KITTELSON & ASSOCIATES

TRACTOR SUPPLY COMPANY, TRAFFIC IMPACT STUDY

Phelan, California

June 22, 2025

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Tractor Supply Company, Traffic Impact Study

Phelan, California

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Project Number 31390

June 22, 2025

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CONTENTS

LIST OF FIGURES

LIST OF TABLES

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Executive Summary

This report documents the transportation impact analysis conducted for the development of a 23,957 square-foot (SF) Tractor Supply Company building at 4351 Phelan Road in Phelan, California (Project). The report follows the analysis and documentation requirements set forth by the County of San Bernardino (County) Transportation Impact Study Guidelines (2019).

PROJECT DESCRIPTION

The Project site would include construction of a 23,957 SF tractor supply building with approximately 15,020 SF of fenced outdoor display area with greenhouse, sidewalk display area immediately adjacent to the store front, 3,000 SF of trailer and equipment display adjacent to the northern property line, 102 parking stalls, and a rear loading facility. The Project is estimated to generate 60 weekday PM peak hour trips (28 inbound / 32 outbound) and 137 Saturday midday peak hour trips (67 inbound / 70 outbound).

TRANSPORTATION IMPACT FINDINGS

This transportation impact study concluded the Project would not result in deficient traffic operations at the study intersections during background conditions.

Under cumulative conditions, the intersection of **Sheep Creek Road/Phelan Road** increases delay by more than 5.0 seconds in the Saturday peak hour and would require a fair-share contribution towards an improvement.

- The recommended improvements to enhance intersection operations under Cumulative Plus Project conditions are to widen the eastbound and westbound approaches on Phelan Road to provide one exclusive left-turn lane, two exclusive through lanes, and one shared through/right-turn lane in each direction.
- The calculated fair share percentage for the intersection during Saturday peak hour is 4.62%
- The calculated fair share contribution is $23,100 assuming a cost estimate of $500,000 for the two lane additions.

The intersections of Phelan Road at Valle Vista Road, Sierra Vista Road, and Riggins Road each operate at LOS D, E, or F during cumulative conditions, but the Project does not increase the delay by more than 5.0 seconds, the intersections do not meet signal warrants, and the Project adds less than 10 trips on minor street approaches. Therefore, the Project would not require a mitigation to any of the unsignalized intersections in the study area along Phelan Road.

VEHICLE MILES TRAVELED FINDINGS

According to San Bernardino County's Transportation Impact Study Guidelines (2019), local-serving retail establishments under 50,000 square feet are not required to undergo a VMT assessment. Therefore, the Project is exempt from a VMT analysis as it is designed to serve the local community.

Section 1
Introduction

Introduction

Kittelson & Associates, Inc. (Kittelson) has prepared this transportation impact study for the proposed Tractor Supply Company retail facility to be constructed on a vacant parcel located in the southeast quadrant of the intersection of Phelan Road and Riggins Road at 4351 Phelan Road, Phelan, CA, 92371 (Project). The new facility includes a building of approximately 23,957 square feet (SF) with approximately 15,020 SF of fenced outdoor display area with greenhouse, sidewalk display area immediately adjacent to the store front, 3,000 SF of trailer and equipment display adjacent to the northern property line, 102 parking stalls, and a rear loading facility.

This report documents the traffic analysis findings for the Project. This report follows the requirements set out by San Bernardino County's Transportation Impact Study Guidelines (2019).

SCOPE OF REPORT

The analysis performed for this study determines the expected transportation-related effects of the Project. The scope of the study was developed in coordination with the County of San Bernardino. **Appendix A** includes the scoping agreement memorandum.

The transportation analyses documented in this report were performed to comply with California Environmental Quality Act (CEQA) transportation analysis (vehicle miles travelled) analyses and to assess transportation effects and consistency with the County of San Bernardino Transportation Impact Study Guidelines (2019) through a Traffic Impact Study. This report evaluates the following:

- Existing Traffic Conditions
- Project Traffic
- Background Conditions (Opening Year) Analysis
- Cumulative Year Analysis
- Site Access, Safety, and Other Analyses
- Vehicle Miles Traveled (VMT) Analysis

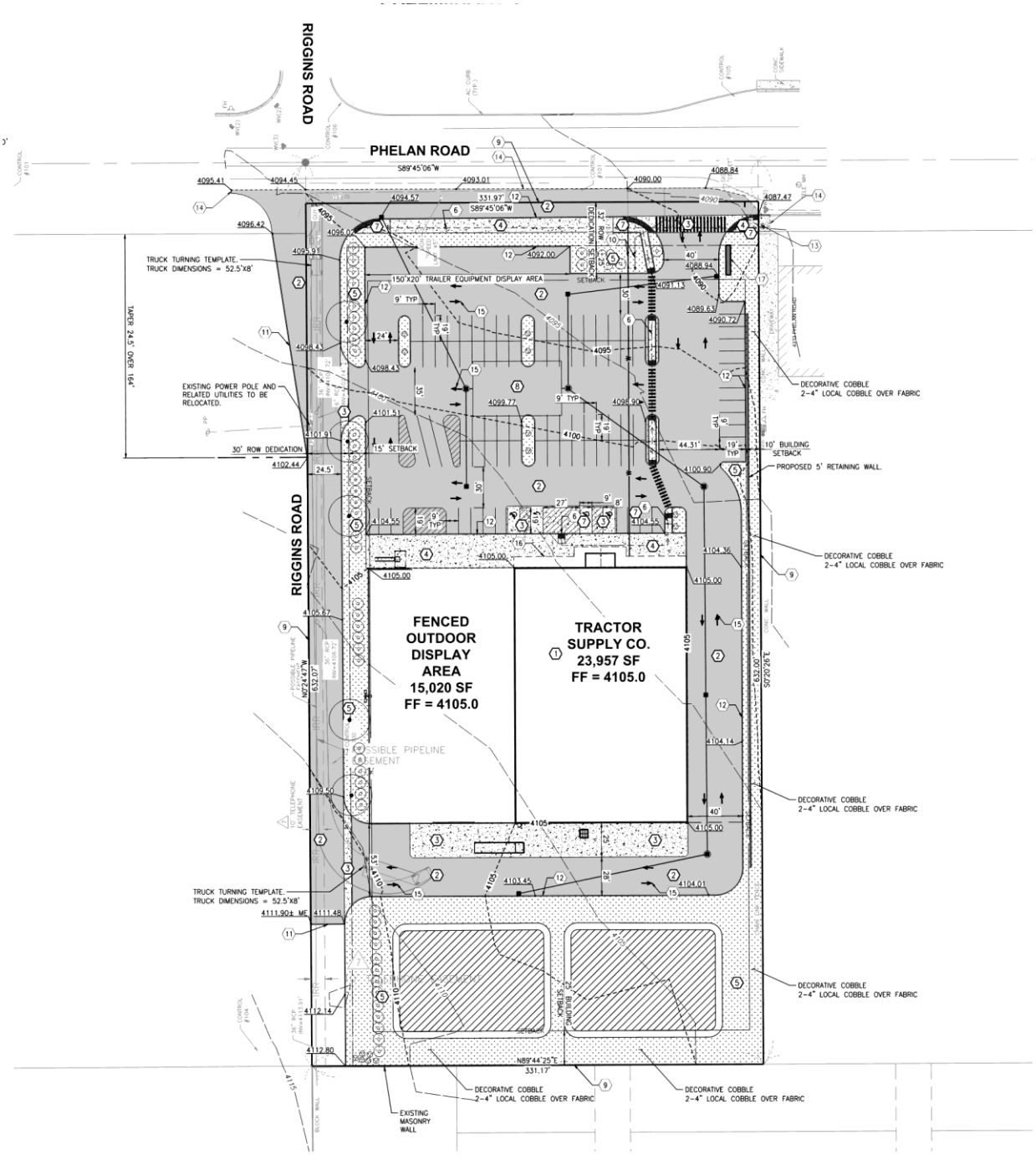
Project Description

The Project is located in the southeast quadrant of the intersection of Phelan Road and Riggins Road as shown in **Figure 1**. The parcel is zoned as General Commercial and currently is vacant. Development of a tractor supply store on the parcel would be consistent with the San Bernardino County Code of Ordinances zoning and land use.

The proposed site plan (**Figure 2)** includes construction of a 23,957 SF tractor supply building, with approximately 15,020 SF of fenced outdoor display area to include a greenhouse, sidewalk display area immediately adjacent to the store front, 3,000 SF of trailer and equipment display adjacent to the northern property line, 102 parking stalls, and a rear loading facility. Project opening year is planned for 2026.

Figure 1: Project Vicinity Map

Figure 2: Site Plan



Section 2
Methodology and Impact Thresholds

Methodology and Impact Thresholds

To ensure land development is consistent with the Countywide General Plan, roadway facilities operate at an acceptable level of service (LOS), and regional VMT is reduced, the County should require a study for any development if there are concerns over safety or operational issues such as congestion, VMT, etc. The requirement to prepare a transportation impact study (TIS) should be based upon, but not limited to, one or more of the following criteria:

- If a project generates 100 or more trips without consideration of pass-by trips during any peak hour.
- If a project is located within 300 feet of
  - The intersection of two streets designated as Collector or higher in the County's General Plan or the Land Use Services Department's Master Plan or
  - An impacted intersection as determined by the County Traffic Division.
- If a project creates safety or operational concerns.
- If a project has the potential to generate VMT that could result in a transportation impact as noted in the significance criteria presented later in this memorandum.
- If a project generates than 100 trips without consideration of pass-by trips during any peak hour, a study maybe required if there are special concerns.

The Project would generate more than 100 trips during the Saturday peak hour and requires a TIS.

Signalized Intersection General Plan Consistency Requirements

Consistent with the acceptable LOS for the Valley region as described in the General Plan, the County considers the following signalized intersection criteria for determining operational improvement needs.

- Any signalized study intersection that is operating at an acceptable LOS C or better without project traffic in which the addition of project traffic causes the intersection to degrade to an LOS D, E or F shall identify improvements to improve operations to LOS C or better.
- Any signalized study intersection in the Desert that is operating at LOS D, E or F without project traffic where the project increases delay by 5.0 or more seconds shall identify improvements to offset the increase in delay.

Unsignalized Intersection General Plan Consistency Requirements

Consistent with the acceptable LOS for Valley region as described in the current General Plan, the County considers the following unsignalized intersection criteria for determining operational improvement needs.

- An operational improvement would be required if the study determines that either section a) or both sections b) and c) occur:
  - a) The addition of project related traffic causes the intersection to degrade from an LOS C or better to a LOS D or worse.
    OR

- b) The project adds 5.0 seconds or more of delay to an intersection that is already projected to operate without project traffic at an LOS D, E or F.
  AND
- c) One or both of the following conditions are met:
  - 1) The project adds ten (10) or more trips to any minor street approach
  - 2) The intersection meets the peak hour traffic signal warrant after the addition of project traffic.

If the conditions above are satisfied, improvements should be identified that would achieve LOS C or better for case a) above or to pre-project LOS and delay for case b) above.

Section 3
Existing Condition

Existing Conditions

This section details the area surrounding the Project site, including existing transportation infrastructure and conditions in the study area.

ROADWAY NETWORK

Phelan Road

Phelan Road is classified as a Major Arterial by the County's Circulation Element.[1] The circulation class identifies the street with 120 feet of right-of-way and 104 feet of curb-to-curb width. The road has three lanes, one in each direction and a two-way left-turn lane, and turn lanes at intersections. The posted speed is 35 miles per hour west of Riggins Road, approaching the Sheep Creek Road intersection. The speed limit then increases to 45 miles per hour east of Riggins Road. The segment of roadway near the Project site is also in a school zone with a 25-mile-per-hour limit during school hours.

Sheep Creek Road

Sheep Creek Road is classified as a Major Arterial by the County's Circulation Element. The circulation class identifies the street with 104 feet of right-of-way and 80 feet of curb-to-curb width. The road has two lanes, one in each direction, with additional through lanes and turn lanes at intersections. The posted speed ranges from 40 miles per hour to 55 miles per hour.

Riggins Road and Sierra Vista Road

Riggins Road and Sierra Vista Road are classified as Local Roads by the County's Circulation Element. The roads have two lanes, one lane in each direction. The roads are only partially paved, eventually transitioning into dirt as pavement does not extend the entire length.

Valle Vista Road

Valle Vista Road is classified as a Local Road by the County's Circulation Element. The road has two lanes, one in each direction.

EXISTING TRAFFIC VOLUMES

Figure 3 shows the existing traffic controls and lane geometries at the four study intersections. Turning movement counts were collected on Saturday, May 10, 2025 and Tuesday, May 13, 2025 at the study intersections. The existing Saturday midday and PM peak hour turning movement volumes are presented in **Figure 4** and **Figure 5**, respectively. Raw traffic count data is provided in **Appendix B**.

[1] https://open.sbcounty.gov/datasets/circulation-elements/explore?location=34.426239%2C-117.569785%2C16.64

Figure 3: Existing Traffic Control and Lane Geometry

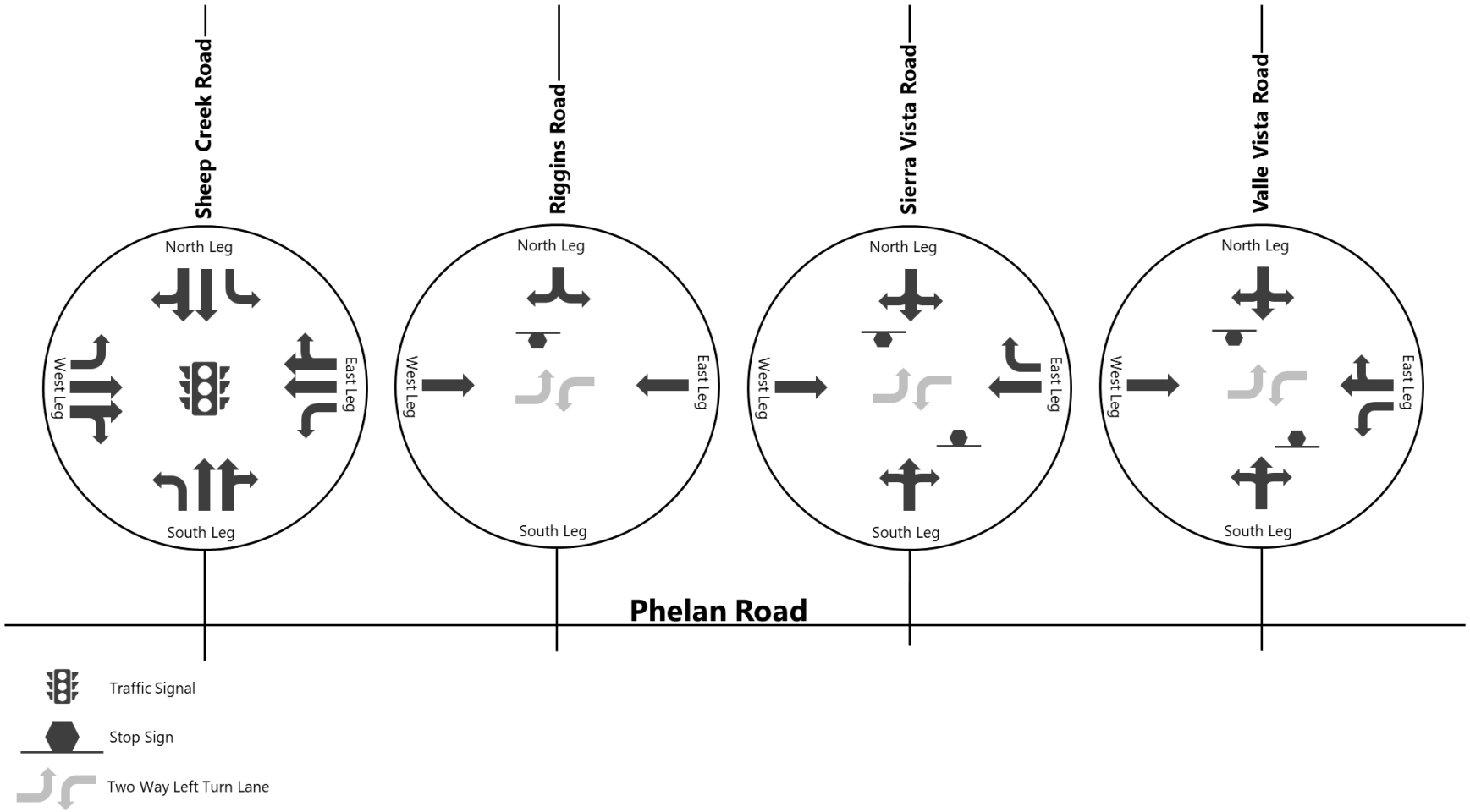


Figure 4: Existing Traffic Volume (Saturday Midday Peak Hour)

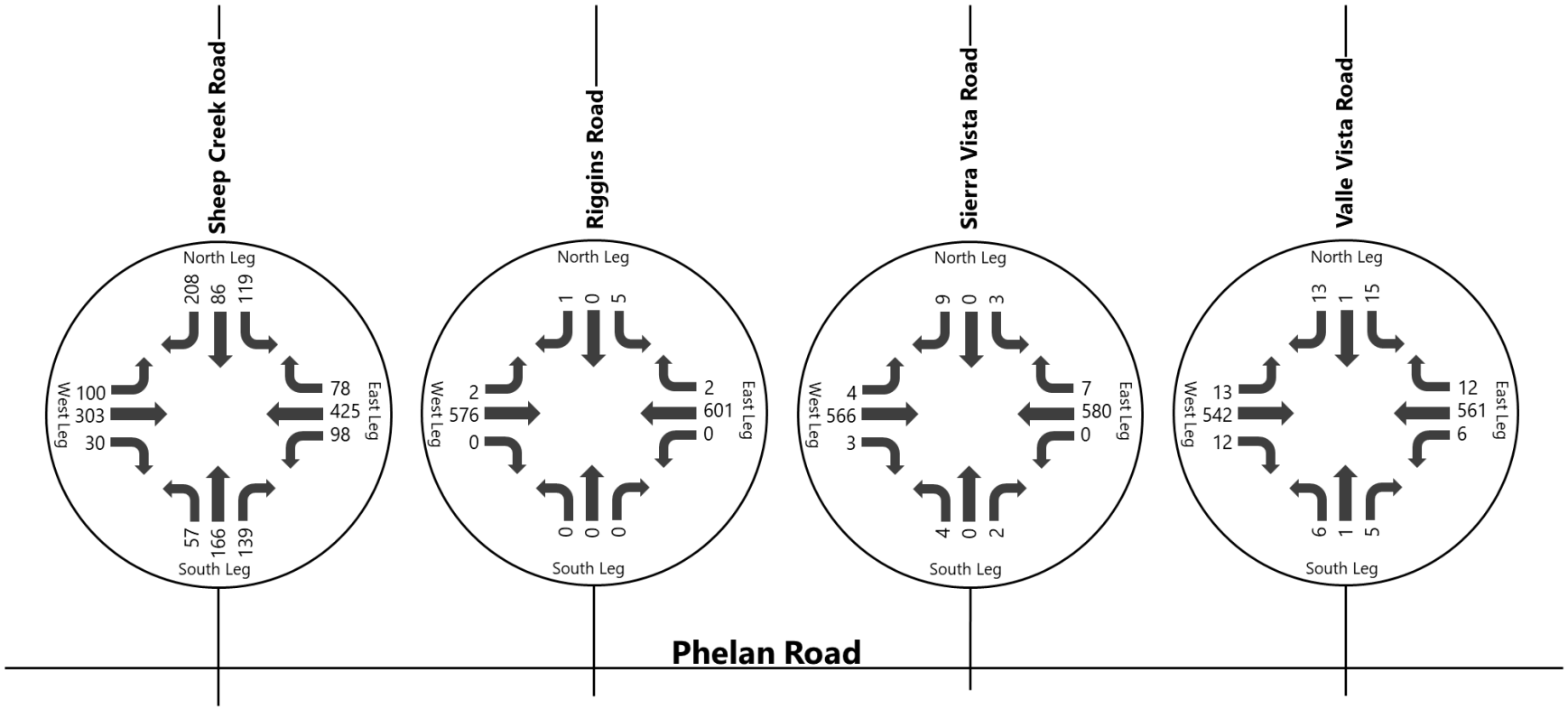
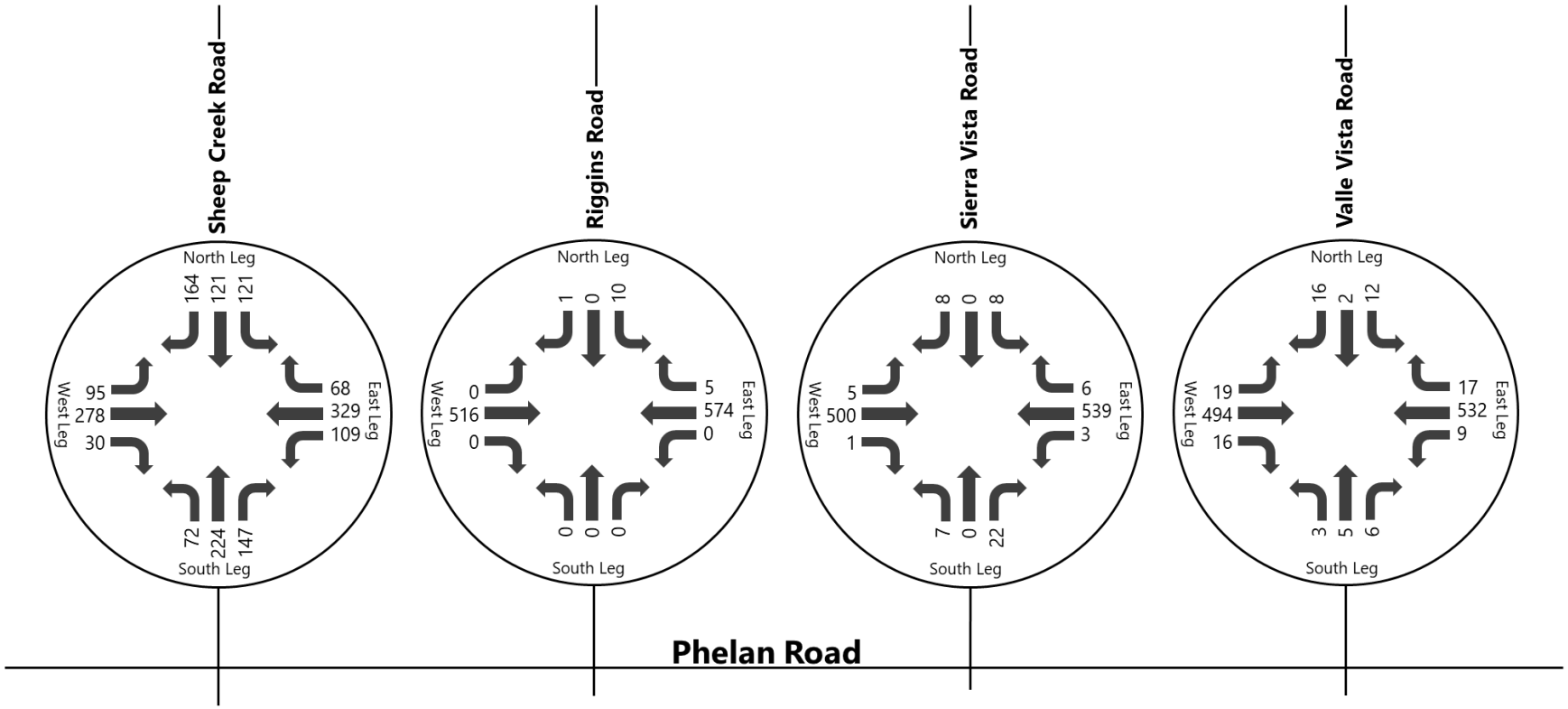


Figure 5: Existing Traffic Volumes (PM Peak Hour)



EXISTING LEVEL OF SERVICE

Existing intersection LOS is provided in **Table 1**. As shown in the table, the study intersections perform at LOS C or better during the study peak hours. Detailed analysis reports for the study intersections are provided in **Appendix C**.

Table 1: Intersection Level of Service – Existing (2025) Conditions

Intersection	Control Type	Peak Hour	Delay (sec)	LOS
1. Sheep Creek Rd / Phelan Rd	Signalized	Saturday Midday Peak	26.1	C
		Weekday PM Peak	24.9	C
2. Riggins Rd / Phelan Rd	TWSC	Saturday Midday Peak	15.4 (SB)	C
		Weekday PM Peak	15.0 (SB)	B
3. Sierra Vista Rd / Phelan Rd	TWSC	Saturday Midday Peak	22.7 (NB)	C
		Weekday PM Peak	19.7 (SB)	C
4. Valle Vista Rd / Phelan Rd	TWSC	Saturday Midday Peak	22.5 (SB)	C
		Weekday PM Peak	20.12 (SB)	C

TWSC: two-way stop controlled
SB: southbound
NB: northbound

EXISTING BICYCLE FACILITIES

There are no bicycle facilities in the study area.

EXISTING TRANSIT FACILITIES

Victor Valley Transit operates within the study area. Bus stops for routes 20 and 21 are located near the intersection of Phelan Road and Riggins Road, as well as Phelan Road and Clovis Road.

EXISTING PEDESTRIAN FACILITIES

The intersection of Phelan Road and Sheep Creek Road features sidewalks and crosswalks in all directions. However, as you move east along Phelan Road, the sidewalks cease after the Sheep Creek intersection, briefly reappear near the Sierra Vista Road intersection, and then cease again.

Section 4
Project Traffic

Project Traffic

TRIP GENERATION

In accordance with the County of San Bernardino Regional Transportation Development Mitigation Plan (Section 7), trip generation estimates must be based on traffic counts from at least three existing facilities with similar functions to the proposed development over a seven-day period. To meet this requirement, two approaches to developing Project trip generation were explored:

- Institute of Transportation Engineers (ITE) *Trip Generation Manual,* 11th Edition trip rates for Tractor Supply Store (ITE Code 810) – seven studies for weekday PM peak hour, eight studies for Saturday peak hour
- New data collected at three Tractor Supply Company locations in California for daily, weekday PM peak hour, and Saturday midday peak hour periods

The trip generation calculations for both approaches consider both the indoor building and outdoor display area, including the fenced area, totaling 43,065 SF.

Site Operations

The proposed facility will receive one truck delivery per week. Its operating hours will be 8:00 AM to 9:00 PM, Monday through Saturday, and 9:00 AM to 7:00 PM on Sunday. The business is expected to employ between 14 and 18 staff members. Based on its use and General Commercial zoning, the preliminary site plan estimates approximately 270 daily vehicle visits. The daily trip generation for the site is calculated by considering that each vehicle visit consists of two trips – one entering and one exiting. So, the total daily trip generation is estimated to be 540 trips per day.

ITE Trip Rates

The PM peak hour trip generation is based on the peak hour of the adjacent street between 4:00 PM and 6:00 PM. This refers to the time when the highest volume of traffic occurs on the surrounding road network. The Saturday peak hour is based on the peak hour of the generator. This refers to the time when the tractor supply store generates the highest volumes of trips. **Table 2** presents the Project trip generation estimate using ITE rates.

Table 2: Project Trip Generation – ITE Rates

Land Use	ITE Code	Intensity	PM Peak Hour			Saturday Peak Hour		
			Ins	Outs	Total	Ins	Outs	Total
Tractor Supply Store	810	43.065 (1,000 sq. ft. GFA)	28	32	60	67	70	137
Total			**28**	**32**	**60**	**67**	**70**	**137**

Source: Trip Generation Manual, 11th Edition
PM peak hour rate: 1.40
Saturday peak hour rate: 3.17
Ins/Outs: PM (47% entering / 53% exiting), Saturday (49% entering / 51% exiting)
GFA – Gross Floor Area

When daily trip rates are unavailable, industry practice is to assume peak hour traffic accounts for 10% of total daily trips. Using this approach, multiplying the PM peak hour trips (60) by 10 results in an estimated 600 daily trips. This generally aligns with the preliminary site plan estimate of 540 trips per day. The weekend is anticipated to generate higher peak hour trips, but these would occur when the roadway network is less busy compared to weekdays.

Newly Collected Trip Data

To gauge traffic patterns for similar land uses, traffic counts were collected at three Tractor Supply Company retail locations in the region: Apple Valley, Barstow, and Hesperia. Data were collected for one week at each location. The trip data across the three locations was averaged to estimate Project trip generation rather than developing a trips-per-1,000 square feet rate since building square footage information was not available. **Table 3** presents the summary of peak hour trips at the three sites and the average of those trips to estimate Project trip generation.

Table 3: Project Trip Generation – Newly Collected Trip Data

Site	Weekday PM Peak Hour			Saturday Midday Peak Hour		
	In[1]	Out[1]	Total	In[1]	Out[1]	Total
Apple Valley			83			132
Barstow			47			56
Hesperia			111			134
Project (Average)	**40**	**40**	**80**	**54**	**53**	**107**

Source: Kittelson & Associates, Inc., 2025
[1] Ins and outs were assigned 50% in/50% out since the proportion of ins and outs across days fluctuated modestly and hovered around a 50/50 split.
No pass-by or diverted rates were assumed since survey data was not collected from customers about trip making.
GFA – Gross Floor Area

Trip Generation Comparison

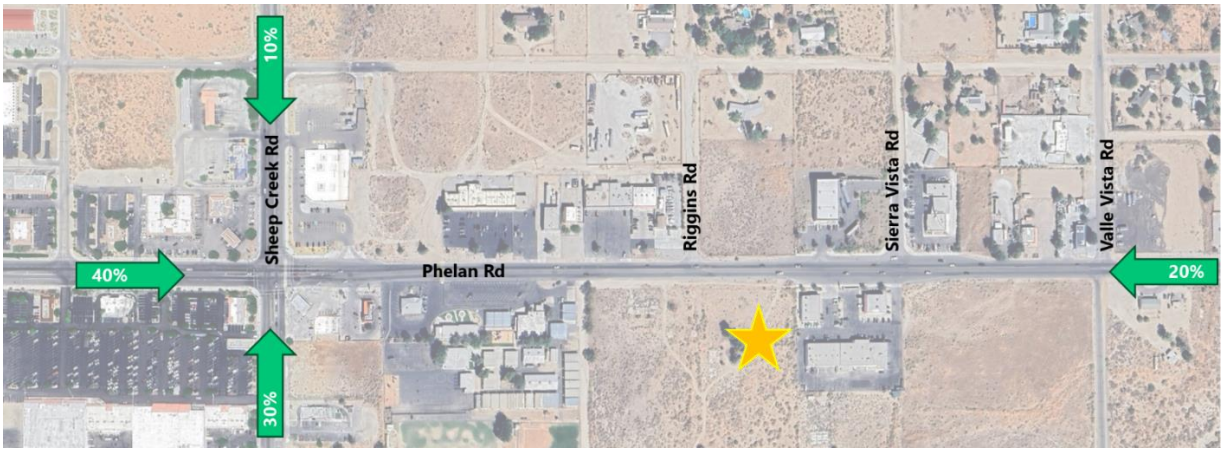
As compared to using ITE trip rates, the newly collected data would estimate higher weekday PM peak hour trips (80 vs. 60) and lower Saturday midday peak hour trips (107 vs. 137). Since the weekday PM peak hour street traffic is lower than the Saturday midday peak hour street traffic (see **Figure 4** and **Figure 5**), Project trip generation for this analysis is based on the ITE trip rates, thus using the higher Saturday midday peak hour estimate.

TRIP DISTRIBUTION

The study area is based on anticipated trip distribution and site access. It is estimated that Project traffic would generally be as follows, and shown in **Figure 6:**

- 40% from west of the site via Phelan Road
- 30% from west of the site via northbound Sheep Creek Road and Phelan Road
- 10% from west of the site via southbound Sheep Creek Road and Phelan Road
- 20% from east of the site via Phelan Road
- Personal vehicle trips entering from Phelan Road
- Truck trips entering from Riggins Road

Figure 6: Trip Distribution



Source: Google Earth Pro, 2025; Kittelson & Associates, Inc., 2025

Trip Assignment

The trip generation volumes were applied to the trip distribution to calculate the number of vehicle trips the Project would add to the roadway network. The Project trip assignment for the Saturday midday peak hour and PM peak hour are shown in **Figure 7** and **Figure 8**, respectively. This includes the total net new trip assignment at the Project driveway.

Figure 7: Primary Project Trips (Saturday Midday Peak Hour)

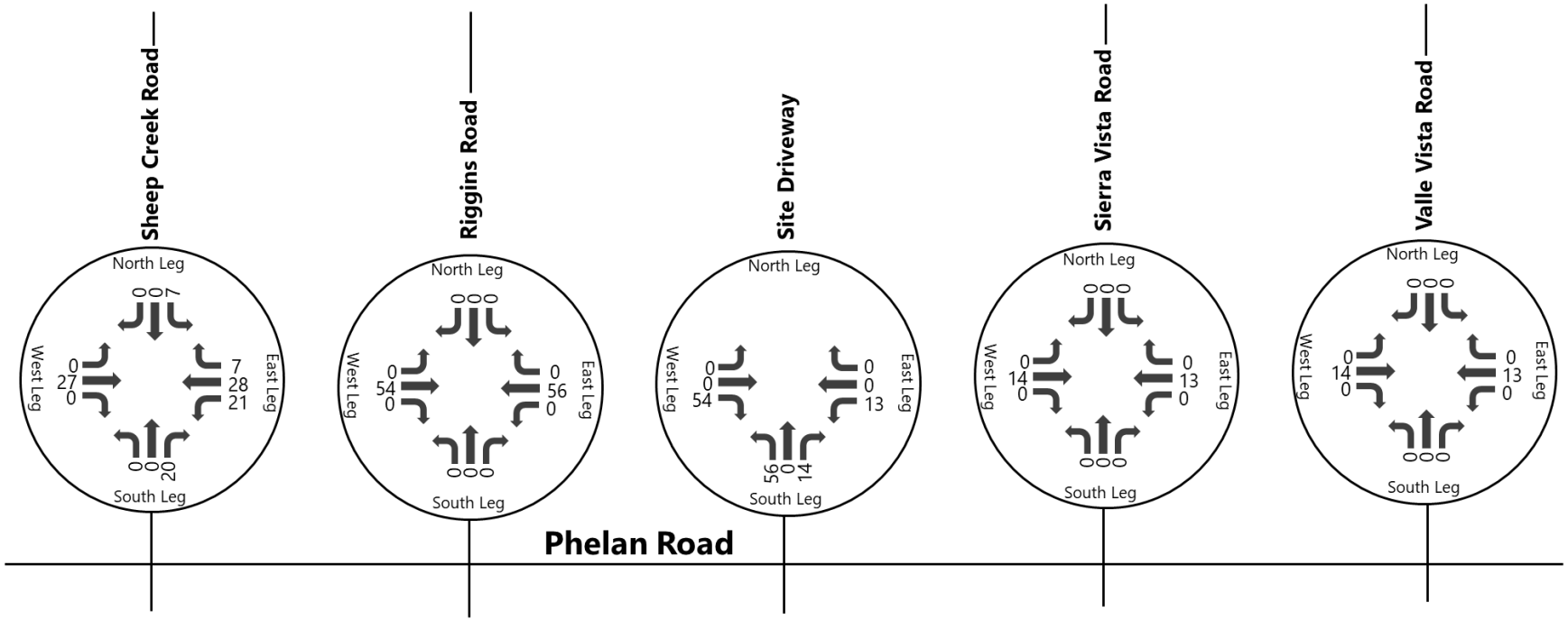
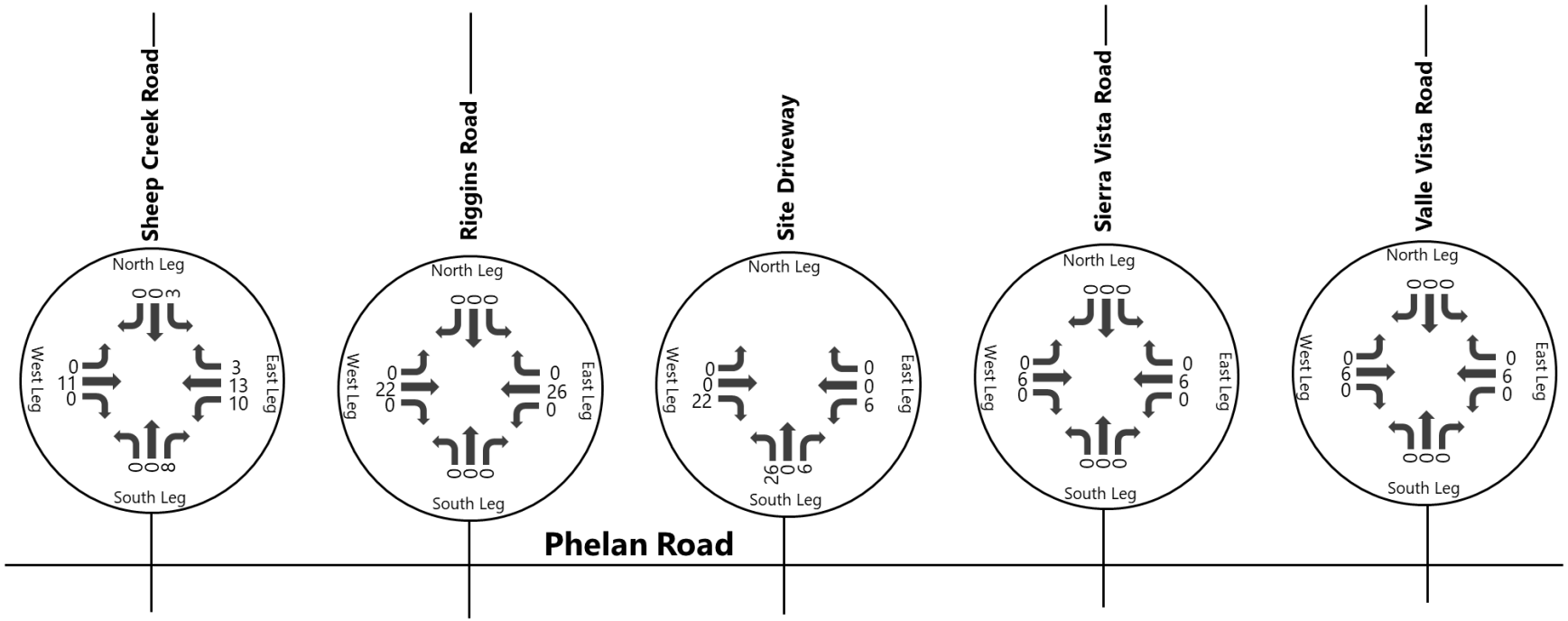


Figure 8: Primary Project Trips (PM Peak Hour)



Section 5
Background Conditions Analysis

Background Conditions

The background conditions analysis reflects projected traffic growth through the build-out year (2026). To forecast future traffic volumes in the study area, the San Bernardino County Transportation Analysis Model (SBTAM) was used. A straight-line annual growth rate was derived by comparing traffic volumes from the model's base year (2019) to its cumulative year (2050), providing a consistent basis for estimating 2026 traffic conditions. To estimate background traffic conditions and account for general growth in the area, an annual growth rate of 0.16% was applied to the PM peak hour based on model outputs. Since the model did not include a Saturday midday peak hour, a growth rate of 0.23% was applied. This was calculated as the average of the weekday AM and weekday PM peak hour growth rates. This approach was chosen to ensure a reasonable comparison, recognizing that a weekday midday is not representative of weekend conditions, and that Saturday midday volumes are typically comparable to the highest weekday peak periods. **Figure 9** and **Figure 10** present the background (2026) volumes for Saturday midday peak hour and PM peak hour, respectively**.**

PLUS PROJECT ANALYSIS

Background volumes were combined with the Project-generated trips estimated in the **Project Traffic** section. The resulting traffic volumes for this scenario are presented in **Figure 11** and **Figure 12** for Saturday midday peak hour and PM peak hour, respectively.

Figure 9: Background Trips (Saturday Midday Peak Hour)

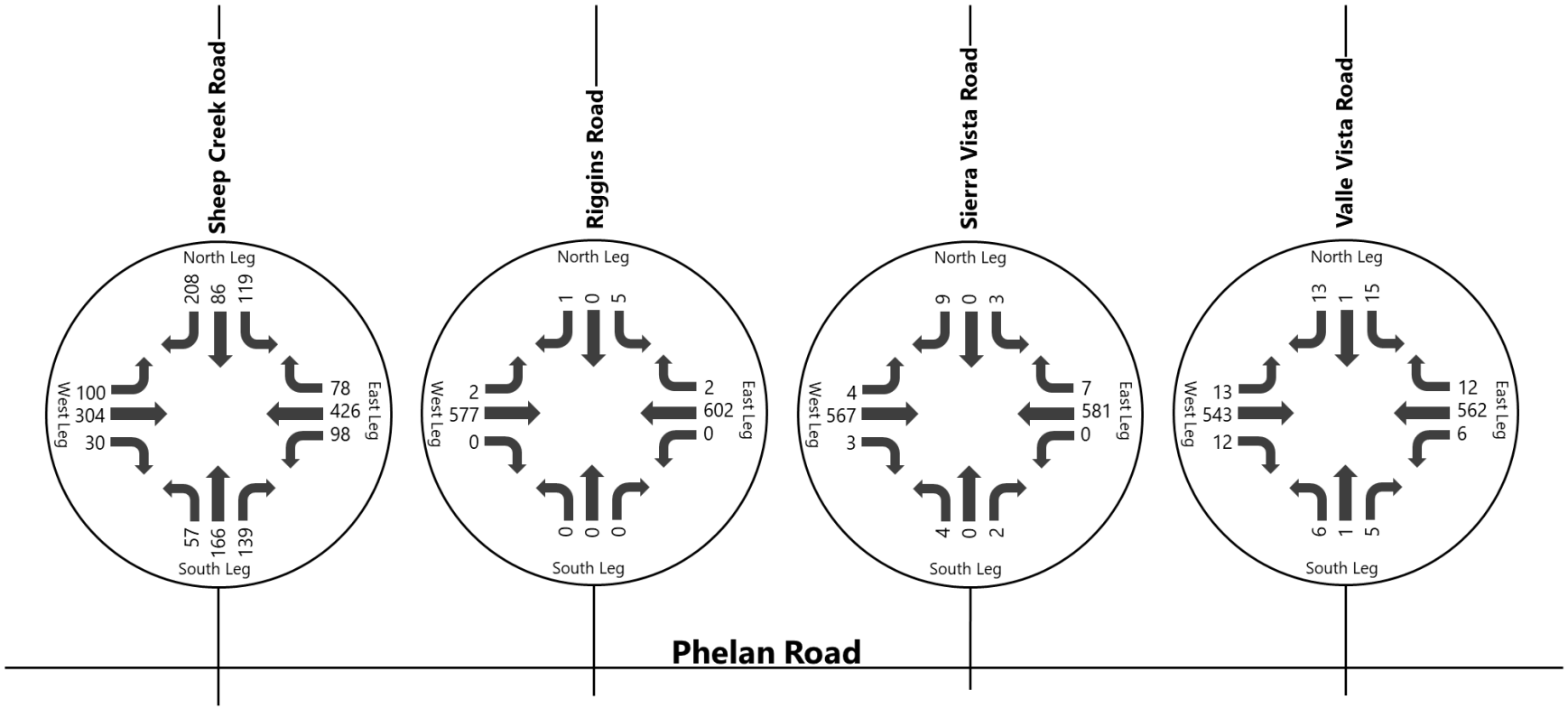


Figure 10: Background Trips (PM Peak Hour)

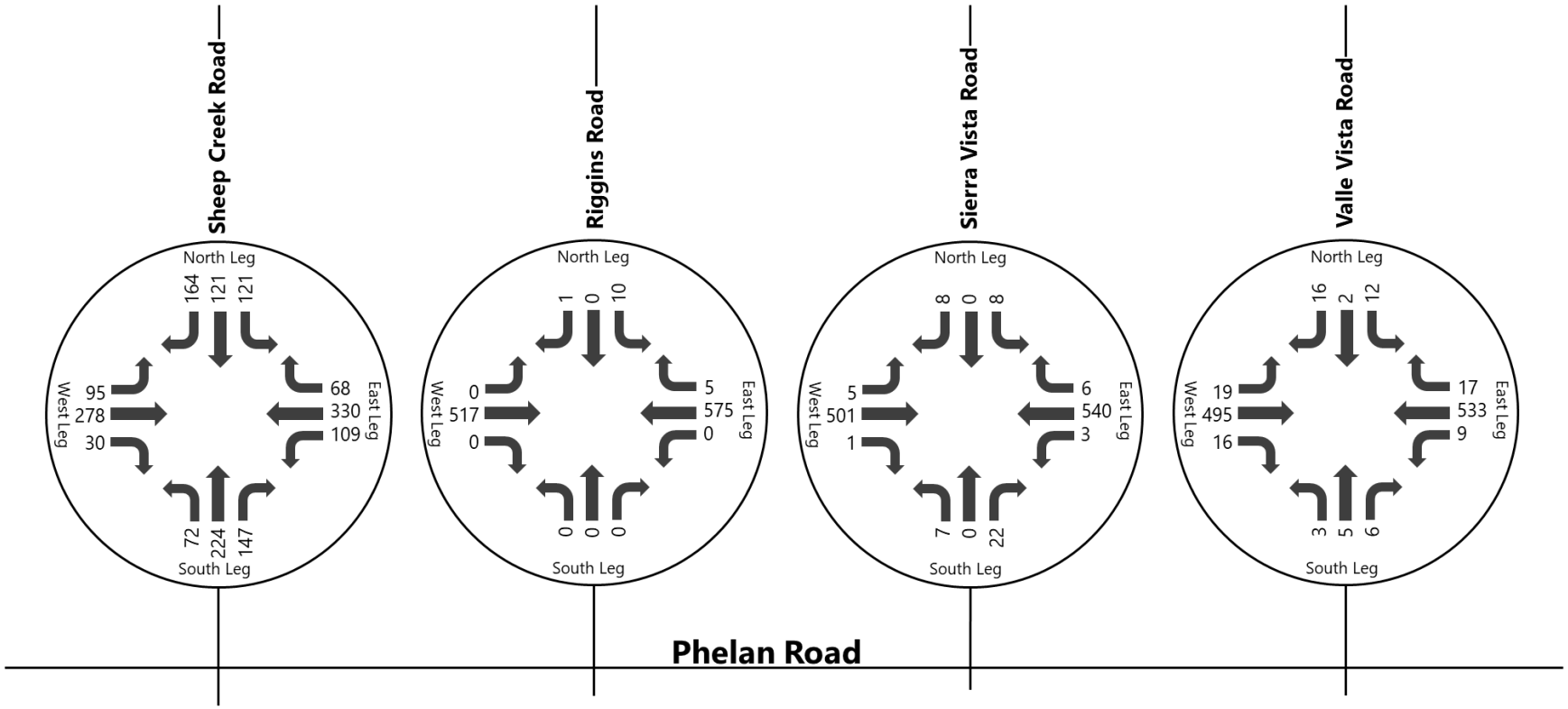


Figure 11: Background + Project Traffic (Saturday Midday Peak Hour)

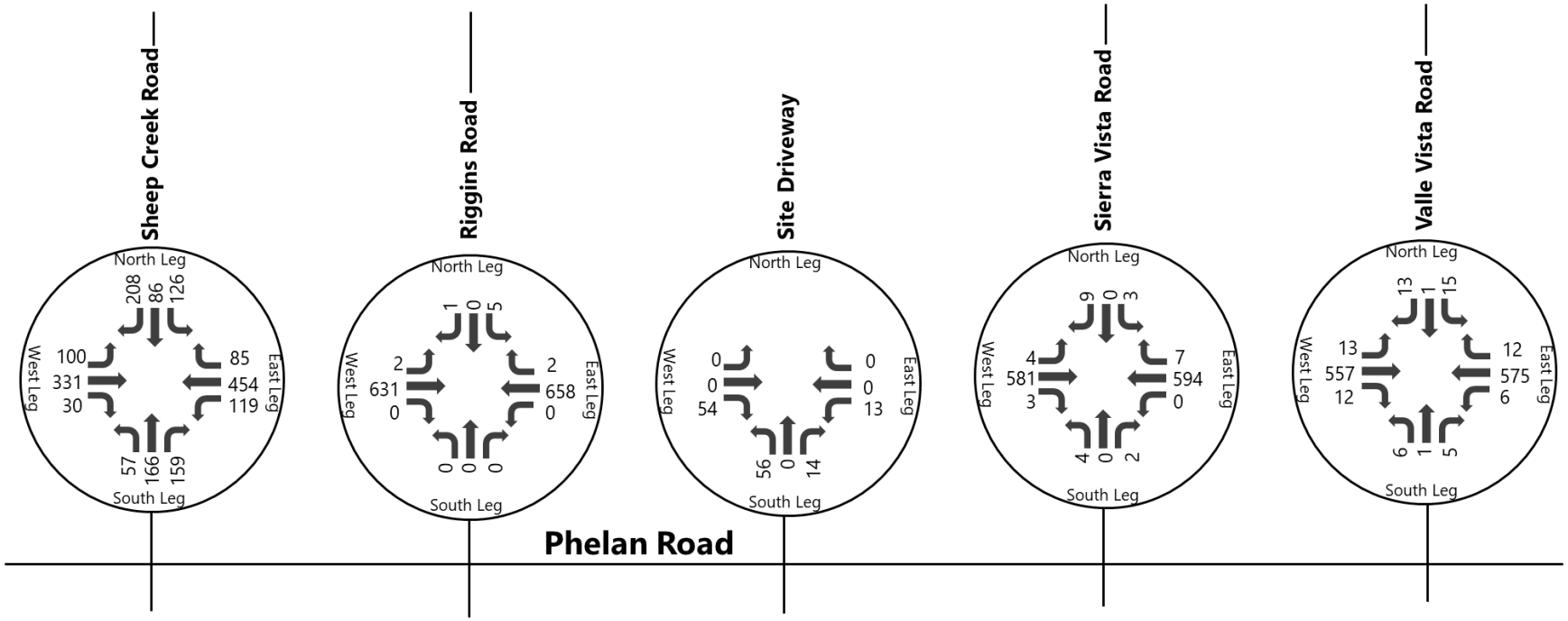
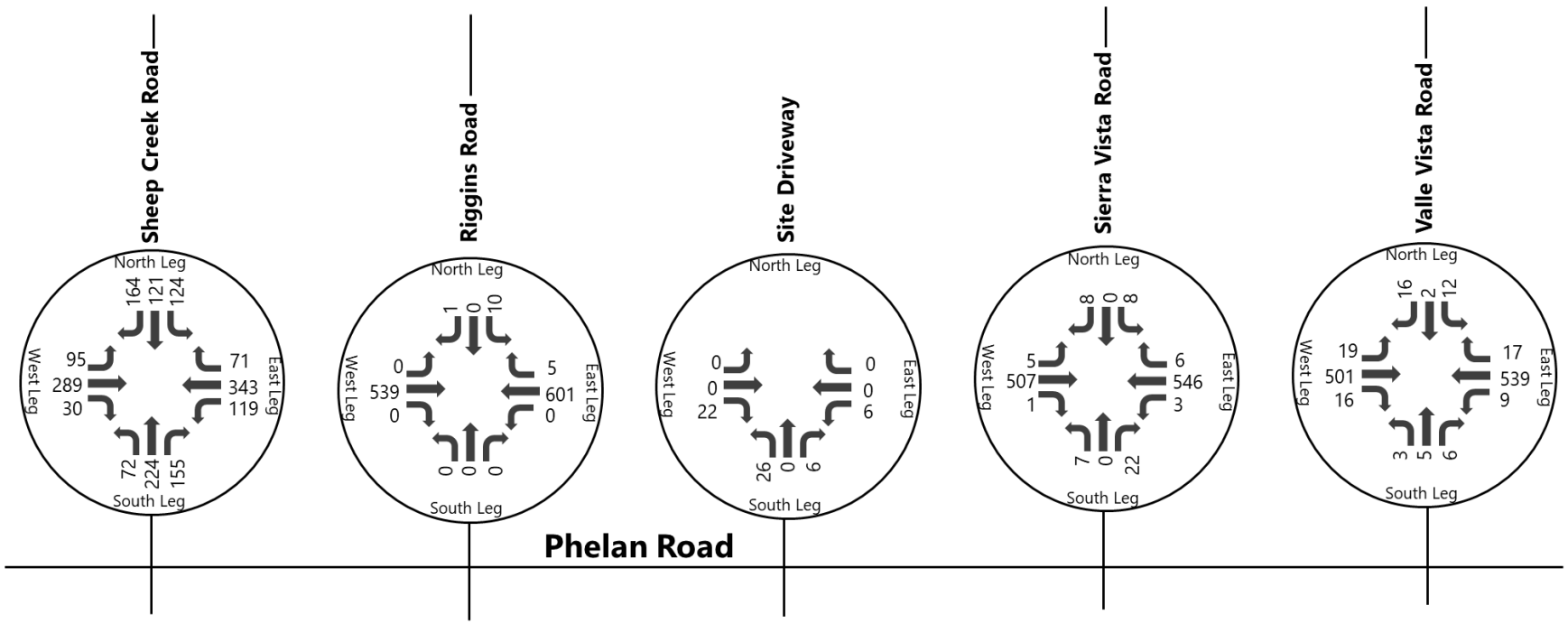


Figure 12: Background + Project Traffic (PM Peak Hour)



INTERSECTION ANALYSIS

Background and Background Plus Project intersection LOS is provided in **Table 4**. A comparison with Background No-Project conditions is included to illustrate the Project's impact on the roadway network. As shown in the table, the study intersections perform at LOS C or better during the study peak hours without and with Project traffic under Background conditions. Detailed analysis reports for the study intersections are provided in **Appendix C**.

Table 4: Intersection Level of Service – Background Conditions

Intersection	Control Type	Peak Hour	Background		Background + Project	
			Delay (sec)	LOS	Delay (sec)	LOS
1. Sheep Creek Rd / Phelan Rd	Signalized	Saturday Midday Peak	26.1	C	26.9	C
		Weekday PM Peak	24.9	C	25.2	C
2. Riggins Rd / Phelan Rd	TWSC	Saturday Midday Peak	15.42 (SB)	C	16.4 (SB)	C
		Weekday PM Peak	15 (SB)	B	15.4 (SB)	C
3. Sierra Vista Rd / Phelan Rd	TWSC	Saturday Midday Peak	22.72 (NB)	C	23.5 (NB)	C
		Weekday PM Peak	19.7 (SB)	C	20.0 (SB)	C
4. Valle Vista Rd / Phelan Rd	TWSC	Saturday Midday Peak	22.56 (SB)	C	23.4 (SB)	C
		Weekday PM Peak	20.22 (SB)	C	20.5 (SB)	C
5. Site Driveway / Phelan Rd	TWSC	Saturday Midday Peak	-	-	9.3 (NB)	A
		Weekday PM Peak	-	-	9.0 (NB)	A

TWSC: two-way stop controlled
SB: southbound
NB: northbound

Section 6
Cumulative Year Analysis

Cumulative Year Analysis

To evaluate long-term growth and project future traffic conditions, the San Bernardino County Transportation Analysis Model (SBTAM) was utilized to model Cumulative conditions for the year 2050. Growth rates from the model, 0.16% annually for the weekday PM peak hour and 0.23% for the Saturday midday peak, were applied to estimate traffic volumes 25 years into the future.

In accordance with the County's 2019 Transportation Impact Study Guidelines, cumulative projects within a two-mile radius were also included. For projects with completed trip generation and distribution, documented results were used (see **Appendix D**). Where such data was unavailable, Kittelson applied rates from the ITE *Trip Generation Manual*, 11th Edition and used engineering judgement to estimate trip distribution based on land use. **Table 5** summarizes the trip generation estimates for each cumulative project.

Table 5: Cumulative Projects Trip Generation

Project No.	Land Use	ITE Code	Intensity	PM Peak Hour			Saturday Peak Hour		
				Ins	Outs	Total	Ins	Outs	Total
1	Mini-Warehouse	151	13.44 KSF	1	1	2	1	1	2
2	Small Office Building	712	2.5 KSF	2	3	5	-	-	-
3	Coffee/Donut Shop w/ Drive-Thru	937	2.23 KSF	43	43	86	98	97	195
4	*	*	14-acre	67	77	144	86	134	220
5	Automobile Parts Sales	843	7.23 KSF	17	18	35	43	40	83
6	Convenience Store, Gas Station / Truck Stop	945 / 950	16 / 12 FP	269	269	549	136	136	272
7	Church	560	2.85 KSF	1	0	1	4	4	8
8	Small Office Building	712	4.8 KSF	4	6	10	-	-	-
Total				**415**	**417**	**832**	**368**	**412**	**780**

*The park includes multiple uses. Details provided in **Appendix D**.
KSF = Thousand square feet
FP = Fueling positions

The trip generation volumes were applied to the trip distribution to calculate the number of vehicle trips the cumulative projects would add to the roadway network. The cumulative project trip assignment for the Saturday midday peak hour and PM peak hour are shown in **Figure 13** and **Figure 14**, respectively.

The Cumulative (2050) volumes without Project trips are presented in **Figure 15** and **Figure 16** for the Saturday midday peak hour and weekday PM peak hour, respectively.

PLUS PROJECT ANALYSIS

The Cumulative (2050) volumes with Project trips estimated in the **Project Traffic** section are illustrated in **Figure 17** and **Figure 18** for the Saturday midday peak hour and weekday PM peak hour, respectively.

Figure 13: Two-Mile Radius Cumulative Projects (Saturday Midday Peak Hour)

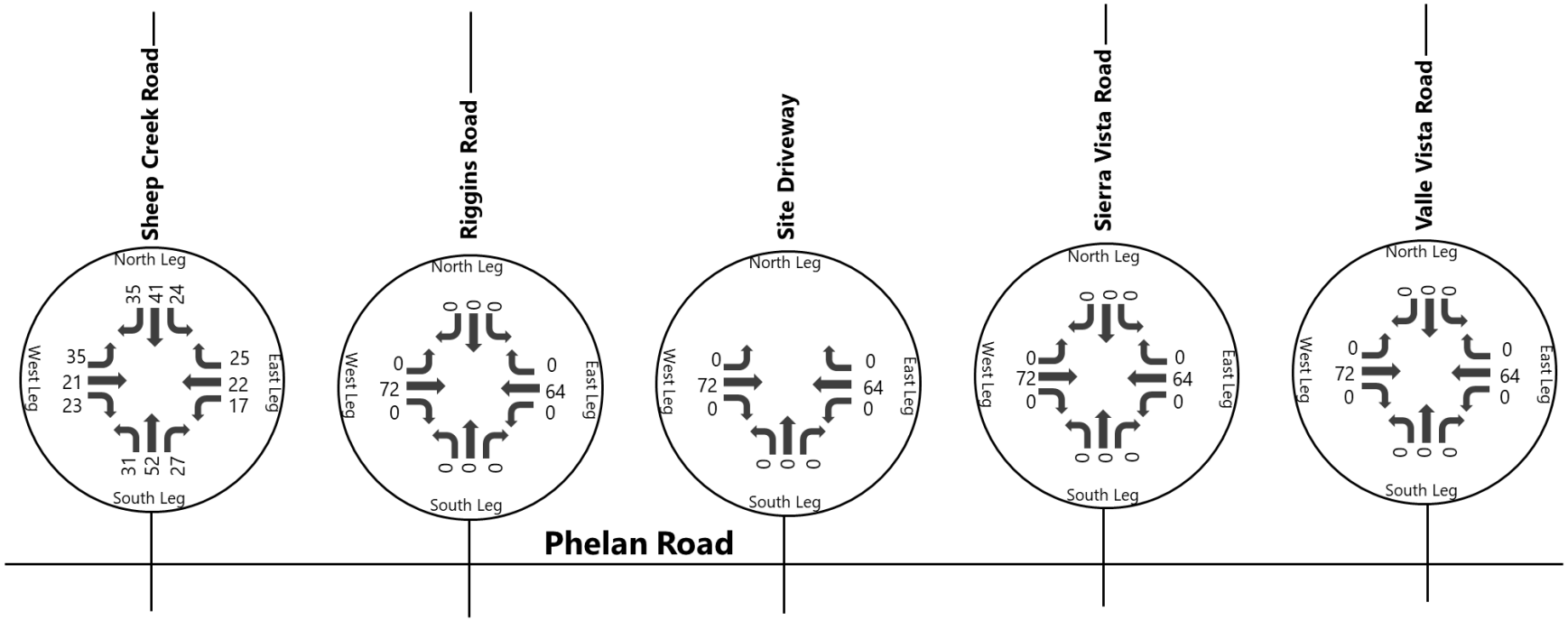


Figure 14: Two-Mile Radius Cumulative Projects (PM Peak Hour)

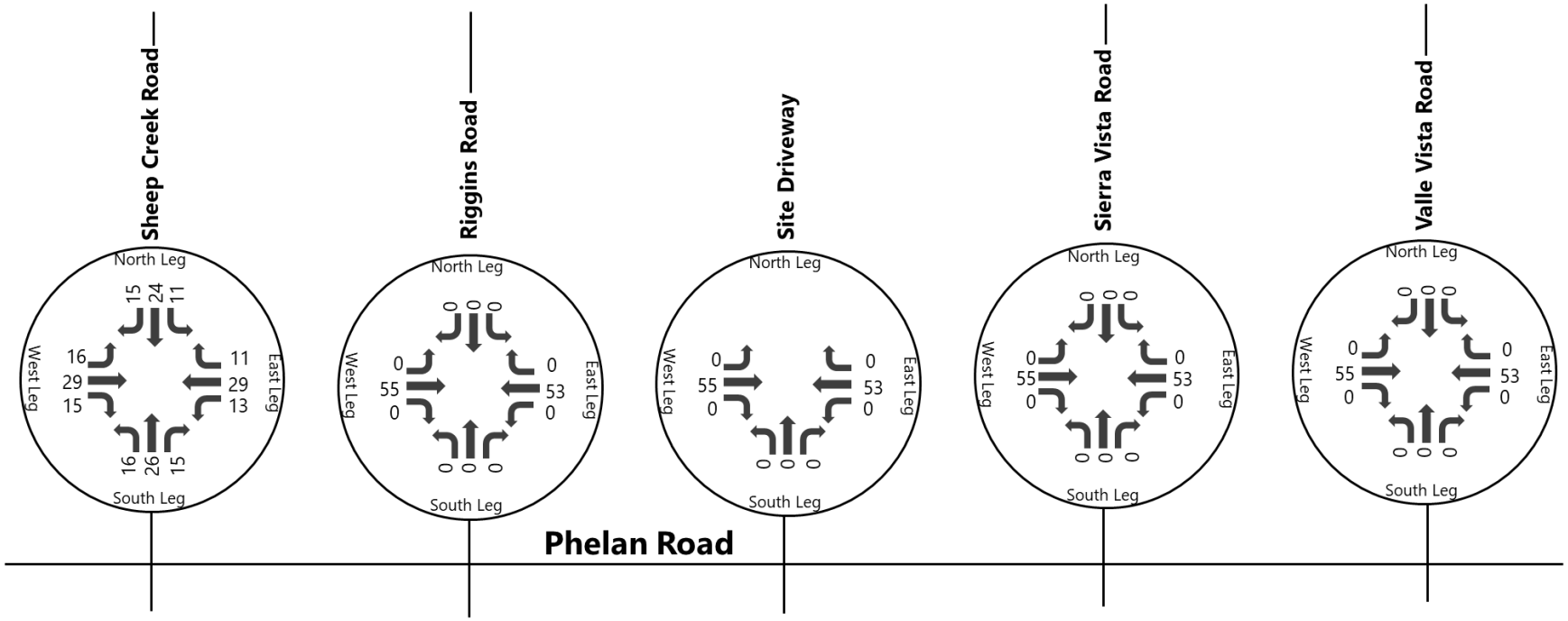


Figure 15: Cumulative No Project (Saturday Midday Peak Hour)

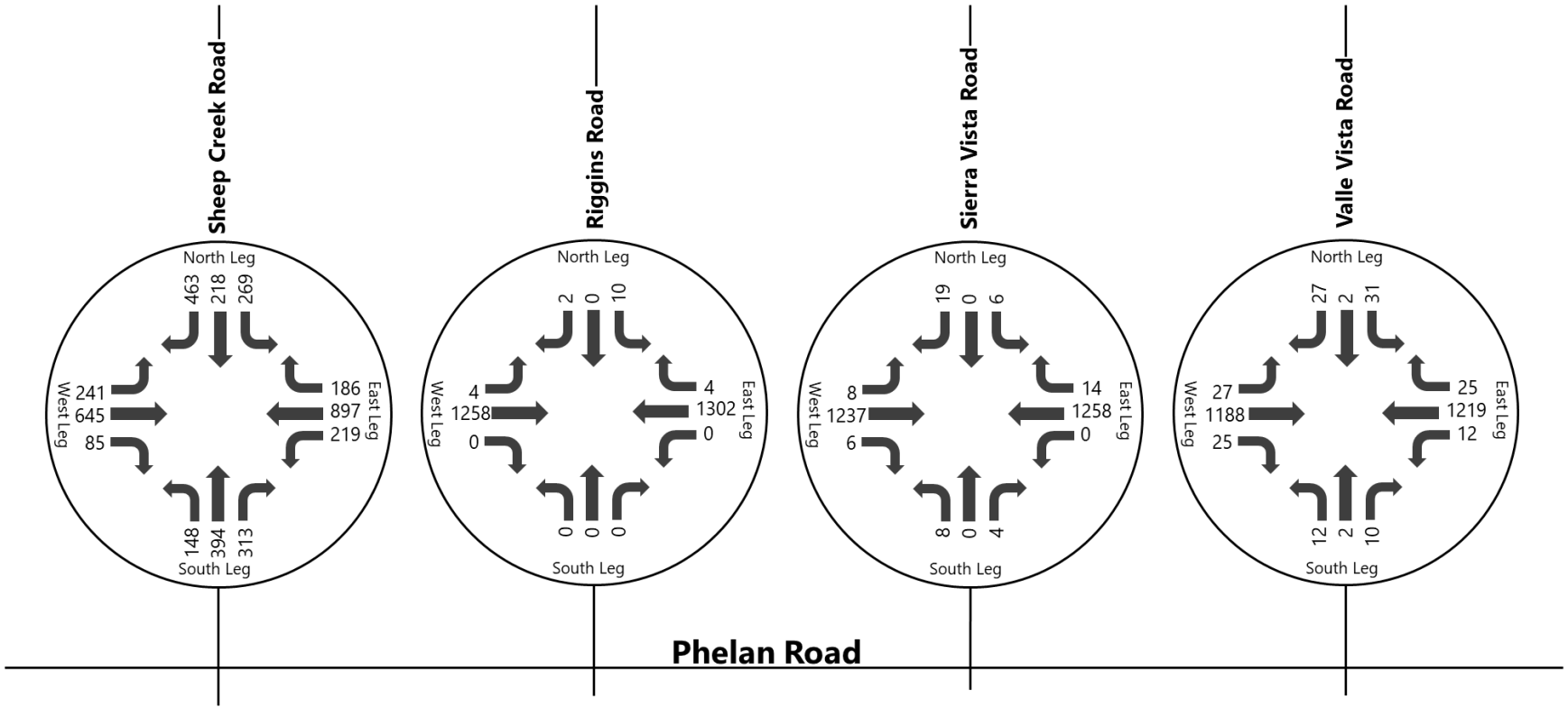


Figure 16: Cumulative No Project (PM Peak Hour)

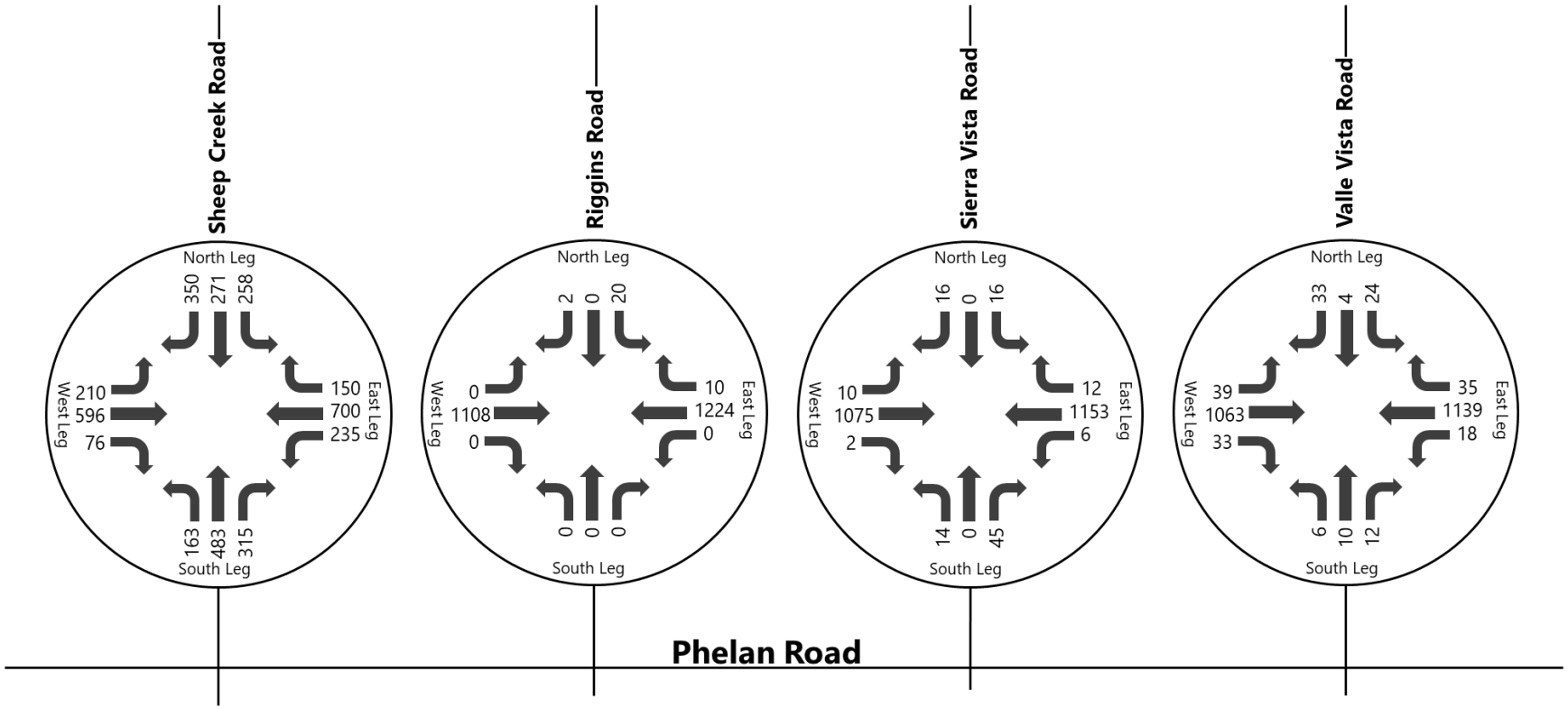


Figure 17: Cumulative Plus Project (Saturday Midday Peak Hour)

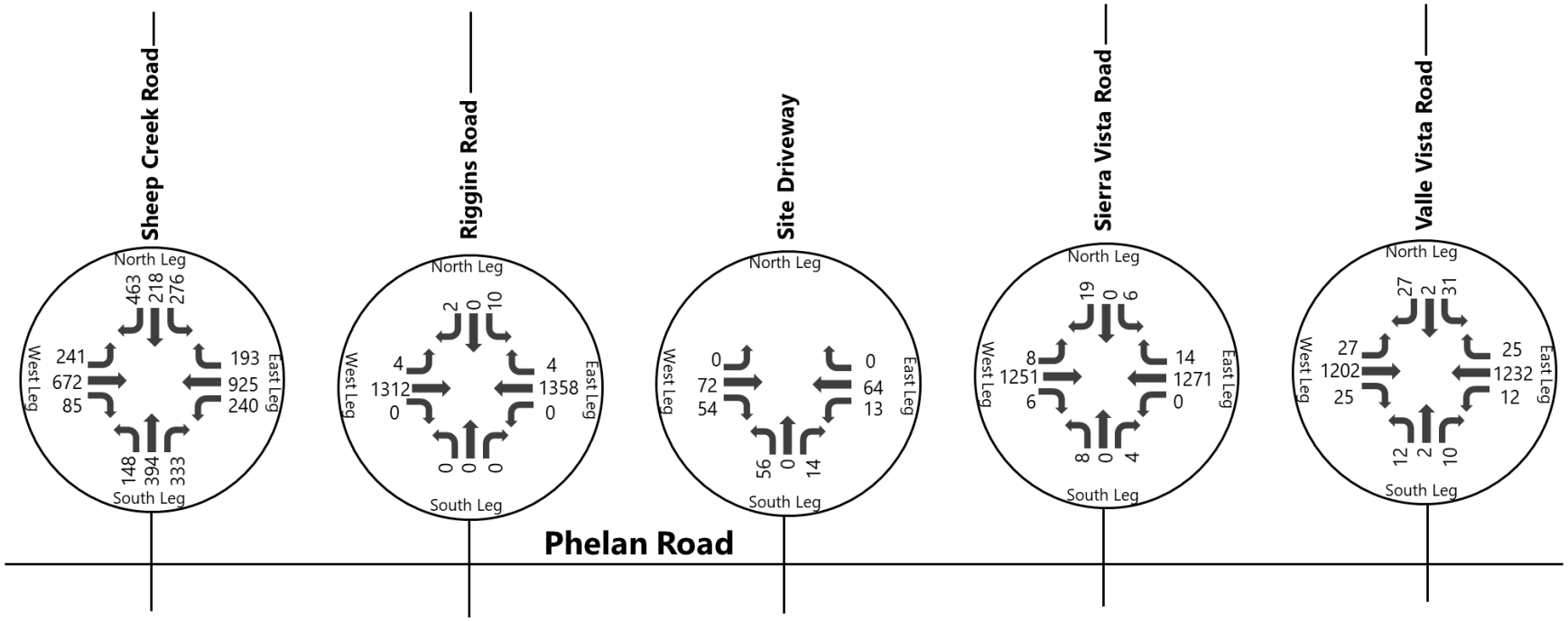
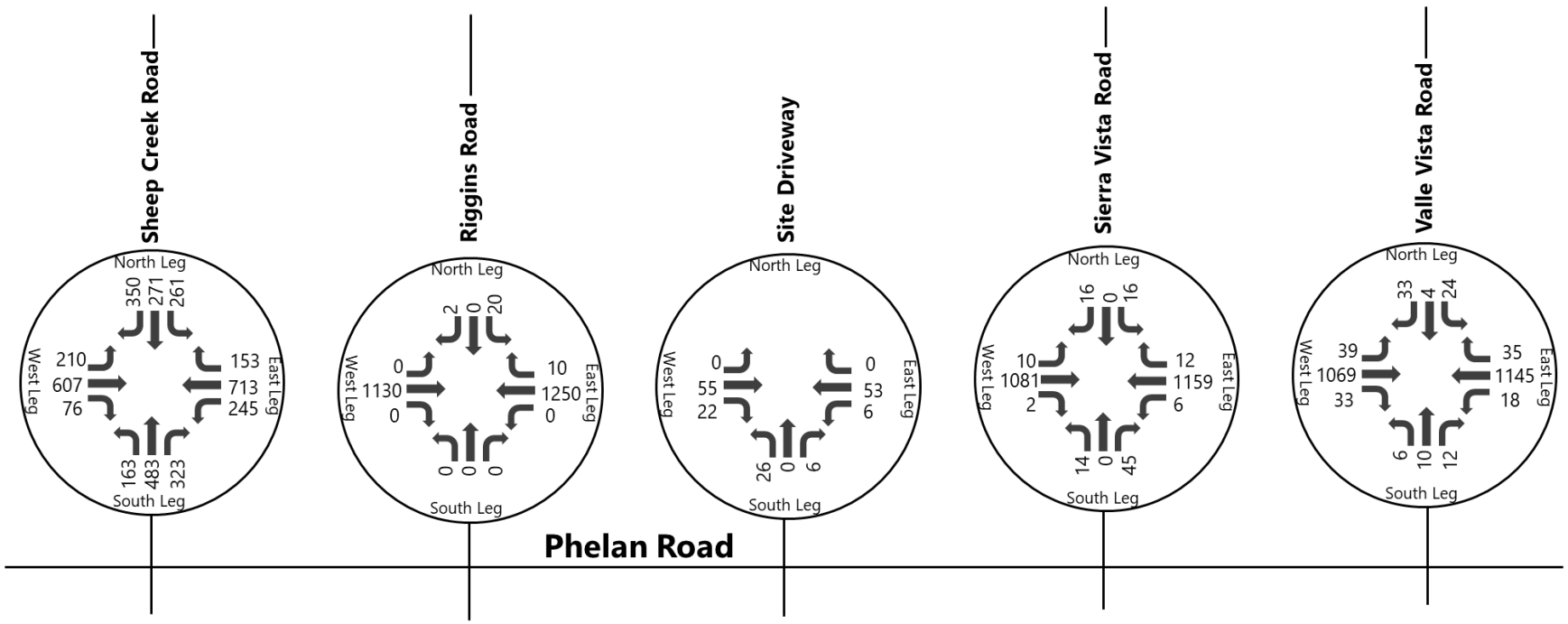


Figure 18: Cumulative Plus Project (PM Peak Hour)



INTERSECTION ANALYSIS

Cumulative and Cumulative Plus Project intersection LOS is presented in **Table 6**. A comparison with Cumulative No-Project conditions is included to illustrate the Project's impact on the roadway network. As shown in the table, each of the intersections along Phelan Road except the site driveway are projected to operate at LOS D or worse. These deficiencies are present under Cumulative conditions without the Project. Detailed analysis reports for the study intersections are provided in **Appendix C**.

Table 6: Intersection Level of Service – Cumulative Conditions

Intersection	Control Type	Peak Hour	Cumulative		Cumulative + Project	
			Delay (sec)	LOS	Delay (sec)	LOS
1. Sheep Creek Rd / Phelan Rd	Signalized	Saturday Midday Peak	**89.1**	**F**	**94.8**	**F**
		Weekday PM Peak	61.5	E	63.3	E
2. Riggins Rd / Phelan Rd	TWSC	Saturday Midday Peak	36.1 (SB)	E	38.8 (SB)	E
		Weekday PM Peak	33.6 (SB)	D	34.7 (SB)	D
3. Sierra Vista Rd / Phelan Rd	TWSC	Saturday Midday Peak	41.1 (NB)	E	42.0 (NB)	E
		Weekday PM Peak	40.2 (SB)	E	40.7 (SB)	E
4. Valle Vista Rd / Phelan Rd	TWSC	Saturday Midday Peak	61.3 (SB)	F	63.5 (SB)	F
		Weekday PM Peak	49.9 (SB)	E	50.7 (SB)	F
5. Site Driveway / Phelan Rd	TWSC	Saturday Midday Peak	-	-	9.9 (NB)	A
		Weekday PM Peak	-	-	9.4 (NB)	A

TWSC: two-way stop controlled
SB: southbound
NB: northbound

Section 7
Additional Analysis

Site Access, Safety, and Other Analyses

SITE ACCESS ANALYSIS

The following analyses were prepared to evaluate the Project driveway access and circulation:

a) **Intersection Sight Distance –** The access driveways are planned to be constructed at a right angle, providing the most favorable conditions for intersecting and turning traffic movements according to the Caltrans Highway Design Manual. The visibility required for turning maneuvers forms a clear sight triangle with the corner sight distance and the crossing distance.
b) **Driveway Length and Gated Entrance** – Driveways have a throat of sufficient length of 30 feet, allowing vehicles to enter the Project area without causing subsequent vehicles to back out onto the arterial roadways.
c) **Limit Driveway Impacts** – The driveway located on Phelan Road does not impact the arterial roadway as it maintains a reasonable distance (approximately 240 feet) from the adjacent intersection of Riggins Road.
d) **Corner Clearance** – The proposed driveway on Phelan Road is more than 1,500 feet away from the Sheep Creek Road signalized intersection.
e) **Right Turn Lanes at Driveways** – Peak hour projections indicate that the Project will generate fewer than 50 right-turn movements, which is less than one right-turn per minute on average.
f) **Adequacy of Pedestrian Facilities** – The intersection of Phelan Road and Sheep Creek Road features sidewalks and crosswalks in all directions. However, as you move east along Phelan Road, the sidewalks cease after the Sheep Creek intersection, briefly reappear near the Sierra Vista Road intersection, and then cease again.
g) **Bicycle Accessibility** – No bicycle infrastructure exists in the study area.
h) **Accessibility from Adjacent Transit Stops** – Victor Valley Transit operates within the study area. Bus stops for routes 20 and 21 are located near the intersection of Phelan Road and Riggins Road, as well as Phelan Road and Clovis Road.

SAFETY AND OPERATION IMPROVEMENT ANALYSIS

In the opening year (2026), roadway segments are projected to operate at LOS C or better during the study peak hours, both with and without Project traffic. To determine whether safety or operational enhancements are warranted due to increased traffic from the Project or nearby cumulative projects, the following improvements were evaluated:

a) **Addition of through lane(s), right turn lane(s) and left turn lane(s)** – The existing lane configurations effectively accommodate opening year traffic demands.
b) **Left and/or right turn lane pocket length (queue length)** – The existing lane configurations effectively accommodate opening year traffic demands.
c) **Bus Turnouts** – Opening year traffic conditions do not warrant the need for bus turnouts.

d) **Intersection Geometrics** - The existing intersection geometry effectively accommodates opening year traffic volumes, with curb returns and layouts designed to support truck turning movements.
e) **Parking restrictions on adjacent streets** – On-street parking restricted on the study roadways.
f) **Free Right Turn Lane** – Right-turn volumes in the opening year do not exceed 300 vehicles per hour; therefore, dedicated free right-turn lanes are not warranted.
g) **Traffic Signal Coordination** – The existing signal timing at the intersection of Sheep Creek Road and Phelan Road is adequate to accommodate projected opening year traffic volumes.
h) **Bicycle Circulation** - There is no existing bicycle infrastructure within the study area, and no future facilities are proposed in San Bernardino County's 2018 Non-Motorized Transportation Plan.

TRAFFIC SIGNAL WARRANT ANALYSIS

Traffic signal warrants, as defined by the MUTCD, provide a set of criteria to determine whether a traffic signal is justified based on existing traffic conditions, safety concerns, and roadway characteristics. These warrants include factors such as vehicular and pedestrian volumes, crash history, and coordination with other signals. For this study, Warrant 3 – Peak Hour is the most appropriate to assess signal need, as it aligns with the available turning movement count data collected during the study's peak hours.

Since the study intersections operate at LOS C or better during peak hours under Background conditions, both with and without Project traffic, a traffic signal is not warranted at this stage. However, under Cumulative conditions, the unsignalized intersections along Phelan Road are projected to operate at LOS D or worse. To evaluate the need for signalization at these locations, Warrant 3 – Peak Hour was applied.

The intersections of Phelan Road with Valle Vista Road, Sierra Vista Road, and Riggins Road do not meet the criteria for signalization. Although traffic volumes along Phelan Road are high, the minor street approaches fall below the threshold of 75 vehicles per hour required under Warrant 3. Detailed signal warrant worksheets are included in the **Appendix E**.

IMPROVEMENTS FOR TRANSPORTATION IMPACTS

The intersection of Sheep Creek Road/Phelan Road increases delay by more than 5.0 seconds in the Saturday peak hour and would require a fair-share contribution towards an improvement. The recommended improvements include the following modifications to enhance intersection operations under Cumulative Plus Project conditions:

- **Sheep Creek Road and Phelan Road:** Widen the eastbound and westbound approaches on Phelan Road to provide one exclusive left-turn lane, two exclusive through lanes, and one shared through/right-turn lane in each direction.

The intersections of Phelan Road at Valle Vista Road, Sierra Vista Road, and Riggins Road each operate at LOS D, E, or F during cumulative conditions, but the Project does not increase the delay by more than 5.0 seconds, the intersections do not meet signal warrants, and the Project adds less than 10 trips on minor

street approaches. Therefore, the Project would not require a mitigation to any of the unsignalized intersections in the study area along Phelan Road.

Cumulative and Cumulative Plus Project with improvements intersection LOS is presented in **Table 7**. Intersections operations now operate at LOS E or better, offsetting the increase in delay by the project. Detailed analysis reports for the improved intersections are provided in **Appendix F**.

Table 7: Intersection Level of Service – Cumulative Conditions with Improvements

Intersection	Control Type	Peak Hour	Cumulative		Cumulative + Project	
			Delay (sec)	LOS	Delay (sec)	LOS
1. Sheep Creek Rd / Phelan Rd	Signalized	Saturday Midday Peak	67.9	E	70.0	E
		Weekday PM Peak	50.5	D	56.3	E

FAIR SHARE CONTRIBUTIONS

Since the identified intersection impacts during the Saturday midday peak hour occur under both Cumulative and Cumulative Plus Project conditions, and the Project is not solely responsible for the degradation to LOS F at the intersections of Sheep Creek Road/Phelan Road, a fair share contribution analysis was conducted. Specifically, the fair share calculation is based on the volume of Project-generated trips relative to the total number of future development trips contributing to the intersection during the Saturday midday peak hour. The Project will contribute 110 vehicle trips to the intersection during this period, while other future cumulative developments are expected to generate 2,269 trips between existing (1,809 vehicles) and cumulative plus project conditions (4,188 vehicles).

The Project's proportional impact is therefore calculated as:

Fair Share Percentage = (Project Trips) / (Project Trips + Future Development Trips) x 100 = 110 / (110 + 2,269) = 4.62%

To mitigate the cumulative impact, the following improvements are proposed:

- **Sheep Creek Road and Phelan Road:** Installation of one additional through lane on the eastbound and westbound approaches.

The cost of constructing one additional lane is estimated at $250,000. With two additional lanes proposed, the total mitigation cost is estimated at $500,000. Applying the Project's fair share percentage of 4.62%, the Project's contribution toward these improvements is calculated as:

Fair Share Contribution = 4.62% × $500,000 = $23,100.00

Section 8
VMT Analysis

Vehicle Miles Traveled

According to San Bernardino County's Transportation Impact Study Guidelines (2019), local-serving retail establishments under 50,000 square feet are not required to undergo a VMT assessment. This new Tractor Supply Company store will help address a service gap in the area by providing a closer and more convenient option for residents, farmers, and businesses. Currently, the nearest Tractor Supply Company stores are located approximately 10 miles east, 22 miles northeast, and 35 miles northwest. By establishing a store at this new location, the Project will reduce travel distances for customers and employees in and around Phelan, thereby improving accessibility and supporting local economic activity. Additionally, reducing the need for long-distance travel to similar stores potentially lowers overall vehicle emissions and congestion in the region. Based on these projections, the Project is exempt from a VMT analysis as it is designed to serve the local community.

Section 9
Conclusion

Conclusion

Kittelson & Associates, Inc. (Kittelson) has prepared this transportation impact study for the proposed Tractor Supply Company retail facility to be constructed on a vacant parcel located in the southeast quadrant of the intersection of Phelan Road and Riggins Road at 4351 Phelan Road, Phelan, CA, 92371 (Project). The new facility includes a building of approximately 23,957 square feet (SF) with approximately 15,020 SF of fenced outdoor display area with greenhouse, sidewalk display area immediately adjacent to the store front, 3,000 SF of trailer and equipment display adjacent to the northern property line, 102 parking stalls, and a rear loading facility.

Field-collected traffic counts were utilized in an operational analysis to evaluate conditions using *Highway Capacity Manual, 7th Edition* methodologies. In the existing condition, all study intersections operate at LOS C or better.

Background traffic was forecasted utilizing a straight-line annual growth rate derived from SBTAM. The study intersections perform at LOS C or better during the study peak hours without and with Project traffic under Background conditions.

Cumulative traffic conditions were forecasted using the San Bernardino County Transportation Analysis Model (SBTAM) for the year 2050, incorporating anticipated development within a two-mile radius of the project site. Under these conditions, each of the study intersections except the site driveway are projected to operate at failing levels of service.

To mitigate the impact to the signalized intersection of Sheep Creek Road/Phelan Road, the addition of through lanes on Phelan Road are needed to offset project delays. Based on the Project's proportional contribution to cumulative traffic and an estimated cost of the improvements, the Project fair share cost for these improvements is calculated to be $23,100.

Project traffic does not meet the criteria to require improvements at the unsignalized intersections.

Based on San Bernardino County's Transportation Impact Study Guidelines (2019), the Project is exempt from a VMT analysis because it is intended to serve the local community and is planned to be less than 50,000 square feet in size.

APPENDIX A

Scoping Agreement

SCOPE FOR TRAFFIC STUDY

Project Name:	Phelan Tractor Supply Co

This Scope for Traffic Study acknowledges San Bernardino County Department of Public Works, Traffic Division requirements of traffic impact analysis for the project and is subject to change:
Available on the Department of Public Works Website:
http://cms.sbcounty.gov/dpw/Transportation/Traffic.aspx

Project Address/APN	4351 Phelan Road, Phelan, CA, 92371		
Project Description	24,000 square feet (SF) Tractor Supply Company building with approximately 19,000 SF of fenced outdoor display area		
City	County (Phelan area)		
Project Horizon Year	2035	**Project Opening Year**	2026
Closest Intersection (Xtn) to the Project			
Xtn N/S Street Name	Riggins Road		
Xtn E/W Street Name	Phelan Road		
County Supervisorial District	1	**Ambient Growth Rate per Year Valley 2%, Desert 1%**	1%

	Traffic Engineer	**Owner/Developer**
Company	Kittelson & Associates, Inc.	Durban Development
Name	Mychal Loomis	Stephen Knudsen
Address	3601 Fifth Avenue	106 Foster Avenue
City, State, Zip Code	San Diego, CA 92104	Charlotte, NC, 28203
Phone #	714-468-1180	704-319-8346
Email address	mloomis@kittelson.com	stephen.knudsen@durbandevelopment.com

Kittelson & Associates, Inc.	04/29/2025
Firm Preparing Study	**DATE**
Mychal Loomis 	TE 2918
Engineer of Record	**License Number**

SCOPE FOR TRAFFIC STUDY

Project Name:	Phelan Tractor Supply Co

1. Traffic Distribution: Please insert or attach Figure(s) illustrating project trip distribution in percentages and volumes at the study intersections analyzed.
See attached Exhibit A

2. Trip Credit: Exact amount of credit subject to approval by Traffic Division.

Transportation Demand Management (TDM)	Yes/no	No
Existing Active Land Use	Yes/no	No
Previous Land Use	Yes/no	No
Internal Trip Reduction	Yes/no	No
Pass-by Trip Reduction	Yes/no	No

3. Related Projects: Consultant should check with Planning in the San Bernardino County Department of Land Use Services and planning departments of adjoining Cities. Documentation of the consultation from these agencies shall be included in the traffic study. Related projects list shall be submitted to Traffic Division for our review and approval before being incorporated in the study.
Will contact Land Use Services to inquire about other projects in the area.

4. Freeway Analysis: The potential traffic impact on the following Freeway(s) must be considered.
None

The applicant shall consult with the State of California Department of Transportation (Caltrans) to determine the California Environmental Quality Act levels of significance with regard to traffic impacts on Caltrans' freeway facilities. This consultation shall also include a determination of Caltrans requirements for the study of traffic impacts to its facilities and the mitigation of any such impacts. This analysis must follow the most current Caltrans' Vehicle Miles Traveled-Focused Transportation Impact Study Guide (May 2020) and can be obtained from https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-05-20-approved-vmt-focused-tisg-a11y.pdf. If Caltrans finds that the project has a significant impact on the freeway, Caltrans shall be requested to include the basis for this finding in their response. If fees are proposed to mitigate the freeway impact, Caltrans shall be requested to identify the specific project to which the fees will apply. These written comments from Caltrans shall be included with the traffic study and submitted to Public Works for review and approval. If a documented good faith effort is made to consult with Caltrans and written comments cannot be obtained from within a reasonable amount of time, an analysis of the freeway impact shall be made using HCM procedures. Appendix A of the San Bernardino County Transportation Authority CMP outlines allowable modifications to these procedures. The San Bernardino County Transportation Authority CMP can be viewed online at: https://www.gosbcta.com/planning-sustainability/?term=249

SCOPE FOR TRAFFIC STUDY

Project Name:	Phelan Tractor Supply Co

5. Trip Generation

Trip Generation Rate(s) Source: ITE Trip Generation		I – Institute of Transportation Engineers; S – San Diego Traffic Generators; C – County; O – Other:	Edition:	11th	

Land Use Code	Land Use	Rate Based on	QTY	AVTE Units*	Daily Trips	Weekday A.M. Peak			Weekday P.M. Peak			Weekend peak hour		
						In	Out	Total	In	Out	Total	In	Out	Total
810	Tractor Supply Store	I	43.065	1,000 SF GFA (including fenced area)	600 (estimate)	Not available	Not available	Not available	28	32	60	67	70	137

* - Average Vehicle Trip Ends.
For ITE Land Uses provide number and name of Land Use. e.g. LU 814 - Variety Store. Units include ksf, employee, GLA, etc.

Note: Counts will be collected at three other Tractor Supply Company locations to obtain daily trips to be used in fee estimates.

SCOPE FOR TRAFFIC STUDY

Project Name:	Phelan Tractor Supply Co

6. Study Intersections: At minimum, the study shall include the following intersections. The list is subject to change after related projects, trip generation and distribution are determined. Consultant should check with adjoining Cities regarding their requirements in addition to the following County/City intersections. Documentation of the consultation from these agencies shall be included in the traffic study.

Xtn #	% County	% City	N-S/E-W Street Name	City Name/Caltrans	Signalized	CMP
1	100		Riggins Road / Phelan Road	County (Phelan Area)	No	Yes
2	100		Sheep Creek Road / Phelan Road	County (Phelan Area)	Yes	Yes
3	100		Site Driveway / Phelan Road	County (Phelan Area)	No	Yes
4	100		Sierra Vista Road / Phelan Road	County (Phelan Area)	No	Yes
5	100		Valle Vista Road / Phelan Road	County (Phelan Area)	No	Yes
6						
7						
8						
9						
10						

Cities/agencies to be consulted: **None**

SCOPE FOR TRAFFIC STUDY

Project Name:	Phelan Tractor Supply Co

7. Other:

Traffic counts may be conducted immediately per the following:
• Must be taken on Tuesdays, Wednesdays or Thursdays. • Certain projects may need to collect traffic counts on Friday or Sunday
• Must exclude holidays, and the first weekdays before and after the holiday.
• Must be taken on days when local schools or colleges are in session.
• Must be taken on days of good weather, and avoid atypical conditions (e.g., road construction, detours, or major traffic incidents).
• Traffic counts used for other traffic studies in the area shall **NOT** be reused again, unless 25% of the counts conducted for that particular traffic study are validated with new counts. The difference in volumes between the old and new counts at each corresponding movement should not be more than 10%.
• New traffic counts shall be checked to ensure the difference in volumes at corresponding approaches, if applicable, between two adjacent intersections is no more than 10% unless the difference can be justified.
• For all proposed mitigation measures, a conceptual plan for the improvements shall be submitted to our Traffic Studies section for review and approval prior to the approval of the Traffic Impact Analysis. All proposed improvements shall be within the right-of-way.
• For all cumulative mitigation measures, a cost estimate for the improvement shall be submitted.
• Raw traffic counts data must be included with traffic analysis study
• Traffic Counts must not be older than 1 year prior to submittal unless approved by County Traffic.

This analysis must follow the most current Traffic Impact Study Guidelines for the County as stated in the County's Road Planning and Design Standards.

8. Fees

The County charges on an actual cost basis for review of traffic studies. An initial deposit of $1,802 is required at the time that a land use application is filed with the Department of Land Use Services If the review costs exceed the initial deposit, the applicant will be expected to provide additional funds and the review will be suspended until the additional funds are deposited.

Project Name:	Phelan Tractor Supply Co

9. Contact Information:

Please submit a signed copy of this scope for approval by the Traffic Division. Draft scopes may be sent electronically. Final scope with signature should be submitted in person or by US Mail to:

San Bernardino County
Dept. of Public Works, Traffic Division
825 E. 3rd Street, Rm 115
San Bernardino, CA 92415-0835

Phone: 909-387-8186
Fax: 909-387-7809
Email: Eric.Valencia@dpw.sbcounty.gov or Osvaldo.Roque@dpw.sbcounty.gov

APPENDIX B

Existing Traffic Counts

INTERSECTION TURNING MOVEMENT COUNTS

T012524

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 13, 25

LOCATION: Phelan
NORTH & SOUTH: Sheep Creek Rd
EAST & WEST: Phelan Rd

PROJECT #: SC5356
LOCATION #: 1
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND (Sheep Creek Rd)			SOUTHBOUND (Sheep Creek Rd)			EASTBOUND (Phelan Rd)			WESTBOUND (Phelan Rd)			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
4:00 PM	10	44	35	29	24	44	29	63	11	30	99	18	436
4:15 PM	23	69	36	24	28	52	16	56	8	29	88	13	442
4:30 PM	18	39	38	27	29	35	31	82	10	23	75	20	427
4:45 PM	11	59	39	46	37	43	15	60	6	27	91	9	443
5:00 PM	20	57	34	24	27	34	33	80	6	30	75	26	446
5:15 PM	14	37	40	34	27	35	23	51	7	21	78	13	380
5:30 PM	20	42	28	16	31	35	16	57	10	20	63	13	351
5:45 PM	11	40	45	16	33	34	19	65	5	41	77	19	405
PM VOLUMES	127	387	295	216	236	312	182	514	63	221	646	131	3,330
APPROACH %	16%	48%	36%	28%	31%	41%	24%	68%	8%	22%	65%	13%	
APP/DEPART	809	/	700	764	/	520	759	/	1,025	998	/	1,085	0
BEGIN PEAK HR	4:15 PM												
VOLUMES	72	224	147	121	121	164	95	278	30	109	329	68	1,758
APPROACH %	16%	51%	33%	30%	30%	40%	24%	69%	7%	22%	65%	13%	
PEAK HR FACTOR		0.865			0.806			0.819			0.966		0.985
APP/DEPART	443	/	387	406	/	260	403	/	546	506	/	565	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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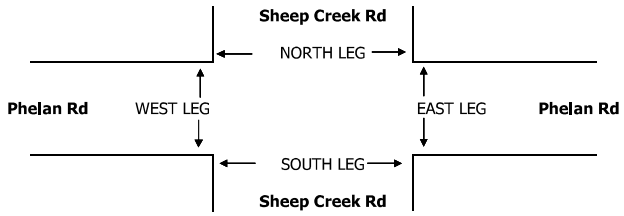
0	0	0	0	0

0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T0125

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, May 10, 25

LOCATION: Phelan
NORTH & SOUTH: Sheep Creek Rd
EAST & WEST: Phelan Rd

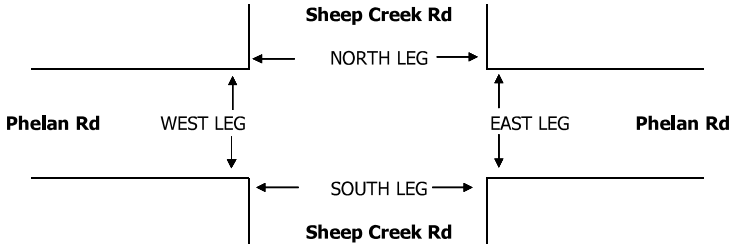
PROJECT #: SC5356
LOCATION #: 1
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER

N ▲ S ▼ W ◄ E ►

	NORTHBOUND Sheep Creek Rd			SOUTHBOUND Sheep Creek Rd			EASTBOUND Phelan Rd			WESTBOUND Phelan Rd				U-TURNS				
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
MD 10:00 AM	19	36	33	29	23	46	27	58	5	19	88	24	407	0	0	0	0	0
10:15 AM	18	45	23	20	39	41	27	64	6	24	94	11	412	0	0	0	0	0
10:30 AM	8	42	32	29	37	33	26	54	7	30	89	16	403	0	0	0	0	0
10:45 AM	19	43	38	28	28	56	20	74	8	27	101	26	468	0	0	0	0	0
11:00 AM	17	32	39	25	22	53	25	63	15	25	101	18	435	0	0	0	0	0
11:15 AM	16	44	33	37	26	55	33	56	7	26	72	13	418	0	0	0	0	0
11:30 AM	20	48	32	33	22	43	23	79	7	23	123	24	477	0	0	0	0	0
11:45 AM	18	35	25	34	27	48	33	62	10	32	106	12	442	0	0	0	0	0
12:00 PM	16	42	32	19	24	41	25	64	11	17	97	22	410	0	0	0	0	0
12:15 PM	13	39	31	37	18	50	15	88	6	17	122	11	447	0	0	0	0	0
12:30 PM	17	34	33	32	27	61	33	82	6	36	114	23	498	0	0	0	0	0
12:45 PM	11	51	43	31	17	56	27	69	7	28	92	22	454	0	0	0	0	0
1:00 PM	12	38	37	19	20	46	17	70	10	28	87	15	399	0	0	0	0	0
1:15 PM	11	37	34	21	27	48	24	70	14	18	80	14	398	0	0	0	0	0
1:30 PM	12	36	31	18	18	59	27	68	7	18	109	9	412	0	0	0	0	0
1:45 PM	17	26	30	17	27	54	19	62	6	17	141	20	436	0	0	0	0	0
VOLUMES	244	628	526	429	402	790	401	1,083	132	385	1,616	280	6,916	0	0	0	0	0
APPROACH %	17%	45%	38%	26%	25%	49%	25%	67%	8%	17%	71%	12%						
APP/DEPART	1,398	/	1,309	1,621	/	919	1,616	/	2,038	2,281	/	2,650	0					
BEGIN PEAK HR		12:00 PM																
VOLUMES	57	166	139	119	86	208	100	303	30	98	425	78	1,809	0	0	0	0	
APPROACH %	16%	46%	38%	29%	21%	50%	23%	70%	7%	16%	71%	13%						
PEAK HR FACTOR		0.862			0.860			0.895			0.868		0.908					
APP/DEPART	362	/	344	413	/	214	433	/	561	601	/	690	0					



INTERSECTION TURNING MOVEMENT COUNTS

T012524

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:					
Tue, May 13, 25	LOCATION:	Phelan	PROJECT #:	SC5356
	NORTH & SOUTH:	Riggins Rd	LOCATION #:	2
	EAST & WEST:	Phelan Rd	CONTROL:	STOP S

NOTES:

AM / PM / MD / OTHER / OTHER

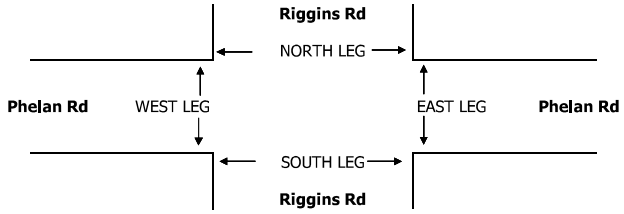
▲ N ◄ W E ► S ▼

		NORTHBOUND (Riggins Rd)			SOUTHBOUND (Riggins Rd)			EASTBOUND (Phelan Rd)			WESTBOUND (Phelan Rd)			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 1	ET 1	ER X	WL X	WT 1	WR 0	TOTAL
PM	4:00 PM	0	0	0	1	0	0	0	126	0	0	131	1	259
	4:15 PM	0	0	0	5	0	0	0	122	0	0	150	2	279
	4:30 PM	0	0	0	2	0	0	0	133	0	0	124	1	260
	4:45 PM	0	0	0	2	0	0	0	125	0	0	159	1	287
	5:00 PM	0	0	0	1	0	1	0	136	0	0	141	1	280
	5:15 PM	0	0	0	2	0	2	0	115	0	0	122	1	242
	5:30 PM	0	0	0	4	0	0	0	95	0	0	109	0	208
	5:45 PM	0	0	0	4	0	0	4	125	0	0	119	1	253
	VOLUMES	0	0	0	21	0	3	4	977	0	0	1,055	8	2,069
	APPROACH %	0%	0%	0%	88%	0%	13%	0%	99%	0%	0%	99%	1%	
	APP/DEPART	0	/	12	24	/	0	982	/	998	1,063	/	1,059	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	0	0	0	10	0	1	0	516	0	0	574	5	1,106
	APPROACH %	0%	0%	0%	91%	0%	9%	0%	100%	0%	0%	99%	1%	
	PEAK HR FACTOR		0.000			0.550			0.949			0.905		0.963
	APP/DEPART	0	/	5	11	/	0	516	/	526	579	/	575	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	

0	0	0	0	



INTERSECTION TURNING MOVEMENT COUNTS

T0125

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, May 10, 25

LOCATION: Phelan
NORTH & SOUTH: Riggins Rd
EAST & WEST: Phelan Rd

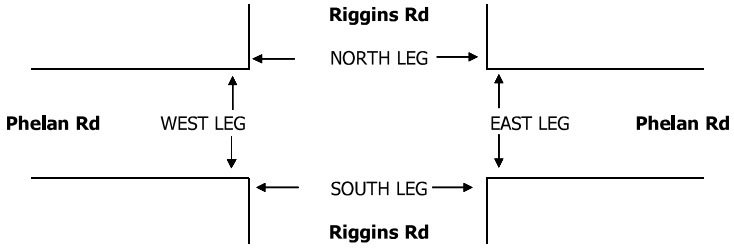
PROJECT #: SC5356
LOCATION #: 2
CONTROL: STOP S

NOTES:

AM / PM / MD / OTHER / OTHER

N ▲ ◄ W E ► S ▼

	NORTHBOUND Riggins Rd			SOUTHBOUND Riggins Rd			EASTBOUND Phelan Rd			WESTBOUND Phelan Rd				U-TURNS				
LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 1	ET 1	ER X	WL X	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
MD 10:00 AM	0	0	0	0	0	0	0	120	0	0	142	0	262	0	0	0	0	0
10:15 AM	0	0	0	0	0	1	2	97	0	0	136	0	236	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	1	127	0	0	161	2	291	0	0	0	0	0
10:45 AM	0	0	0	0	0	1	0	131	0	0	153	0	285	0	0	1	0	1
11:00 AM	0	0	0	2	0	0	0	123	0	0	142	0	267	0	0	0	0	0
11:15 AM	0	0	0	1	0	0	0	123	0	0	127	0	251	0	0	0	0	0
11:30 AM	0	0	0	1	0	0	0	138	0	0	179	0	318	0	0	0	0	0
11:45 AM	0	0	0	1	0	2	1	123	0	0	157	0	284	0	0	0	0	0
12:00 PM	0	0	0	1	0	0	0	117	0	0	151	0	269	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	154	0	0	158	0	312	0	0	0	0	0
12:30 PM	0	0	0	2	0	0	0	136	0	0	157	1	296	0	0	0	0	0
12:45 PM	0	0	0	2	0	1	2	147	0	0	146	1	299	0	0	0	0	0
1:00 PM	0	0	0	1	0	0	0	139	0	0	140	0	280	0	0	0	0	0
1:15 PM	0	0	0	2	0	0	0	126	0	0	114	0	242	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	119	0	0	156	0	275	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	101	0	0	162	0	263	0	0	0	0	0
VOLUMES	0	0	0	13	0	5	6	2,021	0	0	2,381	4	4,431	0	0	1	0	1
APPROACH %	0%	0%	0%	72%	0%	28%	0%	100%	0%	0%	100%	0%						
APP/DEPART	0	/	10	18	/	0	2,028	/	2,034	2,385	/	2,387	0					
BEGIN PEAK HR	12:15 PM																	
VOLUMES	0	0	0	5	0	1	2	576	0	0	601	2	1,187	0	0	0	0	
APPROACH %	0%	0%	0%	83%	0%	17%	0%	100%	0%	0%	100%	0%						
PEAK HR FACTOR	0.000			0.500			0.938			0.954			0.951					
APP/DEPART	0	/	4	6	/	0	578	/	581	603	/	602	0					



INTERSECTION TURNING MOVEMENT COUNTS

T012524

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 13, 25

LOCATION: Phelan
NORTH & SOUTH: Sierra Vista Rd
EAST & WEST: Phelan Rd

PROJECT #: SC5356
LOCATION #: 3
CONTROL: STOP S

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

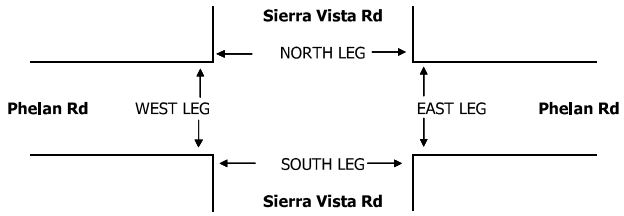
	NORTHBOUND (Sierra Vista Rd)			SOUTHBOUND (Sierra Vista Rd)			EASTBOUND (Phelan Rd)			WESTBOUND (Phelan Rd)			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 1	ER 0	WL 0	WT 1	WR 1	TOTAL
4:00 PM	4	0	1	10	0	4	1	105	1	3	112	3	244
4:15 PM	2	0	3	2	0	3	1	119	0	0	137	0	267
4:30 PM	1	0	12	3	0	0	3	133	1	2	135	2	292
4:45 PM	2	0	3	0	0	4	0	112	0	0	144	4	269
5:00 PM	2	0	4	3	0	1	1	136	0	1	123	0	271
5:15 PM	3	0	4	2	0	2	0	106	0	5	128	0	250
5:30 PM	4	0	2	2	0	0	1	95	2	3	93	1	203
5:45 PM	2	0	2	2	0	1	1	118	0	2	112	0	240
VOLUMES	20	0	31	24	0	15	8	924	4	16	984	10	2,036
APPROACH %	39%	0%	61%	62%	0%	38%	1%	99%	0%	2%	97%	1%	
APP/DEPART	51	/	18	39	/	20	936	/	979	1,010	/	1,019	0
BEGIN PEAK HR	4:15 PM												
VOLUMES	7	0	22	8	0	8	5	500	1	3	539	6	1,099
APPROACH %	24%	0%	76%	50%	0%	50%	1%	99%	0%	1%	98%	1%	
PEAK HR FACTOR		0.558			0.800			0.923			0.926		0.941
APP/DEPART	29	/	11	16	/	4	506	/	530	548	/	554	0

PM

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T0125

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, May 10, 25

LOCATION: Phelan
NORTH & SOUTH: Sierra Vista Rd
EAST & WEST: Phelan Rd

PROJECT #: SC5356
LOCATION #: 3
CONTROL: STOP S

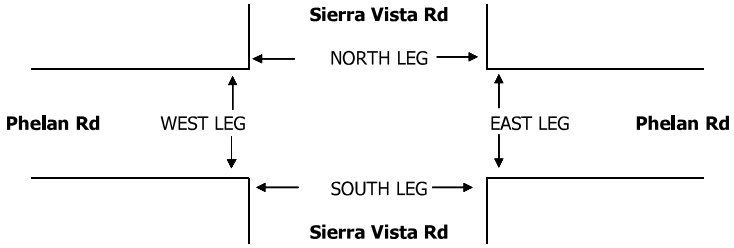
NOTES:

AM / PM / MD / OTHER / OTHER

N ▲ ◄ W E ► S ▼

MD

	NORTHBOUND Sierra Vista Rd			SOUTHBOUND Sierra Vista Rd			EASTBOUND Phelan Rd			WESTBOUND Phelan Rd				U-TURNS				
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 1	ER 0	WL 0	WT 1	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
10:00 AM	0	0	1	3	0	0	1	100	3	1	125	0	234	0	0	0	0	0
10:15 AM	4	0	1	2	0	2	1	97	1	1	129	2	240	0	0	0	0	0
10:30 AM	0	0	0	6	0	0	1	117	1	2	152	0	279	0	0	0	0	0
10:45 AM	1	0	0	2	0	1	0	110	0	2	160	1	277	0	0	0	0	0
11:00 AM	1	0	3	4	0	1	0	134	1	3	134	1	282	0	0	0	0	0
11:15 AM	0	0	1	3	0	0	0	114	1	0	124	2	245	0	0	0	0	0
11:30 AM	1	0	1	3	0	2	2	123	2	0	164	1	299	0	0	0	1	1
11:45 AM	0	0	0	0	0	0	0	129	1	0	151	0	281	0	0	0	0	0
12:00 PM	2	0	0	0	0	3	0	111	0	2	145	3	266	0	0	0	0	0
12:15 PM	1	0	0	0	0	3	3	142	0	0	150	3	302	0	0	0	0	0
12:30 PM	1	0	0	2	0	3	1	137	0	0	158	1	303	0	0	1	0	1
12:45 PM	1	0	2	1	0	0	0	153	3	0	141	1	302	0	0	0	0	0
1:00 PM	1	0	0	0	0	3	0	134	0	0	131	2	271	0	0	0	0	0
1:15 PM	0	0	0	3	0	1	1	119	0	1	105	2	232	0	0	0	0	0
1:30 PM	0	0	0	3	0	1	1	107	0	2	153	1	268	0	0	0	0	0
1:45 PM	0	0	2	0	0	1	1	98	1	2	157	0	262	0	0	0	0	0
VOLUMES	13	0	11	32	0	21	12	1,925	14	16	2,279	20	4,345	0	0	1	1	2
APPROACH %	54%	0%	46%	60%	0%	40%	1%	99%	1%	1%	98%	1%						
APP/DEPART	24	/	32	53	/	30	1,952	/	1,969	2,316	/	2,314	0					
BEGIN PEAK HR	12:15 PM																	
VOLUMES	4	0	2	3	0	9	4	566	3	0	580	7	1,179	0	0	1	0	
APPROACH %	67%	0%	33%	25%	0%	75%	1%	99%	1%	0%	99%	1%						
PEAK HR FACTOR	0.500			0.600			0.920			0.923			0.970					
APP/DEPART	6	/	11	12	/	3	574	/	571	587	/	594	0					



INTERSECTION TURNING MOVEMENT COUNTS

T012524

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 13, 25

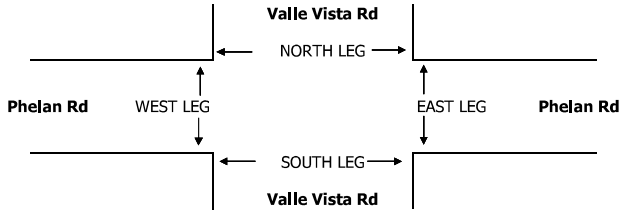
LOCATION: Phelan
NORTH & SOUTH: Valle Vista Rd
EAST & WEST: Phelan Rd

PROJECT #: SC5356
LOCATION #: 4
CONTROL: STOP N/S

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND (Valle Vista Rd)			SOUTHBOUND (Valle Vista Rd)			EASTBOUND (Phelan Rd)			WESTBOUND (Phelan Rd)				U-TURNS				
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
PM 4:00 PM	0	0	1	6	0	3	6	108	5	1	111	2	243	0	0	0	0	0
4:15 PM	2	0	1	2	0	5	7	111	2	3	135	7	275	0	0	0	0	0
4:30 PM	0	1	1	5	0	6	7	137	7	6	122	1	293	0	0	0	0	0
4:45 PM	1	1	2	4	2	4	2	112	4	0	142	5	279	0	0	0	0	0
5:00 PM	0	3	2	1	0	1	3	134	3	0	133	4	284	0	0	0	0	0
5:15 PM	1	0	2	2	0	5	2	114	0	3	114	1	244	0	0	0	0	0
5:30 PM	0	0	4	0	1	4	3	94	0	2	93	2	203	0	0	0	0	0
5:45 PM	0	0	1	4	0	1	3	118	2	5	112	1	247	0	0	0	0	0
VOLUMES	4	5	14	24	3	29	33	928	23	20	962	23	2,068	0	0	0	0	0
APPROACH %	17%	22%	61%	43%	5%	52%	3%	94%	2%	2%	96%	2%						
APP/DEPART	23	/	61	56	/	46	984	/	966	1,005	/	995	0					
BEGIN PEAK HR	4:15 PM																	
VOLUMES	3	5	6	12	2	16	19	494	16	9	532	17	1,131	0	0	0	0	
APPROACH %	21%	36%	43%	40%	7%	53%	4%	93%	3%	2%	95%	3%						
PEAK HR FACTOR		0.700			0.682			0.876			0.949		0.965					
APP/DEPART	14	/	41	30	/	27	529	/	512	558	/	551	0					



INTERSECTION TURNING MOVEMENT COUNTS

T0125

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, May 10, 25

LOCATION: Phelan
NORTH & SOUTH: Valle Vista Rd
EAST & WEST: Phelan Rd

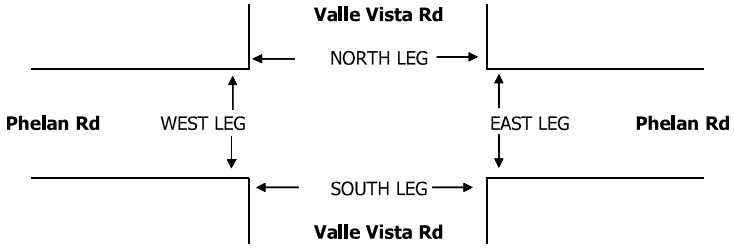
PROJECT #: SC5356
LOCATION #: 4
CONTROL: STOP N/S

NOTES:

AM / PM / MD / OTHER / OTHER

N ▲ S ▼ W ◄ E ►

	NORTHBOUND Valle Vista Rd			SOUTHBOUND Valle Vista Rd			EASTBOUND Phelan Rd			WESTBOUND Phelan Rd				U-TURNS				
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
MD 10:00 AM	3	0	2	4	0	1	5	96	3	0	124	4	242	0	0	0	0	0
10:15 AM	3	0	4	1	0	4	2	95	3	4	128	4	248	0	0	0	0	0
10:30 AM	3	0	0	4	1	8	1	124	2	2	145	3	293	0	0	0	0	0
10:45 AM	3	0	0	1	0	9	3	109	4	0	141	6	276	0	0	0	0	0
11:00 AM	0	0	2	6	0	6	8	125	2	1	129	8	287	0	0	0	0	0
11:15 AM	1	1	1	4	0	5	4	117	3	0	126	5	267	0	0	0	0	0
11:30 AM	1	1	2	2	1	4	3	113	5	5	165	3	305	0	0	0	0	0
11:45 AM	1	1	2	2	1	5	2	126	1	0	145	4	290	0	0	0	0	0
12:00 PM	4	0	0	2	2	7	4	107	3	3	135	4	271	0	0	0	0	0
12:15 PM	1	0	0	2	0	4	2	138	2	3	149	5	306	0	0	0	0	0
12:30 PM	2	1	2	5	0	2	5	125	4	1	145	3	295	0	0	0	0	0
12:45 PM	1	0	2	4	0	2	4	150	2	1	137	2	305	0	0	0	0	0
1:00 PM	2	0	1	4	1	5	2	129	4	1	130	2	281	0	0	0	0	0
1:15 PM	1	0	3	0	0	5	0	119	2	2	107	1	240	0	0	0	0	0
1:30 PM	0	0	2	2	1	4	4	108	3	1	155	3	283	0	0	0	0	0
1:45 PM	0	0	0	1	0	5	2	93	1	1	148	7	258	0	0	0	0	0
VOLUMES	26	4	23	44	7	76	51	1,874	44	25	2,209	64	4,447	0	0	0	0	0
APPROACH %	49%	8%	43%	35%	6%	60%	3%	95%	2%	1%	96%	3%						
APP/DEPART	53	/	119	127	/	76	1,969	/	1,941	2,298	/	2,311	0					
BEGIN PEAK HR	12:15 PM																	
VOLUMES	6	1	5	15	1	13	13	542	12	6	561	12	1,187	0	0	0	0	
APPROACH %	50%	8%	42%	52%	3%	45%	2%	96%	2%	1%	97%	2%						
PEAK HR FACTOR		0.600			0.725			0.909			0.922		0.970					
APP/DEPART	12	/	26	29	/	19	567	/	562	579	/	580	0					



ASC/3

PROGRAM REFERENCE CARD

TRAFFIC SIGNAL TIMING

INTERSECTION: Phelan Rd. & Sheep Creek Rd 9/22/2022 By: AAL

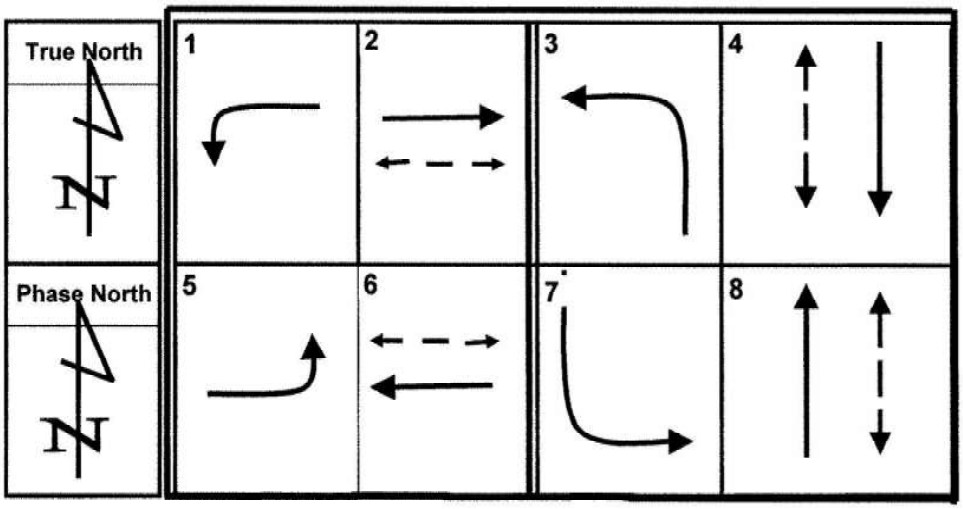
T.S. No.: 21-122 By: AAL

UTILITIES SUBMENU

8-7. SOFTWARE MODULES

NAME	PART NUMBER
EB U-BOOT	119-1046-205
O/S	119-1047-212
APPLICATION	119-1051-267
CONFIGURATION	100-1049-001
EB CONTROLLER	119-1049-207
	119-1050-203

PHASE DIAGRAM



Comments:

ASC/3

PROGRAM REFERENCE CARD

INTERSECTION: Phelan Rd. & Sheep Creek Rd Date Prepared: 9/22/2022 By AAL

T.S. No.: 21-122 Date Implemented: _____ By AAL

CONFIGURATION SUBMENU

1-1-1. PHASE RING SEQUENCE AND ASSIGNMENT

CONTROLLER SEQUENCE	1															
SEQUENCE COMMANDS								HARDWARE ALTERNATE SEQUENCE ENABLE								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
BARRIER CONTROL		B	B	B	B	C	C	C	C	C	C	C	C	C	C	C
RING 1	1	2	3	4												
RING 2	5	6	7	8												
RING 3																
RING 4																

CONTROLLER SEQUENCE	2															
SEQUENCE COMMANDS								HARDWARE ALTERNATE SEQUENCE ENABLE								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
BARRIER CONTROL																
RING 1																
RING 2																
RING 3																
RING 4																

CONTROLLER SEQUENCE	3															
SEQUENCE COMMANDS								HARDWARE ALTERNATE SEQUENCE ENABLE								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
BARRIER CONTROL																
RING 1																
RING 2																
RING 3																
RING 4																

CONTROLLER SEQUENCE	4															
SEQUENCE COMMANDS								HARDWARE ALTERNATE SEQUENCE ENABLE								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
BARRIER CONTROL																
RING 1																
RING 2																
RING 3																
RING 4																

UP TO 16 CONTROL SEQUENCES AVAILABLE.

ASC/3

PROGRAM REFERENCE CARD

TRAFFIC SIGNAL TIMING

INTERSECTION: Phelan Rd & Sheep Creek Rd Date Prepared: 9/22/2022 By: AAL

T.S. No.: 21-122 Date Implemented: _____ By: _____

CONTROLLER SUBMENU

2-1. CONTROLLER TIMING DATA

TIMING PLAN	1	PHASE DATA															
PHASE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MINIMUM GREEN		10	10	10	10	10	10	11	10								
BICYCLE MIN GREEN																	
CONDITIONAL SERVICE MIN GRN																	
DELAY GREEN																	
WALK			7		7		7		7								
WALK 2																	
WALK MAX																	
PEDESTRIAN CLEARANCE			30		34		30		34								
PEDESTRIAN CLEARANCE 2																	
PEDESTRIAN CLEARANCE MAX																	
PEDESTRIAN CARRY OVER																	
VEHICLE EXTENSION		3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0								
VEHICLE EXTENSION 2																	
MAX 1		20	30	30	30	20	30	20	30								
MAX 2																	
MAX 3																	
DYNAMIC MAX																	
DYNAMIC STEP																	
YELLOW		3.5	5.0	3.5	5.5	3.5	5.0	3.5	5.5								
RED CLEARANCE		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0								
RED MAX																	
RED REVERT		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0								
ACTUATIONS BEFORE (ACT B4)																	
SEC/ACTUATION																	
MAX ADDED INITIAL (MAX INI)																	
TIME BEFORE GAP REDUCTION																	
CARS WAITING B4 REDUCTION																	
STEP TO REDUCE (STPTDUC)																	
TIME TO REDUCE (TTREDUC)																	
MINIMUM GAP																	

Comments:

ASC/3

PROGRAM REFERENCE CARD

TRAFFIC SIGNAL TIMING

INTERSECTION: Phelan Rd & Sheep Creek Rd Date Prepared: 9/22/2022 By: AAL

T.S. No.: 21-122 Date Implemented: _____ By: _____

CONTROLLER SUBMENU

2-5. START / FLASH DATA

POWER START																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE		G				G										
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
OVERLAP																
FLASH>MON			NO		FLASH TIME			15		ALL RED				6		
POWER START SEQ			1		MUTCD					yes						
AUTOMATIC FLASH																
PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ENTRY		X				X										
EXIT		X				X										
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
EXIT																
FLASH>MON			NO		EXIT FLASH				R		MIN AUTO FLASH				8	
MINIMUM RECALL			NO		CYCLE THRU PHASE				NO							

2-6-1. CONTROLLER OPTIONS

PEDESTRIAN CLEARANCE PROTECT	X	UNIT RED REVERT	2.0
MUTCD 3 SECOND DON'T WALK	YES		

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
FLASHING GREEN PHASE																
GUARANTEED PASSAGE																
NON-ACT I																
NON-ACT II																
DUAL ENTRY		X		X		X		X								
COND SERVICE																
COND RESERVICE																
PED RESERVICE																
REST IN WALK																
FLASHING WALK																
PED CLEAR > YELLOW																
PED CLEAR > ALL RED																
INIT GREEN + VEH EXT																

2-6-2. EXTENDED OPTIONS [Not Available]

ASC/3

PROGRAM REFERENCE CARD

TRAFFIC SIGNAL TIMING

INTERSECTION: Phelan Rd & Sheep Creek Rd Date Prepared: 9/22/2022 By: AAL

T.S. No.: 21-122 Date Implemented: _____ By: _____

CONTROLLER SUBMENU

2-7. ACTUATED / PRE-TIMED MODE

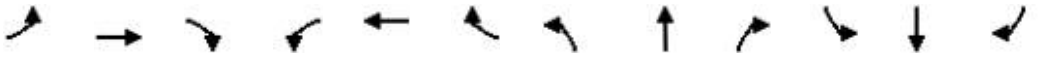
ENABLE PRE-TIMED MODE						NO										
FREE INPUT ENABLES PRE-TIMED						NO										
PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PRE-TIMED																

2-8. PHASE RECALL OPTIONS

TIMING PLAN NUMBER						1										
PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
LOCK DETECTOR																
VEHICLE RECALL		X				X										
PEDESTRIAN RECALL																
MAX RECALL																
SOFT RECALL																
NO REST																
ADD INITIAL CALC																

APPENDIX C

Intersection Analysis Worksheets



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	278	30	109	329	68	72	224	147	121	121	164
Future Volume (veh/h)	95	278	30	109	329	68	72	224	147	121	121	164
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	97	284	31	111	336	69	73	229	150	123	123	167
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	238	583	63	249	550	112	209	382	240	283	398	355
Arrive On Green	0.13	0.18	0.18	0.14	0.18	0.18	0.12	0.18	0.18	0.16	0.22	0.22
Sat Flow, veh/h	1810	3285	356	1810	2989	607	1810	2127	1337	1810	1805	1610
Grp Volume(v), veh/h	97	155	160	111	201	204	73	193	186	123	123	167
Grp Sat Flow(s),veh/h/ln	1810	1805	1836	1810	1805	1791	1810	1805	1659	1810	1805	1610
Q Serve(g_s), s	3.0	4.8	4.8	3.5	6.3	6.5	2.3	6.1	6.4	3.8	3.5	5.6
Cycle Q Clear(g_c), s	3.0	4.8	4.8	3.5	6.3	6.5	2.3	6.1	6.4	3.8	3.5	5.6
Prop In Lane	1.00		0.19	1.00		0.34	1.00		0.81	1.00		1.00
Lane Grp Cap(c), veh/h	238	320	326	249	332	330	209	325	298	283	398	355
V/C Ratio(X)	0.41	0.48	0.49	0.44	0.61	0.62	0.35	0.59	0.62	0.43	0.31	0.47
Avail Cap(c_a), veh/h	454	702	714	454	702	696	748	687	632	454	687	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	22.8	22.9	24.4	23.1	23.2	25.2	23.2	23.4	23.6	20.1	20.9
Incr Delay (d2), s/veh	1.1	1.6	1.6	1.2	2.5	2.7	1.0	2.5	3.0	1.0	0.6	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.0	2.1	1.5	2.7	2.8	1.0	2.6	2.6	1.6	1.5	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.7	24.5	24.5	25.7	25.7	25.9	26.1	25.7	26.4	24.6	20.7	22.3
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		412			516			452			413	
Approach Delay, s/veh		24.8			25.7			26.1			22.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	17.0	11.6	20.1	12.6	17.4	14.2	17.6
Change Period (Y+Rc), s	4.5	6.0	4.5	6.5	4.5	6.0	4.5	6.5
Max Green Setting (Gmax), s	15.5	24.0	25.5	23.5	15.5	24.0	15.5	23.5
Max Q Clear Time (g_c+I1), s	5.5	6.8	4.3	7.6	5.0	8.5	5.8	8.4
Green Ext Time (p_c), s	0.2	2.3	0.1	2.1	0.1	2.9	0.2	2.7

Intersection Summary	
HCM 7th Control Delay, s/veh	24.9
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	516	574	5	10	1
Future Vol, veh/h	0	516	574	5	10	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	538	598	5	10	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	603	0	-	0	1138	601
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	538	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	984	-	-	-	225	504
Stage 1	-	-	-	-	552	-
Stage 2	-	-	-	-	590	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	984	-	-	-	225	504
Mov Cap-2 Maneuver	-	-	-	-	363	-
Stage 1	-	-	-	-	552	-
Stage 2	-	-	-	-	590	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0	0	14.98
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	984	-	-	-	372
HCM Lane V/C Ratio	-	-	-	-	0.031
HCM Ctrl Dly (s/v)	0	-	-	-	15
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	500	1	3	539	6	7	0	22	8	0	8
Future Vol, veh/h	5	500	1	3	539	6	7	0	22	8	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	20	-	125	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	5	532	1	3	573	6	7	0	23	9	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	580	0	0	533	0	0	1123	1129	532	1122	1123	573
Stage 1	-	-	-	-	-	-	543	543	-	580	580	-
Stage 2	-	-	-	-	-	-	580	586	-	543	544	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1004	-	-	1045	-	-	185	206	551	185	207	522
Stage 1	-	-	-	-	-	-	527	523	-	504	503	-
Stage 2	-	-	-	-	-	-	504	500	-	528	523	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1004	-	-	1045	-	-	180	204	551	175	206	522
Mov Cap-2 Maneuver	-	-	-	-	-	-	180	204	-	175	206	-
Stage 1	-	-	-	-	-	-	525	520	-	502	502	-
Stage 2	-	-	-	-	-	-	494	499	-	503	520	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.09	0.05	15.67	19.65
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	368	1004	-	-	1045	-	-	263
HCM Lane V/C Ratio	0.084	0.005	-	-	0.003	-	-	0.065
HCM Ctrl Dly (s/v)	15.7	8.6	-	-	8.5	-	-	19.7
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.2

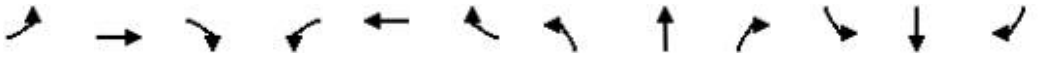
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	494	16	9	532	17	3	5	6	12	2	16
Future Vol, veh/h	19	494	16	9	532	17	3	5	6	12	2	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	20	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	20	515	17	9	554	18	3	5	6	13	2	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	572	0	0	531	0	0	1136	1153	523	1139	1153	563
Stage 1	-	-	-	-	-	-	563	563	-	582	582	-
Stage 2	-	-	-	-	-	-	574	591	-	557	571	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1011	-	-	1046	-	-	181	199	558	180	199	530
Stage 1	-	-	-	-	-	-	515	512	-	503	502	-
Stage 2	-	-	-	-	-	-	507	498	-	519	508	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1011	-	-	1046	-	-	168	193	558	168	194	530
Mov Cap-2 Maneuver	-	-	-	-	-	-	168	193	-	168	194	-
Stage 1	-	-	-	-	-	-	505	502	-	498	498	-
Stage 2	-	-	-	-	-	-	485	493	-	497	498	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.31	0.14	19.84	20.17
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	257	1011	-	-	1046	-	-	268
HCM Lane V/C Ratio	0.057	0.02	-	-	0.009	-	-	0.116
HCM Ctrl Dly (s/v)	19.8	8.6	-	-	8.5	-	-	20.2
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	303	30	98	425	78	57	166	139	119	86	208
Future Volume (veh/h)	100	303	30	98	425	78	57	166	139	119	86	208
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	110	333	33	108	467	86	63	182	153	131	95	229
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	239	758	75	237	693	127	188	308	244	275	377	336
Arrive On Green	0.13	0.23	0.23	0.13	0.23	0.23	0.10	0.16	0.16	0.15	0.21	0.21
Sat Flow, veh/h	1810	3319	327	1810	3047	558	1810	1915	1517	1810	1805	1610
Grp Volume(v), veh/h	110	180	186	108	276	277	63	171	164	131	95	229
Grp Sat Flow(s),veh/h/ln	1810	1805	1841	1810	1805	1800	1810	1805	1627	1810	1805	1610
Q Serve(g_s), s	3.7	5.6	5.7	3.6	9.1	9.2	2.1	5.8	6.2	4.3	2.9	8.6
Cycle Q Clear(g_c), s	3.7	5.6	5.7	3.6	9.1	9.2	2.1	5.8	6.2	4.3	2.9	8.6
Prop In Lane	1.00		0.18	1.00		0.31	1.00		0.93	1.00		1.00
Lane Grp Cap(c), veh/h	239	412	420	237	411	409	188	290	262	275	377	336
V/C Ratio(X)	0.46	0.44	0.44	0.46	0.67	0.68	0.33	0.59	0.63	0.48	0.25	0.68
Avail Cap(c_a), veh/h	427	660	673	427	660	658	703	646	583	427	646	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.3	21.7	21.7	26.3	23.1	23.2	27.3	25.5	25.7	25.4	21.7	23.9
Incr Delay (d2), s/veh	1.4	1.0	1.0	1.4	2.7	2.8	1.0	2.7	3.5	1.3	0.5	3.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	2.4	2.4	1.6	3.9	4.0	0.9	2.6	2.5	1.9	1.2	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.7	22.7	22.8	27.7	25.8	25.9	28.3	28.2	29.2	26.7	22.2	27.4
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		476			661			398			455	
Approach Delay, s/veh		23.9			26.2			28.6			26.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	21.0	11.3	20.2	13.2	20.9	14.5	17.1
Change Period (Y+Rc), s	4.5	6.0	4.5	6.5	4.5	6.0	4.5	6.5
Max Green Setting (Gmax), s	15.5	24.0	25.5	23.5	15.5	24.0	15.5	23.5
Max Q Clear Time (g_c+I1), s	5.6	7.7	4.1	10.6	5.7	11.2	6.3	8.2
Green Ext Time (p_c), s	0.2	2.6	0.1	2.1	0.2	3.7	0.2	2.4

Intersection Summary	
HCM 7th Control Delay, s/veh	26.1
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	576	601	2	5	1
Future Vol, veh/h	2	576	601	2	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2	606	633	2	5	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	635	0	-	0	1244	634
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	611	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	958	-	-	-	194	483
Stage 1	-	-	-	-	533	-
Stage 2	-	-	-	-	546	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	958	-	-	-	194	483
Mov Cap-2 Maneuver	-	-	-	-	334	-
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	546	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.03	0	15.41
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	958	-	-	-	352
HCM Lane V/C Ratio	0.002	-	-	-	0.018
HCM Ctrl Dly (s/v)	8.8	-	-	-	15.4
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	566	3	0	580	7	4	0	2	3	0	9
Future Vol, veh/h	4	566	3	0	580	7	4	0	2	3	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	20	-	125	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	4	584	3	0	598	7	4	0	2	3	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	605	0	0	587	0	0	1191	1198	585	1190	1193	598
Stage 1	-	-	-	-	-	-	593	593	-	598	598	-
Stage 2	-	-	-	-	-	-	598	605	-	592	595	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	983	-	-	998	-	-	166	187	515	166	189	506
Stage 1	-	-	-	-	-	-	495	496	-	492	494	-
Stage 2	-	-	-	-	-	-	492	490	-	496	496	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	983	-	-	998	-	-	162	186	515	165	188	506
Mov Cap-2 Maneuver	-	-	-	-	-	-	162	186	-	165	188	-
Stage 1	-	-	-	-	-	-	493	494	-	492	494	-
Stage 2	-	-	-	-	-	-	483	490	-	492	494	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.06	0	22.67	16.21
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	210	983	-	-	998	-	-	333
HCM Lane V/C Ratio	0.029	0.004	-	-	-	-	-	0.037
HCM Ctrl Dly (s/v)	22.7	8.7	-	-	0	-	-	16.2
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	542	12	6	561	12	6	1	5	15	1	13
Future Vol, veh/h	13	542	12	6	561	12	6	1	5	15	1	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	20	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	13	559	12	6	578	12	6	1	5	15	1	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	591	0	0	571	0	0	1183	1195	565	1183	1195	585
Stage 1	-	-	-	-	-	-	592	592	-	597	597	-
Stage 2	-	-	-	-	-	-	591	603	-	586	598	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	995	-	-	1012	-	-	168	188	528	168	188	515
Stage 1	-	-	-	-	-	-	496	497	-	493	495	-
Stage 2	-	-	-	-	-	-	497	491	-	500	494	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	995	-	-	1012	-	-	159	184	528	162	184	515
Mov Cap-2 Maneuver	-	-	-	-	-	-	159	184	-	162	184	-
Stage 1	-	-	-	-	-	-	490	491	-	490	492	-
Stage 2	-	-	-	-	-	-	480	488	-	487	487	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.2	0.09	21.66	22.51
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	228	995	-	-	1012	-	-	235
HCM Lane V/C Ratio	0.054	0.013	-	-	0.006	-	-	0.127
HCM Ctrl Dly (s/v)	21.7	8.7	-	-	8.6	-	-	22.5
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	278	30	109	330	68	72	224	147	121	121	164
Future Volume (veh/h)	95	278	30	109	330	68	72	224	147	121	121	164
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	97	284	31	111	337	69	73	229	150	123	123	167
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	238	584	63	249	551	112	209	382	240	283	398	355
Arrive On Green	0.13	0.18	0.18	0.14	0.18	0.18	0.12	0.18	0.18	0.16	0.22	0.22
Sat Flow, veh/h	1810	3285	356	1810	2991	605	1810	2127	1337	1810	1805	1610
Grp Volume(v), veh/h	97	155	160	111	202	204	73	193	186	123	123	167
Grp Sat Flow(s),veh/h/ln	1810	1805	1836	1810	1805	1791	1810	1805	1659	1810	1805	1610
Q Serve(g_s), s	3.0	4.8	4.8	3.5	6.3	6.5	2.3	6.1	6.4	3.8	3.5	5.6
Cycle Q Clear(g_c), s	3.0	4.8	4.8	3.5	6.3	6.5	2.3	6.1	6.4	3.8	3.5	5.6
Prop In Lane	1.00		0.19	1.00		0.34	1.00		0.81	1.00		1.00
Lane Grp Cap(c), veh/h	238	321	326	249	333	330	209	324	298	283	398	355
V/C Ratio(X)	0.41	0.48	0.49	0.45	0.61	0.62	0.35	0.59	0.62	0.43	0.31	0.47
Avail Cap(c_a), veh/h	454	701	714	454	701	696	747	687	631	454	687	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	22.8	22.9	24.5	23.1	23.2	25.2	23.3	23.4	23.6	20.1	20.9
Incr Delay (d2), s/veh	1.1	1.6	1.6	1.2	2.5	2.7	1.0	2.5	3.0	1.0	0.6	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.0	2.1	1.5	2.8	2.8	1.0	2.6	2.6	1.6	1.5	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.7	24.4	24.5	25.7	25.7	25.9	26.2	25.7	26.4	24.6	20.7	22.3
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		412			517			452			413	
Approach Delay, s/veh		24.8			25.8			26.1			22.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	17.0	11.6	20.1	12.6	17.4	14.2	17.6
Change Period (Y+Rc), s	4.5	6.0	4.5	6.5	4.5	6.0	4.5	6.5
Max Green Setting (Gmax), s	15.5	24.0	25.5	23.5	15.5	24.0	15.5	23.5
Max Q Clear Time (g_c+I1), s	5.5	6.8	4.3	7.6	5.0	8.5	5.8	8.4
Green Ext Time (p_c), s	0.2	2.3	0.1	2.1	0.1	2.9	0.2	2.7

Intersection Summary	
HCM 7th Control Delay, s/veh	24.9
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	517	575	5	10	1
Future Vol, veh/h	0	517	575	5	10	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	539	599	5	10	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	604	0	-	0	1140	602
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	539	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	983	-	-	-	224	504
Stage 1	-	-	-	-	551	-
Stage 2	-	-	-	-	589	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	983	-	-	-	224	504
Mov Cap-2 Maneuver	-	-	-	-	362	-
Stage 1	-	-	-	-	551	-
Stage 2	-	-	-	-	589	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0	0	15
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	983	-	-	-	372
HCM Lane V/C Ratio	-	-	-	-	0.031
HCM Ctrl Dly (s/v)	0	-	-	-	15
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	501	1	3	540	6	7	0	22	8	0	8
Future Vol, veh/h	5	501	1	3	540	6	7	0	22	8	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	20	-	125	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	5	533	1	3	574	6	7	0	23	9	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	581	0	0	534	0	0	1125	1131	534	1124	1126	574
Stage 1	-	-	-	-	-	-	544	544	-	581	581	-
Stage 2	-	-	-	-	-	-	581	587	-	544	545	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1003	-	-	1044	-	-	184	205	550	184	207	522
Stage 1	-	-	-	-	-	-	527	522	-	503	503	-
Stage 2	-	-	-	-	-	-	503	500	-	527	522	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1003	-	-	1044	-	-	179	203	550	175	205	522
Mov Cap-2 Maneuver	-	-	-	-	-	-	179	203	-	175	205	-
Stage 1	-	-	-	-	-	-	524	519	-	502	501	-
Stage 2	-	-	-	-	-	-	493	498	-	502	519	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.08	0.05	15.7	19.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	367	1003	-	-	1044	-	-	262
HCM Lane V/C Ratio	0.084	0.005	-	-	0.003	-	-	0.065
HCM Ctrl Dly (s/v)	15.7	8.6	-	-	8.5	-	-	19.7
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	495	16	9	533	17	3	5	6	12	2	16
Future Vol, veh/h	19	495	16	9	533	17	3	5	6	12	2	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	20	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	20	516	17	9	555	18	3	5	6	13	2	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	573	0	0	532	0	0	1139	1155	524	1141	1155	564
Stage 1	-	-	-	-	-	-	564	564	-	583	583	-
Stage 2	-	-	-	-	-	-	575	592	-	558	572	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1010	-	-	1045	-	-	180	198	557	179	199	529
Stage 1	-	-	-	-	-	-	514	512	-	502	502	-
Stage 2	-	-	-	-	-	-	507	497	-	518	508	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1010	-	-	1045	-	-	168	193	557	168	193	529
Mov Cap-2 Maneuver	-	-	-	-	-	-	168	193	-	168	193	-
Stage 1	-	-	-	-	-	-	504	502	-	497	497	-
Stage 2	-	-	-	-	-	-	484	493	-	497	498	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.31	0.14	19.88	20.22
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	256	1010	-	-	1045	-	-	268
HCM Lane V/C Ratio	0.057	0.02	-	-	0.009	-	-	0.117
HCM Ctrl Dly (s/v)	19.9	8.6	-	-	8.5	-	-	20.2
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	304	30	98	426	78	57	166	139	119	86	208
Future Volume (veh/h)	100	304	30	98	426	78	57	166	139	119	86	208
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	110	334	33	108	468	86	63	182	153	131	95	229
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	239	759	74	237	694	127	188	308	244	275	377	336
Arrive On Green	0.13	0.23	0.23	0.13	0.23	0.23	0.10	0.16	0.16	0.15	0.21	0.21
Sat Flow, veh/h	1810	3320	326	1810	3048	557	1810	1915	1517	1810	1805	1610
Grp Volume(v), veh/h	110	181	186	108	276	278	63	171	164	131	95	229
Grp Sat Flow(s),veh/h/ln	1810	1805	1841	1810	1805	1800	1810	1805	1627	1810	1805	1610
Q Serve(g_s), s	3.7	5.6	5.7	3.6	9.2	9.3	2.1	5.8	6.2	4.3	2.9	8.6
Cycle Q Clear(g_c), s	3.7	5.6	5.7	3.6	9.2	9.3	2.1	5.8	6.2	4.3	2.9	8.6
Prop In Lane	1.00		0.18	1.00		0.31	1.00		0.93	1.00		1.00
Lane Grp Cap(c), veh/h	239	413	421	237	411	410	188	290	262	275	377	336
V/C Ratio(X)	0.46	0.44	0.44	0.46	0.67	0.68	0.33	0.59	0.63	0.48	0.25	0.68
Avail Cap(c_a), veh/h	427	660	673	427	660	658	703	646	582	427	646	576
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.3	21.7	21.7	26.4	23.1	23.2	27.3	25.5	25.7	25.4	21.7	24.0
Incr Delay (d2), s/veh	1.4	1.0	1.0	1.4	2.7	2.8	1.0	2.7	3.5	1.3	0.5	3.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	2.4	2.4	1.6	4.0	4.0	0.9	2.6	2.5	1.9	1.2	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.7	22.8	22.8	27.7	25.8	25.9	28.3	28.2	29.2	26.7	22.2	27.4
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		477			662			398			455	
Approach Delay, s/veh		23.9			26.2			28.7			26.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	21.0	11.3	20.2	13.2	21.0	14.5	17.1
Change Period (Y+Rc), s	4.5	6.0	4.5	6.5	4.5	6.0	4.5	6.5
Max Green Setting (Gmax), s	15.5	24.0	25.5	23.5	15.5	24.0	15.5	23.5
Max Q Clear Time (g_c+I1), s	5.6	7.7	4.1	10.6	5.7	11.3	6.3	8.2
Green Ext Time (p_c), s	0.2	2.6	0.1	2.1	0.2	3.7	0.2	2.4

Intersection Summary	
HCM 7th Control Delay, s/veh	26.1
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	577	602	2	5	1
Future Vol, veh/h	2	577	602	2	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2	607	634	2	5	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	636	0	-	0	1246	635
Stage 1	-	-	-	-	635	-
Stage 2	-	-	-	-	612	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	957	-	-	-	194	482
Stage 1	-	-	-	-	532	-
Stage 2	-	-	-	-	545	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	957	-	-	-	193	482
Mov Cap-2 Maneuver	-	-	-	-	334	-
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	545	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.03	0	15.42
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	957	-	-	-	352
HCM Lane V/C Ratio	0.002	-	-	-	0.018
HCM Ctrl Dly (s/v)	8.8	-	-	-	15.4
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	567	3	0	581	7	4	0	2	3	0	9
Future Vol, veh/h	4	567	3	0	581	7	4	0	2	3	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	20	-	125	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	4	585	3	0	599	7	4	0	2	3	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	606	0	0	588	0	0	1193	1201	586	1192	1195	599
Stage 1	-	-	-	-	-	-	594	594	-	599	599	-
Stage 2	-	-	-	-	-	-	599	606	-	593	596	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	982	-	-	997	-	-	165	187	514	166	188	505
Stage 1	-	-	-	-	-	-	495	496	-	492	494	-
Stage 2	-	-	-	-	-	-	492	490	-	496	495	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	982	-	-	997	-	-	161	186	514	164	187	505
Mov Cap-2 Maneuver	-	-	-	-	-	-	161	186	-	164	187	-
Stage 1	-	-	-	-	-	-	493	494	-	492	494	-
Stage 2	-	-	-	-	-	-	483	490	-	492	493	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.06	0	22.72	16.24
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	209	982	-	-	997	-	-	333
HCM Lane V/C Ratio	0.03	0.004	-	-	-	-	-	0.037
HCM Ctrl Dly (s/v)	22.7	8.7	-	-	0	-	-	16.2
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	543	12	6	562	12	6	1	5	15	1	13
Future Vol, veh/h	13	543	12	6	562	12	6	1	5	15	1	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	20	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	13	560	12	6	579	12	6	1	5	15	1	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	592	0	0	572	0	0	1185	1197	566	1185	1197	586
Stage 1	-	-	-	-	-	-	593	593	-	598	598	-
Stage 2	-	-	-	-	-	-	592	604	-	587	599	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	994	-	-	1011	-	-	167	187	528	167	187	514
Stage 1	-	-	-	-	-	-	496	497	-	492	494	-
Stage 2	-	-	-	-	-	-	496	491	-	499	494	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	994	-	-	1011	-	-	159	184	528	162	184	514
Mov Cap-2 Maneuver	-	-	-	-	-	-	159	184	-	162	184	-
Stage 1	-	-	-	-	-	-	489	490	-	489	491	-
Stage 2	-	-	-	-	-	-	479	488	-	487	487	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.2	0.09	21.71	22.56
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	228	994	-	-	1011	-	-	235
HCM Lane V/C Ratio	0.054	0.013	-	-	0.006	-	-	0.127
HCM Ctrl Dly (s/v)	21.7	8.7	-	-	8.6	-	-	22.6
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	289	30	119	343	71	72	224	155	124	121	164
Future Volume (veh/h)	95	289	30	119	343	71	72	224	155	124	121	164
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	97	295	31	121	350	72	73	229	158	127	123	167
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	235	590	61	254	564	115	208	378	250	283	403	360
Arrive On Green	0.13	0.18	0.18	0.14	0.19	0.19	0.11	0.18	0.18	0.16	0.22	0.22
Sat Flow, veh/h	1810	3299	344	1810	2988	608	1810	2081	1377	1810	1805	1610
Grp Volume(v), veh/h	97	160	166	121	210	212	73	197	190	127	123	167
Grp Sat Flow(s),veh/h/ln	1810	1805	1838	1810	1805	1791	1810	1805	1652	1810	1805	1610
Q Serve(g_s), s	3.1	5.0	5.1	3.9	6.7	6.8	2.3	6.3	6.6	4.0	3.6	5.6
Cycle Q Clear(g_c), s	3.1	5.0	5.1	3.9	6.7	6.8	2.3	6.3	6.6	4.0	3.6	5.6
Prop In Lane	1.00		0.19	1.00		0.34	1.00		0.83	1.00		1.00
Lane Grp Cap(c), veh/h	235	323	328	254	341	338	208	328	300	283	403	360
V/C Ratio(X)	0.41	0.50	0.50	0.48	0.62	0.63	0.35	0.60	0.63	0.45	0.31	0.46
Avail Cap(c_a), veh/h	448	691	704	448	691	686	736	677	620	448	677	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	23.2	23.2	24.8	23.3	23.4	25.6	23.6	23.7	24.0	20.3	21.1
Incr Delay (d2), s/veh	1.2	1.7	1.7	1.4	2.6	2.7	1.0	2.5	3.1	1.1	0.6	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.2	2.2	1.7	2.9	3.0	1.0	2.7	2.7	1.7	1.5	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.2	24.9	24.9	26.2	25.9	26.1	26.6	26.1	26.8	25.1	20.9	22.4
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		423			543			460			417	
Approach Delay, s/veh		25.2			26.1			26.5			22.8	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	17.2	11.7	20.5	12.7	17.8	14.3	17.9
Change Period (Y+Rc), s	4.5	6.0	4.5	6.5	4.5	6.0	4.5	6.5
Max Green Setting (Gmax), s	15.5	24.0	25.5	23.5	15.5	24.0	15.5	23.5
Max Q Clear Time (g_c+I1), s	5.9	7.1	4.3	7.6	5.1	8.8	6.0	8.6
Green Ext Time (p_c), s	0.2	2.3	0.1	2.1	0.1	3.0	0.2	2.7

Intersection Summary	
HCM 7th Control Delay, s/veh	25.2
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	539	601	5	10	1
Future Vol, veh/h	0	539	601	5	10	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	561	626	5	10	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	631	0	-	0	1190	629
Stage 1	-	-	-	-	629	-
Stage 2	-	-	-	-	561	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	961	-	-	-	209	486
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	575	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	961	-	-	-	209	486
Mov Cap-2 Maneuver	-	-	-	-	348	-
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	575	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0	0	15.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	961	-	-	-	358
HCM Lane V/C Ratio	-	-	-	-	0.032
HCM Ctrl Dly (s/v)	0	-	-	-	15.4
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	507	1	3	546	6	7	0	22	8	0	8
Future Vol, veh/h	5	507	1	3	546	6	7	0	22	8	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	20	-	125	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	5	539	1	3	581	6	7	0	23	9	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	587	0	0	540	0	0	1138	1144	540	1137	1138	581
Stage 1	-	-	-	-	-	-	551	551	-	587	587	-
Stage 2	-	-	-	-	-	-	587	594	-	550	551	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	998	-	-	1038	-	-	180	201	546	180	203	517
Stage 1	-	-	-	-	-	-	523	519	-	499	500	-
Stage 2	-	-	-	-	-	-	499	496	-	523	519	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	998	-	-	1038	-	-	176	200	546	171	201	517
Mov Cap-2 Maneuver	-	-	-	-	-	-	176	200	-	171	201	-
Stage 1	-	-	-	-	-	-	520	516	-	498	498	-
Stage 2	-	-	-	-	-	-	489	495	-	498	516	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.08	0.05	15.87	19.98
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	362	998	-	-	1038	-	-	257
HCM Lane V/C Ratio	0.085	0.005	-	-	0.003	-	-	0.066
HCM Ctrl Dly (s/v)	15.9	8.6	-	-	8.5	-	-	20
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	501	16	9	539	17	3	5	6	12	2	16
Future Vol, veh/h	19	501	16	9	539	17	3	5	6	12	2	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	20	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	20	522	17	9	561	18	3	5	6	13	2	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	579	0	0	539	0	0	1151	1168	530	1153	1167	570
Stage 1	-	-	-	-	-	-	570	570	-	589	589	-
Stage 2	-	-	-	-	-	-	581	598	-	564	578	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1005	-	-	1040	-	-	177	195	553	176	195	525
Stage 1	-	-	-	-	-	-	510	509	-	498	499	-
Stage 2	-	-	-	-	-	-	503	494	-	514	504	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1005	-	-	1040	-	-	164	190	553	165	190	525
Mov Cap-2 Maneuver	-	-	-	-	-	-	164	190	-	165	190	-
Stage 1	-	-	-	-	-	-	500	499	-	493	494	-
Stage 2	-	-	-	-	-	-	480	490	-	493	494	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.31	0.14	20.14	20.51
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	252	1005	-	-	1040	-	-	263
HCM Lane V/C Ratio	0.058	0.02	-	-	0.009	-	-	0.119
HCM Ctrl Dly (s/v)	20.1	8.7	-	-	8.5	-	-	20.5
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.4

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	22	6	0	26	6
Future Vol, veh/h	0	22	6	0	26	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	20	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	23	6	0	27	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	23	0	24	12
Stage 1	-	-	-	-	12	-
Stage 2	-	-	-	-	13	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1605	-	997	1075
Stage 1	-	-	-	-	1017	-
Stage 2	-	-	-	-	1015	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1605	-	993	1075
Mov Cap-2 Maneuver	-	-	-	-	916	-
Stage 1	-	-	-	-	1017	-
Stage 2	-	-	-	-	1011	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	7.25	8.96
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	942	-	-	1605	-
HCM Lane V/C Ratio	0.036	-	-	0.004	-
HCM Ctrl Dly (s/v)	9	-	-	7.3	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	331	30	119	454	85	57	166	159	126	86	208
Future Volume (veh/h)	100	331	30	119	454	85	57	166	159	126	86	208
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	110	364	33	131	499	93	63	182	175	138	95	229
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	233	771	69	244	718	133	185	303	270	272	389	347
Arrive On Green	0.13	0.23	0.23	0.13	0.24	0.24	0.10	0.17	0.17	0.15	0.22	0.22
Sat Flow, veh/h	1810	3349	302	1810	3040	564	1810	1805	1610	1810	1805	1610
Grp Volume(v), veh/h	110	195	202	131	295	297	63	182	175	138	95	229
Grp Sat Flow(s),veh/h/ln	1810	1805	1846	1810	1805	1799	1810	1805	1610	1810	1805	1610
Q Serve(g_s), s	3.8	6.3	6.4	4.6	10.1	10.2	2.2	6.3	6.9	4.8	3.0	8.8
Cycle Q Clear(g_c), s	3.8	6.3	6.4	4.6	10.1	10.2	2.2	6.3	6.9	4.8	3.0	8.8
Prop In Lane	1.00		0.16	1.00		0.31	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	233	415	425	244	426	425	185	303	270	272	389	347
V/C Ratio(X)	0.47	0.47	0.47	0.54	0.69	0.70	0.34	0.60	0.65	0.51	0.24	0.66
Avail Cap(c_a), veh/h	413	639	653	413	639	636	680	625	558	413	625	558
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	22.5	22.6	27.4	23.7	23.7	28.3	26.1	26.4	26.5	22.0	24.3
Incr Delay (d2), s/veh	1.5	1.2	1.2	1.8	2.9	3.0	1.1	2.7	3.7	1.5	0.5	3.0
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	1.7	2.7	2.8	2.0	4.4	4.4	1.0	2.8	2.8	2.1	1.2	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.9	23.7	23.7	29.2	26.5	26.7	29.4	28.8	30.0	28.0	22.5	27.4
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		507			723			420			462	
Approach Delay, s/veh		24.8			27.1			29.4			26.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	21.6	11.4	21.1	13.2	22.0	14.7	17.9
Change Period (Y+Rc), s	4.5	6.0	4.5	6.5	4.5	6.0	4.5	6.5
Max Green Setting (Gmax), s	15.5	24.0	25.5	23.5	15.5	24.0	15.5	23.5
Max Q Clear Time (g_c+I1), s	6.6	8.4	4.2	10.8	5.8	12.2	6.8	8.9
Green Ext Time (p_c), s	0.2	2.8	0.1	2.1	0.2	3.8	0.2	2.5

Intersection Summary	
HCM 7th Control Delay, s/veh	26.9
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	631	658	2	5	1
Future Vol, veh/h	2	631	658	2	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2	664	693	2	5	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	695	0	-	0	1362	694
Stage 1	-	-	-	-	694	-
Stage 2	-	-	-	-	668	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	910	-	-	-	165	446
Stage 1	-	-	-	-	500	-
Stage 2	-	-	-	-	513	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	910	-	-	-	164	446
Mov Cap-2 Maneuver	-	-	-	-	306	-
Stage 1	-	-	-	-	498	-
Stage 2	-	-	-	-	513	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.03	0	16.38
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	910	-	-	-	323
HCM Lane V/C Ratio	0.002	-	-	-	0.02
HCM Ctrl Dly (s/v)	9	-	-	-	16.4
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	581	3	0	594	7	4	0	2	3	0	9
Future Vol, veh/h	4	581	3	0	594	7	4	0	2	3	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	20	-	125	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	4	599	3	0	612	7	4	0	2	3	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	620	0	0	602	0	0	1221	1228	601	1220	1223	612
Stage 1	-	-	-	-	-	-	609	609	-	612	612	-
Stage 2	-	-	-	-	-	-	612	620	-	607	610	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	971	-	-	985	-	-	158	180	504	158	181	497
Stage 1	-	-	-	-	-	-	486	489	-	484	487	-
Stage 2	-	-	-	-	-	-	484	483	-	487	488	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	971	-	-	985	-	-	154	179	504	157	180	497
Mov Cap-2 Maneuver	-	-	-	-	-	-	154	179	-	157	180	-
Stage 1	-	-	-	-	-	-	484	487	-	484	487	-
Stage 2	-	-	-	-	-	-	475	483	-	483	486	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.06	0	23.48	16.61
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	201	971	-	-	985	-	-	322
HCM Lane V/C Ratio	0.031	0.004	-	-	-	-	-	0.038
HCM Ctrl Dly (s/v)	23.5	8.7	-	-	0	-	-	16.6
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	557	12	6	575	12	6	1	5	15	1	13
Future Vol, veh/h	13	557	12	6	575	12	6	1	5	15	1	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	20	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	13	574	12	6	593	12	6	1	5	15	1	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	605	0	0	587	0	0	1213	1225	580	1213	1225	599
Stage 1	-	-	-	-	-	-	607	607	-	611	611	-
Stage 2	-	-	-	-	-	-	606	618	-	602	613	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	983	-	-	998	-	-	160	180	518	160	180	505
Stage 1	-	-	-	-	-	-	487	489	-	484	487	-
Stage 2	-	-	-	-	-	-	488	484	-	490	486	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	983	-	-	998	-	-	152	177	518	155	177	505
Mov Cap-2 Maneuver	-	-	-	-	-	-	152	177	-	155	177	-
Stage 1	-	-	-	-	-	-	480	483	-	481	484	-
Stage 2	-	-	-	-	-	-	471	481	-	478	480	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.19	0.09	22.42	23.36
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	219	983	-	-	998	-	-	226
HCM Lane V/C Ratio	0.056	0.014	-	-	0.006	-	-	0.132
HCM Ctrl Dly (s/v)	22.4	8.7	-	-	8.6	-	-	23.4
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.4

Intersection	
Int Delay, s/veh	5.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	54	13	0	56	14
Future Vol, veh/h	0	54	13	0	56	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	-	-	20	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	57	14	0	59	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	57	0	56	28
Stage 1	-	-	-	-	28	-
Stage 2	-	-	-	-	27	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1561	-	957	1052
Stage 1	-	-	-	-	999	-
Stage 2	-	-	-	-	1000	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1561	-	949	1052
Mov Cap-2 Maneuver	-	-	-	-	887	-
Stage 1	-	-	-	-	999	-
Stage 2	-	-	-	-	992	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	7.33	9.27
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	916	-	-	1561	-
HCM Lane V/C Ratio	0.08	-	-	0.009	-
HCM Ctrl Dly (s/v)	9.3	-	-	7.3	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1108	1224	10	20	2
Future Vol, veh/h	0	1108	1224	10	20	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1154	1275	10	21	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1285	0	-	0	2434	1280
Stage 1	-	-	-	-	1280	-
Stage 2	-	-	-	-	1154	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	546	-	-	-	35	204
Stage 1	-	-	-	-	264	-
Stage 2	-	-	-	-	303	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	546	-	-	-	35	204
Mov Cap-2 Maneuver	-	-	-	-	145	-
Stage 1	-	-	-	-	264	-
Stage 2	-	-	-	-	303	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0	0	33.57
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	546	-	-	-	149
HCM Lane V/C Ratio	-	-	-	-	0.154
HCM Ctrl Dly (s/v)	0	-	-	-	33.6
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	0.5

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	1075	2	6	1153	12	14	0	45	16	0	16
Future Vol, veh/h	10	1075	2	6	1153	12	14	0	45	16	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	20	-	125	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	11	1144	2	6	1227	13	15	0	48	17	0	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1239	0	0	1146	0	0	2405	2418	1145	2404	2406	1227
Stage 1	-	-	-	-	-	-	1166	1166	-	1239	1239	-
Stage 2	-	-	-	-	-	-	1239	1252	-	1165	1167	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	569	-	-	617	-	-	23	33	245	23	34	220
Stage 1	-	-	-	-	-	-	238	270	-	217	250	-
Stage 2	-	-	-	-	-	-	217	246	-	239	270	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	569	-	-	617	-	-	21	32	245	18	33	220
Mov Cap-2 Maneuver	-	-	-	-	-	-	104	128	-	98	130	-
Stage 1	-	-	-	-	-	-	234	265	-	214	247	-
Stage 2	-	-	-	-	-	-	198	244	-	189	265	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.11	0.06	33.97	40.2
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	186	569	-	-	617	-	-	136
HCM Lane V/C Ratio	0.338	0.019	-	-	0.01	-	-	0.251
HCM Ctrl Dly (s/v)	34	11.4	-	-	10.9	-	-	40.2
HCM Lane LOS	D	B	-	-	B	-	-	E
HCM 95th %tile Q(veh)	1.4	0.1	-	-	0	-	-	0.9

Intersection	
Int Delay, s/veh	2

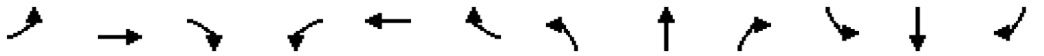
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	1063	33	18	1139	35	6	10	12	24	4	33
Future Vol, veh/h	39	1063	33	18	1139	35	6	10	12	24	4	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	20	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	41	1107	34	19	1186	36	6	10	13	25	4	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1223	0	0	1142	0	0	2432	2466	1124	2436	2465	1205
Stage 1	-	-	-	-	-	-	1206	1206	-	1242	1242	-
Stage 2	-	-	-	-	-	-	1226	1260	-	1194	1223	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	577	-	-	619	-	-	22	31	252	~ 22	31	226
Stage 1	-	-	-	-	-	-	226	259	-	216	249	-
Stage 2	-	-	-	-	-	-	221	244	-	230	254	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	577	-	-	619	-	-	16	28	252	~ 17	28	226
Mov Cap-2 Maneuver	-	-	-	-	-	-	83	111	-	95	117	-
Stage 1	-	-	-	-	-	-	210	241	-	209	241	-
Stage 2	-	-	-	-	-	-	178	236	-	194	236	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.4	0.17	39.38	49.96
HCM LOS			E	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	133	577	-	-	619	-	-	141
HCM Lane V/C Ratio	0.219	0.07	-	-	0.03	-	-	0.451
HCM Ctrl Dly (s/v)	39.4	11.7	-	-	11	-	-	50
HCM Lane LOS	E	B	-	-	B	-	-	E
HCM 95th %tile Q(veh)	0.8	0.2	-	-	0.1	-	-	2

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	596	76	235	700	150	163	483	315	258	271	350
Future Volume (veh/h)	210	596	76	235	700	150	163	483	315	258	271	350
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	214	608	78	240	714	153	166	493	321	263	277	357
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	227	875	112	237	820	176	193	586	380	266	577	515
Arrive On Green	0.13	0.27	0.27	0.13	0.28	0.28	0.11	0.28	0.28	0.15	0.32	0.32
Sat Flow, veh/h	1810	3219	412	1810	2957	633	1810	2098	1362	1810	1805	1610
Grp Volume(v), veh/h	214	340	346	240	436	431	166	424	390	263	277	357
Grp Sat Flow(s),veh/h/ln	1810	1805	1826	1810	1805	1786	1810	1805	1655	1810	1805	1610
Q Serve(g_s), s	14.8	21.3	21.4	16.5	28.9	29.0	11.4	27.8	28.0	18.3	15.5	24.4
Cycle Q Clear(g_c), s	14.8	21.3	21.4	16.5	28.9	29.0	11.4	27.8	28.0	18.3	15.5	24.4
Prop In Lane	1.00		0.23	1.00		0.35	1.00		0.82	1.00		1.00
Lane Grp Cap(c), veh/h	227	491	496	237	501	495	193	504	462	266	577	515
V/C Ratio(X)	0.94	0.69	0.70	1.01	0.87	0.87	0.86	0.84	0.84	0.99	0.48	0.69
Avail Cap(c_a), veh/h	227	538	544	237	548	542	217	588	539	266	637	568
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.6	41.1	41.1	54.7	43.3	43.3	55.3	42.7	42.8	53.6	34.4	37.4
Incr Delay (d2), s/veh	43.7	4.0	4.0	61.4	13.9	14.1	26.0	10.2	11.2	51.9	0.9	3.7
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	9.5	10.0	10.2	11.6	14.8	14.7	6.6	13.8	12.8	12.1	7.0	10.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	98.3	45.1	45.1	116.1	57.2	57.4	81.3	52.9	54.0	105.4	35.3	41.1
LnGrp LOS	F	D	D	F	E	E	F	D	D	F	D	D
Approach Vol, veh/h		900			1107			980			897	
Approach Delay, s/veh		57.8			70.1			58.2			58.2	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	40.2	17.9	46.7	20.3	40.9	23.0	41.6
Change Period (Y+Rc), s	4.5	6.0	4.5	6.5	4.5	6.0	4.5	6.5
Max Green Setting (Gmax), s	16.5	37.5	15.1	44.4	15.8	38.2	18.5	41.0
Max Q Clear Time (g_c+I1), s	18.5	23.4	13.4	26.4	16.8	31.0	20.3	30.0
Green Ext Time (p_c), s	0.0	4.9	0.1	5.4	0.0	3.9	0.0	5.2

Intersection Summary	
HCM 7th Control Delay, s/veh	61.5
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	1258	1302	4	10	2
Future Vol, veh/h	4	1258	1302	4	10	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	4	1324	1371	4	11	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1375	0	-	0	2705	1373
Stage 1	-	-	-	-	1373	-
Stage 2	-	-	-	-	1333	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	505	-	-	-	24	180
Stage 1	-	-	-	-	238	-
Stage 2	-	-	-	-	249	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	505	-	-	-	24	180
Mov Cap-2 Maneuver	-	-	-	-	121	-
Stage 1	-	-	-	-	236	-
Stage 2	-	-	-	-	249	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.04	0	36.13
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	505	-	-	-	128
HCM Lane V/C Ratio	0.008	-	-	-	0.099
HCM Ctrl Dly (s/v)	12.2	-	-	-	36.1
HCM Lane LOS	B	-	-	-	E
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	1237	6	0	1258	14	8	0	4	6	0	19
Future Vol, veh/h	8	1237	6	0	1258	14	8	0	4	6	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	20	-	125	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	8	1275	6	0	1297	14	8	0	4	6	0	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1311	0	0	1281	0	0	2592	2606	1278	2589	2595	1297
Stage 1	-	-	-	-	-	-	1295	1295	-	1297	1297	-
Stage 2	-	-	-	-	-	-	1297	1311	-	1292	1298	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	534	-	-	548	-	-	17	25	205	17	25	200
Stage 1	-	-	-	-	-	-	202	235	-	201	234	-
Stage 2	-	-	-	-	-	-	201	231	-	202	234	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	534	-	-	548	-	-	15	25	205	16	25	200
Mov Cap-2 Maneuver	-	-	-	-	-	-	91	115	-	98	117	-
Stage 1	-	-	-	-	-	-	198	231	-	201	234	-
Stage 2	-	-	-	-	-	-	181	231	-	195	230	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.08	0	41.12	31.79
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	112	534	-	-	548	-	-	160
HCM Lane V/C Ratio	0.111	0.015	-	-	-	-	-	0.161
HCM Ctrl Dly (s/v)	41.1	11.8	-	-	0	-	-	31.8
HCM Lane LOS	E	B	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.6

Intersection	
Int Delay, s/veh	2

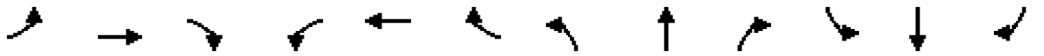
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	1188	25	12	1219	25	12	2	10	31	2	27
Future Vol, veh/h	27	1188	25	12	1219	25	12	2	10	31	2	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	20	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	28	1225	26	12	1257	26	12	2	10	32	2	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1282	0	0	1251	0	0	2576	2601	1238	2576	2601	1270
Stage 1	-	-	-	-	-	-	1293	1293	-	1294	1294	-
Stage 2	-	-	-	-	-	-	1282	1307	-	1281	1306	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	548	-	-	563	-	-	17	25	216	~ 17	25	207
Stage 1	-	-	-	-	-	-	202	235	-	202	235	-
Stage 2	-	-	-	-	-	-	205	232	-	205	232	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	548	-	-	563	-	-	14	23	216	~ 15	23	207
Mov Cap-2 Maneuver	-	-	-	-	-	-	81	107	-	91	110	-
Stage 1	-	-	-	-	-	-	192	223	-	197	230	-
Stage 2	-	-	-	-	-	-	172	227	-	184	220	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.26	0.11	45.64	61.31
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	113	548	-	-	563	-	-	122
HCM Lane V/C Ratio	0.219	0.051	-	-	0.022	-	-	0.506
HCM Ctrl Dly (s/v)	45.6	11.9	-	-	11.5	-	-	61.3
HCM Lane LOS	E	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.8	0.2	-	-	0.1	-	-	2.3

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	645	85	219	897	186	148	394	313	269	218	463
Future Volume (veh/h)	241	645	85	219	897	186	148	394	313	269	218	463
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	265	709	93	241	986	204	163	433	344	296	240	509
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	224	935	123	265	934	193	188	506	400	265	553	494
Arrive On Green	0.12	0.29	0.29	0.15	0.31	0.31	0.10	0.26	0.26	0.15	0.31	0.31
Sat Flow, veh/h	1810	3209	421	1810	2979	615	1810	1917	1515	1810	1805	1610
Grp Volume(v), veh/h	265	399	403	241	597	593	163	407	370	296	240	509
Grp Sat Flow(s),veh/h/ln	1810	1805	1824	1810	1805	1789	1810	1805	1627	1810	1805	1610
Q Serve(g_s), s	17.5	28.4	28.4	18.5	44.3	44.3	12.5	30.3	30.6	20.7	15.0	43.3
Cycle Q Clear(g_c), s	17.5	28.4	28.4	18.5	44.3	44.3	12.5	30.3	30.6	20.7	15.0	43.3
Prop In Lane	1.00		0.23	1.00		0.34	1.00		0.93	1.00		1.00
Lane Grp Cap(c), veh/h	224	526	531	265	566	561	188	476	429	265	553	494
V/C Ratio(X)	1.18	0.76	0.76	0.91	1.05	1.06	0.87	0.86	0.86	1.12	0.43	1.03
Avail Cap(c_a), veh/h	224	526	531	286	566	561	236	524	472	265	553	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.9	45.5	45.5	59.4	48.5	48.5	62.4	49.4	49.5	60.3	39.2	49.0
Incr Delay (d2), s/veh	118.1	6.7	6.7	30.0	52.9	54.0	23.4	13.0	14.7	90.1	0.8	48.8
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	15.4	13.7	13.9	10.7	28.1	28.1	7.0	15.4	14.2	16.1	6.9	24.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	180.0	52.3	52.2	89.4	101.4	102.5	85.8	62.4	64.2	150.4	39.9	97.7
LnGrp LOS	F	D	D	F	F	F	F	E	E	F	D	F
Approach Vol, veh/h		1067			1431			940			1045	
Approach Delay, s/veh		84.0			99.8			67.2			99.4	
Approach LOS		F			F			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.2	47.1	19.2	49.8	22.0	50.3	25.2	43.8
Change Period (Y+Rc), s	4.5	6.0	4.5	6.5	4.5	6.0	4.5	6.5
Max Green Setting (Gmax), s	22.3	39.5	18.4	43.3	17.5	44.3	20.7	41.0
Max Q Clear Time (g_c+I1), s	20.5	30.4	14.5	45.3	19.5	46.3	22.7	32.6
Green Ext Time (p_c), s	0.1	4.3	0.1	0.0	0.0	0.0	0.0	4.1

Intersection Summary	
HCM 7th Control Delay, s/veh	89.1
HCM 7th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1130	1250	10	20	2
Future Vol, veh/h	0	1130	1250	10	20	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1177	1302	10	21	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1313	0	-	0	2484	1307
Stage 1	-	-	-	-	1307	-
Stage 2	-	-	-	-	1177	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	534	-	-	-	33	197
Stage 1	-	-	-	-	256	-
Stage 2	-	-	-	-	295	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	534	-	-	-	33	197
Mov Cap-2 Maneuver	-	-	-	-	140	-
Stage 1	-	-	-	-	256	-
Stage 2	-	-	-	-	295	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0	0	34.71
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	534	-	-	-	144
HCM Lane V/C Ratio	-	-	-	-	0.159
HCM Ctrl Dly (s/v)	0	-	-	-	34.7
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	0.5

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	1081	2	6	1159	12	14	0	45	16	0	16
Future Vol, veh/h	10	1081	2	6	1159	12	14	0	45	16	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	20	-	125	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	11	1150	2	6	1233	13	15	0	48	17	0	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1246	0	0	1152	0	0	2418	2431	1151	2417	2419	1233
Stage 1	-	-	-	-	-	-	1172	1172	-	1246	1246	-
Stage 2	-	-	-	-	-	-	1246	1259	-	1171	1173	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	566	-	-	614	-	-	23	32	243	23	33	218
Stage 1	-	-	-	-	-	-	236	269	-	215	248	-
Stage 2	-	-	-	-	-	-	215	244	-	237	268	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	566	-	-	614	-	-	20	31	243	18	32	218
Mov Cap-2 Maneuver	-	-	-	-	-	-	103	127	-	97	129	-
Stage 1	-	-	-	-	-	-	232	263	-	213	245	-
Stage 2	-	-	-	-	-	-	196	242	-	187	263	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.11	0.06	34.37	40.67
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	184	566	-	-	614	-	-	134
HCM Lane V/C Ratio	0.341	0.019	-	-	0.01	-	-	0.253
HCM Ctrl Dly (s/v)	34.4	11.5	-	-	10.9	-	-	40.7
HCM Lane LOS	D	B	-	-	B	-	-	E
HCM 95th %tile Q(veh)	1.4	0.1	-	-	0	-	-	0.9

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	1069	33	18	1145	35	6	10	12	24	4	33
Future Vol, veh/h	39	1069	33	18	1145	35	6	10	12	24	4	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	20	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	41	1114	34	19	1193	36	6	10	13	25	4	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1229	0	0	1148	0	0	2444	2479	1131	2448	2478	1211
Stage 1	-	-	-	-	-	-	1212	1212	-	1248	1248	-
Stage 2	-	-	-	-	-	-	1232	1267	-	1200	1229	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	574	-	-	616	-	-	22	30	250	~ 22	30	224
Stage 1	-	-	-	-	-	-	225	257	-	214	247	-
Stage 2	-	-	-	-	-	-	219	242	-	228	252	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	574	-	-	616	-	-	16	27	250	~ 17	27	224
Mov Cap-2 Maneuver	-	-	-	-	-	-	82	110	-	94	116	-
Stage 1	-	-	-	-	-	-	209	239	-	208	240	-
Stage 2	-	-	-	-	-	-	176	235	-	193	234	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.4	0.17	39.82	50.69
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	132	574	-	-	616	-	-	140
HCM Lane V/C Ratio	0.221	0.071	-	-	0.03	-	-	0.455
HCM Ctrl Dly (s/v)	39.8	11.7	-	-	11	-	-	50.7
HCM Lane LOS	E	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.8	0.2	-	-	0.1	-	-	2.1

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

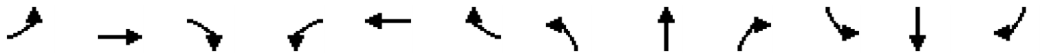
Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	55	22	6	53	26	6
Future Vol, veh/h	55	22	6	53	26	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	20	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	58	23	6	56	27	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	81	0	138	69
Stage 1	-	-	-	-	69	-
Stage 2	-	-	-	-	68	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1529	-	860	999
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	959	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1529	-	857	999
Mov Cap-2 Maneuver	-	-	-	-	828	-
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	955	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.75	9.38
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	855	-	-	1529	-
HCM Lane V/C Ratio	0.039	-	-	0.004	-
HCM Ctrl Dly (s/v)	9.4	-	-	7.4	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	607	76	245	713	153	163	483	323	261	271	350
Future Volume (veh/h)	210	607	76	245	713	153	163	483	323	261	271	350
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	214	619	78	250	728	156	166	493	330	266	277	357
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	226	875	110	243	830	178	192	582	389	260	575	513
Arrive On Green	0.12	0.27	0.27	0.13	0.28	0.28	0.11	0.28	0.28	0.14	0.32	0.32
Sat Flow, veh/h	1810	3226	406	1810	2957	634	1810	2072	1383	1810	1805	1610
Grp Volume(v), veh/h	214	346	351	250	444	440	166	429	394	266	277	357
Grp Sat Flow(s),veh/h/ln	1810	1805	1827	1810	1805	1786	1810	1805	1651	1810	1805	1610
Q Serve(g_s), s	14.9	21.9	22.0	17.0	29.7	29.7	11.4	28.4	28.5	18.2	15.6	24.6
Cycle Q Clear(g_c), s	14.9	21.9	22.0	17.0	29.7	29.7	11.4	28.4	28.5	18.2	15.6	24.6
Prop In Lane	1.00		0.22	1.00		0.35	1.00		0.84	1.00		1.00
Lane Grp Cap(c), veh/h	226	490	496	243	507	501	192	507	464	260	575	513
V/C Ratio(X)	0.95	0.71	0.71	1.03	0.88	0.88	0.86	0.85	0.85	1.02	0.48	0.70
Avail Cap(c_a), veh/h	226	532	538	243	549	543	216	585	535	260	629	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	41.6	41.6	54.8	43.4	43.4	55.7	43.0	43.0	54.2	34.7	37.8
Incr Delay (d2), s/veh	45.3	4.4	4.4	65.4	14.7	14.9	26.3	10.7	11.8	61.7	0.9	3.9
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	9.6	10.3	10.5	12.2	15.3	15.1	6.6	14.1	13.1	12.7	7.0	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	100.3	46.0	46.0	120.2	58.1	58.3	82.0	53.7	54.8	115.9	35.6	41.7
LnGrp LOS	F	D	D	F	E	E	F	D	D	F	D	D
Approach Vol, veh/h		911			1134			989			900	
Approach Delay, s/veh		58.8			71.9			58.9			61.8	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.5	40.3	18.0	46.8	20.3	41.5	22.7	42.1
Change Period (Y+Rc), s	4.5	6.0	4.5	6.5	4.5	6.0	4.5	6.5
Max Green Setting (Gmax), s	17.0	37.3	15.1	44.1	15.8	38.5	18.2	41.0
Max Q Clear Time (g_c+I1), s	19.0	24.0	13.4	26.6	16.9	31.7	20.2	30.5
Green Ext Time (p_c), s	0.0	4.9	0.1	5.3	0.0	3.8	0.0	5.0

Intersection Summary	
HCM 7th Control Delay, s/veh	63.3
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	1312	1358	4	10	2
Future Vol, veh/h	4	1312	1358	4	10	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	20	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	4	1381	1429	4	11	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1434	0	-	0	2821	1432
Stage 1	-	-	-	-	1432	-
Stage 2	-	-	-	-	1389	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	480	-	-	-	20	166
Stage 1	-	-	-	-	223	-
Stage 2	-	-	-	-	233	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	480	-	-	-	20	166
Mov Cap-2 Maneuver	-	-	-	-	113	-
Stage 1	-	-	-	-	221	-
Stage 2	-	-	-	-	233	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.04	0	38.83
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	480	-	-	-	119
HCM Lane V/C Ratio	0.009	-	-	-	0.106
HCM Ctrl Dly (s/v)	12.6	-	-	-	38.8
HCM Lane LOS	B	-	-	-	E
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	1251	6	0	1271	14	8	0	4	6	0	19
Future Vol, veh/h	8	1251	6	0	1271	14	8	0	4	6	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	20	-	125	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	8	1290	6	0	1310	14	8	0	4	6	0	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1325	0	0	1296	0	0	2620	2634	1293	2616	2623	1310
Stage 1	-	-	-	-	-	-	1309	1309	-	1310	1310	-
Stage 2	-	-	-	-	-	-	1310	1325	-	1306	1312	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	528	-	-	541	-	-	16	24	201	16	24	196
Stage 1	-	-	-	-	-	-	198	231	-	198	231	-
Stage 2	-	-	-	-	-	-	198	227	-	199	230	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	528	-	-	541	-	-	14	24	201	16	24	196
Mov Cap-2 Maneuver	-	-	-	-	-	-	89	113	-	96	115	-
Stage 1	-	-	-	-	-	-	195	227	-	198	231	-
Stage 2	-	-	-	-	-	-	178	227	-	191	227	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.08	0	42	32.41
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	110	528	-	-	541	-	-	157
HCM Lane V/C Ratio	0.113	0.016	-	-	-	-	-	0.164
HCM Ctrl Dly (s/v)	42	11.9	-	-	0	-	-	32.4
HCM Lane LOS	E	B	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.6

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	1202	25	12	1232	25	12	2	10	31	2	27
Future Vol, veh/h	27	1202	25	12	1232	25	12	2	10	31	2	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	20	-	-	20	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	28	1239	26	12	1270	26	12	2	10	32	2	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1296	0	0	1265	0	0	2604	2628	1252	2604	2628	1283
Stage 1	-	-	-	-	-	-	1308	1308	-	1308	1308	-
Stage 2	-	-	-	-	-	-	1296	1321	-	1296	1321	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	541	-	-	556	-	-	17	24	212	~ 17	24	204
Stage 1	-	-	-	-	-	-	198	231	-	198	231	-
Stage 2	-	-	-	-	-	-	201	228	-	201	228	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	541	-	-	556	-	-	13	22	212	~ 14	22	204
Mov Cap-2 Maneuver	-	-	-	-	-	-	79	105	-	89	108	-
Stage 1	-	-	-	-	-	-	188	220	-	194	226	-
Stage 2	-	-	-	-	-	-	168	223	-	180	216	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.26	0.11	46.85	63.47
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	110	541	-	-	556	-	-	120
HCM Lane V/C Ratio	0.224	0.051	-	-	0.022	-	-	0.517
HCM Ctrl Dly (s/v)	46.9	12	-	-	11.6	-	-	63.5
HCM Lane LOS	E	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.8	0.2	-	-	0.1	-	-	2.4

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

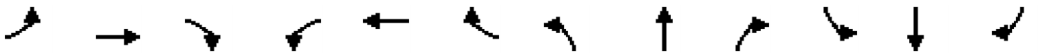
Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	72	54	13	64	56	14
Future Vol, veh/h	72	54	13	64	56	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	-	-	20	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	76	57	14	67	59	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	133	0	199	104
Stage 1	-	-	-	-	104	-
Stage 2	-	-	-	-	95	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1465	-	794	956
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	934	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1465	-	787	956
Mov Cap-2 Maneuver	-	-	-	-	781	-
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	925	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.26	9.88
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	811	-	-	1465	-
HCM Lane V/C Ratio	0.091	-	-	0.009	-
HCM Ctrl Dly (s/v)	9.9	-	-	7.5	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	672	85	240	925	193	148	394	333	276	218	463
Future Volume (veh/h)	241	672	85	240	925	193	148	394	333	276	218	463
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	265	738	93	264	1016	212	163	433	366	303	240	509
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	224	888	112	287	923	192	188	493	414	270	560	500
Arrive On Green	0.12	0.28	0.28	0.16	0.31	0.31	0.10	0.26	0.26	0.15	0.31	0.31
Sat Flow, veh/h	1810	3226	406	1810	2974	619	1810	1859	1564	1810	1805	1610
Grp Volume(v), veh/h	265	413	418	264	616	612	163	420	379	303	240	509
Grp Sat Flow(s),veh/h/ln	1810	1805	1827	1810	1805	1789	1810	1805	1618	1810	1805	1610
Q Serve(g_s), s	17.5	30.4	30.4	20.3	43.9	43.9	12.6	31.6	31.8	21.1	15.0	43.9
Cycle Q Clear(g_c), s	17.5	30.4	30.4	20.3	43.9	43.9	12.6	31.6	31.8	21.1	15.0	43.9
Prop In Lane	1.00		0.22	1.00		0.35	1.00		0.97	1.00		1.00
Lane Grp Cap(c), veh/h	224	497	503	287	560	555	188	478	429	270	560	500
V/C Ratio(X)	1.18	0.83	0.83	0.92	1.10	1.10	0.87	0.88	0.88	1.12	0.43	1.02
Avail Cap(c_a), veh/h	224	497	503	301	560	555	235	523	469	270	560	500
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.0	48.2	48.2	58.6	48.8	48.8	62.5	49.8	49.9	60.2	38.8	48.8
Incr Delay (d2), s/veh	118.9	11.8	11.7	31.3	68.0	69.7	23.5	15.5	17.5	91.9	0.7	45.0
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	15.4	15.3	15.5	11.8	30.2	30.2	7.0	16.3	14.9	16.6	6.8	23.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	180.9	59.9	59.9	89.9	116.8	118.5	86.0	65.3	67.3	152.1	39.5	93.8
LnGrp LOS	F	E	E	F	F	F	F	E	E	F	D	F
Approach Vol, veh/h		1096			1492			962			1052	
Approach Delay, s/veh		89.2			112.8			69.6			98.2	
Approach LOS		F			F			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.9	45.0	19.2	50.4	22.0	49.9	25.6	44.0
Change Period (Y+Rc), s	4.5	6.0	4.5	6.5	4.5	6.0	4.5	6.5
Max Green Setting (Gmax), s	23.5	37.9	18.4	43.7	17.5	43.9	21.1	41.0
Max Q Clear Time (g_c+I1), s	22.3	32.4	14.6	45.9	19.5	45.9	23.1	33.8
Green Ext Time (p_c), s	0.1	3.0	0.1	0.0	0.0	0.0	0.0	3.7

Intersection Summary	
HCM 7th Control Delay, s/veh	94.8
HCM 7th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

APPENDIX D

Cumulative Projects

MapNo	RECORD ID	ParcelNumber	ADDR FULL LINE#	Zoning	RECORD STATUS	RECORD STATUS DATE	Building Sq. Ft.
1	PRAA-2022-00037	306622128	9428 SHEEP CREEK RD, PHELAN, CA 92371	PH/CG	Approved	06/13/2023	13,440
2	PROJ-2020-00078	306633104	9551 MONTE VISTA RD, PHELAN, CA 92371	PH/CS	Approved	05/14/2021	5,500
3	PROJ-2022-00091	306612164	9775 SHEEP CREEK RD, PHELAN, CA 92371	PH/CG	Approved	05/18/2023	2,224
4	PROJ-2022-00184	306625118		PH/CG	Decision Pending	03/26/2025	
5	PROJ-2024-00035	306622101	3919 PHELAN RD, PHELAN, CA 92371	PH/CG	In Review	12/23/2024	7,225
6	PROJ-2024-00106	303701114	3444 HWY 138, PHELAN, CA 92371	PH/RL	In Review	01/27/2025	5,000
7	PRAA-2024-00033	306614103	10484 JOHNSON RD, PHELAN, CA 92371	PH/RL	In Review	12/02/2024	2,846
8	PRAA-2020-00035	306653101	9539 JOHNSON RD, PHELAN, CA 92371	PH/CG	Approved	06/06/2022	4,800

Scale: 1:36,000

Projects Sites within 2 Miles

PROJ-2024-00098
Project 2 Mile Buffer
Subject Parcels

N

0 0.5 1 2 Miles

TABLE 1

PROJECT TRIP GENERATION RATES[1]

Land Use	ITE Code	Quantity[2]	Peak Hour Trip Rates						Daily
			AM			PM			
			IN	OUT	Total	IN	OUT	Total	
Coffee/Donut Shop with Drive-Through Window	937	2.224 TSF	43.80	42.08	85.88	19.50	19.49	38.99	533.57

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 11th Edition (2021).

[2] TSF = Thousand Square Feet

TABLE 2

PROJECT TRIP GENERATION SUMMARY

Land Use	ITE Code	Quantity[1]	Peak Hour						Daily
			AM			PM			
			In	Out	Total	In	Out	Total	
Coffee/Donut Shop with Drive-Through Window	937	2.224 TSF	97	94	191	43	43	86	1,187
Pass-By Reduction (50%)			*-49*	*-47*	*-96*	*-22*	*-22*	*-44*	*-594*
TOTAL			48	47	95	21	21	42	593

[1] TSF = Thousand Square Feet

As Saturday peak hour was not provided, Kittelson utilized the PM peak hour trip generations for picnic table at park and skate park. The remaining uses were calculated specifically for Saturday.

Table 2
Project Trip Generation

Trip Generation Rates									
Land Use	Source[1]	Land Use Variable[2]	AM Peak Hour			PM Peak Hour			Daily Rate
			% In	% Out	Rate	% In	% Out	Rate	
Public Park	ITE 411	AC	59%	41%	0.02	55%	45%	0.11	0.78
Soccer Complex	ITE 488	FLD	61%	39%	0.99	66%	34%	16.43	71.33
Tennis Courts	ITE 490 [a]	CRT	50%	50%	1.52	50%	50%	4.21	30.32
Picnic Table at Park	ITE 411 [b]	PT	50%	50%	0.23	50%	50%	0.47	5.87
Skate Park	TIA [c]	TSF	53%	47%	0.30	46%	54%	1.36	9.10
Water Park	ITE 482 [d]	TSF	70%	30%	0.73	21%	79%	2.56	20.75

Trips Generated									
Land Use	Source	Quantity		AM Peak Hour			PM Peak Hour			Daily
				In	Out	Total	In	Out	Total	
Public Park	ITE 411	14.27	AC	0	0	0	1	1	2	11
Soccer Complex	ITE 488	3	FLD	2	1	3	33	16	49	214
Tennis Courts	ITE 490	1	CRT	1	1	2	2	2	4	30
Picnic Table at Park	ITE 411	30	PT	4	3	7	7	7	14	176
Skate Park	TIA	26.000	TSF	4	4	8	16	19	35	237
Aquatic Center [optional] & Splash Pad	ITE 482	15.730	TSF	8	3	11	8	32	40	326
NET NEW TRIPS GENERATED				**+ 19**	**+ 12**	**+ 31**	**+ 67**	**+ 77**	**+ 144**	**+ 994**

Notes:

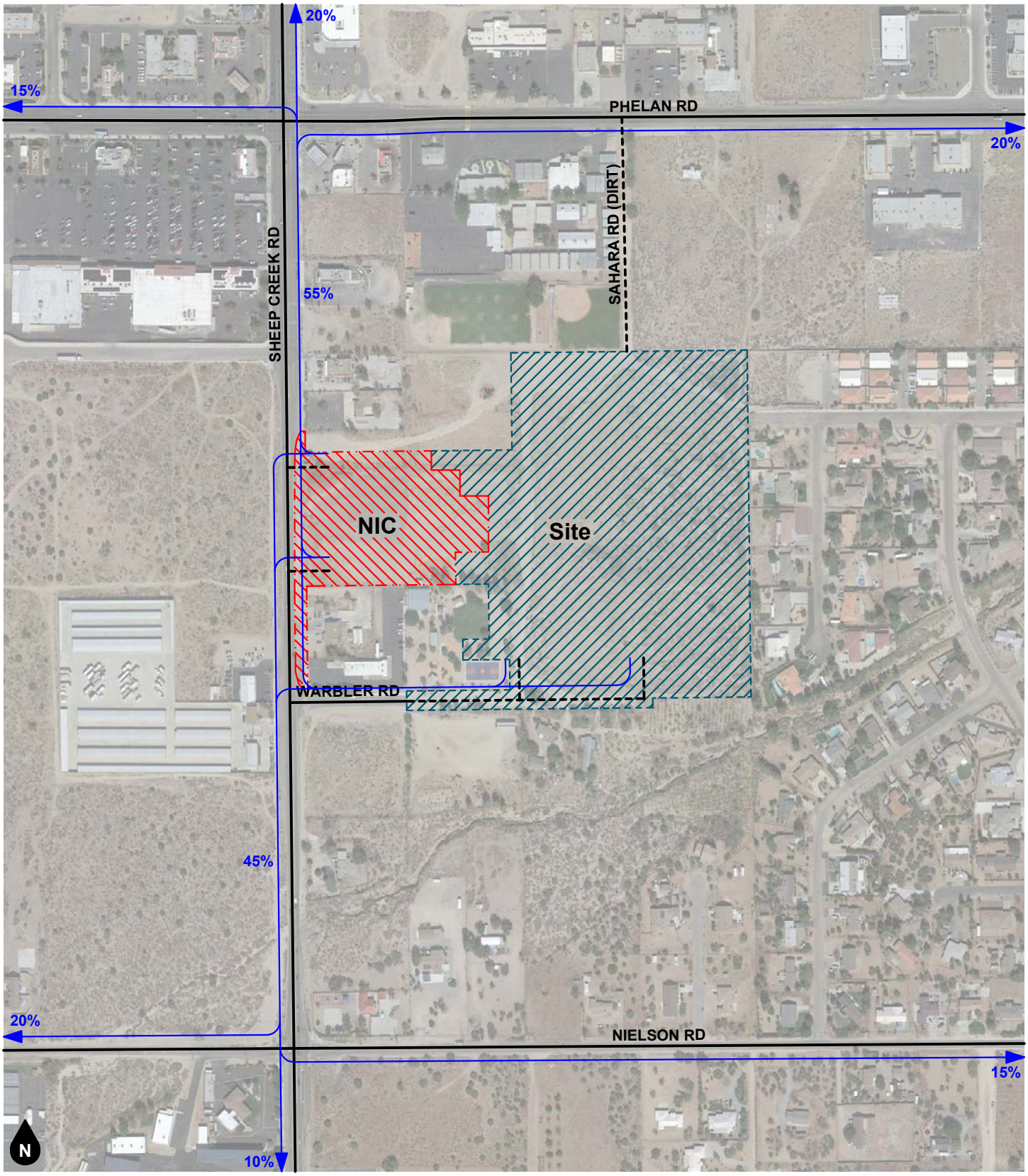
(1) ITE = Institute of Transportation Engineers *Trip Generation Manual* (11th Edition, 2021); ### = Land Use Code. All rates based on General Urban / Suburban rates, unless otherwise noted.

[a] = San Diego Association of Governments (SANDAG) *Vehicular Traffic Generation Rates* (April 2002). Where the daily or peak hour rate is not provided by ITE, the SANDAG percentage of peak hour to daily rate is used to calculate the missing data. Where the peak hour distribution is not provided by ITE, the SANDAG peak hour distribution is used. AM/Daily rate 5%.

[b] = AM and PM peak hourly rate derived from SANDAG *Brief Guide of Vehicular Traffic Generation Rate*s AM/Daily percentage (4%) and PM/Daily percentage (8%) using ITE daily total. The park daily total rate per picnic table is from ITE *Trip Generation Manual*, 9th Edition due to absence of picnic table data in the 11th Edition. Saturday midday and Saturday weekend rate derived from trip generation ratio of PM rate per picnic site to PM rate per acre.

[d] = AM peak hour and Daily rate derived from ITE "Specialized Land Use Data" shown on the land use description page 482 of ITE *Trip Generation Manual* using trip generation PM hourly rate per thousand square feet and trip generation rates based on parking spaces.

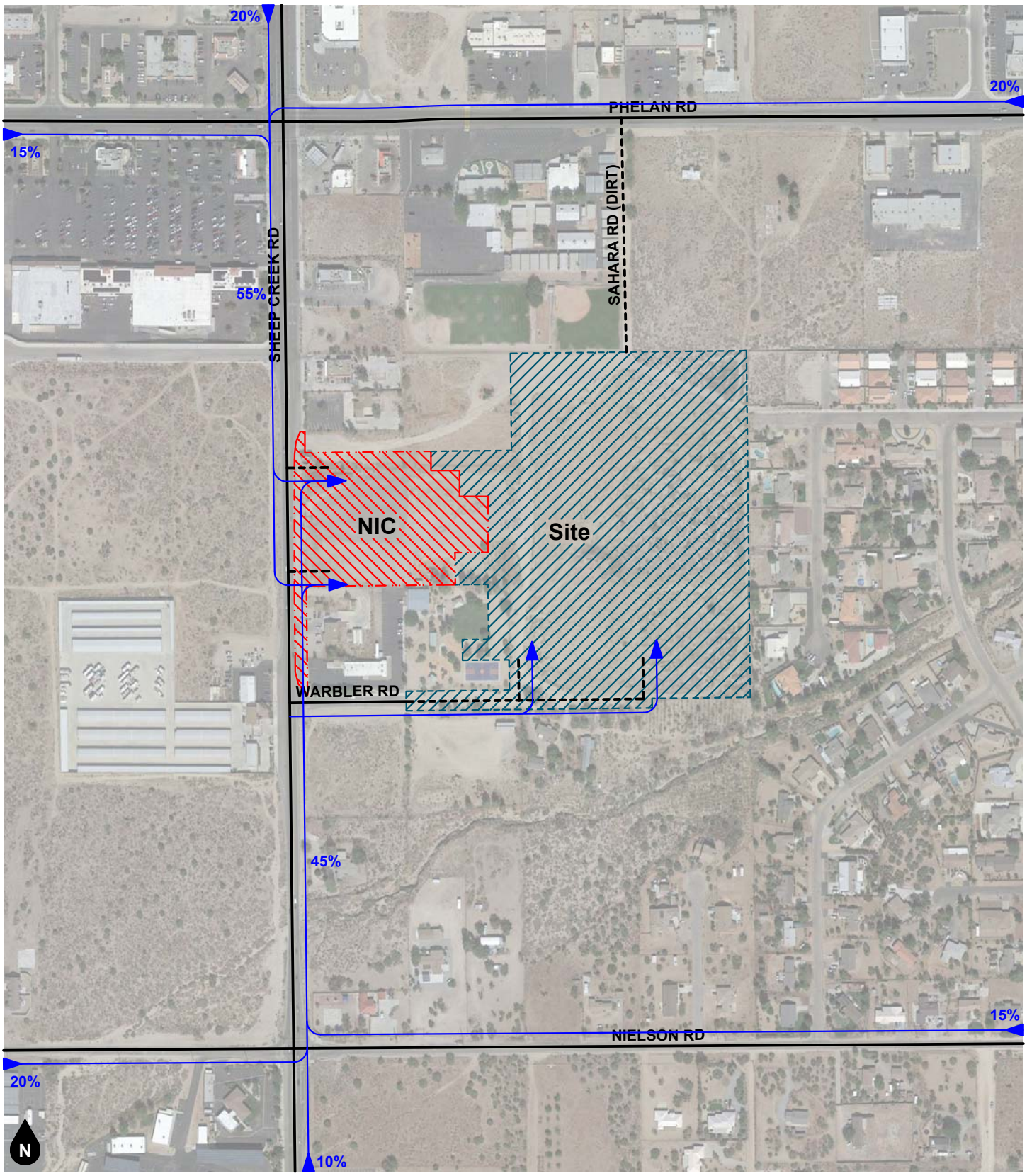
(2) AC = Acre; TSF = Thousand Square Feet; FLD = Sport Field; CRT = Tennis Court; PT = Picnic Table.



Legend

10% Percent From Project

Figure 13
Project Trip Distribution (Outbound)



Legend

10% Percent To Project

Figure 14
Project Trip Distribution (Inbound)

SCOPE FOR TRAFFIC STUDY

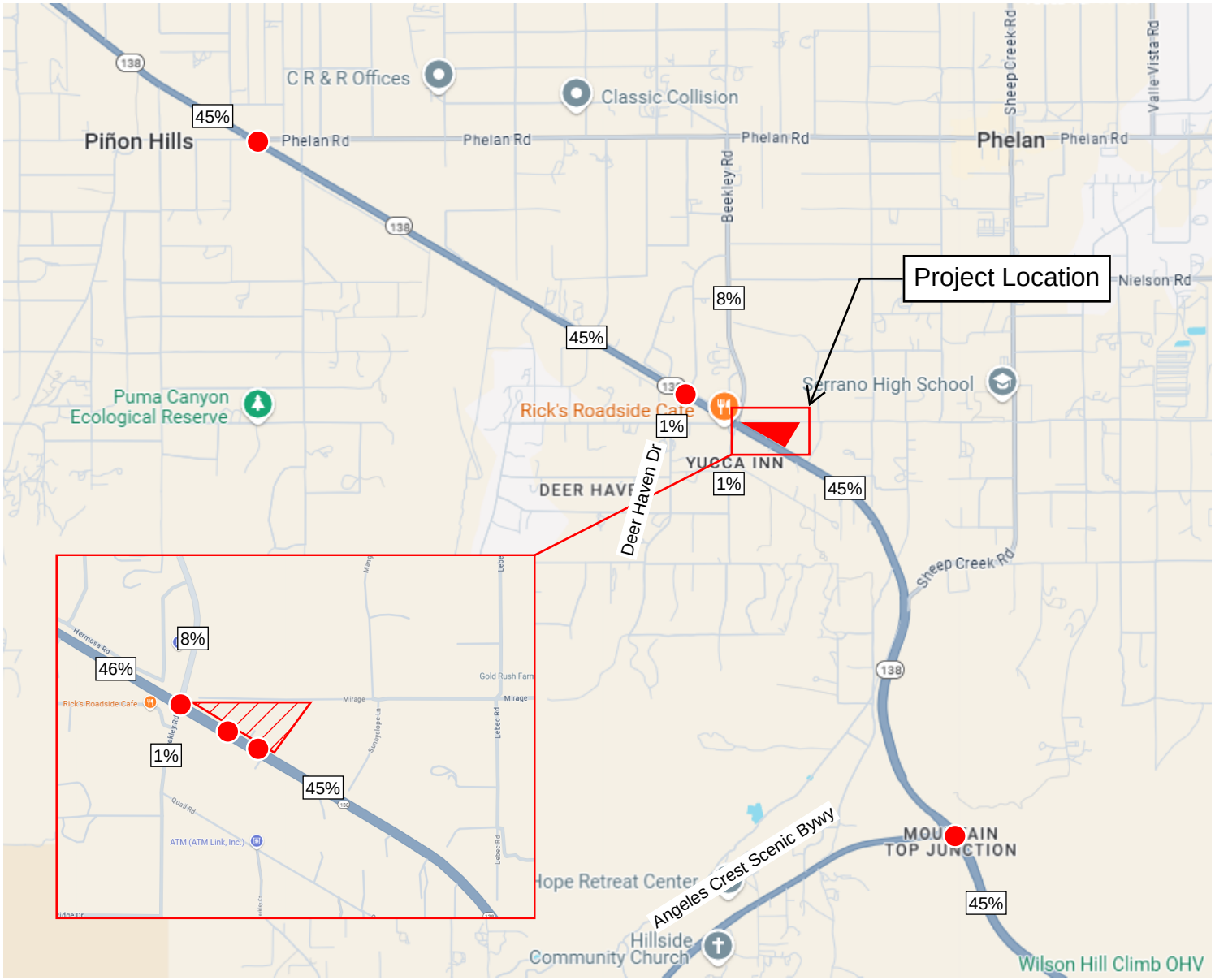
Project Name:	3444 Highway 138 and Beekley Road Gas Station

5. Trip Generation

Trip Generation Rate(s) Source: ITE Trip Generation		**I – Institute of Transportation Engineers; S – San Diego Traffic Generators; C – County; O – Other:**												
						Edition:		11th						
Land Use Code	**Land Use**	**Rate Based on**	**QTY**	**AVTE Units***	**Daily Trips**	Weekday A.M. Peak			Weekday P.M. Peak			Weekend peak hour		
						In	Out	Total	In	Out	Total	In	Out	Total
945	Convenience Store/Gas Station – GFA (4-5.5k)	**I**	16	Fueling Position	4,114	216	216	432	182	182	364	N/A	N/A	N/A
950	Truck Stop	**I**	12	Fueling Position	2,688	82	86	168	98	87	185	N/A	N/A	N/A
Total Proposed Project Trips			**-**	**-**	**6,802**	**298**	**302**	**600**	**280**	**269**	**549**	**N/A**	**N/A**	**N/A**

* - Average Vehicle Trip Ends.
For ITE Land Uses provide number and name of Land Use. e.g. LU 814 - Variety Store. Units include ksf, employee, GLA, etc.

ATTACHMENT B - HWY 138/BEEKLEY ROAD - TRIP DISTRIBUTION AND STUDY AREA



Legend

● = Study Intersection

x% = Trip Distribution Percentage

APPENDIX E

Signal Warrant Worksheets

Major Street:	**Phelan Road**	Lanes:	**1**	Major Approach Speed:	**45**
Minor Street:	**Riggins Rd**	Lanes:	**1**	Minor Approach Speed:	**25**

MUTCD Electronic Reference to Chapter 4: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf

Volume Level Criteria

1. Is the posted speed or 85th-percentile of major street > 40 mph?		☑ Yes ☐ No
2. Is the intersection in a built-up area of an isolated community with a population < 10,000?		☐ Yes ☑ No
"70%" volume level **may** be used if Question 1 **or** 2 above is answered "Yes"	☑ MAY	☑ 70% ☑ 100%

WARRANT 3 - PEAK HOUR

*If all three criteria are fulfilled **or** the plotted point lies above the appropriate line, then the warrant is satisfied.*

Applicable: ☑ Yes ☐ No

Satisfied: ☐ Yes ☑ No

Unusual condition justifying use of warrant:

Industrial Complex

-

Record hour when criteria are fulfilled and the corresponding delay or volume in boxes provided.

Peak Hour 100% Volume		
Time	Major Vol.	Minor Vol.
4:15PM - 5:15PM	2390	22

Peak Hour 70% Volume		
Time	Major Vol.	Minor Vol.
4:15PM - 5:15PM	2390	22

Criteria

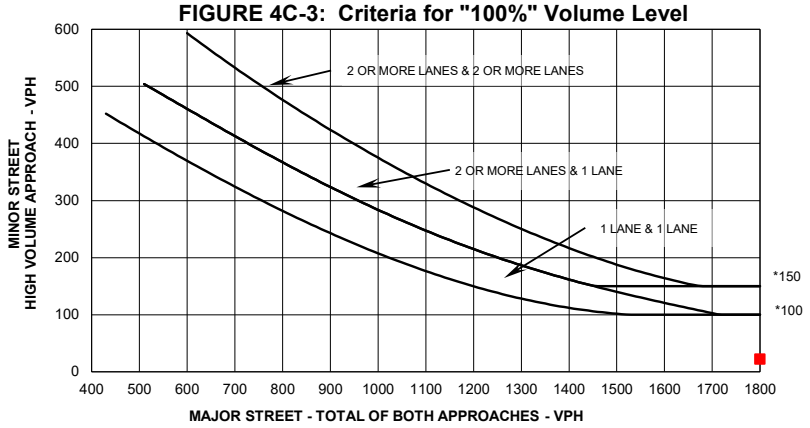
1. Delay on Minor Approach *(vehicle-hours)		
Approach Lanes	1	2
Delay Criteria*	4.0	5.0
Delay*	34.7	
Fulfilled?:	☑ Yes ☐ No	

2. Volume on Minor Approach One-Direction *(vehicles per hour)		
Approach Lanes	1	2
Volume Criteria*	100	150
Volume*	22	
Fulfilled?:	☐ Yes ☑ No	

3. Total Intersection Entering Volume *(vehicles per hour)		
No. of Approaches	3	4
Volume Criteria*	650	800
Volume*	2,412	
Fulfilled?:	☑ Yes ☐ No	

Plot volume combination on the applicable figure below.

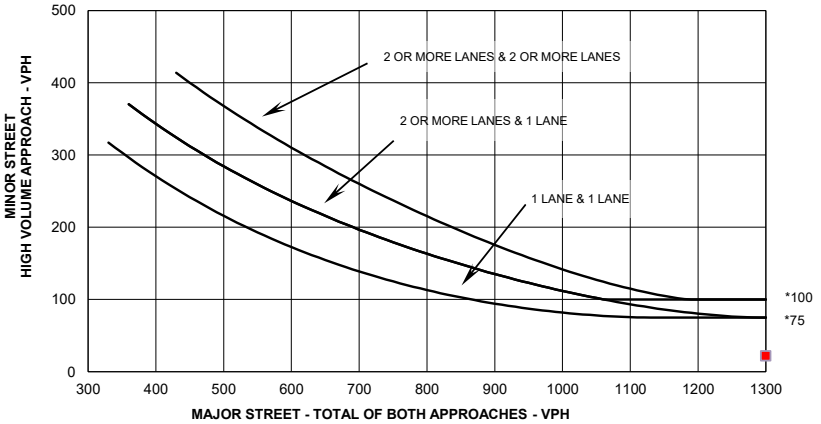
FIGURE 4C-3: Criteria for "100%" Volume Level



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

FIGURE 4C-4: Criteria for "70%" Volume Level

(Community Less than 10,000 population or above 70 km/hr. (40 mph) on Major Street)



** Note: 100 ph. applies as the lower threshold volume for a minor street approach with two or more lanes and 75 phi applies as the lower threshold volume threshold for a minor street approach with one lane.*

Major Street:	**Phelan Road**	Lanes:	**1**	Major Approach Speed:	**45**
Minor Street:	**Riggins Road**	Lanes:	**1**	Minor Approach Speed:	**25**

MUTCD Electronic Reference to Chapter 4: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf

Volume Level Criteria

1. Is the posted speed or 85th-percentile of major street > 40 mph? ☑ Yes ☐ No
2. Is the intersection in a built-up area of an isolated community with a population < 10,000? ☐ Yes ☑ No

"70%" volume level **may** be used if Question 1 **or** 2 above is answered "Yes" ☑ MAY ☑ 70% ☑ 100%

WARRANT 3 - PEAK HOUR

*If all three criteria are fulfilled **or** the plotted point lies above the appropriate line, then the warrant is satisfied.*

Applicable: ☑ Yes ☐ No
Satisfied: ☐ Yes ☑ No

Unusual condition justifying use of warrant:

Industrial Complex

-

Record hour when criteria are fulfilled and the corresponding delay or volume in boxes provided.

Peak Hour 100% Volume		
Time	Major Vol.	Minor Vol.
12:15PM - 1:15PM	2678	16

Peak Hour 70% Volume		
Time	Major Vol.	Minor Vol.
12:15PM - 1:15PM	2678	16

Criteria

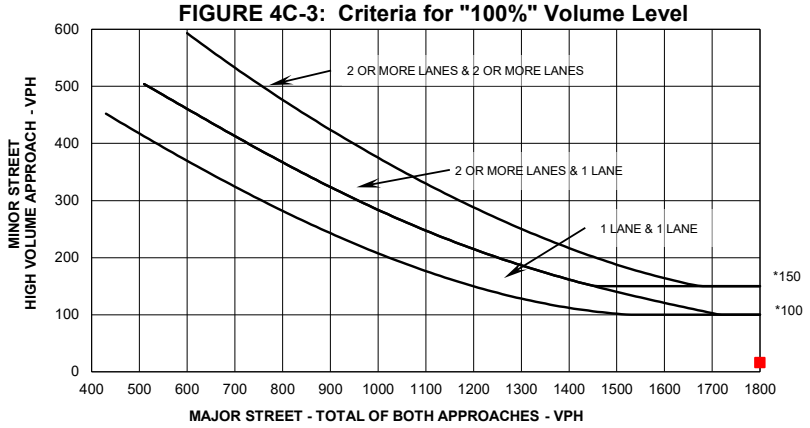
1. Delay on Minor Approach *(vehicle-hours)		
Approach Lanes	1	2
Delay Criteria*	4.0	5.0
Delay*	38.8	
Fulfilled?: ☑ Yes ☐ No		

2. Volume on Minor Approach One-Direction *(vehicles per hour)		
Approach Lanes	1	2
Volume Criteria*	100	150
Volume*	16	
Fulfilled?: ☐ Yes ☑ No		

3. Total Intersection Entering Volume *(vehicles per hour)		
No. of Approaches	3	4
Volume Criteria*	650	800
Volume*	2,694	
Fulfilled?: ☑ Yes ☐ No		

Plot volume combination on the applicable figure below.

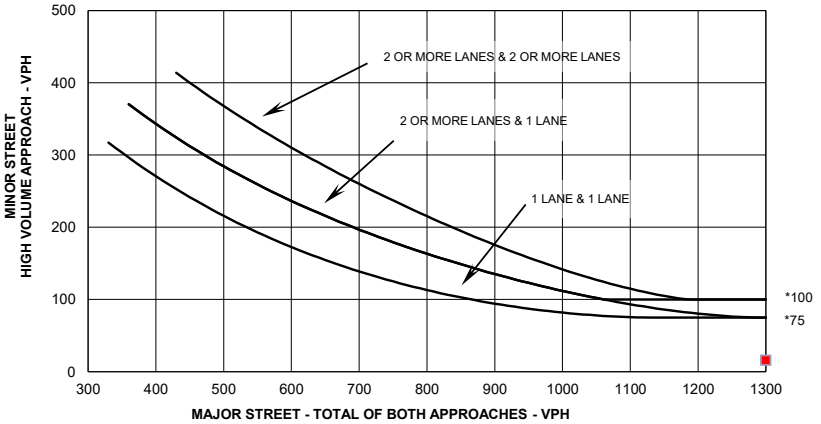
FIGURE 4C-3: Criteria for "100%" Volume Level



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

FIGURE 4C-4: Criteria for "70%" Volume Level

(Community Less than 10,000 population or above 70 km/hr. (40 mph) on Major Street)



** Note: 100 ph. applies as the lower threshold volume for a minor street approach with two or more lanes and 75 phi applies as the lower threshold volume threshold for a minor street approach with one lane.*

Major Street:	**Phelan Road**	Lanes:	**1**	Major Approach Speed:	**45**
Minor Street:	**Sierra Vista Road**	Lanes:	**1**	Minor Approach Speed:	**25**

MUTCD Electronic Reference to Chapter 4: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf

Volume Level Criteria

1. Is the posted speed or 85th-percentile of major street > 40 mph? ☑ Yes ☐ No
2. Is the intersection in a built-up area of an isolated community with a population < 10,000? ☐ Yes ☑ No

"70%" volume level **may** be used if Question 1 **or** 2 above is answered "Yes" ☑ MAY ☑ 70% ☑ 100%

WARRANT 3 - PEAK HOUR

*If all three criteria are fulfilled **or** the plotted point lies above the appropriate line, then the warrant is satisfied.*

Applicable: ☑ Yes ☐ No
Satisfied: ☐ Yes ☑ No

Unusual condition justifying use of warrant:

Industrial Complex

-

Record hour when criteria are fulfilled and the corresponding delay or volume in boxes provided.

Peak Hour 100% Volume		
Time	Major Vol.	Minor Vol.
4:15PM - 5:15PM	2271	59

Peak Hour 70% Volume		
Time	Major Vol.	Minor Vol.
4:15PM - 5:15PM	2271	59

Criteria

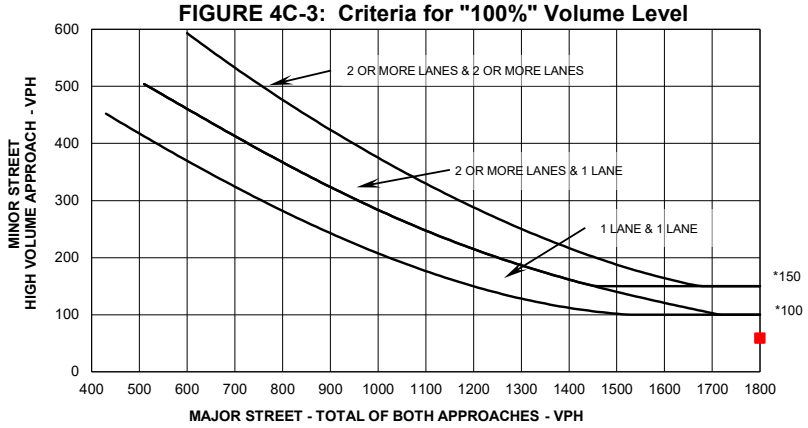
1. Delay on Minor Approach *(vehicle-hours)		
Approach Lanes	1	2
Delay Criteria*	4.0	5.0
Delay*	34.3	
Fulfilled?:	☑ Yes ☐ No	

2. Volume on Minor Approach One-Direction *(vehicles per hour)		
Approach Lanes	1	2
Volume Criteria*	100	150
Volume*	59	
Fulfilled?:	☐ Yes ☑ No	

3. Total Intersection Entering Volume *(vehicles per hour)		
No. of Approaches	3	4
Volume Criteria*	650	800
Volume*	2,361	
Fulfilled?:	☑ Yes ☐ No	

Plot volume combination on the applicable figure below.

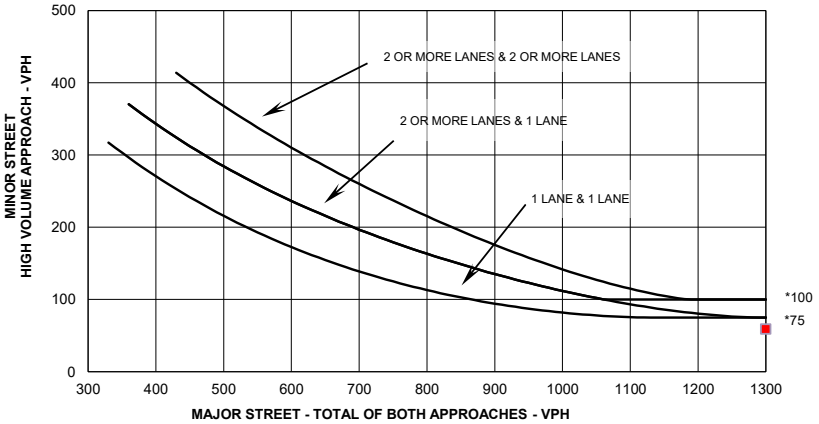
FIGURE 4C-3: Criteria for "100%" Volume Level



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

FIGURE 4C-4: Criteria for "70%" Volume Level

(Community Less than 10,000 population or above 70 km/hr. (40 mph) on Major Street)



** Note: 100 ph. applies as the lower threshold volume for a minor street approach with two or more lanes and 75 phi applies as the lower threshold volume threshold for a minor street approach with one lane.*

Major Street:	**Phelan Road**	Lanes:	**1**	Major Approach Speed:	**45**
Minor Street:	**Sierra Vista Road**	Lanes:	**1**	Minor Approach Speed:	**25**

MUTCD Electronic Reference to Chapter 4: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf

Volume Level Criteria

1. Is the posted speed or 85th-percentile of major street > 40 mph? ☑ Yes ☐ No
2. Is the intersection in a built-up area of an isolated community with a population < 10,000? ☐ Yes ☑ No

"70%" volume level **may** be used if Question 1 **or** 2 above is answered "Yes" ☑ MAY ☑ 70% ☑ 100%

WARRANT 3 - PEAK HOUR

*If all three criteria are fulfilled **or** the plotted point lies above the appropriate line, then the warrant is satisfied.*

Applicable: ☑ Yes ☐ No
Satisfied: ☐ Yes ☑ No

Unusual condition justifying use of warrant:

Industrial Complex

-

Record hour when criteria are fulfilled and the corresponding delay or volume in boxes provided.

Peak Hour 100% Volume		
Time	Major Vol.	Minor Vol.
12:15PM - 1:15PM	2550	25

Peak Hour 70% Volume		
Time	Major Vol.	Minor Vol.
12:15PM - 1:15PM	2550	25

Criteria

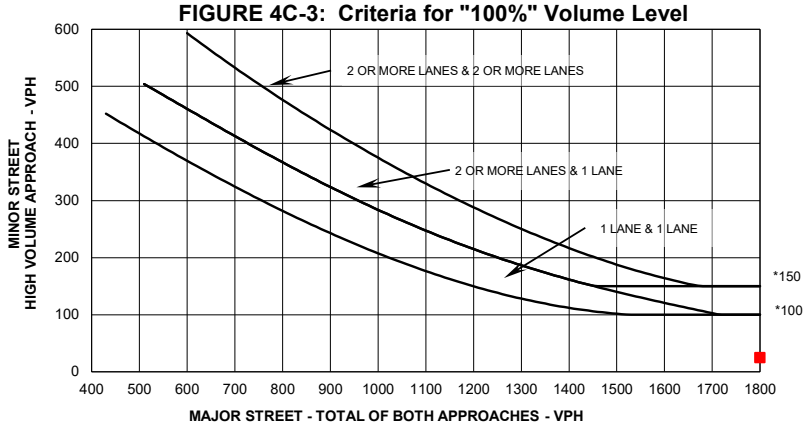
1. Delay on Minor Approach *(vehicle-hours)		
Approach Lanes	1	2
Delay Criteria*	4.0	5.0
Delay*	32.4	
Fulfilled?: ☑ Yes ☐ No		

2. Volume on Minor Approach One-Direction *(vehicles per hour)		
Approach Lanes	1	2
Volume Criteria*	100	150
Volume*	25	
Fulfilled?: ☐ Yes ☑ No		

3. Total Intersection Entering Volume *(vehicles per hour)		
No. of Approaches	3	4
Volume Criteria*	650	800
Volume*		2,587
Fulfilled?: ☐ Yes ☐ No		

Plot volume combination on the applicable figure below.

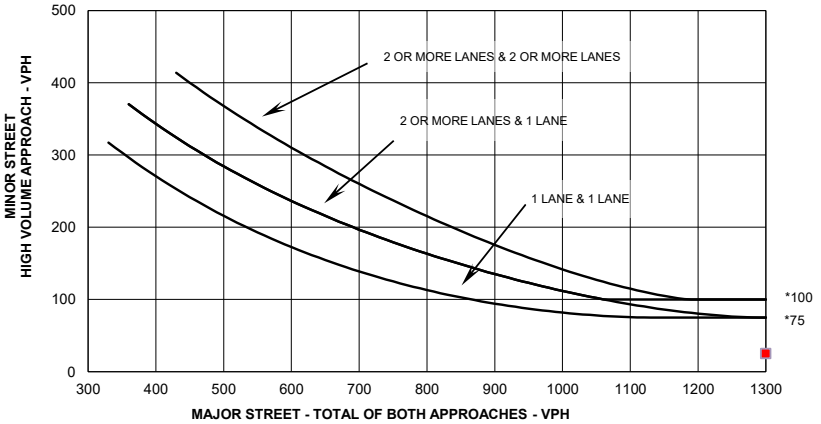
FIGURE 4C-3: Criteria for "100%" Volume Level



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

FIGURE 4C-4: Criteria for "70%" Volume Level

(Community Less than 10,000 population or above 70 km/hr. (40 mph) on Major Street)



** Note: 100 ph. applies as the lower threshold volume for a minor street approach with two or more lanes and 75 phi applies as the lower threshold volume threshold for a minor street approach with one lane.*

Major Street:	**Phelan Road**	Lanes:	**1**	Major Approach Speed:	**45**
Minor Street:	**Valle Vista Road**	Lanes:	**1**	Minor Approach Speed:	**25**

MUTCD Electronic Reference to Chapter 4: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf

Volume Level Criteria

1. Is the posted speed or 85th-percentile of major street > 40 mph? ☑ Yes ☐ No
2. Is the intersection in a built-up area of an isolated community with a population < 10,000? ☐ Yes ☑ No

"70%" volume level **may** be used if Question 1 **or** 2 above is answered "Yes" ☑ MAY ☑ 70% ☑ 100%

WARRANT 3 - PEAK HOUR

*If all three criteria are fulfilled **or** the plotted point lies above the appropriate line, then the warrant is satisfied.*

Applicable: ☑ Yes ☐ No
Satisfied: ☐ Yes ☑ No

Unusual condition justifying use of warrant:

Industrial Complex

-

Record hour when criteria are fulfilled and the corresponding delay or volume in boxes provided.

Peak Hour 100% Volume		
Time	Major Vol.	Minor Vol.
4:15PM - 5:15PM	2338	61

Peak Hour 70% Volume		
Time	Major Vol.	Minor Vol.
4:15PM - 5:15PM	2338	61

Criteria

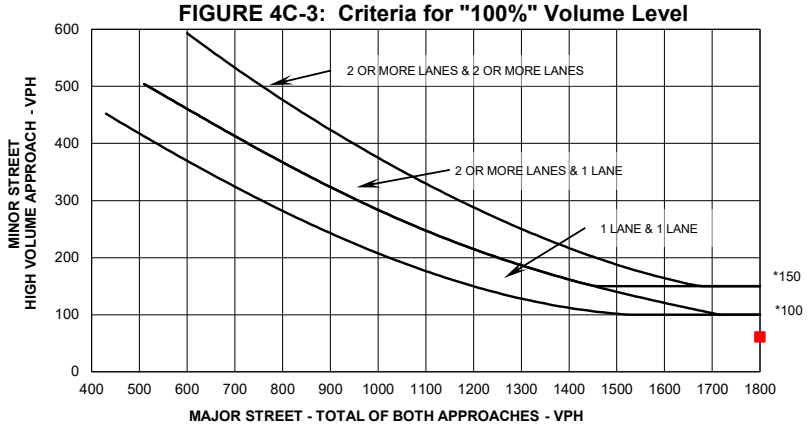
1. Delay on Minor Approach *(vehicle-hours)		
Approach Lanes	1	2
Delay Criteria*	4.0	5.0
Delay*	50.7	
Fulfilled?:	☑ Yes ☐ No	

2. Volume on Minor Approach One-Direction *(vehicles per hour)		
Approach Lanes	1	2
Volume Criteria*	100	150
Volume*	61	
Fulfilled?:	☐ Yes ☑ No	

3. Total Intersection Entering Volume *(vehicles per hour)		
No. of Approaches	3	4
Volume Criteria*	650	800
Volume*		2,418
Fulfilled?:	☑ Yes ☐ No	

Plot volume combination on the applicable figure below.

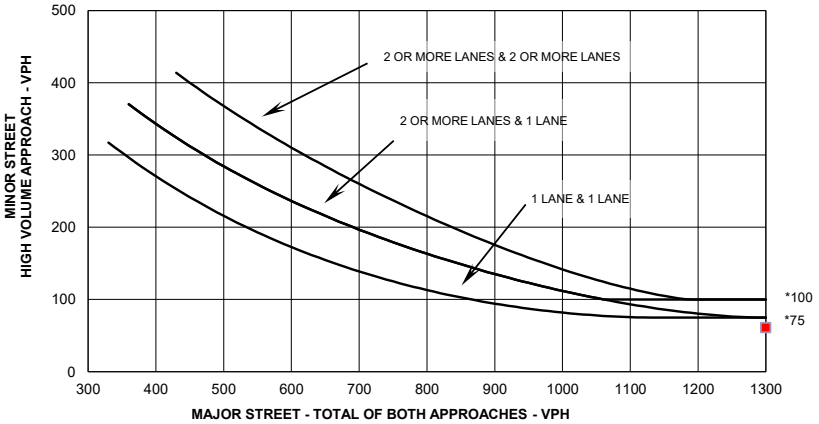
FIGURE 4C-3: Criteria for "100%" Volume Level



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

FIGURE 4C-4: Criteria for "70%" Volume Level

(Community Less than 10,000 population or above 70 km/hr. (40 mph) on Major Street)



** Note: 100 ph. applies as the lower threshold volume for a minor street approach with two or more lanes and 75 phi applies as the lower threshold volume threshold for a minor street approach with one lane.*

Major Street:	**Phelan Road**	Lanes:	**1**	Major Approach Speed:	**45**
Minor Street:	**Valle Vista Road**	Lanes:	**1**	Minor Approach Speed:	**25**

MUTCD Electronic Reference to Chapter 4: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf

Volume Level Criteria

1. Is the posted speed or 85th-percentile of major street > 40 mph? ☑ Yes ☐ No
2. Is the intersection in a built-up area of an isolated community with a population < 10,000? ☐ Yes ☑ No

"70%" volume level **may** be used if Question 1 **or** 2 above is answered "Yes" ☑ MAY ☑ 70% ☑ 100%

WARRANT 3 - PEAK HOUR

*If all three criteria are fulfilled **or** the plotted point lies above the appropriate line, then the warrant is satisfied.*

Applicable: ☑ Yes ☐ No
Satisfied: ☐ Yes ☑ No

Unusual condition justifying use of warrant:

Industrial Complex

-

Record hour when criteria are fulfilled and the corresponding delay or volume in boxes provided.

Peak Hour 100% Volume		
Time	Major Vol.	Minor Vol.
12:15PM - 1:15PM	2523	60

Peak Hour 70% Volume		
Time	Major Vol.	Minor Vol.
12:15PM - 1:15PM	2523	60

Criteria

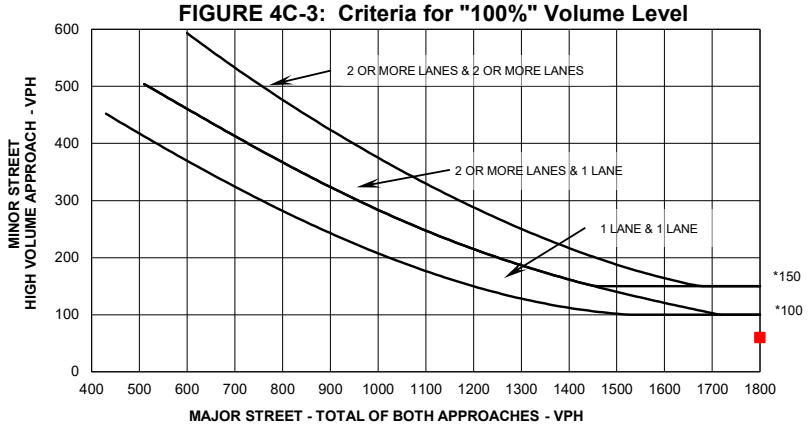
1. Delay on Minor Approach *(vehicle-hours)		
Approach Lanes	1	2
Delay Criteria*	4.0	5.0
Delay*	63.5	
Fulfilled?:	☑ Yes ☐ No	

2. Volume on Minor Approach One-Direction *(vehicles per hour)		
Approach Lanes	1	2
Volume Criteria*	100	150
Volume*	60	
Fulfilled?:	☐ Yes ☑ No	

3. Total Intersection Entering Volume *(vehicles per hour)		
No. of Approaches	3	4
Volume Criteria*	650	800
Volume*		2,607
Fulfilled?:	☑ Yes ☐ No	

Plot volume combination on the applicable figure below.

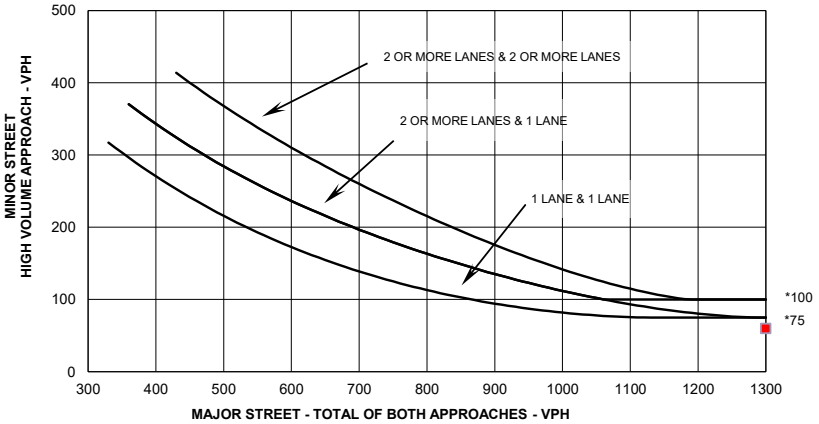
FIGURE 4C-3: Criteria for "100%" Volume Level



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

FIGURE 4C-4: Criteria for "70%" Volume Level

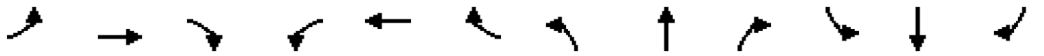
(Community Less than 10,000 population or above 70 km/hr. (40 mph) on Major Street)



** Note: 100 ph. applies as the lower threshold volume for a minor street approach with two or more lanes and 75 phi applies as the lower threshold volume threshold for a minor street approach with one lane.*

APPENDIX F

Intersection Analysis Worksheets (Cumulative Improvements)



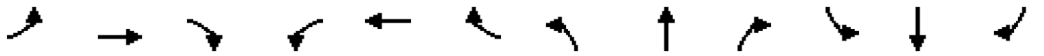
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	596	76	235	700	150	163	483	315	258	271	350
Future Volume (veh/h)	210	596	76	235	700	150	163	483	315	258	271	350
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	214	608	78	240	714	153	166	493	321	263	277	357
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	241	1061	135	256	1011	214	195	603	391	287	611	545
Arrive On Green	0.13	0.23	0.23	0.14	0.24	0.24	0.11	0.29	0.29	0.16	0.34	0.34
Sat Flow, veh/h	1810	4661	591	1810	4287	908	1810	2098	1362	1810	1805	1610
Grp Volume(v), veh/h	214	449	237	240	574	293	166	424	390	263	277	357
Grp Sat Flow(s),veh/h/ln	1810	1729	1794	1810	1729	1737	1810	1805	1655	1810	1805	1610
Q Serve(g_s), s	13.5	13.4	13.7	15.3	17.7	18.0	10.5	25.5	25.6	16.7	14.0	22.0
Cycle Q Clear(g_c), s	13.5	13.4	13.7	15.3	17.7	18.0	10.5	25.5	25.6	16.7	14.0	22.0
Prop In Lane	1.00		0.33	1.00		0.52	1.00		0.82	1.00		1.00
Lane Grp Cap(c), veh/h	241	787	408	256	816	410	195	519	475	287	611	545
V/C Ratio(X)	0.89	0.57	0.58	0.94	0.70	0.71	0.85	0.82	0.82	0.92	0.45	0.66
Avail Cap(c_a), veh/h	245	1113	577	256	1134	569	235	635	582	287	688	614
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	39.9	40.0	49.5	40.8	40.9	51.1	38.7	38.7	48.2	30.1	32.8
Incr Delay (d2), s/veh	29.5	0.9	1.9	39.2	1.6	3.5	21.7	7.7	8.5	31.9	0.8	2.6
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	8.1	5.8	6.2	9.7	7.7	8.1	5.9	12.3	11.4	10.0	6.2	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	79.1	40.9	41.9	88.7	42.4	44.4	72.8	46.3	47.2	80.1	30.9	35.4
LnGrp LOS	E	D	D	F	D	D	E	D	D	F	C	D
Approach Vol, veh/h		900			1107			980			897	
Approach Delay, s/veh		50.2			53.0			51.2			47.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	32.5	17.0	45.9	20.0	33.5	23.0	40.0
Change Period (Y+Rc), s	4.5	6.0	4.5	6.5	4.5	6.0	4.5	6.5
Max Green Setting (Gmax), s	16.5	37.5	15.1	44.4	15.8	38.2	18.5	41.0
Max Q Clear Time (g_c+I1), s	17.3	15.7	12.5	24.0	15.5	20.0	18.7	27.6
Green Ext Time (p_c), s	0.0	6.3	0.1	5.7	0.0	7.4	0.0	5.9

Intersection Summary	
HCM 7th Control Delay, s/veh	50.5
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.



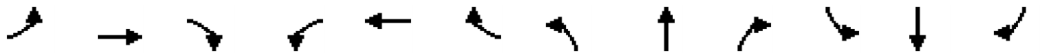
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	645	85	219	897	186	148	394	313	269	218	463
Future Volume (veh/h)	241	645	85	219	897	186	148	394	313	269	218	463
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	265	709	93	241	986	204	163	433	344	296	240	509
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	234	1256	163	266	1243	256	189	520	411	276	577	514
Arrive On Green	0.13	0.27	0.27	0.15	0.29	0.29	0.10	0.27	0.27	0.15	0.32	0.32
Sat Flow, veh/h	1810	4645	604	1810	4309	889	1810	1917	1515	1810	1805	1610
Grp Volume(v), veh/h	265	526	276	241	791	399	163	407	370	296	240	509
Grp Sat Flow(s),veh/h/ln	1810	1729	1791	1810	1729	1740	1810	1805	1627	1810	1805	1610
Q Serve(g_s), s	17.5	17.7	18.0	17.8	28.6	28.7	12.0	28.8	29.0	20.7	14.1	42.6
Cycle Q Clear(g_c), s	17.5	17.7	18.0	17.8	28.6	28.7	12.0	28.8	29.0	20.7	14.1	42.6
Prop In Lane	1.00		0.34	1.00		0.51	1.00		0.93	1.00		1.00
Lane Grp Cap(c), veh/h	234	935	484	266	997	502	189	489	441	276	577	514
V/C Ratio(X)	1.13	0.56	0.57	0.91	0.79	0.80	0.86	0.83	0.84	1.07	0.42	0.99
Avail Cap(c_a), veh/h	234	1008	522	298	1130	569	246	546	492	276	577	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.0	42.5	42.6	56.9	44.5	44.5	59.7	46.5	46.6	57.4	36.2	45.9
Incr Delay (d2), s/veh	99.8	0.8	1.7	27.6	3.9	7.6	21.1	10.4	11.9	74.2	0.7	36.9
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	14.5	7.7	8.2	10.2	12.8	13.4	6.6	14.3	13.2	15.2	6.4	22.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	158.8	43.4	44.3	84.4	48.4	52.1	80.9	56.9	58.4	131.7	36.9	82.8
LnGrp LOS	F	D	D	F	D	D	F	E	E	F	D	F
Approach Vol, veh/h		1067			1431			940			1045	
Approach Delay, s/veh		72.3			55.5			61.7			86.1	
Approach LOS		E			E			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.4	42.7	18.6	49.8	22.0	45.1	25.2	43.2
Change Period (Y+Rc), s	4.5	6.0	4.5	6.5	4.5	6.0	4.5	6.5
Max Green Setting (Gmax), s	22.3	39.5	18.4	43.3	17.5	44.3	20.7	41.0
Max Q Clear Time (g_c+I1), s	19.8	20.0	14.0	44.6	19.5	30.7	22.7	31.0
Green Ext Time (p_c), s	0.2	7.1	0.2	0.0	0.0	8.4	0.0	4.6

Intersection Summary	
HCM 7th Control Delay, s/veh	67.9
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.



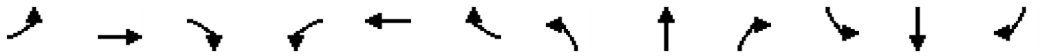
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	607	76	245	713	153	163	483	323	261	271	350
Future Volume (veh/h)	210	607	76	245	713	153	163	483	323	261	271	350
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	214	619	78	250	728	156	166	493	330	266	277	357
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	234	1286	160	252	844	181	193	902	420	269	547	488
Arrive On Green	0.13	0.28	0.28	0.14	0.29	0.29	0.11	0.26	0.26	0.15	0.30	0.30
Sat Flow, veh/h	1810	4671	582	1810	2957	634	1810	3458	1610	1810	1805	1610
Grp Volume(v), veh/h	214	456	241	250	444	440	166	493	330	266	277	357
Grp Sat Flow(s),veh/h/ln	1810	1729	1795	1810	1805	1786	1810	1729	1610	1810	1805	1610
Q Serve(g_s), s	14.3	13.5	13.7	16.9	28.5	28.6	11.0	15.0	23.3	17.9	15.5	24.3
Cycle Q Clear(g_c), s	14.3	13.5	13.7	16.9	28.5	28.6	11.0	15.0	23.3	17.9	15.5	24.3
Prop In Lane	1.00		0.32	1.00		0.35	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	234	952	494	252	515	509	193	902	420	269	547	488
V/C Ratio(X)	0.92	0.48	0.49	0.99	0.86	0.86	0.86	0.55	0.79	0.99	0.51	0.73
Avail Cap(c_a), veh/h	234	1055	548	252	568	562	223	1160	540	269	651	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.6	37.0	37.1	52.6	41.4	41.4	53.7	39.0	42.0	51.9	35.1	38.2
Incr Delay (d2), s/veh	36.7	0.5	1.1	54.9	12.7	12.9	24.4	0.7	6.8	51.2	1.0	4.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	5.8	6.2	11.5	14.4	14.3	6.3	6.5	10.0	11.9	7.0	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	89.3	37.5	38.1	107.5	54.2	54.3	78.0	39.7	48.8	103.2	36.1	42.7
LnGrp LOS	F	D	D	F	D	D	E	D	D	F	D	D
Approach Vol, veh/h		911			1134			989			900	
Approach Delay, s/veh		49.8			66.0			49.2			58.6	
Approach LOS		D			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.5	39.7	17.6	43.5	20.3	40.9	22.7	38.4
Change Period (Y+Rc), s	4.5	6.0	4.5	6.5	4.5	6.0	4.5	6.5
Max Green Setting (Gmax), s	17.0	37.3	15.1	44.1	15.8	38.5	18.2	41.0
Max Q Clear Time (g_c+I1), s	18.9	15.7	13.0	26.3	16.3	30.6	19.9	25.3
Green Ext Time (p_c), s	0.0	6.3	0.1	5.3	0.0	4.3	0.0	6.6

Intersection Summary	
HCM 7th Control Delay, s/veh	56.3
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	672	85	240	925	193	148	394	333	276	218	463
Future Volume (veh/h)	241	672	85	240	925	193	148	394	333	276	218	463
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	265	738	93	264	1016	212	163	433	366	303	240	509
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	232	1213	152	288	1252	261	189	501	422	279	577	514
Arrive On Green	0.13	0.26	0.26	0.16	0.29	0.29	0.10	0.27	0.27	0.15	0.32	0.32
Sat Flow, veh/h	1810	4669	584	1810	4301	896	1810	1859	1564	1810	1805	1610
Grp Volume(v), veh/h	265	545	286	264	817	411	163	420	379	303	240	509
Grp Sat Flow(s),veh/h/ln	1810	1729	1795	1810	1729	1739	1810	1805	1618	1810	1805	1610
Q Serve(g_s), s	17.5	18.9	19.2	19.6	30.0	30.1	12.1	30.3	30.5	21.1	14.3	43.0
Cycle Q Clear(g_c), s	17.5	18.9	19.2	19.6	30.0	30.1	12.1	30.3	30.5	21.1	14.3	43.0
Prop In Lane	1.00		0.33	1.00		0.52	1.00		0.97	1.00		1.00
Lane Grp Cap(c), veh/h	232	898	466	288	1007	506	189	486	436	279	577	514
V/C Ratio(X)	1.14	0.61	0.61	0.92	0.81	0.81	0.86	0.86	0.87	1.09	0.42	0.99
Avail Cap(c_a), veh/h	232	958	497	311	1110	558	243	541	485	279	577	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.6	44.5	44.6	56.6	45.0	45.0	60.3	47.6	47.6	57.8	36.5	46.3
Incr Delay (d2), s/veh	103.7	1.2	2.5	29.2	4.6	8.9	21.6	13.4	15.1	78.5	0.7	36.8
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	14.7	8.3	8.9	11.3	13.5	14.2	6.7	15.4	14.1	15.7	6.5	22.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	163.3	45.7	47.1	85.8	49.6	53.9	81.9	60.9	62.7	136.3	37.2	83.1
LnGrp LOS	F	D	D	F	D	D	F	E	E	F	D	F
Approach Vol, veh/h		1096			1492			962			1052	
Approach Delay, s/veh		74.5			57.2			65.2			88.0	
Approach LOS		E			E			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.3	41.5	18.8	50.2	22.0	45.8	25.6	43.4
Change Period (Y+Rc), s	4.5	6.0	4.5	6.5	4.5	6.0	4.5	6.5
Max Green Setting (Gmax), s	23.5	37.9	18.4	43.7	17.5	43.9	21.1	41.0
Max Q Clear Time (g_c+I1), s	21.6	21.2	14.1	45.0	19.5	32.1	23.1	32.5
Green Ext Time (p_c), s	0.2	6.8	0.2	0.0	0.0	7.8	0.0	4.2

Intersection Summary	
HCM 7th Control Delay, s/veh	70.0
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.