251			129			317			181	
Approach Delay, s/veh		6.8			6.3			6.4			5.5	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		10.6		9.0		10.6		9.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		4.7		4.3		5.0		3.4				
Green Ext Time (p_c), s		1.3		0.8		0.6		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			6.3									
HCM 6th LOS			A									

Tulare TIS
2: West Street & Pleasant Avenue

Existing Conditions - Mitigation
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	134	130	45	69	47	68	273	66	72	221	16
Future Volume (veh/h)	72	134	130	45	69	47	68	273	66	72	221	16
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	95	176	171	62	95	64	76	307	74	79	243	18
Peak Hour Factor	0.76	0.76	0.76	0.73	0.73	0.73	0.89	0.89	0.89	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	232	272	226	254	328	175	223	535	543	209	384	25
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	241	758	631	283	915	488	232	1562	1585	181	1121	73
Grp Volume(v), veh/h	442	0	0	221	0	0	383	0	74	340	0	0
Grp Sat Flow(s),veh/h/ln	1630	0	0	1686	0	0	1794	0	1585	1375	0	0
Q Serve(g_s), s	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.9	0.0	0.0
Cycle Q Clear(g_c), s	7.0	0.0	0.0	2.7	0.0	0.0	5.1	0.0	1.0	7.0	0.0	0.0
Prop In Lane	0.21		0.39	0.28		0.29	0.20		1.00	0.23		0.05
Lane Grp Cap(c), veh/h	730	0	0	758	0	0	758	0	543	618	0	0
V/C Ratio(X)	0.61	0.00	0.00	0.29	0.00	0.00	0.51	0.00	0.14	0.55	0.00	0.00
Avail Cap(c_a), veh/h	1108	0	0	1107	0	0	1178	0	947	1012	0	0
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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.4	0.0	0.0	7.1	0.0	0.0	8.2	0.0	6.8	8.5	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.2	0.0	0.0	0.5	0.0	0.1	0.8	0.0	0.0
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	0.0	0.0	0.6	0.0	0.0	1.0	0.0	0.2	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.2	0.0	0.0	7.3	0.0	0.0	8.7	0.0	6.9	9.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		442			221			457			340	
Approach Delay, s/veh		9.2			7.3			8.4			9.2	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.8		15.3		14.8		15.3				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		7.1		9.0		9.0		4.7				
Green Ext Time (p_c), s		1.8		1.8		1.3		1.0				
Intersection Summary												
HCM 6th Ctrl Delay				8.7								
HCM 6th LOS				A								

Existing+Approve Pending Conditions

HCM 6th Signalized Intersection Summary
1: West Street & Prosperity Avenue

Tulare TIS
PM + AP - Mitigation

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	102	16	105	143	24	14	189	81	39	303	114
Future Volume (veh/h)	52	102	16	105	143	24	14	189	81	39	303	114
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	57	111	17	114	155	26	15	205	88	42	329	124
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, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	512	455	385	549	455	385	465	477	205	587	497	187
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1213	1885	1598	1272	1885	1598	945	1251	537	1095	1305	492
Grp Volume(v), veh/h	57	111	17	114	155	26	15	0	293	42	0	453
Grp Sat Flow(s),veh/h/ln	1213	1885	1598	1272	1885	1598	945	0	1788	1095	0	1797
Q Serve(g_s), s	1.0	1.1	0.2	1.9	1.6	0.3	0.3	0.0	2.9	0.7	0.0	5.0
Cycle Q Clear(g_c), s	2.6	1.1	0.2	3.0	1.6	0.3	5.3	0.0	2.9	3.6	0.0	5.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		0.27
Lane Grp Cap(c), veh/h	512	455	385	549	455	385	465	0	681	587	0	684
V/C Ratio(X)	0.11	0.24	0.04	0.21	0.34	0.07	0.03	0.00	0.43	0.07	0.00	0.66
Avail Cap(c_a), veh/h	1136	1425	1208	1204	1425	1208	820	0	1352	997	0	1358
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.5	7.3	6.9	8.5	7.5	7.0	8.3	0.0	5.5	6.8	0.0	6.1
Incr Delay (d2), s/veh	0.1	0.3	0.0	0.2	0.4	0.1	0.0	0.0	0.4	0.1	0.0	1.1
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	0.1	0.2	0.0	0.3	0.3	0.1	0.0	0.0	0.3	0.1	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.6	7.6	7.0	8.7	7.9	7.0	8.3	0.0	5.9	6.8	0.0	7.2
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		185			295			308			495	
Approach Delay, s/veh		7.8			8.1			6.0			7.2	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.6		10.2		13.6		10.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		7.3		4.6		7.0		5.0				
Green Ext Time (p_c), s		1.2		0.6		2.1		1.0				
Intersection Summary												
HCM 6th Ctrl Delay				7.2								
HCM 6th LOS				A								

Existing+Approve Pending+Project Conditions

HCM 6th Signalized Intersection Summary
 1: West Street & Prosperity Avenue

Tulare TIS
 PM + Approved Pending + Project - Mitigation

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	125	26	130	181	47	25	226	103	43	292	123
Future Volume (veh/h)	89	125	26	130	181	47	25	226	103	43	292	123
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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	97	136	28	141	197	51	27	246	112	47	317	134
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, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	503	530	449	556	530	449	429	455	207	498	467	197
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1141	1885	1598	1231	1885	1598	947	1226	558	1032	1258	532
Grp Volume(v), veh/h	97	136	28	141	197	51	27	0	358	47	0	451
Grp Sat Flow(s),veh/h/ln	1141	1885	1598	1231	1885	1598	947	0	1785	1032	0	1789
Q Serve(g_s), s	1.9	1.4	0.3	2.6	2.2	0.6	0.6	0.0	4.1	1.0	0.0	5.5
Cycle Q Clear(g_c), s	4.1	1.4	0.3	4.0	2.2	0.6	6.1	0.0	4.1	5.1	0.0	5.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		0.30
Lane Grp Cap(c), veh/h	503	530	449	556	530	449	429	0	662	498	0	664
V/C Ratio(X)	0.19	0.26	0.06	0.25	0.37	0.11	0.06	0.00	0.54	0.09	0.00	0.68
Avail Cap(c_a), veh/h	976	1311	1111	1066	1311	1111	736	0	1241	833	0	1244
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.1	7.2	6.8	8.8	7.5	6.9	9.4	0.0	6.4	8.4	0.0	6.8
Incr Delay (d2), s/veh	0.2	0.3	0.1	0.2	0.4	0.1	0.1	0.0	0.7	0.1	0.0	1.2
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	0.3	0.3	0.1	0.4	0.5	0.1	0.1	0.0	0.6	0.1	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.3	7.5	6.9	9.0	7.9	7.0	9.5	0.0	7.1	8.5	0.0	8.1
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		261			389			385			498	
Approach Delay, s/veh		8.1			8.2			7.3			8.1	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.1		11.8		14.1		11.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		8.1		6.1		7.5		6.0				
Green Ext Time (p_c), s		1.5		0.8		2.1		1.3				
Intersection Summary												
HCM 6th Ctrl Delay				7.9								
HCM 6th LOS				A								

HCM 6th Signalized Intersection Summary

2: West Street & Pleasant Avenue

Tulare TIS
PM + Approved Pending + Project - Mitigation

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	71	78	46	73	56	92	271	52	63	375	30
Future Volume (veh/h)	31	71	78	46	73	56	92	271	52	63	375	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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	34	77	85	50	79	61	100	295	57	68	408	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, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	218	152	148	258	163	109	307	603	676	228	636	48
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	205	757	737	338	815	545	279	1427	1598	136	1504	114
Grp Volume(v), veh/h	196	0	0	190	0	0	395	0	57	509	0	0
Grp Sat Flow(s),veh/h/ln	1700	0	0	1698	0	0	1706	0	1598	1754	0	0
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.4	0.0	0.0
Cycle Q Clear(g_c), s	2.4	0.0	0.0	2.2	0.0	0.0	3.7	0.0	0.5	5.4	0.0	0.0
Prop In Lane	0.17		0.43	0.26		0.32	0.25		1.00	0.13		0.06
Lane Grp Cap(c), veh/h	517	0	0	530	0	0	910	0	676	913	0	0
V/C Ratio(X)	0.38	0.00	0.00	0.36	0.00	0.00	0.43	0.00	0.08	0.56	0.00	0.00
Avail Cap(c_a), veh/h	1413	0	0	1402	0	0	1728	0	1539	1821	0	0
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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.6	0.0	0.0	8.5	0.0	0.0	5.0	0.0	4.1	5.5	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.4	0.0	0.0	0.3	0.0	0.1	0.5	0.0	0.0
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	0.5	0.0	0.0	0.5	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	0.0	0.0	8.9	0.0	0.0	5.4	0.0	4.2	6.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		196			190			452			509	
Approach Delay, s/veh		9.0			8.9			5.2			6.0	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.6		9.3		14.6		9.3				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		23.0		18.0		23.0		18.0				
Max Q Clear Time (g_c+I1), s		5.7		4.4		7.4		4.2				
Green Ext Time (p_c), s		2.4		0.8		2.7		0.8				
Intersection Summary												
HCM 6th Ctrl Delay				6.6								
HCM 6th LOS				A								

Cumulative Conditions

Tulare TIS
1: West Street & Prosperity Avenue

Cumulative Conditions - Mitigation
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	152	16	190	254	62	15	286	134	51	376	168
Future Volume (veh/h)	122	152	16	190	254	62	15	286	134	51	376	168
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	133	165	17	207	276	67	16	311	146	55	409	183
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	414	602	510	510	602	510	315	513	241	413	521	233
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1038	1870	1585	1202	1870	1585	825	1204	565	934	1224	548
Grp Volume(v), veh/h	133	165	17	207	276	67	16	0	457	55	0	592
Grp Sat Flow(s),veh/h/ln	1038	1870	1585	1202	1870	1585	825	0	1769	934	0	1772
Q Serve(g_s), s	4.2	2.3	0.3	5.5	4.2	1.1	0.6	0.0	7.1	1.7	0.0	10.3
Cycle Q Clear(g_c), s	8.4	2.3	0.3	7.9	4.2	1.1	10.9	0.0	7.1	8.9	0.0	10.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		0.31
Lane Grp Cap(c), veh/h	414	602	510	510	602	510	315	0	753	413	0	755
V/C Ratio(X)	0.32	0.27	0.03	0.41	0.46	0.13	0.05	0.00	0.61	0.13	0.00	0.78
Avail Cap(c_a), veh/h	606	948	804	732	948	804	493	0	1135	614	0	1137
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.0	9.0	8.3	11.9	9.6	8.6	13.5	0.0	7.9	11.4	0.0	8.8
Incr Delay (d2), s/veh	0.4	0.2	0.0	0.5	0.5	0.1	0.1	0.0	0.8	0.1	0.0	2.1
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	0.7	0.1	1.1	1.2	0.3	0.1	0.0	1.5	0.3	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.4	9.2	8.3	12.4	10.2	8.7	13.6	0.0	8.7	11.5	0.0	11.0
LnGrp LOS	B	A	A	B	B	A	B	A	A	B	A	B
Approach Vol, veh/h		315			550			473			647	
Approach Delay, s/veh		10.9			10.8			8.9			11.0	
Approach LOS		B			B			A			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		19.7		16.0		19.7		16.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		22.9		18.1		22.9		18.1				
Max Q Clear Time (g_c+I1), s		12.9		10.4		12.3		9.9				
Green Ext Time (p_c), s		2.0		0.9		2.9		1.6				
Intersection Summary												
HCM 6th Ctrl Delay			10.4									
HCM 6th LOS			B									

Tulare TIS
2: West Street & Pleasant Avenue

Cumulative Conditions - Mitigation
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Volume (veh/h)	111	207	201	67	102	70	93	373	90	98	302	22
Future Volume (veh/h)	111	207	201	67	102	70	93	373	90	98	302	22
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	121	225	218	73	111	76	101	405	98	107	328	24
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	182	270	238	182	264	152	172	578	746	146	399	26
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	286	722	635	275	705	405	207	1228	1585	148	848	55
Grp Volume(v), veh/h	564	0	0	260	0	0	506	0	98	459	0	0
Grp Sat Flow(s),veh/h/ln	1642	0	0	1384	0	0	1435	0	1585	1052	0	0
Q Serve(g_s), s	11.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	9.7	0.0	0.0
Cycle Q Clear(g_c), s	18.8	0.0	0.0	6.9	0.0	0.0	15.6	0.0	2.0	25.3	0.0	0.0
Prop In Lane	0.21		0.39	0.28		0.29	0.20		1.00	0.23		0.05
Lane Grp Cap(c), veh/h	690	0	0	598	0	0	750	0	746	571	0	0
V/C Ratio(X)	0.82	0.00	0.00	0.43	0.00	0.00	0.68	0.00	0.13	0.80	0.00	0.00
Avail Cap(c_a), veh/h	736	0	0	639	0	0	753	0	749	574	0	0
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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.0	0.0	0.0	13.4	0.0	0.0	11.7	0.0	8.7	15.0	0.0	0.0
Incr Delay (d2), s/veh	6.8	0.0	0.0	0.5	0.0	0.0	2.4	0.0	0.1	8.1	0.0	0.0
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	7.0	0.0	0.0	2.1	0.0	0.0	4.0	0.0	0.5	4.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	0.0	0.0	13.9	0.0	0.0	14.1	0.0	8.8	23.1	0.0	0.0
LnGrp LOS	C	A	A	B	A	A	B	A	A	C	A	A
Approach Vol, veh/h		564			260			604			459	
Approach Delay, s/veh		23.8			13.9			13.2			23.1	
Approach LOS		C			B			B			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		31.9		26.3		31.9		26.3				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		27.5		23.5		27.5		23.5				
Max Q Clear Time (g_c+I1), s		17.6		20.8		27.3		8.9				
Green Ext Time (p_c), s		2.4		1.0		0.1		1.3				
Intersection Summary												
HCM 6th Ctrl Delay				18.9								
HCM 6th LOS				B								

Cumulative+Project Conditions

Tulare TIS
1: West Street & Prosperity Avenue

Cumulative + Project - Mitigation
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	166	30	190	268	68	29	292	134	57	382	168
Future Volume (veh/h)	122	166	30	190	268	68	29	292	134	57	382	168
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	133	180	33	207	291	74	32	317	146	62	415	183
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	341	578	490	431	578	490	353	601	277	451	610	269
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.50	0.50	0.50	0.50	0.50	0.50
Sat Flow, veh/h	1017	1870	1585	1168	1870	1585	820	1212	558	929	1230	542
Grp Volume(v), veh/h	133	180	33	207	291	74	32	0	463	62	0	598
Grp Sat Flow(s),veh/h/ln	1017	1870	1585	1168	1870	1585	820	0	1770	929	0	1773
Q Serve(g_s), s	5.7	3.4	0.7	7.6	5.9	1.6	1.4	0.0	8.2	2.3	0.0	11.8
Cycle Q Clear(g_c), s	11.6	3.4	0.7	11.0	5.9	1.6	13.3	0.0	8.2	10.5	0.0	11.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		0.31
Lane Grp Cap(c), veh/h	341	578	490	431	578	490	353	0	878	451	0	880
V/C Ratio(X)	0.39	0.31	0.07	0.48	0.50	0.15	0.09	0.00	0.53	0.14	0.00	0.68
Avail Cap(c_a), veh/h	425	733	622	528	733	622	353	0	878	451	0	880
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.8	12.2	11.3	16.4	13.1	11.6	13.9	0.0	7.9	11.5	0.0	8.8
Incr Delay (d2), s/veh	0.7	0.3	0.1	0.8	0.7	0.1	0.5	0.0	2.3	0.6	0.0	4.2
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	1.2	1.1	0.2	1.7	2.0	0.4	0.3	0.0	2.4	0.4	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.5	12.5	11.3	17.2	13.7	11.7	14.4	0.0	10.2	12.1	0.0	13.1
LnGrp LOS	B	B	B	B	B	B	B	A	B	B	A	B
Approach Vol, veh/h		346			572			495			660	
Approach Delay, s/veh		14.7			14.7			10.5			13.0	
Approach LOS		B			B			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.4		18.8		27.4		18.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		22.9		18.1		22.9		18.1				
Max Q Clear Time (g_c+I1), s		15.3		13.6		13.8		13.0				
Green Ext Time (p_c), s		1.7		0.7		2.7		1.3				
Intersection Summary												
HCM 6th Ctrl Delay			13.2									
HCM 6th LOS			B									

Tulare TIS
2: West Street & Pleasant Avenue

Cumulative + Project - Mitigation
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	207	201	67	102	88	93	391	90	116	320	26
Future Volume (veh/h)	115	207	201	67	102	88	93	391	90	116	320	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	125	225	218	73	111	96	101	425	98	126	348	28
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	185	255	224	170	245	173	172	598	764	159	379	27
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	296	719	633	245	692	489	195	1242	1585	160	786	56
Grp Volume(v), veh/h	568	0	0	280	0	0	526	0	98	502	0	0
Grp Sat Flow(s),veh/h/ln	1648	0	0	1427	0	0	1437	0	1585	1002	0	0
Q Serve(g_s), s	11.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	11.7	0.0	0.0
Cycle Q Clear(g_c), s	18.6	0.0	0.0	7.3	0.0	0.0	14.8	0.0	1.9	26.5	0.0	0.0
Prop In Lane	0.22		0.38	0.26		0.34	0.19		1.00	0.25		0.06
Lane Grp Cap(c), veh/h	664	0	0	588	0	0	770	0	764	565	0	0
V/C Ratio(X)	0.86	0.00	0.00	0.48	0.00	0.00	0.68	0.00	0.13	0.89	0.00	0.00
Avail Cap(c_a), veh/h	664	0	0	588	0	0	770	0	764	565	0	0
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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.2	0.0	0.0	13.7	0.0	0.0	10.7	0.0	7.9	15.6	0.0	0.0
Incr Delay (d2), s/veh	10.6	0.0	0.0	0.6	0.0	0.0	2.5	0.0	0.1	16.0	0.0	0.0
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	7.5	0.0	0.0	2.3	0.0	0.0	3.8	0.0	0.5	7.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.8	0.0	0.0	14.3	0.0	0.0	13.2	0.0	7.9	31.6	0.0	0.0
LnGrp LOS	C	A	A	B	A	A	B	A	A	C	A	A
Approach Vol, veh/h		568			280			624			502	
Approach Delay, s/veh		27.8			14.3			12.4			31.6	
Approach LOS		C			B			B			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		31.0		24.0		31.0		24.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		26.5		19.5		26.5		19.5				
Max Q Clear Time (g_c+I1), s		16.8		20.6		28.5		9.3				
Green Ext Time (p_c), s		2.5		0.0		0.0		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				22.0								
HCM 6th LOS				C								