APPENDIX E

Traffic Impact Analysis

TRAFFIC IMPACT ANALYSIS

FOR THE

VILLAGE AT LOOMIS
Loomis, California

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TRAFFIC IMPACT ANALYSIS FOR THE VILLAGE AT LOOMIS

Loomis, CA

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TRAFFIC IMPACT ANALYSIS FOR THE
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INTRODUCTION

This report summarizes **KDAnderson & Associates'** analysis of traffic impacts associated with the **Village at Loomis** project in Loomis, California. The proposed project is located on 66 acres in the area off of Horseshoe Bar Road between Taylor Road and Interstate 80 in Loomis. The project involves development of a mix of residential and commercial uses. Access to the site is planned via connections to Horseshoe Bar Road, Laird Street and King Road.

The scope of this traffic analysis is intended to conform to Town of Loomis guidelines. "Existing" traffic conditions have been evaluated through observation of current weekday a.m. and p.m. peak hour traffic volumes at 11 intersections in the vicinity of the project. The impacts of the proposed project have been evaluated by estimating probable project trip generation, assigning project trips to the study area street system and superimposing project traffic onto background conditions to determine whether development of this use will result in conditions in excess of the Town of Loomis' minimum Level of Service standards.

Per Town of Loomis requirements, this study includes analysis of six (6) scenarios:

1) Existing Conditions
2) Existing Plus the Village at Loomis
3) Existing Plus the Village at Loomis with the Library Drive – Webb Street Connection per the Draft Circulation Element Update
4) Cumulative Baseline Without the Village at Loomis
5) Cumulative Plus the Village at Loomis under Adopted Circulation Element
6) Cumulative Plus the Village at Loomis under Draft Circulation Element Update

EXISTING SETTING

Study Area Streets / Intersections

The study area was identified based on knowledge of local traffic patterns and represent those locations that could potentially be impacted by the proposed project. The study area streets and intersections were reviewed and approved by Town of Loomis staff.

Streets. The text that follows describes the physical characteristics of the streets that serve the site.

Interstate 80 is the primary east-west arterial across Placer County and Northern California. In the vicinity of the proposed project, Interstate 80 is a six lane controlled access freeway. Access to the freeway is available for the Town of Loomis at the Horseshoe Bar Road interchange and at the Penryn Road interchange to the east and the Sierra College Blvd interchange to the west.

The California Department of Transportation (Caltrans) provides annual reports of the volume of traffic on the state highway system. The most recent counts available from Caltrans (2013) report an *Annual Average Daily Traffic (AADT)* volume of 91,000 vehicles per day between Sierra College Blvd and Horseshoe Bar Road and 84,000 vehicles per day in the area from Horseshoe Bar Road to Penryn Road.

Taylor Road. Taylor Road is a major arterial street that runs parallel to Interstate 80 and links Loomis with the City of Rocklin to the west and with the communities of Penryn and Newcastle to the east. Taylor Road is generally a two-lane road through Loomis, but incremental half section widening has occurred as development has proceeded. In the area of this project Taylor Road has one travel lane in each direction, and turn lanes exist at all intersections. Parking is permitted along Taylor Road through downtown Loomis. New traffic counts conducted in March 2014 for this study reveal that Taylor Road carries an *Average Daily Traffic (ADT)* volume of 10,603 vehicles per day between Sierra College Blvd and Horseshoe Bar Road, about 19,037 ADT in the area from Horseshoe Bar Road to Webb Street and 16,374 ADT between Webb Street and King Road in the vicinity of the proposed project.

Horseshoe Bar Road. Horseshoe Bar Road is the primary gateway to Loomis. This arterial street originates at an intersection on Taylor Road in downtown Loomis and continues east past the project site to an interchange on Interstate 80. Beyond Interstate 80, Horseshoe Bar Road continues for several miles into the rural area of Placer County near Folsom Lake. Horseshoe Bar Road is a two lane road with auxiliary left turn lanes at major intersections. On-street parking is permitted at several locations on Horseshoe Bar Road. New traffic counts made for this study in 2014 indicated that Horseshoe Bar Road carries 14,452 ADT in the area between Interstate 80 and Taylor Road, and 8,107 ADT between Interstate 80 and Laird Road.

King Road. King Road is an east-west arterial road that provides access to Loomis and the rural areas of Placer County surrounding the Town. King Road originates at an intersection on Sierra College Blvd in western Loomis and continues easterly across Taylor Road, over Interstate 80 and ultimately to an intersection on Auburn Folsom Road near Folsom Lake. King

Road is a two lane road with auxiliary turn lanes at major intersections. New traffic counts made for this study indicated that King Road carried 6,464 ADT between Taylor Road and Boyington Road.

Boyington Road. Boyington Road is a collector street that runs parallel to Interstate 80 in the area from the Penryn Road / Interstate 80 interchange to King Road. Boyington Road provides access to commercial uses along the freeway and also provides access to the rear parking lot at Del Oro High School. Based on the peak hour volume observed for this study Boyington Road is estimated to carry 2,600 ADT just north of King Road.

Several local Town streets provide access to the properties surrounding the proposed project and may be used to access the site.

Webb Street. Webb Street is a local street that links King Road with Taylor Road in the area east of downtown Loomis. Webb Street also extends east from Taylor Road to Laird Street. On-street parking is permitted for the portion south of Taylor Road, and today this two lane street carries 676 ADT between Taylor Road and Laird Street. Traffic counts made for the Downtown Implementation Plan indicated that Webb Street carried 3,760 ADT between Taylor Road and King Road in 2009.

Laird Street. Laird Street is a local street that lies one block off of Taylor Road. Laird Street extends east from an intersection on Horseshoe Bar Road to Webb Street and then into the residential area surrounding Loomis Grammar School. Parking is permitted along Laird Street, and in March 2014 Laird Street carried 1,152 ADT between Horseshoe Bar Road and Webb Street.

Sun Knoll Drive. Sun Knoll Drive is a local street that links King Road and Laird Street through the residential area east of Loomis Grammar School. Today Sun Knoll Drive terminates at the undeveloped project site. Parking is permitted along Sun Knoll Drive, and speed bumps have been installed at many locations along this two lane residential street. New traffic counts made for this study in March 2014 indicated that Sun Knoll Drive carried 518 ADT between King Road and Thornwood Drive.

Day Avenue. Day Avenue is a local street that extends south from King Road to serve an existing subdivision located east of Loomis Grammar School. Today Day Avenue terminates at the undeveloped project site. On-street parking is permitted on Day Avenue. New traffic counts made for this study in March 2014 indicated that Day Avenue carried 591 ADT in the area between King Road and David Avenue.

Doc Barnes Drive. Doc Barnes Drive is a local street that links Horseshoe Bar Road and Walnut Street in the area immediately west of the WB Interstate 80 ramps. The Town General Plan indicates that Doc Barnes Drive will eventually be extended northerly to King Road and link up with Boyington Road, and this street is included in the proposed project. In concert with a future westerly extension of Walnut Street to Brace Road, the Doc Barnes Drive extension will be part of an Interstate 80 frontage road that will extend from Brace Road to Penryn Road.

Library Drive. Library Drive is a local street that provides access to Horseshoe Bar Road for Loomis Memorial Hall and the Loomis Library. Parking is permitted on Library Drive. Today this two lane road terminates at the undeveloped project site. The current daily traffic volume on Library Drive is estimated to be 100 vehicles per day, based on the observed peak hour volumes at the Horseshoe Bar Road / Library Drive intersection.

Intersections. This analysis focuses on potential impacts to the following eleven intersections located on the routes that could be used by project traffic during the a.m. and p.m. peak hour.

1. King Road / Swetzer Road (Signalized)
2. Taylor Road / King Road (Signalized)
3. King Road / Boyington Road (WB Stop)
4. Taylor Road / Webb Street (NB/SB Stops)
5. Taylor Road / Horseshoe Bar Road (Signalized)
6. Horseshoe Bar Road / / Laird Street (WB Stop)
7. Horseshoe Bar Road / Library Drive (WB Stop)
8. Horseshoe Bar Road / Doc Barnes Drive (EB Stop)
9. Horseshoe Bar Road / WB I-80 ramps (Signalized)
10. Horseshoe Bar Road / EB I-80 ramps (SB Stop)
11. Horseshoe Bar Road / Laird Road (All-Way Stop)

The **King Road / Swetzer Road intersection** is a signalized intersection that is close to and coordinated with the UPRR crossing and the Taylor Road / King Road intersection. The intersection has single lanes for through traffic in each direction, along with auxiliary right turn lanes on the southbound Swetzer Road and westbound King Road approaches. Crosswalks are striped across the northern and western legs of the intersection.

The **Taylor Road / King Road intersection** is a signalized intersection with auxiliary turn lanes on each approach. Crosswalks are marked on each leg of the intersection. Loomis Grammar School is located on the southeast corner of the intersection.

The **King Road / Boyington Road intersection** is a "tee" intersection controlled by a stop sign on the southbound Boyington Road approach. There are no auxiliary turn lanes at this intersection and no crosswalks.

The **Taylor Road / Webb Street intersection** has left turn lanes on the Taylor Road approaches, but the Webb Street approaches are single lanes. Traffic is controlled by stop signs on the Webb Street approaches. The southbound Webb Street approach is limited to right turns only by a regulatory sign. (note: this control was only in effect during the a.m. peak hour when traffic counts were conducted for this analysis). A crosswalk exists across the eastern Taylor Road leg and across both Webb Street approaches. A utility pole on the southwest corner of the intersection constrains truck turns.

The **Taylor Road / Horseshoe Bar Road intersection** in downtown Loomis is controlled by a traffic signal. Auxiliary left turn lanes exist on the Taylor Road approaches, and right turn lanes available on northbound Horseshoe Bar Road and eastbound Taylor Road. Crosswalks exist on each leg of the intersection.

The **Horseshoe Bar Road / Laird Street intersection** is a "tee" intersection located 240 feet from Taylor Road. There are no auxiliary turn lanes at the intersection, and traffic is controlled by a stop sign on Laird Street. A "KEEP CLEAR" zone has been marked on Horseshoe Bar Road at this intersection.

The **Horseshoe Bar Road / Library Drive intersection** is a "tee" intersection located on a curve on Horseshoe Bar Road. There are no auxiliary turn lanes at the intersection, and traffic is controlled by a stop sign on Library Drive. A crosswalk exists across Library Drive, and there is a mid-block crosswalk on Horseshoe Bar Road south of the intersection.

The **Horseshoe Bar Road / Doc Barnes Drive intersection** is a "tee" intersection controlled by a stop sign on the Doc Barnes Drive approach. Each approach has a single through lane, and a short left turn lane exists on Taylor Road approaching the intersection.

The **Horseshoe Bar Road / WB Interstate 80 Ramps intersection** is controlled by an actuated traffic signal. The fourth leg of the intersection provides access to the Raley's Shopping Center. Auxiliary left turn lanes exist on each leg of the intersection, and the southbound Horseshoe Bar Road approach features a "free" right turn lane onto the westbound on-ramp. The auxiliary lanes on northbound Horseshoe Bar Road are relatively short and constrained by the length of the existing structure over I-80. There is a crosswalk across Horseshoe Bar Road on the north side of the intersection and across the Raley's Shopping Center entrance.

The **Horseshoe Bar Road / EB Interstate 80 Ramps intersection** is a "tee" intersection controlled by a stop sign on the eastbound I-80 off ramp. While no auxiliary lanes are striped at the intersection, the approaches are generally wide enough to permit traffic to proceed around vehicles waiting to turn left. There are no crosswalks at this intersection.

The **Horseshoe Bar Road / Laird Road intersection** is a "tee" intersection controlled by an all-way stop. Each approach is a single lane, and there are no crosswalks in this rural location.

Non-Automotive Facilities

Bus Service. Public bus service is provided to the Loomis area by Placer County Transit. The *Taylor Road Shuttle* links Loomis, Penryn, Auburn and Sierra College in Rocklin. This route stops within Loomis at the downtown multi-modal center, and other stops are signed along Taylor Road. Service is provided between 6:30 a.m. and 4:15 p.m. Monday –Friday with four stops per day. Loomis is also served by *Placer Commuter Express*, which runs during commute hours and links the community with downtown Sacramento. The area is also served by *Placer County Transit Dial-a-Ride* from 6:00 a.m. to 8:00 p.m.

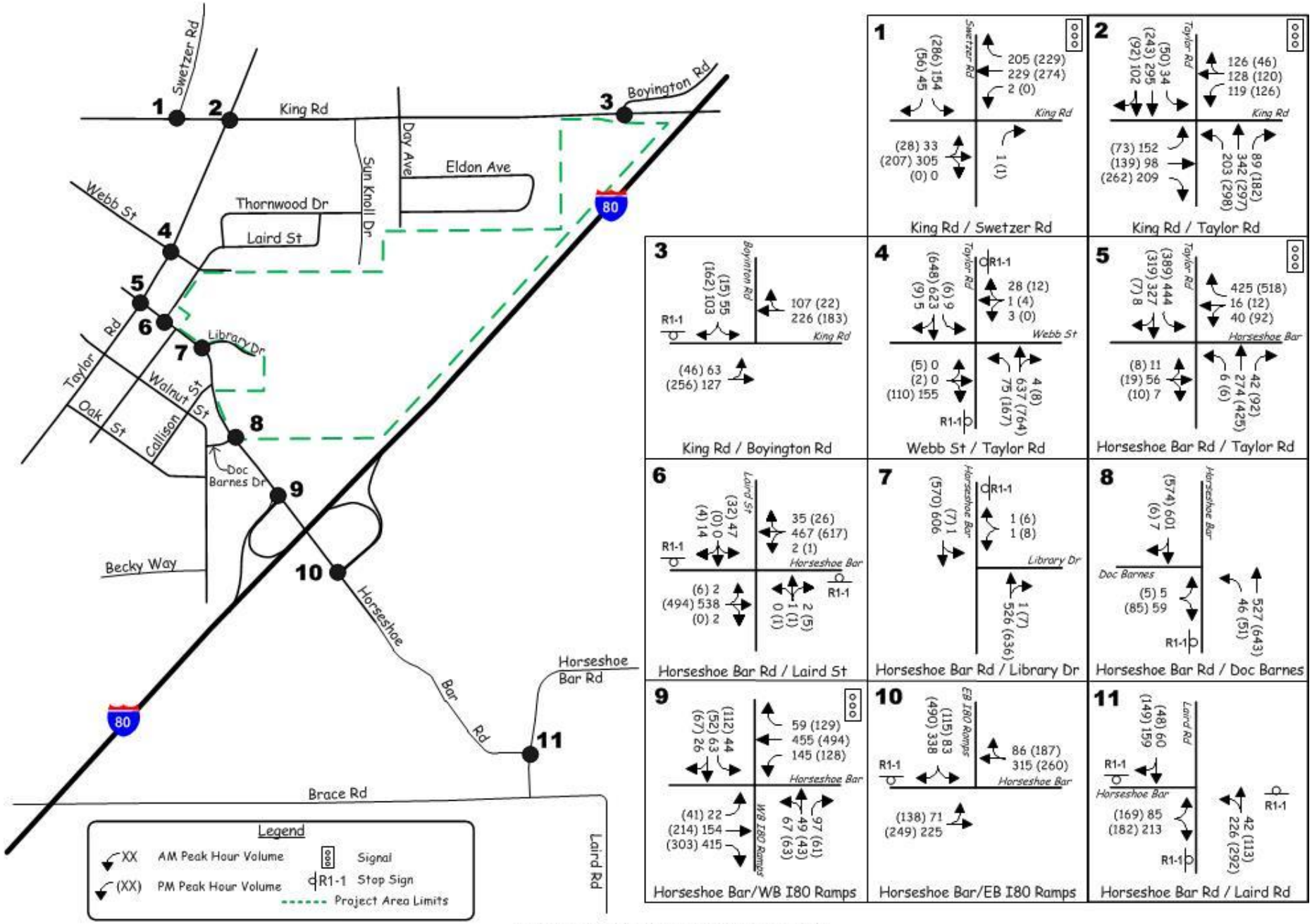
Bicycle Facilities. The *Town of Loomis Bicycle Transportation Plan (2010)* identifies existing and planned bicycle facilities. Existing bicycle system consists of a series of Class II (on-street lanes) facilities on major arterials. Class II lanes exist on Taylor Road between Sierra College Blvd and the northern town limits, although the lanes are not marked through the downtown area. Bike lanes also exist on King Road at various locations. There are no Class I (trails) or Class III (routes) in Loomis.

Sidewalks. The *Town of Loomis Trails Master Plan (2010)* identifies the location of existing sidewalks and trails. Sidewalks are provided today on major downtown area streets and in developed residential subdivisions. However, there are many gaps in the sidewalk system, as no sidewalks exist on portions of Taylor Road and King Road outside of the developed area of Loomis. Most of the local streets in the old area of downtown Loomis lack sidewalks.

Railroad Crossings. The UPRR runs parallel to and immediately north of Taylor Road. At-grade crossings are available in the vicinity of the project at Webb Street and King Road. Each is equipped with standard crossing gates and warning flashers.

Existing Traffic Volumes

A.m. and p.m. peak hour traffic counts at study intersections were assembled for this study. Counts were conducted during March 2014, and Figure 1 displays the existing traffic volumes that were used for this analysis.



EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

7390-01 LT 4/22/2016

figure 1

Level of Service – Methodologies

To assess the quality of existing traffic conditions, operating Levels of Service were calculated at each study intersection. "Level of Service" (or "LOS") is a qualitative measure of traffic operating conditions whereby a letter grade "A" through "F", corresponding to progressively worsening traffic operating conditions, is assigned to an intersection.

Table 1 presents the characteristics associated with each LOS grade. As shown in Table 1, LOS "A", "B" and "C" are considered satisfactory to most motorists, while LOS "D" is marginally acceptable. LOS "E" and "F" are associated with increasingly long delays and congestion and are unacceptable to most motorists.

With one exception the Town of Loomis has established LOS "C" as an operational threshold beyond which mitigations are required. The King Road / Taylor Road intersection is permitted to operate at LOS D during the a.m. peak hour.

TABLE 1
LEVEL OF SERVICE DEFINITIONS

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

The General Plan also contains thresholds based on the volume of traffic on individual roadway segments. Measured in terms of the Volume / Capacity ratio (V/C), unsatisfactory conditions occur when the v/c ratio exceeds 0.80.

Levels of Service were calculated for study intersections using the methodologies contained in the 2010 Highway Capacity Manual using SYNCHRO 8.0 software. In the case of intersections controlled by side street stop signs, the individual Level of Service for movements that yield the right of way has been identified. At these locations the "worst case" Level of Service is used for significance criteria, although it is recognized that through traffic that does not stop experiences no delay and operates at LOS A. Levels of Service on individual approaches can be calculated for intersections controlled by traffic signals or all-way stops, but as the overall average Level of Service is the significance criteria, these values have not been reported.

Levels of Service and V/C ratio for roadway segments were calculated using the capacity thresholds identified in the Town of Loomis General Plan.

Existing Levels of Service

Intersections. Current a.m. and p.m. peak hour Levels of Service are summarized in Table 2. As shown, current Levels of Service meet the Town's minimum LOS C threshold, with two exceptions.

In the p.m. peak hour, the motorists waiting to turn left onto Taylor Road at the **Taylor Road / Webb Street intersection** experience delays that are indicative of LOS F conditions on the northbound approach, which operates at an overall **LOS D.** This Level of Service exceeds the Town's LOS C minimum. Because only a handful of vehicles are involved the Town could consider implementing the left turn prohibition that is in effect on the southbound approach. This would improve the Level of Service to LOS C or better but could divert traffic to other downtown intersections.

Motorists waiting to turn at the **Horseshoe Bar Road / Laird Street intersection** experience delays that are associated with LOS D conditions. As with the Taylor Road / Webb Street intersection, the Town could consider prohibiting left turns at this location at all times or during peak hours as a method for improving the Level of Service. However, as u-turns are not permitted at adjoining intersections, this control could inconvenience residents living along Laird Street or Sun Knolls Drive.

In addition, at the **Horseshoe Bar Road / EB I-80 ramps intersection**, motorists waiting to turn onto Horseshoe Bar Road from the off ramp experience delays that are indicative of LOS E. This Level of Service exceeds the Town's LOS C minimum. Because the volume of traffic at this location also satisfies peak hour traffic signal warrants, this condition is judged to be significant.

Traffic Signal Warrants. Current traffic volumes at the unsignalized study intersection were compared with peak hour warrants contained in the *California Manual on Uniform Traffic Control Devices.* As noted in Table 2, three intersections carry volumes that satisfy peak hour volume warrants. These locations are:

- Taylor Road / Webb Street
- Horseshoe Bar Road / Eastbound Interstate 80 ramps
- Horseshoe Bar Road / Laird Road

While satisfying peak hour warrants can be an indication that a traffic signal is needed, further analysis of additional warrants addressing conditions occurring throughout the day is required to determine whether a traffic signal should be installed. Because the I-80 ramps intersections are under Caltrans jurisdiction, their approval would be required in order to signalize the intersection.

TABLE 2
EXISTING INTERSECTION LEVEL OF SERVICE

Intersection	Control	AM Peak Hour		PM Peak Hour		Peak Hour Traffic Signal Warrants Met?
		Average Delay (sec)	LOS	Average Delay (sec)	LOS	
King Rd / Swetzer Rd	Signal	25.5	C	6.0	A	Not Applicable
Taylor Rd / King Rd	Signal	39.6	D	20.9	C	Not Applicable
King Rd / Boyington Rd						
EB left turn	WB Stop	8.7	A	7.8	A	No
SB left+right turn		18.7	C	11.3	B	
Taylor Rd / Webb St						
EB left turn	NB/SB	9.4	A	10.0	A	Yes (p.m.)
WB left turn	Stop	9.0	A	9.4	A	
NB left+thru+right turn		23.8	C	**29.9**	**D**	
SB left+thru+right turn		18.2	C	27.5	C	
Taylor Rd / Horseshoe Bar Rd	Signal	28.8	C	30.6	C	Not Applicable
Horseshoe Bar Rd / Laird St						
NB left+thru+right turn	EB/WB	15.8	C	16.5	C	No
SB left+thru+right turn	Stop	**29.2**	**D**	**34.6**	**D**	
Horseshoe Bar Rd/Library Dr						
SB left turn	WB Stop	8.6	A	9.0	A	No
WB left+right turn		17.5	C	22.7	C	
Horseshoe Bar Rd/Doc Barnes Dr	EB Stop					
NB left turn		9.0	A	9.1	A	No
EB left+right turn		15.4	C	18.0	C	
Horseshoe Bar Rd/WB I-80 ramps	Signal	19.8	B	20.5	C	Not Applicable
Horseshoe Bar Rd/EB I-80 ramps						
SB left turn	WB Stop	8.4	A	9.0	A	Yes
WB left+right turn		**41.9**	**E**	**35.3**	**E**	
Horseshoe Bar Rd / Laird Rd	All-Way Stop	12.3	B	19.4	C	Yes (p.m.)

Roadway Segments. Conditions on study area roads have also been evaluated within the context of current daily traffic volumes and Town of Loomis Level of Service thresholds, as shown in Table 3.

TABLE 3
CURRENT DAILY TRAFFIC VOLUMES AND LEVELS OF SERVICE

Roadway	Segment	# of Lanes	Average Daily Traffic	Daily Volume/ Capacity Ratio*	LOS
Taylor Rd	Sierra College Blvd to Horseshoe Bar Rd	2	10,603	0.71	C
	Horseshoe Bar Rd to Webb St	2	19,037	1.27	F
	Webb St to King Rd	2	16,374	1.09	F
King Rd	Taylor Rd to Boyington Rd	2	6,464	0.43	A
Horseshoe Bar Rd	Taylor Rd to Doc Barnes Drive	2	14,452	0.96	E
	Doc Barnes Rd to Interstate 80	4	15,706	0.52	A
	Interstate 80 to Laird Rd	2	8,107	0.54	A
Day Ave	King Rd to David Ave	2	591	0.04	A
Laird St	Horseshoe Bar Rd to Webb St	2	1,152	0.08	A
Sun Knoll Dr	King Rd to Thornwood Dr	2	518	0.03	A
Boyington Road	North of King Road	2	2,600	0.17	A
Webb St	Taylor Rd to Laird St	2	676	0.05	A
	King Road to Taylor Road	2	3,760	0.25	A
Interstate 80	Sierra College Blvd to Horseshoe Bar Road	6	91,000	0.85	D
	Horseshoe bar Road to Penryn Road	6	84,000	0.77	D
(*) based on General Plan threshold capacity of 15,000 ADT for two lane road					

Levels of Service on Major Streets. As shown, the daily traffic volume on the portion of Taylor Road through Loomis already exceeds the minimum standard employed by the Town of Loomis (i.e., v/c ratio > 0.80). Current volumes are indicative of LOS F conditions; however, this existing condition has already been noted in the Town of Loomis General Plan as a current deficiency.

Similarly, the daily traffic volume on Horseshoe Bar Road has reached the point that the volume is indicative of v/c ratio of 0.96 on the two lane segment between Taylor Road and Doc Barnes Drive. This exceeds the Town's minimum of 0.80.

The TCCR for Interstate 80 describes existing condition on the mainline freeway at LOS D.

Conditions on Local Streets. It is technically possible to employ Town of Loomis standards to identify the volume / capacity ratio on the local streets addressed by this study. As noted in Table 3, current volumes use a relatively small percentage of the theoretical capacity of these roads. However, it is important to note that residents often perceive traffic impacts along their streets at volume levels that are far below the actual capacity of the road. Noise, access difficulties, and pedestrian conflicts are typical complaints at relatively low volume levels. Many jurisdictions have adopted planning level thresholds for acceptable traffic volumes on residential streets. These thresholds are typically in the range of 2,000 to 3,000 vehicles per day. Comparison of observed volumes with these thresholds suggests that the current volumes on local streets surrounding the project are below typical maximum thresholds.

REGULATORY SETTING

State of California

The **Transportation Corridor Concept Report (TCCR)** is Caltrans long range (20 year) planning document for each State Highway route. The purpose and need of each TCCR are to identify existing route conditions and future needs, including existing and forecasted travel data, a concept Level of Service (LOS) standard, and the facility needed to maintain the concept LOS and address mobility needs over the next 20 years.

The Interstate 80 TCCR provides data for the portion of Interstate 80 from the Sierra College Blvd interchange to the Nevada state line. The Town of Loomis adjoins segment 9. The TCCR notes that the concept LOS for this segment is LOS F assuming the existing six lane facility remains. The TCCR identifies programmed improvements and notes that widening the Horseshoe Bar Road overcrossing for 4 lanes is programmed in the Metropolitan Transportation Plan (MTP). No improvements to mainline I-80 are anticipated.

I-80 / Horseshoe Bar Interchange Modification Project Study Report (1998). In the late 1990's the Town was dealing with the Raley's shopping center that was ultimately built on the north side of Interstate 80, as well as a proposal for developing the property south of the freeway (Turtle Island). The Town commissioned a Project Study Report (PSR), which is the first step in Caltrans' process for identifying and approving improvements to the state highway system. The information which follows is taken from the draft document.

The PSR anticipated a multi-phase widening project that would ultimately replace the existing structure with a 4 lane overcrossing. Because the document is very old, Caltrans design standards and policies may have changed since the late 1990's. It is likely that Caltrans will require that the document be updated before the Town commences any improvements to the interchange structure.

Caltrans Traffic Study Guidelines (2002). The *Caltrans Guide for the Preparation of Traffic Impact Studies* (December 2002) includes the following generalized statement regarding target Levels of Service goals for Caltrans facilities.

> Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities, however, Caltrans acknowledges that this may not be always feasible *and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, the existing Measure of Efficiency (MOE) should be maintained.*

Based on these standards, the Town's LOS C is the minimum acceptable LOS in the area of the project.

Town of Loomis General Plan

The Town of Loomis General Plan (2001) contains the following issues, goals and policies:

Level of Service

Issue: Growth in traffic volumes from development approved within, and adjacent to, the Town will cause increased congestion and need for roadway improvements, depending upon the chosen service level standard.

Goal: To strive for service levels that reflect a balance between mobility, cost-effectiveness, and financial resources.

Level of Service Policy. In order to minimize congestion, maintain Level of Service C on all roads and intersections within the Town of Loomis. Level of Service D may be allowed in conjunction with development approved within the Town as an exception to this standard, at the intersections of King Road / Taylor Road, Horseshoe Bar Road / Taylor Road, Horseshoe Bar Road / Interstate 80 ramps, Sierra College Blvd / Brace Road and Webb Street / Taylor Road when:

1. the deficiency is substantially caused by "through" traffic which neither begins nor ends in Loomis, and is primarily generated by non-residents, or
2. the deficiency will be temporary (i.e., less than three years), and a fully funded plan is in place to provide the improvements needed to remedy the sub-standard condition.

The Town accepts LOS D at the King Road / Taylor Road intersection during the morning peak hour due to the effects of school traffic.

Mitigation of Impacts from Unincorporated Area Projects. Notwithstanding any other General Plan policy or provisions, in the event that significant adverse impacts will result from the construction of large developments on the Town's perimeter, the Town shall make every reasonable effort to have the developers adequately mitigate the adverse impacts.

Roadway Improvement Standards

Issue: Many roadway improvements will be needed during the life of the General Plan and design standards are needed to ensure consistency and quality.

Goal: To develop standards that protect public safety and provide mobility for all forms of transportation.

Roadway Improvement Policy: Roadway improvements within the Town of Loomis shall conform to the roadway classification system and improvement standards specified in the current version of the *Town of Loomis Design & Improvement Standards* after their adoption.

Policy on Character of Roadway Improvements: The design of downtown roadway and streetscape improvements will continue to maintain the "small town downtown" character.

Implementation Measure: The Town will develop and adopt road and street improvement and design standards as funding permits.

Bicycle Facilities

Issue: Bicycle facilities are limited in Loomis. Provisions to increase bicycle use will provide recreational and mobility benefits to residents and reduce vehicular traffic.

Goal: To implement additional bicycle facilities that result in increased bicycle usage.

Bicycle Facility Policies

1. The Town shall promote bicycle travel, as appropriate, and shall pursue all available sources of funding for the development and improvement of bicycle facilities.
2. Bicycle facilities shall be provided in compliance with the Loomis Bicycle Master Plan or subsequent amended versions of that document, as well as on other appropriate routes at the discretion of the Town Council. The Loomis Bicycle Transportation Plan was adopted in 2010 and replaced the Previous Placer County plan.

Transit Service

Issue: Transit service is limited within the Town, providing little incentive for its use and limited options for transit-dependent persons.

Goal: To devote resources for the promotion of transit service that are appropriate for its size and financial resources using comparable cities as a benchmark.

Transit Service Policies

1. The Town will promote and support a safe, efficient, and coordinated public transit system that meets residents' needs, reduces congestion, improves the environment, and helps provide a viable non-automotive means of transportation in and through the Town of Loomis.
2. The Town should work with Placer County Transit and other transit providers to plan and implement public transportation services within the Town that are timely, cost-effective, and responsive to growth patterns and transit demand.

    a. Transit routes should conform to plans established by Placer County Transit, and should generally coincide with major destinations for employment and shopping, the location of major institutions, concentrations of multifamily housing, and other land uses likely to attract public transit ridership.

b. Bus routes should follow major roads with service to residential neighborhoods via collector streets.

c. Bus stops should be located in conformance with the applicable policies of Placer County Transit.

3. The Town should consider the transit needs of senior, disabled, minority, low-income, and transit-dependent persons in making decisions regarding transit services and in compliance with the Americans with Disabilities Act (ADA).

4. The Town should support efforts to provide demand-responsive service ("paratransit") and other transportation services for those unable to use conventional transit.

Neighborhood Environment

Issue: Increased development within, and adjacent to the Town, creates possibility for traffic intrusion into residential neighborhoods.

Goal: To take actions to minimize cut-thru traffic and manage speeds on residential streets.

Neighborhood Environment Policies:

1. The Town shall create and maintain a street system which protects residential neighborhoods from unnecessary levels of traffic, while providing for logical traffic circulation.

2. The Town shall design streets and approve development in such a manner as to prevent and eliminate high traffic flows and parking problems within residential neighborhoods.

3. The Town shall promote the development of a circulation system that preserves the historic nature and character of neighborhoods and districts, and reinforces neighborhood identity and integrity.

4. New local streets shall be designed to promote the interconnection of residential neighborhoods while simultaneously discouraging through-traffic within residential neighborhoods.

5. The Town of Loomis shall establish and maintain a procedure through which local residents can receive assistance in managing and reducing traffic flows through their residential neighborhoods. Such assistance could be technical, the provision of equipment (such as signs) and the labor needed to install such equipment, or the provision of enhanced police traffic enforcement in neighborhoods. The Town could also participate in modifying the existing street system to reduce or eliminate through traffic intrusion into residential neighborhoods. Such modifications could include installation of speed humps, traffic diverters, traffic circles, or a variety of other techniques. Based on the identified need and available financing, priorities will be established and an appropriate level of resources (including staff time, equipment, and physical improvements) will be committed by the Town.

6. If recommended by the Town Engineer after review, and if determined to be feasible, the Town should pursue the construction of a pedestrian bridge over Sierra College Boulevard to address safety impacts. The precise location of the crossing would be determined after further review.

Roadway System Funding

Issue: Transportation improvements are expensive and the Town has very limited financial resources.

Goal: To leverage the Town's resources with outside funding sources (developer fees, state funds, federal funds, etc.).

Roadway System Funding Policies

1. The Town shall aggressively pursue state and federal funding to implement the primary elements of the Town's Circulation Plan.
2. The Town shall require proposed new development projects to analyze their contribution to increased vehicle, pedestrian, and bicycle traffic and to implement the roadway improvements necessary to address their impact.
3. The Town shall assess fees on new development sufficient to cover the fair share portion of development's cumulative impacts on the local and regional transportation system. The cost of all on-site roadways within new development projects is the responsibility of the developer.
4. Prior to acceptance of new local streets by the Town, provisions shall be made for the ongoing maintenance of those facilities. Such provisions could include the establishment of a maintenance district covering the specific roadways identified, or assumption of all maintenance responsibilities by the pertinent homeowners association or other approved organization.

Roadway Maintenance

Issue: Financial constraints can lead to improper maintenance, which reduces the quality and longevity of facilities.

Goal: To create a pavement management system that provides timely and accurate information about how to use maintenance resources.

Roadway Maintenance Policies

1. The Town shall assure that the transportation system continues to provide safe, efficient, and convenient access to its residents.
2. The Town shall provide dependable and adequate resources to maintain and repair the existing system of roads and bridges, according to priorities established on an annual basis.
3. The Town shall work with the Placer County Transportation Planning Agency (PCTPA) to ensure that the PCTPA's Regional Transportation Plan is coordinated with the Town's Capital Improvement Plan. This coordination will allow access to Federal and State funds, where possible, for road maintenance and improvement.

The Environmental Impact Report prepared for the Town of Loomis General Plan also clarifies LOS thresholds by noting that an increase in the v/c ratio of 5% on roadway segments is a significant impact.

Draft Circulation Element Update

The Draft Circulation Element Update includes the streets concept presented in Figure 2. Of those features two are of particular importance for the Village at Loomis:

- **Library Drive – Webb Street Connection.** The Draft Circulation Element Update indicates that a new two-lane road will be created linking the Taylor Road / Webb Street intersection with the Horseshoe Bar Road / Library Drive intersection. The route is intended to divert traffic that would otherwise use the Taylor Road / Horseshoe Bar Road intersection to reach Interstate 80. Recognizing the relative short distance between intersections on Horseshoe Bar Road, the concept includes a roundabout or traffic signal at the Horseshoe Bar Road / Library Drive intersection

- **Swetzer Road Extension.** The Draft Circulation Element Update also proposed a two-lane road that runs parallel to and north of the UPRR. The route begins at the King Road / Swetzer Road intersection and continues westerly to a new intersection on Webb Street before extending to a new intersection on Sierra College Blvd.

Town Draft Circulation Element

STREETS CONCEPT

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figure 2

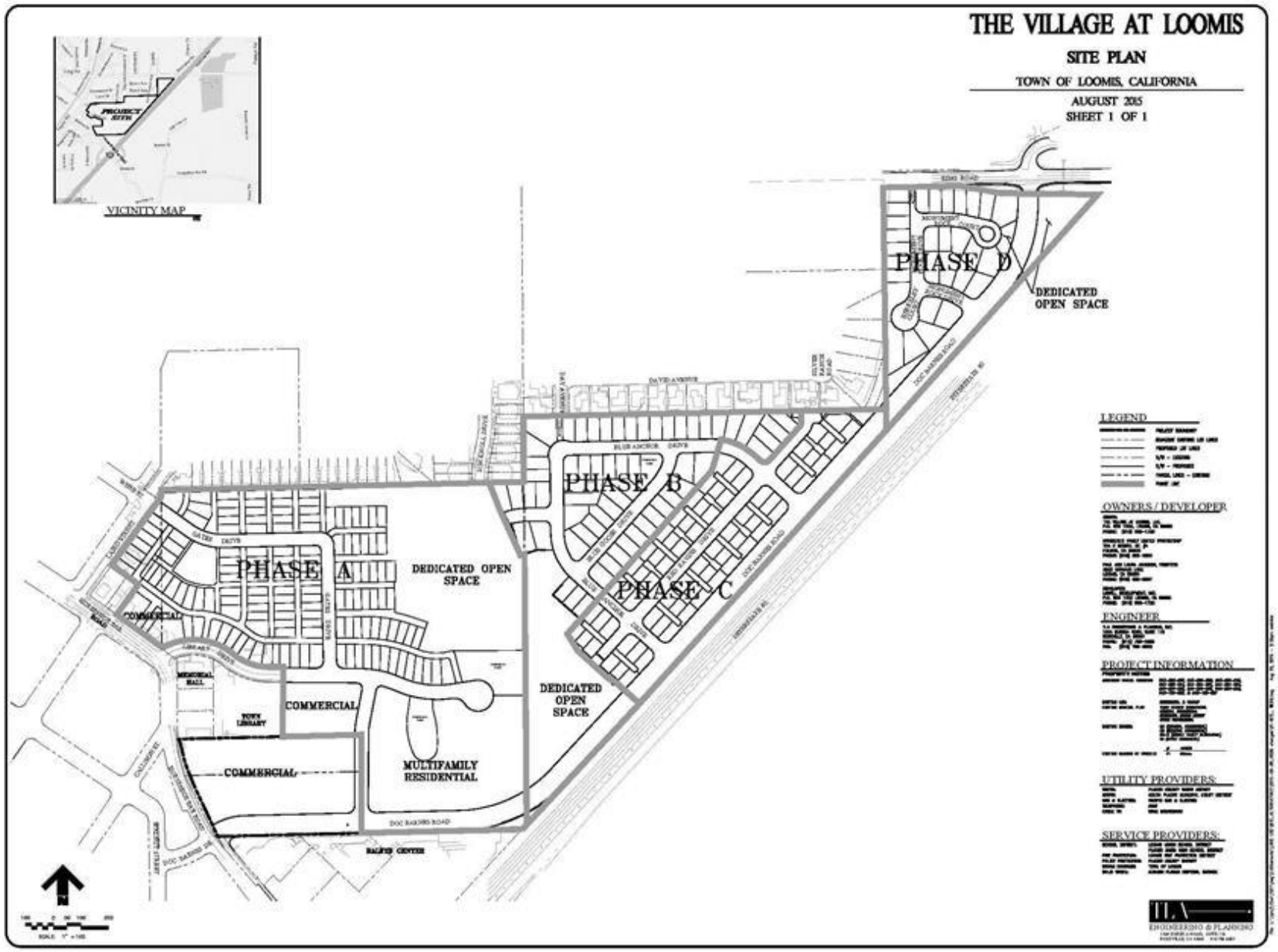
PROJECT CHARACTERISTICS

Land Use

The proposed project involves development of roughly 66 acres within the Town of Loomis as shown in Figure 3. As noted in Table 4, the project will include changing the General Plan designations.

TABLE 4
GENERAL PLAN DESIGNATIONS

Designation	Acreage	
	Existing	Proposed
Residential – Medium Density	23.6	21.8
Residential – Medium High Density	-	30.4
Residential – High Density	-	7.2
General Commercial	29.7	1.4
Town Center Commercial	5.3	5.6
Office Professional	7.8	-
Total	**66.4**	**66.4**



SITE PLAN

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figure 3

Roadways

Proposed. The Project proposes to build Doc Barnes Drive (formerly Boyington Road Extension), from the intersection of Doc Barnes Drive/Horseshoe Bar Road to King Road/Boyington Road. Doc Barnes Drive is described as an element of the Town's circulation system in the General Plan (p. 81) as follows:

"Boyington Road Extension (Figure 4-3) – is the construction of a two-lane freeway frontage road from King Road to Horseshoe Bar Road north of the Raley's Shopping Center, with a short extension to connect with Walnut Street.

The structural improvements will include two traffic lanes, bike lanes on both sides, and parkway strip landscaping and sidewalks on both sides, within a 70-foot wide right-of-way. The location/alignment of this extension will be determined at the time subdivision or other development of the presently vacant properties is proposed.

The Project proposes Doc Barnes Drive substantially as described in the General Plan. The alignment matches the General Plan. The Project proposes a 73-foot right of way, slightly wider than the 70 feet in the General Plan. The Project includes an extra wide sidewalk only one side (an 8-foot wide paved trail), the side away from the freeway, as no pedestrian activity would be anticipated on this side of the road.

A maintenance district or other funding mechanism will be formed for maintenance of the internal streets (i.e., excluding Doc Barnes Drive).

The Downtown Implementation Plan indicates that a traffic signal is planned at the Horseshoe Bar Road / Doc Barnes Drive intersection, and this improvement will be installed by the project proponents when Doc Barnes Drive is extended north. The proposed project will extend Webb Street south of Laird Street into the project. The proposed layout is shown in Figure 4.

THE VILLAGE AT LOOMIS

LAIRD STREET EXHIBIT

AUGUST 2015

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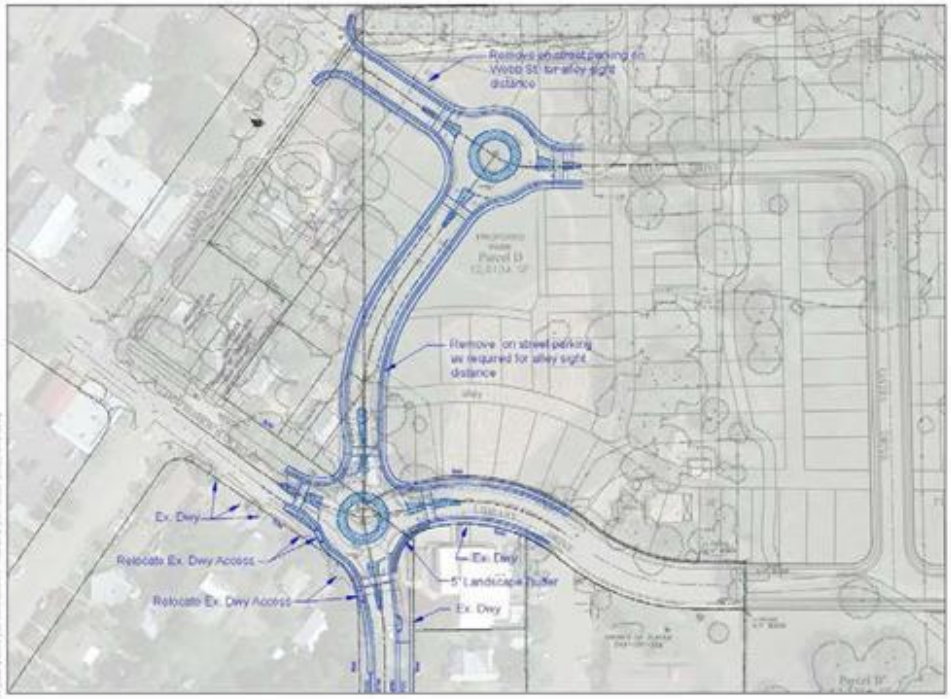
figure 4

Streets Draft Circulation Element Update. The Draft Circulation Element Update includes a feature that occupies a portion of the Village at Loomis:

- **Library Drive – Webb Street Connection.** The Draft Circulation Element Update indicates that a new two-lane road will be created linking the Taylor Road / Webb Street intersection with the Horseshoe Bar Road / Library Drive intersection. This route would cross the Village at Loomis site. A preliminary plan for accommodating the route has been created and employed for this analysis. The plan includes a four-legged roundabout at the Library Drive / Horseshoe Bar Road intersection and a second roundabout roughly 500 feet south of Taylor Road. For the purpose of this analysis it has been assumed that full access will remain at the Laird Street / Webb Street intersection and that a new traffic signal will be installed at the Taylor Road / Webb Street intersection.

Figure 5 presents the layout of Draft Circulation Element Update streets from the Laird Street / Gates Drive intersection to the Horseshoe Bar Road / Library Drive intersection through the project. This layout has been reviewed and tentatively accepted by the Town of Loomis City Engineer.

Town Draft Circulation Element



The roundabout conceptual layouts are based on the NCHRP Report 672, *Roundabouts: An Informational Guide Second Edition*.

Criteria used for the roundabout layouts:

- 105' Inscribed circle diameter (face of curb to face of curb)
- 20' Circulatory roadway (lip of gutter to lip of truck apron)
- 3' Curb and gutter
- 5' Sidewalks

N

0 100 200
1" = 100' GRAPHIC SCALE

Webb Street Extension
Roundabout Concepts

LAYOUT OF DRAFT CIRCULATION
ELEMENT STREETS

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figure 5

Trip Generation

The number of automobile trips that may result from development of the proposed project has been estimated based on an understanding of the yield for the site and typical trip generation rates commonly accepted by the Town of Loomis and Caltrans. For this analysis trip generation rates published in the Institute of Transportation Engineers (ITE) publication *Trip Generation, 9th Edition*, have been consulted.

TABLE 5
TRIP GENERATION RATES

ITE Code	Description	Unit	Trip per Unit						
				AM Peak Hour			PM Peak Hour		
			Daily	In	Out	Total	In	Out	Total
210	Medium and Medium-High Density Residential	du	9.52	25%	75%	0.75	63%	37%	1.00
220	Multi-Family Residential	du	6.65	20%	80%	0.51	65%	35%	0.62
820	Commercial-Retail (<45 ksf)	ksf	90.52	62%	38%	2.14	48%	52%	7.86
826	Commercial – Village	ksf	44.32	62%	38%	1.90	44%	56%	4.19
710	Commercial - Office	ksf	11.03	88%	12%	1.56	17%	83%	1.49

The estimated number of automobile trips that may result from development of the proposed project is presented in Table 6. The project could generate a gross total of 8,487 daily trips, with 446 trip occurring in the a.m. peak hour and 812 trips occurring in the p.m. peak hour. However, not all of these trips will find their way onto the community circulation system or represent new traffic on Loomis' streets.

A share of the project's trips will occur between the various uses within the project area and would not leave the site. The Commercial and Office uses adjoining Taylor Road will attract trips from project residences. Five percent of the trips associated with Commercial and Office uses (i.e., 213 daily trips) are assumed to be matched to an equivalent number of trip ends from the residential area for a total of 426 internal trips. The Village Commercial uses will be more heavily oriented towards residents, and 50% of this use's trips (i.e., 266 daily trips) will remain on site and be matched to an equivalent number of residential trips for a total of 532 internal trips. The project is expected to generate a total of 7,529 daily external trips, with 410 external trips occurring in the a.m. peak hour and 724 external trips generated in the p.m. peak hour.

Of the external trips that do leave the site, a share will be retail "pass-by" trips drawn from traffic already on Horseshoe Bar Road. The share of retail trips that would be "pass-by" has been identified from the Figure 5.5 of the ITE Trip Generation Manual User's Guide, which identifies pass-by percentage in relationship to the size of retail uses. In this case pass-by trips comprise 49% of the trips attracted to a 45 ksf retail center on a p.m. peak hour basis. Because the Village

Commercial uses will serve local residents, fewer would be attracted as pass-by trips from Horseshoe Bar Road, and a 15% pass-by rate has been employed.

As shown, after accounting for internal and pass-by trips, the identified uses in the project could generate 5,635 new daily trips, with 395 trips originating during the a.m. peak hour and 559 generated during the p.m. peak hour.

TABLE 6
TRIP GENERATION FORECASTS

ITE Code	Description	Quantity	Trip per Unit						
				AM Peak Hour			PM Peak Hour		
			Daily	In	Out	Total	In	Out	Total
210	Medium and Medium-High Density Residential	301 du	2,866	56	170	226	190	111	301
220	Multi-Family Residential	125 du	831	13	51	64	50	28	78
820	Commercial-Retail (<45 ksf)	44 ksf	3,982	58	36	94	166	180	346
826	Commercial - Village	12 ksf	532	14	9	23	22	28	50
710	Commercial - Office	25 ksf	276	34	5	39	6	31	37
	Total		8,487	175	271	446	434	378	812
	Less Internal Trips 5% of Office and 5% Commercial Retail matched		-426	-7	-6	-13	-19	-19	-38
	Less Internal 50% of Commercial – Village		-532	-12	-11	-23	-25	-25	-50
	External Trips		7,529	156	254	410	390	334	724
	Less Commercial Retail Pass-by Trips	15% am / 49% pm	-1,854	-8	-5	-13	-77	-84	-161
	Less Commercial Village Retail Pass-By Trips	15%	-40	-1	-1	-2	-2	-2	-4
	Net New Trips		**5,635**	**147**	**248**	**395**	**311**	**248**	**559**
	Share of net new trips - MDR/ MHDR		**2,495 (44%)**					**268 (48%)**	
	Share of net new trips – Multi Family		**723 (13%)**					**67 (12%)**	
	Share of net new trips – Comm Retail		**1,929 (34%)**					**168 (30%)**	
	Share of net new trips – Comm Village		**226 (4%)**					**21 (4%)**	
	Share of net new trips - Comm Office		**262 (5%)**					**35 (6%)**	

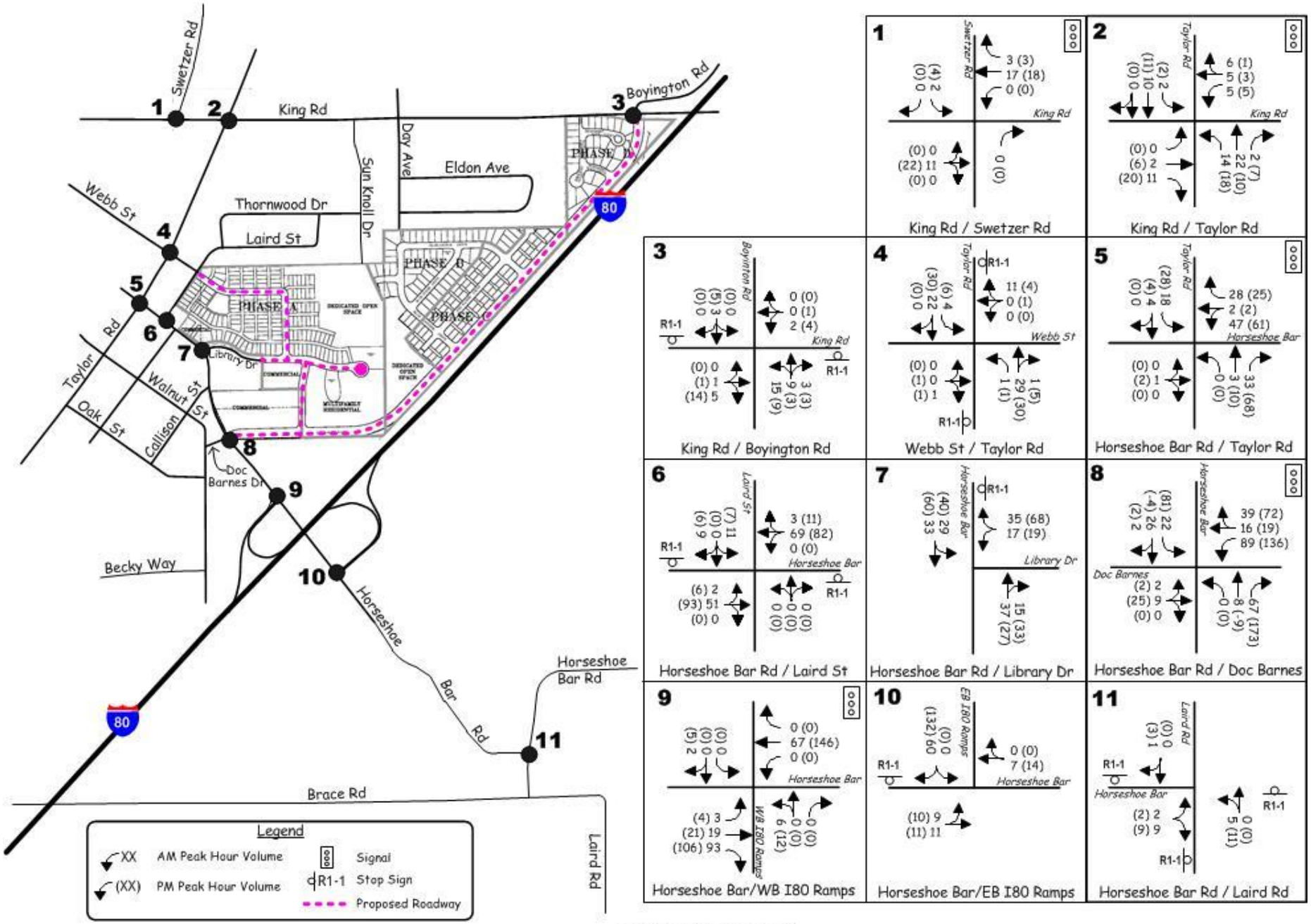
Trip Distribution

The external origins / destinations of trips associated with the proposed project were identified based on review of current travel patterns, knowledge of the location of complimentary land use and the result of "select zone" analysis performed using the Town of Loomis regional travel demand forecasting model. Trips associated with new residences will be oriented to local schools and to regional shopping and employment opportunities. New commercial areas will attract trips from residential neighborhoods throughout the Loomis / South Placer Area. Table 7 identifies the general distribution of trips by land use type.

TABLE 7
TRIP DISTRIBUTION ASSUMPTIONS

Direction	Route	Percent of Total Trips			
		Residential		Office / Commercial Retail	Village Commercial
		AM Peak Hour	PM Peak Hour		
Northeast	Taylor Road beyond King Road	4.0	3.7	4.0	2.2
	Del Oro HS	10.0	0.0	0.0	0.0
	Swetzer Road north of King Road	1.5	1.41	1.5	0.9
	Interstate 80 beyond Horseshoe Bar Road	5.0	4.6	5.0	2.7
	Horseshoe Bar Road beyond Laird Road	1.0	0.9	1.0	0.6
	Boyington Road north of King Road	0.0	0.0	0.0	0.0
East	King Road east of Boyington Road	1.5	1.4	1.5	0.9
	Laird Road east of Horseshoe Bar Road	3.5	3.2	3.5	1.8
Southwest	Taylor Road west of Horseshoe Bar Road	17.5	21.3	23.5	12.0
	Interstate 80 west of Horseshoe Bar Road	35.0	36.1	39.0	20.0
West	King Road west of Swetzer Road	7.5	7.0	7.5	4.0
	Horseshoe Bar Road west of Taylor Road	1.0	0.9	0.0	0.0
	Downtown Loomis	7.5	8.9	8.5	4.9
Internal		5.0	12.0	5.0	50.0
Total		100%	100%	100%	100%

Trip Assignment. The routes selected by individual residents, employees and customers will reflect the least time path along competing routes to identified destinations and will account for the presence of new streets incorporated into the proposed project. Figure 6 identifies the assignment of project trips to the study area street system when the project is built out.



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PROJECT ONLY
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

figure 6

Traffic Diversion. The proposed project includes the eventual construction of the Doc Barnes Drive extension from its current intersection on Horseshoe Bar Road northeasterly through the site to the King Road / Boyington Road intersection. This route is identified in the General Plan and is intended to provide an alternative route parallel to Interstate 80 and provide a more direct route to the I-80 Horseshoe Bar Road interchange for Loomis residences residing on the south side of the freeway.

The potential diversion of existing traffic to this new route has been identified based on consideration of current peak hour travel patterns at study intersections and select link analysis derived from the Town of Loomis regional travel demand forecasting model. The peak hour traffic observed turning from King Road to Taylor Road and from Horseshoe Bar Road to Taylor Road was reviewed. These volumes were compared to the trips suggested on the new route using the baseline version of the traffic model.

A "conservative" estimate of diversion to the new route was made in order to provide a "worst case" projection of project impacts elsewhere in Loomis. It is recognized that Doc Barnes Drive will be used to varying degrees throughout the day based on actual traffic patterns occurring elsewhere in Loomis and in rural Placer County. It is also possible that Loomis residents may alter their travel patterns to take advantage of the new route in a manner that is not readily quantified in this analysis.

For example, Del Oro H.S. parents may elect to use the school's Boyington Road access in greater numbers if a new route to I-80 is available. The number of parents and student drivers electing to change travel patterns is speculative. This change cannot be anticipated by the Loomis city-wide traffic model, and this analysis does not attempt to forecast the number of parent vehicles diverted from Del Oro's Taylor Road access to the Boyington Road driveway. Similarly, parents may elect to make greater use of Loomis Grammar School's King Road loading area instead of the Taylor Road access if a more convenient route to Interstate 80 is available through the project, although it is not possible to estimate the amount of school traffic diverted. From the standpoint of safety, the Doc Barnes Drive-Boyington Road route will likely be especially beneficial for local residents on days when traffic conditions deteriorate on mainline I-80 and background traffic moves to Taylor Road. Because any diversion is likely to draw traffic away from locations with poor Level of Service and towards areas that operate better, traffic projections which would attempt to account for additional diversion would likely yield better Levels of Service than those identified in this report.

Bicycle Facilities

The Loomis Bicycle Transportation Plan proposes new bikeways through the project site, specifically i) a Class III route from the current end of Day Avenue to Doc Barnes Drive; ii) Class I paths along Doc Barnes Drive and connecting the current end of Sun Knoll Drive to Doc Barnes Drive; and iii) Class II paths along Doc Barnes Drive and also extending from the end of Library Drive easterly through the open space into the neighborhood to be built south of Day Avenue. The project proposes to construct the bikeways shown in the Bicycle Transportation Plan, except for the extension of Library Drive. Library Drive will not be extended through the open space. Additionally, due to the regulatory authority of the U.S. Army Corps of Engineers it is uncertain to what extent the bike paths intended through the open space drainage corridor, i.e., south of Sun Knoll Drive, will be permitted.

EXISTING PLUS PROJECT AS PROPOSED CONDITIONS

Traffic Volumes

The impacts associated with developing the Village at Loomis project as proposed have been identified by superimposing project trips onto the Modified Existing forecasts described earlier. The resulting Existing Plus Project traffic volumes are noted in Figure 7.

Level of Service Impacts

Intersection Levels of Service. Conditions occurring at study intersections as a result of the project are noted in Table 8.

The Level of Service at all four signalized intersections would meet the Town's LOS C goal with completion of the project. The **King Road / Taylor Road, Taylor Road / Horseshoe Bar Road**, **Doc Barnes Drive / Horseshoe Bar Road** and **Horseshoe Bar Road / WB I-80 ramps intersections** would operate at LOS C or better during a.m. and p.m. peak hours.

As indicated five (5) intersections will operate with a Level of Service that exceeds the Town of Loomis' minimum LOS C standard, whether for the intersection as a whole or on a single approach to a stop controlled intersection. Two of these locations are already deficient under existing conditions.

The southbound approach to the **King Road / Boyington Road intersection** is projected to operate at LOS D during the morning peak hour. LOS D exceeds the Town's minimum LOS C standard.

The northbound approach to the **Taylor Road / Webb Street intersection** will continue to operate at LOS D during the p.m. peak hour. LOS D exceeds the Town's LOS C minimum.

The length of delays for the westbound approach to the **Horseshoe Bar Road / Laird Street intersection** will increase, and the Level of Service will be LOS E in the p.m. peak hour. This continues to exceed the Town's LOS C minimum.

The westbound approach to the **Horseshoe Bar Road / Library Drive intersection** is projected to operate at LOS D during the p.m. peak hour. This exceeds the Town's minimum LOS C standard.

The westbound approach to the **Horseshoe Bar Road / EB I-80 ramps intersection** is projected to operate at LOS F during the a.m. and p.m. peak hour.

Roadway Segment Level of Service. Levels of Service on roadway segments based on the General Plan segment capacity are noted in Table 9. As indicated, the same three segments that currently carry traffic volumes that exceed the minimum LOS C threshold will continue to do so with completion of the project.

The project will add traffic to mainline Interstate 80, primarily between the Sierra College Blvd and Horseshoe Bar Road interchanges. However, the volume added would not change the current Level of Service (i.e., LOS D)

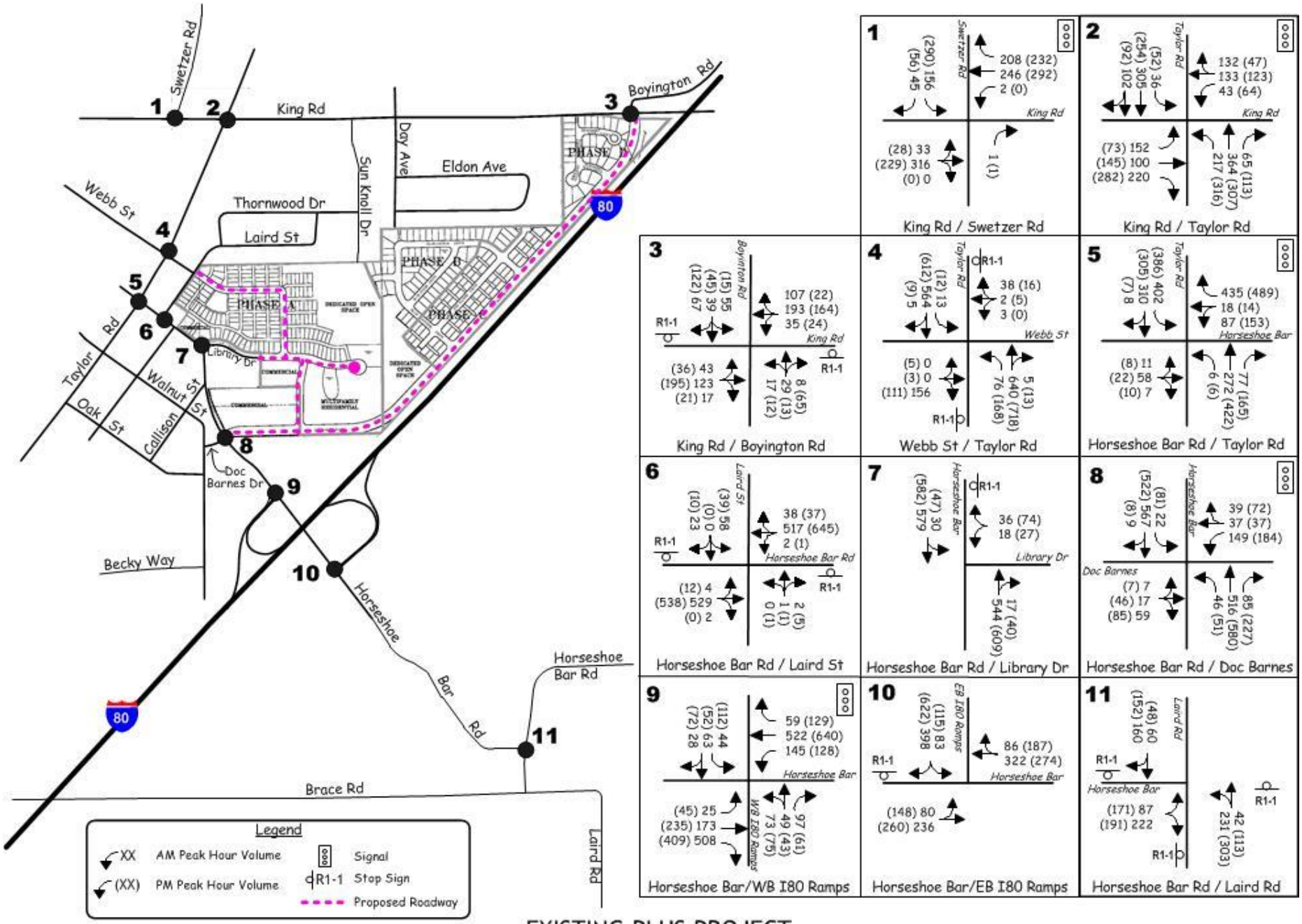
The project proposes pedestrian connections to existing streets that are stubbed to the project but does not propose vehicular access to Day Avenue or Sun Knoll Drive. These connections might theoretically be expanded to accommodate motor vehicles to facilitate neighborhood circulation. However, the amount of vehicle traffic that would use either connection would be relatively low, (i.e., 100 to 200 vehicles per day). As a result, expanding these connections would not appreciably improve traffic conditions elsewhere in Loomis but would not appreciably impact the existing neighborhoods served by either connection.

Traffic Signal Warrants. Table 10 compares the status of traffic signal warrants at study intersections with and without the project. As indicated, conditions at all three locations would be the same with and without the project.

The volume at the **Taylor Road / Webb Street intersection** would satisfy peak hour traffic signal warrants, but as with the existing condition, nearly all of that traffic is turning right from southbound Webb Street onto westbound Taylor Road. Little or any of this traffic would be diverted to eastbound Taylor Road if a traffic signal was made available. A traffic signal is not justified with the project.

The traffic volumes at the **Horseshoe Bar Road / EB I-80 ramps intersection** will continue to satisfy traffic signal warrants during the a.m. and p.m. peak hours.

The traffic volumes at the **Horseshoe Bar Road / Laird Road intersection** will continue to satisfy peak hour warrants during the p.m. peak hour.



EXISTING PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

7390-01 LT 4/22/2016

figure 7

TABLE 8
EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE

		AM Peak Hour				PM Peak Hour			
		Existing		Existing Plus Project		Existing		Existing Plus Project	
Intersection	**Control**	**Average Delay (sec)**	**LOS**	**Average Delay (sec)**	**LOS**	**Average Delay (sec)**	**LOS**	**Average Delay (sec)**	**LOS**
King Rd / Swetzer Rd	Signal	25.5	C	25.1	C	6.0	A	6.2	A
Taylor Rd / King Rd	Signal	39.6	D	37.3	D	20.9	C	19.2	B
King Rd / Boyington Rd									
SB left+thru+right turn	NB/SB Stop	18.7	C	**31.5**	**D**	11.3	B	14.0	B
NB left+thru+right		-	-	22.1	C	-	-	12.7	B
	Signal			11.9	D			15.6	B
Taylor Rd / Webb St									
EB left turn	NB/SB Stop	9.4	A	9.1	A	10.0	A	10.0	A
WB left turn		9.0	A	9.0	A	9.4	A	9.4	A
NB left+thru+right turn		23.8	C	21.8	C	**29.9**	**D**	**27.8**	**D**
SB left+thru+right turn		18.2	C	16.6	C	**27.5**	**D**	**26.6**	**D**
Taylor Rd / Horseshoe Bar Rd	Signal	28.8	C	26.4	C	30.6	C	29.8	C
Horseshoe Bar Rd / Laird Street									
EB left+thru+right turn	EB/WB Stop	15.8	C	16.3	C	16.5	C	18.1	C
WB left+thru+right turn		**29.2**	**D**	**35.2**	**E**	**34.6**	**D**	**42.8**	**E**
Horseshoe Bar Rd / Library Dr									
SB left turn	WB Stop	8.6	A	8.8	A	9.0	A	9.3	A
WB left+right turn		17.5	C	19.0	C	22.7	C	**27.7**	**D**
Horseshoe Bar Rd / Doc Barnes Dr									
EB left+thru+right turn	EB Stop	15.4	C	-	-	18.0	C	-	-
	Signal	-	-	22.5	C	-	-	24.6	C
Horseshoe Bar Rd / WB I-80 ramps	Signal	19.8	B	20.8	C	20.5	C	34.0	C
Horseshoe Bar Rd / EB I-80 ramps									
SB left turn	WB Stop	8.4	A	8.5	A	0.5	A	**9.2**	**A**
WB left+right turn		**41.9**	**E**	**68.2**	**F**	**35.3**	**E**	**301.6**	**F**
	Signal	-	-	10.5	B	-	-	13.7	B
Horseshoe Bar Rd / Laird Rd	All-Way Stop	12.3	B	12.7	B	19.4	C	20.9	C

TABLE 9
EXISTING PLUS PROJECT DAILY TRAFFIC VOLUMES AND LEVELS OF SERVICE

Roadway	Segment	# of Lanes	Existing			Existing Plus Project				
						Average Daily Traffic				
			Average Daily Traffic	Daily Volume / Capacity Ratio*	LOS	Diversion	Project Only	Total	Daily Volume / Capacity Ratio*	LOS
Taylor Road	Oak St to Horseshoe Bar Rd	2	10,603	0.71	C	-400	1,440	11,643	0.78	C
	Horseshoe Bar Rd to Webb St	2	**19,037**	**1.27**	**F**	-1,500	680	**18,217**	**1.21**	**F**
	Webb St to King Rd	2	**16,344**	**1.09**	**F**	-1,500	710	**15,554**	**1.04**	**F**
King Road	Taylor Rd to Boyington Rd	2	6,464	0.43	A	-1,500	235	5,199	0.35	A
Horseshoe Bar Rd	Taylor Rd to Library Dr	2	**14,452**	**0.98**	**E**	-1,100	1,900	**15,252**	**1.02**	**F**
	Library Dr to Doc Barnes Dr	2	**14,452**	**0.98**	**E**	-1,100	1,680	**15,032**	**1.00**	F
	Doc Barnes Rd to Interstate 80	4	15,706	0.52	A	0	2,970	18,676	0.62	B
	Interstate 80 to Laird Rd	2	8,107	0.54	A	0	260	8,367	0.56	A
Day Avenue	King Rd to David Ave	2	591	0.04	A	0	0	591	0.04	A
Laird Street	Horseshoe Bar Rd to Webb St	2	1,152	0.08	A	0	300	1,452	0.10	A
Sun Knoll Drive	King Rd to Thornwood Dr	2	518	0.04	A	0	10	528	0.04	A
Boyington Road	North of King Rd	2	2,600	0.17	A	0	150	2,750	0.18	A
Webb Street	Taylor Rd to Laird St	2	676	0.07	A	0	160	836	0.06	A
	Taylor Rd / King Rd	2	3,760	0.25	A	0	50	3,810	0.25	A
Doc Barnes Road	Taylor Rd to Gates Dr	2	-	-	-	1,500	4,640	6,140	0.35	A
	Gates Dr to Blue Anchor Dr	2	-	-	-	1,500	1,800	3,300	0.22	A
	Blue Anchor Dr to King Rd	2	-	-	-	1,500	1,300	2,800	0.19	A
Library Drive	Horseshoe Bar Rd to Gates Dr	2	100	0.01	A	0	1,230	1,330	0.09	A
Interstate 80	Sierra College Blvd to Horseshoe Bar Rd	6	91,000	0.85	D	0	2,270	93,270	0.86	D
	Horseshoe Bar Rd to Penryn Rd	6	84,000	0.77	D	0	220	84,220	0.78	D

(*) based on General Plan threshold capacity of 15,000 ADT for two lane road

HIGHLIGHTED VALUES ARE AN INCREASE OF MORE THAN 5%

TABLE 10
EXISTING PLUS PROJECT TRAFFIC SIGNAL WARRANTS

Intersection	Control	Peak Hour Warrants Satisfied?				NOTES
		AM Peak Hour		PM Peak Hour		
		Existing	Existing Plus Project	Existing	Existing Plus Project	
King Road / Boyington Road	NB/SB Stop	NO	NO	NO	NO	
Taylor Road / Webb Street	NB/SB Stop	YES	YES	YES	YES	Nearly all Right Turns
Horseshoe Bar Road / Laird Street	EB/WB Stop	NO	NO	NO	NO	
Horseshoe Bar Road / Library Drive	WB Stop	NO	NO	NO	NO	
Horseshoe Bar Road / EB I-80 ramps	WB Stop	YES	YES	YES	YES	20% Right Turns
Horseshoe Bar Road / Laird Road	All-Way Stop	NO	NO	YES	YES	

Impacts to Alternative Transportation Modes

Pedestrians. The project will include new facilities to accommodate site residents and employees and these facilities may also be used by existing Loomis residents. New streets constructed in Village at Loomis will include sidewalks on both sides of the street. New pedestrian connections to existing neighborhoods will be provided at Sun Knoll Drive, Day Avenue, Laird Street and King Road. The traffic signal anticipated at the Horseshoe Bar Road / Doc Barnes Drive intersection will link the community with Downtown Loomis.

The quality of project connections to the community's pedestrian circulation system has been evaluated to identify any particular "gaps". Sidewalks exist along Laird Street and along Horseshoe Bar Road. However, there are no sidewalks along King Road in the vicinity of the new Doc Barnes Drive connection. This location is likely to see increased pedestrian activity, particularly as a route to Del Oro High School. Creation of a "safe pedestrian route to school" is discussed in the Impacts/Mitigation section later in this report.

Within the community itself, Doc Barnes Drive will be used for both pedestrian circulation and through automobile travel by both residents and neighbors who "cut-through" the site. Doc Barnes Drive, however, is relatively a straight road that lacks features to physically control the speed of traffic (i.e., limited connections to neighborhood streets, few direct fronting residential lots, etc.). As a result, it is likely that persons walking along Doc Barnes Drive may perceive the speed of traffic as a safety issue.

Measures to enhance pedestrian safety have been evaluated within the context of available resources. While the Town of Loomis has not adopted policies regarding implementation of "traffic calming" measures, Placer County's Neighborhood Traffic Management Program provides guidance as to the typical range of features that may be applicable on collector streets without direct residential frontage. Recommended measures are identified in the Impacts/ Mitigation section of this report and include:

- Intersection "bulb-outs" at all public street intersections on Doc Barnes Drive to reduce pedestrian crossing distance

- Improve the King Road / Doc Barnes Drive / Boyington Road intersection to include:

    1. Widening King Rd to provide separate eastbound and westbound left turn lanes on King Rd,
    2. Install a traffic signal,
    3. Install applicable pedestrian landings on both sides of King Rd,
    4. Install applicable school crosswalks.

With these measures, on-site improvements and connections to the community safe pedestrian circulation will be accommodated.

Bicycles. The project will include new facilities to accommodate bicycle travel by site residents and employees who wish to use bicycles. As the site proceeds, the frontage improvements made along Horseshoe Bar Road will be consistent with the Downtown Implementation Plan and would include bicycle lanes. The Doc Barnes Extension will include Class II bicycle lanes that are consistent with the Town's Bicycle Transportation Master Plan and would link the community with existing bike lanes on King Road and Horseshoe Bar Road. With these enhancements safe bicycle travel can be accommodated.

Transit. The project's residents, employees and visitors will be able to take advantage of the existing Placer Transit services available along Taylor Road. While existing stops are relatively close to the site, the number of additional riders generated by the project is unlikely to be large enough to justify changes to existing routes or modification of existing schedules. The existing transit service has the capacity to accommodate any riders originating in the project.

Railroad Crossings. The project will add a small amount of traffic on the roads that cross the UPRR. The project will add 5 a.m. and 6 p.m. peak hour trips across the King Road crossing and 1 a.m. and zero p.m. trips across the Webb Street crossing. This additional traffic will not affect queueing that already result from adjacent signalized and un-signalized intersections.

EXISTING PLUS PROJECT WITH HORSESHOE BAR ROAD – WEBB STREET CONNECTION CONDITIONS

Approach to Creating Traffic Volumes

The approach taken to forecast the effects of Draft Circulation Element Update streets makes use of the Loomis regional travel demand forecasting model to identify traffic diverted to the new roads. The baseline version of the traffic model was used to create "Existing Plus Village at Loomis with Library Drive-Webb Street Connection" forecast under a two-step process.

First the traffic model was modified to create two models that excluded the land uses proposed in the Village at Loomis but included:

A. Doc Barnes Drive Extension to King Road, and
B. Doc Barnes Drive Extension and Webb Street – Library Drive Connection

Each model was run, and daily, a.m. peak hour and p.m. peak hour forecasts were created. Peak hour intersection turning movements were produced at study intersections.

The results of the two model runs were compared, and the net difference in volume in each intersection movement and on each study area roadway segment was identified. The net differences were then applied to "modified existing" segment volumes and turning movements created for the original Traffic Study which reflected the effects of the Doc Barnes Drive extension alone.

Trips generated by development in the Village at Loomis were then superimposed onto the modified existing condition to create "plus Project" volumes.

Daily Traffic Volumes / Impacts

Table 11 compares existing traffic volumes with those occurring under Existing Plus the Village at Loomis conditions if the connection is made linking Horseshoe Bar Road and Taylor Road with the Library Drive – Webb Street Connection.

Roadway Segment Level of Service. If the Village at Loomis is fully built out and the Doc Barnes Extension and Library Drive – Webb Street connection is included in the plan, then three (3) roadway segments will continue to carry daily traffic volumes that exceed the LOS C minimum standard.

The segment of **Taylor Road from Horseshoe Bar Road to Webb Street** will carry less traffic than occurs today, but the roadway will operate at LOS D. While LOS D exceeds the minimum LOS C standard, because the volume decreases, this is not a significant project traffic impact.

The segment of **Taylor Road from Webb Street to King Road** will carry less traffic than occurs today, but the roadway will operate at LOS F. While LOS F exceeds the minimum LOS C standard, because the volume decreases, this is not a significant project traffic impact.

The segment of **Horseshoe Bar Road from Library Drive to Doc Barnes Drive** will operate at LOS D based on the volume threshold with a roundabout intersection. LOS D exceeds the LOS C minimum standard. In this case, the difference in traffic falls within the 5% increase permitted under Loomis guidelines, and the project's impact is therefore not significant. The Level of Service on this roadway segment was previously a significant impact under street system that was consistent with the current circulation element. That impact was mitigated by reducing the project's traffic contribution by limiting access to Horseshoe Bar Road at Laird Street and Library Drive to "right turns only" and creating a direct Gates Drive connection to Webb Street.

TABLE 11
EXISTING PLUS PROJECT DAILY TRAFFIC VOLUMES AND LEVELS OF SERVICE
WITH DRAFT CIRCULATION ELEMENT UPDATE STREET THROUGH VILLAGE AT LOOMIS

			Existing			Plus Project with Doc Barnes Drive Extension and Library Drive – Webb Street Connection				
						Average Daily Traffic				
Roadway	**Segment**	**# of Lanes**	**Average Daily Traffic**	**Daily Volume / Capacity Ratio***	**LOS**	**No Project Land Use**	**Village Project Only**	**Total**	**Daily Volume / Capacity Ratio***	**LOS**
Taylor Road	Oak St to Horseshoe Bar Road	2	10,603	0.71	C	10,050	1,380	11,430	0.76	C
	Horseshoe Bar Road to Webb St	2	**19,037**	**1.27**	**F**	12,150	675	**12,825**	**0.86**	**D**
	Webb St to King Road	2	**16,344**	**1.09**	**F**	14,680	625	**15,305**	**1.02**	**F**
King Road	Taylor Rd to Boyington Rd	2	6,464	0.43	A	5,320	210	5,530	0.37	A
Horseshoe Bar Rd	Taylor Rd to Library Dr	2	**14,452**	**0.98**	**E**	8,100	1,575	9,675	0.54	A
	Library Dr to Doc Barnes Dr	2	**14,452**	**0.98**	**E**	13,600	1,580	**15,180**	**0.84**	**D**
	Doc Barnes Drive to Interstate 80	4	15,706	0.52	A	15,850	2,980	15,840	0.53	B
	Interstate 80 to Laird Rd	2	8,107	0.54	A	8,500	260	8,760	0.56	A
Laird Street	Horseshoe Bar Rd to Webb St	2	1,152	0.08	A	250	60	310	0.10	A
Boyington Road	North of King Rd	2	2,600	0.17	A	2,600	150	2,750	0.18	A
Webb Street -	Taylor Rd to Laird Street	2	676	0.07	A	4,150	450	4,600	031	A
	Laird St to Horseshoe Bar Rd	2	0	0	0	5,500	1,225	6,625	0.37	A
	Taylor Rd / King Rd	2	3,760	0.25	A	3,700	140	3,840	0.26	A
Doc Barnes Drive	Horseshoe Bar Road to Gates Drive	2	-	-	-	1,500	4,640	6,140	0.35	A
	Gates Drive to Blue Anchor Drive	2	-	-	-	1,500	1,800	3,300	0.22	A
	Blue Anchor Drive to King Rd	2	-	-	-	1,500	1,300	2,800	0.19	A
Library Drive	Horseshoe Bar Road to Gates Drive	2	100	0.01	A	10	1,050	1,060	0.09	A
Interstate 80	Sierra College Blvd to Horseshoe Bar Rd	6	91,000	0.85	D	0	2,270	93,270	0.86	D
	Horseshoe Bar Road to Penryn Road	6	84,000	0.77	D	0	220	84,220	0.78	D

noted: capacity based on General Plan threshold capacity of 15,000 ADT for two lane road , except where noted as based on Draft Circulation Element capacity of 18,000 ADT for two lane road with roundabout

BOLD values exceed the LOS C standard. **HIGHLIGHTED** values are an increase of more than 5% and significant impact.

Peak Hour Traffic Volumes / Impacts

Figure 8 presents Existing Plus Project peak hour traffic volumes at study area intersections assuming that the Library Drive - Webb Street Connection is made under the Draft Circulation Element Update alternative. This figure also presents the intersection geometry assumed at each location. Two locations would be improved as part of the project to accommodate the Draft Circulation Element Update street system.

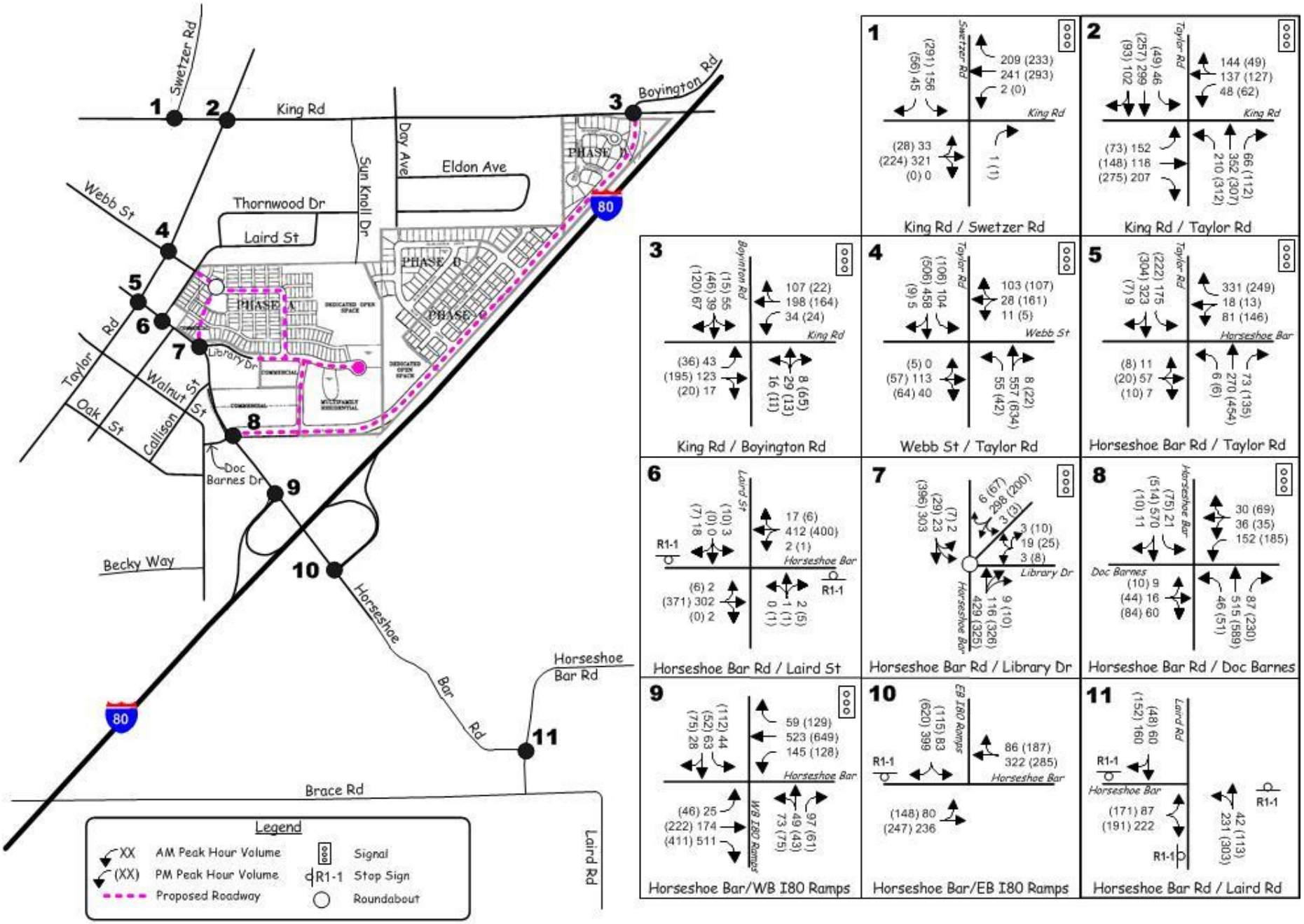
The **Taylor Road / Webb Street intersection** is assumed to be signalized in order to accommodate the intentions of the Draft Circulation Element Update. However, while the Draft Circulation Element Update identifies Webb Street as "3-lane section with on-street parking" this analysis assumes that Webb Street approaches remains one-lane and that these legs of the intersection operate with "permissive" signal phasing whereby the northbound Webb Street and southbound Webb Street approaches move together. Protected left turns are assumed on the Taylor Road approaches.

The **Horseshoe Bar Road / Library Drive - Webb Street Connection intersection** is constructed as a single lane roundabout.

For LOS analysis the Horseshoe Bar Road / Doc Barnes Drive intersection and King Road / Boyington Road intersections are assumed to be signalized, and the intersections are improved pursuant to the mitigation requirements identified for the proposed project. Without these improvements the impact to these intersections would be similar to that identified for the proposed project.

Tables 12 and 13 present resulting peak hour intersection Levels of Service. As indicated, with one exception all study intersections would deliver satisfactory Level of Service. The Horseshoe Bar Road / Eastbound I-80 off ramp intersection will operate at LOS F in the a.m. and p.m. peak hour if no improvements were made.

At one location conditions would be improved relative to the proposed project. At the Horseshoe Bar Road / Laird Street intersection side street delays would be indicative of LOS C or better conditions.



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EXISTING PLUS PROJECT WITH DRAFT CIRCULATION ELEMENT ROADS AND DOC BARNES TRAFFIC VOLUMES AND LANE CONFIGURATIONS

figure 8

TABLE 12
EXISTING PLUS PROJECT AM PEAK HOUR INTERSECTION LEVEL OF SERVICE

Intersection	Control	Existing		Existing Plus Project Current Circulation		Existing Plus Project with Webb Street / Library Drive Connection	
		Average Delay (sec)	LOS	Average Delay (sec)	LOS	Average Delay (sec)	LOS
King Rd / Swetzer Rd	Signal	25.5	C	25.1	C	25.1	C
Taylor Rd / King Rd	Signal	39.6	D	37.3	D	37.3	D
King Rd / Boyington Rd	NB/SB Stop						
SB left+thru+right turn		18.7	C	**31.5**	**D**	**31.5**	**D**
NB left+thru+right		-	-	22.1	C	22.1	C
	Signal			11.9	B	11.9	B
Taylor Rd / Webb Street	NB/SB Stop						
EB left turn		9.4	A	9.1	A	-	-
WB left turn		9.0	A	9.0	A		
NB left+thru+right turn		23.8	C	21.8	C		
SB left+thru+right turn		18.2	C	16.6	C		
	Signal					16.7	B
Taylor Rd / Horseshoe Bar Rd	Signal	28.8	C	26.4	C	26.8	C
Horseshoe Bar Rd / Laird Street	EB/WB Stop						
EB left+thru+right turn		15.8	C	16.3	C	12.2	B
WB left+thru+right turn		**29.2**	**D**	**35.2**	**E**	12.1	B
Horseshoe Bar Rd / Library Dr	WB Stop						
SB left turn		8.6	A	8.8	A	-	-
WB left+right turn		17.5	C	19.0	C		
	Roundabout					11.2	B
Horseshoe Bar Rd / Doc Barnes Dr	EB Stop						
EB left+thru+right turn		15.4	C	-	-	-	-
	Signal	-	-	22.5	C	18.4	C
Horseshoe Bar Rd / WB I-80 ramps	Signal	19.8	B	20.8	C	20.8	C
Horseshoe Bar Rd / EB I-80 ramps	WB Stop						
SB left turn		8.4	A	8.5	A	8.5	A
WB left+right turn		**41.9**	**E**	**68.2**	**F**	**68.8**	**F**
	Signal	-	-	10.5	B	16.8	B
Horseshoe Bar Rd / Laird Rd	All-Way Stop	12.3	B	12.7	B	12.7	B

TABLE 13
EXISTING PLUS PROJECT PM PEAK HOUR INTERSECTION LEVEL OF SERVICE

Intersection	Control	Existing		Existing Plus Project with Current Circulation		Existing Plus Project with Webb Street – Library Drive Connection	
		Average Delay (sec)	LOS	Average Delay (sec)	LOS	Average Delay	LOS
King Rd / Swetzer Rd	Signal	6.0	A	6.2	A	6.2	A
Taylor Rd / King Rd	Signal	20.9	C	19.2	B	18.8	B
King Rd / Boyington Rd	NB/SB Stop						
SB left+thru+right turn		11.3	B	14.0	B	14.0	B
NB left+thru+right		-	-	12.7	B	12.7	B
	Signal			15.6	B	15.9	B
Taylor Rd / Webb Street	NB/SB Stop						
EB left turn		10.0	A	10.0	A	-	-
WB left turn		9.4	A	9.4	A		
NB left+thru+right turn		**29.9**	**D**	**27.8**	**D**		
SB left+thru+right turn		**27.5**	**D**	**26.6**	**D**		
	Signal					23.7	C
Taylor Rd / Horseshoe Bar Rd	Signal	30.6	C	29.8	C	31.1	C
Horseshoe Bar Rd / Laird Street	EB/WB Stop						
EB left+thru+right turn		16.5	C	18.1	C	12.8	B
WB left+thru+right turn		**34.6**	**D**	**42.8**	**E**	15.8	C
Horseshoe Bar Rd / Library Dr	WB Stop						
SB left turn		9.0	A	9.3	A	-	-
WB left+right turn		22.7	C	**27.7**	**D**		
	Roundabout					12.3	B
Horseshoe Bar Rd / Doc Barnes Dr	EB Stop						
EB left+thru+right turn		18.0	C	-	-	-	-
	Signal	-	-	24.6	C	26.2	C
Horseshoe Bar Rd / WB I-80 ramps	Signal	20.5	C	34.0	C	34.4	C
Horseshoe Bar Rd / EB I-80 ramps							
SB left turn	WB Stop	0.5	A	**9.2**	**A**	**9.2**	**A**
WB left+right turn		**35.3**	**E**	**301.6**	**F**	**301.6**	**F**
	Signal	-	-	13.7	B	12.6	B
Horseshoe Bar Rd / Laird Rd	All-Way Stop	19.4	C	20.9	C	20.9	C

CUMULATIVE TRAFFIC CONDITIONS – SHORT TERM

Existing Plus Approved Projects

A short term future condition that assumes occupancy of other approved / pending projects is typically assessed under Caltrans Traffic Study Guidelines. This scenario has not been investigated under Town of Loomis guidelines. Analysis of Existing Plus Approved Projects (EPAP) has been a part of traffic studies commissioned for projects in the City of Rocklin, including the work completed for the Rocklin Commons (Target) and Rocklin Crossings (Walmart) projects.

The relative benefit of evaluating the effects of other approved projects was discussed with Town staff, and it was determined that analysis of EPAP background conditions was not justified for the following reasons:

- The analysis of EPAP conditions for major Rocklin projects did consider impacts to key intersections in Loomis. Those analyses did identify traffic impacts that warranted mitigations for full-build out at one location that is also addressed in this analysis: (1) Taylor Road / Horseshoe Bar Road. At this location the prescribed mitigation (i.e., provide a separate right turn lane on eastbound Taylor Road) has already been installed by the proponents of the Rocklin Commons and Rocklin Crossings projects. Contribution to the cost of mitigations for locations outside of this study area (i.e., King Road / Sierra College Blvd and Taylor Road / Sierra College Blvd) have also been identified and accepted by the Town of Loomis.

- The major elements of the key approved projects in the area of Rocklin adjoining Loomis have already proceeded. The traffic associated with the Target Store and Walmart Store at the I-80 / Sierra College Blvd intersections is already included in the new traffic counts conducted for this analysis.

- No approved projects within the Town of Loomis in the area of the proposed project were known when this traffic study was initiated.

- While the California Environmental Quality Act (CEQA) does require analysis of cumulative impacts, CEQA does not indicate that the EPAP analysis is necessary. The long term cumulative analysis included in this study based on the Town of Loomis travel demand forecasting model addresses the requirements of CEQA.

For these reasons, analysis of the short term cumulative effects of other approved projects is not a part of this traffic study.

CUMULATIVE TRAFFIC CONDITIONS – LONG TERM WITH ADOPTED CIRCULATION ELEMENT

Introduction

While recent traffic growth trends have suggested a decrease in traffic volumes on study area streets, in the long term it is likely that the conditions observed today will change as the result of new development in Loomis and throughout the Sacramento Metropolitan Region, as well as the construction of new roads.

The Town of Loomis commissioned the creation of a regional travel demand forecasting model, and that analysis tool became available in June 2009. The Loomis model is intended to be consistent with a similar model developed for the City of Rocklin and Placer County, and both models as enhanced versions of the SACMET regional model. As a result, the Loomis model reflects development anticipated in Loomis / Rocklin and throughout Sacramento, Placer, Yuba and Yolo Counties by the year 2030.

Locally, the Loomis traffic model assumes development permitted under the Town's General Plan, as well as circulation system components anticipated by the Town. Noteworthy commercial development is assumed on the Turtle Island site south of Interstate 80 and along Sierra College Blvd. The Loomis model assumes that the Doc Barnes Drive extension will be completed to King Road. Regionally, the Town's traffic model assumes major improvements in Rocklin (i.e., Dominguez Road I-80 Overcrossing and Clover Valley Road extension to Park Drive) as well as the Placer Parkway connecting State Route 99 and State Route 65.

Approach to Developing Cumulative (i.e., Year 2030) Traffic Volume Forecasts

The technical approach employed to use model results to create future intersection turning movements for study area intersections employed the "incremental" approach used for most analyses that employ the SACMET regional model.

The traffic model was run for three scenarios:

1. Modified Existing that reflects recent development,
2. Year 2030 Cumulative with no development on the Village at Loomis site, and
3. Year 2030 Cumulative with Village at Loomis development as proposed.

The baseline model developed when the Loomis model was created was modified to reflect recent area development. The most appreciable change was the addition of commercial land uses that have been constructed and occupied near the I-80 / Sierra College Blvd interchange (i.e., Rocklin Commons SC and Rocklin Crossings SC). For this analysis the amount of development that was occupied on the date the new traffic counts were conducted was identified in consultation with the City of Rocklin, and this land use was added to the baseline model. New modified baseline model runs were then made.

Modifications were made to the Loomis 2030 traffic model to create the "no project" condition. The Doc Barnes Drive extension to the King Road / Boyington Road intersection was not assumed to be constructed without the project and was removed from the model's roadway link network. The Traffic Analysis Zones (TAZ's) that would include the proposed project were identified and the land uses in those TAZ's were eliminated to reflect the "no project" condition. New traffic model runs for daily, a.m. and p.m. peak hour conditions were made.

To create the "Plus Project" condition, the proposed land uses were added to the model's land use inventory, anticipated circulation system improvements were incorporated (including the Doc Barnes Extension), and new traffic model runs were made.

The incremental approach for identifying future traffic volumes was then employed. The future daily and peak hour forecasts were compared to the model's modified baseline year forecasts, and the net difference in volumes was determined. These net changes were then added or subtracted from the current peak hour approach and daily segment volumes to create the adjusted cumulative volumes with and without the Village at Loomis project.

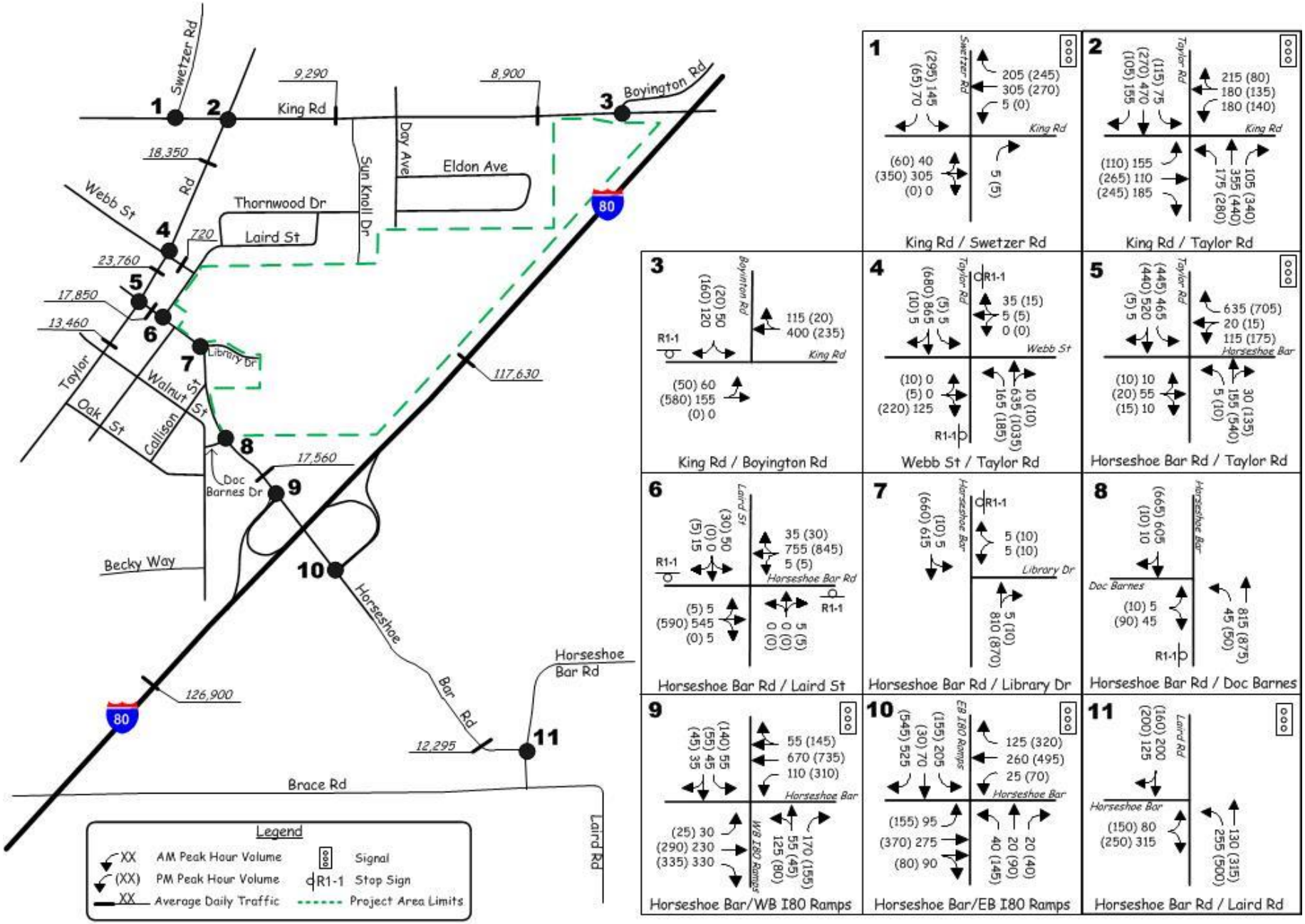
Existing (2014) and adjusted cumulative traffic volumes were then compared to identify equivalent growth rates for roadway segments and for intersection approaches for use in creating intersection turning movement volumes. To create peak hour intersection turning movements, the segment growth factors were applied to observed peak hour volumes and the results were balanced to best approximate conditions on each leg using the methodologies contained in the Transportation Research Board's (TRB's) NCHRP Report 255, *Highway Traffic Data for Urbanized Area Project Planning and Design.* This approach reflects the fact that the development of various land uses may affect current travel patterns while adding new traffic, while new roadways may provide alternative routes for existing traffic.

Traffic Volume Forecasts. To understand the relative change in traffic volumes occurring in the study area with and without the Village at Loomis project, Table 14 summarizes the adjusted daily traffic volume forecasts for study area roads created from the cumulative traffic model runs. The relative daily growth rate on each road has also been identified based on comparison of existing and adjusted future volumes.

Peak hour intersection turning movements were created based on the relative difference in baseline and cumulative peak hour model forecasts. Figures 9 and 10 identify cumulative traffic volumes at study intersections with and without Village at Loomis.

TABLE 14
ADJUSTED CUMULATIVE DAILY VOLUMES
AND EQUIVALENT GROWTH FACTORS

Street	Location	2014 Daily Volume	No Project		With Village at Loomis	
			Adjusted Volume	Growth factor	Adjusted Volume	Growth factor
Taylor Road	West of Horseshoe Bar Rd	10,600	13,460	1.27	13,850	1.31
	Horseshoe Bar Rd to Webb St	19,100	23,760	1.24	23,300	1.22
	Webb St to King Rd	16,375	18,350	1.12	17,960	1.10
Horseshoe Bar Rd	Taylor Rd to Doc Barnes Rd	14,525	17,850	1.23	18,350	1.26
	Doc Barnes Rd to Interstate 80	15,525	17,560	1.13	22,200	1.43
	Interstate 80 to Laird Rd	8,100	12,300	1.52	11,700	1.44
King Road	Taylor Rd to Boyington Rd	6,460	9,290	1.44	8,920	1.38
Interstate 80	Sierra College Blvd to Horseshoe Bar Rd	90,000	126,700	1.41	128,350	1.43
	Horseshoe Bar Rd to Penryn Rd	82,000	117,700	1.44	116,425	1.42



CUMULATIVE NO PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

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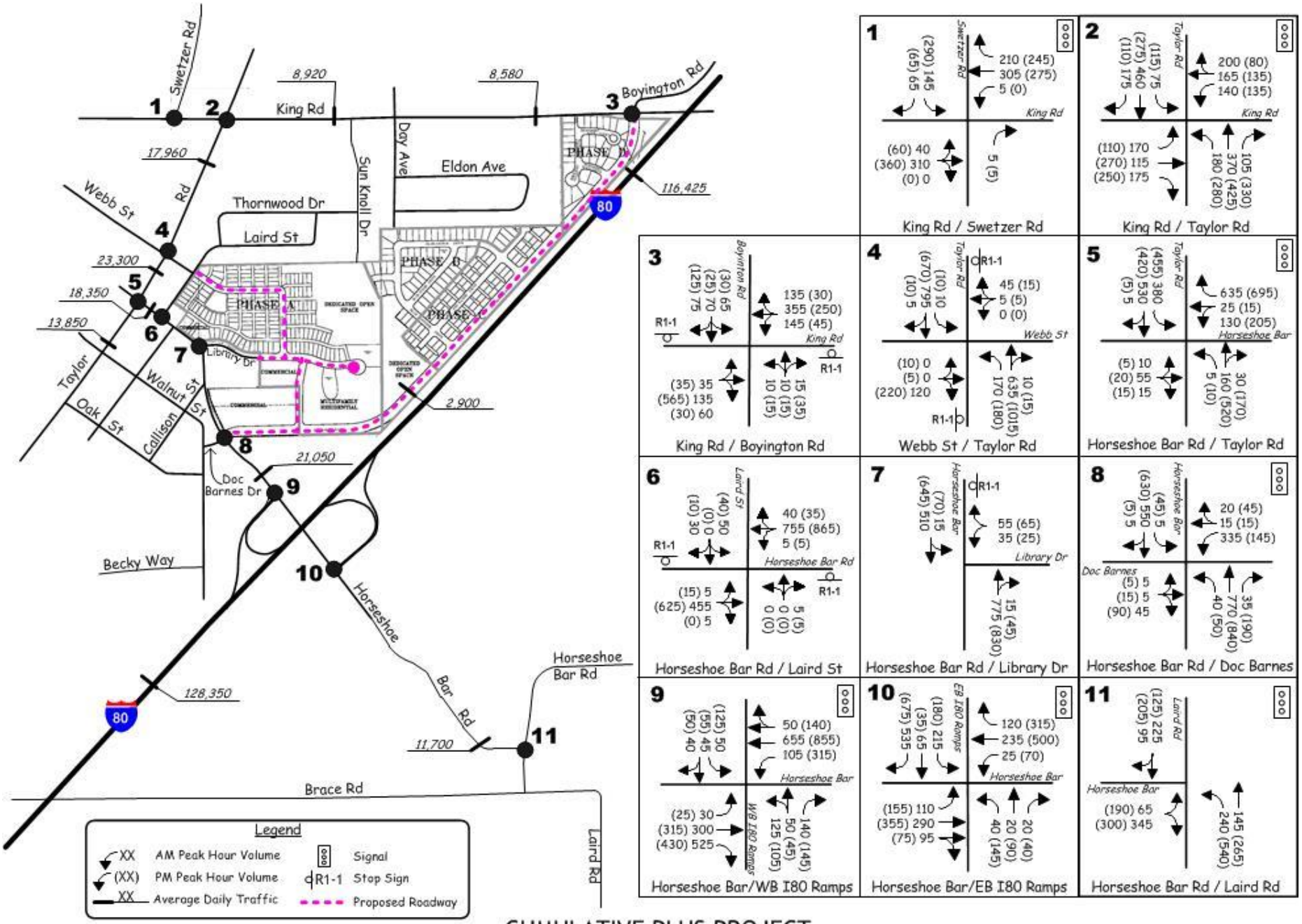
figure 9



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CUMULATIVE PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

figure 10

Cumulative Circulation System

Various plans and programs identify improvements that will be made to the study area circulation system. Those improvements anticipated in the future are also noted in Figures 9 and 10.

Projects in Town of Loomis Impact Fees. The Town of Loomis has a traffic impact fee program intended to address the impacts of future development that originated in 2005. (http://loomis.ca.gov/filesystem/DEVELOPMENT_FEE_STUDY_2005.pdf: note: link no longer active).

Included Improvements. As noted in Fee Study Table 2-1 the fee program includes a share of costs for various Horseshoe Bar Road improvements. Item 2-5 is the Horseshoe Bar Road / Laird Road intersection.

Item 2-1 I-80 / King Road freeway access PSR
Item 2-5 Horseshoe Bar Road / Laird Road "T" signalization
Item 2-9 Horseshoe Bar Road lane width and shoulders (Brace to Town limits)
Item 2-11 Horseshoe Bar Road turn lanes (Walnut to Taylor)
Item 2-12 Horseshoe Bar Road widening (Walnut to south edge of commercial)
Item 2-15 Doc Barnes Drive

A separate chapter discusses the *Interstate 80 / Horseshoe Bar Road interchange improvements* fee. The document notes that a Project Study Report (PSR) was completed for planned improvements in 1998. The Town commissioned a Project Study Report (PSR), which is the first step in Caltrans' process for identifying and approving improvements to the state highway system. The PSR anticipated a multi-phase widening project that would ultimately replace the existing structure with a 4 lane overcrossing. The document accounted for retail development on the Turtle Island site as was originally proposed, including a direct connection to the eastbound ramp intersection, a full access intersection at Evans Drive and right turn only access to property on the north side of Horseshoe Bar Road that is midway between the ramps and Evans Drive. The eastbound ramps and Evans Drive intersections were to be signalized, although the separation was very short (425 feet).

Because the Draft PSR document is very old it cannot be used as the basis for implementing improvements. Caltrans design standards and policies have changed greatly since the late 1990's, and based on initial conversations with Caltrans staff, Caltrans will require the PSR to be updated.

Downtown Implementation Plan. The traffic study completed for the Town of Loomis' Downtown Implementation Plan summarized suggested improvements in the study area that were part of the plan, as noted in the text which follows:

*The **Taylor Road / Horseshoe Bar Road intersection** will still be controlled by a traffic signal. The plan maintains the separate left turn lanes that exist on the Taylor Road approaches as well as the right turn lane that is available on northbound Horseshoe Bar Road. The intersection will*

still be wide enough to accommodate trucks. Bulb outs will be added to reduce the crossing distance for pedestrians, and under the Implementation Plan the eastbound right turn lane on Taylor Road will be removed.

At the ***Taylor Road / Webb Street intersection*** *crosswalks will be provided across Taylor Road on both sides of the street, and the intersection will be "bulb-ed" to shorten pedestrian crossing distances.*

If the intersection was not signalized, in the long term it is likely that this turn prohibition would need to be expanded to other hours. While not a part of the Implementation Plan, it may be necessary to eliminate eastbound left turns from Taylor Road onto Webb Street due to the short distance between this intersection and Horseshoe Bar Road.

The ***Taylor Road / King Road intersection*** *will remain a signalized intersection with auxiliary turn lanes on each approach. Geometrically, one change will be made. The westbound "thru+right turn" lane on Taylor Road will be re-striped as a "right turn only" lane in order to allow a reduced width on Taylor Road west of the intersection. The conceptual plan will continue to accommodate the paths of trucks traveling between Taylor Road and the Swetzer Road industrial area.*

At the ***Horseshoe Bar Road / Library Drive intersection*** *a left turn lane will be added to Horseshoe Bar Road at this intersection, and in the near term traffic will still be controlled by a stop sign on Library Drive, although the intersection could be signalized in the future if needed. Crosswalks will be available across Library Drive and across Horseshoe Bar Road.*

While today the ***Horseshoe Bar Road / Doc Barnes Drive intersection*** *is a "tee" intersection controlled by a stop sign on the Doc Barnes Drive approach, a major signalized intersection is planned in the future when Doc Barnes Drive is extended to King Road. The Implementation Plan recognized that auxiliary turn lanes will be needed to accommodate traffic diverted from Taylor Road to the Doc Barnes Extension, as well as anticipated development in the Village at Loomis project. These lanes include a right turn on Horseshoe Bar Road and left turn lanes on Doc Barnes Drive and Horseshoe Bar Road.*

The ***Horseshoe Bar Road / Westbound I-80 intersection*** *will remain as it exists today. However, the Implementation Plan recognizes the need to extend the existing southbound right turn lane on Horseshoe Bar Road back to the Doc Barnes Drive intersection.*

The Implementation Plan will change the nature of bicycle facilities in some locations and will result in facilities that are consistent with the intentions of the Complete Streets Act (2008).

A mixed ***bicycle – pedestrian path*** *will be the main feature of the plan in many locations. The path will be 10 feet wide to accommodate both modes and will be paved. The path will be separated from automobile traffic by a landscaped swale.*

The bicycle-pedestrian path will extend on both sides of Taylor Road from Sierra College Blvd to the High Hand Nursery and from Horseshoe Bar Road to King Road. Bicycle-pedestrian paths will also be created on Horseshoe Bar Road from Laird Street to Doc Barnes Drive. ADA requirements mandate the size and configuration of pedestrian facilities. Meeting ADA requirements on both sides of Taylor Road requires adjustment to on-street parking.

Within the existing downtown area, striped ***Class II bicycle lanes*** *will be provided on Taylor Road in both directions from High Hand Nursery to Horseshoe Bar Road, and for a little less than 300 feet in front of the Blue Goose Fruit Shed.*

The bicycle-pedestrian path noted under the Implementation Plan will replace existing sidewalks or create new pedestrian opportunities on the west and east ends of the plan area. ADA accessible sidewalks will be created in the remainder of the Taylor Road corridor.

Because these streets fall outside of the plan area, there are no sidewalks proposed on Oak Street, Walnut Street or Magnolia Street outside of those streets' intersections with Taylor Road. This choice is also consistent with the rural character of Loomis and the low traffic volumes on these roads.

The Implementation Plan incorporates numerous pedestrian trails through Town property. Sidewalks will extend west from the Railroad Depot to provide access to the new features being created. From that point meandering trails will then continue beyond Walnut Street to the High Hand Nursery parking lot. Eventually that trail could be extended to the west beyond the W&W lumber yard.

ADA requirements mandate the size and configuration of pedestrian facilities. Meeting ADA requirements on both sides of Taylor Road requires adjustment to on-street parking.

General Plan Miscellaneous Core Improvements (GP Figure 4-4) – consists of a series of localized improvements on Taylor Road that are designed to improve local circulation and parking. Some of the key elements include:

- visual gateways on Taylor Road that all serve a traffic calming function;
- modifications to the Horseshoe Bar Road/Taylor Road intersection to provide an "uninterrupted" right turn from Horseshoe Bar Road to Taylor Road (installed);
- a one-way circulation system to/from the new train depot with on-street parking, bus turnout, and drop-off facility;
- a pedestrian/local traffic only facility adjacent to the fruit sheds (between Walnut Street and Horseshoe Bar Road);
- continuous bike lane on Taylor Road throughout the downtown;
- new traffic signals on Taylor Road at Webb Street, Walnut Avenue, and Circle Drive.

Of these improvements, a potential Taylor Road / Webb Street traffic signal is in the study area. However, the traffic study prepared for the Downtown Implementation Plan noted that queueing between the Horseshoe Bar Road and Webb Street will make operating these signals very difficult, and the option of retaining stop sign controls should be investigated by the Town. Thus this analysis identifies cumulative Level of Service at this intersection with and without a signal.

General Plan Other Improvements. General Plan Figure 4-5 shows other improvements anticipated to be needed at build-out of this General Plan and the General Plan text notes that most of the improvements are safety and/or operational related (such as providing paved shoulders, turning lanes, or signals). However, some roads will need additional through lanes for capacity:

- Sierra College Boulevard – 4 lanes north of Bankhead Road and 6 lanes south of Bankhead.
- Horseshoe Bar Road – 4 lanes from Boyington Road Extension to the southern edge of commercial development.
- The Horseshoe Bar Road/I-80 interchange will also undergo improvement, with the specific details (number of lanes, ramp configurations, etc.) determined by a future Project Study Report.
- Rocklin Road – 4 lanes from Sierra College Boulevard to Barton Road, and 2 lanes from Barton Road to the east, possibly connecting with Laird Road along an alignment north of existing Rocklin Road. The exact alignment will be determined at a future date.
- King Road should be improved to provide turning lanes at major cross-streets.
- The portion of Horseshoe Bar Road between Taylor and the Boyington Road Extension should also be improved to provide a continuous turn lane along with curb, gutter, and sidewalk.
- Taylor Road (east of King Road) should be improved to provide turning lanes at major cross-streets and curb, gutter, and sidewalk.
- The Sierra College Boulevard interchange will need to be widened and improved (completed).
- Some widening of the Taylor Road/King Road intersection will likely be needed depending upon the enrollment and operation of the adjacent Loomis Grammar School and Del Oro High School.
- Brace Road, Barton Road, and Bankhead Road will all warrant upgrades that provide for standard lane widths and paved shoulders.
- Several intersections will likely warrant signalization and/or turning lanes. General Plan Figure 4-5 identifies some of the more likely locations, but the identified locations are neither definitive nor exhaustive.
- The Town may consider an interchange at King Road and Interstate 80 in the future.
- Residents have been concerned about "through" traffic on Del Mar Avenue and the incentives for additional through traffic will increase as travel times increase on Sierra College Boulevard and Taylor Road. In response, the Town will evaluate the potential for the closure of Del Mar Avenue within one month of the adoption of this updated General Plan.

No Project Year 2030 Traffic Volumes and Levels of Service

Conditions at Intersections. As noted in Table 15, if the proposed project does not proceed, then peak hour traffic conditions would exceed the Town of Loomis' minimum LOS C standard at eight (8) locations.

The **Taylor Road / King Road intersection** is projected to operate at LOS E during the a.m. peak hour. This exceeds the LOS D conditions accepted at this intersection under the general plan.

The southbound approach to the **King Road / Boyington Road intersection** is projected to operate at LOS E during the morning peak hour. LOS D exceeds the Town's minimum LOS C standard.

At the **Taylor Road / Webb Street intersection** the Level of Service for the northbound and southbound Webb Street approaches would exceed the LOS D minimum and reach LOS F during the p.m. peak hour.

The **Horseshoe Bar Road / Taylor Road intersection** is projected to operate at LOS F during the p.m. peak hour. This exceeds the LOS C minimum.

The westbound approach to the **Horseshoe Bar Road / Laird Street intersection** is projected to operate at LOS F in the a.m. and p.m. peak hour.

The westbound approach to the **Horseshoe Bar Road / Library Drive intersection** is projected to operate at LOS D in the a.m. peak hour and LOS E during the p.m. peak hour.

The eastbound approach to the **Horseshoe Bar Road / Doc Barnes Drive intersection** is projected to operate at LOS D during the p.m. peak hour.

The **Horseshoe Bar Road / Laird Road intersection** is projected to operate at LOS D in the a.m. and p.m. peak hour.

Conditions on Roadway Segments. Table 16 identifies Year 2030 daily traffic volume forecasts created by the Loomis traffic model for the No Project condition. Resulting Levels of Service are also identified. As indicated five (5) roadway segments are projected to operate with Levels of Service in excess of the Town's LOS C threshold.

As indicated, the volume of traffic on **Taylor Road through the study area** is expected to increase appreciably. Based on the General Plan's capacities, the LOS F conditions now occurring east of Horseshoe Bar Road will also occur in the area between Sierra College Blvd and Horseshoe Bar Road. These forecasts and Level of Service conclusions are generally consistent with the findings of the current Loomis General Plan EIR which noted that a 4 lane section would theoretically be needed to deliver the Town's minimum Levels of Service.

The volume of traffic forecast for Horseshoe Bar Road will also increase. LOS F conditions are projected on **Horseshoe Bar Road in the area between Taylor Road and Doc Barnes Drive.**

The Town of Loomis assumes that significant traffic occurs when the minimum segment Level of Service is exceeded and the project increases the volume by more than 5%. In this case, the increase is less than 5% on each street.

The daily traffic volume on Interstate 80 is projected to exceed the highway capacity and LOS F conditions are forecast. This is consistent with the findings of the TCCR. That document suggested that carpool lanes might be added to I-80 in this area, however, funding for this project is not identified. The TCCR projects LOS F in the future with and without this improvement.

Traffic Signal Warrants. Table 17 identifies the status of traffic signal warrants at the remaining three study intersections where traffic signals have not been assumed. As indicated, traffic signal warrants are not satisfied at the King Road / Boyington Road intersection and at the Horseshoe Bar Road / Library Drive intersection. As is the case today, the volume of traffic at the Taylor Road / Webb Street intersection reaches the level that satisfies warrants, but because nearly all the traffic at this location turns right, a traffic signal is not justified.

TABLE 15
YEAR 2030: NO PROJECT AND PLUS PROJECT INTERSECTION LEVEL OF SERVICE

		AM Peak Hour				PM Peak Hour			
		No Project		Plus Project		No Project		Plus Project	
Intersection	**Control**	**Average Delay (sec)**	**LOS**	**Average Delay (sec)**	**LOS**	**Average Delay (sec)**	**LOS**	**Average Delay (sec)**	**LOS**
King Rd / Swetzer Rd	Signal	20.2	C	20.0	C	10.5	B	10.6	B
Taylor Rd / King Rd	Signal	**76.7**	**E**	**63.2**	**E**	27.1	C	26.8	C
	Current geometry	-	-	45.4	D	-	-	-	-
King Rd / Boyington Rd									
SB left+thru+right turn	NB/SB Stop	**39.7**	**E**	**823.6**	**F**	13.9	B	**32.1**	**D**
NB left+thru+right		-	-	**>999**	**F**	-	-	**32.3**	**D**
	Signal	-	-	19.6	B	-	-	13.9	B
Taylor Rd / Webb St									
EB left turn	NB/SB Stop	11.6	A	11.1	B	10.3	A	10.2	B
WB left turn		9.0	A	9.0	A	10.6	A	10.6	B
NB left+thru+right turn		**27.1**	**D**	24.4	C	**51.6**	**F**	**50.5**	**F**
SB left+thru+right turn		**25.6**	**D**	21.9	C	**234.1**	**F**	**217.4**	**F**
Taylor Rd / Horseshoe Bar Rd	Signal	26.8	C	25.5	C	**91.0**	**F**	**94.6**	**F**
	Current geometry	-	-	-	-	-	-	**46.9**	**D**
Horseshoe Bar Rd / Laird St									
EB left+thru+right turn	EB/WB Stop	12.2	B	11.3	B	12.7	B	**13.1**	**B**
WB left+thru+right turn		**66.0**	**F**	**49.9**	**E**	**68.2**	**F**	**105.5**	**F**
Horseshoe Bar Rd/Library Dr									
SB left turn	WB Stop	9.6	A	9.6	A	10.1	B	10.6	B
WB left+right turn		**28.8**	**D**	**30.5**	**D**	**40.0**	**E**	**59.8**	**F**
	Signal	-	-	15.7	B	-	-	15.6	B
Horseshoe Bar Rd/Doc Barnes Dr									
NB left turn	EB/WB Stop	9.0	A	-	-	9.6	A	-	-
EB left+thru+right turn		17.2	C			**29.7**	**D**		
	Signal	-	-	30.5	C	-	-	33.9	C
Horseshoe Bar Rd/WB I-80 ramps	Signal	25.4	C	26.1	C	25.1	C	23.9	C
Horseshoe Bar Rd/EB I-80 ramps	Signal	24.4	C	26.0	C	25.6	C	26.9	C
Horseshoe Bar Rd / Laird Rd	Signal w/ NB left turn lane	32.7	C	33.5	C	**52.5**	**D**	**79.1**	**E**
	Add EB right turn lane	28.9	C	22.6	C	32.6	C	39.4 (22.6)	D (C)*

(*) with overlap phasing

TABLE 16
YEAR 2030: NO PROJECT AND PLUS PROJECT DAILY TRAFFIC VOLUMES AND LEVELS OF SERVICE

Roadway	Segment	# of Lanes	No Project			Plus Project		
			Average Daily Traffic	Daily Volume / Capacity Ratio*	LOS	Average Daily Traffic	Daily Volume / Capacity Ratio*	LOS
Taylor Rd	Oak St to Horseshoe Bar Rd	2	**13,460**	**0.89**	**D**	**13,850**	**0.92**	**E**
	Horseshoe Bar Rd to Webb St	2	**23,760**	**1.58**	**F**	**23,300**	**1.55**	**F**
	Webb St to King Rd	2	**18,350**	**1.22**	**F**	**17,960**	**1.20**	**F**
King Rd	Taylor Rd to Boyington Rd	2	9,290	0.62	B	8,920	0.59	A
Horseshoe Bar Rd	Taylor Rd to Doc Barnes Dr	2	**17,850**	**1.19**	**F**	**18,350**	**1.22**	**F**
	Doc Barnes Rd to Interstate 80	4	17,560	0.59	A	22,200	0.74	C
	Interstate 80 to Laird Rd	2	**12,295**	**0.82**	**D**	11,700	0.78	C
Doc Barnes Rd	Taylor Rd to Gates Dr	2	-	-	-	5,200	0.35	A
	Gates Dr to Blue Anchor Dr	2	-	-	-	2,900	0.20	A
	Blue Anchor Dr to King Rd	2	-	-	-	2,400	0.16	A
Library Dr	Horseshoe Bar Rd to Gates Dr	2	160	0.01	A	1,900	0.13	A
Interstate 80	Sierra College Blvd to Horseshoe Bar Rd	6	**126,700**	**1.17**	**F**	**128,350**	**1.18**	**F**
	Horseshoe Bar Road to Penryn Road	6	**117,700**	**1.08**	**F**	**116,425**	**1.07**	**F**

(*) based on General Plan threshold capacity of 15,000 ADT for two lane road

HIGHLIGHTED VALUES ARE AN INCREASE OF MORE THAN 5%

TABLE 17
YEAR 2030 PLUS PROJECT TRAFFIC SIGNAL WARRANTS

Intersection	Control	Peak Hour Warrants Satisfied?				
		AM Peak Hour		PM Peak Hour		NOTES
		Existing	Existing Plus Project	Existing	Existing Plus Project	
King Rd / Boyington Rd	NB/SB Stop	NO	NO	NO	NO	
Taylor Rd / Webb St	NB/SB Stop	YES	YES	YES	YES	Nearly all Right Turns
Horseshoe Bar Rd / Laird St	EB/WB Stop	NO	NO	NO	NO	
Horseshoe Bar Rd/Library Dr	WB Stop	NO	NO	NO	NO	

Year 2030 Plus Project Traffic Volumes and Levels of Service

Conditions at Intersections. If the proposed project proceeds, then peak hour traffic conditions would exceed the Town of Loomis' minimum LOS C standard at seven (7) of the same locations identified under the No Project condition. See Table 15.

The **Taylor Road / King Road intersection** is projected to continue to operate at LOS E during the a.m. peak hour. This exceeds the LOS D conditions accepted at this intersection under the general plan. However, development of the proposed project reduces the length of delays at the intersection, and as a result its impact is not significant.

Without signalization, the southbound approach to the **King Road / Boyington Road intersection** is projected to operate at LOS F during the morning peak hour and LOS D in the p.m. peak hour. Both exceed the Town's minimum LOS C standard.

At the **Taylor Road / Webb Street intersection** the Level of Service for the northbound and southbound Webb Street approaches would exceed the LOS D minimum and reach LOS F during the p.m. peak hour if a traffic signal is not installed. However, as the project reduces the length of delays at the intersection, its impacts is not significant.

The **Horseshoe Bar Road / Taylor Road intersection** is projected to operate at LOS F during the p.m. peak hour.

The westbound approach to the **Horseshoe Bar Road / Laird Street intersection** is projected to operate at LOS E in the a.m. peak hour and LOS F during the p.m. peak hour.

The westbound approach to the **Horseshoe Bar Road / Library Drive intersection** is projected to operate at LOS D in the a.m. peak hour and LOS F during the p.m. peak hour.

The **Horseshoe Bar Road / Laird Road intersection** is projected to operate at LOS E during the p.m. peak hour.

Conditions on Roadway Segments. Table 16 identifies Year 2030 daily traffic volume forecasts created by the Loomis traffic model for the Plus Project condition. Resulting Levels of Service are also identified. As indicated four (4) roadway segments are projected to operate with Levels of Service in excess of the Town's LOS C threshold.

As indicated, the volume of traffic on **Taylor Road through the study area** is expected to increase somewhat with the project. Based on the General Plan's capacities, the LOS F conditions now occurring east of Horseshoe Bar Road will also occur in the area between Sierra College Blvd and Horseshoe Bar Road. These forecasts and Level of Service conclusions are generally consistent with the findings of the current Loomis General Plan EIR which noted that a 4 lane section would theoretically be needed to deliver the Town's minimum Levels of Service.

The volume of traffic forecast for Horseshoe Bar Road will also increase. LOS F conditions are projected on **Horseshoe Bar Road in the area between Taylor Road and Doc Barnes Drive.**

The Town of Loomis assumes that a significant traffic impact occurs when the minimum segment Level of Service is exceeded and the project increases the volume by more than 5%. In this case, the increase is less than 5% on each street, and the project's impact is not significant.

The project will add traffic to **Interstate 80 west of the Horseshoe Bar Road interchange**, but under long term conditions the creation of the Doc Barnes Drive extension will reduce the volume east of Horseshoe Bar Road slightly. LOS F conditions are forecast with and without the project, as suggested by the TCCR. The Village at Loomis would increase the daily traffic volume on Interstate 80 west of the Horseshoe bar Road interchange by 1.3%. Caltrans considers any increase to existing or forecasted unacceptable conditions to be a significant impact.

Traffic Signal Warrants. Table 17 identifies the status of traffic signal warrants at the remaining three study intersections where traffic signals have not been assumed. As indicated, traffic signal warrants are not satisfied at the King Road / Boyington Road intersection. However, it is important to note that traffic signal warrants do not account for the peaking characteristics of traffic near school. In this case, the combination of school traffic, pedestrian activity would justify a traffic signal.

The volume of traffic forecast at the Horseshoe Bar Road / Library Drive intersection approaches but is slightly less than the level satisfying traffic signal warrants. The identified side street volume (i.e., 90 vph) is less than the minimum required (i.e., 100 vph).

As is the case today, the volume of traffic at the Taylor Road / Webb Street intersection reaches the level that satisfies warrants, but because nearly all the traffic at this location turns right from Webb Street onto westbound Taylor Road, a traffic signal is not justified to accommodate that movement.

CUMULATIVE TRAFFIC CONDITIONS – LONG TERM WITH DRAFT CIRCULATION ELEMENT UPDATE

Circulation System

This cumulative analysis identifies conditions with occupancy of the Village at Loomis assuming circulation pursuant to the Town of Loomis Draft Circulation Element Update, which in the project vicinity assumes the Doc Barnes Drive Extension plus:

A. Library Drive – Webb Street Connection
B. Roundabout at Horseshoe Bar Road / Library Drive
C. Full access traffic signal at Taylor Road / Webb Street
D. Swetzer Road Extension from King Road across Webb Street to Sierra College Blvd
E. Full access intersection at Sierra College Blvd / Swetzer Road Extension
F. Full access at Webb Street / Swetzer Road Extension intersection
G. Full access at King Road / Swetzer Road intersection

Approach to Developing Cumulative (i.e., Year 2030) Traffic Volume Forecasts

The identified circulation system elements were added to the Long Term Loomis travel demand forecasting model, and the traffic model was run for two scenarios:

- Year 2030 Cumulative with the Village at Loomis and Adopted Circulation Element streets, and

- Year 2030 Cumulative with Village at Loomis and Draft Circulation Element Update streets

The approach taken to create future traffic volumes was different from that employed to develop Existing plus Project traffic volumes. The Year 2030 traffic model was run with the two alternative circulation networks, and daily, a.m. peak hour and p.m. peak hour forecasts were created. Peak hour intersection turning movements were produced at study intersections.

The results of the two model runs were compared and the net differences in each intersection turning movement and on each study area roadway segment were identified. The net differences were then applied to "Year 2030 Plus Project" segment volumes and turning movements created for the original Traffic Study which reflected the effects of the Doc Barnes Drive extension alone. The resulting volumes represent "Year 2030 Plus Project with Draft Circulation Element Update System" conditions.

Daily Traffic Volumes / Impacts with Draft Circulation Element Update

Table 18 compares cumulative traffic volumes with the Village at Loomis project under the two circulation alternatives.

Roadway Segment Level of Service. If the Village at Loomis is fully built out and the Doc Barnes Extension and Library Drive – Webb Street connection are included in the plan, then four roadway segments will carry daily traffic volumes that exceed the LOS C minimum standard. However, the Village at Loomis project's impact will not be significant at each location.

The segment of **Taylor Road west of Horseshoe Bar Road** will carry traffic volumes that are indicative of LOS D. While LOS D exceeds the minimum LOS C standard, because the forecast volume is less than the "No Project" condition, the project's ***impact is not significant.***

The segment of **Taylor Road from Horseshoe Bar Road to Webb Street** will operate at LOS D. While LOS D exceeds the minimum LOS C standard, because the volume decreases compared to the No Project Condition, this is ***not a significant project traffic impact.***

The segment of **Taylor Road from Webb Street to King Road** will carry less traffic than occurs today, but the roadway will operate at LOS D. While LOS D exceeds the minimum LOS C standard, because the volume decreases compared to the No Project Condition, this is ***not a significant project traffic impact.***

The segment of **Horseshoe Bar Road from Library Drive to Doc Barnes Drive** will operate at LOS E based on the volume threshold with a roundabout intersection. While LOS E exceeds the minimum LOS C standard, because the volume decreases compared to the No Project Condition, this is ***not a significant project traffic impact.***

Interstate 80 will carry traffic volumes that are indicative of LOS F with and without the project. Caltrans considers any additional traffic on facilities that fail to meet adopted minimum standards to be ***a significant traffic impact.***

TABLE 18
YEAR 2030 PLUS PROJECT DAILY TRAFFIC VOLUMES AND LEVELS OF SERVICE

Roadway	Segment	# of Lanes	Without Village at Loomis and Adopted Circulation Element			With Village at Loomis and Adopted Circulation Element			With Village at Loomis and Draft Circulation Element Update		
			ADT	V / C*	LOS	ADT	V/C*	LOS	ADT	V / C*	LOS
Taylor Rd	Oak St to Horseshoe Bar Rd	2	**13,460**	**0.89**	**D**	**13,850**	**0.92**	**E**	**12,600**	**0.84**	**D**
	Horseshoe Bar Rd to Webb St	2	**23,760**	**1.58**	**F**	**23,300**	**1.55**	**F**	**15,160**	**1.01**	**F**
	Webb St to King Road	2	**18,350**	**1.22**	**F**	**17,960**	**1.20**	**F**	**13,400**	**0.89**	**D**
King Rd	Taylor Rd to Boyington Rd	2	9,290	0.62	B	8,920	0.59	A	9,580	0.64	B
Horseshoe Bar Rd	Taylor Rd to Library Dr	2	**17,850**	**1.19**	**F**	**18,350**	**1.22**	**F**	10,300	0.69	B
	Library Dr to Doc Barnes Dr	2	**17,850**	**1.19**	**F**	**17,500**	**1.17**	**F**	**17,600**	**0.98**	**E**
	Doc Barnes Dr to Interstate 80	4	17,560	0.59	A	22,200	0.74	C	22,200	0.74	C
	Interstate 80 to Laird Rd	2	**12,295**	**0.82**	**D**	11,700	0.78	C	11,700	0.78	C
Doc Barnes Drive	Taylor Rd to Gates Drive	2	-	-	-	5,200	0.35	A	5,200	0.35	A
	Gates Dr to Blue Anchor Drive	2	-	-	-	2,900	0.19	A	2,900	0.19	A
	Blue Anchor Dr to King Rd	2	-	-	-	2,400	0.16	A	2,400	0.16	A
Webb Street	Swetzer Rd to Taylor Road	2	6,550	0.44	A	6,550	0.44	A	9,850	0.66	B
	Taylor Rd to Laird St	2	700	0.05	A	1,050	0.07	A	8,750	0.58	A
	Laird St to Horseshoe Bar Rd	2	-	-	-	0			8,550	0.57	A
Library Dr	Horseshoe Bar Rd to Gates Dr	2	160	0.01	A	1,900	0.13	A	1,400	0.09	A
Interstate 80	Sierra College Blvd to HBR	6	**126,700**	**1.17**	**F**	**128,350**	**1.18**	**F**	**128,430**	**1.07**	**F**
	HBR to Penryn Rd	6	**117,700**	**1.08**	**F**	**116,425**	**1.07**	**F**	**116,320**	**1.07**	**F**

(*) based on General Plan threshold capacity of 15,000 ADT for two lane road

18,000 ADT for two lane road with roundabout under Draft Circulation Element Update

Year 2030 Plus Project Traffic Volumes and Levels of Service with Draft Circulation Element Update

Figure 11 identifies "Project Only" trips under the long term condition that assumes implementation of Draft Circulation Element Streets.

Figure 12 presents resulting Cumulative peak hour volumes with the Village at Loomis and the streets contemplated in the Draft Circulation Element Update.

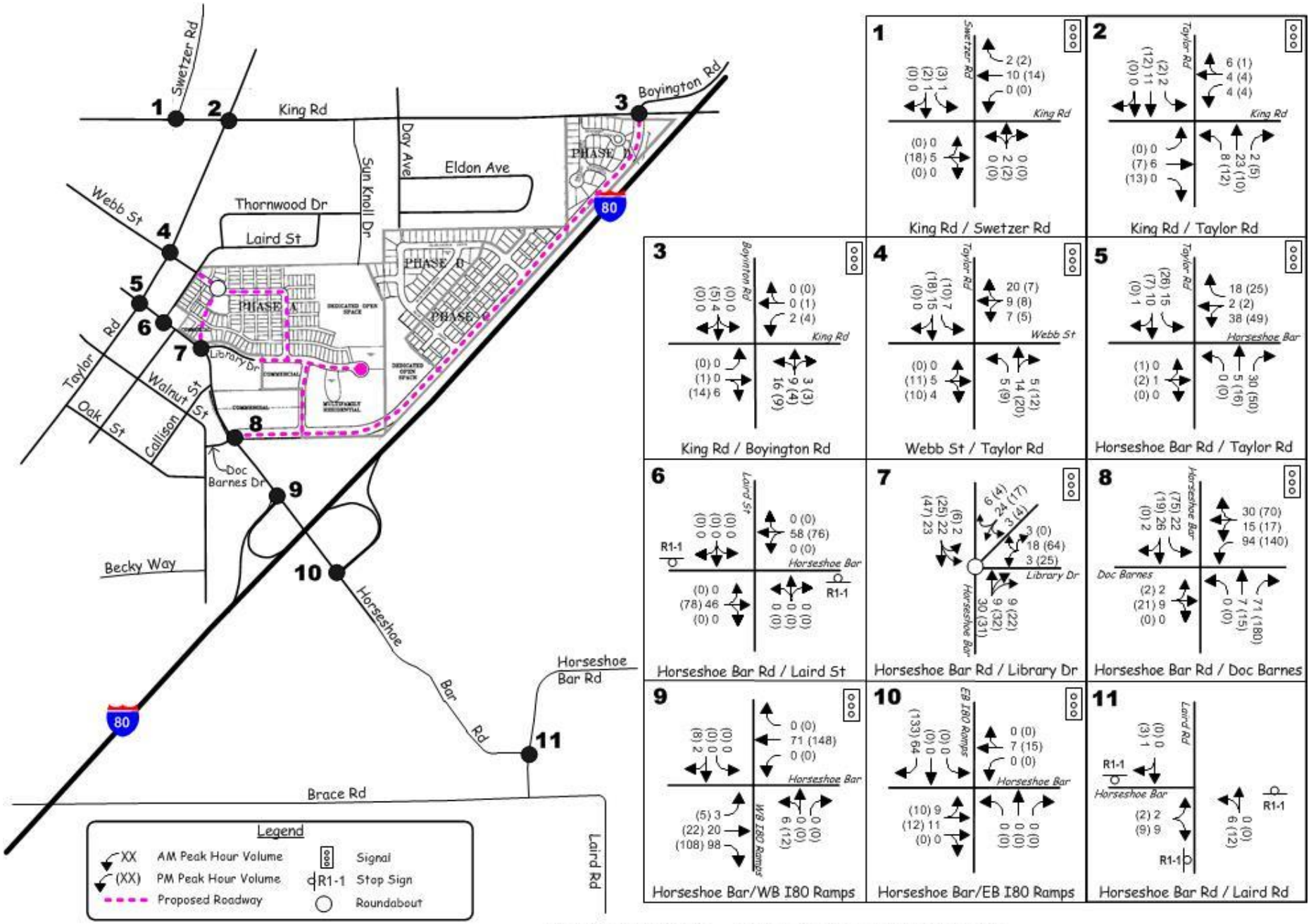
Conditions at Intersections. As noted in Table 19, if the proposed project proceeds, then peak hour traffic conditions would exceed the Town of Loomis' minimum LOS C standard at four (4) locations compared to seven (7) locations identified under the No Project condition. There are two (2) significant cumulative traffic impacts if the Village at Loomis proceeds under the Draft Circulation Element Update scenario.

The **Taylor Road / King Road intersection** is projected to continue to operate at LOS D during the a.m. peak hour and will operate at LOS C in the p.m. peak hour. This satisfies the LOS D conditions accepted at this intersection in the morning under the General Plan. Development of the proposed project with the Draft Circulation Element Update reduces the length of delays at the intersection compared to the No Project condition. ***The impact is not significant***.

The **Horseshoe Bar Road / Taylor Road intersection** is projected to operate at LOS D during the p.m. peak hour. While LOS D exceeds the minimum LOS C standard, because projected conditions are better than the No Project condition, the ***project's impact is not significant.***

The **Horseshoe Bar Road / Library Drive – Webb Street Connection Roundabout intersection** is projected to operate at LOS D in the p.m. peak hour. This exceeds the minimum LOS C standard, and this is a ***significant impact*** that does not occur with the Adopted Circulation Element. To achieve LOS C it would be necessary to add a second northbound lane on Horseshoe Bar Road into the roundabout to the Webb Street Connection exit. LOS C would result.

The **Horseshoe Bar Road / Laird Road intersection** is projected to operate at LOS E during the p.m. peak hour. As LOS E exceeds the minimum LOS standard, this is a ***significant impact*** that would be mitigated by auxiliary lanes.



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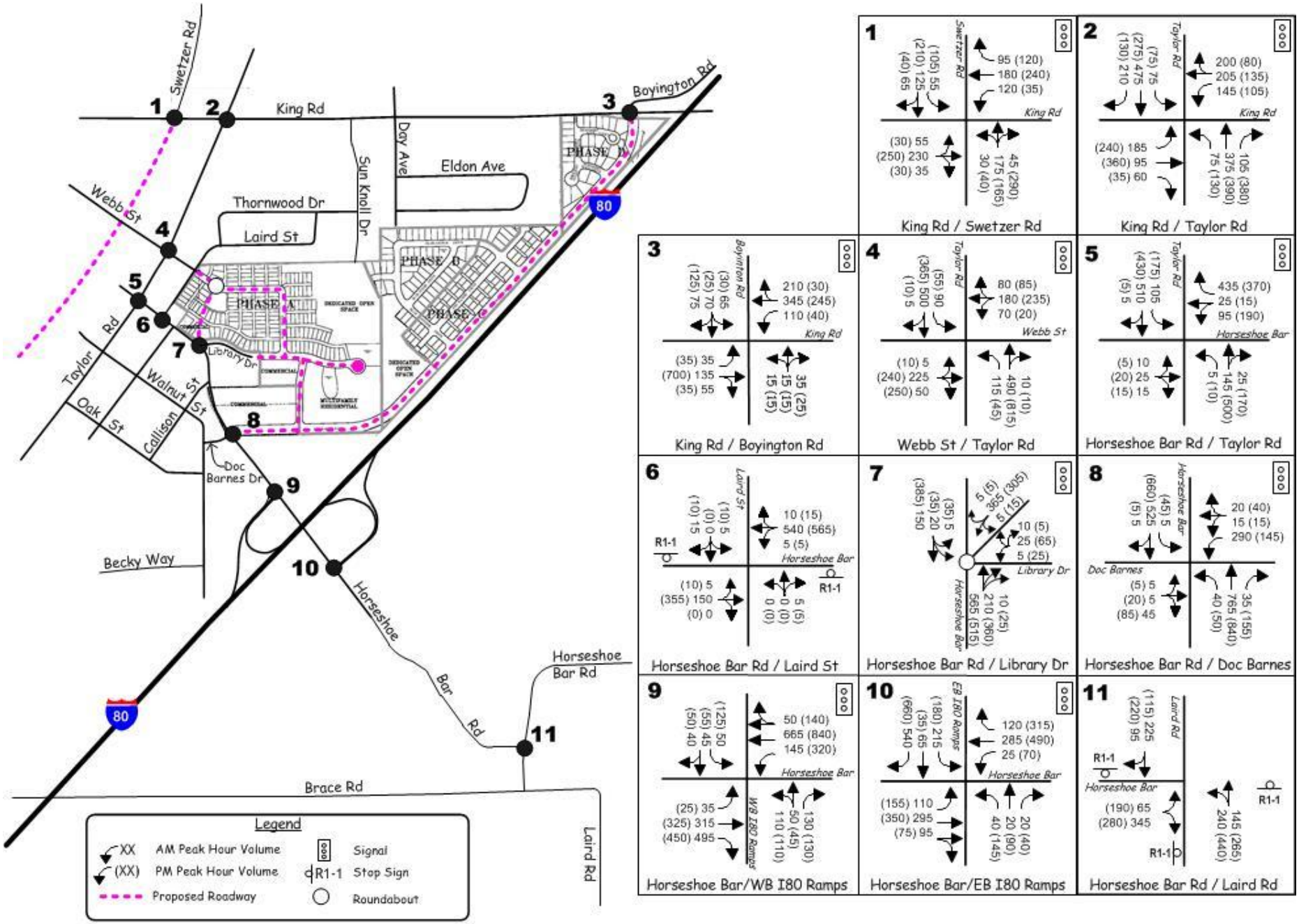
PROJECT ONLY - LONG TERM CONDITIONS
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

figure 11



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CUMULATIVE PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

figure 12

TABLE 19
YEAR 2030 PEAK HOUR INTERSECTION LEVEL OF SERVICE

		AM Peak Hour				PM Peak Hour			
		No Project Current Circulation Element		Plus Project Draft Circulation Element		No Project Current Circulation Element		Plus Project Draft Circulation Element	
Intersection	**Control**	**Average Delay (sec)**	**LOS**	**Average Delay (sec)**	**LOS**	**Average Delay (sec)**	**LOS**	**Average Delay (sec)**	**LOS**
King Rd / Swetzer Rd	Signal	20.2	B	21.8	C	10.5	B	32.9	C
Taylor Rd / King Rd	Signal	**76.7**	**E**	51.9	D	27.1	C	34.5	C
King Road / Boyington Rd	Signal	-	-	24.5	C	-	-	14.6	B
Taylor Rd / Webb Street									
EB left turn	NB/SB Stop	11.6	A			10.3	A		
WB left turn		9.0	A			10.6	A		
NB left+thru+right turn		**27.1**	**D**			**51.6**	**F**		
SB left+thru+right turn		**25.6**	**D**			**234.1**	**F**		
	Signal			25.2	C			30.0	C
Taylor Rd / Horseshoe Bar Rd	Signal	26.8	C	19.6	B	**91.0**	**F**	**41.1**	**D**
	Current geometry	-	-	-	-	-	-	34.8	C
Horseshoe Bar Rd / Laird St									
EB left+thru+right turn	EB/WB Stop	12.2	B	9.1	A	12.7	B	10.5	B
WB left+thru+right turn		**66.0**	**F**	13.7	B	**68.2**	**F**	18.6	C
Horseshoe Bar Rd/Library Dr				-	-			-	-
SB left turn	WB Stop	9.6	A			10.6	B		
WB left+right turn		**28.8**	**D**			**40.0**	**E**		
	Roundabout	-	-	18.5	C	-	-	**29.0**	**D**
	Mitigated	-	-	-	-	-	-	12.0	B
Horseshoe Bar Rd/Doc Barnes Dr	Signal	-	-	19.5	C	-	-	27.5	C
Horseshoe Bar Rd/WB I-80 ramps	Signal	25.4	C	24.2	C	25.1	C	25.2	C
Horseshoe Bar Rd/EB I-80 ramps	Signal	24.4	B	23.5	C	25.6	C	30.3	C
Horseshoe Bar Rd / Laird Rd	Signal w/ NB left turn lane	32.7	C	32.7	C	**52.5**	**D**	**73.4**	**E**
	Add EB right turn lane	28.9	C	22.6	C	32.6	C	32.6	C

Intersection Queuing

As new streets are constructed the Draft Circulation Element Update roadway network creates several closely spaced intersections. As a result, the issue of peak period queueing has been evaluated to identify any improvements needed under cumulative conditions. Loomis already experiences appreciable queuing during peak traffic hours on Horseshoe Bar Road approaching Taylor Road in the a.m. peak hour and on Taylor Road approaching Horseshoe Bar Road in the a.m. and p.m. peak hour.

Anticipated Peak Period Queues. The length of peak period queues has been estimated based on SimTraffic simulation of the study area circulation system. Simulation runs identified average and 95th percentile queues occurring during the a.m. and p.m. peak hour periods. The length of 95th percentile queues would only be exceeded 5% of the time, and this statistical measure is typically used to evaluate the effects of queuing.

Table 20 identifies those critical locations where the new circulation elements created under the Draft Circulation Element Update may be affected by peak period queuing. These locations are:

King Road from Swetzer Road to Taylor Road across UPRR. The separation between two signalized intersections is roughly 200 feet. The eastbound queue of through traffic approaching the Taylor Road intersection and the westbound queue approaching Swetzer Road needs to avoid extending back to the other intersection.

Taylor Road from Horseshoe Bar Road to Webb Street. The separation between the two signalized intersections will be roughly 360 feet. It has been assumed that roughly 180 feet of storage will be available in each direction, although this division can be adjusted to make one lane longer and the other shorter. Left turn queues that spill out of the available turn lane would have an impact on traffic operations in the through lane and could create a safety impact.

Webb Street South of Taylor Road. Taylor Road and Laird Street are separated by roughly 220 feet. Queues that regularly exceed the separation could make access to and from Laird Street difficult.

Horseshoe Bar Road South of Taylor Road. The separation between Taylor Road and the new roundabout at Library Drive – Webb Street Connection will be roughly 525 feet. Northbound traffic queuing at the Taylor Road intersection and extending back through the roundabout would be problematic as flow through the roundabout would be stopped.

Horseshoe Bar Road South of Library Drive – Webb Street Connection Roundabout. The distance separating the Library Drive – Webb Street Connection roundabout and the Doc Barnes Drive signal is roughly 575 feet. Southbound queues at the signal extending back through the roundabout would be problematic because flow through the roundabout would come to a halt.

Queueing could be an issue at other locations, however, this analysis does not address locations where queueing issues are likely to be the same under both circulation options.

TABLE 20
CUMULATIVE PLUS THE VILLAGE AT LOOMIS
PEAK PERIOD QUEUES WITH DRAFT CIRCULATION ELEMENT UPDATE

Street	Intersection	Approach	Lane	Storage (feet)	AM Peak Hour Volume (vph)	AM Peak Hour 95th Percentile Queue (feet)	PM Peak Hour Volume (vph)	PM Peak Hour 95th Percentile Queue (feet)
King Road	Swetzer Road	Westbound	Left	*100 (1)*	120	74	35	59
			Through	*200(1)*	180	63	240	180
King Road	Taylor Road	Eastbound	Through	*200 (1)*	95	**247**	360	**213**
Taylor Road	Horseshoe Bar Road	Westbound	Left turn	*180 (2)*	105	80	175	179
			Through	*360*	510	221	430	108
Taylor Road	Webb Street	Eastbound	Left turn	*180 (2)*	115	38	45	99
			Through	*360*	490	430	815	410
Webb Street	Taylor Road	Northbound	Left+thru+right	*220 (3)*	330	**314**	340	**>500**
		Northbound	Separate left+thru			220		230
			Separate			25		30
Horseshoe Bar Road	Taylor Road	Northbound	Right turn	525 (4)	435	90	370	101
			Left+through	*60*	120	247	205	227
Horseshoe Bar Road	Doc Barnes Drive	Southbound	Through	*575 (5)*	525	209	660	384

1. Storage between Taylor Road and Swetzer Road across UPRR
2. ½ distance from Horseshoe Bar Road to Webb Street
3. Distance separating Taylor Road and Laird Street
4. Distance from Taylor Road to roundabout at Library Drive
5. Distance from Doc Barnes Drive to roundabout

Highlighted values greatly exceed available storage

Evaluation. Under long term conditions the area circulation system has the capacity to accommodate the peak period queues that will accompany the Draft Circulation Element Update system with one exception.

***King Road from Swetzer Road to Taylor Road across UPRR*.** The eastbound queue of through traffic approaching the Taylor Road intersection will slightly exceed the available storage in the p.m. peak hour. However, the westbound queues approaching Swetzer Road will be shorter than the available storage. These results indicate that this portion of the circulation system will operate adequately, although it would be necessary to regularly monitor actual operations to ensure that the railroad crossing area does not become overly congested.

***Taylor Road from Horseshoe Bar Road Signal to Webb Street Signal*.** Assuming coordinated operation of all signals along Taylor Road, the forecast queues in this area can be made to fit within the available storage between the two signalized intersections.

Webb Street South of Taylor Road. This location is problematic as Taylor Road and Laird Street are separated by roughly 220 feet. If only a single northbound lane is provided approaching Taylor Street then queues will regularly exceed the separation and will block access to and from Laird Street. This is an issue that will need to be addressed if this circulation alternative proceeds. Ideally, a second northbound lane will be provided between the Taylor Road intersection and Laird Street, and if this lane was for right turns with an "overlap phase" (like the Horseshoe Bar Road approach today) the queues would become manageable. The extent of right of way acquisition needed to accommodate an additional lane would need to be investigated.

A similar issue may occur on the southbound Webb Street approach to Taylor Road. A second southbound lane should be planned in this area, although the exact nature of the improvements needed north of Taylor Road cannot be determined without further evaluation of conditions at the future Swetzer Road / Webb Street intersection, which was not included in this traffic study.

Horseshoe Bar Road South of Taylor Road. The separation between Taylor Road and the new roundabout at the Library Drive – Webb Street Connection will be roughly 525 feet. Northbound queues approaching the Taylor Road intersection will not extend back to the roundabout.

Horseshoe Bar Road south of Library Drive – Webb Street Connection Roundabout. The distance separating the Library Drive – Webb Street Connection roundabout and the Doc Barnes Drive signal is roughly 575 feet. Southbound queues at the Doc Barnes Drive signal will not extend back to the roundabout.

IMPACT / MITIGATION SUMMARY – PROJECT AS PROPOSED

This report section summarizes the impacts of the Village at Loomis project with access as proposed and attaches applicable mitigation measures. The LOS determination below considered improvements identified in the Town's traffic impact fee program and the project specific mitigations identified.

Existing Plus Project Impacts

Figure 13 illustrates Mitigated Existing Plus Project Traffic Volumes with access as proposed, and Table 21 presents mitigated Levels of Service that reflect the combined effects of all mitigations.

Impact 1: The morning operation of the King Road / Boyington Road intersection will result in safety conflicts between peak period traffic and pedestrians. This is a significant safety impact.

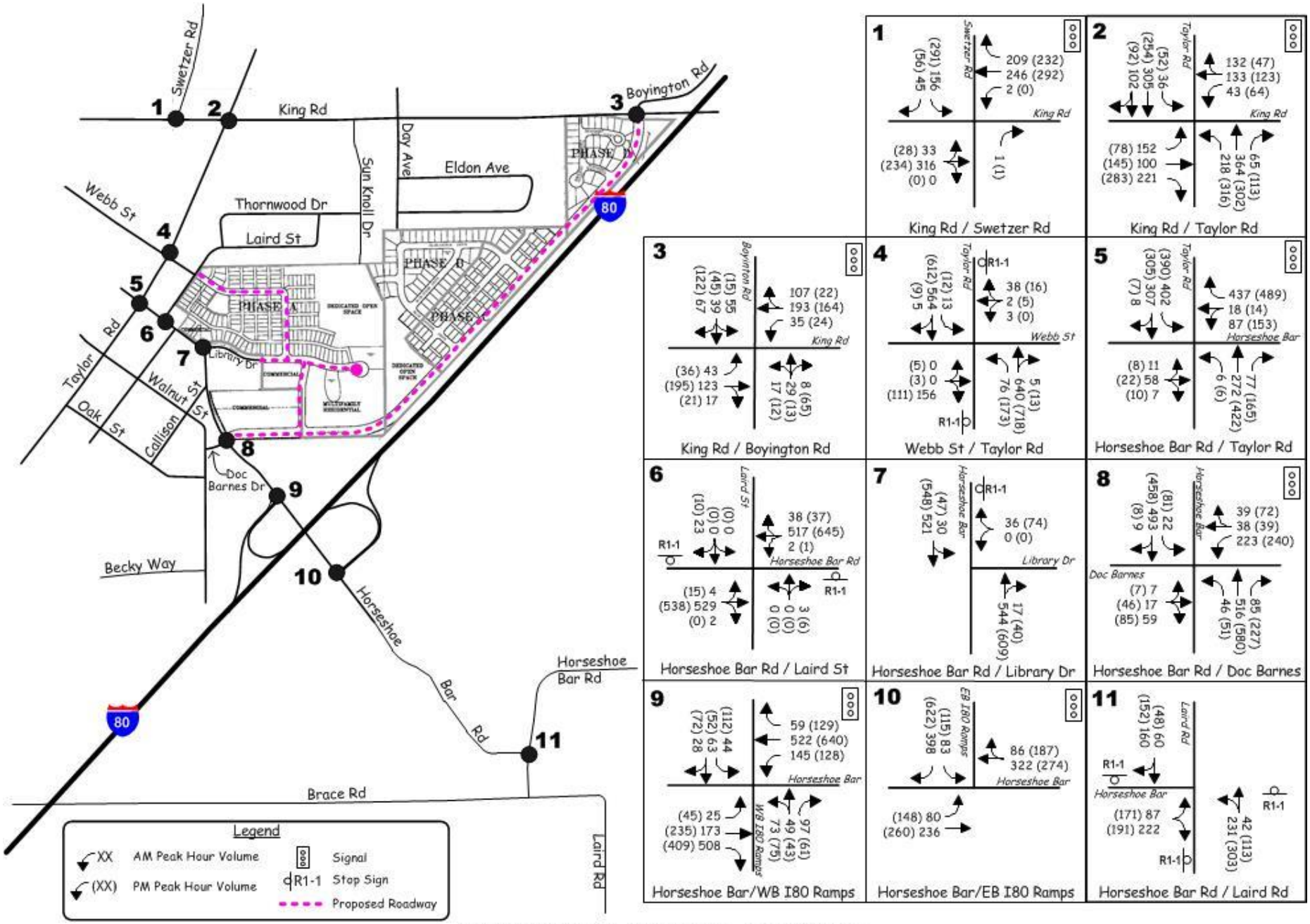
Discussion. The southbound approach to the **King Road / Boyington Road intersection** is projected to operate at LOS D during the morning peak hour. LOS D exceeds the Town's minimum LOS standard. Normally the significance of side street LOS is based on satisfaction of traffic signal warrants, and in this case the intersection does not meet peak hour traffic signal warrants. However, this location will experiences appreciable peak hour traffic variation as a result of travel to Del Oro H.S. and Loomis G.S., and school age pedestrians can be expected. This combination of factors will result in safety conflicts that warrant mitigation.

The following mitigation measures are recommended:

- Widening King Rd to provide separate eastbound and westbound left turn lanes on King Rd,
- Install a traffic signal,
- Install applicable pedestrian landings on both sides of King Rd,
- Install applicable school crosswalks.

Tables 22 and 23 identify the project's traffic contribution at study intersections. Two calculation methodologies have been presented. Caltrans employs a methodology which assumes that "Existing" traffic has no responsibility for its share of the cost of needed improvements.

Mitigation 1: The project proponents shall install improvements to the King Road / Boyington Road intersection, including left turn lanes, pedestrian features and a traffic signal. The project proponents shall contribute their fair share to the costs of the identified improvements. The improvements shall be installed when the fourth leg of the King Road / Boyington Road intersection is constructed. With these improvements, the project's impact is less than significant.



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EXISTING PLUS PROJECT - MITIGATED
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

figure 13

TABLE 21
MITIGATED EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Intersection	Control	AM Peak Hour				PM Peak Hour			
		Unimproved		Mitigated		Unimproved		Mitigated	
		Average Delay (sec)	LOS	Average Delay (sec)	LOS	Average Delay (sec)	LOS	Average Delay (sec)	LOS
King Rd / Swetzer Rd	Signal	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Taylor Rd / King Rd	Signal	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
King Rd / Boyington Rd	Signal	n.a.	n.a.	18.3	C	n.a.	n.a.	24.7	C
Taylor Rd / Webb St	NB/SB Stop	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Taylor Rd / Horseshoe Bar Rd	Signal	26.4	C	26.4	C	29.8	C	29.8	C
Horseshoe Bar Rd / Laird Street									
EB approach	EB/WB Stop	16.3	C	12.0	B	18.1	C	12.1	B
WB approach		**35.2**	**E**	12.9	B	**42.8**	**E**	14.2	B
Horseshoe Bar Rd / Library Dr									
SB left turn	WB Stop	n.a.	n.a.	n.a.	n.a.	9.3	A	9.3	A
WB right turn						**27.7**	**D**	16.9	C
Horseshoe Bar Rd / Doc Barnes Dr	Signal	n.a.	n.a.	22.5	C	n.a.	n.a.	24.6	C
Horseshoe Bar Rd / WB I-80 ramps	Signal	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Horseshoe Bar Rd / EB I-80 ramp	Signal	-	-	10.5	B	-	-	13.7	B
Horseshoe Bar Rd / Laird Rd	All-Way Stop	n.a.	n.a.	n.a.	n.a.	n.a.	n.a	n.a.	n.a.

n.a. "not applicable" no mitigation required

TABLE 22
PROJECT FAIR SHARE CALCULATION WITH ADOPTED CIRCULATION ELEMENT
AM PEAK HOUR

#	Intersection	A Existing	B Cumulative Plus Project	C Project Only	C/B Fair Share	B-A Net New Traffic	C/B-A Fair Share
1	King Rd / Swetzer Rd	974	1,085	33	3%	111	30%
2	King Rd / Taylor Rd	1,897	2,330	79	3%	433	18%
3	King Rd / Boyington Rd	681	1,120	38	3%	439	8%
4	Webb St / Taylor Rd	1,540	1,795	69	4%	255	27%
5	Horseshoe Bar Rd / Taylor Rd	1,656	1,980	136	7%	324	42%
6	Horseshoe Bar Rd / Laird St	1,110	1,300	145	11%	190	76%
7	Horseshoe Bar Rd / Library Dr	1,136	1,315	166	13%	179	93%
8	Horseshoe Bar Rd / Doc Barnes	1,245	1,805	280	16%	560	50%
9	Horseshoe Bar Rd / WB I80 ramps	1,596	2,115	190	9%	519	37%
10	Horseshoe Bar Rd / EB I80 ramps	1,118	1,770	87	5%	652	13%
11	Horseshoe Bar Rd / Laird Rd	785	1,115	17	2%	330	5%

TABLE 23
PROJECT FAIR SHARE CALCULATION WITH ADOPTED CIRCULATION ELEMENT
PM PEAK HOUR

#	Intersection	A Existing	B Cumulative Plus Project	C Project Only	C/B Fair Share	B-A Net New Traffic	C/B-A Fair Share
1	King Rd / Swetzer Rd	1,081	1,300	47	4%	219	21%
2	King Rd / Taylor Rd	1,928	2,515	83	3%	587	14%
3	King Rd / Boyington Rd	684	1,200	40	3%	516	8%
4	Webb St / Taylor Rd	1,735	2,155	79	4%	420	19%
5	Horseshoe Bar Rd / Taylor Rd	1,897	2,535	200	8%	638	31%
6	Horseshoe Bar Rd / Laird St	1,187	1,560	207	13%	373	56%
7	Horseshoe Bar Rd / Library Dr	1,234	1,615	247	15%	381	65%
8	Horseshoe Bar Rd / Doc Barnes	1,364	2,045	497	24%	681	73%
9	Horseshoe Bar Rd / WB I80 ramps	1,707	2,605	294	11%	898	33%
10	Horseshoe Bar Rd / EB I80 ramps	1,439	2,635	167	6%	1,196	14%
11	Horseshoe Bar Rd / Laird Rd	953	1,625	25	2%	672	4%

Impact 2: The westbound approach to the Horseshoe Bar Road / Laird Street intersection is projected to operate at LOS E during the a.m. and p.m. peak hours, respectively. This exceeds the Town's minimum LOS C standard and project traffic increases the length of delays. This is a significant impact.

Discussion. Traffic signal warrants are not satisfied with the project's additional traffic, and in combination with proximity to Taylor Road a traffic signal is not recommended. The Town could elect to prohibit left turns from Laird Street onto Horseshoe Bar Road at all times or during peak periods as has been the case at Webb Street, which would also deliver LOS C or better conditions, but any physical measures to enforce this prohibition may interfere with fire station access. This measure would cause redistribution of existing traffic, but review of resulting traffic volumes indicates that these changes do not result in any additional impacts.

Mitigation. 2: The project proponents shall install traffic control signs that prohibit left turns from Laird Street during peak periods. With this mitigation the LOS C standard will be satisfied, and the impact is not significant.

Impact 3: The westbound approach to the Horseshoe Bar Road / Library Drive intersection is projected to operate at LOS D during the a.m. and p.m. peak hours, respectively. This exceeds the Town's minimum LOS C standard. This is a significant impact.

Discussion. Traffic signal warrants are not satisfied with the project, and as a result a traffic signal is not recommended with the project. A traffic signal may be justified in the future. The Town could elect to prohibit left turns from Library Drive onto Horseshoe Bar Road, which would also deliver LOS C or better conditions. This measure would cause redistribution of existing traffic, but review of resulting traffic volumes reveals no additional impacts.

Mitigation 3: The Project proponents shall install traffic control signs enforcing a peak hour left turn prohibition. With this mitigation the LOS C standard will be met, and the impact is not significant.

Impact 4: The westbound approach to the Horseshoe Bar Road / EB I-80 ramps intersection is projected to operate at LOS F during the a.m. and p.m. peak hour. This is a significant impact.

Discussion. Presently the intersection operates at LOS E and signal warrants are met. A traffic signal and phased interchange improvements are included in the Town's traffic impact fee program.

Installation of the following improvements is recommended:

1. Traffic Signal
2. Widen Horseshoe Bar Road to provide a separate southbound left turn lane
3. Widen the eastbound off ramp to provide a separate left turn lane

This improvement would yield LOS C, which satisfies the Town's minimum LOS C standard. Because a traffic signal is already warranted under existing conditions, the project proponents shall contribute their fair share to the cost of this improvement by paying adopted traffic impact fees.

Mitigation 4: Project proponents need not install the traffic signal and should pay Town of Loomis Traffic Impact Fees. However, the Town of Loomis establishes priorities for improvements and identifies implementation schedules through its CIP. It may be appropriate for the EIR to note that as a result of priorities or CIP schedule there may be short term traffic impacts that are **significant and unavoidable** until such time as the traffic signal is fully funded and constructed.

Impact 5: The traffic volumes at the Horseshoe Bar Road / Laird Road intersection will continue to satisfy peak hour warrants during the p.m. peak hour with the development of the project.

Discussion. Presently traffic signal warrants are met in the p.m. peak hour. A traffic signal is included in the Town's traffic impact fee program.

Installation of the following improvements is recommended:

1. Traffic Signal
2. Widen the southern Laird Road leg to provide a separate northbound left turn.

This improvement would yield LOS C, which satisfies the Town's minimum LOS C standard. Because a traffic signal is already warranted under existing conditions, the project proponents shall contribute their fair share to the cost of this improvement by paying adopted traffic impact fees.

Mitigation 5: Project proponents need not install the traffic signal and should pay Town of Loomis Traffic Impact Fees. With this contribution the project's impact is less than significant. However, the Town of Loomis establishes priorities for improvements and identifies implementation schedules through its CIP. It may be appropriate for the EIR to note that as a result of priorities or CIP schedule there may be short term traffic impacts that are **significant and unavoidable** until such time as the traffic signal is fully funded and constructed

Impact 6: The segment of Horseshoe Bar Road from Taylor Road to Doc Barnes Drive will carry traffic volumes that are indicative of LOS F, and the project will increase the current volume by more than 5%. This is a significant impact.

Discussion. This segment already carries volumes at LOS E which exceed the LOS C threshold, and neither the General Plan nor the Downtown Implementation Plan anticipates capacity improvements in this developed area. While development of the project will create the Doc Barnes Drive extension and provide an alternative to Taylor Road and Horseshoe Bar Road, resulting volume will still exceed the LOS C threshold.

The project's net traffic increase identified in this area of Horseshoe Bar Road without mitigation is 800 ADT. Based on current volume, the permissible increase of 5% would equal 723 ADT. The project's net increase is 77 ADT over that threshold. Mitigation Measures 2 and 3 prescribe implementation of traffic controls that would limit left turns onto Horseshoe Bar Road during peak periods. Approximately 100 vehicles per day would be diverted from Horseshoe Bar Road through the project by peak period traffic controls. The project's net increase in traffic on Horseshoe Bar Road would then be 700 ADT, which is 4.8% of the current volume. With this mitigation the daily traffic volume increase resulting from the project would be less than a 5% increase over the existing volume, and therefore the project's impact would not be significant. No additional mitigation is required.

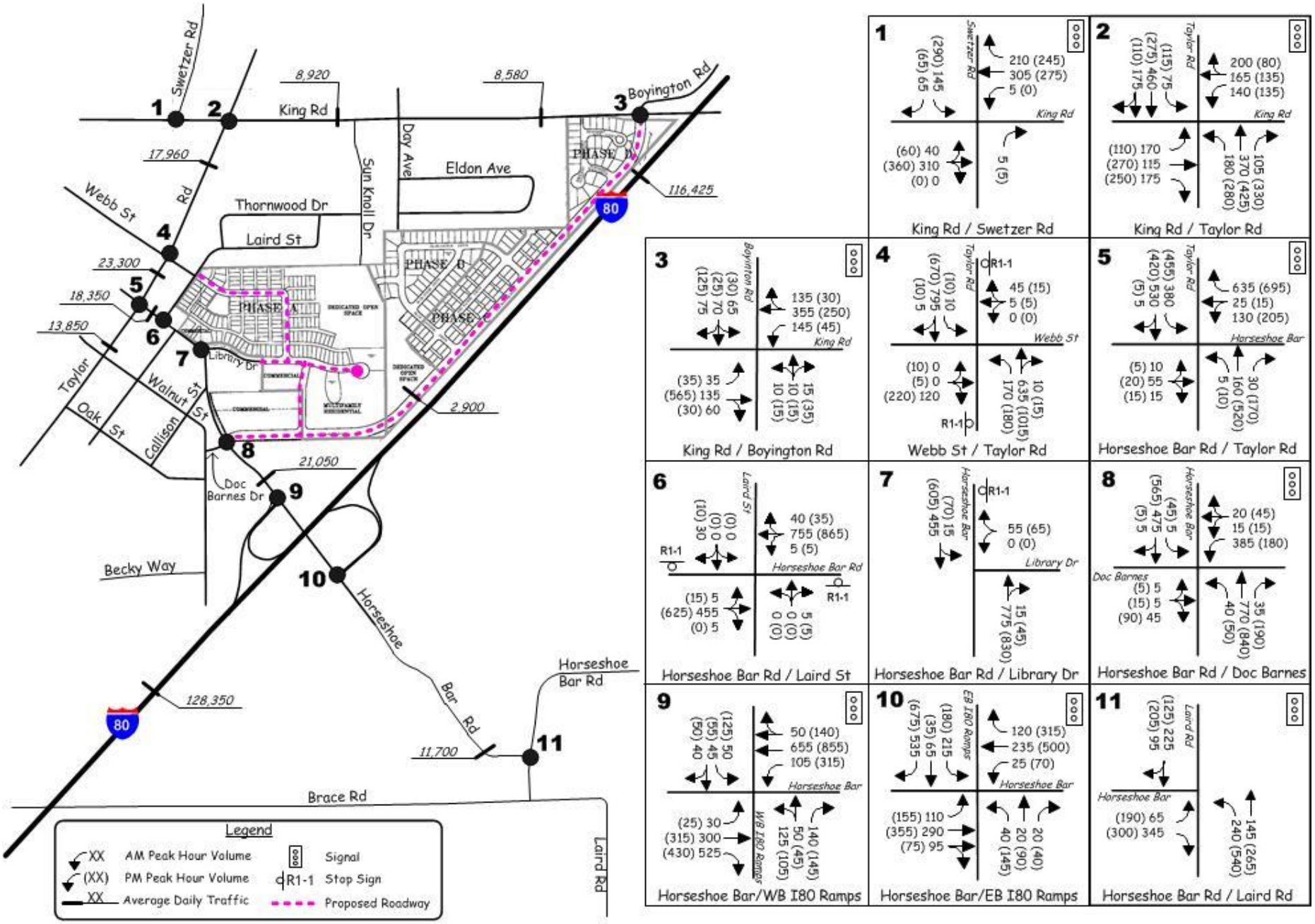
Impact 7: The project will create a new collector street (Doc Barnes Extension) which because of its alignment has the potential for high speed traffic in conflict with pedestrian and bicycle traffic. This is a significant traffic safety impact.

Discussion. Measures to control the speed of traffic on this ½ mile long route have been considered. Because emergency vehicle routes should be preserved and this will be a route used by both project residents and regional traffic, vertical measures such as speed bumps are not applicable, but horizontal measures to narrow the street width in key areas to reduce pedestrian crossing distances can be implemented. All-way stops could also be considered but are not warranted based on the projected traffic volumes. An applicable response to the pedestrian safety issue includes intersection "bulb-outs" at all public street intersections on Doc Barnes Drive.

Mitigation 7: The Project site plan shall be modified to identify appropriate traffic calming measures that will be installed as the Doc Barnes Extension is constructed. With these improvements, the project's impact is less than significant.

Cumulative Impacts

Figure 14 presents mitigated Cumulative Plus Project Traffic, and Table 24 presents mitigated Levels of Service that reflect the combined effects of all mitigations.



CUMULATIVE PLUS PROJECT - MITIGATED TRAFFIC VOLUMES AND LANE CONFIGURATIONS

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figure 14

TABLE 24
MITIGATED YEAR 2030 PLUS PROJECT INTERSECTION LEVEL OF SERVICE

		AM Peak Hour				PM Peak Hour			
		Unmitigated		Mitigated		Unmitigated		Mitigated	
Intersection	**Control**	**Average Delay (sec)**	**LOS**	**Average Delay (sec)**	**LOS**	**Average Delay (sec)**	**LOS**	**Average Delay (sec)**	**LOS**
King Rd / Swetzer Rd	Signal	20.0	B	n.a.	n.a.	10.6	A	n.a.	n.a.
Taylor Rd / King Rd	Signal	**63.2**	**E**	n.a.	n.a.	26.8	C	n.a.	n.a.
King Rd / Boyington Rd									
SB left+thru+right turn	NB/SB Stop	**823.6**	**F**			**32.1**	**D**		
NB left+thru+right		**>999**	**F**			**32.3**	**D-**		
	Signal	-	-	19.6	B	-	-	13.9	B
Taylor Rd / Webb St									
EB left turn	NB/SB Stop	11.6	A	n.a.	n.a.	10.2	A	n.a.	n.a.
WB left turn		9.0	A			10.6	A		
NB left+thru+right turn		24.4	C			**50.5**	**F**		
SB left+thru+right turn		21.9	C			**217.4**	**F**		
Taylor Rd / Horseshoe Bar Rd	Signal	25.5	C	n.a.	n.a.	**94.6**	**F**	**46.9**	**D**
Horseshoe Bar Rd / Laird St									
EB left+thru+right turn	EB/WB Stop	11.3	B	11.3	B	13.1	B	13.1	B
WB left+thru+right turn		**49.9**	**E**	17.0	C	**105.5**	**F**	17.9	C
Horseshoe Bar Rd/Library Dr									
SB left turn	WB Stop	9.6	A	9.6	A	10.6	B	10.6	B
WB left+right turn		**30.5**	**D**	16.5	C	**59.8**	**F**	19.1	C
	Or Signal	-	-	15.7	B	-	-	15.6	B
Horseshoe Bar Rd/Doc Barnes Dr	Signal(*)	-	-	28.6	C	-	-	29.1	C
Horseshoe Bar Rd/WB I-80 ramps	Signal	26.1	C	n.a.	n.a.	23.9	C	n.a.	n.a.
Horseshoe Bar Rd/EB I-80 ramps	Signal	26.0	C	n.a.	B	26.9	C	n.a.	n.a.
Horseshoe Bar Rd / Laird Rd	Signal	33.5	C	n.a.	n.a.	**73.4**	**E**	**39.4**	**D**
	Add EB right turn lane			22.6	C			(22.6)	(C)*

(*) westbound Doc Barnes approach shall be striped as separate left turn lane and combined left+thru+right turn lane.

(**) with overlap phasing

Impact 8: The King Road / Boyington Road intersection will operate at LOS F during the morning peak hour and LOS D in the p.m. peak hour. This exceeds the Town's LOS C standard and is a significant impact.

Discussion. Mitigation 1 will improve the intersection via widening and signalization and would deliver LOS B conditions during peak hours. No further improvements are needed.

Impact 9: The Taylor Road / Horseshoe Bar Road intersection is projected to operate at LOS F during the p.m. peak hour with and without the project. This is a significant impact.

Discussion. The Horseshoe Bar Road / Taylor Road intersection is located in an area that is already built out, and the Downtown Implementation Plan has reduced intersection geometry (i.e., elimination of eastbound right turn lane). Retaining the eastbound right turn lane would improve the Level of Service to LOS D but would be contrary to the Downtown Implementation Plan.

Mitigation. 9. The project proponent shall work with the Town to modify the Implementation Plan to retain the current eastbound Taylor Road right turn lane. However, as there is no guarantee that the plan will be changed, **this impact is significant and unavoidable.**

Impact 10: The westbound approach to the Horseshoe Bar Road / Laird Street intersection is projected to operate at LOS E during the a.m. and LOS F during the p.m. peak hours. This exceeds the Town's minimum LOS C standard. This is a significant impact.

Discussion: A traffic signal is not feasible due to proximity to the Taylor Road intersection, and projected traffic volumes do not reach the level that warrants a signal. Prohibiting outbound left turns onto Horseshoe Bar Road during peak periods would also improve the Level of Service to LOS C. This is Mitigation 2. With implementation of Mitigation 2 the Level of Service will satisfy Town minimum standards, and this impact will be less than significant. No additional mitigation is required.

Impact 11: The westbound approach to the Horseshoe Bar Road / Library Drive intersection is projected to operate at LOS D during the a.m. and LOS F during the p.m. peak hours. This exceeds the Town's minimum LOS C standard. This is a significant impact.

Discussion: Traffic signal warrants are not satisfied, but the projected traffic volume is close to satisfying warrants. A traffic signal is discussed in the Downtown Implementation Plan but not included in the fee program. Prohibiting outbound left turns onto Horseshoe Bar Road during peak periods, as included in Mitigation Measure 3, would improve the Level of Service to LOS C. With this mitigation the impact is less than significant and no additional mitigation is required.

Impact 12: The traffic volumes at the Horseshoe Bar Road / Laird Road intersection will result in LOS E with signalization. This is a significant impact.

Discussion: A traffic signal is included in the Town's traffic impact fee program as is widening of Horseshoe Bar Road from Brace Road to the Town Limits (2.5 and 2.9). With or without the proposed project a northbound left turn lane and eastbound right turn lane will be needed to meet the Town's LOS C standard. These improvements would be part of the widening included in the fee program. The project proponents will pay adopted traffic mitigation fees in place when the project proceeds. With this improvement the minimum LOS standard will be met, and the project's impact is less than significant. No additional mitigation is required.

Impact 13. The Village at Loomis will increase the volume of traffic on Interstate 80 west of the Horseshoe Bar Road interchange. The freeway is projected to operate at LOS F with and without the project, and Caltrans considers any increase a significant impact.

Discussion. As noted in the discussion of Regulatory Setting, the I-80 TCCR indicates that no improvements to mainline I-80 are anticipated. **Thus, this impact is significant and unavoidable.**

IMPACT / MITIGATION SUMMARY FOR DRAFT CIRCULATION ELEMENT UPDATE ALTERNATIVE

This report section summarizes the impacts of the project alternative that is consistent with the Draft Circulation Element Update street system and attaches applicable mitigation measures. The LOS determination below considered improvements identified in the Town's traffic impact fee program and the project specific mitigations identified. Mitigated Levels of Service are shown in Tables 25 and 28. Because no mitigations will alter identified travel patterns, no mitigated volume figure is required.

Existing Plus Project Impacts

Impact 1: The morning operation of the King Road / Boyington Road intersection will result in safety conflicts between peak period traffic and pedestrians. This is a significant safety impact.

Discussion. The southbound approach to the **King Road / Boyington Road intersection** is projected to operate at LOS D during the morning peak hour. LOS D exceeds the Town's minimum LOS standard. Normally the significance of side street LOS is based on satisfaction of traffic signal warrants, and in this case the intersection does not meet peak hour traffic signal warrants. However, this location will experiences appreciable peak hour traffic variation as a result of travel to Del Oro H.S. and Loomis G.S., and school age pedestrians can be expected. This combination of factors will result in safety conflicts that warrant mitigation.

The following mitigation measures are recommended:

- Widening King Road to provide separate eastbound and westbound left turn lanes on King Road,
- Install a traffic signal,
- Install applicable pedestrian landings on both sides of King Road,
- Install applicable school crosswalks.

Because this intersection is planned under the General Plan, the project would not be responsible for all of these costs. The project's traffic relative to future long term traffic or to the net traffic increase anticipated in the future would be an indication of the project's "fair share". Tables 26 and 27 present fair share calculations under conditions with the Draft Circulation Element Update.

Mitigation 1: The project proponents shall install improvements to the King Road / Boyington Road intersection, including left turn lanes, pedestrian features and a traffic signal. . The improvements shall be installed when the fourth leg of the King Road / Boyington Road intersection is constructed. With these improvements, the project's impact is less than significant.

TABLE 25
MITIGATED EXISTING PLUS PROJECT DRAFT CIRCULATION ELEMENT ALTERNATIVE
INTERSECTION LEVEL OF SERVICE

Intersection	Control	AM Peak Hour				PM Peak Hour			
		Unimproved		Mitigated		Unimproved		Mitigated	
		Average Delay (sec)	LOS	Average Delay (sec)	LOS	Average Delay (sec)	LOS	Average Delay (sec)	LOS
King Rd / Swetzer Rd	Signal	25.1	C	25.1	C	6.2	A	6.2.	A
Taylor Rd / King Rd	Signal	37.3	**D**	37.3	**D**	18.8	B	18.8	B
King Rd / Boyington Rd	Signal	-	-	11.9	B	-	-	15.9	B
Taylor Rd / Webb St	Signal	16.7	B	16.7	B	23.7	C	23.7	C
Taylor Rd / Horseshoe Bar Rd	Signal	26.8	C	26.8	C	31.1	C	31.1	C
Horseshoe Bar Rd / Laird Street	EB/WB Stop	12.2	B	12.2	B	15.8	C	15.8	C
Horseshoe Bar Rd / Library Dr	Roundabout	11.2	B	11.2	B	12.3	B	12.3	B
Horseshoe Bar Rd / Doc Barnes Dr	Signal	18.4	B	18.4	B	26.2	C	26.2	C
Horseshoe Bar Rd / WB I-80 ramps	Signal	20.8	C	20.8	C	34.4	C	34.4	C
Horseshoe Bar Rd / EB I-80 ramp	Signal	-	-	16.8	C	-	-	12.6	B
Horseshoe Bar Rd / Laird Rd	All-Way Stop	12.7	B	12.7	B	20.9	C	20.9	C

TABLE 26
PROJECT FAIR SHARE CALCULATION WITH DRAFT CIRCULATION ELEMENT UDPATE
AM PEAK HOUR

#	Intersection	A Existing	B Cumulative Plus Project	C Project Only	C/B Fair Share	B-A Net New Traffic	C/B-A Fair Share
1	King Rd / Swetzer Rd	974	1,210	21	2%	236	9%
2	King Rd / Taylor Rd	1,897	2,205	66	3%	308	21%
3	King Rd / Boyington Rd	681	1,165	40	3%	484	8%
4	Webb St / Taylor Rd	1,540	1,820	98	5%	280	35%
5	Horseshoe Bar Rd / Taylor Rd	1,656	1,400	120	9%	<-256>	n.a.
6	Horseshoe Bar Rd / Laird St	1,110	735	104	14%	<-375>	n.a.
7	Horseshoe Bar Rd / Library Dr	1,136	1,405	152	11%	269	57%
8	Horseshoe Bar Rd / Doc Barnes	1,245	1,755	278	16%	510	55%
9	Horseshoe Bar Rd / WB I80 ramps	1,596	2,130	200	9%	534	37%
10	Horseshoe Bar Rd / EB I80 ramps	1,118	1,830	91	5%	712	13%
11	Horseshoe Bar Rd / Laird Rd	785	1,115	18	2%	330	5%

TABLE 27
PROJECT FAIR SHARE CALCULATION WITH DRAFT CIRCULATION ELEMENT UPDATE
PM PEAK HOUR

#	Intersection	A Existing	B Cumulative Plus Project	C Project Only	C/B Fair Share	B-A Net New Traffic	C/B-A Fair Share
1	King Rd / Swetzer Rd	1,081	1,555	41	3%	474	9%
2	King Rd / Taylor Rd	1,928	2,335	80	3%	407	20%
3	King Rd / Boyington Rd	684	1,320	41	3%	636	6%
4	Webb St / Taylor Rd	1,735	2,140	110	5%	405	27%
5	Horseshoe Bar Rd / Taylor Rd	1,897	1,905	178	9%	8	n.a
6	Horseshoe Bar Rd / Laird St	1,187	975	154	16%	<-212>	n.a
7	Horseshoe Bar Rd / Library Dr	1,234	1,775	277	16%	541	51%
8	Horseshoe Bar Rd / Doc Barnes	1,364	2,065	539	26%	701	77%
9	Horseshoe Bar Rd / WB I80 ramps	1,707	2,615	303	12%	908	34%
10	Horseshoe Bar Rd / EB I80 ramps	1,439	2,605	170	7%	1,166	15%
11	Horseshoe Bar Rd / Laird Rd	953	1,510	26	2%	557	5%

Impact 2: The westbound approach to the Horseshoe Bar Road / EB I-80 ramps intersection is projected to operate at LOS F during the a.m. and p.m. peak hour. This is a significant impact.

Discussion. Presently the intersection operates at LOS E, and signal warrants are met. A traffic signal and phased interchange improvements are included in the Town's traffic impact fee program. The Draft Circulation Element Update suggests that a roundabout be installed instead.

Installation of the following improvements is recommended:

- Traffic Signal
- Widen Horseshoe Bar Road to provide a separate southbound left turn lane
- Widen the eastbound off ramp to provide a separate left turn lane

These improvements would yield LOS C, which satisfies the Town's minimum LOS C standard. Because a traffic signal is already warranted under existing conditions, the project proponents shall contribute their fair share to the cost of this improvement by paying the traffic impact fees in place when building permits are pulled.

Mitigation 2: Project proponents need not install the traffic signal and should pay Town of Loomis Traffic Impact Fees. With this contribution the project's impact would be less than significant. However, the Town of Loomis establishes priorities for improvements and identifies implementation schedules through its CIP. It may be appropriate for the EIR to note that as a result of priorities or CIP schedule there may be short term traffic impacts that are **significant and unavoidable** until such time as the traffic signal is fully funded and constructed.

Impact 3: The traffic volumes at the Horseshoe Bar Road / Laird Road intersection will continue to satisfy peak hour warrants during the p.m. peak hour with the development of the project alternative.

Discussion. Presently traffic signal warrants are met in the p.m. peak hour. A traffic signal is included in the Town's traffic impact fee program. The Draft Circulation Element Update suggests a roundabout be installed.

Installation of the following improvements is recommended:

- Traffic Signal
- Widen the southern Laird Road leg to provide a separate northbound left turn

This improvement would yield LOS C, which satisfies the Town's minimum LOS C standard. Because a traffic signal is already warranted under existing conditions, the project proponents shall contribute their fair share to the cost of this improvement by paying adopted traffic impact fees.

Mitigation 3: Project proponents need not install the traffic signal and should pay Town of Loomis Traffic Impact Fees. With this contribution the project's impact is less than significant. However, the Town of Loomis establishes priorities for improvements and identifies implementation schedules through its CIP. It may be appropriate for the EIR to note that as a result of priorities or CIP schedule there may be short term traffic impacts that are **significant and unavoidable** until such time as the traffic signal is fully funded and constructed

Impact 4: The project alternative will create a new collector street (Doc Barnes Extension) which because of its alignment has the potential for high speed traffic in conflict with pedestrian and bicycle traffic. This is a significant traffic safety impact.

Discussion. Measures to control the speed of traffic on this ½ mile long route have been considered. Because emergency vehicle routes should be preserved and this will be a route used by both project residents and regional traffic, vertical measures such as speed bumps are not applicable, but horizontal measures to narrow the street width in key areas to reduce pedestrian crossing distances can be implemented. All-way stops could also be considered but are not warranted based on the projected traffic volumes. An applicable response to the pedestrian safety issue includes intersection "bulb-outs" at all public street intersections on Doc Barnes Drive.

Mitigation 4: The Project site plan shall be modified to identify appropriate traffic calming measures that will be installed as the Doc Barnes Extension is constructed. With these improvements, the project's impact is less than significant.

<u>Cumulative Impacts</u>

Impact 5: The Horseshoe Bar Road / Webb Street Connector roundabout will operate at LOS D. Because LOS D exceeds the LOS C minimum this is a significant impact.

Discussion. To increase the capacity of the intersection a second northbound lane could be installed beginning on the Horseshoe Bar approach through the Library Drive leg to the Webb Street Extension exit. Right of way may need to be acquired. With this improvement the intersection will operate at LOS B.

Mitigation 5: The project proponents shall install the roundabout with an auxiliary lane.

Impact 6: The traffic volumes at the Horseshoe Bar Road / Laird Road intersection will result in LOS E with signalization. This is a significant impact.

Discussion: A traffic signal is included in the Town's traffic impact fee program as is widening of Horseshoe Bar Road from Brace Road to the Town Limits (2.5 and 2.9). With or without the proposed project a northbound left turn lane and eastbound right turn lane will be needed to meet the Town's LOS C standard. These improvements would be part of the widening included in the fee program. The project proponents will pay adopted traffic mitigation fees in place when the

project proceeds. With this improvement the minimum LOS standard will be met, and the project's impact is less than significant. No additional mitigation is required.

Impact 7: Peak period queues on the Northbound Webb Street approach to the Taylor Road intersection will extend south beyond the Laird Street intersection and block access to the Sun Knolls Subdivision. This is a significant impact.

Discussion. To reduce peak period queues it is necessary to provide a second lane on northbound Webb Street, as noted in the Draft Circulation Element Update. Roughly 40 feet of pavement width measured centerline to centerline would be needed. To provide this additional width it would be necessary to eliminate parking on Webb Street, and it may be necessary to modify existing frontages. Right of way acquisition may be required. With this improvement queuing may occasionally reach the Laird Street intersection but would not regularly block access.

Mitigation 7: Project proponents shall contribute their fair share to the cost of widening Webb Street.

Impact 8. The Village at Loomis will increase the volume of traffic on Interstate 80 west of the Horseshoe Bar Road interchange. The freeway is projected to operate at LOS F with and without the project, and Caltrans considers any increase a significant impact.

Discussion. As noted in the discussion of Regulatory Setting, the I-80 TCCR indicates that no improvements to mainline I-80 are anticipated. **Thus, this impact is significant and unavoidable.**

TABLE 28
MITIGATED YEAR 2030 PEAK HOUR INTERSECTION LEVEL OF SERVICE

Intersection	Control	AM Peak Hour				PM Peak Hour			
		Unimproved		With Mitigation		Unimproved		With Mitigation	
		Average Delay (sec)	LOS	Average Delay (sec)	LOS	Average Delay (sec)	LOS	Average Delay (sec)	LOS
King Rd / Swetzer Rd	Signal	21.8	C	21.8	C	32.9	C	32.9	C
Taylor Rd / King Rd	Signal	51.9	D	51.9	D	34.5	C	34.5	C
King Rd / Boyington Rd	Signal	-	-	24.5	C	-	-	14.6	B
Taylor Rd / Webb St	Signal	25.2	C	25.2	C	30.0	C	30.0	C
Taylor Rd / Horseshoe Bar Rd	Signal	19.6	B	19.6	B	**41.1**	**D**	**41.1**	**D**
Horseshoe Bar Rd / Laird St	EB/WB Stop	13.7	B	13.7	B	18.6	C	18.6	C
Horseshoe Bar Rd / Library Dr	Roundabout	18.5	C	18.5	C	**29.0**	**D**	12.0	B
Horseshoe Bar Rd/Doc Barnes Dr	Signal	19.5	B	19.5	B	27.5	C	27.5	C
Horseshoe Bar Rd/WB I-80 ramps	Signal	23.5	C	23.5	C	30.3	C	30.3	C
Horseshoe Bar Rd/EB I-80 ramps	Signal	23.5	C	23.5	C	30.3	C	30.3	C
Horseshoe Bar Rd / Laird Rd	Add EB right turn lane	28.9	C	22.6	C	32.6	C	32.6	C

n.a. “not applicable” no mitigation required

APPENDIX

TECHNICAL APPENDIX

FOR

VILLAGE AT LOOMIS
TRAFFIC IMPACT STUDY
Loomis, California

Prepared For:

Village at Loomis, LLC
P.O. Box 1200
Loomis, CA 95650

Prepared By:

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April 22, 2016

Job No. 7390-01

KD Anderson & Associates, Inc.
Transportation Engineers

Prepared by NDS/ATD

Volumes for: Thursday, March 20, 2014 City: Loomis Project #: 14-7171-001
Location: Horseshoe Bar Road from Taylor Road to I-80

Start	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	3	103			4	116				
12:15	8	123			1	118				
12:30	4	118			2	92				
12:45	6	125	21	469	1	104	8	430	29	899
1:00	1	123			0	96				
1:15	2	121			0	100				
1:30	5	97			4	109				
1:45	4	115	12	456	4	85	8	390	20	846
2:00	1	115			0	113				
2:15	1	137			3	90				
2:30	2	170			5	153				
2:45	2	181	6	603	2	153	10	509	16	1112
3:00	3	170			2	163				
3:15	6	164			2	160				
3:30	0	158			3	173				
3:45	2	155	11	647	4	134	11	630	22	1277
4:00	6	156			3	148				
4:15	6	162			8	139				
4:30	2	152			13	127				
4:45	9	182	23	652	10	113	34	527	57	1179
5:00	5	154			23	164				
5:15	17	166			18	146				
5:30	31	168			36	130				
5:45	64	155	117	643	44	137	121	577	238	1220
6:00	51	126			62	120				
6:15	70	131			55	107				
6:30	77	116			82	101				
6:45	110	92	308	465	86	117	285	445	593	910
7:00	115	83			106	100				
7:15	143	95			154	99				
7:30	131	89			149	115				
7:45	132	61	521	328	160	84	569	398	1090	726
8:00	125	72			148	71				
8:15	131	98			136	81				
8:30	92	64			122	35				
8:45	92	60	440	294	105	41	511	228	951	522
9:00	78	41			100	30				
9:15	84	47			89	63				
9:30	77	39			106	32	0			
9:45	73	31	312	158	99	21	394	146	706	304
10:00	73	33			70	18				
10:15	107	25			99	28				
10:30	75	18			99	18				
10:45	83	24	338	100	86	12	354	76	692	176
11:00	106	17			99	12				
11:15	114	11			111	8				
11:30	97	13			105	9				
11:45	100	15	417	56	116	6	431	35	848	91
Total	2526	4871	2526	4871	2736	4391	2736	4391	5262	9262
Combined Total	7397		7397		7127		7127		14524	
AM Peak	7:15 AM				7:15 AM					
Vol.	531				611					
P.H.F.	0.928				0.955					
PM Peak		2:30 PM				2:45 PM				
Vol.		685				649				
P.H.F.		0.954				0.938				
Percentage	34.1%	65.9%			38.4%	61.6%				

Prepared by NDS/ATD

Volumes for: Thursday, March 20, 2014 City: Loomis Project #: 14-7171-002
Location: Horseshoe Bar Road from I-80 to Laird Road

Start	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	1	48			4	54				
12:15	2	55			3	53				
12:30	1	52			3	48				
12:45	1	61	5	216	2	42	12	197	17	413
1:00	0	40			1	67				
1:15	1	64			2	60				
1:30	0	44			1	64				
1:45	0	52	1	200	3	69	7	260	8	460
2:00	2	74			0	74				
2:15	1	55			0	83				
2:30	0	103			1	99				
2:45	2	102	5	334	0	109	1	365	6	699
3:00	1	132			1	93				
3:15	2	85			2	96				
3:30	1	74			1	84				
3:45	4	63	8	354	0	77	4	350	12	704
4:00	3	98			1	80				
4:15	5	87			1	86				
4:30	3	129			4	83				
4:45	5	130	16	444	1	91	7	340	23	784
5:00	10	102			7	100				
5:15	15	90			5	84				
5:30	17	107			9	82				
5:45	22	99	64	398	10	77	31	343	95	741
6:00	26	73			26	72				
6:15	53	50			32	53				
6:30	47	47			37	68				
6:45	55	51	181	221	38	71	133	264	314	485
7:00	84	33			41	63				
7:15	89	29			61	60				
7:30	92	34			64	37				
7:45	101	36	366	132	99	41	265	201	631	333
8:00	107	29			81	40				
8:15	103	35			65	42				
8:30	93	29			42	33				
8:45	66	24	369	117	50	27	238	142	607	259
9:00	52	19			39	45				
9:15	60	25			39	33				
9:30	56	14			53	22	0			
9:45	59	17	227	75	40	12	171	112	398	187
10:00	56	10			28	10				
10:15	55	13			54	13				
10:30	47	9			45	14				
10:45	45	3	203	35	45	13	172	50	375	85
11:00	54	11			42	3				
11:15	61	4			59	10				
11:30	64	6			49	5				
11:45	50	2	229	23	48	3	198	21	427	44
Total	1674	2549	1674	2549	1239	2645	1239	2645	2913	5194
Combined Total	4223		4223		3884		3884		8107	
AM Peak	7:45 AM				7:30 AM					
Vol.	404				309					
P.H.F.	0.944				0.780					
PM Peak		4:30 PM				2:30 PM				
Vol.		451				397				
P.H.F.		0.890				0.911				
Percentage	39.6%	60.4%			31.9%	68.1%				

Prepared by NDS/ATD

Volumes for: Thursday, March 20, 2014 City: Loomis Project #: 14-7171-003
Location: Taylor Road from Sierra College Boulevard to Horseshoe Bar Road

Start	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	3	109			5	104				
12:15	4	106			1	85				
12:30	2	97			1	102				
12:45	1	114	10	426	0	101	7	392	17	818
1:00	4	116			0	99				
1:15	1	90			4	90				
1:30	7	111			2	97				
1:45	5	113	17	430	2	86	8	372	25	802
2:00	0	137			0	87				
2:15	3	112			0	101				
2:30	1	138			1	132				
2:45	0	126	4	513	2	142	3	462	7	975
3:00	1	120			2	158				
3:15	0	130			4	114				
3:30	2	124			1	98				
3:45	0	128	3	502	6	98	13	468	16	970
4:00	0	116			2	120				
4:15	2	132			5	79				
4:30	3	113			2	97				
4:45	0	111	5	472	9	101	18	397	23	869
5:00	5	119			13	129				
5:15	3	137			7	114				
5:30	7	119			11	107				
5:45	11	99	26	474	16	82	47	432	73	906
6:00	18	91			28	85				
6:15	23	81			31	82				
6:30	25	57			33	82				
6:45	49	60	115	289	49	62	141	311	256	600
7:00	55	58			50	68				
7:15	77	70			65	66				
7:30	77	60			81	60				
7:45	84	49	293	237	85	51	281	245	574	482
8:00	85	44			72	44				
8:15	80	50			93	45				
8:30	52	39			84	31				
8:45	61	47	278	180	61	29	310	149	588	329
9:00	57	36			66	21				
9:15	75	17			68	35				
9:30	69	16			76	17	0			
9:45	76	29	277	98	63	17	273	90	550	188
10:00	82	24			65	14				
10:15	81	15			73	17				
10:30	79	21			73	15				
10:45	78	10	320	70	77	12	288	58	608	128
11:00	98	9			88	8				
11:15	98	9			94	4				
11:30	96	9			92	6				
11:45	96	3	388	30	87	2	361	20	749	50
Total	1736	3721	1736	3721	1750	3396	1750	3396	3486	7117
Combined Total	5457		5457		5146		5146		10603	
AM Peak	11:45 AM				11:45 AM					
Vol.	408				378					
P.H.F.	0.936				0.909					
PM Peak		2:30 PM				2:30 PM				
Vol.		514				546				
P.H.F.		0.913				0.864				
Percentage	31.8%	68.2%			34.0%	66.0%				

Prepared by NDS/ATD

Volumes for: Thursday, March 20, 2014 City: Loomis Project #: 14-7171-004

Location: Taylor Road from Horseshoe Bar Road to Webb Street

Start	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	4	132			2	154				
12:15	10	170			3	146				
12:30	4	144			2	156				
12:45	6	140	24	586	1	160	8	616	32	1202
1:00	2	172			0	138				
1:15	3	145			4	142				
1:30	8	138			6	157				
1:45	4	172	17	627	3	123	13	560	30	1187
2:00	2	208			2	124				
2:15	3	216			2	140				
2:30	1	191			4	194				
2:45	1	254	7	869	3	187	11	645	18	1514
3:00	2	223			6	226				
3:15	6	223			5	182				
3:30	2	208			2	194				
3:45	2	222	12	876	9	172	22	774	34	1650
4:00	2	218			4	194				
4:15	8	217			15	172				
4:30	2	239			10	159				
4:45	8	250	20	924	12	157	41	682	61	1606
5:00	2	228			30	209				
5:15	16	234			22	197				
5:30	31	238			39	178				
5:45	69	236	118	936	52	169	143	753	261	1689
6:00	55	168			69	166				
6:15	74	145			67	157				
6:30	82	136			104	139				
6:45	130	120	341	569	120	156	360	618	701	1187
7:00	137	110			134	132				
7:15	201	132			170	123				
7:30	193	126			196	144				
7:45	158	92	689	460	202	115	702	514	1391	974
8:00	185	87			181	84				
8:15	178	109			205	73				
8:30	124	89			152	49				
8:45	112	83	599	368	130	59	668	265	1267	633
9:00	97	63			138	41				
9:15	110	53			126	80				
9:30	102	47			128	41	0			
9:45	79	42	388	205	140	29	532	191	920	396
10:00	82	41			117	19				
10:15	115	27			123	27				
10:30	100	30			129	26				
10:45	108	30	405	128	127	15	496	87	901	215
11:00	115	15			143	15				
11:15	125	16			141	10				
11:30	129	19			136	12				
11:45	111	10	480	60	164	7	584	44	1064	104
Total	3100	6608	3100	6608	3580	5749	3580	5749	6680	12357
Combined Total	9708		9708		9329		9329		19037	
AM Peak	7:15 AM				7:30 AM					
Vol.	737				784					
P.H.F.	0.917				0.956					
PM Peak		4:30 PM				2:30 PM				
Vol.		951				789				
P.H.F.		0.945				0.873				
Percentage	31.9%	68.1%			38.4%	61.6%				

Prepared by NDS/ATD

Volumes for: Thursday, March 20, 2014 City: Loomis Project #: 14-7171-005
Location: Taylor Road from Webb Street to King Road

Start	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	3	128			1	137				
12:15	5	138			1	119				
12:30	3	128			2	129				
12:45	4	126	15	520	1	132	5	517	20	1037
1:00	2	154			0	110				
1:15	3	127			3	113				
1:30	8	121			6	137				
1:45	4	147	17	549	2	111	11	471	28	1020
2:00	2	175			2	96				
2:15	2	201			2	111				
2:30	1	175			3	178				
2:45	1	238	6	789	3	183	10	568	16	1357
3:00	2	203			5	219				
3:15	4	193			4	163				
3:30	1	177			2	176				
3:45	2	185	9	758	8	145	19	703	28	1461
4:00	1	179			1	180				
4:15	7	176			7	145				
4:30	2	206			6	145				
4:45	7	212	17	773	5	133	19	603	36	1376
5:00	1	186			21	189				
5:15	15	189			15	170				
5:30	31	202			26	153				
5:45	65	190	112	767	43	140	105	652	217	1419
6:00	50	138			40	144				
6:15	70	120			50	132				
6:30	68	107			76	123				
6:45	125	90	313	455	101	134	267	533	580	988
7:00	131	100			116	112				
7:15	196	121			147	120				
7:30	180	93			161	133				
7:45	158	89	665	403	182	88	606	453	1271	856
8:00	152	66			132	69				
8:15	166	93			159	65				
8:30	97	67			124	41				
8:45	102	67	517	293	103	45	518	220	1035	513
9:00	88	46			126	32				
9:15	104	38			105	64				
9:30	87	44			113	31	0			
9:45	80	32	359	160	107	23	451	150	810	310
10:00	67	35			99	13				
10:15	102	25			104	19				
10:30	103	30			103	20				
10:45	104	30	376	120	111	12	417	64	793	184
11:00	108	14			121	15				
11:15	134	21			117	10				
11:30	112	14			104	8				
11:45	98	7	452	56	131	5	473	38	925	94
Total	2858	5643	2858	5643	2901	4972	2901	4972	5759	10615
Combined Total	8501		8501		7873		7873		16374	
AM Peak	7:15 AM				7:30 AM					
Vol.	686				634					
P.H.F.	0.875				0.871					
PM Peak		2:15 PM				2:30 PM				
Vol.		817				743				
P.H.F.		0.895				0.848				
Percentage	33.6%	66.4%			36.8%	63.2%				

Prepared by NDS/ATD

Volumes for: Thursday, March 20, 2014 City: Loomis Project #: 14-7171-006
Location: King Road from Taylor Road to Boydington Road

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	32			0	34				
12:15	2	35			1	40				
12:30	0	28			1	39				
12:45	4	61	6	156	1	25	3	138	9	294
1:00	1	44			0	40				
1:15	2	52			2	26				
1:30	3	37			2	39				
1:45	3	42	9	175	1	39	5	144	14	319
2:00	2	46			1	52				
2:15	0	49			1	55				
2:30	0	107			1	78				
2:45	0	96	2	298	1	80	4	265	6	563
3:00	0	86			0	91				
3:15	0	55			1	59				
3:30	2	84			1	47				
3:45	0	71	2	296	0	75	2	272	4	568
4:00	0	91			0	69				
4:15	2	80			3	64				
4:30	2	89			1	65				
4:45	2	80	6	340	4	85	8	283	14	623
5:00	0	109			11	73				
5:15	8	85			6	67				
5:30	2	90			11	75				
5:45	11	90	21	374	25	61	53	276	74	650
6:00	4	76			24	58				
6:15	16	57			32	46				
6:30	7	47			27	47				
6:45	29	46	56	226	47	46	130	197	186	423
7:00	32	56			66	46				
7:15	44	61			99	66				
7:30	49	46			123	85				
7:45	51	34	176	197	68	26	356	223	532	420
8:00	61	28			101	18				
8:15	66	46			63	21				
8:30	48	17			44	18				
8:45	23	35	198	126	35	12	243	69	441	195
9:00	22	16			39	22				
9:15	34	21			38	24				
9:30	38	12			36	13				
9:45	30	14	124	63	33	11	146	70	270	133
10:00	22	13			32	10				
10:15	34	14			28	10				
10:30	42	13			30	3				
10:45	38	8	136	48	40	6	130	29	266	77
11:00	33	14			28	12				
11:15	36	14			35	5				
11:30	48	6			51	5				
11:45	37	4	154	38	49	6	163	28	317	66
Total	890	2337	890	2337	1243	1994	1243	1994	2133	4331
Combined Total	3227		3227		3237		3237		6464	
AM Peak	7:30 AM				7:15 AM					
Vol.	227				391					
P.H.F.	0.860				0.795					
PM Peak		5:00 PM				2:30 PM				
Vol.		374				308				
P.H.F.		0.858				0.846				
Percentage	27.6%	72.4%			38.4%	61.6%				

Prepared by NDS/ATD

Volumes for: Thursday, March 20, 2014 City: Loomis Project #: 14-7171-007
Location: Laird Street from Horseshoe Bar Road to Webb Street

Start	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	11			0	15				
12:15	0	5			0	11				
12:30	3	6			0	6				
12:45	1	10	4	32	0	12	0	44	4	76
1:00	0	7			0	5				
1:15	1	10			0	6				
1:30	1	12			0	13				
1:45	0	8	2	37	0	10	0	34	2	71
2:00	0	8			0	16				
2:15	0	9			0	4				
2:30	0	13			1	21				
2:45	0	21	0	51	0	15	1	56	1	107
3:00	0	9			0	22				
3:15	0	13			0	13				
3:30	0	10			1	10				
3:45	0	15	0	47	2	10	3	55	3	102
4:00	0	17			1	12				
4:15	0	7			0	4				
4:30	0	21			1	14				
4:45	0	12	0	57	1	10	3	40	3	97
5:00	1	5			1	10				
5:15	2	15			3	15				
5:30	0	10			2	12				
5:45	1	13	4	43	3	12	9	49	13	92
6:00	0	9			8	9				
6:15	0	9			3	18				
6:30	1	9			5	2				
6:45	3	7	4	34	4	9	20	38	24	72
7:00	4	12			12	9				
7:15	7	6			6	12				
7:30	12	8			16	7				
7:45	6	2	29	28	4	11	38	39	67	67
8:00	9	8			14	3				
8:15	9	12			14	8				
8:30	5	6			11	4				
8:45	6	13	29	39	12	2	51	17	80	56
9:00	5	2			6	1				
9:15	1	3			7	4				
9:30	2	8			10	3	0			
9:45	4	1	12	14	4	2	27	10	39	24
10:00	3	2			9	2				
10:15	6	3			8	4				
10:30	3	1			10	1				
10:45	5	3	17	9	13	0	40	7	57	16
11:00	5	2			13	1				
11:15	6	1			11	1				
11:30	4	0			10	1				
11:45	8	2	23	5	7	0	41	3	64	8
Total	124	396	124	396	233	392	233	392	357	788
Combined Total	520		520		625		625		1145	
AM Peak	7:30 AM				8:00 AM					
Vol.	36				51					
P.H.F.	0.750				0.911					
PM Peak		3:45 PM				2:30 PM				
Vol.		60				71				
P.H.F.		0.676				0.807				
Percentage	23.8%	76.2%			37.3%	62.7%				

Prepared by NDS/ATD

Volumes for: Thursday, March 20, 2014 City: Loomis Project #: 14-7171-008

Location: Webb Street from Taylor Road to Laird Street

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	4			0	7				
12:15	0	9			0	11				
12:30	0	10			0	11				
12:45	0	8	0	31	0	9	0	38	0	69
1:00	0	6			0	11				
1:15	0	9			0	14				
1:30	0	7			0	17				
1:45	0	5	0	27	0	10	0	52	0	79
2:00	0	6			0	7				
2:15	1	3			0	9				
2:30	0	3			0	6				
2:45	0	4	1	16	0	8	0	30	1	46
3:00	0	6			0	5				
3:15	0	7			0	5				
3:30	0	7			0	7				
3:45	0	2	0	22	0	5	0	22	0	44
4:00	0	11			0	10				
4:15	0	4			0	5				
4:30	0	5			0	7				
4:45	0	2	0	22	0	7	0	29	0	51
5:00	0	4			0	4				
5:15	0	4			0	6				
5:30	0	5			0	3				
5:45	1	5	1	18	2	4	2	17	3	35
6:00	1	1			1	0				
6:15	0	7			1	7				
6:30	2	3			0	2				
6:45	0	5	3	16	5	5	7	14	10	30
7:00	1	3			4	5				
7:15	1	3			4	4				
7:30	0	3			10	4				
7:45	5	5	7	14	10	4	28	17	35	31
8:00	4	0			8	0				
8:15	3	2			8	2				
8:30	5	3			5	6				
8:45	3	1	15	6	6	5	27	13	42	19
9:00	9	2			3	1				
9:15	3	0			2	1				
9:30	4	1			1	3				
9:45	8	0	24	3	6	4	12	9	36	12
10:00	6	1			7	3				
10:15	9	0			5	1				
10:30	6	1			10	2				
10:45	5	0	26	2	11	1	33	7	59	9
11:00	6	0			8	1				
11:15	7	0			9	0				
11:30	5	0			11	0				
11:45	6	2	24	2	7	3	35	4	59	6
Total	101	179	101	179	144	252	144	252	245	431
Combined Total	280		280		396		396		676	
AM Peak	9:45 AM				10:45 AM					
Vol.	29				39					
P.H.F.	0.806				0.886					
PM Peak		12:15 PM				1:00 PM				
Vol.		33				52				
P.H.F.		0.825				0.765				
Percentage	36.1%	63.9%			36.4%	63.6%				

Prepared by NDS/ATD

Volumes for: Thursday, March 20, 2014 City: Loomis Project #: 14-7171-009
Location: Sun Knoll Drive from King Road to Thornwood Drive

Start	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	1	6			0	1				
12:15	0	2			1	1				
12:30	0	3			0	2				
12:45	0	2	1	13	1	4	2	8	3	21
1:00	1	0			0	3				
1:15	1	3			2	4				
1:30	0	1			0	2				
1:45	0	2	2	6	0	2	2	11	4	17
2:00	0	5			0	4				
2:15	1	7			0	4				
2:30	0	4			0	16				
2:45	0	9	1	25	1	4	1	28	2	53
3:00	0	12			0	16				
3:15	0	3			0	4				
3:30	0	6			0	8				
3:45	0	10	0	31	0	9	0	37	0	68
4:00	0	9			0	4				
4:15	1	3			0	3				
4:30	0	8			0	6				
4:45	0	5	1	25	0	5	0	18	1	43
5:00	1	3			0	6				
5:15	1	5			1	4				
5:30	1	2			1	6				
5:45	1	6	4	16	0	6	2	22	6	38
6:00	1	0			0	4				
6:15	4	3			3	8				
6:30	1	3			1	2				
6:45	3	5	9	11	1	2	5	16	14	27
7:00	4	1			2	5				
7:15	7	1			4	5				
7:30	10	0			3	5				
7:45	7	4	28	6	4	10	13	25	41	31
8:00	10	1			6	3				
8:15	5	3			6	2				
8:30	5	3			3	1				
8:45	3	1	23	8	2	1	17	7	40	15
9:00	2	1			1	2				
9:15	2	3			3	4				
9:30	5	0			4	1	0			
9:45	4	3	13	7	2	1	10	8	23	15
10:00	2	2			1	3				
10:15	2	0			2	1				
10:30	1	0			3	3				
10:45	4	1	9	3	3	1	9	8	18	11
11:00	1	0			4	0				
11:15	1	1			3	5				
11:30	3	2			4	0				
11:45	1	0	6	3	2	0	13	5	19	8
Total	97	154	97	154	74	193	74	193	171	347
Combined Total	251		251		267		267		518	
AM Peak	7:15 AM				7:30 AM					
Vol.	34				19					
P.H.F.	0.850				0.792					
PM Peak		2:15 PM				2:15 PM				
Vol.		32				40				
P.H.F.		0.806				0.625				
Percentage	38.6%	61.4%			27.7%	72.3%				

Prepared by NDS/ATD

Volumes for: Thursday, March 20, 2014 City: Loomis Project #: 14-7171-010
Location: Day Avenue from King Road to David Avenue

Start	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	1	2			0	2				
12:15	0	6			0	3				
12:30	0	3			0	4				
12:45	0	1	1	12	0	2	0	11	1	23
1:00	0	5			0	4				
1:15	0	3			1	4				
1:30	0	2			0	3				
1:45	1	2	1	12	1	4	2	15	3	27
2:00	0	4			0	2				
2:15	1	4			1	3				
2:30	0	7			0	16				
2:45	1	7	2	22	0	10	1	31	3	53
3:00	0	10			0	6				
3:15	0	3			0	4				
3:30	0	10			0	11				
3:45	0	3	0	26	0	5	0	26	0	52
4:00	0	8			1	11				
4:15	0	3			0	5				
4:30	0	7			0	9				
4:45	0	9	0	27	0	7	1	32	1	59
5:00	5	8			0	10				
5:15	1	4			1	10				
5:30	2	2			0	4				
5:45	5	9	13	23	1	10	2	34	15	57
6:00	5	3			2	5				
6:15	3	7			1	11				
6:30	5	5			0	7				
6:45	5	8	18	23	1	10	4	33	22	56
7:00	4	4			3	2				
7:15	8	4			1	3				
7:30	7	0			4	4				
7:45	7	2	26	10	6	0	14	9	40	19
8:00	12	3			2	5				
8:15	12	1			5	3				
8:30	4	1			6	4				
8:45	2	2	30	7	3	4	16	16	46	23
9:00	5	1			2	0				
9:15	3	0			4	2				
9:30	4	1			1	1	0			
9:45	4	1	16	3	5	3	12	6	28	9
10:00	2	4			0	3				
10:15	3	3			2	2				
10:30	3	1			1	2				
10:45	1	0	9	8	0	1	3	8	12	16
11:00	4	0			3	1				
11:15	3	1			3	2				
11:30	4	0			2	1				
11:45	0	0	11	1	2	0	10	4	21	5
Total	127	174	127	174	65	225	65	225	192	399
Combined Total	301		301		290		290		591	
AM Peak	7:30 AM				7:45 AM					
Vol.	38				19					
P.H.F.	0.792				0.792					
PM Peak		2:45 PM				2:30 PM				
Vol.		30				36				
P.H.F.		0.575				0.563				
Percentage	42.2%	57.8%			22.4%	77.6%				

ALL TRAFFIC DATA

City of Loomis
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7170-001 Taylor Road-Horseshoe Bar Road.ppd
Date : 3/20/2014

Unshifted Count = All Vehicles

	Taylor Road Southbound					Horseshoe Bar Road Westbound					Taylor Road Northbound					Horseshoe Bar Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	79	49	1	0	129	6	4	90	0	100	0	49	5	0	54	2	8	2	0	12	295	0
07:15	122	54	2	0	178	6	2	131	0	139	1	77	7	0	85	2	18	2	0	22	424	0
07:30	100	84	4	0	188	5	6	111	0	122	1	71	8	0	80	3	22	3	0	28	418	0
07:45	125	78	3	0	206	10	4	106	0	120	0	56	12	0	68	6	12	1	0	19	413	0
Total	426	265	10	0	701	27	16	438	0	481	2	253	32	0	287	13	60	8	0	81	1550	0
08:00	111	62	1	0	174	11	4	97	0	112	3	75	12	0	90	2	16	3	0	21	397	0
08:15	108	103	0	0	211	14	2	111	0	127	2	72	10	0	84	0	6	0	0	6	428	0
08:30	83	65	2	0	150	9	3	73	0	85	0	42	16	0	58	1	10	2	0	13	306	0
08:45	76	51	0	0	127	16	3	71	0	90	2	45	9	0	56	0	3	0	0	3	276	0
Total	378	281	3	0	662	50	12	352	0	414	7	234	47	0	288	3	35	5	0	43	1407	0
16:00	103	87	2	0	192	12	0	123	0	135	2	96	29	0	127	4	4	3	0	11	465	0
16:15	93	76	1	0	170	19	5	115	0	139	3	91	26	0	120	6	6	2	0	14	443	0
16:30	85	67	0	0	152	24	0	127	0	151	2	119	24	0	145	1	6	2	0	9	457	0
16:45	81	72	3	0	156	23	5	142	0	170	0	97	21	0	118	5	4	3	0	12	456	0
Total	362	302	6	0	670	78	10	507	0	595	7	403	100	0	510	16	20	10	0	46	1821	0
17:00	120	85	1	0	206	22	4	119	0	145	2	112	24	0	138	1	4	4	0	9	498	0
17:15	103	95	3	0	201	23	3	130	0	156	2	97	23	0	122	1	5	1	0	7	486	0
17:30	95	74	2	0	171	15	1	121	0	137	4	104	18	0	126	8	4	2	0	14	448	0
17:45	96	65	4	0	165	9	6	133	0	148	5	95	17	0	117	5	5	5	0	15	445	0
Total	414	319	10	0	743	69	14	503	0	586	13	408	82	0	503	15	18	12	0	45	1877	0
Grand Total	1580	1167	29	0	2776	224	52	1800	0	2076	29	1298	261	0	1588	47	133	35	0	215	6655	0
Apprch %	56.9%	42.0%	1.0%	0.0%		10.8%	2.5%	86.7%	0.0%		1.8%	81.7%	16.4%	0.0%		21.9%	61.9%	16.3%	0.0%			
Total %	23.7%	17.5%	0.4%	0.0%	41.7%	3.4%	0.8%	27.0%	0.0%	31.2%	0.4%	19.5%	3.9%	0.0%	23.9%	0.7%	2.0%	0.5%	0.0%	3.2%	100.0%	

ALL TRAFFIC DATA

City of Loomis
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7170-001 Taylor Road-Horseshoe Bar Road.ppd
Date : 3/20/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	Taylor Road Southbound					Horseshoe Bar Road Westbound					Taylor Road Northbound					Horseshoe Bar Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	100	84	4	0	188	5	6	111	0	122	1	71	8	0	80	3	22	3	0	28	418
07:45	125	78	3	0	206	10	4	106	0	120	0	56	12	0	68	6	12	1	0	19	413
08:00	111	62	1	0	174	11	4	97	0	112	3	75	12	0	90	2	16	3	0	21	397
08:15	108	103	0	0	211	14	2	111	0	127	2	72	10	0	84	0	6	0	0	6	428
Total Volume	444	327	8	0	779	40	16	425	0	481	6	274	42	0	322	11	56	7	0	74	1656
% App Total	57.0%	42.0%	1.0%	0.0%		8.3%	3.3%	88.4%	0.0%		1.9%	85.1%	13.0%	0.0%		14.9%	75.7%	9.5%	0.0%		
PHF	.888	.794	.500	.000	.923	.714	.667	.957	.000	.947	.500	.913	.875	.000	.894	.458	.636	.583	.000	.661	.967

PM PEAK HOUR	Taylor Road Southbound					Horseshoe Bar Road Westbound					Taylor Road Northbound					Horseshoe Bar Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	85	67	0	0	152	24	0	127	0	151	2	119	24	0	145	1	6	2	0	9	457
16:45	81	72	3	0	156	23	5	142	0	170	0	97	21	0	118	5	4	3	0	12	456
17:00	120	85	1	0	206	22	4	119	0	145	2	112	24	0	138	1	4	4	0	9	498
17:15	103	95	3	0	201	23	3	130	0	156	2	97	23	0	122	1	5	1	0	7	486
Total Volume	389	319	7	0	715	92	12	518	0	622	6	425	92	0	523	8	19	10	0	37	1897
% App Total	54.4%	44.6%	1.0%	0.0%		14.8%	1.9%	83.3%	0.0%		1.1%	81.3%	17.6%	0.0%		21.6%	51.4%	27.0%	0.0%		
PHF	.810	.839	.583	.000	.868	.958	.600	.912	.000	.915	.750	.893	.958	.000	.902	.400	.792	.625	.000	.771	.952

ALL TRAFFIC DATA

City of Loomis
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7170-002 Taylor Road-Webb Street.ppd
Date : 3/20/2014

Unshifted Count = All Vehicles

	Taylor Road Southbound					Gates Lane Westbound					Taylor Road Northbound					Webb Street Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	109	1	0	110	1	0	1	0	2	9	127	0	0	136	0	0	22	0	22	270	0
07:15	0	133	1	0	134	1	1	2	0	4	13	190	1	0	204	0	0	38	0	38	380	0
07:30	0	161	1	0	162	1	0	9	0	10	15	176	0	0	191	0	0	34	0	34	397	0
07:45	4	171	0	0	175	0	1	8	0	9	12	148	1	0	161	0	0	35	0	35	380	0
Total	4	574	3	0	581	3	2	20	0	25	49	641	2	0	692	0	0	129	0	129	1427	0
08:00	3	133	1	0	137	2	0	5	0	7	27	151	1	1	180	0	0	44	0	44	368	1
08:15	2	158	3	0	163	0	0	6	0	6	21	162	2	0	185	0	0	42	0	42	396	0
08:30	3	125	1	0	129	0	1	4	0	5	11	106	2	0	119	0	0	30	0	30	283	0
08:45	2	95	0	0	97	1	1	3	0	5	13	103	0	0	116	0	0	32	0	32	250	0
Total	10	511	5	0	526	3	2	18	0	23	72	522	5	1	600	0	0	148	0	148	1297	1
16:00	2	174	2	0	178	0	1	6	0	7	41	175	7	0	223	0	0	20	0	20	428	0
16:15	3	144	1	0	148	2	0	4	0	6	36	171	1	0	208	1	0	27	0	28	390	0
16:30	2	139	2	0	143	1	0	5	0	6	40	204	3	0	247	0	0	19	0	19	415	0
16:45	0	132	0	0	132	0	0	7	0	7	43	202	2	0	247	0	0	23	0	23	409	0
Total	7	589	5	0	601	3	1	22	0	26	160	752	13	0	925	1	0	89	0	90	1642	0
17:00	1	189	1	0	191	0	1	3	0	4	45	187	1	0	233	1	1	24	0	26	454	0
17:15	3	174	2	0	179	0	3	3	0	6	47	184	1	0	232	0	0	24	0	24	441	0
17:30	0	147	4	0	151	0	0	2	0	2	32	203	4	0	239	4	0	31	0	35	427	0
17:45	2	138	2	0	142	0	0	4	0	4	43	190	2	0	235	0	1	31	0	32	413	0
Total	6	648	9	0	663	0	4	12	0	16	167	764	8	0	939	5	2	110	0	117	1735	0
Grand Total	27	2322	22	0	2371	9	9	72	0	90	448	2679	28	1	3156	6	2	476	0	484	6101	1
Apprch %	1.1%	97.9%	0.9%	0.0%		10.0%	10.0%	80.0%	0.0%		14.2%	84.9%	0.9%	0.0%		1.2%	0.4%	98.3%	0.0%			
Total %	0.4%	38.1%	0.4%	0.0%	38.9%	0.1%	0.1%	1.2%	0.0%	1.5%	7.3%	43.9%	0.5%	0.0%	51.7%	0.1%	0.0%	7.8%	0.0%	7.9%	100.0%	

ALL TRAFFIC DATA

City of Loomis
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7170-002 Taylor Road-Webb Street.ppd
Date : 3/20/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	Taylor Road Southbound					Gates Lane Westbound					Taylor Road Northbound					Webb Street Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	0	161	1	0	162	1	0	9	0	10	15	176	0	0	191	0	0	34	0	34	397
07:45	4	171	0	0	175	0	1	8	0	9	12	148	1	0	161	0	0	35	0	35	380
08:00	3	133	1	0	137	2	0	5	0	7	27	151	1	1	180	0	0	44	0	44	368
08:15	2	158	3	0	163	0	0	6	0	6	21	162	2	0	185	0	0	42	0	42	396
Total Volume	9	623	5	0	637	3	1	28	0	32	75	637	4	1	717	0	0	155	0	155	1541
% App Total	1.4%	97.8%	0.8%	0.0%		9.4%	3.1%	87.5%	0.0%		10.5%	88.8%	0.6%	0.1%		0.0%	0.0%	100.0%	0.0%		
PHF	.563	.911	.417	.000	.910	.375	.250	.778	.000	.800	.694	.905	.500	.250	.938	.000	.000	.881	.000	.881	.970

PM PEAK HOUR	Taylor Road Southbound					Gates Lane Westbound					Taylor Road Northbound					Webb Street Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	1	189	1	0	191	0	1	3	0	4	45	187	1	0	233	1	1	24	0	26	454
17:15	3	174	2	0	179	0	3	3	0	6	47	184	1	0	232	0	0	24	0	24	441
17:30	0	147	4	0	151	0	0	2	0	2	32	203	4	0	239	4	0	31	0	35	427
17:45	2	138	2	0	142	0	0	4	0	4	43	190	2	0	235	0	1	31	0	32	413
Total Volume	6	648	9	0	663	0	4	12	0	16	167	764	8	0	939	5	2	110	0	117	1735
% App Total	0.9%	97.7%	1.4%	0.0%		0.0%	25.0%	75.0%	0.0%		17.8%	81.4%	0.9%	0.0%		4.3%	1.7%	94.0%	0.0%		
PHF	.500	.857	.563	.000	.868	.000	.333	.750	.000	.667	.888	.941	.500	.000	.982	.313	.500	.887	.000	.836	.955

ALL TRAFFIC DATA

City of Loomis
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7170-003 Taylor Road-King Road.ppd
Date : 3/20/2014

Unshifted Count = All Vehicles

	Taylor Road Southbound					King Road Westbound					Taylor Road Northbound					King Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	2	59	12	0	73	19	21	21	0	61	48	59	17	0	124	26	12	40	0	78	336	0
07:15	6	96	25	0	127	21	24	34	0	79	44	133	13	0	190	67	25	38	0	130	526	0
07:30	12	78	27	0	117	32	28	64	0	124	37	119	20	0	176	50	20	52	0	122	539	0
07:45	11	86	31	0	128	33	25	22	0	80	53	52	27	0	132	21	21	62	0	104	444	0
Total	31	319	95	0	445	105	98	141	0	344	182	363	77	0	622	164	78	192	0	434	1845	0
08:00	5	35	19	0	59	33	51	6	0	90	69	38	29	0	136	14	32	57	0	103	388	0
08:15	7	49	12	0	68	31	25	11	0	67	59	49	29	0	137	19	32	72	0	123	395	0
08:30	8	34	7	0	49	21	22	4	0	47	51	30	22	0	103	14	15	46	0	75	274	0
08:45	3	43	11	0	57	16	13	7	0	36	48	36	9	0	93	6	13	43	0	62	248	0
Total	23	161	49	0	233	101	111	28	0	240	227	153	89	0	469	53	92	218	0	363	1305	0
16:00	12	59	22	0	93	33	27	13	0	73	81	70	51	0	202	16	31	82	0	129	497	0
16:15	5	33	17	0	55	31	30	8	0	69	60	68	41	0	169	26	36	75	0	137	430	0
16:30	13	62	25	0	100	23	26	11	0	60	83	79	39	0	201	16	38	61	0	115	476	0
16:45	8	57	21	0	86	33	36	20	0	89	73	79	48	0	200	23	32	47	0	102	477	0
Total	38	211	85	0	334	120	119	52	0	291	297	296	179	0	772	81	137	265	0	483	1880	0
17:00	18	56	23	0	97	40	27	7	0	74	77	69	47	0	193	13	41	88	0	142	506	0
17:15	11	68	23	0	102	30	31	8	0	69	65	70	48	0	183	21	28	66	0	115	469	0
17:30	13	56	17	0	86	33	28	12	0	73	71	70	55	0	196	31	21	61	0	113	468	0
17:45	10	59	18	0	87	40	16	12	0	68	62	72	52	0	186	14	29	43	0	86	427	0
Total	52	239	81	0	372	143	102	39	0	284	275	281	202	0	758	79	119	258	0	456	1870	0
Grand Total	144	930	310	0	1384	469	430	260	0	1159	981	1093	547	0	2621	377	426	933	0	1736	6900	0
Apprch %	10.4%	67.2%	22.4%	0.0%		40.5%	37.1%	22.4%	0.0%		37.4%	41.7%	20.9%	0.0%		21.7%	24.5%	53.7%	0.0%			
Total %	2.1%	13.5%	4.5%	0.0%	20.1%	6.8%	6.2%	3.8%	0.0%	16.8%	14.2%	15.8%	7.9%	0.0%	38.0%	5.5%	6.2%	13.5%	0.0%	25.2%	100.0%	

ALL TRAFFIC DATA

City of Loomis
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7170-003 Taylor Road-King Road.ppd
Date : 3/20/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	Taylor Road Southbound					King Road Westbound					Taylor Road Northbound					King Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
07:15	6	96	25	0	127	21	24	34	0	79	44	133	13	0	190	67	25	38	0	130	526
07:30	12	78	27	0	117	32	28	64	0	124	37	119	20	0	176	50	20	52	0	122	539
07:45	11	86	31	0	128	33	25	22	0	80	53	52	27	0	132	21	21	62	0	104	444
08:00	5	35	19	0	59	33	51	6	0	90	69	38	29	0	136	14	32	57	0	103	388
Total Volume	34	295	102	0	431	119	128	126	0	373	203	342	89	0	634	152	98	209	0	459	1897
% App Total	7.9%	68.4%	23.7%	0.0%		31.9%	34.3%	33.8%	0.0%		32.0%	53.9%	14.0%	0.0%		33.1%	21.4%	45.5%	0.0%		
PHF	.708	.768	.823	.000	.842	.902	.627	.492	.000	.752	.736	.643	.767	.000	.834	.567	.766	.843	.000	.883	.880

PM PEAK HOUR	Taylor Road Southbound					King Road Westbound					Taylor Road Northbound					King Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	13	62	25	0	100	23	26	11	0	60	83	79	39	0	201	16	38	61	0	115	476
16:45	8	57	21	0	86	33	36	20	0	89	73	79	48	0	200	23	32	47	0	102	477
17:00	18	56	23	0	97	40	27	7	0	74	77	69	47	0	193	13	41	88	0	142	506
17:15	11	68	23	0	102	30	31	8	0	69	65	70	48	0	183	21	28	66	0	115	469
Total Volume	50	243	92	0	385	126	120	46	0	292	298	297	182	0	777	73	139	262	0	474	1928
% App Total	13.0%	63.1%	23.9%	0.0%		43.2%	41.1%	15.8%	0.0%		38.4%	38.2%	23.4%	0.0%		15.4%	29.3%	55.3%	0.0%		
PHF	.694	.893	.920	.000	.944	.788	.833	.575	.000	.820	.898	.940	.948	.000	.966	.793	.848	.744	.000	.835	.953

ALL TRAFFIC DATA

City of Loomis
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7170-004 Horseshoe Bar Road-Library Drive.ppd
Date : 3/20/2014

Unshifted Count = All Vehicles

	Horseshoe Bar Road Southbound					Library Drive Westbound					Horseshoe Bar Road Northbound					Driveway Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	104	0	0	104	0	0	0	0	0	0	109	0	0	109	0	0	0	0	0	213	0
07:15	0	156	0	0	156	0	0	0	0	0	0	139	0	0	139	0	0	0	0	0	295	0
07:30	0	143	0	0	143	0	0	0	0	0	0	133	1	0	134	0	0	0	0	0	277	0
07:45	0	162	0	0	162	0	0	0	0	0	0	128	0	0	128	0	0	0	0	0	290	0
Total	0	565	0	0	565	0	0	0	0	0	0	509	1	0	510	0	0	0	0	0	1075	0
08:00	1	145	0	0	146	1	0	1	0	2	0	126	0	0	126	0	0	0	0	0	274	0
08:15	3	131	0	0	134	0	0	3	0	3	0	131	0	0	131	0	0	0	0	0	268	0
08:30	3	123	0	0	126	0	0	2	0	2	0	88	1	0	89	0	0	0	0	0	217	0
08:45	3	101	0	0	104	2	0	3	0	5	0	95	1	0	96	0	0	0	0	0	205	0
Total	10	500	0	0	510	3	0	9	0	12	0	440	2	0	442	0	0	0	0	0	964	0
16:00	0	147	1	0	148	0	0	4	0	4	0	150	6	0	156	0	0	0	0	0	308	0
16:15	5	131	0	1	137	4	0	1	0	5	0	158	3	0	161	0	0	0	0	0	303	1
16:30	1	122	0	0	123	6	0	2	0	8	0	153	5	0	158	1	0	0	0	1	290	0
16:45	0	111	1	0	112	1	0	0	0	1	0	176	2	0	178	0	0	0	0	0	291	0
Total	6	511	2	1	520	11	0	7	0	18	0	637	16	0	653	1	0	0	0	1	1192	1
17:00	2	166	0	0	168	3	0	4	0	7	0	148	0	0	148	0	0	0	0	0	323	0
17:15	3	138	0	0	141	3	0	2	0	5	0	173	2	1	176	0	0	0	0	0	322	1
17:30	1	133	0	1	135	1	0	0	0	1	0	158	1	0	159	0	0	0	0	0	295	1
17:45	1	133	0	0	134	1	0	0	0	1	0	157	4	0	161	0	0	0	0	0	296	0
Total	7	570	0	1	578	8	0	6	0	14	0	636	7	1	644	0	0	0	0	0	1236	2
Grand Total	23	2146	2	2	2173	22	0	22	0	44	0	2222	26	1	2249	1	0	0	0	1	4467	3
Apprch %	1.1%	98.8%	0.1%	0.1%		50.0%	0.0%	50.0%	0.0%		0.0%	98.8%	1.2%	0.0%		100.0%	0.0%	0.0%	0.0%			
Total %	0.5%	48.0%	0.0%	0.0%	48.6%	0.5%	0.0%	0.5%	0.0%	1.0%	0.0%	49.7%	0.6%	0.0%	50.3%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

ALL TRAFFIC DATA

City of Loomis
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7170-004 Horseshoe Bar Road-Library Drive.ppd
Date : 3/20/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	Horseshoe Bar Road Southbound					Library Drive Westbound					Horseshoe Bar Road Northbound					Driveway Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
07:15	0	156	0	0	156	0	0	0	0	0	0	139	0	0	139	0	0	0	0	0	295
07:30	0	143	0	0	143	0	0	0	0	0	0	133	1	0	134	0	0	0	0	0	277
07:45	0	162	0	0	162	0	0	0	0	0	0	128	0	0	128	0	0	0	0	0	290
08:00	1	145	0	0	146	1	0	1	0	2	0	126	0	0	126	0	0	0	0	0	274
Total Volume	1	606	0	0	607	1	0	1	0	2	0	526	1	0	527	0	0	0	0	0	1136
% App Total	0.2%	99.8%	0.0%	0.0%		50.0%	0.0%	50.0%	0.0%		0.0%	99.8%	0.2%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.250	.935	.000	.000	.937	.250	.000	.250	.000	.250	.000	.946	.250	.000	.948	.000	.000	.000	.000	.000	.963

PM PEAK HOUR	Horseshoe Bar Road Southbound					Library Drive Westbound					Horseshoe Bar Road Northbound					Driveway Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	2	166	0	0	168	3	0	4	0	7	0	148	0	0	148	0	0	0	0	0	323
17:15	3	138	0	0	141	3	0	2	0	5	0	173	2	1	176	0	0	0	0	0	322
17:30	1	133	0	1	135	1	0	0	0	1	0	158	1	0	159	0	0	0	0	0	295
17:45	1	133	0	0	134	1	0	0	0	1	0	157	4	0	161	0	0	0	0	0	296
Total Volume	7	570	0	1	578	8	0	6	0	14	0	636	7	1	644	0	0	0	0	0	1236
% App Total	1.2%	98.6%	0.0%	0.2%		57.1%	0.0%	42.9%	0.0%		0.0%	98.8%	1.1%	0.2%		0.0%	0.0%	0.0%	0.0%		
PHF	.583	.858	.000	.250	.860	.667	.000	.375	.000	.500	.000	.919	.438	.250	.915	.000	.000	.000	.000	.000	.957

ALL TRAFFIC DATA

City of Loomis
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7170-005 Horseshoe Bar Road-Doc Barnes Drive.ppd
Date : 3/20/2014

Unshifted Count = All Vehicles

	Horseshoe Bar Road Southbound					Westbound					Horseshoe Bar Road Northbound					Doc Barnes Drive Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	100	2	0	102	0	0	0	0	0	10	108	0	0	118	0	0	11	0	11	231	0
07:15	0	157	1	0	158	0	0	0	0	0	5	140	0	0	145	1	0	15	0	16	319	0
07:30	0	140	0	0	140	0	0	0	0	0	15	130	0	0	145	1	0	14	0	15	300	0
07:45	0	155	5	0	160	0	0	0	0	0	13	129	0	0	142	1	0	17	0	18	320	0
Total	0	552	8	0	560	0	0	0	0	0	43	507	0	0	550	3	0	57	0	60	1170	0
08:00	0	149	1	0	150	0	0	0	0	0	13	128	0	0	141	2	0	13	0	15	306	0
08:15	0	132	0	0	132	0	0	0	0	0	17	130	0	0	147	2	0	18	0	20	299	0
08:30	0	124	0	0	124	0	0	0	0	0	19	87	0	2	108	0	0	9	0	9	241	2
08:45	0	104	1	0	105	0	0	0	0	0	11	95	0	0	106	2	0	8	0	10	221	0
Total	0	509	2	0	511	0	0	0	0	0	60	440	0	2	502	6	0	48	0	54	1067	2
16:00	0	145	1	0	146	0	0	0	0	0	20	157	0	1	178	2	0	18	0	20	344	1
16:15	0	135	1	0	136	0	0	0	0	0	20	162	0	0	182	0	0	27	0	27	345	0
16:30	0	121	2	0	123	0	0	0	0	0	19	155	0	0	174	1	0	20	0	21	318	0
16:45	0	111	2	0	113	0	0	0	0	0	18	172	0	0	190	1	0	15	0	16	319	0
Total	0	512	6	0	518	0	0	0	0	0	77	646	0	1	724	4	0	80	0	84	1326	1
17:00	0	164	2	0	166	0	0	0	0	0	12	154	0	0	166	1	0	31	0	32	364	0
17:15	0	146	3	0	149	0	0	0	0	0	16	172	0	0	188	1	0	17	0	18	355	0
17:30	0	125	0	0	125	0	0	0	0	0	10	161	0	0	171	1	0	16	0	17	313	0
17:45	0	139	1	0	140	0	0	0	0	0	13	156	0	1	170	2	0	21	0	23	333	1
Total	0	574	6	0	580	0	0	0	0	0	51	643	0	1	695	5	0	85	0	90	1365	1
Grand Total	0	2147	22	0	2169	0	0	0	0	0	231	2236	0	4	2471	18	0	270	0	288	4928	4
Apprch %	0.0%	99.0%	1.0%	0.0%		0.0%	0.0%	0.0%	0.0%		9.3%	90.5%	0.0%	0.2%		6.3%	0.0%	93.8%	0.0%			
Total %	0.0%	43.6%	0.4%	0.0%	44.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.7%	45.4%	0.0%	0.1%	50.1%	0.4%	0.0%	5.5%	0.0%	5.8%	100.0%	

ALL TRAFFIC DATA

City of Loomis
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7170-005 Horseshoe Bar Road-Doc Barnes Drive.ppd
Date : 3/20/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	Horseshoe Bar Road Southbound					Westbound					Horseshoe Bar Road Northbound					Doc Barnes Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
07:15	0	157	1	0	158	0	0	0	0	0	5	140	0	0	145	1	0	15	0	16	319
07:30	0	140	0	0	140	0	0	0	0	0	15	130	0	0	145	1	0	14	0	15	300
07:45	0	155	5	0	160	0	0	0	0	0	13	129	0	0	142	1	0	17	0	18	320
08:00	0	149	1	0	150	0	0	0	0	0	13	128	0	0	141	2	0	13	0	15	306
Total Volume	0	601	7	0	608	0	0	0	0	0	46	527	0	0	573	5	0	59	0	64	1245
% App Total	0.0%	98.8%	1.2%	0.0%		0.0%	0.0%	0.0%	0.0%		8.0%	92.0%	0.0%	0.0%		7.8%	0.0%	92.2%	0.0%		
PHF	.000	.957	.350	.000	.950	.000	.000	.000	.000	.000	.767	.941	.000	.000	.988	.625	.000	.868	.000	.889	.973

PM PEAK HOUR	Horseshoe Bar Road Southbound					Westbound					Horseshoe Bar Road Northbound					Doc Barnes Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	164	2	0	166	0	0	0	0	0	12	154	0	0	166	1	0	31	0	32	364
17:15	0	146	3	0	149	0	0	0	0	0	16	172	0	0	188	1	0	17	0	18	355
17:30	0	125	0	0	125	0	0	0	0	0	10	161	0	0	171	1	0	16	0	17	313
17:45	0	139	1	0	140	0	0	0	0	0	13	156	0	1	170	2	0	21	0	23	333
Total Volume	0	574	6	0	580	0	0	0	0	0	51	643	0	1	695	5	0	85	0	90	1365
% App Total	0.0%	99.0%	1.0%	0.0%		0.0%	0.0%	0.0%	0.0%		7.3%	92.5%	0.0%	0.1%		5.6%	0.0%	94.4%	0.0%		
PHF	.000	.875	.500	.000	.873	.000	.000	.000	.000	.000	.797	.935	.000	.250	.924	.625	.000	.685	.000	.703	.938

ALL TRAFFIC DATA

City of Loomis
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7170-006 Horseshoe Bar Road-I-80 WB Ramps.ppd
Date : 3/20/2014

Unshifted Count = All Vehicles

	Horseshoe Bar Road Southbound					Shopping Center Driveway Westbound					Horseshoe Bar Road Northbound					I-80 WB Ramps Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	3	20	74	0	97	10	14	2	0	26	35	98	14	0	147	15	10	19	0	44	314	0
07:15	7	33	113	0	153	10	12	7	0	29	37	126	13	0	176	10	9	26	0	45	403	0
07:30	7	39	93	0	139	10	17	7	0	34	28	104	8	0	140	16	12	20	0	48	361	0
07:45	5	39	113	0	157	12	13	6	0	31	43	117	20	0	180	23	10	31	0	64	432	0
Total	22	131	393	0	546	42	56	22	0	120	143	445	55	0	643	64	41	96	0	201	1510	0
08:00	3	43	96	0	142	12	21	6	0	39	37	108	18	0	163	18	18	20	0	56	400	0
08:15	2	45	84	0	131	6	21	7	0	34	42	111	15	0	168	19	10	19	0	48	381	0
08:30	7	39	86	0	132	11	12	5	0	28	41	84	15	0	140	13	9	9	0	31	331	0
08:45	3	24	75	0	102	6	14	8	0	28	36	74	19	0	129	17	9	21	0	47	306	0
Total	15	151	341	0	507	35	68	26	0	129	156	377	67	0	600	67	46	69	0	182	1418	0
16:00	11	46	92	0	149	23	6	10	0	39	24	132	37	0	193	17	6	16	0	39	420	0
16:15	14	63	74	0	151	25	14	15	0	54	28	133	45	0	206	16	11	14	0	41	452	0
16:30	9	52	70	0	131	30	11	23	0	64	37	111	33	0	181	8	10	12	0	30	406	0
16:45	7	42	59	0	108	29	15	15	0	59	26	145	24	0	195	24	13	19	0	56	418	0
Total	41	203	295	0	539	107	46	63	0	216	115	521	139	0	775	65	40	61	0	166	1696	0
17:00	11	57	100	0	168	28	12	14	0	54	37	105	27	0	169	15	9	16	0	40	431	0
17:15	6	53	76	0	135	26	12	23	0	61	31	116	36	0	183	19	10	20	0	49	428	0
17:30	7	36	78	0	121	31	6	9	0	46	28	135	30	0	193	14	5	18	0	37	397	0
17:45	11	45	79	0	135	30	8	18	0	56	29	121	27	0	177	15	10	14	0	39	407	0
Total	35	191	333	0	559	115	38	64	0	217	125	477	120	0	722	63	34	68	0	165	1663	0
Grand Total	113	676	1362	0	2151	299	208	175	0	682	539	1820	381	0	2740	259	161	294	0	714	6287	0
Apprch %	5.3%	31.4%	63.3%	0.0%		43.8%	30.5%	25.7%	0.0%		19.7%	66.4%	13.9%	0.0%		36.3%	22.5%	41.2%	0.0%			
Total %	1.8%	10.8%	21.7%	0.0%	34.2%	4.8%	3.3%	2.8%	0.0%	10.8%	8.6%	28.9%	6.1%	0.0%	43.6%	4.1%	2.6%	4.7%	0.0%	11.4%	100.0%	

ALL TRAFFIC DATA

City of Loomis
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7170-006 Horseshoe Bar Road-I-80 WB Ramps.ppd
Date : 3/20/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	Horseshoe Bar Road Southbound					Shopping Center Driveway Westbound					Horseshoe Bar Road Northbound					I-80 WB Ramps Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
07:15	7	33	113	0	153	10	12	7	0	29	37	126	13	0	176	10	9	26	0	45	403
07:30	7	39	93	0	139	10	17	7	0	34	28	104	8	0	140	16	12	20	0	48	361
07:45	5	39	113	0	157	12	13	6	0	31	43	117	20	0	180	23	10	31	0	64	432
08:00	3	43	96	0	142	12	21	6	0	39	37	108	18	0	163	18	18	20	0	56	400
Total Volume	22	154	415	0	591	44	63	26	0	133	145	455	59	0	659	67	49	97	0	213	1596
% App Total	3.7%	26.1%	70.2%	0.0%		33.1%	47.4%	19.5%	0.0%		22.0%	69.0%	9.0%	0.0%		31.5%	23.0%	45.5%	0.0%		
PHF	.786	.895	.918	.000	.941	.917	.750	.929	.000	.853	.843	.903	.738	.000	.915	.728	.681	.782	.000	.832	.924

PM PEAK HOUR	Horseshoe Bar Road Southbound					Shopping Center Driveway Westbound					Horseshoe Bar Road Northbound					I-80 WB Ramps Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	14	63	74	0	151	25	14	15	0	54	28	133	45	0	206	16	11	14	0	41	452
16:30	9	52	70	0	131	30	11	23	0	64	37	111	33	0	181	8	10	12	0	30	406
16:45	7	42	59	0	108	29	15	15	0	59	26	145	24	0	195	24	13	19	0	56	418
17:00	11	57	100	0	168	28	12	14	0	54	37	105	27	0	169	15	9	16	0	40	431
Total Volume	41	214	303	0	558	112	52	67	0	231	128	494	129	0	751	63	43	61	0	167	1707
% App Total	7.3%	38.4%	54.3%	0.0%		48.5%	22.5%	29.0%	0.0%		17.0%	65.8%	17.2%	0.0%		37.7%	25.7%	36.5%	0.0%		
PHF	.732	.849	.758	.000	.830	.933	.867	.728	.000	.902	.865	.852	.717	.000	.911	.656	.827	.803	.000	.746	.944

ALL TRAFFIC DATA

City of Loomis
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7170-007 Horseshoe Bar Road-I-80 EB Ramps.ppd
Date : 3/20/2014

Unshifted Count = All Vehicles

	Horseshoe Bar Road Southbound					I-80 EB Ramps Westbound					Horseshoe Bar Road Northbound					Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	15	35	0	0	50	3	0	79	0	82	0	71	14	0	85	0	0	0	0	0	217	0
07:15	17	52	0	0	69	10	0	95	0	105	0	79	10	0	89	0	0	0	0	0	263	0
07:30	21	47	0	0	68	20	0	73	0	93	0	69	24	0	93	0	0	0	0	0	254	0
07:45	10	73	0	0	83	25	0	96	0	121	0	82	18	0	100	0	0	0	0	0	304	0
Total	63	207	0	0	270	58	0	343	0	401	0	301	66	0	367	0	0	0	0	0	1038	0
08:00	22	53	0	0	75	25	0	83	0	108	0	87	21	0	108	0	0	0	0	0	291	0
08:15	18	52	0	0	70	13	0	86	0	99	0	77	23	0	100	0	0	0	0	0	269	0
08:30	19	39	0	0	58	6	0	65	0	71	0	79	20	0	99	0	0	0	0	0	228	0
08:45	11	41	0	0	52	8	0	68	0	76	0	57	6	0	63	0	0	0	0	0	191	0
Total	70	185	0	0	255	52	0	302	0	354	0	300	70	0	370	0	0	0	0	0	979	0
16:00	28	57	0	0	85	19	0	118	0	137	0	81	16	0	97	0	0	0	0	0	319	0
16:15	38	61	0	0	99	29	0	138	0	167	0	66	23	0	89	0	0	0	0	0	355	0
16:30	35	62	0	0	97	19	0	115	0	134	0	68	59	0	127	0	0	0	0	0	358	0
16:45	27	62	0	0	89	34	0	130	0	164	0	70	63	0	133	0	0	0	0	0	386	0
Total	128	242	0	0	370	101	0	501	0	602	0	285	161	0	446	0	0	0	0	0	1418	0
17:00	38	64	0	0	102	33	0	107	0	140	0	56	42	0	98	0	0	0	0	0	340	0
17:15	33	64	0	0	97	24	0	120	0	144	0	63	31	0	94	0	0	0	0	0	335	0
17:30	32	56	0	0	88	23	0	118	0	141	0	78	25	0	103	0	0	0	0	0	332	0
17:45	33	56	0	0	89	24	0	95	0	119	0	78	25	0	103	0	0	0	0	0	311	0
Total	136	240	0	0	376	104	0	440	0	544	0	275	123	0	398	0	0	0	0	0	1318	0
Grand Total	397	874	0	0	1271	315	0	1586	0	1901	0	1161	420	0	1581	0	0	0	0	0	4753	0
Apprch %	31.2%	68.8%	0.0%	0.0%		16.6%	0.0%	83.4%	0.0%		0.0%	73.4%	26.6%	0.0%		0.0%	0.0%	0.0%	0.0%			
Total %	8.4%	18.4%	0.0%	0.0%	26.7%	6.6%	0.0%	33.4%	0.0%	40.0%	0.0%	24.4%	8.8%	0.0%	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

ALL TRAFFIC DATA

City of Loomis
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7170-007 Horseshoe Bar Road-I-80 EB Ramps.ppd
Date : 3/20/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	Horseshoe Bar Road Southbound					I-80 EB Ramps Westbound					Horseshoe Bar Road Northbound					Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	21	47	0	0	68	20	0	73	0	93	0	69	24	0	93	0	0	0	0	0	254
07:45	10	73	0	0	83	25	0	96	0	121	0	82	18	0	100	0	0	0	0	0	304
08:00	22	53	0	0	75	25	0	83	0	108	0	87	21	0	108	0	0	0	0	0	291
08:15	18	52	0	0	70	13	0	86	0	99	0	77	23	0	100	0	0	0	0	0	269
Total Volume	71	225	0	0	296	83	0	338	0	421	0	315	86	0	401	0	0	0	0	0	1118
% App Total	24.0%	76.0%	0.0%	0.0%		19.7%	0.0%	80.3%	0.0%		0.0%	78.6%	21.4%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.807	.771	.000	.000	.892	.830	.000	.880	.000	.870	.000	.905	.896	.000	.928	.000	.000	.000	.000	.000	.919

PM PEAK HOUR	Horseshoe Bar Road Southbound					I-80 EB Ramps Westbound					Horseshoe Bar Road Northbound					Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	38	61	0	0	99	29	0	138	0	167	0	66	23	0	89	0	0	0	0	0	355
16:30	35	62	0	0	97	19	0	115	0	134	0	68	59	0	127	0	0	0	0	0	358
16:45	27	62	0	0	89	34	0	130	0	164	0	70	63	0	133	0	0	0	0	0	386
17:00	38	64	0	0	102	33	0	107	0	140	0	56	42	0	98	0	0	0	0	0	340
Total Volume	138	249	0	0	387	115	0	490	0	605	0	260	187	0	447	0	0	0	0	0	1439
% App Total	35.7%	64.3%	0.0%	0.0%		19.0%	0.0%	81.0%	0.0%		0.0%	58.2%	41.8%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.908	.973	.000	.000	.949	.846	.000	.888	.000	.906	.000	.929	.742	.000	.840	.000	.000	.000	.000	.000	.932

ALL TRAFFIC DATA

City of Loomis
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7170-008 Laird Road-Horseshoe Bar Road.ppd
Date : 3/20/2014

Unshifted Count = All Vehicles

	Horseshoe Bar Road Southbound					Westbound					Laird Road Northbound					Horseshoe Bar Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	4	39	0	43	0	0	0	0	0	45	7	0	0	52	6	0	30	0	36	131	0
07:15	0	8	33	0	41	0	0	0	0	0	53	1	0	0	54	14	0	42	0	56	151	0
07:30	0	15	34	0	49	0	0	0	0	0	55	8	0	0	63	18	0	45	0	63	175	0
07:45	0	16	45	0	61	0	0	0	0	0	54	13	0	0	67	22	0	68	0	90	218	0
Total	0	43	151	0	194	0	0	0	0	0	207	29	0	0	236	60	0	185	0	245	675	0
08:00	0	11	37	0	48	0	0	0	0	0	66	13	0	0	79	27	0	51	0	78	205	0
08:15	0	18	43	0	61	0	0	0	0	0	51	8	0	0	59	18	0	49	0	67	187	0
08:30	0	7	52	0	59	0	0	0	0	0	41	3	0	0	44	9	0	31	0	40	143	0
08:45	0	12	40	0	52	0	0	0	0	0	24	6	0	0	30	13	0	37	0	50	132	0
Total	0	48	172	0	220	0	0	0	0	0	182	30	0	0	212	67	0	168	0	235	667	0
16:00	0	10	38	0	48	0	0	0	0	0	61	19	0	0	80	34	0	38	0	72	200	0
16:15	0	11	39	0	50	0	0	0	0	0	46	24	0	0	70	38	0	48	0	86	206	0
16:30	0	12	38	0	50	0	0	0	0	0	83	37	0	0	120	37	0	40	0	77	247	0
16:45	0	12	38	0	50	0	0	0	0	0	94	31	0	0	125	50	0	47	0	97	272	0
Total	0	45	153	0	198	0	0	0	0	0	284	111	0	0	395	159	0	173	0	332	925	0
17:00	0	13	34	0	47	0	0	0	0	0	69	21	0	0	90	44	0	47	0	91	228	0
17:15	0	13	30	0	43	0	0	0	0	0	57	24	0	0	81	41	0	40	0	81	205	0
17:30	0	9	35	0	44	0	0	0	0	0	65	14	0	0	79	39	0	41	0	80	203	0
17:45	0	12	36	0	48	0	0	0	0	0	64	14	0	0	78	36	0	40	0	76	202	0
Total	0	47	135	0	182	0	0	0	0	0	255	73	0	0	328	160	0	168	0	328	838	0
Grand Total	0	183	611	0	794	0	0	0	0	0	928	243	0	0	1171	446	0	694	0	1140	3105	0
Apprch %	0.0%	23.0%	77.0%	0.0%		0.0%	0.0%	0.0%	0.0%		79.2%	20.8%	0.0%	0.0%		39.1%	0.0%	60.9%	0.0%			
Total %	0.0%	5.9%	19.7%	0.0%	25.6%	0.0%	0.0%	0.0%	0.0%	0.0%	29.9%	7.8%	0.0%	0.0%	37.7%	14.4%	0.0%	22.4%	0.0%	36.7%	100.0%	

ALL TRAFFIC DATA

City of Loomis
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7170-008 Laird Road-Horseshoe Bar Road.ppd
Date : 3/20/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	Horseshoe Bar Road Southbound					Westbound					Laird Road Northbound					Horseshoe Bar Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	0	15	34	0	49	0	0	0	0	0	55	8	0	0	63	18	0	45	0	63	175
07:45	0	16	45	0	61	0	0	0	0	0	54	13	0	0	67	22	0	68	0	90	218
08:00	0	11	37	0	48	0	0	0	0	0	66	13	0	0	79	27	0	51	0	78	205
08:15	0	18	43	0	61	0	0	0	0	0	51	8	0	0	59	18	0	49	0	67	187
Total Volume	0	60	159	0	219	0	0	0	0	0	226	42	0	0	268	85	0	213	0	298	785
% App Total	0.0%	27.4%	72.6%	0.0%		0.0%	0.0%	0.0%	0.0%		84.3%	15.7%	0.0%	0.0%		28.5%	0.0%	71.5%	0.0%		
PHF	.000	.833	.883	.000	.898	.000	.000	.000	.000	.000	.856	.808	.000	.000	.848	.787	.000	.783	.000	.828	.900

PM PEAK HOUR	Horseshoe Bar Road Southbound					Westbound					Laird Road Northbound					Horseshoe Bar Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	0	11	39	0	50	0	0	0	0	0	46	24	0	0	70	38	0	48	0	86	206
16:30	0	12	38	0	50	0	0	0	0	0	83	37	0	0	120	37	0	40	0	77	247
16:45	0	12	38	0	50	0	0	0	0	0	94	31	0	0	125	50	0	47	0	97	272
17:00	0	13	34	0	47	0	0	0	0	0	69	21	0	0	90	44	0	47	0	91	228
Total Volume	0	48	149	0	197	0	0	0	0	0	292	113	0	0	405	169	0	182	0	351	953
% App Total	0.0%	24.4%	75.6%	0.0%		0.0%	0.0%	0.0%	0.0%		72.1%	27.9%	0.0%	0.0%		48.1%	0.0%	51.9%	0.0%		
PHF	.000	.923	.955	.000	.985	.000	.000	.000	.000	.000	.777	.764	.000	.000	.810	.845	.000	.948	.000	.905	.876

ALL TRAFFIC DATA

City of Loomis
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7170-009 Boyington Road-King Road.ppd
Date : 3/20/2014

Unshifted Count = All Vehicles

	Boyington Road Southbound					King Road Westbound					Northbound					King Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	1	0	19	0	20	0	41	9	0	50	0	0	0	0	0	10	16	0	0	26	96	0
07:15	14	0	23	0	37	0	63	25	0	88	0	0	0	0	0	21	18	0	0	39	164	0
07:30	27	0	33	0	60	0	70	58	0	128	0	0	0	0	0	19	37	0	0	56	244	0
07:45	12	0	23	0	35	0	39	22	0	61	0	0	0	0	0	8	37	0	0	45	141	0
Total	54	0	98	0	152	0	213	114	0	327	0	0	0	0	0	58	108	0	0	166	645	0
08:00	2	0	24	0	26	0	54	2	0	56	0	0	0	0	0	15	35	0	0	50	132	0
08:15	0	0	11	0	11	0	30	5	0	35	0	0	0	0	0	9	40	0	1	50	96	1
08:30	2	0	12	0	14	0	18	1	0	19	0	0	0	0	0	10	24	0	0	34	67	0
08:45	0	0	7	0	7	0	20	2	0	22	0	0	0	0	0	5	9	0	0	14	43	0
Total	4	0	54	0	58	0	122	10	0	132	0	0	0	0	0	39	108	0	1	148	338	1
16:00	1	0	15	0	16	0	39	3	0	42	0	0	0	0	0	8	71	0	0	79	137	0
16:15	3	0	12	0	15	0	43	7	0	50	0	0	0	0	0	14	55	0	0	69	134	0
16:30	4	0	16	0	20	0	39	2	0	41	0	0	0	0	0	9	67	0	0	76	137	0
16:45	2	0	19	0	21	0	53	3	0	56	0	0	0	0	0	7	60	0	0	67	144	0
Total	10	0	62	0	72	0	174	15	0	189	0	0	0	0	0	38	253	0	0	291	552	0
17:00	6	0	15	0	21	0	48	10	0	58	0	0	0	0	0	16	74	0	0	90	169	0
17:15	7	0	27	0	34	0	26	1	0	27	0	0	0	0	0	13	58	0	0	71	132	0
17:30	5	0	13	0	18	0	45	4	0	49	0	0	0	0	0	21	51	0	0	72	139	0
17:45	5	0	13	0	18	0	29	4	0	33	0	0	0	0	0	12	59	0	0	71	122	0
Total	23	0	68	0	91	0	148	19	0	167	0	0	0	0	0	62	242	0	0	304	562	0
Grand Total	91	0	282	0	373	0	657	158	0	815	0	0	0	0	0	197	711	0	1	909	2097	1
Apprch %	24.4%	0.0%	75.6%	0.0%		0.0%	80.6%	19.4%	0.0%		0.0%	0.0%	0.0%	0.0%		21.7%	78.2%	0.0%	0.1%			
Total %	4.3%	0.0%	13.4%	0.0%	17.8%	0.0%	31.3%	7.5%	0.0%	38.9%	0.0%	0.0%	0.0%	0.0%	0.0%	9.4%	33.9%	0.0%	0.0%	43.3%	100.0%	

ALL TRAFFIC DATA

City of Loomis
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7170-009 Boyington Road-King Road.ppd
Date : 3/20/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	Boyington Road Southbound					King Road Westbound					Northbound					King Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
07:15	14	0	23	0	37	0	63	25	0	88	0	0	0	0	0	21	18	0	0	39	164
07:30	27	0	33	0	60	0	70	58	0	128	0	0	0	0	0	19	37	0	0	56	244
07:45	12	0	23	0	35	0	39	22	0	61	0	0	0	0	0	8	37	0	0	45	141
08:00	2	0	24	0	26	0	54	2	0	56	0	0	0	0	0	15	35	0	0	50	132
Total Volume	55	0	103	0	158	0	226	107	0	333	0	0	0	0	0	63	127	0	0	190	681
% App Total	34.8%	0.0%	65.2%	0.0%		0.0%	67.9%	32.1%	0.0%		0.0%	0.0%	0.0%	0.0%		33.2%	66.8%	0.0%	0.0%		
PHF	.509	.000	.780	.000	.658	.000	.807	.461	.000	.650	.000	.000	.000	.000	.000	.750	.858	.000	.000	.848	.698

PM PEAK HOUR	Boyington Road Southbound					King Road Westbound					Northbound					King Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	3	0	12	0	15	0	43	7	0	50	0	0	0	0	0	14	55	0	0	69	134
16:30	4	0	16	0	20	0	39	2	0	41	0	0	0	0	0	9	67	0	0	76	137
16:45	2	0	19	0	21	0	53	3	0	56	0	0	0	0	0	7	60	0	0	67	144
17:00	6	0	15	0	21	0	48	10	0	58	0	0	0	0	0	16	74	0	0	90	169
Total Volume	15	0	62	0	77	0	183	22	0	205	0	0	0	0	0	46	256	0	0	302	584
% App Total	19.5%	0.0%	80.5%	0.0%		0.0%	89.3%	10.7%	0.0%		0.0%	0.0%	0.0%	0.0%		15.2%	84.8%	0.0%	0.0%		
PHF	.625	.000	.816	.000	.917	.000	.863	.550	.000	.884	.000	.000	.000	.000	.000	.719	.865	.000	.000	.839	.864

ALL TRAFFIC DATA

City of Loomis
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7170-010 Swetzer Road-King Road.ppd
Date : 3/20/2014

Unshifted Count = All Vehicles

	Swetzer Road Southbound					King Road Westbound					Northbound					King Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	26	0	12	0	38	1	22	57	0	80	1	0	0	0	1	5	56	0	0	61	180	0
07:15	41	0	21	0	62	1	45	47	0	93	0	0	1	0	1	4	90	0	0	94	250	0
07:30	46	0	10	0	56	0	45	45	0	90	0	0	0	0	0	9	78	0	0	87	233	0
07:45	46	0	10	0	56	1	60	50	0	111	0	0	0	0	0	12	60	0	0	72	239	0
Total	159	0	53	0	212	3	172	199	0	374	1	0	1	0	2	30	284	0	0	314	902	0
08:00	21	0	4	0	25	0	79	63	0	142	0	0	0	0	0	8	77	0	0	85	252	0
08:15	48	0	4	0	52	0	54	39	0	93	0	0	0	0	0	11	79	0	0	90	235	0
08:30	35	0	4	0	39	0	34	46	0	80	0	0	1	0	1	8	38	0	0	46	166	0
08:45	34	0	1	0	35	0	29	47	0	76	0	0	0	0	0	7	29	0	0	36	147	0
Total	138	0	13	0	151	0	196	195	0	391	0	0	1	0	1	34	223	0	0	257	800	0
16:00	82	1	13	0	96	1	71	56	0	128	0	0	1	0	1	10	51	0	0	61	286	0
16:15	67	0	12	0	79	0	67	45	0	112	0	0	0	0	0	8	65	0	0	73	264	0
16:30	70	0	18	0	88	0	67	66	0	133	0	0	1	0	1	5	49	0	0	54	276	0
16:45	58	0	7	0	65	0	68	65	0	133	0	0	0	0	0	8	44	0	0	52	250	0
Total	277	1	50	0	328	1	273	232	0	506	0	0	2	0	2	31	209	0	0	240	1076	0
17:00	91	0	19	0	110	0	72	53	0	125	0	0	0	0	0	7	49	0	0	56	291	0
17:15	56	0	7	0	63	1	71	49	1	122	0	0	0	0	0	8	62	0	0	70	255	1
17:30	44	0	15	0	59	1	62	49	1	113	0	0	0	0	0	5	60	0	0	65	237	1
17:45	38	0	7	0	45	0	47	49	0	96	0	0	0	0	0	5	46	0	0	51	192	0
Total	229	0	48	0	277	2	252	200	2	456	0	0	0	0	0	25	217	0	0	242	975	2
Grand Total	803	1	164	0	968	6	893	826	2	1727	1	0	4	0	5	120	933	0	0	1053	3753	2
Apprch %	83.0%	0.1%	16.9%	0.0%		0.3%	51.7%	47.8%	0.1%		20.0%	0.0%	80.0%	0.0%		11.4%	88.6%	0.0%	0.0%			
Total %	21.4%	0.0%	4.4%	0.0%	25.8%	0.2%	23.8%	22.0%	0.1%	46.0%	0.0%	0.0%	0.1%	0.0%	0.1%	3.2%	24.9%	0.0%	0.0%	28.1%	100.0%	

ALL TRAFFIC DATA

City of Loomis
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7170-010 Swetzer Road-King Road.ppd
Date : 3/20/2014

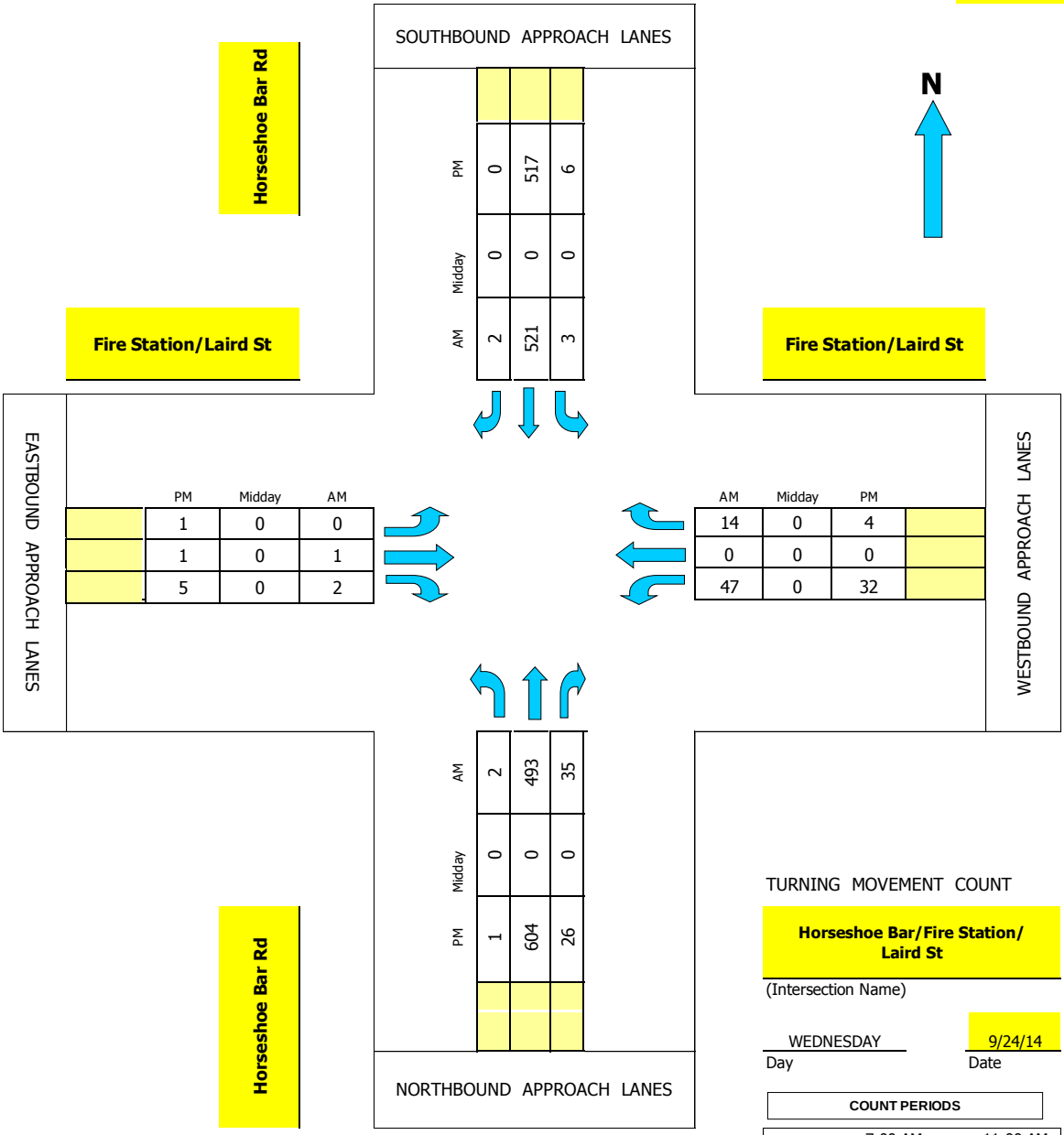
Unshifted Count = All Vehicles

AM PEAK HOUR	Swetzer Road Southbound					King Road Westbound					Northbound					King Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
07:15	41	0	21	0	62	1	45	47	0	93	0	0	1	0	1	4	90	0	0	94	250
07:30	46	0	10	0	56	0	45	45	0	90	0	0	0	0	0	9	78	0	0	87	233
07:45	46	0	10	0	56	1	60	50	0	111	0	0	0	0	0	12	60	0	0	72	239
08:00	21	0	4	0	25	0	79	63	0	142	0	0	0	0	0	8	77	0	0	85	252
Total Volume	154	0	45	0	199	2	229	205	0	436	0	0	1	0	1	33	305	0	0	338	974
% App Total	77.4%	0.0%	22.6%	0.0%		0.5%	52.5%	47.0%	0.0%		0.0%	0.0%	100.0%	0.0%		9.8%	90.2%	0.0%	0.0%		
PHF	.837	.000	.536	.000	.802	.500	.725	.813	.000	.768	.000	.000	.250	.000	.250	.688	.847	.000	.000	.899	.966

PM PEAK HOUR	Swetzer Road Southbound					King Road Westbound					Northbound					King Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	67	0	12	0	79	0	67	45	0	112	0	0	0	0	0	8	65	0	0	73	264
16:30	70	0	18	0	88	0	67	66	0	133	0	0	1	0	1	5	49	0	0	54	276
16:45	58	0	7	0	65	0	68	65	0	133	0	0	0	0	0	8	44	0	0	52	250
17:00	91	0	19	0	110	0	72	53	0	125	0	0	0	0	0	7	49	0	0	56	291
Total Volume	286	0	56	0	342	0	274	229	0	503	0	0	1	0	1	28	207	0	0	235	1081
% App Total	83.6%	0.0%	16.4%	0.0%		0.0%	54.5%	45.5%	0.0%		0.0%	0.0%	100.0%	0.0%		11.9%	88.1%	0.0%	0.0%		
PHF	.786	.000	.737	.000	.777	.000	.951	.867	.000	.945	.000	.000	.250	.000	.250	.875	.796	.000	.000	.805	.929

TMC Summary of Horseshoe Bar Rd/Fire Station/Laird St

Project #: 7390-01



TURNING MOVEMENT COUNT

Horseshoe Bar/Fire Station/ Laird St

(Intersection Name)

WEDNESDAY — Day

9/24/14 — Date

COUNT PERIODS			
am	7:00 AM	-	11:00 AM
noon	11:00 AM	-	2:00 PM
pm	4:00 PM	-	6:00 PM

AM PEAK HOUR	730 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

LEVEL OF SERVICE CALCULATIONS

KDA

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	33	305	0	2	229	205	0	0	1	154	0	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	37	339	0	3	297	266	0	0	4	192	0	56
Adj No. of Lanes	0	1	0	0	1	1	0	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.77	0.77	0.77	0.25	0.25	0.25	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	448	0	37	559	1000	0	0	394	585	0	522
Arrive On Green	0.30	0.30	0.00	0.30	0.30	0.30	0.00	0.00	0.25	0.33	0.00	0.33
Sat Flow, veh/h	91	1486	0	4	1856	1583	0	0	1583	1774	0	1583
Grp Volume(v), veh/h	376	0	0	300	0	266	0	0	4	192	0	56
Grp Sat Flow(s),veh/h/ln	1577	0	0	1860	0	1583	0	0	1583	1774	0	1583
Q Serve(g_s), s	9.0	0.0	0.0	0.0	0.0	7.4	0.0	0.0	0.2	8.1	0.0	2.5
Cycle Q Clear(g_c), s	22.4	0.0	0.0	13.4	0.0	7.4	0.0	0.0	0.2	8.1	0.0	2.5
Prop In Lane	0.10		0.00	0.01		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	515	0	0	597	0	1000	0	0	394	585	0	523
V/C Ratio(X)	0.73	0.00	0.00	0.50	0.00	0.27	0.00	0.00	0.01	0.33	0.00	0.11
Avail Cap(c_a), veh/h	845	0	0	964	0	1314	0	0	394	585	0	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.8	0.0	0.0	29.1	0.0	8.2	0.0	0.0	28.3	25.2	0.0	23.3
Incr Delay (d2), s/veh	2.0	0.0	0.0	0.7	0.0	0.1	0.0	0.0	0.0	1.5	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	9.8	0.0	0.0	7.0	0.0	6.2	0.0	0.0	0.1	4.2	0.0	1.1
LnGrp Delay(d),s/veh	33.8	0.0	0.0	29.8	0.0	8.3	0.0	0.0	28.3	26.7	0.0	23.7
LnGrp LOS	C			C		A			C	C		C
Approach Vol, veh/h		376			566			4			248	
Approach Delay, s/veh		33.8			19.7			28.3			26.0	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		28.9		34.1		37.0		34.1
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		5.0		50.0		33.0		50.0
Max Q Clear Time (g_c+I1), s		2.2		24.4		10.1		15.4
Green Ext Time (p_c), s		0.0		5.7		0.8		6.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	152	98	209	119	128	126	203	342	89	34	295	102
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	173	111	238	159	171	168	245	412	107	40	351	121
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	1	2	0
Peak Hour Factor	0.88	0.88	0.88	0.75	0.75	0.75	0.83	0.83	0.83	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	438	372	177	194	191	417	689	586	240	701	238
Arrive On Green	0.11	0.23	0.23	0.10	0.22	0.22	0.24	0.37	0.37	0.14	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	864	849	1774	1863	1583	1774	2596	881
Grp Volume(v), veh/h	173	111	238	159	0	339	245	412	107	40	238	234
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1713	1774	1863	1583	1774	1770	1707
Q Serve(g_s), s	9.6	4.8	8.0	8.9	0.0	19.1	12.3	17.9	3.3	2.0	11.3	11.6
Cycle Q Clear(g_c), s	9.6	4.8	8.0	8.9	0.0	19.1	12.3	17.9	3.3	2.0	11.3	11.6
Prop In Lane	1.00		1.00	1.00		0.50	1.00		1.00	1.00		0.52
Lane Grp Cap(c), veh/h	195	438	372	177	0	385	417	689	586	240	478	461
V/C Ratio(X)	0.89	0.25	0.64	0.90	0.00	0.88	0.59	0.60	0.18	0.17	0.50	0.51
Avail Cap(c_a), veh/h	195	577	491	177	0	514	417	689	586	240	478	461
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	31.1	11.9	44.5	0.0	37.4	33.9	25.5	10.9	38.3	30.8	30.9
Incr Delay (d2), s/veh	35.1	0.3	1.8	39.7	0.0	12.9	2.1	3.8	0.7	0.3	3.7	4.0
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(-26165%),veh/ln	6.6	2.5	3.6	6.3	0.0	10.4	6.2	9.9	1.5	1.0	6.0	6.0
LnGrp Delay(d),s/veh	79.0	31.4	13.8	84.2	0.0	50.3	36.1	29.3	11.5	38.6	34.4	34.9
LnGrp LOS	E	C	B	F		D	D	C	B	D	C	C
Approach Vol, veh/h		522			498			764			512	
Approach Delay, s/veh		39.1			61.1			29.0			35.0	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	41.0	14.0	27.5	27.5	31.0	15.0	26.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	37.0	10.0	31.0	16.0	27.0	11.0	30.0
Max Q Clear Time (g_c+I1), s	4.0	19.9	10.9	10.0	14.3	13.6	11.6	21.1
Green Ext Time (p_c), s	0.2	2.7	0.0	1.9	0.2	2.4	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	39.6
HCM 2010 LOS	D

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	11	56	7	40	16	425	6	274	42	444	327	8
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	17	85	11	42	17	447	7	308	47	483	355	9
Adj No. of Lanes	0	1	0	0	1	1	1	1	1	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.95	0.95	0.95	0.89	0.89	0.89	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	23	113	15	269	109	802	13	374	318	526	886	22
Arrive On Green	0.08	0.08	0.08	0.21	0.21	0.21	0.01	0.20	0.20	0.30	0.49	0.49
Sat Flow, veh/h	273	1367	177	1280	518	1583	1774	1863	1583	1774	1809	46
Grp Volume(v), veh/h	113	0	0	59	0	447	7	308	47	483	0	364
Grp Sat Flow(s),veh/h/ln	1818	0	0	1799	0	1583	1774	1863	1583	1774	0	1855
Q Serve(g_s), s	4.6	0.0	0.0	2.0	0.0	14.8	0.3	12.1	1.9	20.1	0.0	9.5
Cycle Q Clear(g_c), s	4.6	0.0	0.0	2.0	0.0	14.8	0.3	12.1	1.9	20.1	0.0	9.5
Prop In Lane	0.15		0.10	0.71		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	151	0	0	378	0	802	13	374	318	526	0	909
V/C Ratio(X)	0.75	0.00	0.00	0.16	0.00	0.56	0.55	0.82	0.15	0.92	0.00	0.40
Avail Cap(c_a), veh/h	382	0	0	378	0	802	93	416	353	582	0	925
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.2	0.0	0.0	24.6	0.0	12.9	37.7	29.2	25.1	25.9	0.0	12.3
Incr Delay (d2), s/veh	7.3	0.0	0.0	0.2	0.0	0.9	31.6	11.7	0.2	18.7	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	2.6	0.0	0.0	1.0	0.0	6.6	0.3	7.4	0.8	12.5	0.0	4.9
LnGrp Delay(d),s/veh	41.5	0.0	0.0	24.8	0.0	13.8	69.3	40.8	25.3	44.6	0.0	12.6
LnGrp LOS	D			C		B	F	D	C	D		B
Approach Vol, veh/h		113			506			362			847	
Approach Delay, s/veh		41.5			15.1			39.3			30.9	
Approach LOS		D			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		20.0	26.6	19.3		10.3	4.6	41.3
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	25.0	17.0		16.0	4.0	38.0
Max Q Clear Time (g_c+I1), s		16.8	22.1	14.1		6.6	2.3	11.5
Green Ext Time (p_c), s		0.0	0.5	1.2		0.3	0.0	4.6

Intersection Summary	
HCM 2010 Ctrl Delay	28.8
HCM 2010 LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	22	154	415	145	455	59	67	49	97	44	63	26
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	23	164	0	158	495	64	81	59	117	52	74	31
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.83	0.83	0.83	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	39	619	526	200	788	670	133	97	202	169	119	50
Arrive On Green	0.02	0.33	0.00	0.11	0.42	0.42	0.13	0.13	0.13	0.10	0.10	0.10
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1047	763	1583	1774	1248	523
Grp Volume(v), veh/h	23	164	0	158	495	64	140	0	117	52	0	105
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1810	0	1583	1774	0	1771
Q Serve(g_s), s	0.6	3.1	0.0	4.2	10.0	1.2	3.5	0.0	3.4	1.3	0.0	2.7
Cycle Q Clear(g_c), s	0.6	3.1	0.0	4.2	10.0	1.2	3.5	0.0	3.4	1.3	0.0	2.7
Prop In Lane	1.00		1.00	1.00		1.00	0.58		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	39	619	526	200	788	670	230	0	202	169	0	168
V/C Ratio(X)	0.59	0.26	0.00	0.79	0.63	0.10	0.61	0.00	0.58	0.31	0.00	0.62
Avail Cap(c_a), veh/h	147	619	526	221	788	670	602	0	526	590	0	589
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	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.3	11.8	0.0	20.8	10.9	8.3	19.9	0.0	19.8	20.3	0.0	20.9
Incr Delay (d2), s/veh	13.3	1.0	0.0	16.0	3.8	0.3	2.6	0.0	2.6	1.0	0.0	3.8
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(-26165%),veh/ln	0.4	1.8	0.0	2.9	5.9	0.6	1.9	0.0	1.6	0.7	0.0	1.5
LnGrp Delay(d),s/veh	36.7	12.8	0.0	36.8	14.7	8.6	22.4	0.0	22.4	21.3	0.0	24.7
LnGrp LOS	D	B		D	B	A	C		C	C		C
Approach Vol, veh/h		187			717			257			157	
Approach Delay, s/veh		15.7			19.0			22.4			23.6	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.1	24.4		10.1	9.4	20.0		8.6
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	18.0		16.0	6.0	16.0		16.0
Max Q Clear Time (g_c+I1), s	2.6	12.0		5.5	6.2	5.1		4.7
Green Ext Time (p_c), s	0.0	2.2		0.8	0.0	3.3		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	19.8
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	12.3
Intersection LOS	B

Movement	EBU	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Vol, veh/h	0	85	213	0	226	42	0	60	159
Peak Hour Factor	0.92	0.83	0.83	0.92	0.85	0.85	0.92	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	102	257	0	266	49	0	67	177
Number of Lanes	0	1	0	0	0	1	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	12.9	13.2	10.4
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	84%	29%	0%
Vol Thru, %	16%	0%	27%
Vol Right, %	0%	71%	73%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	268	298	219
LT Vol	226	85	0
Through Vol	42	0	60
RT Vol	0	213	159
Lane Flow Rate	315	359	243
Geometry Grp	1	1	1
Degree of Util (X)	0.474	0.498	0.334
Departure Headway (Hd)	5.407	4.996	4.937
Convergence, Y/N	Yes	Yes	Yes
Cap	668	722	728
Service Time	3.437	3.028	2.97
HCM Lane V/C Ratio	0.472	0.497	0.334
HCM Control Delay	13.2	12.9	10.4
HCM Lane LOS	B	B	B
HCM 95th-tile Q	2.6	2.8	1.5

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	63	127	226	107	55	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	65	65	66	66
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	74	149	348	165	83	156

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	512	0	-	0	728	430
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	298	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1053	-	-	-	390	625
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	753	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1053	-	-	-	360	625
Mov Cap-2 Maneuver	-	-	-	-	360	-
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	695	-

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	18.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1053	-	-	-	498
HCM Lane V/C Ratio	0.07	-	-	-	0.481
HCM Control Delay (s)	8.7	0	-	-	18.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	2.6

Intersection	
Int Delay, s/veh	3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	155	3	1	28	75	637	4	9	623	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	80	80	80	94	94	94	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	176	4	1	35	80	678	4	10	685	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1564	1548	687	1634	1549	680	690	0	0	682	0	0
Stage 1	707	707	-	839	839	-	-	-	-	-	-	-
Stage 2	857	841	-	795	710	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	91	114	447	81	114	451	905	-	-	911	-	-
Stage 1	426	438	-	360	381	-	-	-	-	-	-	-
Stage 2	352	380	-	381	437	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	77	103	447	45	103	451	905	-	-	911	-	-
Mov Cap-2 Maneuver	77	103	-	45	103	-	-	-	-	-	-	-
Stage 1	388	433	-	328	347	-	-	-	-	-	-	-
Stage 2	295	346	-	228	432	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	18.2	23.8	1	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	905	-	-	231	447	911	-	-
HCM Lane V/C Ratio	0.088	-	-	0.173	0.394	0.011	-	-
HCM Control Delay (s)	9.4	-	-	23.8	18.2	9	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.6	1.9	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBR	SEL	SWL	SWR
Vol, veh/h	526	606	1	1
Conflicting Peds, #/hr	0	0	0	0
Sign Control	Free	Free	Stop	Stop
RT Channelized	-	None	-	None
Storage Length	0	0	0	-
Veh in Median Storage, #	0	0	0	-
Grade, %	0	0	0	-
Peak Hour Factor	95	94	25	25
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	554	645	4	4

Major/Minor	Major2	Major1	Minor2	
Conflicting Flow All	0	555	1201	554
Stage 1	-	-	554	-
Stage 2	-	-	647	-
Critical Hdwy	-	4.12	6.42	6.22
Critical Hdwy Stg 1	-	-	5.42	-
Critical Hdwy Stg 2	-	-	5.42	-
Follow-up Hdwy	-	2.218	3.518	3.318
Pot Cap-1 Maneuver	-	1015	204	532
Stage 1	-	-	575	-
Stage 2	-	-	521	-
Platoon blocked, %	-			
Mov Cap-1 Maneuver	-	1015	204	532
Mov Cap-2 Maneuver	-	-	204	-
Stage 1	-	-	575	-
Stage 2	-	-	520	-

Approach	WB	SE	SW
HCM Control Delay, s	0	0	17.5
HCM LOS			C

Minor Lane/Major Mvmt	WBR	WBR2	SEL2	SEL	SWLn1
Capacity (veh/h)	-	-	1015	-	295
HCM Lane V/C Ratio	-	-	0.001	-	0.027
HCM Control Delay (s)	-	-	8.6	0	17.5
HCM Lane LOS	-	-	A	A	C
HCM 95th %tile Q(veh)	-	-	0	-	0.1

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	SET	SER	NWL	NWT
Vol, veh/h	5	59	601	7	46	527
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	95	95	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	66	633	7	50	573

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1309	636	0	0	640	0
Stage 1	636	-	-	-	-	-
Stage 2	673	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	176	478	-	-	944	-
Stage 1	527	-	-	-	-	-
Stage 2	507	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	167	478	-	-	944	-
Mov Cap-2 Maneuver	167	-	-	-	-	-
Stage 1	527	-	-	-	-	-
Stage 2	480	-	-	-	-	-

Approach	EB	SE	NW
HCM Control Delay, s	15.4	0	0.7
HCM LOS	C		

Minor Lane/Major Mvmt	NWL	NWT	EBLn1	SET	SER
Capacity (veh/h)	944	-	417	-	-
HCM Lane V/C Ratio	0.053	-	0.172	-	-
HCM Control Delay (s)	9	-	15.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	2	538	2	2	467	35	0	1	2	47	0	14
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	585	2	2	508	38	0	1	2	51	0	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	546	0	0	587	0	0	1129	1140	586	1123	1122	527
Stage 1	-	-	-	-	-	-	590	590	-	531	531	-
Stage 2	-	-	-	-	-	-	539	550	-	592	591	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1023	-	-	988	-	-	181	201	510	183	206	551
Stage 1	-	-	-	-	-	-	494	495	-	532	526	-
Stage 2	-	-	-	-	-	-	527	516	-	493	494	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1023	-	-	988	-	-	175	200	510	181	205	551
Mov Cap-2 Maneuver	-	-	-	-	-	-	175	200	-	181	205	-
Stage 1	-	-	-	-	-	-	493	494	-	530	524	-
Stage 2	-	-	-	-	-	-	511	514	-	488	493	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0	0	15.8	29.2
HCM LOS			C	D

Minor Lane/Major Mvmt	NEL n1	NWL	NWT	NWR	SEL	SET	SER	SWL n1
Capacity (veh/h)	336	988	-	-	1023	-	-	214
HCM Lane V/C Ratio	0.01	0.002	-	-	0.002	-	-	0.31
HCM Control Delay (s)	15.8	8.7	0	-	8.5	0	-	29.2
HCM Lane LOS	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	28	207	0	0	274	229	0	0	1	286	0	56
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	35	256	0	0	288	241	0	0	0	367	0	72
Adj No. of Lanes	0	1	0	0	1	1	0	1	0	1	1	0
Peak Hour Factor	0.81	0.81	0.81	0.95	0.95	0.95	0.25	0.25	0.25	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	209	586	0	0	666	1043	0	8	0	535	0	477
Arrive On Green	0.36	0.36	0.00	0.00	0.36	0.36	0.00	0.00	0.00	0.30	0.00	0.30
Sat Flow, veh/h	104	1641	0	0	1863	1583	0	1863	0	1774	0	1583
Grp Volume(v), veh/h	291	0	0	0	288	241	0	0	0	367	0	72
Grp Sat Flow(s),veh/h/ln	1745	0	0	0	1863	1583	0	1863	0	1774	0	1583
Q Serve(g_s), s	0.0	0.0	0.0	0.0	2.8	1.4	0.0	0.0	0.0	4.3	0.0	0.8
Cycle Q Clear(g_c), s	2.8	0.0	0.0	0.0	2.8	1.4	0.0	0.0	0.0	4.3	0.0	0.8
Prop In Lane	0.12		0.00	0.00		1.00	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	795	0	0	0	666	1043	0	8	0	535	0	477
V/C Ratio(X)	0.37	0.00	0.00	0.00	0.43	0.23	0.00	0.00	0.00	0.69	0.00	0.15
Avail Cap(c_a), veh/h	1398	0	0	0	1351	1626	0	318	0	1287	0	1148
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.7	0.0	0.0	0.0	5.7	1.6	0.0	0.0	0.0	7.2	0.0	6.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.0	0.4	0.1	0.0	0.0	0.0	1.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	1.4	0.0	0.0	0.0	1.4	1.2	0.0	0.0	0.0	2.3	0.0	0.4
LnGrp Delay(d),s/veh	6.0	0.0	0.0	0.0	6.2	1.7	0.0	0.0	0.0	8.8	0.0	6.1
LnGrp LOS	A				A	A				A		A
Approach Vol, veh/h		291			529			0			439	
Approach Delay, s/veh		6.0			4.1			0.0			8.4	
Approach LOS		A			A						A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		0.0		12.4		11.1		12.4
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		4.0		17.0		17.0		17.0
Max Q Clear Time (g_c+I1), s		0.0		4.8		6.3		4.8
Green Ext Time (p_c), s		0.0		3.6		1.2		3.6

Intersection Summary	
HCM 2010 Ctrl Delay	6.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	73	139	262	126	120	46	298	297	182	50	243	92
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	87	165	250	154	146	56	307	306	188	53	259	98
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	1	2	0
Peak Hour Factor	0.84	0.84	0.84	0.82	0.82	0.82	0.97	0.97	0.97	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	189	309	262	196	218	84	402	674	573	74	447	165
Arrive On Green	0.11	0.17	0.17	0.11	0.17	0.17	0.23	0.36	0.36	0.04	0.18	0.18
Sat Flow, veh/h	1774	1863	1583	1774	1284	492	1774	1863	1583	1774	2533	935
Grp Volume(v), veh/h	87	165	250	154	0	202	307	306	188	53	179	178
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1776	1774	1863	1583	1774	1770	1698
Q Serve(g_s), s	2.3	4.0	4.2	4.2	0.0	5.3	8.1	6.3	4.3	1.5	4.6	4.8
Cycle Q Clear(g_c), s	2.3	4.0	4.2	4.2	0.0	5.3	8.1	6.3	4.3	1.5	4.6	4.8
Prop In Lane	1.00		1.00	1.00		0.28	1.00		1.00	1.00		0.55
Lane Grp Cap(c), veh/h	189	309	262	196	0	302	402	674	573	74	313	300
V/C Ratio(X)	0.46	0.53	0.95	0.79	0.00	0.67	0.76	0.45	0.33	0.72	0.57	0.59
Avail Cap(c_a), veh/h	249	1194	1015	249	0	1139	498	1232	1047	249	922	885
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0	19.1	5.9	21.6	0.0	19.4	18.0	12.2	11.5	23.6	18.8	18.9
Incr Delay (d2), s/veh	1.8	1.4	16.8	12.1	0.0	2.6	5.5	0.5	0.3	12.1	1.7	1.9
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(-26165%),veh/ln	1.2	2.2	4.0	2.7	0.0	2.8	4.5	3.2	1.9	1.0	2.4	2.4
LnGrp Delay(d),s/veh	22.7	20.5	22.7	33.7	0.0	22.0	23.5	12.6	11.9	35.7	20.5	20.8
LnGrp LOS	C	C	C	C		C	C	B	B	D	C	C
Approach Vol, veh/h		502			356			801			410	
Approach Delay, s/veh		22.0			27.0			16.6			22.6	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.1	22.0	9.5	12.3	15.3	12.8	9.3	12.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	33.0	7.0	32.0	14.0	26.0	7.0	32.0
Max Q Clear Time (g_c+I1), s	3.5	8.3	6.2	6.2	10.1	6.8	4.3	7.3
Green Ext Time (p_c), s	0.0	3.6	0.0	2.1	1.4	2.0	0.6	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	20.9
HCM 2010 LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	8	19	10	92	12	518	6	425	92	389	319	7
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	10	25	13	100	13	563	7	472	102	447	367	8
Adj No. of Lanes	0	1	0	0	1	1	1	1	1	1	1	0
Peak Hour Factor	0.77	0.77	0.77	0.92	0.92	0.92	0.90	0.90	0.90	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	13	32	17	308	40	740	13	564	479	482	1030	22
Arrive On Green	0.04	0.04	0.04	0.20	0.20	0.20	0.01	0.30	0.30	0.27	0.57	0.57
Sat Flow, veh/h	367	917	477	1579	205	1583	1774	1863	1583	1774	1816	40
Grp Volume(v), veh/h	48	0	0	113	0	563	7	472	102	447	0	375
Grp Sat Flow(s),veh/h/ln	1760	0	0	1784	0	1583	1774	1863	1583	1774	0	1856
Q Serve(g_s), s	2.2	0.0	0.0	4.5	0.0	16.0	0.3	19.4	3.9	20.1	0.0	9.0
Cycle Q Clear(g_c), s	2.2	0.0	0.0	4.5	0.0	16.0	0.3	19.4	3.9	20.1	0.0	9.0
Prop In Lane	0.21		0.27	0.88		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	62	0	0	348	0	740	13	564	479	482	0	1052
V/C Ratio(X)	0.78	0.00	0.00	0.32	0.00	0.76	0.55	0.84	0.21	0.93	0.00	0.36
Avail Cap(c_a), veh/h	344	0	0	348	0	740	87	659	561	498	0	1087
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.2	0.0	0.0	28.3	0.0	18.1	40.5	26.7	21.3	29.0	0.0	9.6
Incr Delay (d2), s/veh	18.6	0.0	0.0	0.5	0.0	4.7	32.0	8.2	0.2	23.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	1.4	0.0	0.0	2.2	0.0	11.4	0.3	11.2	1.8	12.9	0.0	4.6
LnGrp Delay(d),s/veh	57.8	0.0	0.0	28.9	0.0	22.7	72.6	34.9	21.5	52.4	0.0	9.8
LnGrp LOS	E			C		C	E	C	C	D		A
Approach Vol, veh/h		48			676			581			822	
Approach Delay, s/veh		57.8			23.7			33.0			33.0	
Approach LOS		E			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		20.0	26.3	28.8		6.9	4.6	50.5
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	23.0	29.0		16.0	4.0	48.0
Max Q Clear Time (g_c+I1), s		18.0	22.1	21.4		4.2	2.3	11.0
Green Ext Time (p_c), s		0.0	0.2	3.4		0.1	0.0	6.8

Intersection Summary	
HCM 2010 Ctrl Delay	30.6
HCM 2010 LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	41	214	303	128	494	129	63	43	61	112	52	67
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	49	258	0	141	543	142	84	57	81	124	58	74
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	1	1	0
Peak Hour Factor	0.83	0.83	0.83	0.91	0.91	0.91	0.75	0.75	0.75	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	672	571	181	791	672	129	87	189	217	91	116
Arrive On Green	0.04	0.36	0.00	0.10	0.42	0.42	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1078	731	1583	1774	745	950
Grp Volume(v), veh/h	49	258	0	141	543	142	141	0	81	124	0	132
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1809	0	1583	1774	0	1695
Q Serve(g_s), s	1.5	5.6	0.0	4.2	12.8	3.1	4.0	0.0	2.6	3.6	0.0	4.0
Cycle Q Clear(g_c), s	1.5	5.6	0.0	4.2	12.8	3.1	4.0	0.0	2.6	3.6	0.0	4.0
Prop In Lane	1.00		1.00	1.00		1.00	0.60		1.00	1.00		0.56
Lane Grp Cap(c), veh/h	68	672	571	181	791	672	216	0	189	217	0	207
V/C Ratio(X)	0.72	0.38	0.00	0.78	0.69	0.21	0.65	0.00	0.43	0.57	0.00	0.64
Avail Cap(c_a), veh/h	131	672	571	295	791	672	534	0	467	524	0	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	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.8	12.9	0.0	23.7	12.7	9.9	22.8	0.0	22.1	22.4	0.0	22.6
Incr Delay (d2), s/veh	13.1	1.7	0.0	7.0	4.8	0.7	3.3	0.0	1.5	2.4	0.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	1.0	3.2	0.0	2.4	7.5	1.5	2.2	0.0	1.2	1.9	0.0	2.1
LnGrp Delay(d),s/veh	38.9	14.5	0.0	30.8	17.5	10.6	26.1	0.0	23.7	24.8	0.0	25.9
LnGrp LOS	D	B		C	B	B	C		C	C		C
Approach Vol, veh/h		307			826			222			256	
Approach Delay, s/veh		18.4			18.6			25.2			25.3	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.1	27.0		10.5	9.5	23.6		10.6
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	23.0		16.0	9.0	18.0		16.0
Max Q Clear Time (g_c+I1), s	3.5	14.8		6.0	6.2	7.6		6.0
Green Ext Time (p_c), s	0.0	3.5		0.7	0.1	4.1		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	20.5
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	19.4
Intersection LOS	C

Movement	EBU	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Vol, veh/h	0	169	182	0	292	113	0	48	149
Peak Hour Factor	0.92	0.91	0.91	0.92	0.81	0.81	0.92	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	186	200	0	360	140	0	48	151
Number of Lanes	0	1	0	0	0	1	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	16.7	24.8	10.8
HCM LOS	C	C	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	72%	48%	0%
Vol Thru, %	28%	0%	24%
Vol Right, %	0%	52%	76%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	405	351	197
LT Vol	292	169	0
Through Vol	113	0	48
RT Vol	0	182	149
Lane Flow Rate	500	386	199
Geometry Grp	1	1	1
Degree of Util (X)	0.77	0.599	0.3
Departure Headway (Hd)	5.541	5.592	5.427
Convergence, Y/N	Yes	Yes	Yes
Cap	650	644	659
Service Time	3.589	3.648	3.491
HCM Lane V/C Ratio	0.769	0.599	0.302
HCM Control Delay	24.8	16.7	10.8
HCM Lane LOS	C	C	B
HCM 95th-tile Q	7.2	4	1.3

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	46	256	183	22	15	162
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	88	88	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	55	305	208	25	16	176

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	233	0	-	0	634	220
Stage 1	-	-	-	-	220	-
Stage 2	-	-	-	-	414	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1335	-	-	-	443	820
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	667	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1335	-	-	-	421	820
Mov Cap-2 Maneuver	-	-	-	-	421	-
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	634	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1335	-	-	-	759
HCM Lane V/C Ratio	0.041	-	-	-	0.253
HCM Control Delay (s)	7.8	0	-	-	11.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1

Intersection	
Int Delay, s/veh	3.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	5	2	110	0	4	12	167	764	8	6	648	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	82	82	82	97	97	97	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	2	131	0	5	15	172	788	8	6	689	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1853	1847	694	1910	1848	792	699	0	0	796	0	0
Stage 1	707	707	-	1136	1136	-	-	-	-	-	-	-
Stage 2	1146	1140	-	774	712	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	57	75	443	52	75	389	898	-	-	826	-	-
Stage 1	426	438	-	246	277	-	-	-	-	-	-	-
Stage 2	242	276	-	391	436	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	44	60	443	30	60	389	898	-	-	826	-	-
Mov Cap-2 Maneuver	44	60	-	30	60	-	-	-	-	-	-	-
Stage 1	344	435	-	199	224	-	-	-	-	-	-	-
Stage 2	184	223	-	272	433	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	27.5	29.9	1.8	0.1
HCM LOS	D	D		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	898	-	-	164	296	826	-	-
HCM Lane V/C Ratio	0.192	-	-	0.119	0.471	0.008	-	-
HCM Control Delay (s)	10	-	-	29.9	27.5	9.4	-	-
HCM Lane LOS	A	-	-	D	D	A	-	-
HCM 95th %tile Q(veh)	0.7	-	-	0.4	2.4	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBR	SEL	SWL	SWR
Vol, veh/h	636	570	8	6
Conflicting Peds, #/hr	0	0	0	0
Sign Control	Free	Free	Stop	Stop
RT Channelized	-	None	-	None
Storage Length	0	0	0	-
Veh in Median Storage, #	0	0	0	-
Grade, %	0	0	0	-
Peak Hour Factor	92	86	92	92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	691	663	9	7

Major/Minor	Major2	Major1	Minor2	
Conflicting Flow All	0	699	1374	695
Stage 1	-	-	695	-
Stage 2	-	-	679	-
Critical Hdwy	-	4.12	6.42	6.22
Critical Hdwy Stg 1	-	-	5.42	-
Critical Hdwy Stg 2	-	-	5.42	-
Follow-up Hdwy	-	2.218	3.518	3.318
Pot Cap-1 Maneuver	-	898	160	442
Stage 1	-	-	495	-
Stage 2	-	-	504	-
Platoon blocked, %	-			
Mov Cap-1 Maneuver	-	898	158	442
Mov Cap-2 Maneuver	-	-	158	-
Stage 1	-	-	495	-
Stage 2	-	-	497	-

Approach	WB	SE	SW
HCM Control Delay, s	0	0.1	22.7
HCM LOS			C

Minor Lane/Major Mvmt	WBR	WBR2	SEL2	SEL	SWLn1
Capacity (veh/h)	-	-	898	-	218
HCM Lane V/C Ratio	-	-	0.009	-	0.07
HCM Control Delay (s)	-	-	9	0	22.7
HCM Lane LOS	-	-	A	A	C
HCM 95th %tile Q(veh)	-	-	0	-	0.2

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	SET	SER	NWL	NWT
Vol, veh/h	5	85	574	6	51	643
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	87	87	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	121	660	7	55	699

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1473	663	0	0	667	0
Stage 1	663	-	-	-	-	-
Stage 2	810	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	140	461	-	-	923	-
Stage 1	512	-	-	-	-	-
Stage 2	438	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	132	461	-	-	923	-
Mov Cap-2 Maneuver	132	-	-	-	-	-
Stage 1	512	-	-	-	-	-
Stage 2	412	-	-	-	-	-

Approach	EB	SE	NW
HCM Control Delay, s	18	0	0.7
HCM LOS	C		

Minor Lane/Major Mvmt	NWL	NWT	EBLn1	SET	SER
Capacity (veh/h)	923	-	405	-	-
HCM Lane V/C Ratio	0.06	-	0.317	-	-
HCM Control Delay (s)	9.1	-	18	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.3	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	6	494	0	1	617	26	1	1	5	32	0	4
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	537	0	1	671	28	1	1	5	35	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	699	0	0	537	0	0	1239	1251	537	1240	1237	685
Stage 1	-	-	-	-	-	-	550	550	-	687	687	-
Stage 2	-	-	-	-	-	-	689	701	-	553	550	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	898	-	-	1031	-	-	152	172	544	152	176	448
Stage 1	-	-	-	-	-	-	519	516	-	437	447	-
Stage 2	-	-	-	-	-	-	436	441	-	517	516	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	898	-	-	1031	-	-	149	170	544	148	174	448
Mov Cap-2 Maneuver	-	-	-	-	-	-	149	170	-	148	174	-
Stage 1	-	-	-	-	-	-	513	510	-	432	446	-
Stage 2	-	-	-	-	-	-	431	440	-	505	510	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.1	0	16.5	34.6
HCM LOS			C	D

Minor Lane/Major Mvmt	NEL n1	NWL	NWT	NWR	SEL	SET	SER	SWL n1
Capacity (veh/h)	321	1031	-	-	898	-	-	160
HCM Lane V/C Ratio	0.024	0.001	-	-	0.007	-	-	0.245
HCM Control Delay (s)	16.5	8.5	0	-	9	0	-	34.6
HCM Lane LOS	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	33	316	0	2	246	208	0	0	1	156	0	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	37	351	0	3	319	270	0	0	4	195	0	56
Adj No. of Lanes	0	1	0	0	1	1	0	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.77	0.77	0.77	0.25	0.25	0.25	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	462	0	37	582	1019	0	0	374	585	0	522
Arrive On Green	0.31	0.31	0.00	0.31	0.31	0.31	0.00	0.00	0.24	0.33	0.00	0.33
Sat Flow, veh/h	86	1474	0	3	1856	1583	0	0	1583	1774	0	1583
Grp Volume(v), veh/h	388	0	0	322	0	270	0	0	4	195	0	56
Grp Sat Flow(s),veh/h/ln	1560	0	0	1860	0	1583	0	0	1583	1774	0	1583
Q Serve(g_s), s	9.1	0.0	0.0	0.0	0.0	7.3	0.0	0.0	0.2	8.3	0.0	2.5
Cycle Q Clear(g_c), s	23.4	0.0	0.0	14.3	0.0	7.3	0.0	0.0	0.2	8.3	0.0	2.5
Prop In Lane	0.10		0.00	0.01		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	529	0	0	620	0	1019	0	0	374	585	0	523
V/C Ratio(X)	0.73	0.00	0.00	0.52	0.00	0.26	0.00	0.00	0.01	0.33	0.00	0.11
Avail Cap(c_a), veh/h	839	0	0	964	0	1314	0	0	374	585	0	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.1	0.0	0.0	28.5	0.0	7.7	0.0	0.0	29.2	25.2	0.0	23.3
Incr Delay (d2), s/veh	2.0	0.0	0.0	0.7	0.0	0.1	0.0	0.0	0.0	1.5	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	10.1	0.0	0.0	7.5	0.0	6.2	0.0	0.0	0.1	4.3	0.0	1.1
LnGrp Delay(d),s/veh	33.1	0.0	0.0	29.2	0.0	7.8	0.0	0.0	29.2	26.7	0.0	23.7
LnGrp LOS	C			C		A			C	C		C
Approach Vol, veh/h		388			592			4			251	
Approach Delay, s/veh		33.1			19.4			29.2			26.1	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		27.6		35.4		37.0		35.4
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		5.0		50.0		33.0		50.0
Max Q Clear Time (g_c+I1), s		2.2		25.4		10.3		16.3
Green Ext Time (p_c), s		0.0		5.9		0.9		6.3

Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	152	100	220	43	133	132	217	364	65	36	305	102
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	173	114	250	57	177	176	261	439	78	43	363	121
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	1	2	0
Peak Hour Factor	0.88	0.88	0.88	0.75	0.75	0.75	0.83	0.83	0.83	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	561	477	74	200	199	403	689	586	226	707	232
Arrive On Green	0.11	0.30	0.30	0.04	0.23	0.23	0.23	0.37	0.37	0.13	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	858	854	1774	1863	1583	1774	2619	861
Grp Volume(v), veh/h	173	114	250	57	0	353	261	439	78	43	244	240
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1712	1774	1863	1583	1774	1770	1711
Q Serve(g_s), s	9.6	4.6	7.3	3.2	0.0	19.9	13.3	19.4	2.6	2.2	11.7	11.9
Cycle Q Clear(g_c), s	9.6	4.6	7.3	3.2	0.0	19.9	13.3	19.4	2.6	2.2	11.7	11.9
Prop In Lane	1.00		1.00	1.00		0.50	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	195	561	477	74	0	399	403	689	586	226	478	462
V/C Ratio(X)	0.89	0.20	0.52	0.78	0.00	0.89	0.65	0.64	0.13	0.19	0.51	0.52
Avail Cap(c_a), veh/h	195	577	491	177	0	514	403	689	586	226	478	462
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	26.0	9.1	47.5	0.0	37.1	35.0	26.0	13.6	39.0	30.9	31.0
Incr Delay (d2), s/veh	35.1	0.2	1.0	15.8	0.0	14.0	3.6	4.5	0.5	0.4	3.9	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	6.6	2.4	3.3	1.9	0.0	11.0	6.9	10.9	1.2	1.1	6.2	6.1
LnGrp Delay(d),s/veh	79.0	26.2	10.1	63.2	0.0	51.1	38.6	30.4	14.1	39.4	34.7	35.2
LnGrp LOS	E	C	B	E		D	D	C	B	D	C	D
Approach Vol, veh/h		537			410			778			527	
Approach Delay, s/veh		35.7			52.8			31.5			35.3	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	41.0	8.1	34.1	26.7	31.0	15.0	27.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	37.0	10.0	31.0	16.0	27.0	11.0	30.0
Max Q Clear Time (g_c+I1), s	4.2	21.4	5.2	9.3	15.3	13.9	11.6	21.9
Green Ext Time (p_c), s	0.2	2.7	0.0	2.0	0.1	2.4	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	37.3
HCM 2010 LOS	D

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	11	57	7	87	18	435	6	269	75	402	310	8
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	17	86	11	92	19	458	7	302	84	437	337	9
Adj No. of Lanes	0	1	0	0	1	1	1	1	1	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.95	0.95	0.95	0.89	0.89	0.89	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	23	115	15	325	67	783	13	377	321	488	849	23
Arrive On Green	0.08	0.08	0.08	0.22	0.22	0.22	0.01	0.20	0.20	0.27	0.47	0.47
Sat Flow, veh/h	271	1372	175	1482	306	1583	1774	1863	1583	1774	1806	48
Grp Volume(v), veh/h	114	0	0	111	0	458	7	302	84	437	0	346
Grp Sat Flow(s),veh/h/ln	1818	0	0	1789	0	1583	1774	1863	1583	1774	0	1854
Q Serve(g_s), s	4.5	0.0	0.0	3.8	0.0	15.0	0.3	11.3	3.3	17.3	0.0	8.9
Cycle Q Clear(g_c), s	4.5	0.0	0.0	3.8	0.0	15.0	0.3	11.3	3.3	17.3	0.0	8.9
Prop In Lane	0.15		0.10	0.83		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	153	0	0	392	0	783	13	377	321	488	0	872
V/C Ratio(X)	0.75	0.00	0.00	0.28	0.00	0.59	0.54	0.80	0.26	0.90	0.00	0.40
Avail Cap(c_a), veh/h	399	0	0	392	0	783	97	434	369	608	0	966
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.6	0.0	0.0	23.7	0.0	13.1	36.1	27.7	24.5	25.4	0.0	12.6
Incr Delay (d2), s/veh	7.1	0.0	0.0	0.4	0.0	1.1	31.3	9.1	0.4	13.8	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	2.5	0.0	0.0	1.9	0.0	6.7	0.3	6.7	1.5	10.2	0.0	4.6
LnGrp Delay(d),s/veh	39.8	0.0	0.0	24.1	0.0	14.2	67.4	36.8	24.9	39.2	0.0	12.9
LnGrp LOS	D			C		B	F	D	C	D		B
Approach Vol, veh/h		114			569			393			783	
Approach Delay, s/veh		39.8			16.2			34.8			27.6	
Approach LOS		D			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		20.0	24.0	18.8		10.1	4.5	38.3
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	25.0	17.0		16.0	4.0	38.0
Max Q Clear Time (g_c+I1), s		17.0	19.3	13.3		6.5	2.3	10.9
Green Ext Time (p_c), s		0.0	0.8	1.5		0.3	0.0	4.6

Intersection Summary	
HCM 2010 Ctrl Delay	26.4
HCM 2010 LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	25	173	508	145	522	59	73	49	97	44	63	28
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	27	184	0	158	567	64	88	59	117	52	74	33
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.83	0.83	0.83	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	45	614	522	200	777	661	142	95	208	171	118	53
Arrive On Green	0.03	0.33	0.00	0.11	0.42	0.42	0.13	0.13	0.13	0.10	0.10	0.10
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1083	726	1583	1774	1222	545
Grp Volume(v), veh/h	27	184	0	158	567	64	147	0	117	52	0	107
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1809	0	1583	1774	0	1767
Q Serve(g_s), s	0.7	3.6	0.0	4.2	12.4	1.2	3.7	0.0	3.4	1.3	0.0	2.8
Cycle Q Clear(g_c), s	0.7	3.6	0.0	4.2	12.4	1.2	3.7	0.0	3.4	1.3	0.0	2.8
Prop In Lane	1.00		1.00	1.00		1.00	0.60		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	45	614	522	200	777	661	238	0	208	171	0	170
V/C Ratio(X)	0.61	0.30	0.00	0.79	0.73	0.10	0.62	0.00	0.56	0.30	0.00	0.63
Avail Cap(c_a), veh/h	146	614	522	219	777	661	596	0	522	585	0	583
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	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.4	12.1	0.0	21.0	11.8	8.6	19.9	0.0	19.8	20.4	0.0	21.1
Incr Delay (d2), s/veh	12.5	1.2	0.0	16.2	5.9	0.3	2.6	0.0	2.4	1.0	0.0	3.8
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(-26165%),veh/ln	0.5	2.1	0.0	3.0	7.6	0.6	2.0	0.0	1.6	0.7	0.0	1.5
LnGrp Delay(d),s/veh	35.9	13.3	0.0	37.2	17.8	8.9	22.5	0.0	22.1	21.4	0.0	24.9
LnGrp LOS	D	B		D	B	A	C		C	C		C
Approach Vol, veh/h		211			789			264			159	
Approach Delay, s/veh		16.2			21.0			22.4			23.7	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.2	24.3		10.4	9.5	20.0		8.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	18.0		16.0	6.0	16.0		16.0
Max Q Clear Time (g_c+I1), s	2.7	14.4		5.7	6.2	5.6		4.8
Green Ext Time (p_c), s	0.0	1.7		0.8	0.0	3.7		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	20.8
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBU	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Vol, veh/h	0	87	222	0	231	42	0	60	160
Peak Hour Factor	0.92	0.83	0.83	0.92	0.85	0.85	0.92	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	105	267	0	272	49	0	67	178
Number of Lanes	0	1	0	0	0	1	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	13.4	13.6	10.6
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	85%	28%	0%
Vol Thru, %	15%	0%	27%
Vol Right, %	0%	72%	73%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	273	309	220
LT Vol	231	87	0
Through Vol	42	0	60
RT Vol	0	222	160
Lane Flow Rate	321	372	244
Geometry Grp	1	1	1
Degree of Util (X)	0.487	0.519	0.339
Departure Headway (Hd)	5.454	5.022	4.993
Convergence, Y/N	Yes	Yes	Yes
Cap	662	719	719
Service Time	3.487	3.055	3.028
HCM Lane V/C Ratio	0.485	0.517	0.339
HCM Control Delay	13.6	13.4	10.6
HCM Lane LOS	B	B	B
HCM 95th-tile Q	2.7	3	1.5

Intersection	
Int Delay, s/veh	9.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	43	123	17	35	193	107	17	29	8	55	39	67
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	65	65	65	92	92	92	66	66	66
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	145	20	54	297	165	18	32	9	83	59	102

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	462	0	0	165	0	0	823	825	155	763	753	379
Stage 1	-	-	-	-	-	-	256	256	-	487	487	-
Stage 2	-	-	-	-	-	-	567	569	-	276	266	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1099	-	-	1413	-	-	292	308	891	321	339	668
Stage 1	-	-	-	-	-	-	749	696	-	562	550	-
Stage 2	-	-	-	-	-	-	508	506	-	730	689	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1099	-	-	1413	-	-	195	277	891	268	305	668
Mov Cap-2 Maneuver	-	-	-	-	-	-	195	277	-	268	305	-
Stage 1	-	-	-	-	-	-	711	661	-	533	521	-
Stage 2	-	-	-	-	-	-	362	479	-	653	654	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0.8	22.1	31.5
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	269	1099	-	-	1413	-	-	371
HCM Lane V/C Ratio	0.218	0.046	-	-	0.038	-	-	0.658
HCM Control Delay (s)	22.1	8.4	0	-	7.6	0	-	31.5
HCM Lane LOS	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0.1	-	-	4.5

Intersection	
Int Delay, s/veh	3.1

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	156	3	2	38	76	640	5	13	564	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	80	80	80	94	94	94	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	177	4	2	48	81	681	5	14	620	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1521	1499	623	1585	1499	684	625	0	0	686	0	0
Stage 1	651	651	-	845	845	-	-	-	-	-	-	-
Stage 2	870	848	-	740	654	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	97	122	486	88	122	449	956	-	-	908	-	-
Stage 1	457	465	-	357	379	-	-	-	-	-	-	-
Stage 2	346	378	-	409	463	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	79	110	486	52	110	449	956	-	-	908	-	-
Mov Cap-2 Maneuver	79	110	-	52	110	-	-	-	-	-	-	-
Stage 1	418	458	-	327	347	-	-	-	-	-	-	-
Stage 2	281	346	-	256	456	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	16.6	21.8	1	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	956	-	-	268	486	908	-	-
HCM Lane V/C Ratio	0.085	-	-	0.201	0.365	0.016	-	-
HCM Control Delay (s)	9.1	-	-	21.8	16.6	9	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.7	1.7	0	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	4	529	2	2	517	38	0	1	2	58	0	23
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	575	2	2	562	41	0	1	2	63	0	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	603	0	0	577	0	0	1184	1193	576	1173	1173	583
Stage 1	-	-	-	-	-	-	585	585	-	587	587	-
Stage 2	-	-	-	-	-	-	599	608	-	586	586	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	975	-	-	996	-	-	166	187	517	169	192	512
Stage 1	-	-	-	-	-	-	497	498	-	496	497	-
Stage 2	-	-	-	-	-	-	488	486	-	496	497	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	975	-	-	996	-	-	157	185	517	166	190	512
Mov Cap-2 Maneuver	-	-	-	-	-	-	157	185	-	166	190	-
Stage 1	-	-	-	-	-	-	494	495	-	493	496	-
Stage 2	-	-	-	-	-	-	463	485	-	490	494	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.1	0	16.3	35.2
HCM LOS			C	E

Minor Lane/Major Mvmt	NEL n1	NWL	NWT	NWR	SEL	SET	SER	SWL n1
Capacity (veh/h)	323	996	-	-	975	-	-	205
HCM Lane V/C Ratio	0.01	0.002	-	-	0.004	-	-	0.429
HCM Control Delay (s)	16.3	8.6	0	-	8.7	0	-	35.2
HCM Lane LOS	C	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	2

Intersection	
Int Delay, s/veh	1.1

Movement	WBR	SEL	SWL	SWR
Vol, veh/h	544	579	18	36
Conflicting Peds, #/hr	0	0	0	0
Sign Control	Free	Free	Stop	Stop
RT Channelized	-	None	-	None
Storage Length	0	0	0	-
Veh in Median Storage, #	0	0	0	-
Grade, %	0	0	0	-
Peak Hour Factor	95	94	92	92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	573	616	20	39

Major/Minor	Major2	Major1	Minor2	
Conflicting Flow All	0	591	1262	582
Stage 1	-	-	582	-
Stage 2	-	-	680	-
Critical Hdwy	-	4.12	6.42	6.22
Critical Hdwy Stg 1	-	-	5.42	-
Critical Hdwy Stg 2	-	-	5.42	-
Follow-up Hdwy	-	2.218	3.518	3.318
Pot Cap-1 Maneuver	-	985	188	513
Stage 1	-	-	559	-
Stage 2	-	-	503	-
Platoon blocked, %	-			
Mov Cap-1 Maneuver	-	985	179	513
Mov Cap-2 Maneuver	-	-	179	-
Stage 1	-	-	559	-
Stage 2	-	-	478	-

Approach	WB	SE	SW
HCM Control Delay, s	0	0.4	19
HCM LOS			C

Minor Lane/Major Mvmt	WBR	WBR2	SEL2	SEL	SWLn1
Capacity (veh/h)	-	-	985	-	316
HCM Lane V/C Ratio	-	-	0.032	-	0.186
HCM Control Delay (s)	-	-	8.8	0	19
HCM Lane LOS	-	-	A	A	C
HCM 95th %tile Q(veh)	-	-	0.1	-	0.7

Intersection	
Int Delay, s/veh	46.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Vol, veh/h	7	17	59	149	37	39	22	567	9	46	516	85
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	150	-	-	50	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	92	89	92	92	92	92	95	95	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	18	66	162	40	42	24	597	9	50	561	92

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	1351	1310	602	1353	1315	561	561	0	0	606	0	0
Stage 1	649	649	-	661	661	-	-	-	-	-	-	-
Stage 2	702	661	-	692	654	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	127	159	500	~ 127	158	527	1010	-	-	972	-	-
Stage 1	458	466	-	452	460	-	-	-	-	-	-	-
Stage 2	429	460	-	434	463	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	87	147	500	~ 94	146	527	1010	-	-	972	-	-
Mov Cap-2 Maneuver	87	147	-	~ 94	146	-	-	-	-	-	-	-
Stage 1	447	455	-	441	436	-	-	-	-	-	-	-
Stage 2	340	436	-	353	452	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	25.6	$ 303.1	0.3	0.6
HCM LOS	D	F		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	WBLn2	SEL	SET	SER
Capacity (veh/h)	972	-	-	266	94	232	1010	-	-
HCM Lane V/C Ratio	0.051	-	-	0.348	1.723	0.356	0.024	-	-
HCM Control Delay (s)	8.9	-	-	25.6	$ 442.9	28.9	8.7	-	-
HCM Lane LOS	A	-	-	D	F	D	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.5	13.1	1.5	0.1	-	-

Notes

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

Intersection	
Int Delay, s/veh	28.6

Movement	WBL	WBR	SEL	SET	NWT	NWR
Vol, veh/h	83	398	80	236	322	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	89	89	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	95	457	90	265	346	92

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	837	392	439	0	-	0
Stage 1	392	-	-	-	-	-
Stage 2	445	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	337	657	1121	-	-	-
Stage 1	683	-	-	-	-	-
Stage 2	646	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	305	657	1121	-	-	-
Mov Cap-2 Maneuver	305	-	-	-	-	-
Stage 1	683	-	-	-	-	-
Stage 2	585	-	-	-	-	-

Approach	WB	SE	NW
HCM Control Delay, s	68.2	2.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NWT	NWR	WBLn1	SEL	SET
Capacity (veh/h)	-	-	548	1121	-
HCM Lane V/C Ratio	-	-	1.009	0.08	-
HCM Control Delay (s)	-	-	68.2	8.5	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	14.7	0.3	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	28	229	0	0	292	232	0	0	1	290	0	56
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	35	283	0	0	307	244	0	0	0	372	0	72
Adj No. of Lanes	0	1	0	0	1	1	0	1	0	1	1	0
Peak Hour Factor	0.81	0.81	0.81	0.95	0.95	0.95	0.25	0.25	0.25	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	199	611	0	0	687	1062	0	8	0	536	0	478
Arrive On Green	0.37	0.37	0.00	0.00	0.37	0.37	0.00	0.00	0.00	0.30	0.00	0.30
Sat Flow, veh/h	94	1658	0	0	1863	1583	0	1863	0	1774	0	1583
Grp Volume(v), veh/h	318	0	0	0	307	244	0	0	0	372	0	72
Grp Sat Flow(s),veh/h/ln	1752	0	0	0	1863	1583	0	1863	0	1774	0	1583
Q Serve(g_s), s	0.0	0.0	0.0	0.0	3.0	1.5	0.0	0.0	0.0	4.5	0.0	0.8
Cycle Q Clear(g_c), s	3.2	0.0	0.0	0.0	3.0	1.5	0.0	0.0	0.0	4.5	0.0	0.8
Prop In Lane	0.11		0.00	0.00		1.00	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	810	0	0	0	687	1062	0	8	0	536	0	478
V/C Ratio(X)	0.39	0.00	0.00	0.00	0.45	0.23	0.00	0.00	0.00	0.69	0.00	0.15
Avail Cap(c_a), veh/h	1356	0	0	0	1303	1586	0	307	0	1241	0	1108
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.8	0.0	0.0	0.0	5.8	1.6	0.0	0.0	0.0	7.5	0.0	6.2
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.0	0.5	0.1	0.0	0.0	0.0	1.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	1.7	0.0	0.0	0.0	1.6	1.3	0.0	0.0	0.0	2.4	0.0	0.4
LnGrp Delay(d),s/veh	6.1	0.0	0.0	0.0	6.3	1.7	0.0	0.0	0.0	9.1	0.0	6.3
LnGrp LOS	A				A	A				A		A
Approach Vol, veh/h		318			551			0			444	
Approach Delay, s/veh		6.1			4.2			0.0			8.7	
Approach LOS		A			A						A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		0.0		13.0		11.3		13.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		4.0		17.0		17.0		17.0
Max Q Clear Time (g_c+I1), s		0.0		5.2		6.5		5.0
Green Ext Time (p_c), s		0.0		3.8		1.2		3.8

Intersection Summary	
HCM 2010 Ctrl Delay	6.2
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	73	145	282	64	123	47	316	307	113	52	254	92
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	87	173	274	78	150	57	326	316	116	55	270	98
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	1	2	0
Peak Hour Factor	0.84	0.84	0.84	0.82	0.82	0.82	0.97	0.97	0.97	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	355	302	98	226	86	421	703	598	77	470	167
Arrive On Green	0.07	0.19	0.19	0.06	0.18	0.18	0.24	0.38	0.38	0.04	0.18	0.18
Sat Flow, veh/h	1774	1863	1583	1774	1287	489	1774	1863	1583	1774	2563	909
Grp Volume(v), veh/h	87	173	274	78	0	207	326	316	116	55	184	184
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1776	1774	1863	1583	1774	1770	1702
Q Serve(g_s), s	2.3	4.0	4.1	2.1	0.0	5.2	8.2	6.1	2.4	1.5	4.6	4.7
Cycle Q Clear(g_c), s	2.3	4.0	4.1	2.1	0.0	5.2	8.2	6.1	2.4	1.5	4.6	4.7
Prop In Lane	1.00		1.00	1.00		0.28	1.00		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	126	355	302	98	0	311	421	703	598	77	325	312
V/C Ratio(X)	0.69	0.49	0.91	0.79	0.00	0.66	0.77	0.45	0.19	0.72	0.57	0.59
Avail Cap(c_a), veh/h	259	1241	1055	259	0	1184	517	1280	1088	259	958	922
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	17.3	4.8	22.4	0.0	18.5	17.1	11.2	10.0	22.7	17.9	17.9
Incr Delay (d2), s/veh	6.6	1.0	10.2	13.2	0.0	2.4	5.9	0.5	0.2	11.7	1.6	1.8
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(-26165%),veh/ln	1.3	2.1	2.6	1.4	0.0	2.7	4.7	3.2	1.1	1.0	2.3	2.3
LnGrp Delay(d),s/veh	28.4	18.4	15.0	35.6	0.0	20.9	23.0	11.7	10.2	34.4	19.4	19.7
LnGrp LOS	C	B	B	D		C	C	B	B	C	B	B
Approach Vol, veh/h		534			285			758			423	
Approach Delay, s/veh		18.3			24.9			16.3			21.5	
Approach LOS		B			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.1	22.1	6.7	13.2	15.4	12.8	7.4	12.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	33.0	7.0	32.0	14.0	26.0	7.0	32.0
Max Q Clear Time (g_c+I1), s	3.5	8.1	4.1	6.1	10.2	6.7	4.3	7.2
Green Ext Time (p_c), s	0.0	3.4	0.0	2.2	1.3	2.1	0.7	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	19.2
HCM 2010 LOS	B

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	8	21	10	153	14	489	6	414	160	386	305	7
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	10	27	13	166	15	532	7	460	178	444	351	8
Adj No. of Lanes	0	1	0	0	1	1	1	1	1	1	1	0
Peak Hour Factor	0.77	0.77	0.77	0.92	0.92	0.92	0.90	0.90	0.90	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	13	35	17	321	29	740	13	558	474	480	1021	23
Arrive On Green	0.04	0.04	0.04	0.20	0.20	0.20	0.01	0.30	0.30	0.27	0.56	0.56
Sat Flow, veh/h	353	953	459	1633	148	1583	1774	1863	1583	1774	1814	41
Grp Volume(v), veh/h	50	0	0	181	0	532	7	460	178	444	0	359
Grp Sat Flow(s),veh/h/ln	1764	0	0	1781	0	1583	1774	1863	1583	1774	0	1855
Q Serve(g_s), s	2.3	0.0	0.0	7.4	0.0	16.0	0.3	18.7	7.2	19.8	0.0	8.5
Cycle Q Clear(g_c), s	2.3	0.0	0.0	7.4	0.0	16.0	0.3	18.7	7.2	19.8	0.0	8.5
Prop In Lane	0.20		0.26	0.92		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	65	0	0	350	0	740	13	558	474	480	0	1044
V/C Ratio(X)	0.77	0.00	0.00	0.52	0.00	0.72	0.55	0.82	0.38	0.92	0.00	0.34
Avail Cap(c_a), veh/h	347	0	0	350	0	740	87	664	564	502	0	1095
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.9	0.0	0.0	29.2	0.0	17.4	40.3	26.5	22.5	28.9	0.0	9.6
Incr Delay (d2), s/veh	17.6	0.0	0.0	1.3	0.0	3.4	32.0	7.2	0.5	22.6	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	1.4	0.0	0.0	3.7	0.0	10.2	0.3	10.7	3.2	12.6	0.0	4.3
LnGrp Delay(d),s/veh	56.4	0.0	0.0	30.5	0.0	20.8	72.2	33.7	23.0	51.5	0.0	9.8
LnGrp LOS	E			C		C	E	C	C	D		A
Approach Vol, veh/h		50			713			645			803	
Approach Delay, s/veh		56.4			23.3			31.2			32.9	
Approach LOS		E			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		20.0	26.0	28.4		7.0	4.6	49.8
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	23.0	29.0		16.0	4.0	48.0
Max Q Clear Time (g_c+I1), s		18.0	21.8	20.7		4.3	2.3	10.5
Green Ext Time (p_c), s		0.0	0.2	3.7		0.1	0.0	6.8

Intersection Summary	
HCM 2010 Ctrl Delay	29.8
HCM 2010 LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	45	235	409	128	640	129	75	43	61	112	52	72
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	54	283	0	141	703	142	100	57	81	124	58	80
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	1	1	0
Peak Hour Factor	0.83	0.83	0.83	0.91	0.91	0.91	0.75	0.75	0.75	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	275	983	836	173	875	744	126	72	174	186	75	103
Arrive On Green	0.16	0.53	0.00	0.10	0.47	0.47	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1150	655	1583	1774	710	980
Grp Volume(v), veh/h	54	283	0	141	703	142	157	0	81	124	0	138
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1805	0	1583	1774	0	1690
Q Serve(g_s), s	2.7	8.5	0.0	7.8	32.1	5.2	8.5	0.0	4.8	6.7	0.0	8.0
Cycle Q Clear(g_c), s	2.7	8.5	0.0	7.8	32.1	5.2	8.5	0.0	4.8	6.7	0.0	8.0
Prop In Lane	1.00		1.00	1.00		1.00	0.64		1.00	1.00		0.58
Lane Grp Cap(c), veh/h	275	983	836	173	875	744	198	0	174	186	0	178
V/C Ratio(X)	0.20	0.29	0.00	0.82	0.80	0.19	0.79	0.00	0.47	0.66	0.00	0.78
Avail Cap(c_a), veh/h	275	983	836	266	875	744	289	0	253	284	0	270
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	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.8	13.1	0.0	44.2	22.6	15.4	43.4	0.0	41.8	43.0	0.0	43.6
Incr Delay (d2), s/veh	0.3	0.7	0.0	10.7	7.7	0.6	9.0	0.0	1.9	4.0	0.0	7.6
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(-26165%),veh/ln	1.3	4.5	0.0	4.4	18.3	2.4	4.7	0.0	2.2	3.5	0.0	4.1
LnGrp Delay(d),s/veh	37.1	13.9	0.0	55.0	30.3	16.0	52.4	0.0	43.7	47.1	0.0	51.2
LnGrp LOS	D	B		D	C	B	D		D	D		D
Approach Vol, veh/h		337			986			238			262	
Approach Delay, s/veh		17.6			31.7			49.5			49.3	
Approach LOS		B			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.5	51.0		15.0	13.7	56.8		14.5
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	5.0	47.0		16.0	15.0	37.0		16.0
Max Q Clear Time (g_c+I1), s	4.7	34.1		10.5	9.8	10.5		10.0
Green Ext Time (p_c), s	0.0	4.5		0.5	0.1	1.9		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	34.0
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	20.9
Intersection LOS	C

Movement	EBU	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Vol, veh/h	0	171	191	0	303	113	0	48	152
Peak Hour Factor	0.92	0.91	0.91	0.92	0.81	0.81	0.92	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	188	210	0	374	140	0	48	154
Number of Lanes	0	1	0	0	0	1	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	17.7	27.3	11.1
HCM LOS	C	D	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	73%	47%	0%
Vol Thru, %	27%	0%	24%
Vol Right, %	0%	53%	76%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	416	362	200
LT Vol	303	171	0
Through Vol	113	0	48
RT Vol	0	191	152
Lane Flow Rate	514	398	202
Geometry Grp	1	1	1
Degree of Util (X)	0.799	0.624	0.309
Departure Headway (Hd)	5.6	5.643	5.507
Convergence, Y/N	Yes	Yes	Yes
Cap	642	636	648
Service Time	3.653	3.704	3.578
HCM Lane V/C Ratio	0.801	0.626	0.312
HCM Control Delay	27.3	17.7	11.1
HCM Lane LOS	D	C	B
HCM 95th-tile Q	8	4.3	1.3

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	36	195	21	24	164	22	12	13	65	15	45	122
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	88	88	88	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	232	25	27	186	25	13	14	71	16	49	133

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	211	0	0	257	0	0	674	596	245	626	596	199
Stage 1	-	-	-	-	-	-	330	330	-	253	253	-
Stage 2	-	-	-	-	-	-	344	266	-	373	343	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1360	-	-	1308	-	-	368	417	794	397	417	842
Stage 1	-	-	-	-	-	-	683	646	-	751	698	-
Stage 2	-	-	-	-	-	-	671	689	-	648	637	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1360	-	-	1308	-	-	268	392	794	336	392	842
Mov Cap-2 Maneuver	-	-	-	-	-	-	268	392	-	336	392	-
Stage 1	-	-	-	-	-	-	658	622	-	723	682	-
Stage 2	-	-	-	-	-	-	513	673	-	556	613	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0.9	12.7	14
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	563	1360	-	-	1308	-	-	598
HCM Lane V/C Ratio	0.174	0.032	-	-	0.021	-	-	0.331
HCM Control Delay (s)	12.7	7.7	0	-	7.8	0	-	14
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0.1	-	-	1.4

Intersection	
Int Delay, s/veh	3.6

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	5	3	111	0	5	16	168	718	13	12	612	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	82	82	82	97	97	97	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	4	132	0	6	20	173	740	13	13	651	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1787	1781	656	1842	1779	747	661	0	0	754	0	0
Stage 1	681	681	-	1093	1093	-	-	-	-	-	-	-
Stage 2	1106	1100	-	749	686	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	63	82	465	58	82	413	927	-	-	856	-	-
Stage 1	440	450	-	260	290	-	-	-	-	-	-	-
Stage 2	255	288	-	404	448	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	47	66	465	34	66	413	927	-	-	856	-	-
Mov Cap-2 Maneuver	47	66	-	34	66	-	-	-	-	-	-	-
Stage 1	358	443	-	211	236	-	-	-	-	-	-	-
Stage 2	193	234	-	283	441	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	26.6	27.8	1.8	0.2
HCM LOS	D	D		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	927	-	-	183	305	856	-	-
HCM Lane V/C Ratio	0.187	-	-	0.14	0.464	0.015	-	-
HCM Control Delay (s)	9.8	-	-	27.8	26.6	9.3	-	-
HCM Lane LOS	A	-	-	D	D	A	-	-
HCM 95th %tile Q(veh)	0.7	-	-	0.5	2.3	0	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	WBR	SEL	SWL	SWR
Vol, veh/h	609	582	27	74
Conflicting Peds, #/hr	0	0	0	0
Sign Control	Free	Free	Stop	Stop
RT Channelized	-	None	-	None
Storage Length	0	0	0	-
Veh in Median Storage, #	0	0	0	-
Grade, %	0	0	0	-
Peak Hour Factor	92	86	92	92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	662	677	29	80

Major/Minor	Major2	Major1	Minor2	
Conflicting Flow All	0	705	1470	684
Stage 1	-	-	684	-
Stage 2	-	-	786	-
Critical Hdwy	-	4.12	6.42	6.22
Critical Hdwy Stg 1	-	-	5.42	-
Critical Hdwy Stg 2	-	-	5.42	-
Follow-up Hdwy	-	2.218	3.518	3.318
Pot Cap-1 Maneuver	-	893	140	449
Stage 1	-	-	501	-
Stage 2	-	-	449	-
Platoon blocked, %	-			
Mov Cap-1 Maneuver	-	893	126	449
Mov Cap-2 Maneuver	-	-	126	-
Stage 1	-	-	501	-
Stage 2	-	-	405	-

Approach	WB	SE	SW
HCM Control Delay, s	0	0.7	27.7
HCM LOS			D

Minor Lane/Major Mvmt	WBR	WBR2	SEL2	SEL	SWLn1
Capacity (veh/h)	-	-	893	-	266
HCM Lane V/C Ratio	-	-	0.061	-	0.413
HCM Control Delay (s)	-	-	9.3	0	27.7
HCM Lane LOS	-	-	A	A	D
HCM 95th %tile Q(veh)	-	-	0.2	-	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	7	17	59	149	37	39	22	567	9	46	516	85
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	8	18	66	122	96	42	24	597	9	50	561	92
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	1
Peak Hour Factor	0.89	0.92	0.89	0.92	0.92	0.92	0.92	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	10	23	85	231	160	70	41	649	10	157	782	871
Arrive On Green	0.07	0.07	0.07	0.13	0.13	0.13	0.02	0.35	0.35	0.09	0.42	0.42
Sat Flow, veh/h	143	322	1182	1774	1230	538	1774	1830	28	1774	1863	1583
Grp Volume(v), veh/h	92	0	0	122	0	138	24	0	606	50	561	92
Grp Sat Flow(s),veh/h/ln	1647	0	0	1774	0	1768	1774	0	1858	1774	1863	1583
Q Serve(g_s), s	2.5	0.0	0.0	2.9	0.0	3.3	0.6	0.0	14.1	1.2	11.3	1.3
Cycle Q Clear(g_c), s	2.5	0.0	0.0	2.9	0.0	3.3	0.6	0.0	14.1	1.2	11.3	1.3
Prop In Lane	0.09		0.72	1.00		0.30	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	119	0	0	231	0	230	41	0	658	157	782	871
V/C Ratio(X)	0.77	0.00	0.00	0.53	0.00	0.60	0.59	0.00	0.92	0.32	0.72	0.11
Avail Cap(c_a), veh/h	584	0	0	629	0	626	157	0	658	629	782	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.6	0.0	0.0	18.3	0.0	18.5	21.8	0.0	14.0	19.3	10.9	4.8
Incr Delay (d2), s/veh	10.1	0.0	0.0	1.9	0.0	2.5	12.7	0.0	18.3	1.2	3.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	1.5	0.0	0.0	1.5	0.0	1.8	0.4	0.0	10.4	0.6	6.5	0.7
LnGrp Delay(d),s/veh	30.7	0.0	0.0	20.2	0.0	21.0	34.5	0.0	32.3	20.4	14.0	4.9
LnGrp LOS	C			C		C	C		C	C	B	A
Approach Vol, veh/h		92			260			630			703	
Approach Delay, s/veh		30.7			20.6			32.4			13.3	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.0	23.0		7.3	8.0	20.0		9.9
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	16.0		16.0	16.0	16.0		16.0
Max Q Clear Time (g_c+I1), s	2.6	13.3		4.5	3.2	16.1		5.3
Green Ext Time (p_c), s	0.0	1.9		0.3	0.1	0.0		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	22.5
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	7	46	85	184	37	72	81	522	8	51	580	227
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	10	50	121	159	97	78	88	600	9	55	630	247
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	1
Peak Hour Factor	0.70	0.92	0.70	0.92	0.92	0.92	0.92	0.87	0.87	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	13	64	155	252	136	109	111	785	12	69	755	867
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.06	0.43	0.43	0.04	0.41	0.41
Sat Flow, veh/h	92	459	1111	1774	957	770	1774	1830	27	1774	1863	1583
Grp Volume(v), veh/h	181	0	0	159	0	175	88	0	609	55	630	247
Grp Sat Flow(s),veh/h/ln	1662	0	0	1774	0	1727	1774	0	1858	1774	1863	1583
Q Serve(g_s), s	6.7	0.0	0.0	5.4	0.0	6.2	3.1	0.0	17.8	2.0	19.4	5.3
Cycle Q Clear(g_c), s	6.7	0.0	0.0	5.4	0.0	6.2	3.1	0.0	17.8	2.0	19.4	5.3
Prop In Lane	0.06		0.67	1.00		0.45	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	231	0	0	252	0	245	111	0	797	69	755	867
V/C Ratio(X)	0.78	0.00	0.00	0.63	0.00	0.71	0.79	0.00	0.76	0.79	0.83	0.29
Avail Cap(c_a), veh/h	417	0	0	445	0	433	111	0	816	111	818	920
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	0.0	0.0	25.8	0.0	26.1	29.5	0.0	15.5	30.4	17.0	7.7
Incr Delay (d2), s/veh	5.7	0.0	0.0	2.6	0.0	3.8	30.9	0.0	4.2	18.1	7.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	3.4	0.0	0.0	2.8	0.0	3.2	2.5	0.0	9.9	1.3	11.3	3.1
LnGrp Delay(d),s/veh	32.2	0.0	0.0	28.4	0.0	30.0	60.4	0.0	19.7	48.5	24.1	7.9
LnGrp LOS	C			C		C	E		B	D	C	A
Approach Vol, veh/h		181			334			697			932	
Approach Delay, s/veh		32.2			29.2			24.8			21.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	29.8		12.9	6.5	31.4		13.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	28.0		16.0	4.0	28.0		16.0
Max Q Clear Time (g_c+I1), s	5.1	21.4		8.7	4.0	19.8		8.2
Green Ext Time (p_c), s	0.0	4.5		0.5	0.0	5.3		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	24.6
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	33	321	0	2	241	209	0	0	1	156	0	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	37	357	0	3	313	271	0	0	4	195	0	56
Adj No. of Lanes	0	1	0	0	1	1	0	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.77	0.77	0.77	0.25	0.25	0.25	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	468	0	37	582	1019	0	0	374	585	0	522
Arrive On Green	0.31	0.31	0.00	0.31	0.31	0.31	0.00	0.00	0.24	0.33	0.00	0.33
Sat Flow, veh/h	87	1492	0	4	1856	1583	0	0	1583	1774	0	1583
Grp Volume(v), veh/h	394	0	0	316	0	271	0	0	4	195	0	56
Grp Sat Flow(s),veh/h/ln	1579	0	0	1860	0	1583	0	0	1583	1774	0	1583
Q Serve(g_s), s	9.4	0.0	0.0	0.0	0.0	7.4	0.0	0.0	0.2	8.3	0.0	2.5
Cycle Q Clear(g_c), s	23.4	0.0	0.0	14.0	0.0	7.4	0.0	0.0	0.2	8.3	0.0	2.5
Prop In Lane	0.09		0.00	0.01		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	534	0	0	619	0	1019	0	0	374	585	0	523
V/C Ratio(X)	0.74	0.00	0.00	0.51	0.00	0.27	0.00	0.00	0.01	0.33	0.00	0.11
Avail Cap(c_a), veh/h	845	0	0	964	0	1314	0	0	374	585	0	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.2	0.0	0.0	28.4	0.0	7.7	0.0	0.0	29.2	25.2	0.0	23.3
Incr Delay (d2), s/veh	2.0	0.0	0.0	0.7	0.0	0.1	0.0	0.0	0.0	1.5	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	10.3	0.0	0.0	7.3	0.0	6.2	0.0	0.0	0.1	4.3	0.0	1.1
LnGrp Delay(d),s/veh	33.2	0.0	0.0	29.0	0.0	7.8	0.0	0.0	29.2	26.7	0.0	23.7
LnGrp LOS	C			C		A			C	C		C
Approach Vol, veh/h		394			587			4			251	
Approach Delay, s/veh		33.2			19.2			29.2			26.1	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		27.6		35.4		37.0		35.4
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		5.0		50.0		33.0		50.0
Max Q Clear Time (g_c+I1), s		2.2		25.4		10.3		16.0
Green Ext Time (p_c), s		0.0		5.9		0.9		6.3

Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	152	118	207	48	137	144	210	352	66	46	299	102
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	173	134	235	64	183	192	253	424	80	55	356	121
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	1	2	0
Peak Hour Factor	0.88	0.88	0.88	0.75	0.75	0.75	0.83	0.83	0.83	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	575	489	83	204	215	381	689	586	204	704	236
Arrive On Green	0.11	0.31	0.31	0.05	0.25	0.25	0.21	0.37	0.37	0.11	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	834	875	1774	1863	1583	1774	2606	873
Grp Volume(v), veh/h	173	134	235	64	0	375	253	424	80	55	240	237
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1708	1774	1863	1583	1774	1770	1709
Q Serve(g_s), s	9.6	5.4	6.9	3.6	0.0	21.2	13.1	18.6	2.7	2.8	11.5	11.8
Cycle Q Clear(g_c), s	9.6	5.4	6.9	3.6	0.0	21.2	13.1	18.6	2.7	2.8	11.5	11.8
Prop In Lane	1.00		1.00	1.00		0.51	1.00		1.00	1.00		0.51
Lane Grp Cap(c), veh/h	195	575	489	83	0	419	381	689	586	204	478	461
V/C Ratio(X)	0.89	0.23	0.48	0.77	0.00	0.90	0.66	0.62	0.14	0.27	0.50	0.51
Avail Cap(c_a), veh/h	195	577	491	177	0	513	381	689	586	204	478	461
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	0.80	0.00	0.80	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	25.8	9.2	47.2	0.0	36.5	36.0	25.7	13.3	40.4	30.8	30.9
Incr Delay (d2), s/veh	35.1	0.2	0.7	11.6	0.0	13.3	4.3	4.1	0.5	0.7	3.7	4.0
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(-26165%),veh/ln	6.6	2.8	3.1	2.0	0.0	11.5	6.9	10.3	1.2	1.4	6.1	6.0
LnGrp Delay(d),s/veh	79.0	26.0	10.0	58.8	0.0	49.8	40.3	29.8	13.8	41.1	34.6	35.0
LnGrp LOS	E	C	A	E		D	D	C	B	D	C	C
Approach Vol, veh/h		542			439			757			532	
Approach Delay, s/veh		36.0			51.1			31.6			35.4	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.5	41.0	8.7	34.9	25.5	31.0	15.0	28.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	37.0	10.0	31.0	16.0	27.0	11.0	30.0
Max Q Clear Time (g_c+I1), s	4.8	20.6	5.6	8.9	15.1	13.8	11.6	23.2
Green Ext Time (p_c), s	0.1	2.7	0.0	2.1	0.1	2.4	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	37.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	43	123	17	34	198	107	16	29	8	55	39	67
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	51	145	20	52	305	165	17	32	9	83	59	102
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.85	0.85	0.85	0.65	0.65	0.65	0.92	0.92	0.92	0.66	0.66	0.66
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	603	83	81	429	232	195	273	61	235	118	152
Arrive On Green	0.04	0.38	0.38	0.05	0.38	0.38	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1774	1603	221	1774	1138	616	262	1193	267	411	516	666
Grp Volume(v), veh/h	51	0	165	52	0	470	58	0	0	244	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1824	1774	0	1754	1721	0	0	1593	0	0
Q Serve(g_s), s	1.0	0.0	2.1	1.0	0.0	7.8	0.0	0.0	0.0	3.0	0.0	0.0
Cycle Q Clear(g_c), s	1.0	0.0	2.1	1.0	0.0	7.8	0.9	0.0	0.0	4.7	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.35	0.29		0.16	0.34		0.42
Lane Grp Cap(c), veh/h	80	0	686	81	0	661	529	0	0	505	0	0
V/C Ratio(X)	0.64	0.00	0.24	0.64	0.00	0.71	0.11	0.00	0.00	0.48	0.00	0.00
Avail Cap(c_a), veh/h	207	0	1010	310	0	1073	1225	0	0	1191	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.1	0.0	7.3	16.1	0.0	9.1	10.5	0.0	0.0	12.0	0.0	0.0
Incr Delay (d2), s/veh	8.3	0.0	0.2	8.3	0.0	1.4	0.1	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	0.7	0.0	1.1	0.7	0.0	3.9	0.4	0.0	0.0	2.2	0.0	0.0
LnGrp Delay(d),s/veh	24.4	0.0	7.5	24.4	0.0	10.5	10.6	0.0	0.0	12.7	0.0	0.0
LnGrp LOS	C		A	C		B	B			B		
Approach Vol, veh/h		216			522			58			244	
Approach Delay, s/veh		11.5			11.9			10.6			12.7	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		11.8	5.6	16.9		11.8	5.5	16.9
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		23.0	6.0	19.0		23.0	4.0	21.0
Max Q Clear Time (g_c+I1), s		2.9	3.0	4.1		6.7	3.0	9.8
Green Ext Time (p_c), s		1.8	0.0	3.6		1.6	0.0	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	11.9
HCM 2010 LOS	B

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	113	40	11	28	103	55	557	8	104	458	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	128	45	14	35	129	59	593	9	114	503	5
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.80	0.80	0.80	0.94	0.94	0.94	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	218	77	74	62	187	74	1012	15	146	1092	11
Arrive On Green	0.00	0.17	0.17	0.17	0.17	0.17	0.04	0.55	0.55	0.08	0.59	0.59
Sat Flow, veh/h	0	1318	463	57	373	1133	1774	1830	28	1774	1841	18
Grp Volume(v), veh/h	0	0	173	178	0	0	59	0	602	114	0	508
Grp Sat Flow(s),veh/h/ln	0	0	1781	1563	0	0	1774	0	1858	1774	0	1860
Q Serve(g_s), s	0.0	0.0	5.4	1.1	0.0	0.0	2.0	0.0	12.9	3.8	0.0	9.2
Cycle Q Clear(g_c), s	0.0	0.0	5.4	6.5	0.0	0.0	2.0	0.0	12.9	3.8	0.0	9.2
Prop In Lane	0.00		0.26	0.08		0.72	1.00		0.01	1.00		0.01
Lane Grp Cap(c), veh/h	0	0	294	323	0	0	74	0	1027	146	0	1103
V/C Ratio(X)	0.00	0.00	0.59	0.55	0.00	0.00	0.80	0.00	0.59	0.78	0.00	0.46
Avail Cap(c_a), veh/h	0	0	534	537	0	0	148	0	1027	177	0	1103
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)	0.00	0.00	1.00	1.00	0.00	0.00	0.90	0.00	0.90	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	23.2	23.5	0.0	0.0	28.5	0.0	8.9	27.0	0.0	6.8
Incr Delay (d2), s/veh	0.0	0.0	1.9	1.5	0.0	0.0	15.8	0.0	2.2	16.8	0.0	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(-26165%),veh/ln	0.0	0.0	2.8	2.9	0.0	0.0	1.3	0.0	7.2	2.5	0.0	5.1
LnGrp Delay(d),s/veh	0.0	0.0	25.0	25.0	0.0	0.0	44.3	0.0	11.1	43.8	0.0	8.2
LnGrp LOS			C	C			D		B	D		A
Approach Vol, veh/h		173			178			661			622	
Approach Delay, s/veh		25.0			25.0			14.1			14.7	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		13.9	8.9	37.2		13.9	6.5	39.6
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		18.0	6.0	24.0		18.0	5.0	25.0
Max Q Clear Time (g_c+I1), s		8.5	5.8	14.9		7.4	4.0	11.2
Green Ext Time (p_c), s		1.4	0.0	4.8		1.5	0.0	6.2

Intersection Summary	
HCM 2010 Ctrl Delay	16.7
HCM 2010 LOS	B

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	11	57	7	81	18	331	6	270	73	175	323	9
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	17	86	11	85	19	348	7	303	82	190	351	10
Adj No. of Lanes	0	1	0	0	1	1	1	1	1	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.95	0.95	0.95	0.89	0.89	0.89	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	22	112	14	260	58	487	13	806	685	231	1001	29
Arrive On Green	0.08	0.08	0.08	0.18	0.18	0.18	0.01	0.43	0.43	0.13	0.56	0.56
Sat Flow, veh/h	271	1372	175	1463	327	1583	1774	1863	1583	1774	1802	51
Grp Volume(v), veh/h	114	0	0	104	0	348	7	303	82	190	0	361
Grp Sat Flow(s),veh/h/ln	1818	0	0	1790	0	1583	1774	1863	1583	1774	0	1854
Q Serve(g_s), s	5.5	0.0	0.0	4.6	0.0	16.0	0.4	9.9	2.8	9.4	0.0	9.7
Cycle Q Clear(g_c), s	5.5	0.0	0.0	4.6	0.0	16.0	0.4	9.9	2.8	9.4	0.0	9.7
Prop In Lane	0.15		0.10	0.82		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	149	0	0	318	0	487	13	806	685	231	0	1030
V/C Ratio(X)	0.77	0.00	0.00	0.33	0.00	0.71	0.55	0.38	0.12	0.82	0.00	0.35
Avail Cap(c_a), veh/h	323	0	0	318	0	487	79	806	685	493	0	1030
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.88	0.00	0.88
Uniform Delay (d), s/veh	40.5	0.0	0.0	32.3	0.0	27.6	44.5	17.3	15.3	38.1	0.0	11.0
Incr Delay (d2), s/veh	7.9	0.0	0.0	0.6	0.0	4.9	32.7	1.3	0.4	6.4	0.0	0.8
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(-26165%),veh/ln	3.1	0.0	0.0	2.3	0.0	8.3	0.3	5.4	1.3	5.0	0.0	5.1
LnGrp Delay(d),s/veh	48.4	0.0	0.0	32.9	0.0	32.5	77.2	18.7	15.6	44.5	0.0	11.9
LnGrp LOS	D			C		C	F	B	B	D		B
Approach Vol, veh/h		114			452			392			551	
Approach Delay, s/veh		48.4			32.6			19.1			23.1	
Approach LOS		D			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		20.0	15.7	42.9		11.4	4.6	54.0
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	25.0	17.0		16.0	4.0	38.0
Max Q Clear Time (g_c+I1), s		18.0	11.4	11.9		7.5	2.4	11.7
Green Ext Time (p_c), s		0.0	0.4	2.0		0.3	0.0	4.7

Intersection Summary	
HCM 2010 Ctrl Delay	26.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	9	16	60	152	36	30	21	570	11	46	515	87
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	10	17	67	118	104	33	23	600	12	50	560	95
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	1
Peak Hour Factor	0.89	0.92	0.89	0.92	0.92	0.92	0.92	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	13	22	87	197	150	48	36	972	19	100	1061	1077
Arrive On Green	0.07	0.07	0.07	0.11	0.11	0.11	0.02	0.53	0.53	0.06	0.57	0.57
Sat Flow, veh/h	175	298	1174	1774	1356	430	1774	1820	36	1774	1863	1583
Grp Volume(v), veh/h	94	0	0	118	0	137	23	0	612	50	560	95
Grp Sat Flow(s),veh/h/ln	1647	0	0	1774	0	1787	1774	0	1856	1774	1863	1583
Q Serve(g_s), s	4.0	0.0	0.0	4.5	0.0	5.3	0.9	0.0	16.3	1.9	13.2	1.5
Cycle Q Clear(g_c), s	4.0	0.0	0.0	4.5	0.0	5.3	0.9	0.0	16.3	1.9	13.2	1.5
Prop In Lane	0.11		0.71	1.00		0.24	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	122	0	0	197	0	198	36	0	991	100	1061	1077
V/C Ratio(X)	0.77	0.00	0.00	0.60	0.00	0.69	0.63	0.00	0.62	0.50	0.53	0.09
Avail Cap(c_a), veh/h	370	0	0	399	0	402	100	0	991	100	1061	1077
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.3	0.0	0.0	30.1	0.0	30.5	34.6	0.0	11.5	32.6	9.4	3.9
Incr Delay (d2), s/veh	9.7	0.0	0.0	2.9	0.0	4.3	16.6	0.0	2.9	3.9	1.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	2.1	0.0	0.0	2.4	0.0	2.8	0.6	0.0	9.1	1.1	7.2	0.9
LnGrp Delay(d),s/veh	42.0	0.0	0.0	33.1	0.0	34.7	51.2	0.0	14.4	36.5	11.3	4.0
LnGrp LOS	D			C		C	D		B	D	B	A
Approach Vol, veh/h		94			255			635			705	
Approach Delay, s/veh		42.0			34.0			15.8			12.1	
Approach LOS		D			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.5	44.5		9.3	8.0	42.0		11.9
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	38.0		16.0	4.0	38.0		16.0
Max Q Clear Time (g_c+I1), s	2.9	15.2		6.0	3.9	18.3		7.3
Green Ext Time (p_c), s	0.0	9.0		0.3	0.0	8.4		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	18.4
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	25	174	511	145	523	59	73	49	97	44	63	28
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	27	185	0	158	568	64	88	59	117	52	74	33
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.83	0.83	0.83	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	45	614	522	200	777	661	142	95	208	171	118	53
Arrive On Green	0.03	0.33	0.00	0.11	0.42	0.42	0.13	0.13	0.13	0.10	0.10	0.10
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1083	726	1583	1774	1222	545
Grp Volume(v), veh/h	27	185	0	158	568	64	147	0	117	52	0	107
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1809	0	1583	1774	0	1767
Q Serve(g_s), s	0.7	3.6	0.0	4.2	12.4	1.2	3.7	0.0	3.4	1.3	0.0	2.8
Cycle Q Clear(g_c), s	0.7	3.6	0.0	4.2	12.4	1.2	3.7	0.0	3.4	1.3	0.0	2.8
Prop In Lane	1.00		1.00	1.00		1.00	0.60		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	45	614	522	200	777	661	238	0	208	171	0	170
V/C Ratio(X)	0.61	0.30	0.00	0.79	0.73	0.10	0.62	0.00	0.56	0.30	0.00	0.63
Avail Cap(c_a), veh/h	146	614	522	219	777	661	596	0	522	585	0	583
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	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.4	12.1	0.0	21.0	11.9	8.6	19.9	0.0	19.8	20.4	0.0	21.1
Incr Delay (d2), s/veh	12.5	1.3	0.0	16.2	6.0	0.3	2.6	0.0	2.4	1.0	0.0	3.8
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(-26165%),veh/ln	0.5	2.1	0.0	3.0	7.6	0.6	2.0	0.0	1.6	0.7	0.0	1.5
LnGrp Delay(d),s/veh	35.9	13.4	0.0	37.2	17.8	8.9	22.5	0.0	22.1	21.4	0.0	24.9
LnGrp LOS	D	B		D	B	A	C		C	C		C
Approach Vol, veh/h		212			790			264			159	
Approach Delay, s/veh		16.2			21.0			22.4			23.7	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.2	24.3		10.4	9.5	20.0		8.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	18.0		16.0	6.0	16.0		16.0
Max Q Clear Time (g_c+I1), s	2.7	14.4		5.7	6.2	5.6		4.8
Green Ext Time (p_c), s	0.0	1.7		0.8	0.0	3.7		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	20.8
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBU	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Vol, veh/h	0	87	222	0	231	42	0	60	160
Peak Hour Factor	0.92	0.83	0.83	0.92	0.85	0.85	0.92	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	105	267	0	272	49	0	67	178
Number of Lanes	0	1	0	0	0	1	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	13.4	13.6	10.6
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	85%	28%	0%
Vol Thru, %	15%	0%	27%
Vol Right, %	0%	72%	73%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	273	309	220
LT Vol	231	87	0
Through Vol	42	0	60
RT Vol	0	222	160
Lane Flow Rate	321	372	244
Geometry Grp	1	1	1
Degree of Util (X)	0.487	0.519	0.339
Departure Headway (Hd)	5.454	5.022	4.993
Convergence, Y/N	Yes	Yes	Yes
Cap	662	719	719
Service Time	3.487	3.055	3.028
HCM Lane V/C Ratio	0.485	0.517	0.339
HCM Control Delay	13.6	13.4	10.6
HCM Lane LOS	B	B	B
HCM 95th-tile Q	2.7	3	1.5

Intersection	
Int Delay, s/veh	0.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	2	302	2	2	412	17	0	1	2	3	0	18
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	328	2	2	448	18	0	1	2	3	0	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	466	0	0	330	0	0	805	805	329	796	796	457
Stage 1	-	-	-	-	-	-	334	334	-	461	461	-
Stage 2	-	-	-	-	-	-	471	471	-	335	335	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1095	-	-	1229	-	-	301	316	712	305	320	604
Stage 1	-	-	-	-	-	-	680	643	-	581	565	-
Stage 2	-	-	-	-	-	-	573	560	-	679	643	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1095	-	-	1229	-	-	290	315	712	302	319	604
Mov Cap-2 Maneuver	-	-	-	-	-	-	290	315	-	302	319	-
Stage 1	-	-	-	-	-	-	679	642	-	580	564	-
Stage 2	-	-	-	-	-	-	553	559	-	674	642	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.1	0	12.2	12.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1
Capacity (veh/h)	501	1229	-	-	1095	-	-	529
HCM Lane V/C Ratio	0.007	0.002	-	-	0.002	-	-	0.043
HCM Control Delay (s)	12.2	7.9	0	-	8.3	0	-	12.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	28.8

Movement	SEL	SET	NWT	NWR	SWL	SWR
Vol, veh/h	80	236	322	86	83	399
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	93	93	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	90	265	346	92	95	459

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	439	0	-	0	837	392
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	445	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1121	-	-	-	337	657
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	646	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1121	-	-	-	305	657
Mov Cap-2 Maneuver	-	-	-	-	305	-
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	585	-

Approach	SE	NW	SW
HCM Control Delay, s	2.1	0	68.8
HCM LOS			F

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	1121	-	548
HCM Lane V/C Ratio	-	-	0.08	-	1.011
HCM Control Delay (s)	-	-	8.5	0	68.8
HCM Lane LOS	-	-	A	A	F
HCM 95th %tile Q(veh)	-	-	0.3	-	14.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	28	224	0	0	293	233	0	0	0	291	0	56
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	35	277	0	0	308	245	0	0	-1	373	0	72
Adj No. of Lanes	0	1	0	0	1	1	0	1	0	1	1	0
Peak Hour Factor	0.81	0.81	0.81	0.95	0.95	0.95	0.90	0.90	0.90	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	200	606	0	0	683	1060	0	0	127	537	0	480
Arrive On Green	0.37	0.37	0.00	0.00	0.37	0.37	0.00	0.00	0.00	0.30	0.00	0.30
Sat Flow, veh/h	96	1654	0	0	1863	1583	0	0	1583	1774	0	1583
Grp Volume(v), veh/h	312	0	0	0	308	245	0	0	-1	373	0	72
Grp Sat Flow(s),veh/h/ln	1749	0	0	0	1863	1583	0	0	1583	1774	0	1583
Q Serve(g_s), s	0.0	0.0	0.0	0.0	3.0	1.5	0.0	0.0	0.0	4.5	0.0	0.8
Cycle Q Clear(g_c), s	3.1	0.0	0.0	0.0	3.0	1.5	0.0	0.0	0.0	4.5	0.0	0.8
Prop In Lane	0.11		0.00	0.00		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	807	0	0	0	683	1060	0	0	0	537	0	480
V/C Ratio(X)	0.39	0.00	0.00	0.00	0.45	0.23	0.00	0.00	0.00	0.69	0.00	0.15
Avail Cap(c_a), veh/h	1359	0	0	0	1308	1592	0	0	0	1246	0	1112
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.8	0.0	0.0	0.0	5.8	1.6	0.0	0.0	0.0	7.4	0.0	6.2
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.0	0.5	0.1	0.0	0.0	0.0	1.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	1.6	0.0	0.0	0.0	1.6	1.3	0.0	0.0	0.0	2.4	0.0	0.4
LnGrp Delay(d),s/veh	6.1	0.0	0.0	0.0	6.3	1.7	0.0	0.0	0.0	9.1	0.0	6.3
LnGrp LOS	A				A	A				A		A
Approach Vol, veh/h		312			553			-1			445	
Approach Delay, s/veh		6.1			4.2			0.0			8.6	
Approach LOS		A			A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		0.0		12.9		11.3		12.9
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		4.0		17.0		17.0		17.0
Max Q Clear Time (g_c+I1), s		0.0		5.1		6.5		5.0
Green Ext Time (p_c), s		0.0		3.8		1.2		3.8

Intersection Summary	
HCM 2010 Ctrl Delay	6.2
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	73	148	275	62	127	49	312	307	112	49	257	93
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	87	176	265	76	155	60	322	316	115	52	273	99
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	1	2	0
Peak Hour Factor	0.84	0.84	0.84	0.82	0.82	0.82	0.97	0.97	0.97	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	125	366	311	96	230	89	416	703	597	74	473	168
Arrive On Green	0.07	0.20	0.20	0.05	0.18	0.18	0.23	0.38	0.38	0.04	0.18	0.18
Sat Flow, veh/h	1774	1863	1583	1774	1280	495	1774	1863	1583	1774	2563	909
Grp Volume(v), veh/h	87	176	265	76	0	215	322	316	115	52	186	186
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1775	1774	1863	1583	1774	1770	1702
Q Serve(g_s), s	2.3	4.1	3.9	2.1	0.0	5.5	8.2	6.2	2.4	1.4	4.7	4.8
Cycle Q Clear(g_c), s	2.3	4.1	3.9	2.1	0.0	5.5	8.2	6.2	2.4	1.4	4.7	4.8
Prop In Lane	1.00		1.00	1.00		0.28	1.00		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	125	366	311	96	0	320	416	703	597	74	326	314
V/C Ratio(X)	0.69	0.48	0.85	0.79	0.00	0.67	0.77	0.45	0.19	0.71	0.57	0.59
Avail Cap(c_a), veh/h	256	1231	1046	256	0	1173	513	1269	1079	256	950	914
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	17.3	4.7	22.6	0.0	18.5	17.3	11.3	10.1	22.9	18.0	18.1
Incr Delay (d2), s/veh	6.7	1.0	6.5	13.6	0.0	2.5	5.8	0.5	0.2	11.6	1.6	1.8
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(-26165%),veh/ln	1.4	2.2	3.3	1.4	0.0	2.9	4.7	3.2	1.1	0.9	2.4	2.4
LnGrp Delay(d),s/veh	28.7	18.2	11.2	36.2	0.0	21.0	23.2	11.8	10.3	34.5	19.6	19.9
LnGrp LOS	C	B	B	D		C	C	B	B	C	B	B
Approach Vol, veh/h		528			291			753			424	
Approach Delay, s/veh		16.4			25.0			16.4			21.5	
Approach LOS		B			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.0	22.3	6.6	13.5	15.4	12.9	7.4	12.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	33.0	7.0	32.0	14.0	26.0	7.0	32.0
Max Q Clear Time (g_c+I1), s	3.4	8.2	4.1	6.1	10.2	6.8	4.3	7.5
Green Ext Time (p_c), s	0.0	3.4	0.0	2.2	1.3	2.1	0.6	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	18.8
HCM 2010 LOS	B

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												
Volume (veh/h)	36	195	20	24	164	22	11	13	65	15	46	120
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	43	232	24	27	186	25	12	14	71	16	50	130
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.84	0.84	0.84	0.88	0.88	0.88	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	360	37	47	299	40	25	29	146	26	81	211
Arrive On Green	0.06	0.22	0.22	0.03	0.19	0.19	0.12	0.12	0.12	0.19	0.19	0.19
Sat Flow, veh/h	1774	1661	172	1774	1608	216	203	237	1201	136	424	1102
Grp Volume(v), veh/h	43	0	256	27	0	211	97	0	0	196	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1832	1774	0	1825	1641	0	0	1661	0	0
Q Serve(g_s), s	0.8	0.0	4.6	0.5	0.0	3.8	2.0	0.0	0.0	3.9	0.0	0.0
Cycle Q Clear(g_c), s	0.8	0.0	4.6	0.5	0.0	3.8	2.0	0.0	0.0	3.9	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.12	0.12		0.73	0.08		0.66
Lane Grp Cap(c), veh/h	102	0	398	47	0	339	200	0	0	318	0	0
V/C Ratio(X)	0.42	0.00	0.64	0.58	0.00	0.62	0.49	0.00	0.00	0.62	0.00	0.00
Avail Cap(c_a), veh/h	295	0	1015	246	0	960	954	0	0	1058	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.4	0.0	12.9	17.4	0.0	13.5	14.8	0.0	0.0	13.4	0.0	0.0
Incr Delay (d2), s/veh	2.7	0.0	1.7	10.9	0.0	1.9	1.8	0.0	0.0	1.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	0.5	0.0	2.5	0.4	0.0	2.1	1.0	0.0	0.0	1.9	0.0	0.0
LnGrp Delay(d),s/veh	19.2	0.0	14.6	28.2	0.0	15.4	16.6	0.0	0.0	15.3	0.0	0.0
LnGrp LOS	B		B	C		B	B			B		
Approach Vol, veh/h		299			238			97			196	
Approach Delay, s/veh		15.3			16.9			16.6			15.3	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		8.4	4.9	11.8		10.9	6.1	10.7
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		21.0	5.0	20.0		23.0	6.0	19.0
Max Q Clear Time (g_c+I1), s		4.0	2.5	6.6		5.9	2.8	5.8
Green Ext Time (p_c), s		0.4	0.0	1.3		1.0	0.5	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	15.9
HCM 2010 LOS	B

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	5	57	64	5	161	107	42	634	22	106	506	9
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	6	68	76	6	196	130	43	654	23	113	538	10
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.82	0.82	0.82	0.97	0.97	0.97	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	44	182	192	40	230	149	183	913	32	257	1006	19
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.14	0.68	0.68	0.15	0.55	0.55
Sat Flow, veh/h	23	829	875	10	1047	680	1774	1789	63	1774	1823	34
Grp Volume(v), veh/h	150	0	0	332	0	0	43	0	677	113	0	548
Grp Sat Flow(s),veh/h/ln	1728	0	0	1737	0	0	1774	0	1852	1774	0	1857
Q Serve(g_s), s	0.0	0.0	0.0	3.6	0.0	0.0	2.1	0.0	21.9	5.6	0.0	18.0
Cycle Q Clear(g_c), s	7.2	0.0	0.0	17.7	0.0	0.0	2.1	0.0	21.9	5.6	0.0	18.0
Prop In Lane	0.04		0.51	0.02		0.39	1.00		0.03	1.00		0.02
Lane Grp Cap(c), veh/h	418	0	0	420	0	0	183	0	945	257	0	1025
V/C Ratio(X)	0.36	0.00	0.00	0.79	0.00	0.00	0.23	0.00	0.72	0.44	0.00	0.53
Avail Cap(c_a), veh/h	486	0	0	490	0	0	183	0	945	257	0	1025
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.86	0.00	0.86	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.1	0.0	0.0	36.1	0.0	0.0	38.0	0.0	11.1	37.5	0.0	13.7
Incr Delay (d2), s/veh	0.5	0.0	0.0	7.4	0.0	0.0	0.6	0.0	4.0	1.2	0.0	2.0
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(-26165%),veh/ln	3.5	0.0	0.0	9.4	0.0	0.0	1.0	0.0	11.9	2.8	0.0	9.7
LnGrp Delay(d),s/veh	32.6	0.0	0.0	43.6	0.0	0.0	38.6	0.0	15.1	38.6	0.0	15.7
LnGrp LOS	C			D			D		B	D		B
Approach Vol, veh/h		150			332			720			661	
Approach Delay, s/veh		32.6			43.6			16.5			19.6	
Approach LOS		C			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		25.1	17.9	53.0		25.1	13.9	57.0
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		25.0	10.0	49.0		25.0	6.0	53.0
Max Q Clear Time (g_c+I1), s		19.7	7.6	23.9		9.2	4.1	20.0
Green Ext Time (p_c), s		1.4	0.1	5.1		2.7	0.1	4.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.7
HCM 2010 LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	8	20	10	146	13	249	6	454	135	222	304	7
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	10	26	13	159	14	271	7	504	150	255	349	8
Adj No. of Lanes	0	1	0	0	1	1	1	1	1	1	1	0
Peak Hour Factor	0.77	0.77	0.77	0.92	0.92	0.92	0.90	0.90	0.90	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	13	34	17	204	18	751	380	602	511	621	831	19
Arrive On Green	0.04	0.04	0.04	0.12	0.12	0.12	0.21	0.32	0.32	0.35	0.46	0.46
Sat Flow, veh/h	360	935	468	1637	144	1583	1774	1863	1583	1774	1814	42
Grp Volume(v), veh/h	49	0	0	173	0	271	7	504	150	255	0	357
Grp Sat Flow(s),veh/h/ln	1762	0	0	1781	0	1583	1774	1863	1583	1774	0	1855
Q Serve(g_s), s	2.6	0.0	0.0	9.0	0.0	0.0	0.3	24.1	6.8	10.5	0.0	12.4
Cycle Q Clear(g_c), s	2.6	0.0	0.0	9.0	0.0	0.0	0.3	24.1	6.8	10.5	0.0	12.4
Prop In Lane	0.20		0.27	0.92		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	64	0	0	222	0	751	380	602	511	621	0	850
V/C Ratio(X)	0.77	0.00	0.00	0.78	0.00	0.36	0.02	0.84	0.29	0.41	0.00	0.42
Avail Cap(c_a), veh/h	294	0	0	297	0	818	380	602	511	621	0	850
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.88	0.00	0.88
Uniform Delay (d), s/veh	45.9	0.0	0.0	40.8	0.0	16.0	29.7	30.2	24.3	23.7	0.0	17.4
Incr Delay (d2), s/veh	17.5	0.0	0.0	9.1	0.0	0.3	0.0	13.1	1.5	0.4	0.0	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(-26165%),veh/ln	1.6	0.0	0.0	5.0	0.0	4.6	0.1	14.5	3.2	5.2	0.0	6.7
LnGrp Delay(d),s/veh	63.4	0.0	0.0	49.9	0.0	16.3	29.8	43.3	25.8	24.1	0.0	18.8
LnGrp LOS	E			D		B	C	D	C	C		B
Approach Vol, veh/h		49			444			661			612	
Approach Delay, s/veh		63.4			29.4			39.2			21.0	
Approach LOS		E			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		16.0	37.6	35.0		7.5	24.6	48.0
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	17.0	31.0		16.0	4.0	44.0
Max Q Clear Time (g_c+I1), s		11.0	12.5	26.1		4.6	2.3	14.4
Green Ext Time (p_c), s		0.9	0.3	1.7		0.1	0.1	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	31.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	10	44	84	185	35	69	75	514	10	51	589	230
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	14	48	120	157	100	75	82	591	11	55	640	250
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	1
Peak Hour Factor	0.70	0.92	0.70	0.92	0.92	0.92	0.92	0.87	0.87	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	61	152	248	138	104	105	768	14	105	785	889
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.06	0.42	0.42	0.06	0.42	0.42
Sat Flow, veh/h	128	439	1096	1774	990	742	1774	1823	34	1774	1863	1583
Grp Volume(v), veh/h	182	0	0	157	0	175	82	0	602	55	640	250
Grp Sat Flow(s),veh/h/ln	1663	0	0	1774	0	1732	1774	0	1857	1774	1863	1583
Q Serve(g_s), s	7.0	0.0	0.0	5.5	0.0	6.4	3.0	0.0	18.4	2.0	20.1	5.5
Cycle Q Clear(g_c), s	7.0	0.0	0.0	5.5	0.0	6.4	3.0	0.0	18.4	2.0	20.1	5.5
Prop In Lane	0.08		0.66	1.00		0.43	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	231	0	0	248	0	242	105	0	783	105	785	889
V/C Ratio(X)	0.79	0.00	0.00	0.63	0.00	0.72	0.78	0.00	0.77	0.53	0.82	0.28
Avail Cap(c_a), veh/h	401	0	0	427	0	417	107	0	783	107	785	889
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	0.0	0.0	27.0	0.0	27.3	30.8	0.0	16.4	30.3	16.9	7.6
Incr Delay (d2), s/veh	5.9	0.0	0.0	2.7	0.0	4.1	30.1	0.0	7.2	4.5	9.1	0.8
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(-26165%),veh/ln	3.6	0.0	0.0	2.9	0.0	3.3	2.4	0.0	10.9	1.1	12.3	3.3
LnGrp Delay(d),s/veh	33.6	0.0	0.0	29.6	0.0	31.4	61.0	0.0	23.6	34.8	26.0	8.4
LnGrp LOS	C			C		C	E		C	C	C	A
Approach Vol, veh/h		182			332			684			945	
Approach Delay, s/veh		33.6			30.6			28.1			21.9	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.9	32.0		13.2	7.9	32.0		13.3
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	28.0		16.0	4.0	28.0		16.0
Max Q Clear Time (g_c+I1), s	5.0	22.1		9.0	4.0	20.4		8.4
Green Ext Time (p_c), s	0.0	2.7		0.5	0.0	2.4		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	26.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	46	222	411	128	649	129	75	43	61	112	52	75
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	55	267	0	141	713	142	100	57	81	124	58	83
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	1	1	0
Peak Hour Factor	0.83	0.83	0.83	0.91	0.91	0.91	0.75	0.75	0.75	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	272	980	833	173	875	744	126	72	174	190	74	106
Arrive On Green	0.15	0.53	0.00	0.10	0.47	0.47	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1150	655	1583	1774	694	993
Grp Volume(v), veh/h	55	267	0	141	713	142	157	0	81	124	0	141
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1805	0	1583	1774	0	1687
Q Serve(g_s), s	2.7	7.9	0.0	7.8	32.9	5.2	8.5	0.0	4.8	6.7	0.0	8.1
Cycle Q Clear(g_c), s	2.7	7.9	0.0	7.8	32.9	5.2	8.5	0.0	4.8	6.7	0.0	8.1
Prop In Lane	1.00		1.00	1.00		1.00	0.64		1.00	1.00		0.59
Lane Grp Cap(c), veh/h	272	980	833	173	875	744	198	0	174	190	0	180
V/C Ratio(X)	0.20	0.27	0.00	0.82	0.81	0.19	0.79	0.00	0.47	0.65	0.00	0.78
Avail Cap(c_a), veh/h	272	980	833	266	875	744	289	0	253	284	0	270
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)	0.65	0.65	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.0	13.1	0.0	44.2	22.8	15.4	43.4	0.0	41.8	42.9	0.0	43.5
Incr Delay (d2), s/veh	0.2	0.4	0.0	10.7	8.2	0.6	9.0	0.0	1.9	3.8	0.0	8.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	1.3	4.2	0.0	4.4	18.8	2.4	4.7	0.0	2.2	3.5	0.0	4.2
LnGrp Delay(d),s/veh	37.2	13.6	0.0	55.0	31.0	16.0	52.4	0.0	43.7	46.6	0.0	51.8
LnGrp LOS	D	B		D	C	B	D		D	D		D
Approach Vol, veh/h		322			996			238			265	
Approach Delay, s/veh		17.6			32.2			49.5			49.4	
Approach LOS		B			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.3	51.0		15.0	13.7	56.6		14.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	5.0	47.0		16.0	15.0	37.0		16.0
Max Q Clear Time (g_c+I1), s	4.7	34.9		10.5	9.8	9.9		10.1
Green Ext Time (p_c), s	0.0	4.4		0.5	0.1	1.8		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	34.4
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	20.9
Intersection LOS	C

Movement	EBU	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Vol, veh/h	0	171	191	0	303	113	0	48	152
Peak Hour Factor	0.92	0.91	0.91	0.92	0.81	0.81	0.92	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	188	210	0	374	140	0	48	154
Number of Lanes	0	1	0	0	0	1	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	17.7	27.3	11.1
HCM LOS	C	D	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	73%	47%	0%
Vol Thru, %	27%	0%	24%
Vol Right, %	0%	53%	76%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	416	362	200
LT Vol	303	171	0
Through Vol	113	0	48
RT Vol	0	191	152
Lane Flow Rate	514	398	202
Geometry Grp	1	1	1
Degree of Util (X)	0.799	0.624	0.309
Departure Headway (Hd)	5.6	5.643	5.507
Convergence, Y/N	Yes	Yes	Yes
Cap	642	636	648
Service Time	3.653	3.704	3.578
HCM Lane V/C Ratio	0.801	0.626	0.312
HCM Control Delay	27.3	17.7	11.1
HCM Lane LOS	D	C	B
HCM 95th-tile Q	8	4.3	1.3

Intersection	
Int Delay, s/veh	0.5

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	6	371	0	1	400	6	1	1	5	10	0	7
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	403	0	1	435	7	1	1	5	11	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	441	0	0	403	0	0	860	859	403	860	856	438
Stage 1	-	-	-	-	-	-	416	416	-	440	440	-
Stage 2	-	-	-	-	-	-	444	443	-	420	416	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1119	-	-	1156	-	-	276	294	647	276	295	619
Stage 1	-	-	-	-	-	-	614	592	-	596	578	-
Stage 2	-	-	-	-	-	-	593	576	-	611	592	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1119	-	-	1156	-	-	271	291	647	271	292	619
Mov Cap-2 Maneuver	-	-	-	-	-	-	271	291	-	271	292	-
Stage 1	-	-	-	-	-	-	609	587	-	591	577	-
Stage 2	-	-	-	-	-	-	585	575	-	600	587	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.1	0	12.8	15.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NEL n1	NWL	NWT	NWR	SEL	SET	SER	SWL n1
Capacity (veh/h)	471	1156	-	-	1119	-	-	353
HCM Lane V/C Ratio	0.016	0.001	-	-	0.006	-	-	0.052
HCM Control Delay (s)	12.8	8.1	0	-	8.2	0	-	15.8
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	141.6

Movement	WBL	WBR	SEL	SET	NWT	NWR
Vol, veh/h	115	620	148	247	285	187
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	95	95	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	126	681	156	260	339	223

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1023	451	562	0	-	0
Stage 1	451	-	-	-	-	-
Stage 2	572	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	261	~ 608	1009	-	-	-
Stage 1	642	-	-	-	-	-
Stage 2	565	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	214	~ 608	1009	-	-	-
Mov Cap-2 Maneuver	214	-	-	-	-	-
Stage 1	642	-	-	-	-	-
Stage 2	463	-	-	-	-	-

Approach	WB	SE	NW
HCM Control Delay, s	$ 311.3	3.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NWT	NWR	WBLn1	SEL	SET
Capacity (veh/h)	-	-	497	1009	-
HCM Lane V/C Ratio	-	-	1.625	0.154	-
HCM Control Delay (s)	-	-	$ 311.3	9.2	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	45.5	0.5	-

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												
Volume (veh/h)	40	305	0	5	305	205	0	0	5	145	0	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	44	339	0	6	396	266	0	0	20	181	0	88
Adj No. of Lanes	0	1	0	1	1	1	0	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.77	0.77	0.77	0.25	0.25	0.25	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	453	0	253	597	1030	0	0	364	585	0	522
Arrive On Green	0.32	0.32	0.00	0.64	0.64	0.64	0.00	0.00	0.23	0.33	0.00	0.33
Sat Flow, veh/h	108	1415	0	1037	1863	1583	0	0	1583	1774	0	1583
Grp Volume(v), veh/h	383	0	0	6	396	266	0	0	20	181	0	88
Grp Sat Flow(s),veh/h/ln	1523	0	0	1037	1863	1583	0	0	1583	1774	0	1583
Q Serve(g_s), s	10.1	0.0	0.0	0.0	13.3	4.7	0.0	0.0	1.0	7.6	0.0	3.9
Cycle Q Clear(g_c), s	23.4	0.0	0.0	0.6	13.3	4.7	0.0	0.0	1.0	7.6	0.0	3.9
Prop In Lane	0.11		0.00	1.00		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	528	0	0	253	597	1030	0	0	364	585	0	523
V/C Ratio(X)	0.73	0.00	0.00	0.02	0.66	0.26	0.00	0.00	0.05	0.31	0.00	0.17
Avail Cap(c_a), veh/h	816	0	0	439	931	1314	0	0	364	585	0	523
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.52	0.52	0.52	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.6	0.0	0.0	12.3	14.6	3.7	0.0	0.0	30.0	25.0	0.0	23.8
Incr Delay (d2), s/veh	1.9	0.0	0.0	0.0	0.7	0.1	0.0	0.0	0.1	1.4	0.0	0.7
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(-26165%),veh/ln	10.0	0.0	0.0	0.1	6.7	3.9	0.0	0.0	0.4	3.9	0.0	1.8
LnGrp Delay(d),s/veh	32.5	0.0	0.0	12.3	15.3	3.7	0.0	0.0	30.1	26.4	0.0	24.5
LnGrp LOS	C			B	B	A			C	C		C
Approach Vol, veh/h		383			668			20			269	
Approach Delay, s/veh		32.5			10.7			30.1			25.7	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		27.0		36.0		37.0		36.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		5.0		50.0		33.0		50.0
Max Q Clear Time (g_c+I1), s		3.0		25.4		9.6		15.3
Green Ext Time (p_c), s		0.0		6.6		1.0		7.1

Intersection Summary	
HCM 2010 Ctrl Delay	20.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	155	110	185	180	180	215	175	355	105	75	470	155
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	176	125	210	240	240	287	211	428	127	89	560	185
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	1	1	1
Peak Hour Factor	0.88	0.88	0.88	0.75	0.75	0.75	0.83	0.83	0.83	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	577	491	177	232	278	284	689	586	106	503	427
Arrive On Green	0.07	0.21	0.21	0.10	0.30	0.30	0.16	0.37	0.37	0.06	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	774	925	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	176	125	210	240	0	527	211	428	127	89	560	185
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1699	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	9.8	5.6	7.5	10.0	0.0	30.0	11.3	18.8	3.9	5.0	27.0	9.7
Cycle Q Clear(g_c), s	9.8	5.6	7.5	10.0	0.0	30.0	11.3	18.8	3.9	5.0	27.0	9.7
Prop In Lane	1.00		1.00	1.00		0.54	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	195	577	491	177	0	510	284	689	586	106	503	427
V/C Ratio(X)	0.90	0.22	0.43	1.35	0.00	1.03	0.74	0.62	0.22	0.84	1.11	0.43
Avail Cap(c_a), veh/h	195	577	491	177	0	510	284	689	586	106	503	427
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.49	0.49	0.49	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	29.5	13.6	45.0	0.0	35.0	40.0	25.8	11.0	46.5	36.5	30.2
Incr Delay (d2), s/veh	23.0	0.1	0.3	191.1	0.0	48.8	10.1	4.2	0.8	41.2	75.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	6.1	2.9	3.3	14.3	0.0	20.9	6.4	10.4	1.8	3.6	24.3	4.6
LnGrp Delay(d),s/veh	68.8	29.6	13.9	236.1	0.0	83.8	50.1	29.9	11.9	87.7	111.5	33.3
LnGrp LOS	F	C	B	F		F	D	C	B	F	F	C
Approach Vol, veh/h		511			767			766			834	
Approach Delay, s/veh		36.6			131.5			32.5			91.6	
Approach LOS		D			F			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	41.0	14.0	35.0	20.0	31.0	15.0	34.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	37.0	10.0	31.0	16.0	27.0	11.0	30.0
Max Q Clear Time (g_c+I1), s	7.0	20.8	12.0	9.5	13.3	29.0	11.8	32.0
Green Ext Time (p_c), s	0.0	2.8	0.0	1.9	0.2	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	76.7
HCM 2010 LOS	E

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	10	55	10	115	20	635	5	155	30	465	520	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	15	83	15	121	21	668	6	174	34	505	565	5
Adj No. of Lanes	0	1	0	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.95	0.95	0.95	0.89	0.89	0.89	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	20	111	20	331	57	833	11	262	51	549	878	8
Arrive On Green	0.08	0.08	0.08	0.22	0.22	0.22	0.01	0.17	0.17	0.31	0.48	0.48
Sat Flow, veh/h	240	1328	240	1522	264	1583	1774	1515	296	1774	1844	16
Grp Volume(v), veh/h	113	0	0	142	0	668	6	0	208	505	0	570
Grp Sat Flow(s),veh/h/ln	1808	0	0	1787	0	1583	1774	0	1811	1774	0	1860
Q Serve(g_s), s	4.5	0.0	0.0	5.0	0.0	16.0	0.2	0.0	7.9	20.3	0.0	17.1
Cycle Q Clear(g_c), s	4.5	0.0	0.0	5.0	0.0	16.0	0.2	0.0	7.9	20.3	0.0	17.1
Prop In Lane	0.13		0.13	0.85		1.00	1.00		0.16	1.00		0.01
Lane Grp Cap(c), veh/h	151	0	0	388	0	833	11	0	313	549	0	885
V/C Ratio(X)	0.75	0.00	0.00	0.37	0.00	0.80	0.54	0.00	0.66	0.92	0.00	0.64
Avail Cap(c_a), veh/h	393	0	0	388	0	833	96	0	418	602	0	959
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.0	0.0	0.0	24.5	0.0	14.3	36.5	0.0	28.5	24.6	0.0	14.6
Incr Delay (d2), s/veh	7.2	0.0	0.0	0.6	0.0	5.7	35.0	0.0	2.4	18.7	0.0	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(-26165%),veh/ln	2.6	0.0	0.0	2.5	0.0	12.2	0.2	0.0	4.1	12.7	0.0	9.0
LnGrp Delay(d),s/veh	40.3	0.0	0.0	25.1	0.0	19.9	71.5	0.0	30.9	43.3	0.0	15.9
LnGrp LOS	D			C		B	F		C	D		B
Approach Vol, veh/h		113			810			214			1075	
Approach Delay, s/veh		40.3			20.9			32.0			28.8	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		20.0	26.8	16.8		10.1	4.5	39.1
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	25.0	17.0		16.0	4.0	38.0
Max Q Clear Time (g_c+I1), s		18.0	22.3	9.9		6.5	2.2	19.1
Green Ext Time (p_c), s		0.0	0.5	2.8		0.3	0.0	5.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.8
HCM 2010 LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	30	230	330	110	670	55	125	55	170	55	45	35
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	32	245	0	120	728	60	151	66	205	65	53	41
Adj No. of Lanes	1	1	1	1	2	0	0	1	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.83	0.83	0.83	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	813	691	152	1641	135	208	91	263	148	81	63
Arrive On Green	0.03	0.44	0.00	0.06	0.33	0.33	0.17	0.17	0.17	0.08	0.08	0.08
Sat Flow, veh/h	1774	1863	1583	1774	3311	273	1253	548	1583	1774	975	754
Grp Volume(v), veh/h	32	245	0	120	389	399	217	0	205	65	0	94
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1770	1815	1800	0	1583	1774	0	1730
Q Serve(g_s), s	1.3	6.0	0.0	4.7	12.1	12.1	8.0	0.0	8.7	2.4	0.0	3.7
Cycle Q Clear(g_c), s	1.3	6.0	0.0	4.7	12.1	12.1	8.0	0.0	8.7	2.4	0.0	3.7
Prop In Lane	1.00		1.00	1.00		0.15	0.70		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	47	813	691	152	877	899	299	0	263	148	0	144
V/C Ratio(X)	0.68	0.30	0.00	0.79	0.44	0.44	0.73	0.00	0.78	0.44	0.00	0.65
Avail Cap(c_a), veh/h	101	813	691	152	877	899	411	0	362	405	0	395
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.94	0.94	0.94	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.8	12.8	0.0	32.4	15.8	15.8	27.7	0.0	28.0	30.5	0.0	31.1
Incr Delay (d2), s/veh	15.9	1.0	0.0	22.5	1.5	1.5	4.0	0.0	7.2	2.0	0.0	4.9
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(-26165%),veh/ln	0.8	3.3	0.0	3.2	6.3	6.4	4.3	0.0	4.3	1.3	0.0	1.9
LnGrp Delay(d),s/veh	49.7	13.8	0.0	54.8	17.3	17.3	31.7	0.0	35.2	32.6	0.0	36.0
LnGrp LOS	D	B		D	B	B	C		D	C		D
Approach Vol, veh/h		277			908			422			159	
Approach Delay, s/veh		17.9			22.3			33.4			34.6	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.9	38.7		15.6	10.0	34.5		9.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	18.0		16.0	6.0	16.0		16.0
Max Q Clear Time (g_c+I1), s	3.3	14.1		10.7	6.7	8.0		5.7
Green Ext Time (p_c), s	0.0	2.2		0.9	0.0	3.9		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	25.4
HCM 2010 LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	95	275	90	25	260	125	40	20	20	205	70	525
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	107	309	98	27	280	134	43	22	22	236	76	0
Adj No. of Lanes	1	2	0	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.92	0.92	0.93	0.93	0.92	0.92	0.92	0.87	0.92	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	137	1414	441	41	890	757	57	102	87	286	342	291
Arrive On Green	0.03	0.18	0.18	0.02	0.48	0.48	0.03	0.05	0.05	0.16	0.18	0.00
Sat Flow, veh/h	1774	2658	828	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	107	204	203	27	280	134	43	22	22	236	76	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1717	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	4.2	6.9	7.1	1.1	6.5	3.4	1.7	0.8	0.9	9.0	2.4	0.0
Cycle Q Clear(g_c), s	4.2	6.9	7.1	1.1	6.5	3.4	1.7	0.8	0.9	9.0	2.4	0.0
Prop In Lane	1.00		0.48	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	137	941	913	41	890	757	57	102	87	286	342	291
V/C Ratio(X)	0.78	0.22	0.22	0.65	0.31	0.18	0.75	0.22	0.25	0.82	0.22	0.00
Avail Cap(c_a), veh/h	152	941	913	127	890	757	127	426	362	405	718	611
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.5	16.4	16.4	33.9	11.2	10.4	33.6	31.6	31.7	28.4	24.3	0.0
Incr Delay (d2), s/veh	19.1	0.5	0.5	16.0	0.9	0.5	17.5	1.0	1.5	9.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	2.8	3.5	3.5	0.7	3.5	1.6	1.1	0.4	0.4	5.1	1.3	0.0
LnGrp Delay(d),s/veh	52.6	16.8	17.0	49.9	12.2	10.9	51.1	32.7	33.2	37.5	24.6	0.0
LnGrp LOS	D	B	B	D	B	B	D	C	C	D	C	
Approach Vol, veh/h		514			441			87			312	
Approach Delay, s/veh		24.3			14.1			41.9			34.4	
Approach LOS		C			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	37.4	15.3	7.8	5.6	41.2	6.3	16.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	16.0	16.0	16.0	5.0	17.0	5.0	27.0
Max Q Clear Time (g_c+I1), s	6.2	8.5	11.0	2.9	3.1	9.1	3.7	4.4
Green Ext Time (p_c), s	0.0	2.8	0.3	0.4	0.0	2.9	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	24.4
HCM 2010 LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	80	315	255	130	200	125
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	96	380	300	153	222	139
Adj No. of Lanes	0	0	1	1	1	0
Peak Hour Factor	0.83	0.83	0.85	0.85	0.90	0.90
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	99	393	359	1011	283	177
Arrive On Green	0.30	0.30	0.20	0.54	0.26	0.26
Sat Flow, veh/h	326	1290	1774	1863	1073	672
Grp Volume(v), veh/h	477	0	300	153	0	361
Grp Sat Flow(s),veh/h/ln	1619	0	1774	1863	0	1744
Q Serve(g_s), s	15.2	0.0	8.5	2.1	0.0	10.1
Cycle Q Clear(g_c), s	15.2	0.0	8.5	2.1	0.0	10.1
Prop In Lane	0.20	0.80	1.00			0.39
Lane Grp Cap(c), veh/h	493	0	359	1011	0	461
V/C Ratio(X)	0.97	0.00	0.84	0.15	0.00	0.78
Avail Cap(c_a), veh/h	493	0	439	1278	0	631
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.0	0.0	20.1	6.0	0.0	17.9
Incr Delay (d2), s/veh	32.0	0.0	11.1	0.1	0.0	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	11.1	0.0	5.3	1.1	0.0	5.4
LnGrp Delay(d),s/veh	50.0	0.0	31.2	6.0	0.0	22.4
LnGrp LOS	D		C	A		C
Approach Vol, veh/h	477			453	361	
Approach Delay, s/veh	50.0			22.7	22.4	
Approach LOS	D			C	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		32.5		20.0	14.6	17.9		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		36.0		16.0	13.0	19.0		
Max Q Clear Time (g_c+I1), s		4.1		17.2	10.5	12.1		
Green Ext Time (p_c), s		3.5		0.0	0.2	1.8		

Intersection Summary	
HCM 2010 Ctrl Delay	32.7
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	8.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	60	155	400	115	50	120
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	65	65	66	66
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	71	182	615	177	76	182

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	792	0	-	0	1028	704
Stage 1	-	-	-	-	704	-
Stage 2	-	-	-	-	324	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	829	-	-	-	259	437
Stage 1	-	-	-	-	490	-
Stage 2	-	-	-	-	733	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	829	-	-	-	234	437
Mov Cap-2 Maneuver	-	-	-	-	234	-
Stage 1	-	-	-	-	490	-
Stage 2	-	-	-	-	663	-

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	39.7
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	829	-	-	-	348
HCM Lane V/C Ratio	0.085	-	-	-	0.74
HCM Control Delay (s)	9.7	0	-	-	39.7
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0.3	-	-	-	5.7

Intersection	
Int Delay, s/veh	3.6

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	125	0	5	35	165	635	10	5	865	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	80	80	80	94	94	94	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	142	0	6	44	176	676	11	5	951	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2021	2001	953	2067	1999	681	956	0	0	686	0	0
Stage 1	964	964	-	1032	1032	-	-	-	-	-	-	-
Stage 2	1057	1037	-	1035	967	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	43	60	314	40	60	450	719	-	-	908	-	-
Stage 1	307	334	-	281	310	-	-	-	-	-	-	-
Stage 2	272	308	-	280	333	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	28	45	314	18	45	450	719	-	-	908	-	-
Mov Cap-2 Maneuver	28	45	-	18	45	-	-	-	-	-	-	-
Stage 1	232	332	-	212	234	-	-	-	-	-	-	-
Stage 2	180	233	-	152	331	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	25.6	27.1	2.4	0.1
HCM LOS	D	D		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	719	-	-	212	314	908	-	-
HCM Lane V/C Ratio	0.244	-	-	0.236	0.452	0.006	-	-
HCM Control Delay (s)	11.6	-	-	27.1	25.6	9	-	-
HCM Lane LOS	B	-	-	D	D	A	-	-
HCM 95th %tile Q(veh)	1	-	-	0.9	2.2	0	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	5	545	5	5	755	35	0	0	5	50	0	15
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	592	5	5	821	38	0	0	5	54	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	859	0	0	598	0	0	1465	1476	595	1460	1460	840
Stage 1	-	-	-	-	-	-	606	606	-	851	851	-
Stage 2	-	-	-	-	-	-	859	870	-	609	609	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	782	-	-	979	-	-	106	126	504	107	129	365
Stage 1	-	-	-	-	-	-	484	487	-	355	376	-
Stage 2	-	-	-	-	-	-	351	369	-	482	485	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	782	-	-	979	-	-	100	123	504	104	126	365
Mov Cap-2 Maneuver	-	-	-	-	-	-	100	123	-	104	126	-
Stage 1	-	-	-	-	-	-	479	482	-	351	372	-
Stage 2	-	-	-	-	-	-	332	365	-	472	480	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.1	0.1	12.2	66
HCM LOS			B	F

Minor Lane/Major Mvmt	NEL n1	NWL	NWT	NWR	SEL	SET	SER	SWL n1
Capacity (veh/h)	504	979	-	-	782	-	-	125
HCM Lane V/C Ratio	0.011	0.006	-	-	0.007	-	-	0.565
HCM Control Delay (s)	12.2	8.7	0	-	9.6	0	-	66
HCM Lane LOS	B	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	2.8

Intersection	
Int Delay, s/veh	0.8

Movement	WBR	SEL	SWL	SWR
Vol, veh/h	810	615	5	5
Conflicting Peds, #/hr	0	0	0	0
Sign Control	Free	Free	Stop	Stop
RT Channelized	-	None	-	None
Storage Length	0	0	0	-
Veh in Median Storage, #	0	0	0	-
Grade, %	0	0	0	-
Peak Hour Factor	95	94	25	25
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	853	654	20	20

Major/Minor	Major2	Major1	Minor2	
Conflicting Flow All	0	858	1520	855
Stage 1	-	-	855	-
Stage 2	-	-	665	-
Critical Hdwy	-	4.12	6.42	6.22
Critical Hdwy Stg 1	-	-	5.42	-
Critical Hdwy Stg 2	-	-	5.42	-
Follow-up Hdwy	-	2.218	3.518	3.318
Pot Cap-1 Maneuver	-	783	131	358
Stage 1	-	-	417	-
Stage 2	-	-	511	-
Platoon blocked, %	-			
Mov Cap-1 Maneuver	-	783	130	358
Mov Cap-2 Maneuver	-	-	130	-
Stage 1	-	-	417	-
Stage 2	-	-	506	-

Approach	WB	SE	SW
HCM Control Delay, s	0	0.1	28.8
HCM LOS			D

Minor Lane/Major Mvmt	WBR	WBR2	SEL2	SEL	SWLn1
Capacity (veh/h)	-	-	783	-	191
HCM Lane V/C Ratio	-	-	0.007	-	0.209
HCM Control Delay (s)	-	-	9.6	0	28.8
HCM Lane LOS	-	-	A	A	D
HCM 95th %tile Q(veh)	-	-	0	-	0.8

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	SET	SER	NWL	NWT
Vol, veh/h	5	45	605	10	45	815
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	95	95	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	51	637	11	49	886

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1626	642	0	0	647	0
Stage 1	642	-	-	-	-	-
Stage 2	984	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	112	474	-	-	939	-
Stage 1	524	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	106	474	-	-	939	-
Mov Cap-2 Maneuver	106	-	-	-	-	-
Stage 1	524	-	-	-	-	-
Stage 2	343	-	-	-	-	-

Approach	EB	SE	NW
HCM Control Delay, s	17.2	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NWL	NWT	EBLn1	SET	SER
Capacity (veh/h)	939	-	352	-	-
HCM Lane V/C Ratio	0.052	-	0.16	-	-
HCM Control Delay (s)	9	-	17.2	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	60	350	0	0	270	245	0	0	5	295	0	65
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	74	432	0	0	284	258	0	0	16	378	0	83
Adj No. of Lanes	0	1	0	1	1	1	0	1	0	1	1	0
Peak Hour Factor	0.81	0.81	0.81	0.95	0.95	0.95	0.25	0.25	0.25	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	170	589	0	193	717	1047	0	0	26	491	0	438
Arrive On Green	0.38	0.38	0.00	0.00	0.38	0.38	0.00	0.00	0.02	0.28	0.00	0.28
Sat Flow, veh/h	153	1532	0	952	1863	1583	0	0	1583	1774	0	1583
Grp Volume(v), veh/h	506	0	0	0	284	258	0	0	16	378	0	83
Grp Sat Flow(s),veh/h/ln	1685	0	0	952	1863	1583	0	0	1583	1774	0	1583
Q Serve(g_s), s	4.5	0.0	0.0	0.0	4.1	2.5	0.0	0.0	0.4	7.3	0.0	1.5
Cycle Q Clear(g_c), s	9.5	0.0	0.0	0.0	4.1	2.5	0.0	0.0	0.4	7.3	0.0	1.5
Prop In Lane	0.15		0.00	1.00		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	759	0	0	193	717	1047	0	0	26	491	0	438
V/C Ratio(X)	0.67	0.00	0.00	0.00	0.40	0.25	0.00	0.00	0.62	0.77	0.00	0.19
Avail Cap(c_a), veh/h	873	0	0	262	850	1161	0	0	170	810	0	723
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.8	0.0	0.0	0.0	8.3	2.6	0.0	0.0	18.2	12.4	0.0	10.3
Incr Delay (d2), s/veh	1.6	0.0	0.0	0.0	0.4	0.1	0.0	0.0	21.5	2.6	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	4.8	0.0	0.0	0.0	2.1	2.0	0.0	0.0	0.3	3.9	0.0	0.7
LnGrp Delay(d),s/veh	11.4	0.0	0.0	0.0	8.7	2.7	0.0	0.0	39.7	15.0	0.0	10.5
LnGrp LOS	B				A	A			D	B		B
Approach Vol, veh/h		506			542			16			461	
Approach Delay, s/veh		11.4			5.8			39.7			14.2	
Approach LOS		B			A			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		4.6		18.3		14.3		18.3
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		4.0		17.0		17.0		17.0
Max Q Clear Time (g_c+I1), s		2.4		11.5		9.3		6.1
Green Ext Time (p_c), s		0.0		2.9		1.1		4.6

Intersection Summary	
HCM 2010 Ctrl Delay	10.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	110	265	245	140	135	80	280	440	340	115	270	105
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	131	315	230	171	165	98	289	454	351	122	287	112
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	1	1	1
Peak Hour Factor	0.84	0.84	0.84	0.82	0.82	0.82	0.97	0.97	0.97	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	249	425	361	194	216	128	370	605	514	155	380	323
Arrive On Green	0.14	0.23	0.23	0.11	0.20	0.20	0.21	0.32	0.32	0.09	0.20	0.20
Sat Flow, veh/h	1774	1863	1583	1774	1097	651	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	131	315	230	171	0	263	289	454	351	122	287	112
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1748	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	4.4	10.1	4.8	6.1	0.0	9.1	9.9	13.9	12.3	4.3	9.3	3.9
Cycle Q Clear(g_c), s	4.4	10.1	4.8	6.1	0.0	9.1	9.9	13.9	12.3	4.3	9.3	3.9
Prop In Lane	1.00		1.00	1.00		0.37	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	249	425	361	194	0	345	370	605	514	155	380	323
V/C Ratio(X)	0.53	0.74	0.64	0.88	0.00	0.76	0.78	0.75	0.68	0.78	0.76	0.35
Avail Cap(c_a), veh/h	249	931	792	194	0	874	388	960	816	194	757	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	22.9	7.2	28.1	0.0	24.3	24.0	19.3	18.7	28.6	24.0	21.8
Incr Delay (d2), s/veh	2.0	2.6	1.9	34.2	0.0	3.5	9.5	1.9	1.6	15.3	3.1	0.6
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(-26165%),veh/ln	2.3	5.5	2.2	4.8	0.0	4.7	5.8	7.4	5.6	2.8	5.1	1.7
LnGrp Delay(d),s/veh	27.6	25.5	9.1	62.3	0.0	27.8	33.5	21.2	20.4	43.9	27.1	22.5
LnGrp LOS	C	C	A	E		C	C	C	C	D	C	C
Approach Vol, veh/h		676			434			1094			521	
Approach Delay, s/veh		20.3			41.4			24.2			30.0	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	24.8	11.0	18.6	17.3	17.1	13.0	16.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	33.0	7.0	32.0	14.0	26.0	7.0	32.0
Max Q Clear Time (g_c+I1), s	6.3	15.9	8.1	12.1	11.9	11.3	6.4	11.1
Green Ext Time (p_c), s	0.0	4.9	0.0	2.6	1.2	1.8	0.2	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	27.1
HCM 2010 LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	10	20	15	175	15	705	10	540	135	445	440	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	13	26	19	190	16	766	11	600	150	511	506	6
Adj No. of Lanes	0	1	0	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.77	0.77	0.77	0.92	0.92	0.92	0.90	0.90	0.90	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	17	34	25	299	25	703	19	475	119	465	1068	13
Arrive On Green	0.04	0.04	0.04	0.18	0.18	0.18	0.01	0.33	0.33	0.26	0.58	0.58
Sat Flow, veh/h	391	781	571	1642	138	1583	1774	1439	360	1774	1837	22
Grp Volume(v), veh/h	58	0	0	206	0	766	11	0	750	511	0	512
Grp Sat Flow(s),veh/h/ln	1742	0	0	1781	0	1583	1774	0	1799	1774	0	1859
Q Serve(g_s), s	2.9	0.0	0.0	9.4	0.0	16.0	0.5	0.0	29.0	23.0	0.0	14.0
Cycle Q Clear(g_c), s	2.9	0.0	0.0	9.4	0.0	16.0	0.5	0.0	29.0	23.0	0.0	14.0
Prop In Lane	0.22		0.33	0.92		1.00	1.00		0.20	1.00		0.01
Lane Grp Cap(c), veh/h	76	0	0	324	0	703	19	0	594	465	0	1081
V/C Ratio(X)	0.77	0.00	0.00	0.63	0.00	1.09	0.58	0.00	1.26	1.10	0.00	0.47
Avail Cap(c_a), veh/h	318	0	0	324	0	703	81	0	594	465	0	1081
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.6	0.0	0.0	33.2	0.0	24.4	43.2	0.0	29.4	32.4	0.0	10.6
Incr Delay (d2), s/veh	14.9	0.0	0.0	4.0	0.0	60.8	24.8	0.0	131.1	71.6	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	1.7	0.0	0.0	5.0	0.0	28.8	0.4	0.0	35.8	20.3	0.0	7.2
LnGrp Delay(d),s/veh	56.4	0.0	0.0	37.2	0.0	85.2	68.0	0.0	160.5	104.0	0.0	10.9
LnGrp LOS	F			D		F	F		F	F		B
Approach Vol, veh/h		58			972			761			1023	
Approach Delay, s/veh		56.4			75.0			159.2			57.4	
Approach LOS		E			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		20.0	27.0	33.0		7.8	4.9	55.1
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	23.0	29.0		16.0	4.0	48.0
Max Q Clear Time (g_c+I1), s		18.0	25.0	31.0		4.9	2.5	16.0
Green Ext Time (p_c), s		0.0	0.0	0.0		0.1	0.0	11.2

Intersection Summary	
HCM 2010 Ctrl Delay	91.0
HCM 2010 LOS	F

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	25	290	335	310	735	145	80	45	155	140	55	45
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	30	349	0	341	808	159	107	60	207	156	61	50
Adj No. of Lanes	1	1	1	1	2	0	0	1	1	1	1	0
Peak Hour Factor	0.83	0.83	0.83	0.91	0.91	0.91	0.75	0.75	0.75	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	42	645	549	369	1566	308	178	100	244	202	108	88
Arrive On Green	0.02	0.35	0.00	0.42	1.00	1.00	0.15	0.15	0.15	0.11	0.11	0.11
Sat Flow, veh/h	1774	1863	1583	1774	2950	580	1156	648	1583	1774	948	777
Grp Volume(v), veh/h	30	349	0	341	485	482	167	0	207	156	0	111
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1770	1760	1805	0	1583	1774	0	1726
Q Serve(g_s), s	1.5	13.6	0.0	16.4	0.0	0.0	7.8	0.0	11.4	7.7	0.0	5.5
Cycle Q Clear(g_c), s	1.5	13.6	0.0	16.4	0.0	0.0	7.8	0.0	11.4	7.7	0.0	5.5
Prop In Lane	1.00		1.00	1.00		0.33	0.64		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	42	645	549	369	939	935	278	0	244	202	0	196
V/C Ratio(X)	0.72	0.54	0.00	0.92	0.52	0.52	0.60	0.00	0.85	0.77	0.00	0.57
Avail Cap(c_a), veh/h	99	645	549	414	939	935	321	0	281	315	0	307
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.82	0.82	0.82	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.7	23.7	0.0	25.6	0.0	0.0	35.5	0.0	37.0	38.8	0.0	37.8
Incr Delay (d2), s/veh	20.7	3.2	0.0	21.7	1.7	1.7	2.4	0.0	18.8	6.2	0.0	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(-26165%),veh/ln	1.0	7.6	0.0	10.2	0.4	0.4	4.0	0.0	6.3	4.1	0.0	2.8
LnGrp Delay(d),s/veh	64.4	26.9	0.0	47.3	1.7	1.7	37.8	0.0	55.8	45.0	0.0	40.3
LnGrp LOS	E	C		D	A	A	D		E	D		D
Approach Vol, veh/h		379			1308			374			267	
Approach Delay, s/veh		29.9			13.6			47.8			43.1	
Approach LOS		C			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.1	51.8		17.9	22.7	35.2		14.2
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	5.0	37.0		16.0	21.0	21.0		16.0
Max Q Clear Time (g_c+I1), s	3.5	2.0		13.4	18.4	15.6		9.7
Green Ext Time (p_c), s	0.0	11.0		0.4	0.3	3.6		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	155	370	80	70	495	320	145	90	40	155	30	545
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	163	389	87	76	589	381	158	98	43	170	33	0
Adj No. of Lanes	1	2	0	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.92	0.92	0.84	0.84	0.92	0.92	0.92	0.91	0.92	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	177	1643	364	98	979	832	194	147	125	209	163	139
Arrive On Green	0.20	1.00	1.00	0.06	0.53	0.53	0.11	0.08	0.08	0.12	0.09	0.00
Sat Flow, veh/h	1774	2882	638	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	163	237	239	76	589	381	158	98	43	170	33	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1750	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	8.1	0.0	0.0	3.8	19.8	13.5	7.8	4.6	2.3	8.4	1.5	0.0
Cycle Q Clear(g_c), s	8.1	0.0	0.0	3.8	19.8	13.5	7.8	4.6	2.3	8.4	1.5	0.0
Prop In Lane	1.00		0.36	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	177	1009	998	98	979	832	194	147	125	209	163	139
V/C Ratio(X)	0.92	0.24	0.24	0.78	0.60	0.46	0.82	0.67	0.34	0.81	0.20	0.00
Avail Cap(c_a), veh/h	177	1009	998	177	979	832	296	331	281	315	352	299
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.78	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.6	0.0	0.0	42.0	14.8	13.3	39.2	40.3	39.2	38.7	38.1	0.0
Incr Delay (d2), s/veh	38.4	0.4	0.4	12.3	2.7	1.8	10.0	5.1	1.6	9.3	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	5.8	0.1	0.1	2.2	10.9	6.3	4.4	2.6	1.1	4.6	0.8	0.0
LnGrp Delay(d),s/veh	74.0	0.4	0.4	54.2	17.6	15.2	49.2	45.4	40.9	48.0	38.7	0.0
LnGrp LOS	F	A	A	D	B	B	D	D	D	D	D	
Approach Vol, veh/h		639			1046			299			203	
Approach Delay, s/veh		19.2			19.4			46.8			46.5	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	51.3	14.6	11.1	9.0	55.3	13.8	11.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	33.0	16.0	16.0	9.0	33.0	15.0	17.0
Max Q Clear Time (g_c+I1), s	10.1	21.8	10.4	6.6	5.8	2.0	9.8	3.5
Green Ext Time (p_c), s	0.0	6.2	0.2	0.5	0.0	10.2	0.2	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	25.6
HCM 2010 LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	150	250	500	315	160	200
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	165	275	617	389	162	202
Adj No. of Lanes	0	0	1	1	1	0
Peak Hour Factor	0.91	0.91	0.81	0.81	0.99	0.99
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	151	251	657	1217	175	218
Arrive On Green	0.24	0.24	0.37	0.65	0.23	0.23
Sat Flow, veh/h	617	1029	1774	1863	755	942
Grp Volume(v), veh/h	441	0	617	389	0	364
Grp Sat Flow(s),veh/h/ln	1650	0	1774	1863	0	1697
Q Serve(g_s), s	19.0	0.0	26.1	7.1	0.0	16.3
Cycle Q Clear(g_c), s	19.0	0.0	26.1	7.1	0.0	16.3
Prop In Lane	0.37	0.62	1.00			0.55
Lane Grp Cap(c), veh/h	403	0	657	1217	0	392
V/C Ratio(X)	1.09	0.00	0.94	0.32	0.00	0.93
Avail Cap(c_a), veh/h	403	0	706	1268	0	392
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.4	0.0	23.6	5.9	0.0	29.3
Incr Delay (d2), s/veh	72.9	0.0	19.6	0.2	0.0	28.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	16.7	0.0	16.3	3.6	0.0	10.6
LnGrp Delay(d),s/veh	102.3	0.0	43.3	6.1	0.0	57.4
LnGrp LOS	F		D	A		F
Approach Vol, veh/h	441			1006	364	
Approach Delay, s/veh	102.3			28.9	57.4	
Approach LOS	F			C	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		54.8		23.0	32.8	22.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		53.0		19.0	31.0	18.0		
Max Q Clear Time (g_c+I1), s		9.1		21.0	28.1	18.3		
Green Ext Time (p_c), s		5.7		0.0	0.7	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	52.5
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	50	580	235	20	20	160
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	88	88	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	690	267	23	22	174

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	290	0	-	0	1088	278
Stage 1	-	-	-	-	278	-
Stage 2	-	-	-	-	810	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1272	-	-	-	239	761
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	438	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1272	-	-	-	221	761
Mov Cap-2 Maneuver	-	-	-	-	221	-
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	404	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	13.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1272	-	-	-	599
HCM Lane V/C Ratio	0.047	-	-	-	0.327
HCM Control Delay (s)	8	0	-	-	13.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.4

Intersection	
Int Delay, s/veh	29.7

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	10	5	220	0	5	15	185	1035	10	5	680	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	82	82	82	97	97	97	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	6	262	0	6	18	191	1067	10	5	723	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2205	2198	729	2327	2199	1072	734	0	0	1077	0	0
Stage 1	739	739	-	1454	1454	-	-	-	-	-	-	-
Stage 2	1466	1459	-	873	745	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	32	45	423	26	45	268	871	-	-	647	-	-
Stage 1	409	424	-	162	195	-	-	-	-	-	-	-
Stage 2	159	194	-	345	421	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	21	35	423	7	35	268	871	-	-	647	-	-
Mov Cap-2 Maneuver	21	35	-	7	35	-	-	-	-	-	-	-
Stage 1	319	421	-	126	152	-	-	-	-	-	-	-
Stage 2	111	151	-	129	418	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	234.1	51.6	1.5	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	871	-	-	101	206	647	-	-
HCM Lane V/C Ratio	0.219	-	-	0.241	1.358	0.008	-	-
HCM Control Delay (s)	10.3	-	-	51.6	234.1	10.6	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.8	-	-	0.9	15.8	0	-	-

Intersection	
Int Delay, s/veh	1

Movement	WBR	SEL	SWL	SWR
Vol, veh/h	870	660	10	10
Conflicting Peds, #/hr	0	0	0	0
Sign Control	Free	Free	Stop	Stop
RT Channelized	-	None	-	None
Storage Length	0	0	0	-
Veh in Median Storage, #	0	0	0	-
Grade, %	0	0	0	-
Peak Hour Factor	92	86	50	50
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	946	767	20	20

Major/Minor	Major2	Major1	Minor2	
Conflicting Flow All	0	957	1742	951
Stage 1	-	-	951	-
Stage 2	-	-	791	-
Critical Hdwy	-	4.12	6.42	6.22
Critical Hdwy Stg 1	-	-	5.42	-
Critical Hdwy Stg 2	-	-	5.42	-
Follow-up Hdwy	-	2.218	3.518	3.318
Pot Cap-1 Maneuver	-	719	95	315
Stage 1	-	-	375	-
Stage 2	-	-	447	-
Platoon blocked, %	-			
Mov Cap-1 Maneuver	-	719	92	315
Mov Cap-2 Maneuver	-	-	92	-
Stage 1	-	-	375	-
Stage 2	-	-	434	-

Approach	WB	SE	SW
HCM Control Delay, s	0	0.2	40
HCM LOS			E

Minor Lane/Major Mvmt	WBR	WBR2	SEL2	SEL	SWLn1
Capacity (veh/h)	-	-	719	-	142
HCM Lane V/C Ratio	-	-	0.016	-	0.282
HCM Control Delay (s)	-	-	10.1	0	40
HCM Lane LOS	-	-	B	A	E
HCM 95th %tile Q(veh)	-	-	0	-	1.1

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	SET	SER	NWL	NWT
Vol, veh/h	10	90	665	10	50	875
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	87	87	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	129	764	11	54	951

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1830	770	0	0	776	0
Stage 1	770	-	-	-	-	-
Stage 2	1060	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	84	401	-	-	840	-
Stage 1	457	-	-	-	-	-
Stage 2	333	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	79	401	-	-	840	-
Mov Cap-2 Maneuver	79	-	-	-	-	-
Stage 1	457	-	-	-	-	-
Stage 2	312	-	-	-	-	-

Approach	EB	SE	NW
HCM Control Delay, s	29.7	0	0.5
HCM LOS	D		

Minor Lane/Major Mvmt	NWL	NWT	EBLn1	SET	SER
Capacity (veh/h)	840	-	285	-	-
HCM Lane V/C Ratio	0.065	-	0.501	-	-
HCM Control Delay (s)	9.6	-	29.7	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0.2	-	2.6	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	5	590	0	5	845	30	0	0	5	30	0	5
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	641	0	5	918	33	0	0	5	33	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	951	0	0	641	0	0	1600	1614	641	1601	1598	935
Stage 1	-	-	-	-	-	-	652	652	-	946	946	-
Stage 2	-	-	-	-	-	-	948	962	-	655	652	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	722	-	-	943	-	-	85	104	475	85	106	322
Stage 1	-	-	-	-	-	-	457	464	-	314	340	-
Stage 2	-	-	-	-	-	-	313	334	-	455	464	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	722	-	-	943	-	-	82	102	475	83	104	322
Mov Cap-2 Maneuver	-	-	-	-	-	-	82	102	-	83	104	-
Stage 1	-	-	-	-	-	-	452	459	-	311	336	-
Stage 2	-	-	-	-	-	-	304	330	-	445	459	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.1	0.1	12.7	68.2
HCM LOS			B	F

Minor Lane/Major Mvmt	NEL n1	NWL	NWT	NWR	SEL	SET	SER	SWL n1
Capacity (veh/h)	475	943	-	-	722	-	-	93
HCM Lane V/C Ratio	0.011	0.006	-	-	0.008	-	-	0.409
HCM Control Delay (s)	12.7	8.8	0	-	10	0	-	68.2
HCM Lane LOS	B	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	40	310	0	5	305	210	0	0	5	145	0	65
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	44	344	0	6	396	273	0	0	20	181	0	81
Adj No. of Lanes	0	1	0	0	1	1	0	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.77	0.77	0.77	0.25	0.25	0.25	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	459	0	39	598	1035	0	0	359	585	0	522
Arrive On Green	0.32	0.32	0.00	0.65	0.65	0.65	0.00	0.00	0.23	0.33	0.00	0.33
Sat Flow, veh/h	106	1419	0	8	1849	1583	0	0	1583	1774	0	1583
Grp Volume(v), veh/h	388	0	0	402	0	273	0	0	20	181	0	81
Grp Sat Flow(s),veh/h/ln	1525	0	0	1857	0	1583	0	0	1583	1774	0	1583
Q Serve(g_s), s	10.3	0.0	0.0	0.0	0.0	4.8	0.0	0.0	1.0	7.6	0.0	3.6
Cycle Q Clear(g_c), s	23.7	0.0	0.0	13.4	0.0	4.8	0.0	0.0	1.0	7.6	0.0	3.6
Prop In Lane	0.11		0.00	0.01		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	533	0	0	637	0	1035	0	0	359	585	0	523
V/C Ratio(X)	0.73	0.00	0.00	0.63	0.00	0.26	0.00	0.00	0.06	0.31	0.00	0.16
Avail Cap(c_a), veh/h	816	0	0	962	0	1314	0	0	359	585	0	523
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.57	0.00	0.57	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.4	0.0	0.0	14.3	0.0	3.6	0.0	0.0	30.3	25.0	0.0	23.7
Incr Delay (d2), s/veh	1.9	0.0	0.0	0.6	0.0	0.1	0.0	0.0	0.1	1.4	0.0	0.6
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(-26165%),veh/ln	10.1	0.0	0.0	6.8	0.0	4.0	0.0	0.0	0.4	3.9	0.0	1.7
LnGrp Delay(d),s/veh	32.3	0.0	0.0	14.9	0.0	3.6	0.0	0.0	30.4	26.4	0.0	24.3
LnGrp LOS	C			B		A			C	C		C
Approach Vol, veh/h		388			675			20			262	
Approach Delay, s/veh		32.3			10.3			30.4			25.7	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		26.7		36.3		37.0		36.3
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		5.0		50.0		33.0		50.0
Max Q Clear Time (g_c+I1), s		3.0		25.7		9.6		15.4
Green Ext Time (p_c), s		0.0		6.7		1.0		7.2

Intersection Summary	
HCM 2010 Ctrl Delay	20.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	170	115	175	140	165	200	180	370	105	75	460	175
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	193	131	199	187	220	267	217	446	127	89	548	208
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	1	1	1
Peak Hour Factor	0.88	0.88	0.88	0.75	0.75	0.75	0.83	0.83	0.83	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	577	491	177	230	279	284	689	586	106	503	427
Arrive On Green	0.07	0.21	0.21	0.10	0.30	0.30	0.16	0.37	0.37	0.06	0.27	0.27
Sat Flow, veh/h	1774	1863	1583	1774	767	931	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	193	131	199	187	0	487	217	446	127	89	548	208
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1698	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	10.9	5.8	7.1	10.0	0.0	28.1	11.7	19.8	3.9	5.0	27.0	11.0
Cycle Q Clear(g_c), s	10.9	5.8	7.1	10.0	0.0	28.1	11.7	19.8	3.9	5.0	27.0	11.0
Prop In Lane	1.00		1.00	1.00		0.55	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	195	577	491	177	0	510	284	689	586	106	503	427
V/C Ratio(X)	0.99	0.23	0.41	1.05	0.00	0.96	0.76	0.65	0.22	0.84	1.09	0.49
Avail Cap(c_a), veh/h	195	577	491	177	0	510	284	689	586	106	503	427
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.48	0.48	0.48	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.3	29.7	13.5	45.0	0.0	34.3	40.2	26.1	11.0	46.5	36.5	30.7
Incr Delay (d2), s/veh	41.5	0.1	0.3	82.6	0.0	29.0	11.7	4.7	0.8	41.2	66.6	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(-26165%),veh/ln	7.6	3.0	3.1	8.9	0.0	17.2	6.6	11.0	1.8	3.6	23.1	5.3
LnGrp Delay(d),s/veh	87.7	29.7	13.7	127.6	0.0	63.3	51.9	30.7	11.9	87.7	103.1	34.6
LnGrp LOS	F	C	B	F		F	D	C	B	F	F	C
Approach Vol, veh/h		523			674			790			845	
Approach Delay, s/veh		45.0			81.1			33.5			84.6	
Approach LOS		D			F			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	41.0	14.0	35.0	20.0	31.0	15.0	34.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	37.0	10.0	31.0	16.0	27.0	11.0	30.0
Max Q Clear Time (g_c+I1), s	7.0	21.8	12.0	9.1	13.7	29.0	12.9	30.1
Green Ext Time (p_c), s	0.0	2.9	0.0	2.0	0.2	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	62.2
HCM 2010 LOS	E

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	10	55	15	130	25	635	5	160	30	380	530	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	15	83	23	137	26	668	6	180	34	413	576	5
Adj No. of Lanes	0	1	0	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.95	0.95	0.95	0.89	0.89	0.89	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	20	111	31	348	66	785	11	278	52	469	812	7
Arrive On Green	0.09	0.09	0.09	0.23	0.23	0.23	0.01	0.18	0.18	0.26	0.44	0.44
Sat Flow, veh/h	222	1229	341	1502	285	1583	1774	1524	288	1774	1844	16
Grp Volume(v), veh/h	121	0	0	163	0	668	6	0	214	413	0	581
Grp Sat Flow(s),veh/h/ln	1792	0	0	1788	0	1583	1774	0	1812	1774	0	1860
Q Serve(g_s), s	4.6	0.0	0.0	5.3	0.0	16.0	0.2	0.0	7.6	15.4	0.0	17.6
Cycle Q Clear(g_c), s	4.6	0.0	0.0	5.3	0.0	16.0	0.2	0.0	7.6	15.4	0.0	17.6
Prop In Lane	0.12		0.19	0.84		1.00	1.00		0.16	1.00		0.01
Lane Grp Cap(c), veh/h	162	0	0	414	0	785	11	0	330	469	0	819
V/C Ratio(X)	0.75	0.00	0.00	0.39	0.00	0.85	0.54	0.00	0.65	0.88	0.00	0.71
Avail Cap(c_a), veh/h	415	0	0	414	0	785	103	0	446	642	0	1023
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.7	0.0	0.0	22.4	0.0	15.2	34.2	0.0	26.2	24.4	0.0	15.7
Incr Delay (d2), s/veh	6.8	0.0	0.0	0.6	0.0	8.8	34.6	0.0	2.1	10.4	0.0	1.7
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(-26165%),veh/ln	2.6	0.0	0.0	2.7	0.0	12.8	0.2	0.0	3.9	8.9	0.0	9.3
LnGrp Delay(d),s/veh	37.4	0.0	0.0	23.0	0.0	24.0	68.8	0.0	28.3	34.8	0.0	17.4
LnGrp LOS	D			C		C	E		C	C		B
Approach Vol, veh/h		121			831			220			994	
Approach Delay, s/veh		37.4			23.8			29.4			24.7	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		20.0	22.3	16.6		10.2	4.4	34.4
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	25.0	17.0		16.0	4.0	38.0
Max Q Clear Time (g_c+I1), s		18.0	17.4	9.6		6.6	2.2	19.6
Green Ext Time (p_c), s		0.0	0.8	3.0		0.4	0.0	5.1

Intersection Summary	
HCM 2010 Ctrl Delay	25.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	5	5	45	335	15	20	5	550	5	40	770	35
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	6	5	51	364	16	22	5	579	5	43	837	38
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	1
Peak Hour Factor	0.89	0.92	0.89	0.92	0.92	0.92	0.92	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	8	6	65	399	160	220	9	952	8	54	1009	1214
Arrive On Green	0.05	0.05	0.05	0.22	0.22	0.22	0.01	0.52	0.52	0.03	0.54	0.54
Sat Flow, veh/h	157	131	1332	1774	712	978	1774	1844	16	1774	1863	1583
Grp Volume(v), veh/h	62	0	0	364	0	38	5	0	584	43	837	38
Grp Sat Flow(s),veh/h/ln	1620	0	0	1774	0	1690	1774	0	1860	1774	1863	1583
Q Serve(g_s), s	3.4	0.0	0.0	17.8	0.0	1.6	0.3	0.0	19.7	2.1	33.3	0.5
Cycle Q Clear(g_c), s	3.4	0.0	0.0	17.8	0.0	1.6	0.3	0.0	19.7	2.1	33.3	0.5
Prop In Lane	0.10		0.82	1.00		0.58	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	79	0	0	399	0	380	9	0	961	54	1009	1214
V/C Ratio(X)	0.79	0.00	0.00	0.91	0.00	0.10	0.54	0.00	0.61	0.79	0.83	0.03
Avail Cap(c_a), veh/h	291	0	0	418	0	398	80	0	961	119	1009	1214
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	0.0	0.0	33.7	0.0	27.4	44.2	0.0	15.2	42.9	17.0	2.5
Incr Delay (d2), s/veh	15.6	0.0	0.0	23.6	0.0	0.1	41.0	0.0	2.9	22.3	7.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	1.9	0.0	0.0	11.3	0.0	0.8	0.2	0.0	10.8	1.4	19.2	0.4
LnGrp Delay(d),s/veh	57.5	0.0	0.0	57.2	0.0	27.5	85.2	0.0	18.0	65.2	24.9	2.5
LnGrp LOS	E			E		C	F		B	E	C	A
Approach Vol, veh/h		62			402			589			918	
Approach Delay, s/veh		57.5			54.4			18.6			25.8	
Approach LOS		E			D			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.5	52.3		8.3	6.7	50.0		24.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	48.0		16.0	6.0	46.0		21.0
Max Q Clear Time (g_c+I1), s	2.3	35.3		5.4	4.1	21.7		19.8
Green Ext Time (p_c), s	0.0	7.9		0.2	0.0	11.8		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	30.5
HCM 2010 LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	30	300	525	105	655	50	125	50	140	50	45	40
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	32	319	0	114	712	54	151	60	169	59	53	47
Adj No. of Lanes	1	1	1	1	2	0	0	1	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.83	0.83	0.83	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	834	709	146	1680	127	199	79	244	154	79	70
Arrive On Green	0.03	0.45	0.00	0.03	0.17	0.17	0.15	0.15	0.15	0.09	0.09	0.09
Sat Flow, veh/h	1774	1863	1583	1774	3335	253	1287	511	1583	1774	912	808
Grp Volume(v), veh/h	32	319	0	114	378	388	211	0	169	59	0	100
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1770	1818	1798	0	1583	1774	0	1720
Q Serve(g_s), s	1.3	8.0	0.0	4.5	13.4	13.4	7.9	0.0	7.1	2.2	0.0	3.9
Cycle Q Clear(g_c), s	1.3	8.0	0.0	4.5	13.4	13.4	7.9	0.0	7.1	2.2	0.0	3.9
Prop In Lane	1.00		1.00	1.00		0.14	0.72		1.00	1.00		0.47
Lane Grp Cap(c), veh/h	47	834	709	146	891	916	278	0	244	154	0	150
V/C Ratio(X)	0.68	0.38	0.00	0.78	0.42	0.42	0.76	0.00	0.69	0.38	0.00	0.67
Avail Cap(c_a), veh/h	101	834	709	152	891	916	411	0	362	405	0	393
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.64	0.64	0.00	0.93	0.93	0.93	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.8	12.9	0.0	33.4	20.1	20.1	28.4	0.0	28.0	30.2	0.0	31.0
Incr Delay (d2), s/veh	10.5	0.8	0.0	20.5	1.4	1.3	4.7	0.0	3.5	1.5	0.0	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	0.8	4.3	0.0	3.0	6.9	7.1	4.2	0.0	3.3	1.1	0.0	2.1
LnGrp Delay(d),s/veh	44.3	13.7	0.0	53.9	21.5	21.4	33.0	0.0	31.5	31.7	0.0	36.0
LnGrp LOS	D	B		D	C	C	C		C	C		D
Approach Vol, veh/h		351			880			380			159	
Approach Delay, s/veh		16.5			25.6			32.3			34.4	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.9	39.3		14.8	9.8	35.3		10.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	18.0		16.0	6.0	16.0		16.0
Max Q Clear Time (g_c+I1), s	3.3	15.4		9.9	6.5	10.0		5.9
Green Ext Time (p_c), s	0.0	1.6		0.9	0.0	3.3		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	26.1
HCM 2010 LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	110	290	95	25	235	120	40	20	20	215	65	535
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	124	326	103	27	253	129	43	22	22	247	71	0
Adj No. of Lanes	1	2	0	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.92	0.92	0.93	0.93	0.92	0.92	0.92	0.87	0.92	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	1400	435	41	864	734	57	102	86	297	353	300
Arrive On Green	0.03	0.17	0.17	0.02	0.46	0.46	0.03	0.05	0.05	0.17	0.19	0.00
Sat Flow, veh/h	1774	2660	827	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	124	215	214	27	253	129	43	22	22	247	71	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1717	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	4.9	7.3	7.5	1.1	5.9	3.3	1.7	0.8	0.9	9.4	2.2	0.0
Cycle Q Clear(g_c), s	4.9	7.3	7.5	1.1	5.9	3.3	1.7	0.8	0.9	9.4	2.2	0.0
Prop In Lane	1.00		0.48	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	931	903	41	864	734	57	102	86	297	353	300
V/C Ratio(X)	0.82	0.23	0.24	0.65	0.29	0.18	0.75	0.22	0.25	0.83	0.20	0.00
Avail Cap(c_a), veh/h	152	931	903	127	864	734	127	426	362	405	718	611
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.5	16.7	16.8	33.9	11.6	11.0	33.6	31.7	31.7	28.2	23.9	0.0
Incr Delay (d2), s/veh	25.7	0.5	0.6	16.0	0.9	0.5	17.5	1.1	1.5	10.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	3.5	3.7	3.7	0.7	3.2	1.6	1.1	0.4	0.4	5.4	1.2	0.0
LnGrp Delay(d),s/veh	59.1	17.3	17.4	49.9	12.5	11.5	51.1	32.7	33.3	38.4	24.2	0.0
LnGrp LOS	E	B	B	D	B	B	D	C	C	D	C	
Approach Vol, veh/h		553			409			87			318	
Approach Delay, s/veh		26.7			14.6			41.9			35.2	
Approach LOS		C			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	36.5	15.7	7.8	5.6	40.8	6.3	17.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	16.0	16.0	16.0	5.0	17.0	5.0	27.0
Max Q Clear Time (g_c+I1), s	6.9	7.9	11.4	2.9	3.1	9.5	3.7	4.2
Green Ext Time (p_c), s	0.0	2.9	0.3	0.4	0.0	2.8	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	26.0
HCM 2010 LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	65	345	240	145	225	95
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	78	416	282	171	250	106
Adj No. of Lanes	0	0	1	1	1	0
Peak Hour Factor	0.83	0.83	0.85	0.85	0.90	0.90
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	79	421	343	993	326	138
Arrive On Green	0.31	0.31	0.19	0.53	0.26	0.26
Sat Flow, veh/h	254	1354	1774	1863	1243	527
Grp Volume(v), veh/h	495	0	282	171	0	356
Grp Sat Flow(s),veh/h/ln	1611	0	1774	1863	0	1770
Q Serve(g_s), s	15.7	0.0	7.8	2.4	0.0	9.6
Cycle Q Clear(g_c), s	15.7	0.0	7.8	2.4	0.0	9.6
Prop In Lane	0.16	0.84	1.00			0.30
Lane Grp Cap(c), veh/h	502	0	343	993	0	464
V/C Ratio(X)	0.99	0.00	0.82	0.17	0.00	0.77
Avail Cap(c_a), veh/h	502	0	449	1305	0	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.6	0.0	19.9	6.2	0.0	17.5
Incr Delay (d2), s/veh	36.7	0.0	9.2	0.1	0.0	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	12.0	0.0	4.7	1.3	0.0	5.1
LnGrp Delay(d),s/veh	54.3	0.0	29.0	6.3	0.0	21.1
LnGrp LOS	D		C	A		C
Approach Vol, veh/h	495			453	356	
Approach Delay, s/veh	54.3			20.4	21.1	
Approach LOS	D			C	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		31.4		20.0	13.9	17.5		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		36.0		16.0	13.0	19.0		
Max Q Clear Time (g_c+I1), s		4.4		17.7	9.8	11.6		
Green Ext Time (p_c), s		3.6		0.0	0.3	1.9		

Intersection Summary	
HCM 2010 Ctrl Delay	33.5
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	164.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	35	135	60	145	355	135	10	10	15	65	70	75
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	65	65	65	92	92	92	66	66	66
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	159	71	223	546	208	11	11	16	98	106	114

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	754	0	0	229	0	0	1482	1476	194	1386	1408	650
Stage 1	-	-	-	-	-	-	276	276	-	1096	1096	-
Stage 2	-	-	-	-	-	-	1206	1200	-	290	312	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	856	-	-	1339	-	-	103	126	847	120	139	469
Stage 1	-	-	-	-	-	-	730	682	-	259	289	-
Stage 2	-	-	-	-	-	-	224	258	-	718	658	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	856	-	-	1339	-	-	-	84	847	~ 79	~ 92	469
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	84	-	~ 79	~ 92	-
Stage 1	-	-	-	-	-	-	690	644	-	245	203	-
Stage 2	-	-	-	-	-	-	57	181	-	654	622	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	1.9		$ 823.6
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	856	-	-	1339	-	-	120
HCM Lane V/C Ratio	-	0.048	-	-	0.167	-	-	2.652
HCM Control Delay (s)	-	9.4	0	-	8.2	0		$ 823.6
HCM Lane LOS	-	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	-	0.2	-	-	0.6	-	-	28.9

Notes

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

Intersection	
Int Delay, s/veh	3.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	0	120	0	5	45	170	635	10	10	795	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	80	80	80	94	94	94	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	136	0	6	56	181	676	11	11	874	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1972	1946	876	2010	1944	681	879	0	0	686	0	0
Stage 1	898	898	-	1043	1043	-	-	-	-	-	-	-
Stage 2	1074	1048	-	967	901	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	47	65	348	44	65	450	769	-	-	908	-	-
Stage 1	334	358	-	277	306	-	-	-	-	-	-	-
Stage 2	266	305	-	306	357	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	30	49	348	22	49	450	769	-	-	908	-	-
Mov Cap-2 Maneuver	30	49	-	22	49	-	-	-	-	-	-	-
Stage 1	255	354	-	212	234	-	-	-	-	-	-	-
Stage 2	173	233	-	184	353	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	21.9	24.4	2.3	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	769	-	-	247	348	908	-	-
HCM Lane V/C Ratio	0.235	-	-	0.253	0.392	0.012	-	-
HCM Control Delay (s)	11.1	-	-	24.4	21.9	9	-	-
HCM Lane LOS	B	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.9	-	-	1	1.8	0	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	5	455	5	5	755	40	0	0	5	50	0	30
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	495	5	5	821	43	0	0	5	54	0	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	864	0	0	500	0	0	1378	1383	497	1364	1364	842
Stage 1	-	-	-	-	-	-	508	508	-	853	853	-
Stage 2	-	-	-	-	-	-	870	875	-	511	511	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	779	-	-	1064	-	-	122	144	573	125	148	364
Stage 1	-	-	-	-	-	-	547	539	-	354	376	-
Stage 2	-	-	-	-	-	-	346	367	-	545	537	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	779	-	-	1064	-	-	110	141	573	122	145	364
Mov Cap-2 Maneuver	-	-	-	-	-	-	110	141	-	122	145	-
Stage 1	-	-	-	-	-	-	542	534	-	351	373	-
Stage 2	-	-	-	-	-	-	312	364	-	535	532	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.1	0.1	11.3	49.9
HCM LOS			B	E

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1
Capacity (veh/h)	573	1064	-	-	779	-	-	163
HCM Lane V/C Ratio	0.009	0.005	-	-	0.007	-	-	0.533
HCM Control Delay (s)	11.3	8.4	0	-	9.7	0	-	49.9
HCM Lane LOS	B	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	2.7

Intersection	
Int Delay, s/veh	2.1

Movement	WBR	SEL	SWL	SWR
Vol, veh/h	775	510	35	55
Conflicting Peds, #/hr	0	0	0	0
Sign Control	Free	Free	Stop	Stop
RT Channelized	-	None	-	None
Storage Length	0	0	0	-
Veh in Median Storage, #	0	0	0	-
Grade, %	0	0	0	-
Peak Hour Factor	95	94	92	92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	816	543	38	60

Major/Minor	Major2	Major1	Minor2	
Conflicting Flow All	0	832	1398	824
Stage 1	-	-	824	-
Stage 2	-	-	574	-
Critical Hdwy	-	4.12	6.42	6.22
Critical Hdwy Stg 1	-	-	5.42	-
Critical Hdwy Stg 2	-	-	5.42	-
Follow-up Hdwy	-	2.218	3.518	3.318
Pot Cap-1 Maneuver	-	801	155	373
Stage 1	-	-	431	-
Stage 2	-	-	563	-
Platoon blocked, %	-			
Mov Cap-1 Maneuver	-	801	151	373
Mov Cap-2 Maneuver	-	-	151	-
Stage 1	-	-	431	-
Stage 2	-	-	547	-

Approach	WB	SE	SW
HCM Control Delay, s	0	0.3	30.5
HCM LOS			D

Minor Lane/Major Mvmt	WBR	WBR2	SEL2	SEL	SWLn1
Capacity (veh/h)	-	-	801	-	237
HCM Lane V/C Ratio	-	-	0.02	-	0.413
HCM Control Delay (s)	-	-	9.6	0	30.5
HCM Lane LOS	-	-	A	A	D
HCM 95th %tile Q(veh)	-	-	0.1	-	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	60	360	0	0	275	245	0	0	5	290	0	65
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	74	444	0	0	289	258	0	0	16	372	0	83
Adj No. of Lanes	0	1	0	1	1	1	0	1	0	1	1	0
Peak Hour Factor	0.81	0.81	0.81	0.95	0.95	0.95	0.25	0.25	0.25	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	168	599	0	193	725	1049	0	0	26	485	0	432
Arrive On Green	0.39	0.39	0.00	0.00	0.39	0.39	0.00	0.00	0.02	0.27	0.00	0.27
Sat Flow, veh/h	149	1538	0	942	1863	1583	0	0	1583	1774	0	1583
Grp Volume(v), veh/h	518	0	0	0	289	258	0	0	16	372	0	83
Grp Sat Flow(s),veh/h/ln	1687	0	0	942	1863	1583	0	0	1583	1774	0	1583
Q Serve(g_s), s	4.7	0.0	0.0	0.0	4.2	2.5	0.0	0.0	0.4	7.2	0.0	1.5
Cycle Q Clear(g_c), s	9.7	0.0	0.0	0.0	4.2	2.5	0.0	0.0	0.4	7.2	0.0	1.5
Prop In Lane	0.14		0.00	1.00		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	767	0	0	193	725	1049	0	0	26	485	0	432
V/C Ratio(X)	0.68	0.00	0.00	0.00	0.40	0.25	0.00	0.00	0.62	0.77	0.00	0.19
Avail Cap(c_a), veh/h	872	0	0	255	848	1153	0	0	170	807	0	721
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.8	0.0	0.0	0.0	8.2	2.5	0.0	0.0	18.3	12.5	0.0	10.4
Incr Delay (d2), s/veh	1.8	0.0	0.0	0.0	0.4	0.1	0.0	0.0	21.5	2.6	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	5.0	0.0	0.0	0.0	2.2	2.0	0.0	0.0	0.3	3.9	0.0	0.7
LnGrp Delay(d),s/veh	11.5	0.0	0.0	0.0	8.6	2.7	0.0	0.0	39.7	15.1	0.0	10.6
LnGrp LOS	B				A	A			D	B		B
Approach Vol, veh/h		518			547			16			455	
Approach Delay, s/veh		11.5			5.8			39.7			14.3	
Approach LOS		B			A			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		4.6		18.5		14.2		18.5
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		4.0		17.0		17.0		17.0
Max Q Clear Time (g_c+I1), s		2.4		11.7		9.2		6.2
Green Ext Time (p_c), s		0.0		2.8		1.1		4.7

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	110	270	250	135	135	80	280	425	330	115	275	110
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	131	321	236	165	165	98	289	438	340	122	293	117
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	1	1	1
Peak Hour Factor	0.84	0.84	0.84	0.82	0.82	0.82	0.97	0.97	0.97	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	431	366	194	216	128	359	600	510	155	387	329
Arrive On Green	0.14	0.23	0.23	0.11	0.20	0.20	0.20	0.32	0.32	0.09	0.21	0.21
Sat Flow, veh/h	1774	1863	1583	1774	1097	651	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	131	321	236	165	0	263	289	438	340	122	293	117
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1748	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	4.4	10.3	5.0	5.9	0.0	9.1	9.9	13.4	11.9	4.3	9.5	4.1
Cycle Q Clear(g_c), s	4.4	10.3	5.0	5.9	0.0	9.1	9.9	13.4	11.9	4.3	9.5	4.1
Prop In Lane	1.00		1.00	1.00		0.37	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	254	431	366	194	0	345	359	600	510	155	387	329
V/C Ratio(X)	0.51	0.74	0.64	0.85	0.00	0.76	0.81	0.73	0.67	0.79	0.76	0.36
Avail Cap(c_a), veh/h	254	930	791	194	0	873	388	959	815	194	756	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.4	22.9	7.3	28.0	0.0	24.3	24.4	19.3	18.8	28.6	23.9	21.7
Incr Delay (d2), s/veh	1.8	2.6	1.9	28.6	0.0	3.5	11.1	1.7	1.5	15.3	3.1	0.7
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(-26165%),veh/ln	2.3	5.6	3.3	4.4	0.0	4.7	5.9	7.1	5.4	2.8	5.2	1.8
LnGrp Delay(d),s/veh	27.2	25.4	9.2	56.7	0.0	27.8	35.5	21.0	20.3	44.0	26.9	22.4
LnGrp LOS	C	C	A	F		C	D	C	C	D	C	C
Approach Vol, veh/h		688			428			1067			532	
Approach Delay, s/veh		20.2			38.9			24.7			29.8	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	24.6	11.0	18.8	17.0	17.3	13.2	16.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	33.0	7.0	32.0	14.0	26.0	7.0	32.0
Max Q Clear Time (g_c+I1), s	6.3	15.4	7.9	12.3	11.9	11.5	6.4	11.1
Green Ext Time (p_c), s	0.0	4.8	0.0	2.6	1.1	1.8	0.2	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	26.8
HCM 2010 LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	5	20	15	205	15	695	10	520	170	455	420	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	6	26	19	223	16	755	11	578	189	523	483	6
Adj No. of Lanes	0	1	0	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.77	0.77	0.77	0.92	0.92	0.92	0.90	0.90	0.90	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	8	34	25	304	22	707	19	447	146	467	1074	13
Arrive On Green	0.04	0.04	0.04	0.18	0.18	0.18	0.01	0.33	0.33	0.26	0.58	0.58
Sat Flow, veh/h	204	886	648	1661	119	1583	1774	1345	440	1774	1836	23
Grp Volume(v), veh/h	51	0	0	239	0	755	11	0	767	523	0	489
Grp Sat Flow(s),veh/h/ln	1738	0	0	1780	0	1583	1774	0	1785	1774	0	1859
Q Serve(g_s), s	2.5	0.0	0.0	11.1	0.0	16.0	0.5	0.0	29.0	23.0	0.0	12.9
Cycle Q Clear(g_c), s	2.5	0.0	0.0	11.1	0.0	16.0	0.5	0.0	29.0	23.0	0.0	12.9
Prop In Lane	0.12		0.37	0.93		1.00	1.00		0.25	1.00		0.01
Lane Grp Cap(c), veh/h	66	0	0	326	0	707	19	0	593	467	0	1087
V/C Ratio(X)	0.78	0.00	0.00	0.73	0.00	1.07	0.58	0.00	1.29	1.12	0.00	0.45
Avail Cap(c_a), veh/h	319	0	0	326	0	707	81	0	593	467	0	1087
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.6	0.0	0.0	33.6	0.0	24.2	43.0	0.0	29.2	32.2	0.0	10.2
Incr Delay (d2), s/veh	17.4	0.0	0.0	8.2	0.0	53.3	24.8	0.0	144.3	78.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	1.5	0.0	0.0	6.2	0.0	27.4	0.4	0.0	37.9	21.3	0.0	6.6
LnGrp Delay(d),s/veh	59.0	0.0	0.0	41.9	0.0	77.4	67.7	0.0	173.5	110.5	0.0	10.5
LnGrp LOS	F			D		F	F		F	F		B
Approach Vol, veh/h		51			994			778			1012	
Approach Delay, s/veh		59.0			68.9			172.0			62.2	
Approach LOS		E			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		20.0	27.0	33.0		7.3	4.9	55.1
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	23.0	29.0		16.0	4.0	48.0
Max Q Clear Time (g_c+I1), s		18.0	25.0	31.0		4.5	2.5	14.9
Green Ext Time (p_c), s		0.0	0.0	0.0		0.1	0.0	11.3

Intersection Summary	
HCM 2010 Ctrl Delay	94.6
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	5	15	90	145	15	45	45	630	5	50	840	190
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	7	16	129	158	16	49	49	724	6	54	913	207
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	1
Peak Hour Factor	0.70	0.92	0.70	0.92	0.92	0.92	0.92	0.87	0.87	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	9	19	157	198	45	138	62	802	7	301	1060	1078
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.04	0.43	0.43	0.17	0.57	0.57
Sat Flow, veh/h	74	170	1372	1774	405	1239	1774	1845	15	1774	1863	1583
Grp Volume(v), veh/h	152	0	0	158	0	65	49	0	730	54	913	207
Grp Sat Flow(s),veh/h/ln	1617	0	0	1774	0	1644	1774	0	1860	1774	1863	1583
Q Serve(g_s), s	8.7	0.0	0.0	8.2	0.0	3.4	2.6	0.0	34.5	2.5	39.1	4.5
Cycle Q Clear(g_c), s	8.7	0.0	0.0	8.2	0.0	3.4	2.6	0.0	34.5	2.5	39.1	4.5
Prop In Lane	0.05		0.85	1.00		0.75	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	185	0	0	198	0	184	62	0	808	301	1060	1078
V/C Ratio(X)	0.82	0.00	0.00	0.80	0.00	0.35	0.79	0.00	0.90	0.18	0.86	0.19
Avail Cap(c_a), veh/h	274	0	0	301	0	279	75	0	808	301	1060	1078
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	0.0	0.0	40.9	0.0	38.7	45.2	0.0	24.8	33.5	17.2	5.5
Incr Delay (d2), s/veh	11.7	0.0	0.0	8.3	0.0	1.2	35.2	0.0	15.3	1.3	9.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	4.5	0.0	0.0	4.5	0.0	1.6	1.9	0.0	21.1	1.3	22.5	2.8
LnGrp Delay(d),s/veh	52.6	0.0	0.0	49.2	0.0	39.9	80.4	0.0	40.2	34.9	26.4	5.9
LnGrp LOS	D			D		D	F		D	C	C	A
Approach Vol, veh/h		152			223			779			1174	
Approach Delay, s/veh		52.6			46.5			42.7			23.2	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.3	57.7		14.8	20.0	45.0		14.5
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	53.0		16.0	16.0	41.0		16.0
Max Q Clear Time (g_c+I1), s	4.6	41.1		10.7	4.5	36.5		10.2
Green Ext Time (p_c), s	0.0	8.9		0.3	0.1	3.8		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	33.9
HCM 2010 LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	25	315	430	315	855	140	105	45	145	125	55	50
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	30	380	0	346	940	154	140	60	193	139	61	56
Adj No. of Lanes	1	1	1	1	2	0	0	1	1	1	1	0
Peak Hour Factor	0.83	0.83	0.83	0.91	0.91	0.91	0.75	0.75	0.75	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	42	670	570	373	1666	273	186	80	233	186	94	86
Arrive On Green	0.02	0.36	0.00	0.42	1.00	1.00	0.15	0.15	0.15	0.10	0.10	0.10
Sat Flow, veh/h	1774	1863	1583	1774	3046	499	1260	540	1583	1774	896	822
Grp Volume(v), veh/h	30	380	0	346	546	548	200	0	193	139	0	117
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1770	1775	1800	0	1583	1774	0	1718
Q Serve(g_s), s	1.5	14.8	0.0	16.7	0.0	0.0	9.6	0.0	10.7	6.9	0.0	5.9
Cycle Q Clear(g_c), s	1.5	14.8	0.0	16.7	0.0	0.0	9.6	0.0	10.7	6.9	0.0	5.9
Prop In Lane	1.00		1.00	1.00		0.28	0.70		1.00	1.00		0.48
Lane Grp Cap(c), veh/h	42	670	570	373	968	971	265	0	233	186	0	180
V/C Ratio(X)	0.72	0.57	0.00	0.93	0.56	0.56	0.75	0.00	0.83	0.75	0.00	0.65
Avail Cap(c_a), veh/h	99	670	570	414	968	971	320	0	281	315	0	305
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.40	0.40	0.00	0.79	0.79	0.79	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.7	23.2	0.0	25.4	0.0	0.0	36.8	0.0	37.3	39.1	0.0	38.7
Incr Delay (d2), s/veh	9.1	1.4	0.0	21.6	1.9	1.9	8.0	0.0	15.6	5.9	0.0	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(-26165%),veh/ln	0.8	7.9	0.0	10.3	0.5	0.5	5.4	0.0	5.7	3.7	0.0	3.0
LnGrp Delay(d),s/veh	52.8	24.6	0.0	47.0	1.9	1.9	44.8	0.0	52.9	45.1	0.0	42.6
LnGrp LOS	D	C		D	A	A	D		D	D		D
Approach Vol, veh/h		410			1440			393			256	
Approach Delay, s/veh		26.6			12.7			48.8			44.0	
Approach LOS		C			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.1	53.2		17.3	22.9	36.4		13.4
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	5.0	37.0		16.0	21.0	21.0		16.0
Max Q Clear Time (g_c+I1), s	3.5	2.0		12.7	18.7	16.8		8.9
Green Ext Time (p_c), s	0.0	12.9		0.6	0.3	3.1		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	23.9
HCM 2010 LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	155	355	75	70	500	315	145	90	40	180	35	675
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	163	374	82	76	595	375	158	98	43	198	38	0
Adj No. of Lanes	1	2	0	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.92	0.92	0.84	0.84	0.92	0.92	0.92	0.91	0.92	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	177	1605	348	98	950	807	194	147	125	237	192	164
Arrive On Green	0.20	1.00	1.00	0.06	0.51	0.51	0.11	0.08	0.08	0.13	0.10	0.00
Sat Flow, veh/h	1774	2894	628	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	163	227	229	76	595	375	158	98	43	198	38	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1752	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	8.1	0.0	0.0	3.8	20.7	13.7	7.8	4.6	2.3	9.8	1.7	0.0
Cycle Q Clear(g_c), s	8.1	0.0	0.0	3.8	20.7	13.7	7.8	4.6	2.3	9.8	1.7	0.0
Prop In Lane	1.00		0.36	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	177	981	972	98	950	807	194	147	125	237	192	164
V/C Ratio(X)	0.92	0.23	0.24	0.78	0.63	0.46	0.82	0.67	0.34	0.84	0.20	0.00
Avail Cap(c_a), veh/h	177	981	972	177	950	807	296	331	281	315	352	299
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.76	0.76	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.6	0.0	0.0	42.0	15.9	14.2	39.2	40.3	39.2	38.0	36.9	0.0
Incr Delay (d2), s/veh	37.6	0.4	0.4	12.3	3.1	1.9	10.0	5.1	1.6	13.7	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	5.7	0.1	0.1	2.2	11.4	6.4	4.4	2.6	1.1	5.7	0.9	0.0
LnGrp Delay(d),s/veh	73.3	0.4	0.4	54.2	19.0	16.1	49.2	45.4	40.8	51.7	37.4	0.0
LnGrp LOS	F	A	A	D	B	B	D	D	D	D	D	
Approach Vol, veh/h		619			1046			299			236	
Approach Delay, s/veh		19.6			20.5			46.7			49.4	
Approach LOS		B			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	49.9	16.0	11.1	9.0	53.9	13.8	13.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	33.0	16.0	16.0	9.0	33.0	15.0	17.0
Max Q Clear Time (g_c+I1), s	10.1	22.7	11.8	6.6	5.8	2.0	9.8	3.7
Green Ext Time (p_c), s	0.0	5.7	0.2	0.5	0.0	10.0	0.2	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	26.9
HCM 2010 LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	190	300	540	265	125	205
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	209	330	667	327	126	207
Adj No. of Lanes	0	0	1	1	1	0
Peak Hour Factor	0.91	0.91	0.81	0.81	0.99	0.99
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	168	265	687	1188	127	209
Arrive On Green	0.26	0.26	0.39	0.64	0.20	0.20
Sat Flow, veh/h	640	1010	1774	1863	635	1043
Grp Volume(v), veh/h	540	0	667	327	0	333
Grp Sat Flow(s),veh/h/ln	1653	0	1774	1863	0	1679
Q Serve(g_s), s	21.0	0.0	29.5	6.2	0.0	15.8
Cycle Q Clear(g_c), s	21.0	0.0	29.5	6.2	0.0	15.8
Prop In Lane	0.39	0.61	1.00			0.62
Lane Grp Cap(c), veh/h	434	0	687	1188	0	336
V/C Ratio(X)	1.24	0.00	0.97	0.28	0.00	0.99
Avail Cap(c_a), veh/h	434	0	687	1188	0	336
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.5	0.0	24.0	6.4	0.0	31.9
Incr Delay (d2), s/veh	128.3	0.0	27.0	0.1	0.0	46.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	25.0	0.0	19.4	3.1	0.0	11.7
LnGrp Delay(d),s/veh	157.8	0.0	51.0	6.5	0.0	78.8
LnGrp LOS	F		D	A		F
Approach Vol, veh/h	540			994	333	
Approach Delay, s/veh	157.8			36.4	78.8	
Approach LOS	F			D	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		55.0		25.0	35.0	20.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		51.0		21.0	31.0	16.0		
Max Q Clear Time (g_c+I1), s		8.2		23.0	31.5	17.8		
Green Ext Time (p_c), s		4.8		0.0	0.0	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	79.1
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	35	565	30	45	250	30	15	15	35	30	25	125
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	92	92	88	88	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	673	33	49	284	34	16	16	38	33	27	136

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	318	0	0	705	0	0	1252	1188	689	1198	1188	301
Stage 1	-	-	-	-	-	-	772	772	-	399	399	-
Stage 2	-	-	-	-	-	-	480	416	-	799	789	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1242	-	-	893	-	-	149	188	446	162	188	739
Stage 1	-	-	-	-	-	-	392	409	-	627	602	-
Stage 2	-	-	-	-	-	-	567	592	-	379	402	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1242	-	-	893	-	-	97	166	446	125	166	739
Mov Cap-2 Maneuver	-	-	-	-	-	-	97	166	-	125	166	-
Stage 1	-	-	-	-	-	-	370	386	-	592	562	-
Stage 2	-	-	-	-	-	-	411	552	-	313	379	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1.2	32.3	32.1
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	201	1242	-	-	893	-	-	322
HCM Lane V/C Ratio	0.352	0.034	-	-	0.055	-	-	0.608
HCM Control Delay (s)	32.3	8	0	-	9.3	0	-	32.1
HCM Lane LOS	D	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	1.5	0.1	-	-	0.2	-	-	3.8

Intersection	
Int Delay, s/veh	28

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	10	5	220	0	5	15	180	1015	15	10	670	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	1	-	-	1	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	82	82	82	97	97	97	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	6	262	0	6	18	186	1046	15	11	713	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2176	2172	718	2298	2170	1054	723	0	0	1062	0	0
Stage 1	739	739	-	1425	1425	-	-	-	-	-	-	-
Stage 2	1437	1433	-	873	745	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	33	47	429	27	47	275	879	-	-	656	-	-
Stage 1	409	424	-	168	201	-	-	-	-	-	-	-
Stage 2	166	200	-	345	421	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	22	36	429	8	36	275	879	-	-	656	-	-
Mov Cap-2 Maneuver	22	36	-	8	36	-	-	-	-	-	-	-
Stage 1	322	417	-	132	158	-	-	-	-	-	-	-
Stage 2	117	158	-	130	414	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	217.4	50.5	1.5	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	879	-	-	103	212	656	-	-
HCM Lane V/C Ratio	0.211	-	-	0.237	1.32	0.016	-	-
HCM Control Delay (s)	10.2	-	-	50.5	217.4	10.6	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.8	-	-	0.9	15.3	0	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	15	625	0	5	865	35	0	0	5	40	0	10
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	679	0	5	940	38	0	0	5	43	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	978	0	0	679	0	0	1688	1701	679	1685	1682	959
Stage 1	-	-	-	-	-	-	712	712	-	970	970	-
Stage 2	-	-	-	-	-	-	976	989	-	715	712	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	706	-	-	913	-	-	74	92	452	75	94	312
Stage 1	-	-	-	-	-	-	423	436	-	304	331	-
Stage 2	-	-	-	-	-	-	302	325	-	422	436	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	706	-	-	913	-	-	69	88	452	71	90	312
Mov Cap-2 Maneuver	-	-	-	-	-	-	69	88	-	71	90	-
Stage 1	-	-	-	-	-	-	408	420	-	293	327	-
Stage 2	-	-	-	-	-	-	288	321	-	402	420	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.2	0	13.1	105.5
HCM LOS			B	F

Minor Lane/Major Mvmt	NEL n1	NWL	NWT	NWR	SEL	SET	SER	SWL n1
Capacity (veh/h)	452	913	-	-	706	-	-	84
HCM Lane V/C Ratio	0.012	0.006	-	-	0.023	-	-	0.647
HCM Control Delay (s)	13.1	9	0	-	10.2	0	-	105.5
HCM Lane LOS	B	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	0	0	-	-	0.1	-	-	3

Intersection	
Int Delay, s/veh	3.6

Movement	WBR	SEL	SWL	SWR
Vol, veh/h	830	645	25	65
Conflicting Peds, #/hr	0	0	0	0
Sign Control	Free	Free	Stop	Stop
RT Channelized	-	None	-	None
Storage Length	0	0	0	-
Veh in Median Storage, #	0	0	0	-
Grade, %	0	0	0	-
Peak Hour Factor	92	86	92	92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	902	750	27	71

Major/Minor	Major2	Major1	Minor2	
Conflicting Flow All	0	951	1840	927
Stage 1	-	-	927	-
Stage 2	-	-	913	-
Critical Hdwy	-	4.12	6.42	6.22
Critical Hdwy Stg 1	-	-	5.42	-
Critical Hdwy Stg 2	-	-	5.42	-
Follow-up Hdwy	-	2.218	3.518	3.318
Pot Cap-1 Maneuver	-	722	83	325
Stage 1	-	-	385	-
Stage 2	-	-	391	-
Platoon blocked, %	-			
Mov Cap-1 Maneuver	-	722	67	325
Mov Cap-2 Maneuver	-	-	67	-
Stage 1	-	-	385	-
Stage 2	-	-	316	-

Approach	WB	SE	SW
HCM Control Delay, s	0	1	59.8
HCM LOS			F

Minor Lane/Major Mvmt	WBR	WBR2	SEL2	SEL	SWLn1
Capacity (veh/h)	-	-	722	-	157
HCM Lane V/C Ratio	-	-	0.113	-	0.623
HCM Control Delay (s)	-	-	10.6	0	59.8
HCM Lane LOS	-	-	B	A	F
HCM 95th %tile Q(veh)	-	-	0.4	-	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	5	5	45	335	15	20	5	550	5	40	770	35
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	6	5	51	396	0	0	5	579	5	43	837	38
Adj No. of Lanes	0	1	0	2	1	0	1	1	0	1	1	1
Peak Hour Factor	0.89	0.92	0.89	0.92	0.92	0.92	0.92	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	8	6	65	517	271	0	9	1060	9	55	1119	1182
Arrive On Green	0.05	0.05	0.05	0.15	0.00	0.00	0.01	0.58	0.58	0.03	0.60	0.60
Sat Flow, veh/h	157	131	1332	3548	1863	0	1774	1844	16	1774	1863	1583
Grp Volume(v), veh/h	62	0	0	396	0	0	5	0	584	43	837	38
Grp Sat Flow(s),veh/h/ln	1620	0	0	1774	1863	0	1774	0	1860	1774	1863	1583
Q Serve(g_s), s	3.0	0.0	0.0	8.6	0.0	0.0	0.2	0.0	15.6	1.9	26.1	0.5
Cycle Q Clear(g_c), s	3.0	0.0	0.0	8.6	0.0	0.0	0.2	0.0	15.6	1.9	26.1	0.5
Prop In Lane	0.10		0.82	1.00		0.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	79	0	0	517	271	0	9	0	1070	55	1119	1182
V/C Ratio(X)	0.79	0.00	0.00	0.77	0.00	0.00	0.54	0.00	0.55	0.79	0.75	0.03
Avail Cap(c_a), veh/h	324	0	0	931	489	0	89	0	1070	133	1119	1182
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	0.0	0.0	32.9	0.0	0.0	39.7	0.0	10.5	38.5	11.6	2.6
Incr Delay (d2), s/veh	15.9	0.0	0.0	2.4	0.0	0.0	40.4	0.0	2.0	21.6	4.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	1.7	0.0	0.0	4.4	0.0	0.0	0.2	0.0	8.5	1.3	14.7	0.4
LnGrp Delay(d),s/veh	53.5	0.0	0.0	35.3	0.0	0.0	80.1	0.0	12.5	60.1	16.2	2.7
LnGrp LOS	D			D			F		B	F	B	A
Approach Vol, veh/h		62			396			589			918	
Approach Delay, s/veh		53.5			35.3			13.1			17.7	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.4	52.0		7.9	6.5	50.0		15.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	48.0		16.0	6.0	46.0		21.0
Max Q Clear Time (g_c+I1), s	2.2	28.1		5.0	3.9	17.6		10.6
Green Ext Time (p_c), s	0.0	10.6		0.2	0.0	12.8		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	21.0
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	5	15	90	145	15	45	45	630	5	50	840	190
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	7	16	129	112	81	49	49	724	6	54	913	207
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	1
Peak Hour Factor	0.70	0.92	0.70	0.92	0.92	0.92	0.92	0.87	0.87	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	9	20	157	177	109	66	62	814	7	305	1077	1074
Arrive On Green	0.11	0.11	0.11	0.10	0.10	0.10	0.04	0.44	0.44	0.17	0.58	0.58
Sat Flow, veh/h	74	170	1372	1774	1088	658	1774	1845	15	1774	1863	1583
Grp Volume(v), veh/h	152	0	0	112	0	130	49	0	730	54	913	207
Grp Sat Flow(s),veh/h/ln	1617	0	0	1774	0	1747	1774	0	1860	1774	1863	1583
Q Serve(g_s), s	8.5	0.0	0.0	5.6	0.0	6.7	2.5	0.0	33.6	2.4	37.7	4.5
Cycle Q Clear(g_c), s	8.5	0.0	0.0	5.6	0.0	6.7	2.5	0.0	33.6	2.4	37.7	4.5
Prop In Lane	0.05		0.85	1.00		0.38	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	186	0	0	177	0	174	62	0	820	305	1077	1074
V/C Ratio(X)	0.82	0.00	0.00	0.63	0.00	0.75	0.79	0.00	0.89	0.18	0.85	0.19
Avail Cap(c_a), veh/h	278	0	0	305	0	301	76	0	820	305	1077	1074
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.2	0.0	0.0	40.2	0.0	40.7	44.5	0.0	23.9	32.9	16.2	5.5
Incr Delay (d2), s/veh	11.2	0.0	0.0	3.7	0.0	6.2	34.4	0.0	13.8	1.3	8.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	4.4	0.0	0.0	3.0	0.0	3.5	1.8	0.0	20.2	1.3	21.8	2.7
LnGrp Delay(d),s/veh	51.4	0.0	0.0	43.9	0.0	46.9	78.9	0.0	37.7	34.1	24.5	5.9
LnGrp LOS	D			D		D	E		D	C	C	A
Approach Vol, veh/h		152			242			779			1174	
Approach Delay, s/veh		51.4			45.5			40.3			21.7	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.3	57.7		14.7	20.0	45.0		13.3
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	53.0		16.0	16.0	41.0		16.0
Max Q Clear Time (g_c+I1), s	4.5	39.7		10.5	4.4	35.6		8.7
Green Ext Time (p_c), s	0.0	9.7		0.3	0.1	4.5		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	32.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection: 1: King Rd & Swetzer Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	943	99	96	46	105	200	82	142	234
Average Queue (ft)	380	32	21	10	27	108	28	44	94
95th Queue (ft)	1067	74	63	36	73	177	62	101	178
Link Distance (ft)	2373		181			740			567
Upstream Blk Time (%)			0						
Queuing Penalty (veh)			0						
Storage Bay Dist (ft)		100		110	200		200	150	
Storage Blk Time (%)		0	0			0		0	2
Queuing Penalty (veh)		1	0			0		0	1

Intersection: 2: Taylor Rd & King Rd

Movement	EB	EB	EB	WB	WB	NB	NB	NB	B29	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	R	T	L	T	R
Maximum Queue (ft)	75	199	99	125	2509	118	210	118	638	275	524	275
Average Queue (ft)	70	158	30	112	1264	71	145	47	127	97	333	88
95th Queue (ft)	85	247	73	149	2714	134	236	129	492	263	583	289
Link Distance (ft)		181	181		2914		118		803		448	
Upstream Blk Time (%)		23			2	2	25	0	1		18	
Queuing Penalty (veh)		38			9	0	147	0	6		0	
Storage Bay Dist (ft)	50			100		200		200		250		250
Storage Blk Time (%)	60	20		51	39	2	25	0		0	30	0
Queuing Penalty (veh)	58	38		214	59	8	47	2		0	46	0

Intersection: 2: Taylor Rd & King Rd

Movement	B31
Directions Served	T
Maximum Queue (ft)	452
Average Queue (ft)	95
95th Queue (ft)	412
Link Distance (ft)	801
Upstream Blk Time (%)	1
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Boyington Rd & King Rd

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	60	140	216	666	82	245
Average Queue (ft)	25	62	78	196	32	86
95th Queue (ft)	54	114	175	577	66	197
Link Distance (ft)		2914		3279	1593	1850
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	200		200			
Storage Blk Time (%)		0	0	8		
Queuing Penalty (veh)		0	0	11		

Intersection: 4: Taylor Rd & Gates Ln/Webb St

Movement	SE	NW	NE	NE	SW	SW	B29	B29
Directions Served	LTR	LTR	L	TR	L	TR	T	
Maximum Queue (ft)	253	301	46	405	44	896	241	107
Average Queue (ft)	131	202	29	392	30	749	117	7
95th Queue (ft)	216	314	38	430	39	1094	285	53
Link Distance (ft)	1068	270		384		803	118	118
Upstream Blk Time (%)		13		45		44	25	1
Queuing Penalty (veh)		0		268		312	89	2
Storage Bay Dist (ft)			1		1			
Storage Blk Time (%)			36	45	68	18		
Queuing Penalty (veh)			180	52	349	17		

Intersection: 5: Taylor Rd & Horseshoe Bar Rd/Parking

Movement	SE	NW	NW	NE	NE	SW	SW
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	117	209	85	265	1460	74	293
Average Queue (ft)	44	193	84	25	789	43	84
95th Queue (ft)	93	247	90	162	1641	80	221
Link Distance (ft)	154	190			1515		384
Upstream Blk Time (%)	0	46			13		0
Queuing Penalty (veh)	0	256			0		1
Storage Bay Dist (ft)			60	300		50	
Storage Blk Time (%)		12	70		69	9	12
Queuing Penalty (veh)		53	85		4	55	13

Intersection: 6: Laird Street & Horseshoe Bar Rd

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	48	190	29	119
Average Queue (ft)	3	157	5	40
95th Queue (ft)	24	255	22	105
Link Distance (ft)	190	169	143	138
Upstream Blk Time (%)		31		3
Queuing Penalty (veh)		181		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Horseshoe Bar Rd & Library Dr

Movement	WB	SW
Directions Served	R>	LR
Maximum Queue (ft)	818	548
Average Queue (ft)	518	467
95th Queue (ft)	1043	636
Link Distance (ft)	790	498
Upstream Blk Time (%)	10	72
Queuing Penalty (veh)	78	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Horseshoe Bar Rd & Doc Barnes Rd

Movement	EB	WB	WB	SE	SE	NW	NW	NW
Directions Served	LTR	L	LTR	L	TR	L	T	R
Maximum Queue (ft)	73	169	192	22	250	75	511	385
Average Queue (ft)	28	70	92	2	108	30	307	27
95th Queue (ft)	58	134	160	13	209	73	565	195
Link Distance (ft)	196		2335		790		475	475
Upstream Blk Time (%)							6	1
Queuing Penalty (veh)							27	2
Storage Bay Dist (ft)		200		150		50		
Storage Blk Time (%)		0	0		3	4	40	
Queuing Penalty (veh)		0	1		0	32	16	

Intersection: 9: I-80 WB Ramps/Raleys & Horseshoe Bar Rd

Movement	SE	SE	SE	NW	NW	NW	NE	NE	SW	SW
Directions Served	L	T	R	L	T	TR	LT	R	L	TR
Maximum Queue (ft)	110	249	144	75	747	850	138	103	98	152
Average Queue (ft)	29	95	40	67	484	439	92	40	35	57
95th Queue (ft)	72	197	111	91	863	980	150	73	78	113
Link Distance (ft)		475	475		731	731			313	313
Upstream Blk Time (%)					9	23				
Queuing Penalty (veh)					40	98				
Storage Bay Dist (ft)	100			50						
Storage Blk Time (%)	0	6		31	46					
Queuing Penalty (veh)	0	2		103	68					

Intersection: 10: Horseshoe Bar Rd & I-80 EB Ramps

Movement	SE	SE	SE	NW	NW	NW	NE	NE	NE	SW	SW	SW
Directions Served	L	T	TR	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	141	84	82	119	297	206	94	74	35	261	347	260
Average Queue (ft)	69	25	20	28	127	48	36	22	14	129	108	81
95th Queue (ft)	123	65	54	84	278	157	76	57	39	229	346	308
Link Distance (ft)		731	731		321			367			348	
Upstream Blk Time (%)					5						8	
Queuing Penalty (veh)					21						67	
Storage Bay Dist (ft)	200			100		200	200		100	300		300
Storage Blk Time (%)				0	20	0		0		0	0	13
Queuing Penalty (veh)				1	30	0		0		0	1	37

Intersection: 11: Laird Rd & Horseshoe Bar Rd

Movement	EB	EB	NB	NB	SB
Directions Served	L	R	L	T	TR
Maximum Queue (ft)	87	163	176	78	167
Average Queue (ft)	35	81	90	28	87
95th Queue (ft)	69	134	147	65	144
Link Distance (ft)	2196			646	1026
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		300	300		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 18: I-80 WB Ramps

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 22: I-80 EB Ramps

Movement	SB	B23
Directions Served	R	T
Maximum Queue (ft)	402	280
Average Queue (ft)	77	37
95th Queue (ft)	368	275
Link Distance (ft)	493	631
Upstream Blk Time (%)	6	3
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 38: Horseshoe Bar Rd

Movement	SE	NW	NE
Directions Served	T	T	LR
Maximum Queue (ft)	2	199	79
Average Queue (ft)	0	31	28
95th Queue (ft)	2	235	85
Link Distance (ft)	321	2196	206
Upstream Blk Time (%)			3
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 3226

Intersection: 1: King Rd & Swetzer Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	247	50	183	135	89	837	225	175	848
Average Queue (ft)	132	15	94	42	31	258	165	160	660
95th Queue (ft)	218	39	171	124	71	656	276	202	1136
Link Distance (ft)	2376		179			798			814
Upstream Blk Time (%)			0			3			69
Queuing Penalty (veh)			1			0			0
Storage Bay Dist (ft)		100		110	200		200	150	
Storage Blk Time (%)			6	0		0	31	83	7
Queuing Penalty (veh)			9	0		1	64	220	7

Intersection: 2: Taylor Rd & King Rd

Movement	EB	EB	EB	WB	WB	NB	NB	NB	B29	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	R	T	L	T	R
Maximum Queue (ft)	75	204	74	125	313	118	228	118	814	274	312	264
Average Queue (ft)	69	194	16	89	138	91	182	98	562	60	136	23
95th Queue (ft)	91	204	48	145	256	138	238	156	1030	148	230	104
Link Distance (ft)		179	179		2914		118		801		448	
Upstream Blk Time (%)		29				7	47	2	4			
Queuing Penalty (veh)		97				0	434	0	37			
Storage Bay Dist (ft)	50			100		200		200		250		250
Storage Blk Time (%)	23	47		6	15	7	47	2			0	0
Queuing Penalty (veh)	87	116		13	17	53	242	11			1	0

Intersection: 3: Boyington Rd & King Rd

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	76	248	72	120	74	162
Average Queue (ft)	23	152	32	66	25	60
95th Queue (ft)	55	237	63	117	60	110
Link Distance (ft)		2914		3277	1323	1850
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	200		200			
Storage Blk Time (%)		2				
Queuing Penalty (veh)		1				

Intersection: 4: Taylor Rd & Gates Ln/Webb St

Movement	SE	NW	NE	NE	SW	SW
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	1083	892	125	403	124	202
Average Queue (ft)	461	678	63	308	72	108
95th Queue (ft)	917	1169	129	443	126	173
Link Distance (ft)	1068	858		384		801
Upstream Blk Time (%)	0	66		4		
Queuing Penalty (veh)	0	0		37		
Storage Bay Dist (ft)			100		100	
Storage Blk Time (%)			0	37	11	3
Queuing Penalty (veh)			0	17	41	2

Intersection: 5: Taylor Rd & Horseshoe Bar Rd/Parking

Movement	SE	NW	NW	NE	NE	SW	SW
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	74	186	85	324	1306	74	393
Average Queue (ft)	27	168	83	45	661	67	150
95th Queue (ft)	62	218	89	206	1291	83	351
Link Distance (ft)	154	174			1515		384
Upstream Blk Time (%)		28					0
Queuing Penalty (veh)		167					2
Storage Bay Dist (ft)			60	300		50	
Storage Blk Time (%)		48	17		44	46	3
Queuing Penalty (veh)		179	34		4	205	6

Intersection: 6: Laird Street & Horseshoe Bar Rd

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	91	194	28	113
Average Queue (ft)	6	108	3	29
95th Queue (ft)	37	236	17	86
Link Distance (ft)	174	182	145	134
Upstream Blk Time (%)		9		
Queuing Penalty (veh)		50		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Horseshoe Bar Rd & Library Dr

Movement	WB	SE	SW
Directions Served	R>	<L	LR
Maximum Queue (ft)	544	28	68
Average Queue (ft)	125	1	31
95th Queue (ft)	365	9	58
Link Distance (ft)	793	182	525
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Horseshoe Bar Rd & Doc Barnes Rd

Movement	EB	WB	WB	SE	SE	NW	NW	NW
Directions Served	LTR	L	LTR	L	TR	L	T	R
Maximum Queue (ft)	112	80	114	174	412	51	478	464
Average Queue (ft)	43	36	56	35	189	19	243	45
95th Queue (ft)	75	65	102	105	364	44	501	220
Link Distance (ft)	196		2648		793		458	458
Upstream Blk Time (%)							3	0
Queuing Penalty (veh)							18	1
Storage Bay Dist (ft)		200		150		50		
Storage Blk Time (%)				0	10	4	25	
Queuing Penalty (veh)				0	5	36	13	

Intersection: 9: I-80 WB Ramps/Raleys & Horseshoe Bar Rd

Movement	SE	SE	SE	NW	NW	NW	NE	NE	SW	SW
Directions Served	L	T	R	L	T	TR	LT	R	L	TR
Maximum Queue (ft)	124	342	214	75	749	879	155	148	156	222
Average Queue (ft)	37	163	69	73	742	826	110	48	79	69
95th Queue (ft)	102	281	140	80	749	892	162	99	127	145
Link Distance (ft)		458	458		731	731			313	313
Upstream Blk Time (%)					39	74				
Queuing Penalty (veh)					258	492				
Storage Bay Dist (ft)	100			50						
Storage Blk Time (%)		26		35	46					
Queuing Penalty (veh)		7		149	149					

Intersection: 10: Horseshoe Bar Rd & I-80 EB Ramps

Movement	EB	EB	EB	WB	WB	WB	SE	SE	SE	NW	NW	NW
Directions Served	L	T	R	L	T	R	L	T	TR	L	T	R
Maximum Queue (ft)	152	95	50	165	61	202	215	238	136	124	608	225
Average Queue (ft)	93	43	23	95	20	152	105	47	13	67	559	194
95th Queue (ft)	136	80	50	174	48	240	191	129	58	156	707	318
Link Distance (ft)		414						731	731		511	
Upstream Blk Time (%)											81	
Queuing Penalty (veh)											384	
Storage Bay Dist (ft)	200		100	250		250	200			100		200
Storage Blk Time (%)		0					1			0	90	1
Queuing Penalty (veh)		1					2			0	356	3

Intersection: 10: Horseshoe Bar Rd & I-80 EB Ramps

Movement	B41
Directions Served	T
Maximum Queue (ft)	2047
Average Queue (ft)	1196
95th Queue (ft)	2393
Link Distance (ft)	2030
Upstream Blk Time (%)	1
Queuing Penalty (veh)	4
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: Laird Rd & Horseshoe Bar Rd

Movement	EB	EB	NB	NB	SB
Directions Served	L	R	L	T	TR
Maximum Queue (ft)	159	161	186	97	178
Average Queue (ft)	81	54	86	39	85
95th Queue (ft)	135	106	137	80	139
Link Distance (ft)		2030		645	1027
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	250		300		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 18: I-80 WB Ramps

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 22: I-80 EB Ramps

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 4032

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	135	60	145	355	135	10	10	15	65	70	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	186.3	186.3	190.0	186.3	186.3	190.0	190.0	186.3	190.0	190.0	186.3	190.0
Adj Flow Rate, veh/h	41	159	71	223	546	208	11	11	16	98	106	114
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.85	0.85	0.85	0.65	0.65	0.65	0.92	0.92	0.92	0.66	0.66	0.66
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	440	197	284	625	238	159	152	159	190	155	140
Arrive On Green	0.03	0.36	0.36	0.16	0.49	0.49	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1774	1221	545	1774	1286	490	276	630	659	399	640	581
Grp Volume(v), veh/h	41	0	230	223	0	754	38	0	0	318	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1767	1774	0	1776	1564	0	0	1620	0	0
Q Serve(g_s), s	1.2	0.0	4.8	6.1	0.0	19.1	0.0	0.0	0.0	7.0	0.0	0.0
Cycle Q Clear(g_c), s	1.2	0.0	4.8	6.1	0.0	19.1	0.9	0.0	0.0	9.3	0.0	0.0
Prop In Lane	1.00		0.31	1.00		0.28	0.29		0.42	0.31		0.36
Lane Grp Cap(c), veh/h	61	0	637	284	0	863	470	0	0	485	0	0
V/C Ratio(X)	0.67	0.00	0.36	0.79	0.00	0.87	0.08	0.00	0.00	0.66	0.00	0.00
Avail Cap(c_a), veh/h	141	0	637	528	0	987	583	0	0	605	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.0	0.0	11.9	20.3	0.0	11.6	14.8	0.0	0.0	17.9	0.0	0.0
Incr Delay (d2), s/veh	11.7	0.0	0.3	4.8	0.0	8.0	0.1	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	2.4	3.4	0.0	11.1	0.4	0.0	0.0	4.4	0.0	0.0
LnGrp Delay(d),s/veh	35.8	0.0	12.2	25.1	0.0	19.6	14.9	0.0	0.0	19.7	0.0	0.0
LnGrp LOS	D		B	C		B	B			B		
Approach Vol, veh/h		271			977			38			318	
Approach Delay, s/veh		15.8			20.8			14.9			19.7	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		16.2	12.1	22.2		16.2	5.7	28.5
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	15.0	17.0		16.0	4.0	28.0
Max Q Clear Time (g_c+I1), s		2.9	8.1	6.8		11.3	3.2	21.1
Green Ext Time (p_c), s		1.8	0.3	4.9		0.9	0.0	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	19.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	565	30	45	250	30	15	15	35	30	25	125
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	186.3	186.3	190.0	186.3	186.3	190.0	190.0	186.3	190.0	190.0	186.3	190.0
Adj Flow Rate, veh/h	42	673	33	49	284	34	16	16	38	33	27	136
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.84	0.84	0.92	0.92	0.88	0.88	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	976	48	70	840	101	121	96	154	112	54	188
Arrive On Green	0.08	0.55	0.55	0.04	0.51	0.51	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1774	1761	86	1774	1633	195	197	570	911	171	320	1111
Grp Volume(v), veh/h	42	0	706	49	0	318	70	0	0	196	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1848	1774	0	1828	1678	0	0	1601	0	0
Q Serve(g_s), s	1.1	0.0	13.9	1.4	0.0	5.2	0.0	0.0	0.0	2.8	0.0	0.0
Cycle Q Clear(g_c), s	1.1	0.0	13.9	1.4	0.0	5.2	1.8	0.0	0.0	5.8	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.11	0.23		0.54	0.17		0.69
Lane Grp Cap(c), veh/h	140	0	1024	70	0	940	371	0	0	354	0	0
V/C Ratio(X)	0.30	0.00	0.69	0.70	0.00	0.34	0.19	0.00	0.00	0.55	0.00	0.00
Avail Cap(c_a), veh/h	562	0	1024	140	0	940	597	0	0	585	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.9	0.0	8.1	24.0	0.0	7.2	18.2	0.0	0.0	19.8	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.0	3.8	12.0	0.0	1.0	0.2	0.0	0.0	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	7.9	0.9	0.0	2.8	0.9	0.0	0.0	2.7	0.0	0.0
LnGrp Delay(d),s/veh	23.1	0.0	11.9	36.0	0.0	8.2	18.4	0.0	0.0	21.2	0.0	0.0
LnGrp LOS	C		B	D		A	B			C		
Approach Vol, veh/h		748			367			70			196	
Approach Delay, s/veh		12.6			11.9			18.4			21.2	
Approach LOS		B			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		12.5	6.0	32.0		12.5	8.0	30.0
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	4.0	28.0		16.0	16.0	16.0
Max Q Clear Time (g_c+I1), s		3.8	3.4	15.9		7.8	3.1	7.2
Green Ext Time (p_c), s		1.2	0.0	5.4		1.0	0.0	4.4

Intersection Summary	
HCM 2010 Ctrl Delay	13.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	5	5	70	360	15	20	5	475	5	40	770	35
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	6	5	79	423	0	0	5	500	5	43	837	38
Adj No. of Lanes	0	1	0	2	1	0	1	1	0	1	1	1
Peak Hour Factor	0.89	0.92	0.89	0.92	0.92	0.92	0.92	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	8	6	100	518	272	0	9	736	7	396	1151	1209
Arrive On Green	0.07	0.07	0.07	0.15	0.00	0.00	0.01	0.40	0.40	0.22	0.62	0.62
Sat Flow, veh/h	107	89	1412	3548	1863	0	1774	1841	18	1774	1863	1583
Grp Volume(v), veh/h	90	0	0	423	0	0	5	0	505	43	837	38
Grp Sat Flow(s),veh/h/ln	1608	0	0	1774	1863	0	1774	0	1859	1774	1863	1583
Q Serve(g_s), s	5.5	0.0	0.0	11.6	0.0	0.0	0.3	0.0	22.4	1.9	31.2	0.6
Cycle Q Clear(g_c), s	5.5	0.0	0.0	11.6	0.0	0.0	0.3	0.0	22.4	1.9	31.2	0.6
Prop In Lane	0.07		0.88	1.00		0.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	114	0	0	518	272	0	9	0	744	396	1151	1209
V/C Ratio(X)	0.79	0.00	0.00	0.82	0.00	0.00	0.54	0.00	0.68	0.11	0.73	0.03
Avail Cap(c_a), veh/h	257	0	0	781	410	0	71	0	744	396	1151	1209
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.93	0.93	0.93
Uniform Delay (d), s/veh	45.7	0.0	0.0	41.4	0.0	0.0	49.6	0.0	24.7	30.9	13.3	2.9
Incr Delay (d2), s/veh	11.3	0.0	0.0	4.2	0.0	0.0	41.8	0.0	4.9	0.1	3.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	2.8	0.0	0.0	5.9	0.0	0.0	0.2	0.0	12.4	1.0	17.0	0.4
LnGrp Delay(d),s/veh	57.0	0.0	0.0	45.6	0.0	0.0	91.4	0.0	29.7	31.0	17.0	2.9
LnGrp LOS	E			D			F		C	C	B	A
Approach Vol, veh/h		90			423			510			918	
Approach Delay, s/veh		57.0			45.6			30.3			17.1	
Approach LOS		E			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.5	65.8		11.1	26.3	44.0		18.6
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	42.0		16.0	6.0	40.0		22.0
Max Q Clear Time (g_c+I1), s	2.3	33.2		7.5	3.9	24.4		13.6
Green Ext Time (p_c), s	0.0	4.1		0.2	0.2	2.9		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.6
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	5	15	105	165	15	45	45	565	5	50	840	190
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	7	16	150	122	96	49	49	649	6	54	913	207
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	1
Peak Hour Factor	0.70	0.92	0.70	0.92	0.92	0.92	0.92	0.87	0.87	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	8	19	177	188	123	63	63	1027	9	89	1066	1074
Arrive On Green	0.13	0.13	0.13	0.11	0.11	0.11	0.04	0.56	0.56	0.05	0.57	0.57
Sat Flow, veh/h	65	149	1398	1774	1164	594	1774	1843	17	1774	1863	1583
Grp Volume(v), veh/h	173	0	0	122	0	145	49	0	655	54	913	207
Grp Sat Flow(s),veh/h/ln	1613	0	0	1774	0	1758	1774	0	1860	1774	1863	1583
Q Serve(g_s), s	10.5	0.0	0.0	6.6	0.0	8.0	2.7	0.0	24.1	3.0	41.1	4.8
Cycle Q Clear(g_c), s	10.5	0.0	0.0	6.6	0.0	8.0	2.7	0.0	24.1	3.0	41.1	4.8
Prop In Lane	0.04		0.87	1.00		0.34	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	204	0	0	188	0	186	63	0	1036	89	1066	1074
V/C Ratio(X)	0.85	0.00	0.00	0.65	0.00	0.78	0.78	0.00	0.63	0.61	0.86	0.19
Avail Cap(c_a), veh/h	258	0	0	284	0	281	71	0	1036	89	1066	1074
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.76	0.76	0.76
Uniform Delay (d), s/veh	42.7	0.0	0.0	42.9	0.0	43.6	47.9	0.0	15.1	46.5	18.0	6.0
Incr Delay (d2), s/veh	18.5	0.0	0.0	3.7	0.0	7.6	38.5	0.0	2.9	21.3	6.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	5.7	0.0	0.0	3.4	0.0	4.3	2.0	0.0	13.0	2.0	22.8	2.9
LnGrp Delay(d),s/veh	61.2	0.0	0.0	46.7	0.0	51.1	86.3	0.0	18.1	67.9	24.9	6.3
LnGrp LOS	E			D		D	F		B	E	C	A
Approach Vol, veh/h		173			267			704			1174	
Approach Delay, s/veh		61.2			49.1			22.8			23.6	
Approach LOS		E			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.5	61.2		16.7	9.0	59.7		14.6
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	48.0		16.0	5.0	47.0		16.0
Max Q Clear Time (g_c+I1), s	4.7	43.1		12.5	5.0	26.1		10.0
Green Ext Time (p_c), s	0.0	4.0		0.3	0.0	12.9		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	29.1
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	190	300	540	265	125	205
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	186.3	186.3	186.3	186.3	186.3	190.0
Adj Flow Rate, veh/h	209	330	667	327	126	207
Adj No. of Lanes	1	1	1	1	1	0
Peak Hour Factor	0.91	0.91	0.81	0.81	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	288	907	729	1322	150	246
Arrive On Green	0.16	0.16	0.41	0.71	0.24	0.24
Sat Flow, veh/h	1774	1583	1774	1863	635	1043
Grp Volume(v), veh/h	209	330	667	327	0	333
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1679
Q Serve(g_s), s	7.0	7.0	22.3	3.9	0.0	11.9
Cycle Q Clear(g_c), s	7.0	7.0	22.3	3.9	0.0	11.9
Prop In Lane	1.00	1.00	1.00			0.62
Lane Grp Cap(c), veh/h	288	907	729	1322	0	395
V/C Ratio(X)	0.73	0.36	0.92	0.25	0.00	0.84
Avail Cap(c_a), veh/h	453	1054	878	1516	0	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.9	7.2	17.4	3.2	0.0	22.9
Incr Delay (d2), s/veh	3.5	0.2	12.6	0.1	0.0	13.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	8.2	13.3	1.9	0.0	6.9
LnGrp Delay(d),s/veh	28.4	7.5	30.0	3.3	0.0	36.2
LnGrp LOS	C	A	C	A		D
Approach Vol, veh/h	539			994	333	
Approach Delay, s/veh	15.6			21.2	36.2	
Approach LOS	B			C	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		48.5		14.2	29.7	18.8		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		51.0		16.0	31.0	16.0		
Max Q Clear Time (g_c+I1), s		5.9		9.0	24.3	13.9		
Green Ext Time (p_c), s		4.9		1.1	1.5	0.9		

Intersection Summary	
HCM 2010 Ctrl Delay	22.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	55	230	35	120	180	95	30	175	45	55	125	65
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	61	256	39	156	234	123	33	194	50	69	156	81
Adj No. of Lanes	0	1	0	1	1	1	1	1	1	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.77	0.77	0.77	0.90	0.90	0.90	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	705	102	748	1221	1167	79	242	205	144	193	100
Arrive On Green	0.57	0.57	0.57	0.04	0.66	0.66	0.04	0.13	0.13	0.08	0.17	0.17
Sat Flow, veh/h	223	1243	180	1774	1863	1583	1774	1863	1583	1774	1156	600
Grp Volume(v), veh/h	356	0	0	156	234	123	33	194	50	69	0	237
Grp Sat Flow(s),veh/h/ln	1647	0	0	1774	1863	1583	1774	1863	1583	1774	0	1757
Q Serve(g_s), s	0.0	0.0	0.0	3.2	4.5	0.0	1.6	9.1	2.2	3.3	0.0	11.7
Cycle Q Clear(g_c), s	9.4	0.0	0.0	3.2	4.5	0.0	1.6	9.1	2.2	3.3	0.0	11.7
Prop In Lane	0.17		0.11	1.00		1.00	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	980	0	0	748	1221	1167	79	242	205	144	0	293
V/C Ratio(X)	0.36	0.00	0.00	0.21	0.19	0.11	0.42	0.80	0.24	0.48	0.00	0.81
Avail Cap(c_a), veh/h	980	0	0	748	1221	1167	118	352	299	315	0	527
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.5	0.0	0.0	6.6	6.1	3.4	41.9	38.0	25.2	39.5	0.0	36.1
Incr Delay (d2), s/veh	1.0	0.0	0.0	0.1	0.3	0.2	3.5	8.2	0.6	2.5	0.0	5.3
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(-26165%),veh/ln	5.0	0.0	0.0	1.5	2.4	0.9	0.9	5.2	1.0	1.7	0.0	6.1
LnGrp Delay(d),s/veh	11.5	0.0	0.0	6.8	6.4	3.6	45.4	46.3	25.8	42.0	0.0	41.5
LnGrp LOS	B			A	A	A	D	D	C	D		D
Approach Vol, veh/h		356			513			277			306	
Approach Delay, s/veh		11.5			5.9			42.5			41.6	
Approach LOS		B			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	11.3	15.7	8.0	55.0	8.0	19.0		63.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	16.0	17.0	4.0	37.0	6.0	27.0		45.0
Max Q Clear Time (g_c+I1), s	5.3	11.1	5.2	11.4	3.6	13.7		6.5
Green Ext Time (p_c), s	1.1	0.6	0.0	4.4	0.0	1.3		4.7

Intersection Summary	
HCM 2010 Ctrl Delay	21.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	185	95	60	145	205	200	75	375	105	75	475	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	210	108	68	193	273	267	90	452	127	89	565	89
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	1	2	0
Peak Hour Factor	0.88	0.88	0.88	0.75	0.75	0.75	0.83	0.83	0.83	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	241	667	567	197	289	282	219	538	457	114	704	111
Arrive On Green	0.04	0.12	0.12	0.11	0.33	0.33	0.12	0.29	0.29	0.06	0.23	0.23
Sat Flow, veh/h	1774	1863	1583	1774	866	847	1774	1863	1583	1774	3066	482
Grp Volume(v), veh/h	210	108	68	193	0	540	90	452	127	89	325	329
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1713	1774	1863	1583	1774	1770	1778
Q Serve(g_s), s	10.6	4.7	2.3	9.8	0.0	27.6	4.2	20.5	4.0	4.4	15.6	15.7
Cycle Q Clear(g_c), s	10.6	4.7	2.3	9.8	0.0	27.6	4.2	20.5	4.0	4.4	15.6	15.7
Prop In Lane	1.00		1.00	1.00		0.49	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	241	667	567	197	0	571	219	538	457	114	406	408
V/C Ratio(X)	0.87	0.16	0.12	0.98	0.00	0.95	0.41	0.84	0.28	0.78	0.80	0.80
Avail Cap(c_a), veh/h	241	667	567	197	0	571	219	538	457	138	551	553
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	0.34	0.00	0.34	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.2	27.5	12.1	39.9	0.0	29.2	36.4	30.0	12.8	41.5	32.7	32.8
Incr Delay (d2), s/veh	25.6	0.5	0.4	31.9	0.0	12.3	1.2	14.6	1.5	20.9	6.0	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	6.9	2.5	1.1	6.5	0.0	15.0	2.2	12.7	1.9	2.8	8.3	8.4
LnGrp Delay(d),s/veh	67.7	28.0	12.5	71.8	0.0	41.5	37.7	44.6	14.3	62.4	38.7	38.9
LnGrp LOS	E	C	B	E		D	D	D	B	E	D	D
Approach Vol, veh/h		386			733			669			743	
Approach Delay, s/veh		46.9			49.5			37.9			41.6	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	30.0	14.0	36.2	15.1	24.7	16.2	34.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	26.0	10.0	31.0	5.0	28.0	11.0	30.0
Max Q Clear Time (g_c+I1), s	6.4	22.5	11.8	6.7	6.2	17.7	12.6	29.6
Green Ext Time (p_c), s	0.0	1.1	0.0	1.4	0.0	3.0	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	43.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	135	55	110	345	210	15	15	35	65	70	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	41	159	65	169	531	323	16	16	38	98	106	114
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.85	0.85	0.85	0.65	0.65	0.65	0.92	0.92	0.92	0.66	0.66	0.66
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	59	555	227	215	575	350	127	126	211	174	146	134
Arrive On Green	0.03	0.44	0.44	0.12	0.53	0.53	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1774	1258	514	1774	1086	660	222	540	905	404	626	576
Grp Volume(v), veh/h	41	0	224	169	0	854	70	0	0	318	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1772	1774	0	1746	1667	0	0	1606	0	0
Q Serve(g_s), s	1.3	0.0	4.8	5.4	0.0	26.5	0.0	0.0	0.0	8.8	0.0	0.0
Cycle Q Clear(g_c), s	1.3	0.0	4.8	5.4	0.0	26.5	1.9	0.0	0.0	11.1	0.0	0.0
Prop In Lane	1.00		0.29	1.00		0.38	0.23		0.54	0.31		0.36
Lane Grp Cap(c), veh/h	59	0	782	215	0	925	464	0	0	455	0	0
V/C Ratio(X)	0.70	0.00	0.29	0.79	0.00	0.92	0.15	0.00	0.00	0.70	0.00	0.00
Avail Cap(c_a), veh/h	121	0	782	362	0	980	522	0	0	516	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	28.1	0.0	10.5	25.1	0.0	12.7	18.0	0.0	0.0	21.4	0.0	0.0
Incr Delay (d2), s/veh	13.7	0.0	0.2	6.2	0.0	13.5	0.1	0.0	0.0	3.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	0.9	0.0	2.3	3.0	0.0	16.0	0.9	0.0	0.0	5.4	0.0	0.0
LnGrp Delay(d),s/veh	41.9	0.0	10.7	31.3	0.0	26.3	18.2	0.0	0.0	25.0	0.0	0.0
LnGrp LOS	D		B	C		C	B			C		
Approach Vol, veh/h		265			1023			70			318	
Approach Delay, s/veh		15.5			27.1			18.2			25.0	
Approach LOS		B			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		17.7	11.1	30.0		17.7	6.0	35.1
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	12.0	25.0		16.0	4.0	33.0
Max Q Clear Time (g_c+I1), s		3.9	7.4	6.8		13.1	3.3	28.5
Green Ext Time (p_c), s		1.9	0.2	7.9		0.7	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	24.5
HCM 2010 LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	5	225	50	70	180	80	115	490	10	90	500	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	6	256	57	88	225	100	122	521	11	99	549	5
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.80	0.80	0.80	0.94	0.94	0.94	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	44	452	99	130	280	116	303	889	19	126	717	7
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.34	0.98	0.98	0.07	0.39	0.39
Sat Flow, veh/h	10	1474	323	266	912	377	1774	1818	38	1774	1843	17
Grp Volume(v), veh/h	319	0	0	413	0	0	122	0	532	99	0	554
Grp Sat Flow(s),veh/h/ln	1808	0	0	1555	0	0	1774	0	1856	1774	0	1860
Q Serve(g_s), s	0.0	0.0	0.0	9.1	0.0	0.0	4.7	0.0	1.3	4.9	0.0	23.3
Cycle Q Clear(g_c), s	13.4	0.0	0.0	22.5	0.0	0.0	4.7	0.0	1.3	4.9	0.0	23.3
Prop In Lane	0.02		0.18	0.21		0.24	1.00		0.02	1.00		0.01
Lane Grp Cap(c), veh/h	595	0	0	526	0	0	303	0	908	126	0	723
V/C Ratio(X)	0.54	0.00	0.00	0.79	0.00	0.00	0.40	0.00	0.59	0.79	0.00	0.77
Avail Cap(c_a), veh/h	702	0	0	618	0	0	303	0	908	158	0	723
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.90	0.00	0.90	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.3	0.0	0.0	29.2	0.0	0.0	26.1	0.0	0.5	41.1	0.0	23.9
Incr Delay (d2), s/veh	0.8	0.0	0.0	5.7	0.0	0.0	0.8	0.0	2.5	18.5	0.0	7.6
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(-26165%),veh/ln	6.8	0.0	0.0	10.5	0.0	0.0	2.4	0.0	0.9	3.1	0.0	13.4
LnGrp Delay(d),s/veh	27.0	0.0	0.0	34.9	0.0	0.0	26.9	0.0	3.0	59.7	0.0	31.5
LnGrp LOS	C			C			C		A	E		C
Approach Vol, veh/h		319			413			654			653	
Approach Delay, s/veh		27.0			34.9			7.5			35.8	
Approach LOS		C			C			A			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		31.6	10.4	48.0		31.6	19.4	39.0
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		33.0	8.0	37.0		33.0	10.0	35.0
Max Q Clear Time (g_c+I1), s		24.5	6.9	3.3		15.4	6.7	25.3
Green Ext Time (p_c), s		3.1	0.0	4.2		4.6	1.2	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	25.2
HCM 2010 LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	10	25	15	95	25	435	5	145	25	105	570	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	15	38	23	100	26	458	6	163	28	114	620	5
Adj No. of Lanes	0	1	0	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.95	0.95	0.95	0.89	0.89	0.89	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	20	50	30	153	40	772	11	430	74	674	1202	10
Arrive On Green	0.06	0.06	0.06	0.11	0.11	0.11	0.01	0.28	0.28	0.38	0.65	0.65
Sat Flow, veh/h	346	876	530	1422	370	1583	1774	1550	266	1774	1845	15
Grp Volume(v), veh/h	76	0	0	126	0	458	6	0	191	114	0	625
Grp Sat Flow(s),veh/h/ln	1752	0	0	1792	0	1583	1774	0	1816	1774	0	1860
Q Serve(g_s), s	3.8	0.0	0.0	6.1	0.0	0.0	0.3	0.0	7.6	3.8	0.0	15.9
Cycle Q Clear(g_c), s	3.8	0.0	0.0	6.1	0.0	0.0	0.3	0.0	7.6	3.8	0.0	15.9
Prop In Lane	0.20		0.30	0.79		1.00	1.00		0.15	1.00		0.01
Lane Grp Cap(c), veh/h	100	0	0	193	0	772	11	0	504	674	0	1211
V/C Ratio(X)	0.76	0.00	0.00	0.65	0.00	0.59	0.55	0.00	0.38	0.17	0.00	0.52
Avail Cap(c_a), veh/h	311	0	0	319	0	883	79	0	504	674	0	1211
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.68	0.00	0.68
Uniform Delay (d), s/veh	41.8	0.0	0.0	38.5	0.0	16.6	44.6	0.0	26.2	18.5	0.0	8.2
Incr Delay (d2), s/veh	11.2	0.0	0.0	3.7	0.0	0.8	36.2	0.0	2.2	0.1	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	2.2	0.0	0.0	3.2	0.0	8.3	0.3	0.0	4.1	1.9	0.0	8.3
LnGrp Delay(d),s/veh	53.0	0.0	0.0	42.3	0.0	17.5	80.8	0.0	28.4	18.6	0.0	9.3
LnGrp LOS	D			D		B	F		C	B		A
Approach Vol, veh/h		76			584			197			739	
Approach Delay, s/veh		53.0			22.8			30.0			10.7	
Approach LOS		D			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		13.7	38.2	29.0		9.1	4.6	62.6
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	17.0	25.0		16.0	4.0	38.0
Max Q Clear Time (g_c+I1), s		8.1	5.8	9.6		5.8	2.3	17.9
Green Ext Time (p_c), s		1.6	3.5	0.9		0.2	0.0	4.6

Intersection Summary	
HCM 2010 Ctrl Delay	19.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	5	5	45	290	15	20	5	525	5	40	765	35
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	6	5	51	347	0	0	5	553	5	43	832	38
Adj No. of Lanes	0	1	0	2	1	0	1	1	0	1	1	1
Peak Hour Factor	0.89	0.92	0.89	0.92	0.92	0.92	0.92	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	8	6	64	482	253	0	9	1030	9	59	1094	1145
Arrive On Green	0.05	0.05	0.05	0.14	0.00	0.00	0.01	0.56	0.56	0.03	0.59	0.59
Sat Flow, veh/h	157	131	1332	3548	1863	0	1774	1843	17	1774	1863	1583
Grp Volume(v), veh/h	62	0	0	347	0	0	5	0	558	43	832	38
Grp Sat Flow(s),veh/h/ln	1620	0	0	1774	1863	0	1774	0	1860	1774	1863	1583
Q Serve(g_s), s	2.7	0.0	0.0	6.7	0.0	0.0	0.2	0.0	13.5	1.7	23.9	0.5
Cycle Q Clear(g_c), s	2.7	0.0	0.0	6.7	0.0	0.0	0.2	0.0	13.5	1.7	23.9	0.5
Prop In Lane	0.10		0.82	1.00		0.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	78	0	0	482	253	0	9	0	1039	59	1094	1145
V/C Ratio(X)	0.79	0.00	0.00	0.72	0.00	0.00	0.53	0.00	0.54	0.72	0.76	0.03
Avail Cap(c_a), veh/h	362	0	0	1091	573	0	99	0	1039	149	1094	1145
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.7	0.0	0.0	29.6	0.0	0.0	35.5	0.0	9.9	34.3	11.0	2.8
Incr Delay (d2), s/veh	16.2	0.0	0.0	2.0	0.0	0.0	39.8	0.0	2.0	15.2	5.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	1.6	0.0	0.0	3.4	0.0	0.0	0.2	0.0	7.4	1.1	13.5	0.3
LnGrp Delay(d),s/veh	50.0	0.0	0.0	31.7	0.0	0.0	75.3	0.0	11.9	49.5	16.0	2.9
LnGrp LOS	D			C			F		B	D	B	A
Approach Vol, veh/h		62			347			563			913	
Approach Delay, s/veh		50.0			31.7			12.5			17.1	
Approach LOS		D			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.4	46.0		7.5	6.4	44.0		13.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	42.0		16.0	6.0	40.0		22.0
Max Q Clear Time (g_c+I1), s	2.2	25.9		4.7	3.7	15.5		8.7
Green Ext Time (p_c), s	0.0	6.0		0.2	0.8	3.9		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	19.5
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	35	315	495	145	665	50	110	50	130	50	45	40
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	37	335	0	158	723	54	133	60	157	59	53	47
Adj No. of Lanes	1	1	1	1	2	0	0	1	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.83	0.83	0.83	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	384	538	457	562	1299	97	167	76	214	145	75	66
Arrive On Green	0.22	0.29	0.00	0.63	0.78	0.78	0.13	0.13	0.13	0.08	0.08	0.08
Sat Flow, veh/h	1774	1863	1583	1774	3339	249	1241	560	1583	1774	912	808
Grp Volume(v), veh/h	37	335	0	158	383	394	193	0	157	59	0	100
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1770	1819	1801	0	1583	1774	0	1720
Q Serve(g_s), s	1.5	14.0	0.0	3.6	7.6	7.6	9.3	0.0	8.6	2.8	0.0	5.1
Cycle Q Clear(g_c), s	1.5	14.0	0.0	3.6	7.6	7.6	9.3	0.0	8.6	2.8	0.0	5.1
Prop In Lane	1.00		1.00	1.00		0.14	0.69		1.00	1.00		0.47
Lane Grp Cap(c), veh/h	384	538	457	562	688	707	243	0	214	145	0	141
V/C Ratio(X)	0.10	0.62	0.00	0.28	0.56	0.56	0.79	0.00	0.73	0.41	0.00	0.71
Avail Cap(c_a), veh/h	384	538	457	562	688	707	340	0	299	315	0	306
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.00	0.94	0.94	0.94	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.2	27.7	0.0	11.9	7.0	7.0	37.7	0.0	37.4	39.2	0.0	40.3
Incr Delay (d2), s/veh	0.1	3.7	0.0	0.3	3.0	3.0	8.4	0.0	5.7	1.8	0.0	6.5
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(-26165%),veh/ln	0.7	7.7	0.0	1.7	4.0	4.1	5.2	0.0	4.1	1.5	0.0	2.7
LnGrp Delay(d),s/veh	28.3	31.5	0.0	12.2	10.0	9.9	46.2	0.0	43.1	41.1	0.0	46.8
LnGrp LOS	C	C		B	A	A	D		D	D		D
Approach Vol, veh/h		372			935			350			159	
Approach Delay, s/veh		31.1			10.3			44.8			44.6	
Approach LOS		C			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	23.5	39.0		16.1	32.5	30.0		11.4
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	6.0	35.0		17.0	15.0	26.0		16.0
Max Q Clear Time (g_c+I1), s	3.5	9.6		11.3	5.6	16.0		7.1
Green Ext Time (p_c), s	0.1	5.3		0.8	0.4	1.4		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	24.2
HCM 2010 LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	110	295	95	25	285	120	40	20	20	215	65	540
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	124	331	103	27	306	129	43	22	22	247	71	0
Adj No. of Lanes	1	2	0	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.92	0.92	0.93	0.93	0.92	0.92	0.92	0.87	0.92	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	603	1590	487	39	517	440	252	79	68	288	117	99
Arrive On Green	0.68	1.00	1.00	0.02	0.28	0.28	0.14	0.04	0.04	0.16	0.06	0.00
Sat Flow, veh/h	1774	2670	818	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	124	218	216	27	306	129	43	22	22	247	71	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1718	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.3	0.0	0.0	1.4	12.8	3.8	1.9	1.0	1.2	12.2	3.3	0.0
Cycle Q Clear(g_c), s	2.3	0.0	0.0	1.4	12.8	3.8	1.9	1.0	1.2	12.2	3.3	0.0
Prop In Lane	1.00		0.48	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	603	1054	1024	39	517	440	252	79	68	288	117	99
V/C Ratio(X)	0.21	0.21	0.21	0.70	0.59	0.29	0.17	0.28	0.33	0.86	0.61	0.00
Avail Cap(c_a), veh/h	603	1054	1024	99	517	440	252	331	281	414	642	545
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.9	0.0	0.0	43.7	28.1	10.9	33.9	41.7	41.8	36.7	41.1	0.0
Incr Delay (d2), s/veh	0.2	0.4	0.4	20.2	4.9	1.7	0.3	1.9	2.8	11.8	5.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	1.1	0.1	0.1	0.9	7.2	1.8	1.0	0.6	0.6	6.9	1.9	0.0
LnGrp Delay(d),s/veh	10.1	0.4	0.4	63.9	33.0	12.6	34.3	43.6	44.6	48.5	46.1	0.0
LnGrp LOS	B	A	A	E	C	B	C	D	D	D	D	
Approach Vol, veh/h		558			462			87			318	
Approach Delay, s/veh		2.6			29.1			39.2			48.0	
Approach LOS		A			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.6	29.0	18.6	7.8	6.0	57.6	16.8	9.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	25.0	21.0	16.0	5.0	32.0	6.0	31.0
Max Q Clear Time (g_c+I1), s	4.3	14.8	14.2	3.2	3.4	2.0	3.9	5.3
Green Ext Time (p_c), s	1.8	1.6	0.4	0.1	0.0	3.2	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	23.5
HCM 2010 LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	65	345	240	145	225	95
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	78	416	282	171	250	106
Adj No. of Lanes	1	1	1	1	1	0
Peak Hour Factor	0.83	0.83	0.85	0.85	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	529	472	357	1003	317	135
Arrive On Green	0.30	0.30	0.20	0.54	0.26	0.26
Sat Flow, veh/h	1774	1583	1774	1863	1243	527
Grp Volume(v), veh/h	78	416	282	171	0	356
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1770
Q Serve(g_s), s	1.6	12.2	7.4	2.3	0.0	9.2
Cycle Q Clear(g_c), s	1.6	12.2	7.4	2.3	0.0	9.2
Prop In Lane	1.00	1.00	1.00			0.30
Lane Grp Cap(c), veh/h	529	472	357	1003	0	452
V/C Ratio(X)	0.15	0.88	0.79	0.17	0.00	0.79
Avail Cap(c_a), veh/h	580	518	471	1371	0	687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.6	16.3	18.6	5.7	0.0	17.0
Incr Delay (d2), s/veh	0.1	15.2	6.6	0.1	0.0	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	0.8	11.5	4.3	1.2	0.0	4.9
LnGrp Delay(d),s/veh	12.7	31.6	25.1	5.8	0.0	20.5
LnGrp LOS	B	C	C	A		C
Approach Vol, veh/h	494			453	356	
Approach Delay, s/veh	28.6			17.8	20.5	
Approach LOS	C			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		30.3		18.6	13.8	16.5		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		36.0		16.0	13.0	19.0		
Max Q Clear Time (g_c+I1), s		4.3		14.2	9.4	11.2		
Green Ext Time (p_c), s		1.9		0.4	0.7	1.3		

Intersection Summary	
HCM 2010 Ctrl Delay	22.6
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.6

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	5	150	0	5	540	10	0	0	5	5	0	15
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	163	0	5	587	11	0	0	5	5	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	598	0	0	163	0	0	785	783	163	780	777	592
Stage 1	-	-	-	-	-	-	174	174	-	603	603	-
Stage 2	-	-	-	-	-	-	611	609	-	177	174	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	979	-	-	1416	-	-	310	325	882	313	328	506
Stage 1	-	-	-	-	-	-	828	755	-	486	488	-
Stage 2	-	-	-	-	-	-	481	485	-	825	755	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	979	-	-	1416	-	-	298	321	882	308	324	506
Mov Cap-2 Maneuver	-	-	-	-	-	-	298	321	-	308	324	-
Stage 1	-	-	-	-	-	-	823	750	-	483	486	-
Stage 2	-	-	-	-	-	-	463	483	-	815	750	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.3	0.1	9.1	13.7
HCM LOS			A	B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1
Capacity (veh/h)	882	1416	-	-	979	-	-	436
HCM Lane V/C Ratio	0.006	0.004	-	-	0.006	-	-	0.05
HCM Control Delay (s)	9.1	7.6	0	-	8.7	0	-	13.7
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	250	30	35	240	120	40	165	290	105	210	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	37	309	37	37	253	126	44	183	321	135	269	51
Adj No. of Lanes	0	1	0	1	1	1	1	1	1	1	1	0
Peak Hour Factor	0.81	0.81	0.81	0.95	0.95	0.95	0.90	0.90	0.90	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	568	65	576	1019	1035	56	413	351	189	452	86
Arrive On Green	0.39	0.39	0.39	0.12	0.55	0.55	0.03	0.22	0.22	0.11	0.30	0.30
Sat Flow, veh/h	103	1473	169	1774	1863	1583	1774	1863	1583	1774	1523	289
Grp Volume(v), veh/h	383	0	0	37	253	126	44	183	321	135	0	320
Grp Sat Flow(s),veh/h/ln	1744	0	0	1774	1863	1583	1774	1863	1583	1774	0	1812
Q Serve(g_s), s	2.0	0.0	0.0	0.0	6.8	0.0	2.4	8.1	19.0	7.1	0.0	14.5
Cycle Q Clear(g_c), s	15.8	0.0	0.0	0.0	6.8	0.0	2.4	8.1	19.0	7.1	0.0	14.5
Prop In Lane	0.10		0.10	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	713	0	0	576	1019	1035	56	413	351	189	0	538
V/C Ratio(X)	0.54	0.00	0.00	0.06	0.25	0.12	0.79	0.44	0.92	0.71	0.00	0.60
Avail Cap(c_a), veh/h	713	0	0	576	1019	1035	111	427	363	314	0	623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.70	0.70	0.70	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.9	0.0	0.0	13.8	11.4	6.3	46.2	32.3	36.5	41.5	0.0	28.8
Incr Delay (d2), s/veh	2.9	0.0	0.0	0.0	0.4	0.2	21.2	0.7	26.7	4.9	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	8.4	0.0	0.0	0.5	3.6	1.3	1.5	4.3	10.9	3.7	0.0	7.4
LnGrp Delay(d),s/veh	25.8	0.0	0.0	13.8	11.8	6.4	67.4	33.0	63.2	46.4	0.0	30.0
LnGrp LOS	C			B	B	A	E	C	E	D		C
Approach Vol, veh/h		383			416			548			455	
Approach Delay, s/veh		25.8			10.4			53.5			34.9	
Approach LOS		C			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	14.2	25.3	15.5	41.0	7.0	32.5		56.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	17.0	22.0	4.0	37.0	6.0	33.0		45.0
Max Q Clear Time (g_c+I1), s	9.1	21.0	2.0	17.8	4.4	16.5		8.8
Green Ext Time (p_c), s	1.5	0.3	0.4	2.3	0.0	2.1		2.1

Intersection Summary	
HCM 2010 Ctrl Delay	32.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	240	360	35	105	135	80	130	390	380	75	275	130
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	286	429	-20	128	165	98	134	402	392	80	293	138
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	1	1	1
Peak Hour Factor	0.84	0.84	0.84	0.82	0.82	0.82	0.97	0.97	0.97	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	466	751	638	159	252	150	148	524	445	105	479	407
Arrive On Green	0.52	0.81	0.00	0.09	0.23	0.23	0.08	0.28	0.28	0.06	0.26	0.26
Sat Flow, veh/h	1774	1863	1583	1774	1097	651	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	286	429	-20	128	0	263	134	402	392	80	293	138
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1748	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	10.9	8.0	0.0	6.8	0.0	13.1	7.2	19.0	17.2	4.3	13.3	3.6
Cycle Q Clear(g_c), s	10.9	8.0	0.0	6.8	0.0	13.1	7.2	19.0	17.2	4.3	13.3	3.6
Prop In Lane	1.00		1.00	1.00		0.37	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	466	751	638	159	0	402	148	524	445	105	479	407
V/C Ratio(X)	0.61	0.57	-0.03	0.80	0.00	0.65	0.91	0.77	0.88	0.76	0.61	0.34
Avail Cap(c_a), veh/h	466	751	638	240	0	546	148	524	445	129	504	429
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.00	0.97	0.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.4	6.3	0.0	42.9	0.0	33.5	43.6	31.6	19.0	44.5	31.4	8.3
Incr Delay (d2), s/veh	2.0	2.7	0.0	10.7	0.0	1.7	47.4	10.3	21.3	18.4	2.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	5.5	4.4	0.0	3.8	0.0	6.5	5.5	11.2	10.1	2.6	7.1	1.6
LnGrp Delay(d),s/veh	21.4	9.0	0.0	53.6	0.0	35.2	91.0	41.9	40.3	62.9	33.4	8.8
LnGrp LOS	C	A		D		D	F	D	D	F	C	A
Approach Vol, veh/h		695			391			928			511	
Approach Delay, s/veh		14.4			41.2			48.3			31.4	
Approach LOS		B			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	31.0	12.6	42.7	12.0	28.7	29.2	26.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	27.0	13.0	33.0	8.0	26.0	16.0	30.0
Max Q Clear Time (g_c+I1), s	6.3	21.0	8.8	10.0	9.2	15.3	12.9	15.1
Green Ext Time (p_c), s	0.2	2.1	0.1	3.6	0.0	1.8	1.2	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	34.5
HCM 2010 LOS	C

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												
Volume (veh/h)	35	700	35	40	245	30	15	15	25	30	25	125
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	42	833	42	45	278	34	16	16	27	33	27	136
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.84	0.84	0.84	0.88	0.88	0.88	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	1007	51	64	935	114	126	115	133	106	56	193
Arrive On Green	0.03	0.57	0.57	0.04	0.57	0.57	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1774	1758	89	1774	1628	199	250	660	768	169	322	1113
Grp Volume(v), veh/h	42	0	875	45	0	312	59	0	0	196	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1847	1774	0	1828	1679	0	0	1604	0	0
Q Serve(g_s), s	1.3	0.0	21.2	1.4	0.0	4.8	0.0	0.0	0.0	2.8	0.0	0.0
Cycle Q Clear(g_c), s	1.3	0.0	21.2	1.4	0.0	4.8	1.6	0.0	0.0	6.3	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.11	0.27		0.46	0.17		0.69
Lane Grp Cap(c), veh/h	61	0	1058	64	0	1050	374	0	0	354	0	0
V/C Ratio(X)	0.69	0.00	0.83	0.70	0.00	0.30	0.16	0.00	0.00	0.55	0.00	0.00
Avail Cap(c_a), veh/h	193	0	1375	129	0	1294	745	0	0	738	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	26.3	0.0	9.6	26.3	0.0	6.0	19.5	0.0	0.0	21.4	0.0	0.0
Incr Delay (d2), s/veh	12.8	0.0	3.4	13.0	0.0	0.2	0.2	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	0.8	0.0	11.4	0.9	0.0	2.5	0.8	0.0	0.0	2.9	0.0	0.0
LnGrp Delay(d),s/veh	39.2	0.0	12.9	39.3	0.0	6.2	19.7	0.0	0.0	22.7	0.0	0.0
LnGrp LOS	D		B	D		A	B			C		
Approach Vol, veh/h		917			357			59			196	
Approach Delay, s/veh		14.1			10.3			19.7			22.7	
Approach LOS		B			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		13.6	6.0	35.5		13.6	5.9	35.6
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		23.0	4.0	41.0		23.0	6.0	39.0
Max Q Clear Time (g_c+I1), s		3.6	3.4	23.2		8.3	3.3	6.8
Green Ext Time (p_c), s		1.5	0.0	8.4		1.3	0.0	10.9

Intersection Summary	
HCM 2010 Ctrl Delay	14.6
HCM 2010 LOS	B

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	10	240	250	20	235	85	45	815	10	55	365	10
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	12	286	298	24	287	104	46	840	10	59	388	11
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.82	0.82	0.82	0.97	0.97	0.97	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	43	288	293	56	408	142	111	899	11	74	845	24
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.13	0.98	0.98	0.04	0.47	0.47
Sat Flow, veh/h	14	837	851	48	1187	413	1774	1837	22	1774	1803	51
Grp Volume(v), veh/h	596	0	0	415	0	0	46	0	850	59	0	399
Grp Sat Flow(s),veh/h/ln	1702	0	0	1648	0	0	1774	0	1859	1774	0	1854
Q Serve(g_s), s	13.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	10.7	3.2	0.0	14.0
Cycle Q Clear(g_c), s	33.0	0.0	0.0	20.0	0.0	0.0	2.3	0.0	10.7	3.2	0.0	14.0
Prop In Lane	0.02		0.50	0.06		0.25	1.00		0.01	1.00		0.03
Lane Grp Cap(c), veh/h	623	0	0	606	0	0	111	0	910	74	0	869
V/C Ratio(X)	0.96	0.00	0.00	0.68	0.00	0.00	0.41	0.00	0.93	0.80	0.00	0.46
Avail Cap(c_a), veh/h	623	0	0	606	0	0	111	0	910	74	0	869
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.51	0.00	0.51	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.7	0.0	0.0	27.0	0.0	0.0	40.4	0.0	0.6	45.6	0.0	17.3
Incr Delay (d2), s/veh	25.5	0.0	0.0	3.2	0.0	0.0	1.3	0.0	10.5	44.3	0.0	1.7
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(-26165%),veh/ln	20.2	0.0	0.0	10.0	0.0	0.0	1.2	0.0	3.1	2.5	0.0	7.5
LnGrp Delay(d),s/veh	57.3	0.0	0.0	30.2	0.0	0.0	41.6	0.0	11.1	89.9	0.0	19.0
LnGrp LOS	F			C			D		B	F		B
Approach Vol, veh/h		596			415			896			458	
Approach Delay, s/veh		57.3			30.2			12.7			28.1	
Approach LOS		E			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		37.0	8.0	51.0		37.0	10.0	49.0
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		33.0	4.0	47.0		33.0	6.0	45.0
Max Q Clear Time (g_c+I1), s		22.0	5.2	12.7		35.0	4.3	16.0
Green Ext Time (p_c), s		5.2	0.0	8.0		0.0	1.0	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	30.0
HCM 2010 LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	5	20	15	190	15	370	10	500	170	175	430	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	6	26	19	207	16	402	11	556	189	201	494	6
Adj No. of Lanes	0	1	0	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.77	0.77	0.77	0.92	0.92	0.92	0.90	0.90	0.90	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	8	34	25	275	21	445	302	684	233	203	842	10
Arrive On Green	0.04	0.04	0.04	0.17	0.17	0.17	0.17	0.51	0.51	0.11	0.46	0.46
Sat Flow, veh/h	204	886	648	1652	128	1583	1774	1331	452	1774	1837	22
Grp Volume(v), veh/h	51	0	0	223	0	402	11	0	745	201	0	500
Grp Sat Flow(s),veh/h/ln	1738	0	0	1780	0	1583	1774	0	1783	1774	0	1859
Q Serve(g_s), s	2.8	0.0	0.0	11.5	0.0	16.0	0.5	0.0	33.5	10.9	0.0	19.1
Cycle Q Clear(g_c), s	2.8	0.0	0.0	11.5	0.0	16.0	0.5	0.0	33.5	10.9	0.0	19.1
Prop In Lane	0.12		0.37	0.93		1.00	1.00		0.25	1.00		0.01
Lane Grp Cap(c), veh/h	66	0	0	297	0	445	302	0	917	203	0	852
V/C Ratio(X)	0.77	0.00	0.00	0.75	0.00	0.90	0.04	0.00	0.81	0.99	0.00	0.59
Avail Cap(c_a), veh/h	290	0	0	297	0	445	302	0	917	203	0	852
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.91	0.00	0.91
Uniform Delay (d), s/veh	45.8	0.0	0.0	38.1	0.0	33.2	33.2	0.0	19.5	42.4	0.0	19.3
Incr Delay (d2), s/veh	17.1	0.0	0.0	10.3	0.0	21.4	0.0	0.0	7.8	57.0	0.0	2.7
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(-26165%),veh/ln	1.7	0.0	0.0	6.5	0.0	12.9	0.2	0.0	18.3	8.5	0.0	10.4
LnGrp Delay(d),s/veh	62.9	0.0	0.0	48.4	0.0	54.6	33.3	0.0	27.3	99.4	0.0	22.0
LnGrp LOS	E			D		D	C		C	F		C
Approach Vol, veh/h		51			625			756			701	
Approach Delay, s/veh		62.9			52.4			27.4			44.2	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		20.0	15.0	53.4		7.6	20.4	48.0
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	11.0	37.0		16.0	4.0	44.0
Max Q Clear Time (g_c+I1), s		18.0	12.9	35.5		4.8	2.5	21.1
Green Ext Time (p_c), s		0.0	0.0	0.8		0.1	0.8	3.3

Intersection Summary	
HCM 2010 Ctrl Delay	41.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	5	20	85	145	15	40	45	660	5	50	840	155
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	7	22	121	108	85	43	49	759	6	54	913	168
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	1
Peak Hour Factor	0.70	0.92	0.70	0.92	0.92	0.92	0.92	0.87	0.87	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	9	28	152	183	121	61	62	857	7	197	1007	1020
Arrive On Green	0.12	0.12	0.12	0.10	0.10	0.10	0.03	0.46	0.46	0.11	0.54	0.54
Sat Flow, veh/h	76	239	1313	1774	1168	591	1774	1846	15	1774	1863	1583
Grp Volume(v), veh/h	150	0	0	108	0	128	49	0	765	54	913	168
Grp Sat Flow(s),veh/h/ln	1627	0	0	1774	0	1758	1774	0	1860	1774	1863	1583
Q Serve(g_s), s	7.0	0.0	0.0	4.5	0.0	5.5	2.1	0.0	29.2	2.2	34.4	3.3
Cycle Q Clear(g_c), s	7.0	0.0	0.0	4.5	0.0	5.5	2.1	0.0	29.2	2.2	34.4	3.3
Prop In Lane	0.05		0.81	1.00		0.34	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	189	0	0	183	0	182	62	0	864	197	1007	1020
V/C Ratio(X)	0.80	0.00	0.00	0.59	0.00	0.70	0.80	0.00	0.89	0.27	0.91	0.16
Avail Cap(c_a), veh/h	334	0	0	364	0	361	91	0	1121	197	1146	1138
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	0.0	0.0	33.4	0.0	33.8	37.4	0.0	19.0	31.8	16.1	5.5
Incr Delay (d2), s/veh	7.4	0.0	0.0	3.0	0.0	4.9	24.8	0.0	7.1	0.7	9.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	3.5	0.0	0.0	2.4	0.0	2.9	1.5	0.0	16.6	1.1	20.2	1.9
LnGrp Delay(d),s/veh	41.0	0.0	0.0	36.4	0.0	38.7	62.2	0.0	26.1	32.5	25.7	5.6
LnGrp LOS	D			D		D	E		C	C	C	A
Approach Vol, veh/h		150			236			814			1135	
Approach Delay, s/veh		41.0			37.7			28.3			23.0	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.7	46.2		13.0	12.7	40.2		12.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	48.0		16.0	5.0	47.0		16.0
Max Q Clear Time (g_c+I1), s	4.1	36.4		9.0	4.2	31.2		7.5
Green Ext Time (p_c), s	0.0	5.8		0.4	0.0	5.0		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	27.5
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	25	325	450	320	840	140	110	45	130	125	55	50
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	30	392	0	352	923	154	147	60	173	139	61	56
Adj No. of Lanes	1	1	1	1	2	0	0	1	1	1	1	0
Peak Hour Factor	0.83	0.83	0.83	0.91	0.91	0.91	0.75	0.75	0.75	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	250	522	443	570	1397	233	175	72	217	180	91	84
Arrive On Green	0.14	0.28	0.00	0.64	0.92	0.92	0.14	0.14	0.14	0.10	0.10	0.10
Sat Flow, veh/h	1774	1863	1583	1774	3037	506	1277	521	1583	1774	896	822
Grp Volume(v), veh/h	30	392	0	352	538	539	207	0	173	139	0	117
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1770	1773	1799	0	1583	1774	0	1718
Q Serve(g_s), s	1.5	19.2	0.0	11.8	6.2	6.2	11.2	0.0	10.6	7.6	0.0	6.6
Cycle Q Clear(g_c), s	1.5	19.2	0.0	11.8	6.2	6.2	11.2	0.0	10.6	7.6	0.0	6.6
Prop In Lane	1.00		1.00	1.00		0.29	0.71		1.00	1.00		0.48
Lane Grp Cap(c), veh/h	250	522	443	570	814	816	247	0	217	180	0	175
V/C Ratio(X)	0.12	0.75	0.00	0.62	0.66	0.66	0.84	0.00	0.80	0.77	0.00	0.67
Avail Cap(c_a), veh/h	250	522	443	570	814	816	288	0	253	284	0	275
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.53	0.53	0.00	0.83	0.83	0.83	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.5	32.8	0.0	14.2	2.4	2.4	42.1	0.0	41.8	43.8	0.0	43.3
Incr Delay (d2), s/veh	0.1	5.3	0.0	1.7	3.5	3.5	17.2	0.0	14.1	6.8	0.0	4.4
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(-26165%),veh/ln	0.7	10.6	0.0	5.9	3.2	3.2	6.8	0.0	5.5	4.1	0.0	3.3
LnGrp Delay(d),s/veh	37.6	38.1	0.0	15.9	5.9	5.9	59.2	0.0	55.9	50.6	0.0	47.7
LnGrp LOS	D	D		B	A	A	E		E	D		D
Approach Vol, veh/h		422			1429			380			256	
Approach Delay, s/veh		38.1			8.4			57.7			49.3	
Approach LOS		D			A			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.1	50.0		17.7	36.1	32.0		14.2
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	6.0	46.0		16.0	24.0	28.0		16.0
Max Q Clear Time (g_c+I1), s	3.5	8.2		13.2	13.8	21.2		9.6
Green Ext Time (p_c), s	0.3	9.1		0.5	0.9	1.3		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	25.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	145	50	40	180	35	660	155	350	75	70	490	315
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	158	54	43	198	38	0	163	368	82	76	583	375
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.91	0.92	0.91	0.95	0.95	0.92	0.92	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	253	94	80	235	76	64	474	1736	383	98	726	617
Arrive On Green	0.14	0.05	0.05	0.13	0.04	0.00	0.53	1.00	1.00	0.06	0.39	0.39
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	2884	636	1774	1863	1583
Grp Volume(v), veh/h	158	54	43	198	38	0	163	224	226	76	583	375
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1751	1774	1863	1583
Q Serve(g_s), s	8.4	2.8	2.3	10.9	2.0	0.0	5.2	0.0	0.0	4.2	27.8	18.9
Cycle Q Clear(g_c), s	8.4	2.8	2.3	10.9	2.0	0.0	5.2	0.0	0.0	4.2	27.8	18.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	253	94	80	235	76	64	474	1065	1054	98	726	617
V/C Ratio(X)	0.63	0.57	0.54	0.84	0.50	0.00	0.34	0.21	0.21	0.78	0.80	0.61
Avail Cap(c_a), veh/h	284	298	253	284	298	253	474	1065	1054	160	726	617
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	0.79	0.79	0.79	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	46.4	34.1	42.4	47.0	0.0	18.3	0.0	0.0	46.6	27.1	24.4
Incr Delay (d2), s/veh	3.6	5.4	5.5	17.3	5.0	0.0	0.3	0.4	0.4	12.4	9.1	4.4
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(-26165%),veh/ln	4.4	1.6	1.1	6.5	1.1	0.0	2.6	0.1	0.1	2.4	16.1	9.0
LnGrp Delay(d),s/veh	43.9	51.8	39.6	59.7	52.0	0.0	18.7	0.4	0.4	59.1	36.2	28.8
LnGrp LOS	D	D	D	E	D		B	A	A	E	D	C
Approach Vol, veh/h		255			236			613			1034	
Approach Delay, s/veh		44.9			58.4			5.2			35.2	
Approach LOS		D			E			A			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.7	43.0	17.2	9.1	9.5	64.2	18.2	8.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	39.0	16.0	16.0	9.0	43.0	16.0	16.0
Max Q Clear Time (g_c+I1), s	7.2	29.8	12.9	4.8	6.2	2.0	10.4	4.0
Green Ext Time (p_c), s	1.6	3.6	0.4	0.2	0.0	3.5	0.5	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	30.3
HCM 2010 LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	190	280	240	265	115	220
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	209	308	296	327	116	222
Adj No. of Lanes	1	1	1	1	1	0
Peak Hour Factor	0.91	0.91	0.81	0.81	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	381	675	376	1104	163	312
Arrive On Green	0.21	0.21	0.21	0.59	0.28	0.28
Sat Flow, veh/h	1774	1583	1774	1863	573	1096
Grp Volume(v), veh/h	209	308	296	327	0	338
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1669
Q Serve(g_s), s	4.4	5.7	6.6	3.6	0.0	7.5
Cycle Q Clear(g_c), s	4.4	5.7	6.6	3.6	0.0	7.5
Prop In Lane	1.00	1.00	1.00			0.66
Lane Grp Cap(c), veh/h	381	675	376	1104	0	474
V/C Ratio(X)	0.55	0.46	0.79	0.30	0.00	0.71
Avail Cap(c_a), veh/h	684	946	684	1616	0	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.5	8.5	15.5	4.2	0.0	13.3
Incr Delay (d2), s/veh	1.2	0.5	3.7	0.1	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	2.2	5.6	3.6	1.9	0.0	3.8
LnGrp Delay(d),s/veh	15.7	9.0	19.2	4.3	0.0	15.7
LnGrp LOS	B	A	B	A		B
Approach Vol, veh/h	517			623	338	
Approach Delay, s/veh	11.7			11.4	15.7	
Approach LOS	B			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		28.6		12.9	12.8	15.8		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		36.0		16.0	16.0	16.0		
Max Q Clear Time (g_c+I1), s		5.6		7.7	8.6	9.5		
Green Ext Time (p_c), s		4.7		1.2	0.5	2.3		

Intersection Summary	
HCM 2010 Ctrl Delay	12.5
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	0.6

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	10	355	0	5	565	15	0	0	5	10	0	10
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	386	0	5	614	16	0	0	5	11	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	630	0	0	386	0	0	1047	1049	386	1043	1041	622
Stage 1	-	-	-	-	-	-	408	408	-	633	633	-
Stage 2	-	-	-	-	-	-	639	641	-	410	408	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	952	-	-	1172	-	-	206	227	662	207	230	487
Stage 1	-	-	-	-	-	-	620	597	-	468	473	-
Stage 2	-	-	-	-	-	-	464	469	-	619	597	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	952	-	-	1172	-	-	198	222	662	202	225	487
Mov Cap-2 Maneuver	-	-	-	-	-	-	198	222	-	202	225	-
Stage 1	-	-	-	-	-	-	611	588	-	461	470	-
Stage 2	-	-	-	-	-	-	450	466	-	605	588	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.2	0.1	10.5	18.6
HCM LOS			B	C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1
Capacity (veh/h)	662	1172	-	-	952	-	-	286
HCM Lane V/C Ratio	0.008	0.005	-	-	0.011	-	-	0.076
HCM Control Delay (s)	10.5	8.1	0	-	8.8	0	-	18.6
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2

DELAY (CONTROL)

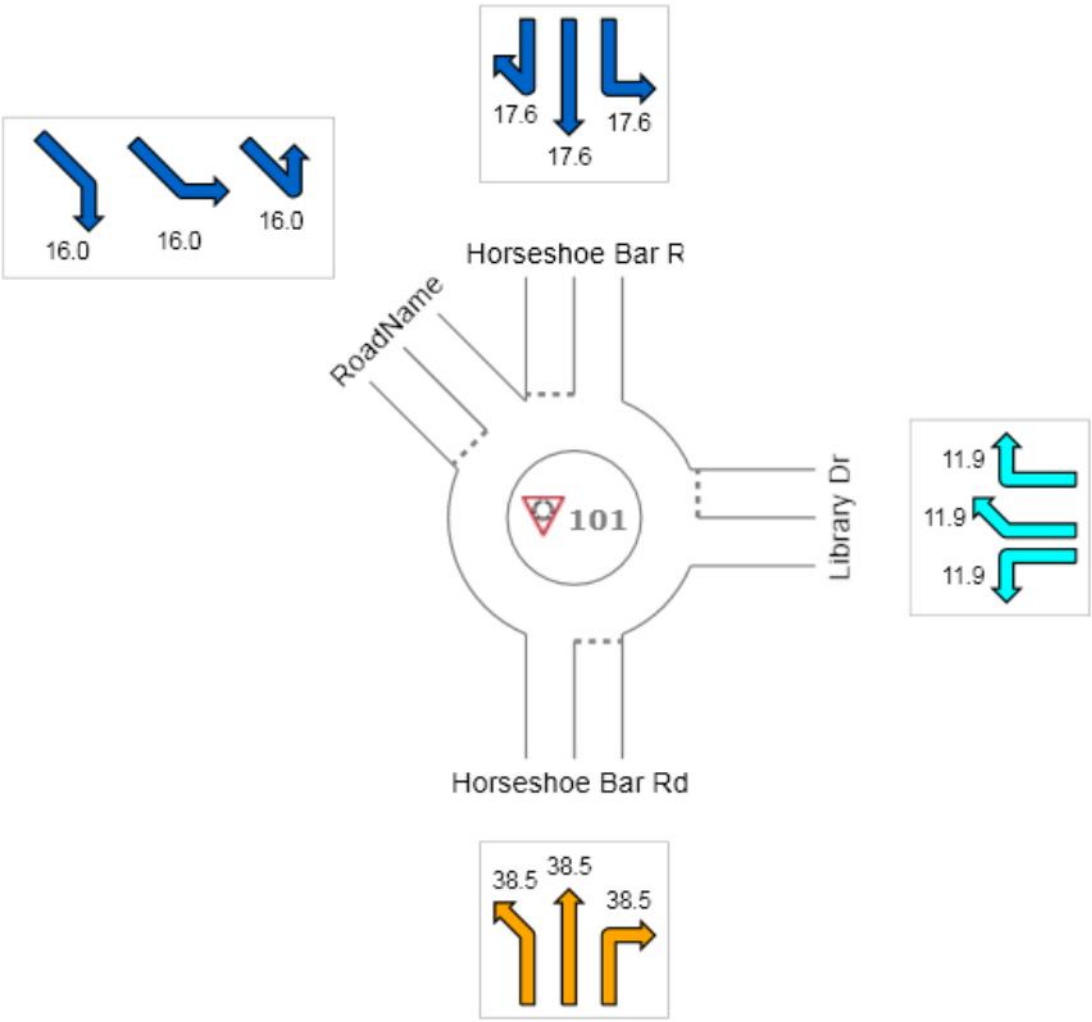
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: Horseshoe Bar Rd / Library Dr / Project Access

Cumulative plus Project PM
Roundabout

All Movement Classes

	South	East	North	Northwest	Intersection
	38.5	11.9	17.6	16.0	27.6
LOS	E	B	C	C	D



Colour code based on Level of Service

LOS A	LOS B	LOS C	LOS D	LOS E	LOS F	Continuous

Level of Service Method: Delay & v/c (HCM 2010)
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

QUEUE DISTANCE (%ILE)

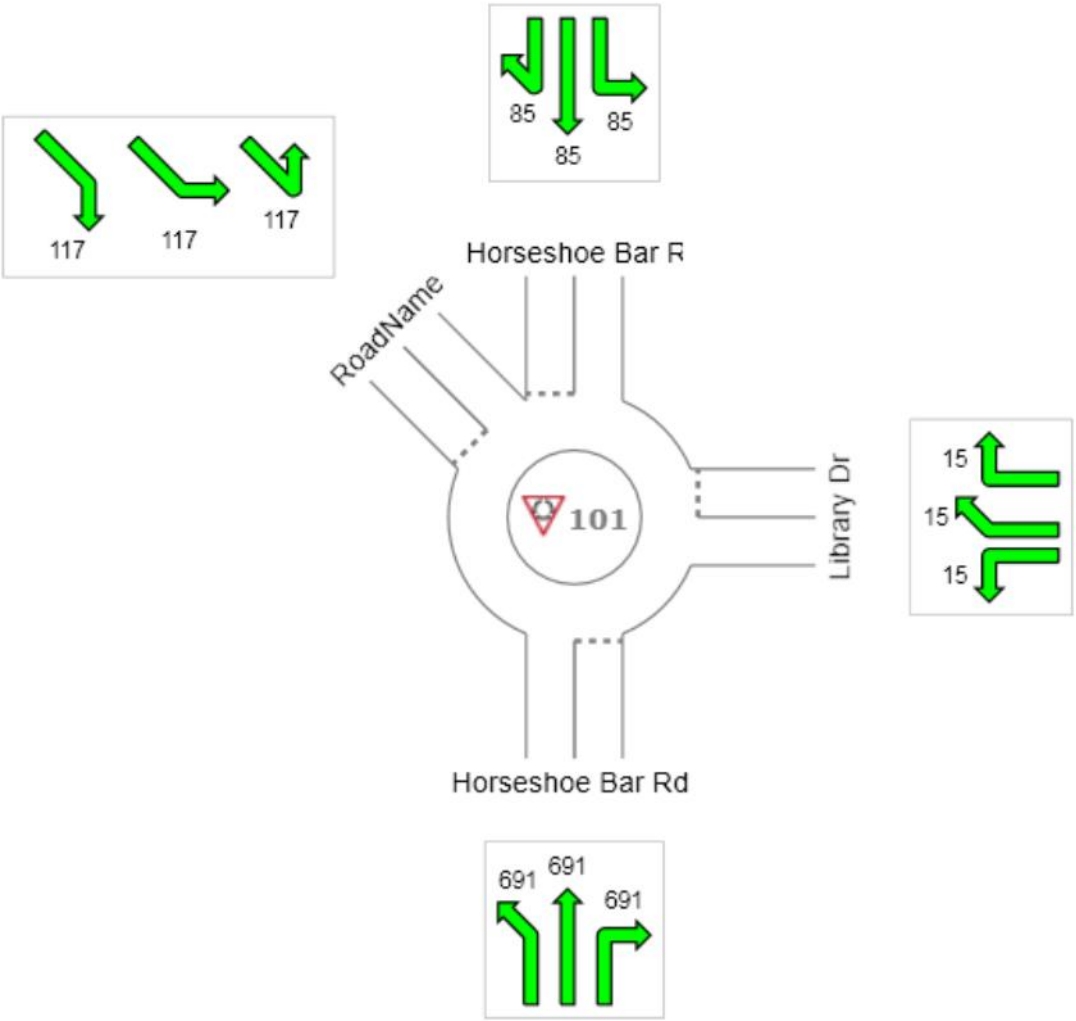
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Horseshoe Bar Rd / Library Dr / Project Access

Cumulative plus Project PM
Roundabout

All Movement Classes

	South	East	North	Northwest	Intersection
	691	15	85	117	691



Colour code based on Queue Storage Ratio

[< 0.6]	[0.6 – 0.7]	[0.7 – 0.8]	[0.8 – 0.9]	[0.9 – 1.0]	[> 1.0]	Continuous

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Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	5	20	15	190	15	370	10	500	170	175	430	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	6	26	19	207	16	402	11	556	189	201	494	6
Adj No. of Lanes	0	1	0	0	1	1	1	1	1	1	1	0
Peak Hour Factor	0.77	0.77	0.77	0.92	0.92	0.92	0.90	0.90	0.90	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	8	34	24	258	20	732	398	585	497	543	726	9
Arrive On Green	0.04	0.04	0.04	0.16	0.16	0.16	0.22	0.31	0.31	0.31	0.40	0.40
Sat Flow, veh/h	204	886	648	1652	128	1583	1774	1863	1583	1774	1837	22
Grp Volume(v), veh/h	51	0	0	223	0	402	11	556	189	201	0	500
Grp Sat Flow(s),veh/h/ln	1738	0	0	1780	0	1583	1774	1863	1583	1774	0	1859
Q Serve(g_s), s	2.5	0.0	0.0	10.4	0.0	0.0	0.4	25.1	8.0	7.6	0.0	19.1
Cycle Q Clear(g_c), s	2.5	0.0	0.0	10.4	0.0	0.0	0.4	25.1	8.0	7.6	0.0	19.1
Prop In Lane	0.12		0.37	0.93		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	66	0	0	278	0	732	398	585	497	543	0	735
V/C Ratio(X)	0.78	0.00	0.00	0.80	0.00	0.55	0.03	0.95	0.38	0.37	0.00	0.68
Avail Cap(c_a), veh/h	323	0	0	331	0	779	398	585	497	543	0	735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.92	0.00	0.92
Uniform Delay (d), s/veh	41.0	0.0	0.0	35.0	0.0	16.7	26.0	28.8	23.0	23.4	0.0	21.5
Incr Delay (d2), s/veh	17.4	0.0	0.0	11.3	0.0	0.7	0.0	26.9	2.2	0.4	0.0	4.7
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(0%),veh/ln	1.5	0.0	0.0	6.0	0.0	7.0	0.2	17.2	3.8	3.8	0.0	10.7
LnGrp Delay(d),s/veh	58.5	0.0	0.0	46.3	0.0	17.4	26.1	55.7	25.2	23.8	0.0	26.2
LnGrp LOS	E			D		B	C	E	C	C		C
Approach Vol, veh/h		51			625			756			701	
Approach Delay, s/veh		58.5			27.7			47.6			25.5	
Approach LOS		E			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		17.4	30.3	31.0		7.3	23.3	38.0
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	11.0	27.0		16.0	4.0	34.0
Max Q Clear Time (g_c+I1), s		12.4	9.6	27.1		4.5	2.4	21.1
Green Ext Time (p_c), s		1.1	0.1	0.0		0.1	0.1	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	34.8
HCM 2010 LOS	C

DELAY (CONTROL)

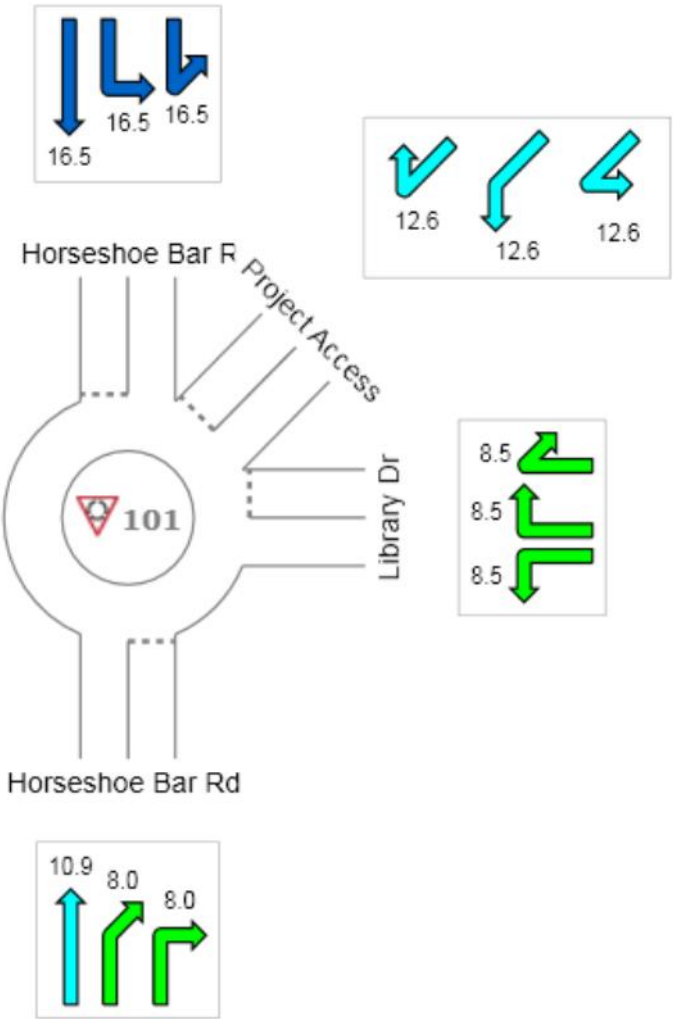
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: Horseshoe Bar Rd / Library Dr / Project Access

Cumulative plus Project PM
Roundabout

All Movement Classes

	South	East	Northeast	North	Intersection
	9.7	8.5	12.6	16.5	12.0
LOS	A	A	B	C	B



Colour code based on Level of Service

LOS A	LOS B	LOS C	LOS D	LOS E	LOS F	Continuous

Level of Service Method: Delay & v/c (HCM 2010)
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

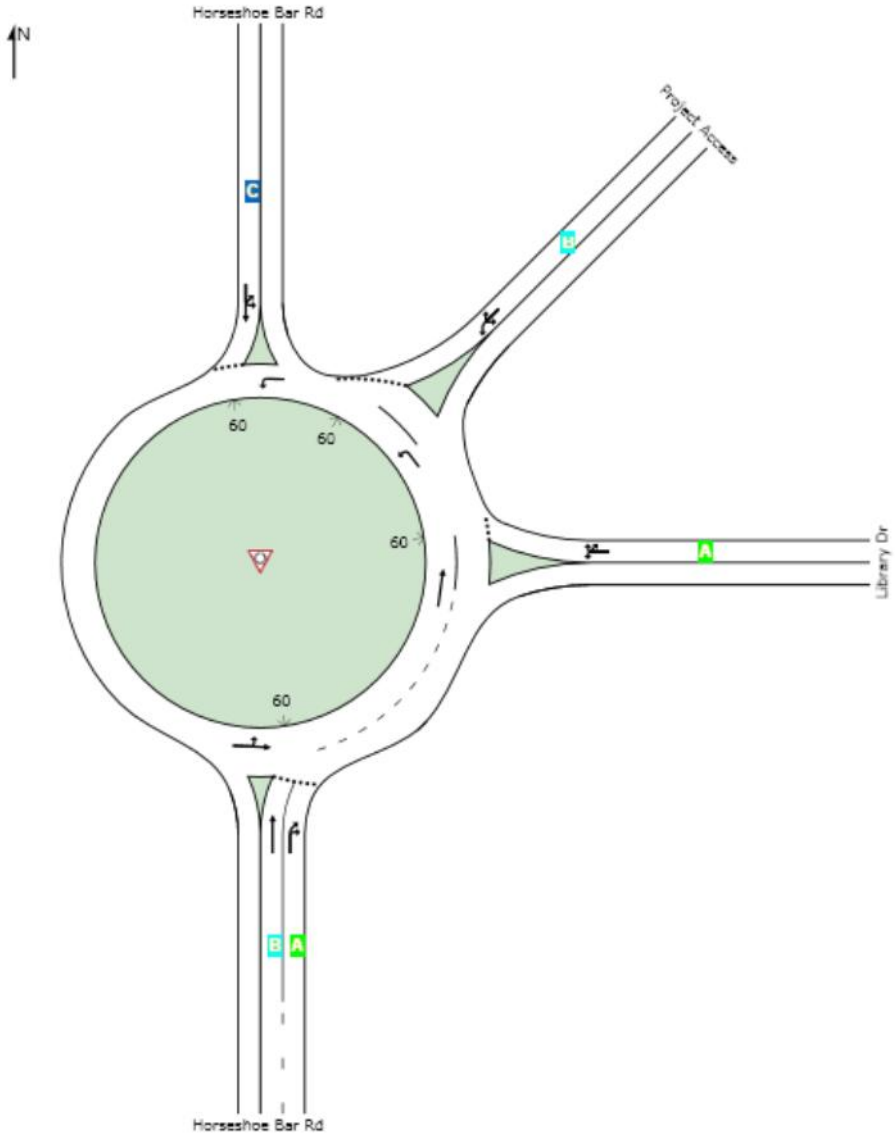
LEVEL OF SERVICE

Site: Horseshoe Bar Rd / Library Dr / Project Access

Cumulative plus Project PM
Roundabout

All Movement Classes

	South	East	Northeast	North	Intersection
LOS	A	A	B	C	B



Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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Intersection: 1: King Rd & Swetzer Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	650	81	66	45	88	233	133	129	208
Average Queue (ft)	267	29	18	8	28	109	31	44	91
95th Queue (ft)	739	67	52	32	67	187	73	93	168
Link Distance (ft)	2373		181			740			567
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		100		110	200		200	150	
Storage Blk Time (%)		0				1	0	0	2
Queuing Penalty (veh)		0				0	0	0	1

Intersection: 2: Taylor Rd & King Rd

Movement	EB	EB	EB	WB	WB	NB	NB	NB	B29	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	R	T	L	T	R
Maximum Queue (ft)	75	201	80	125	1868	118	201	118	476	274	518	275
Average Queue (ft)	71	148	29	112	1023	65	151	54	117	88	304	68
95th Queue (ft)	83	242	67	148	2623	130	233	139	429	242	542	255
Link Distance (ft)		181	181		2914		118		790		448	
Upstream Blk Time (%)		17			8	2	23	0	0		13	
Queuing Penalty (veh)		28			34	0	137	0	1		0	
Storage Bay Dist (ft)	50			100		200		200		250		250
Storage Blk Time (%)	54	16		44	31	2	23	0		0	23	0
Queuing Penalty (veh)	53	30		189	48	9	44	2		0	36	0

Intersection: 2: Taylor Rd & King Rd

Movement	B31
Directions Served	T
Maximum Queue (ft)	283
Average Queue (ft)	72
95th Queue (ft)	379
Link Distance (ft)	801
Upstream Blk Time (%)	2
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Boyington Rd & King Rd

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	72	141	213	1054	129	349
Average Queue (ft)	26	59	73	435	40	119
95th Queue (ft)	60	115	174	1769	136	353
Link Distance (ft)		2914		3279	1593	1850
Upstream Blk Time (%)				4		
Queuing Penalty (veh)				0		
Storage Bay Dist (ft)	200		200			
Storage Blk Time (%)			0	14		
Queuing Penalty (veh)			0	17		

Intersection: 4: Taylor Rd & Gates Ln/Webb St

Movement	SE	SE	NW	NW	NE	NE	SW	SW	B29	B29
Directions Served	LT	R	LT	R	L	TR	L	TR	T	
Maximum Queue (ft)	242	73	308	84	45	393	45	884	225	46
Average Queue (ft)	121	23	144	30	26	369	26	659	97	3
95th Queue (ft)	207	57	249	66	34	444	35	1121	262	31
Link Distance (ft)	1067	1067	850	850		370		790	118	118
Upstream Blk Time (%)						39		35	18	0
Queuing Penalty (veh)						233		244	63	0
Storage Bay Dist (ft)					1		1			
Storage Blk Time (%)					41	42	70	12		
Queuing Penalty (veh)					206	49	357	11		

Intersection: 5: Taylor Rd & Horseshoe Bar Rd/Parking

Movement	SE	NW	NW	NE	NE	SW	SW
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	120	210	85	266	891	73	249
Average Queue (ft)	42	188	84	21	420	42	70
95th Queue (ft)	91	254	91	145	1010	78	185
Link Distance (ft)	154	190			1515		370
Upstream Blk Time (%)	0	44			0		0
Queuing Penalty (veh)	0	246			0		1
Storage Bay Dist (ft)			60	300		50	
Storage Blk Time (%)		12	65		47	8	8
Queuing Penalty (veh)		50	79		2	49	9

Intersection: 6: Laird Street & Horseshoe Bar Rd

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	32	194	29	99
Average Queue (ft)	2	146	4	32
95th Queue (ft)	18	261	21	95
Link Distance (ft)	190	169	143	138
Upstream Blk Time (%)		30		4
Queuing Penalty (veh)		171		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Horseshoe Bar Rd & Library Dr

Movement	WB	SW
Directions Served	R>	LR
Maximum Queue (ft)	817	544
Average Queue (ft)	479	467
95th Queue (ft)	1039	643
Link Distance (ft)	790	498
Upstream Blk Time (%)	11	75
Queuing Penalty (veh)	89	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Horseshoe Bar Rd & Doc Barnes Rd

Movement	EB	WB	WB	SE	SE	NW	NW	NW
Directions Served	LTR	L	LTR	L	TR	L	T	R
Maximum Queue (ft)	80	167	181	37	254	74	507	399
Average Queue (ft)	27	67	89	3	103	29	317	30
95th Queue (ft)	59	129	156	23	201	70	566	213
Link Distance (ft)	196		2335		790		475	475
Upstream Blk Time (%)							7	0
Queuing Penalty (veh)							29	1
Storage Bay Dist (ft)		200		150		50		
Storage Blk Time (%)		0	0		3	4	41	
Queuing Penalty (veh)		0	0		0	28	16	

Intersection: 9: I-80 WB Ramps/Raleys & Horseshoe Bar Rd

Movement	SE	SE	SE	NW	NW	NW	NE	NE	SW	SW
Directions Served	L	T	R	L	T	TR	LT	R	L	TR
Maximum Queue (ft)	118	244	142	75	708	772	147	101	88	122
Average Queue (ft)	28	96	41	65	437	392	94	43	35	54
95th Queue (ft)	77	197	111	93	811	908	149	77	76	100
Link Distance (ft)		475	475		731	731			313	313
Upstream Blk Time (%)					9	18				
Queuing Penalty (veh)					38	78				
Storage Bay Dist (ft)	100			50						
Storage Blk Time (%)	0	7		30	47					
Queuing Penalty (veh)	0	2		102	69					

Intersection: 10: Horseshoe Bar Rd & I-80 EB Ramps

Movement	SE	SE	SE	NW	NW	NW	NE	NE	NE	SW	SW	SW
Directions Served	L	T	TR	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	145	106	78	115	266	212	89	63	39	238	273	254
Average Queue (ft)	69	29	22	25	117	48	37	20	14	116	92	62
95th Queue (ft)	125	76	59	75	260	156	76	52	39	200	312	268
Link Distance (ft)		731	731		321			367			348	
Upstream Blk Time (%)					6						8	
Queuing Penalty (veh)					22						63	
Storage Bay Dist (ft)	200			100		200	200		100	300		300
Storage Blk Time (%)	0			0	18	0		0		0	0	11
Queuing Penalty (veh)	0			0	26	0		0		1	1	31

Intersection: 11: Laird Rd & Horseshoe Bar Rd

Movement	EB	EB	NB	NB	SB
Directions Served	L	R	L	T	TR
Maximum Queue (ft)	81	168	163	79	182
Average Queue (ft)	33	85	93	29	88
95th Queue (ft)	70	136	150	67	149
Link Distance (ft)	2196			646	1026
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		300	300		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 18: I-80 WB Ramps

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 22: I-80 EB Ramps

Movement	SB	B23
Directions Served	R	T
Maximum Queue (ft)	266	151
Average Queue (ft)	73	48
95th Queue (ft)	371	308
Link Distance (ft)	493	631
Upstream Blk Time (%)	8	4
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 38: Horseshoe Bar Rd

Movement	NW	NE
Directions Served	T	LR
Maximum Queue (ft)	230	93
Average Queue (ft)	34	29
95th Queue (ft)	245	87
Link Distance (ft)	2196	206
Upstream Blk Time (%)		1
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 2999

Intersection: 1: King Rd & Swetzer Rd

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	259	104	188	128	103	495	224	175	852
Average Queue (ft)	128	22	87	34	30	167	123	134	472
95th Queue (ft)	221	68	163	103	74	469	229	218	1013
Link Distance (ft)	2376		179			798			814
Upstream Blk Time (%)			1			2			35
Queuing Penalty (veh)			2			0			0
Storage Bay Dist (ft)		100		110	200		200	150	
Storage Blk Time (%)		0	4	0		0	14	43	14
Queuing Penalty (veh)		0	6	0		1	30	116	15

Intersection: 2: Taylor Rd & King Rd

Movement	EB	EB	EB	WB	WB	NB	NB	NB	B29	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	R	T	L	T	R
Maximum Queue (ft)	75	204	49	125	357	118	222	118	755	142	216	48
Average Queue (ft)	66	184	15	85	144	90	179	105	474	51	117	12
95th Queue (ft)	94	228	41	145	288	142	244	152	990	107	198	36
Link Distance (ft)		179	179		2914		118		788		448	
Upstream Blk Time (%)		22				5	38	4	7			
Queuing Penalty (veh)		75				0	350	0	62			
Storage Bay Dist (ft)	50			100		200		200		250		250
Storage Blk Time (%)	24	42		7	16	5	38	4			0	
Queuing Penalty (veh)	88	104		17	17	37	195	23			0	

Intersection: 3: Boyington Rd & King Rd

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	115	325	77	167	66	142
Average Queue (ft)	28	153	31	68	24	63
95th Queue (ft)	82	263	66	137	57	111
Link Distance (ft)		2914		3277	1323	1850
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	200		200			
Storage Blk Time (%)		3		0		
Queuing Penalty (veh)		1		0		

Intersection: 4: Taylor Rd & Gates Ln/Webb St

Movement	SE	SE	NW	NW	NE	NE	SW	SW
Directions Served	LT	R	LT	R	L	TR	L	TR
Maximum Queue (ft)	346	249	393	113	124	381	99	134
Average Queue (ft)	149	87	167	44	39	249	41	28
95th Queue (ft)	271	199	325	90	109	425	81	87
Link Distance (ft)	1067	1067	858	858		371		788
Upstream Blk Time (%)						6		
Queuing Penalty (veh)						57		
Storage Bay Dist (ft)					100		100	
Storage Blk Time (%)					0	33	1	0
Queuing Penalty (veh)					1	15	2	0

Intersection: 5: Taylor Rd & Horseshoe Bar Rd/Parking

Movement	SE	NW	NW	NE	NE	SW	SW
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	103	186	85	267	920	74	390
Average Queue (ft)	33	158	82	28	509	66	206
95th Queue (ft)	75	225	96	146	1182	84	416
Link Distance (ft)	154	174			1515		371
Upstream Blk Time (%)	0	25			6		5
Queuing Penalty (veh)	0	147			0		34
Storage Bay Dist (ft)			60	300		50	
Storage Blk Time (%)		39	22		27	51	6
Queuing Penalty (veh)		147	46		3	226	10

Intersection: 6: Laird Street & Horseshoe Bar Rd

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	87	199	28	65
Average Queue (ft)	6	95	5	20
95th Queue (ft)	40	228	21	55
Link Distance (ft)	174	182	145	134
Upstream Blk Time (%)		10		
Queuing Penalty (veh)		59		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Horseshoe Bar Rd & Library Dr

Movement	WB	SE	SW
Directions Served	R>	<L	LR
Maximum Queue (ft)	559	24	69
Average Queue (ft)	156	1	30
95th Queue (ft)	537	13	58
Link Distance (ft)	793	182	525
Upstream Blk Time (%)	1		
Queuing Penalty (veh)	12		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Horseshoe Bar Rd & Doc Barnes Rd

Movement	EB	WB	WB	SE	SE	NW	NW	NW
Directions Served	LTR	L	LTR	L	TR	L	T	R
Maximum Queue (ft)	131	90	123	174	432	74	477	177
Average Queue (ft)	47	30	52	39	209	25	213	25
95th Queue (ft)	93	69	104	114	376	66	421	117
Link Distance (ft)	196		2648		793		458	458
Upstream Blk Time (%)							1	0
Queuing Penalty (veh)							6	1
Storage Bay Dist (ft)		200		150		50		
Storage Blk Time (%)					13	2	26	
Queuing Penalty (veh)					6	19	13	

Intersection: 9: I-80 WB Ramps/Raleys & Horseshoe Bar Rd

Movement	SE	SE	SE	NW	NW	NW	NE	NE	SW	SW
Directions Served	L	T	R	L	T	TR	LT	R	L	TR
Maximum Queue (ft)	122	315	230	75	751	865	142	102	194	152
Average Queue (ft)	29	149	71	74	736	825	96	46	85	63
95th Queue (ft)	88	265	169	78	798	937	154	81	156	120
Link Distance (ft)		458	458		731	731			313	313
Upstream Blk Time (%)					39	78				
Queuing Penalty (veh)					257	515				
Storage Bay Dist (ft)	100			50						
Storage Blk Time (%)	0	19		46	40					
Queuing Penalty (veh)	0	5		196	131					

Intersection: 10: Horseshoe Bar Rd & I-80 EB Ramps

Movement	EB	EB	EB	WB	WB	WB	SE	SE	SE	NW	NW	NW
Directions Served	L	T	R	L	T	R	L	T	TR	L	T	R
Maximum Queue (ft)	200	124	88	172	78	200	192	117	58	124	621	225
Average Queue (ft)	98	42	25	92	19	160	104	34	13	68	549	190
95th Queue (ft)	171	101	59	171	53	232	169	84	44	157	725	317
Link Distance (ft)		414						731	731		511	
Upstream Blk Time (%)											73	
Queuing Penalty (veh)											345	
Storage Bay Dist (ft)	200		100	250		250	200			100		200
Storage Blk Time (%)	1	1	0				0			1	88	0
Queuing Penalty (veh)	1	2	0				0			7	349	2

Intersection: 10: Horseshoe Bar Rd & I-80 EB Ramps

Movement	B41
Directions Served	T
Maximum Queue (ft)	1638
Average Queue (ft)	751
95th Queue (ft)	1813
Link Distance (ft)	2030
Upstream Blk Time (%)	1
Queuing Penalty (veh)	4
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: Laird Rd & Horseshoe Bar Rd

Movement	EB	EB	NB	NB	SB
Directions Served	L	R	L	T	TR
Maximum Queue (ft)	162	117	198	126	210
Average Queue (ft)	79	55	83	43	88
95th Queue (ft)	135	96	146	87	156
Link Distance (ft)		2030		645	1027
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	250		300		
Storage Blk Time (%)			0	0	
Queuing Penalty (veh)			0	0	

Intersection: 18: I-80 WB Ramps

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 22: I-80 EB Ramps

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 3756