Final Transportation Impact Study for Whitehawk I & II

Prepared for:
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1. Introduction

This study analyzes the transportation and traffic impacts of the proposed Whitehawk I and Whitehawk II single-family residential developments in Granite Bay, CA. The analysis contained in this study supports the preparation of the environmental impact report (EIR) for Whitehawk I and II.

Background

Placer County previously prepared separate Initial Study/Mitigated Negative Declarations (IS/MND) for the Whitehawk I and Whitehawk II projects. Following the closure of the comment period, the County, in coordination with the applicant, decided to prepare a single EIR to evaluate the potential environmental effects of both the Whitehawk I and Whitehawk II projects. Although the County has elected to evaluate both projects in a single EIR, it is reasonable to consider Whitehawk I and Whitehawk II as separate projects given that each proposal has independent utility and is not necessary for the other to proceed. Therefore, this study analyzes the impacts of each project separately (i.e., Whitehawk I only and Whitehawk II only), as well as evaluating the impacts of the two projects combined.

Previous traffic impact analyses were prepared by KD Anderson & Associates, Inc. for Whitehawk I and Whitehawk II separately in support of the aforementioned IS/MNDs. In addition to traffic operations, those previous traffic impact analyses evaluated the following specific traffic issues:

- Queuing in the left-turn pockets along Douglas Boulevard at Woodgrove Way/Quail Oaks Drive and Seeno Avenue
- Evaluation of the gated access points for both Whitehawk I and Whitehawk II, including gate operations, forecasted queuing, and an evaluation of the storage distance
- Deceleration for vehicles accessing Whitehawk I from eastbound Douglas Boulevard
- Weaving across eastbound Douglas Boulevard from Whitehawk I to make a U-turn at the Seeno Avenue signal

Fehr & Peers reviewed these previous analyses for Whitehawk I and Whitehawk II and determined that the project trip generation used in those previous analyses are generally consistent with this study. Therefore, the results of the evaluations listed above are generally still relevant and are not re-evaluated in this study, but relevant findings of that analysis have been incorporated into this report. However, this study applies a newer and current version of the HCM methodology, which results in slightly different traffic operations results than the previous analyses.

NOP Comment Letters

Placer County published a Notice of Preparation (NOP) to notify the California State Clearinghouse, responsible and trustee agencies, and interested parties and organizations of the upcoming preparation of an EIR for the proposed Whitehawk I and II projects. Comment letters on the NOP identified through travel diversion onto residential roadways parallel to Douglas Boulevard, such as Rolling Oaks Drive and Wood Thrush Way, as a topic to address. The comment letters indicate that this is primarily a westbound issue, where westbound through traffic on Douglas Boulevard use the adjacent residential streets to travel west towards Cavitt Stallman Road South as opposed to remaining on Douglas Boulevard.

To address this topic, this study evaluates travel speeds on Douglas Boulevard between Seeno Avenue and Cavitt Stallman Road South to determine the relative attractiveness of this route; and if traffic generated by the proposed projects would significantly affect this attractiveness by reducing travel speeds on Douglas Boulevard.

The NOP identified an off-site improvement to install a feature in the Douglas Boulevard / Woodgrove Way/Quail Oaks Drive intersection median opening that would continue to permit eastbound and westbound left turns from Douglas Boulevard onto Quail Oaks Drive and onto Woodgrove Way, while prohibiting northbound and southbound through traffic across Douglas Boulevard as well as left turns onto Douglas Boulevard from either approach. NOP comment letters expressed concern about the effects of this improvement.

County staff has indicated that a partial median closure at the Douglas Boulevard / Woodgrove Way/Quail Oaks Drive intersection, as described in the NOP, is not funded or finalized as part of the proposed projects plans. Therefore, this study analyzes this intersection as it exists today in allowing all side-street movements from Woodgrove Way/Quail Oaks Drive under all scenarios. This provides a conservative analysis of operations at this intersection since through and left-turn movements from the side-street incur the most delay.

Lastly, NOP comment letters also identified the traffic effects of construction activity, particularly the extension of a 16-inch water line, to the project as an item that should be addressed. This study does not quantitatively analyze construction traffic levels; however, the study conducts a qualitative evaluation and identifies mitigation measures to reduce the significance of construction traffic impacts.

Project Description

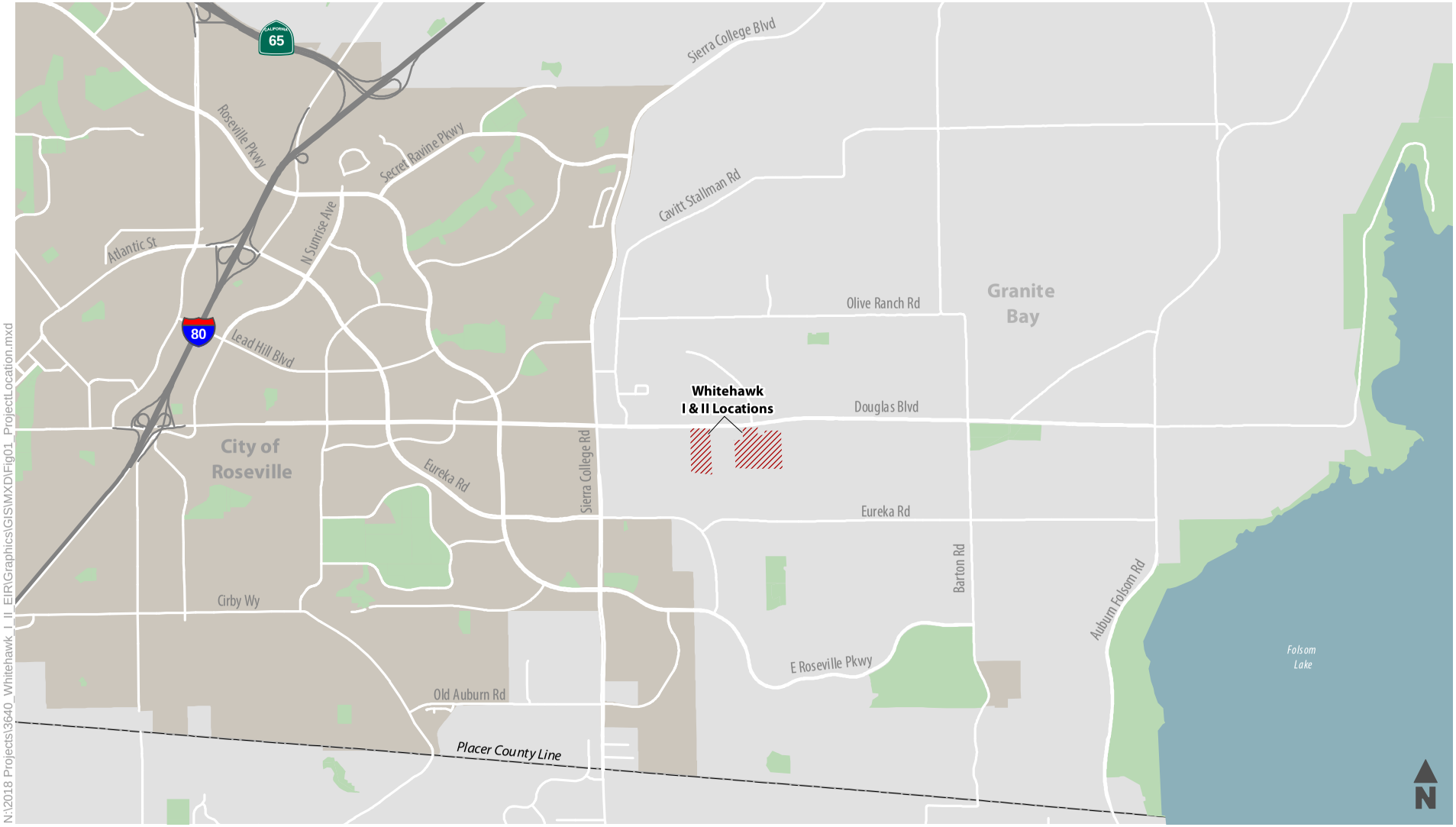
Project Location

Figure 1 shows the location of the proposed Whitehawk I and Whitehawk II projects. The proposed projects are in unincorporated Placer County east of the City of Roseville and within the census designated place of Granite Bay. The project sites are on the south side of Douglas Boulevard approximately 650 feet apart from each other, with a 19.2-acre undeveloped parcel located between them.

Whitehawk I is located east of Woodgrove Way and southeast of the Douglas Boulevard / Woodgrove Way/Quail Oaks Drive intersection. Sierra College Boulevard is approximately ½-mile west of the Whitehawk I site. Whitehawk II is on the south side of the Douglas Boulevard / Seeno Avenue intersection.

Both project sites are currently uninhabited and undeveloped without any existing structures. Strap Ravine, an intermittent stream, transects both sites flowing from east to west.

Douglas Boulevard provides access to the project sites and is a major east-west arterial that connects Granite Bay to Roseville and I-80 to the west; and Auburn Folsom Road and Folsom Lake to the east. Douglas Boulevard along with Auburn Folsom Road is a primary travel route that connects the communities in South Placer County with communities in northeastern Sacramento County and western El Dorado County, such as Folsom and El Dorado Hills.



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Whitehawk I & II Project Location

City of Roseville City Limits

Figure 1

Project Location

Project Elements

Figure 2 shows the proposed site plans for the Whitehawk I and Whitehawk II projects. The proposed Whitehawk I and II projects are described in further detail below.

Whitehawk I

Whitehawk I would involve the development of a 24-unit planned residential development on an 18.14-acre project site. The Whitehawk I site would be accessed from a new private, gated road that extends south from Douglas Boulevard approximately 500 feet east of Woodgrove Way. The 24 single-family residences would be arranged along a private roadway extending through the neighborhood. The Whitehawk I roadway terminates in a half-circle loop, with an emergency vehicle access to Chestnut Court in the Greyhawk subdivision to the southwest.

The project would include a 300-foot scenic setback along the south side of Douglas Boulevard along the northern edge of the site. The scenic setback will be maintained in an open space lot and rezoned to Open Space to protect existing oak woodlands and create a permanent visual separation between Douglas Boulevard and the proposed residential uses.

Whitehawk I would include 9.54 acres of open space and 0.33-ac of parkland within the project site, which would comprise 54 percent of the project site. Strap Ravine and the floodplain connected to the ravine, along with wetlands and woodlands, would be protected within the open space portions of the project site. The 0.33-acre park include active and passive recreation facilities such as seating areas, a bocce ball court, and walkways.

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Figure 2

Project Site Plan

Whitehawk II

Whitehawk II would involve the development of a 55-unit single-family planned residential development on a 32.84-acre project site. The 55 single-family residences would be arranged along private roadways extending through the neighborhood. Pedestrian facilities would be connected to and within the open spaces.

The Whitehawk II site would be accessed from a new private, gated road that extends south from the existing Douglas Boulevard / Seeno Avenue intersection. This will require modifications to the Douglas Boulevard / Seeno Avenue intersection, including minor relocation or replacement of existing facilities, striping and pavement changes, lengthening the westbound Douglas Boulevard left-turn lane approaching the Seeno Avenue intersection, and other improvements necessary for the construction of the southern leg of the intersection.

Similar to Whitehawk I, a 300-foot scenic setback along the south side of Douglas Boulevard along the northern edge of the project site would be maintained in an open space lot and rezoned to Open Space to protect existing oak woodlands and Strap Ravine and create a visual separation between Douglas Boulevard and the proposed residential uses.

Whitehawk II would include 14.45 acres of open space and 0.87-ac of parkland within the site, which would comprise 46 percent of the project site. Open spaces within Whitehawk II are intended to protect Strap Ravine, associated wetlands, and woodland areas. The 0.87-acre park would be within Whitehawk II south of Strap Ravine, and would provide active and passive recreation facilities including a covered picnic area, a bocce ball court, walkways, and seating areas.

An emergency vehicle access is planned for the east side of Whitehawk II, south of Lot 45. The 20-foot access road will extend within a 25-foot off-site easement for approximately 500 feet east to Quartzite Circle, a privately-maintained public road southeast of the site.

Utilities & Off-Site Improvements

To serve both the Whitehawk I and II projects, the existing 16-inch Douglas Boulevard waterline would be extended east from its current terminus at Douglas Boulevard and Woodgrove Way to the eastern property line of the proposed project. In addition, the replacement of the existing sewer main line south of the project site with upsized lines is necessary to implement Whitehawk II.

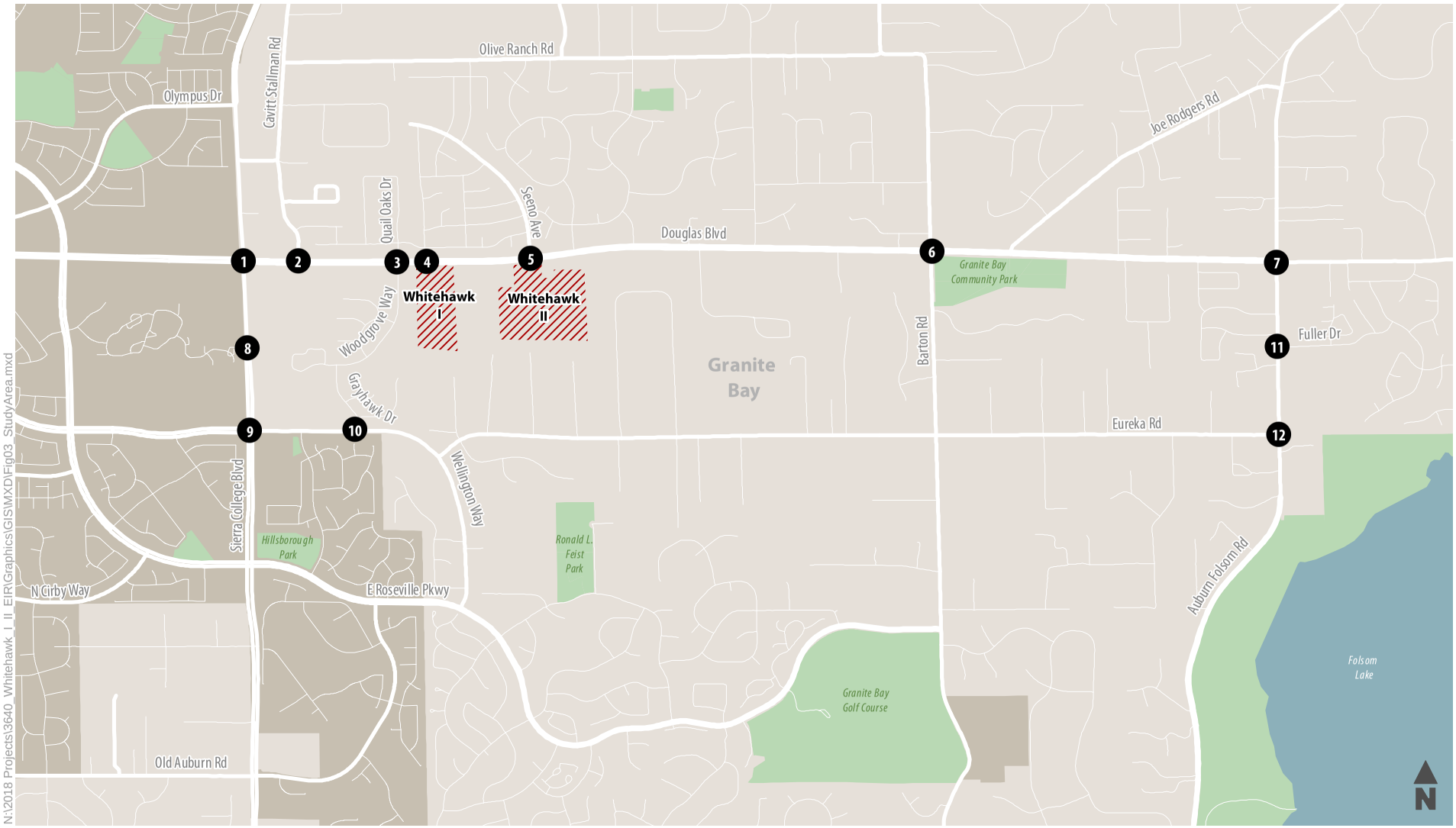
Construction

Each project would be constructed in a single phase. Approximately 9.9 acres of the Whitehawk I site would be graded to construct the project, and approximately 18.3 acres of the Whitehawk II site would be graded to construct the project. Mass and fine grading would be required to implement the projects for streets, home sites, and trenching for installation of infrastructure. The Whitehawk I project will require import of approximately 19,500 cubic yards of fill material, and Whitehawk II will require approximately 53,800 cubic yards of fill material.

Study Area

This study analyzes potential transportation and traffic impacts to transportation facilities that would be used by travel activity generated by the proposed Whitehawk I and II projects. Most of the arterial roadway segments and intersections analyzed in this study are located in unincorporated Placer County and are under Placer County's jurisdiction with the exception of Sierra College Boulevard which generally runs along the Roseville City Limits. Figure 3 shows the location of the study intersections.

As described in the Regulatory Setting section of this report, Placer County and the City of Roseville apply different LOS standards and significance criteria to roadway facilities under their jurisdiction. For roadway segments, both Placer County and the City of Roseville consider LOS D, E, or F operations to be unacceptable. For intersections, the policy documents for Placer County and City of Roseville offer different LOS standards based on their location. Table 1 presents the list of study intersections and identifies the presiding jurisdiction and LOS standard for each intersection.



1 Study Intersection

City of Roseville City Limits

Whitehawk I & II Project Location

Figure 3

Study Area

Both the study roadway segments and intersections are analyzed during weekday a.m. and p.m. peak hour conditions. The study arterial roadway segments and intersections are listed below.

Study Roadway Segments

1. Douglas Boulevard: Sierra College Boulevard to Cavitt Stallman Road South
2. Douglas Boulevard: Cavitt Stallman Road South to Woodgrove Way/Quail Oaks Drive
3. Douglas Boulevard: Woodgrove Way/Quail Oaks Drive to Seeno Avenue
4. Douglas Boulevard: Seeno Avenue to Barton Road
5. Douglas Boulevard: Barton Road to Auburn Folsom Road
6. Sierra College Boulevard: Olympus Drive to Douglas Boulevard
7. Sierra College Boulevard: Douglas Boulevard to Renaissance Creek/Granite Bay Business Park
8. Sierra College Boulevard: Renaissance Creek/Granite Bay Business Park to Eureka Road
9. Auburn Folsom Road: Douglas Boulevard to Eureka Road

All study roadway segments are subject to a LOS C standard per Placer County General Plan Policy 3.A.7 and Granite Bay Community Plan Circulation Element Policy 1.3.

Study Intersections

Table 1: Level of Service Standards – Intersections

Intersection	Jurisdiction	LOS Standard	Source
1. Sierra College Blvd. / Douglas Blvd.	City of Roseville/ Placer County[1]	C[2]	Roseville 2035 General Plan LOS policy
2. Cavitt Stallman Rd. South / Douglas Blvd.	Placer County	E	Granite Bay Community Plan Circulation Element Policy 1.3[4]
3. Woodgrove Way/Quail Oaks Dr. / Douglas Blvd.	Placer County	E	
4. Whitehawk I Access / Douglas Blvd.[3]	Placer County	E	
5. Seeno Ave. / Douglas Blvd.	Placer County	E	
6. Barton Rd. / Douglas Blvd.	Placer County	E	
7. Auburn Folsom Rd. / Douglas Blvd.	Placer County	E	
8. Sierra College Blvd. / Renaissance Creek/ Granite Bay Business Park	City of Roseville/ Placer County[1]	C	Roseville 2035 General Plan LOS policy
9. Sierra College Blvd. / Eureka Rd.	City of Roseville/ Placer County[1]	C	Roseville 2035 General Plan LOS policy

Table 1: Level of Service Standards – Intersections

Intersection	Jurisdiction	LOS Standard	Source
10. Grayhawk Dr. / Eureka Rd.	Placer County	C	Placer County General Plan Policy 3.A.7
11. Auburn Folsom Rd. / Fuller Dr.	Placer County	E	Granite Bay Community Plan Circulation Element Policy 1.3[4]
12. Auburn Folsom Rd. / Eureka Rd.	Placer County	E	

Notes:

1. For intersections that are along the City of Roseville city limits, the City of Roseville's LOS standard is applied.
2. Granite Bay Community Plan Circulation Element Policy 1.4 establishes a LOS E goal for Sierra College Boulevard / Douglas Boulevard. However, the City of Roseville LOS C standard is a stricter standard. Therefore, this study uses LOS C as the LOS standard at this intersection.
3. Whitehawk I Access does not exist today, and would be constructed with development of Whitehawk I.
4. Per Granite Bay Community Plan Circulation Element Policy 1.3, intersections along Auburn Folsom Road south of Douglas Boulevard and along Douglas Boulevard west of Auburn Folsom Road have a LOS E standard during the a.m. and p.m. peak hours. All other roadways and intersections in Granite Bay have a LOS C standard.

Source: *Roseville 2035 General Plan*, 2016; *Placer County General Plan*, 2013; *Granite Bay Community Plan*, 2012.

Study Scenarios

As noted at the beginning of this report, this study analyzes the impacts of Whitehawk I and Whitehawk II separately, as well as evaluating the impacts of the two projects combined. Therefore, this study analyzes traffic conditions for the following scenarios:

- Existing Conditions: represents current conditions and the existing setting upon which project-specific impacts are judged.
- Existing Plus Whitehawk I: represents existing conditions plus the proposed 24-unit Whitehawk I planned residential development.
- Existing Plus Whitehawk II: represents existing conditions plus the proposed 55-unit Whitehawk II planned residential development.
- Existing Plus Whitehawk I and II: represents existing conditions plus both proposed Whitehawk I and Whitehawk II planned residential developments.
- Cumulative No Project: represents future (i.e., 2036) conditions, including the completion of reasonably foreseeable land development projects and transportation projects. This includes land development consistent with known reasonably foreseeable projects in the Granite Bay Community Plan area, land development potential in Granite Bay based on underlying zoning and General Plan land use designations, and the projections for the region contained in the

Sacramento Area Council of Governments (SACOG) *2016 Metropolitan Transportation Plan/Sustainable Communities Strategy* (MTP/SCS).

- Cumulative Plus Whitehawk I: represents cumulative no project conditions plus the proposed 24-unit Whitehawk I planned residential development.
- Cumulative Plus Whitehawk II: represents cumulative no project conditions plus the proposed 55-unit Whitehawk II planned residential development.
- Cumulative Plus Whitehawk I and II: represents cumulative no project conditions plus both proposed Whitehawk I and Whitehawk II planned residential developments.

2. Study Methodology

This chapter presents the analysis methodology, regulatory setting, and significance criteria applied in this study.

Analysis Methods

This study analyzes traffic operations using level of service (LOS) as the primary measure of performance. Automobile LOS is a qualitative description of traffic flow from the perspective of motorists. The *Highway Capacity Manual* (HCM) defines six levels of service from LOS A representing the least congested traffic conditions, to LOS F representing the most congested traffic conditions. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving, as well as speed, travel time, traffic interruptions, and freedom to maneuver.

Roadway Operations

This study analyzes roadway segments in accordance with daily traffic volume thresholds established in the *Placer County Countywide General Plan EIR, Transportation and Circulation* (1994). Table 2 presents these daily traffic volume LOS thresholds.

Table 2: Roadway Segment LOS Thresholds

Roadway Type	Daily Two-Way Volume Thresholds				
	LOS A	LOS B	LOS C	LOS D	LOS E
4-lane Arterial – High Access Control[1]	24,000	28,000	32,000	36,000	40,000
6-lane Arterial – High Access Control[1]	36,000	42,000	48,000	54,000	60,000
4-lane Arterial – Moderate Access Control[2]	21,600	25,200	28,800	32,400	36,000
6-lane Arterial – Moderate Access Control[2]	32,400	37,800	43,200	48,600	54,000

Notes:

1. High access controlled arterials are defined in the Countywide General Plan Final EIR as roadways with 1-2 stops per mile, limited driveway access, and speeds of 35 to 50 mph.
2. Moderate access controlled arterials are defined in the Countywide General Plan Final EIR as roadways with 2-4 stops per mile, moderate driveway access, and speeds of 30 to 35 mph.

Source: Countywide General Plan Final Environmental Impact Report, Placer County, 1994.

While this methodology provides a general sense for the level of traffic congestion on roadway segments

Intersection Operations

Intersection LOS is based on the control delay experienced by motorists traveling through the intersection. At signalized intersections, the LOS is determined by the average control delay per vehicle experienced by all motorists travelling through the intersection, as described in Volume 3 of the HCM, 6th Edition (Transportation Research Board, 2016).

Signalized Intersections

This study analyzes traffic operations at signalized intersections using the procedures described in Chapter 19 of the HCM 6th Edition. Signalized intersection LOS is based on the weighted average control delay measured in seconds per vehicle for the overall intersection. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration. Table 3 presents the delay range for each LOS for signalized intersections. Note that in addition to these delay ranges, if an intersection experiences a volume-to-capacity ratio that exceeds 1.0, it represents failure (i.e., LOS F) from a capacity perspective regardless of the delay.

Table 3: Level of Service Definitions – Signalized Intersections

Level of Service	Description	Average Control Delay[1]
A	Volume-to-capacity ratio is low and either progression is exceptionally favorable or cycle length is very short. Most vehicles arrive during the green phase and travel through the intersection without stopping.	≤ 10
B	Volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.	>10 to 20
C	Progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20 to 35
D	Volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	>35 to 55
E	Volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.	>55 to 80
F	Volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	>80

Notes:

1. Average control delay presented in seconds per vehicle. Delay values are rounded to the nearest second and evaluated for LOS based on the above thresholds (i.e., 10 seconds per vehicle = LOS A)

Source: Highway Capacity Manual 6th Edition, Transportation Research Board, 2016.

Unsignalized Intersections

This study analyzes traffic operations at unsignalized intersections using the procedures described in Chapters 20, 21, and 22 of HCM 6th Edition. Similar to signalized intersections, the HCM methodology for unsignalized intersections reports the LOS based on the control delay experienced by motorists traveling through the intersection. For roundabout and all-way stop-controlled intersections, this study reports the weighted average control delay for all motorists traveling through the intersections, as prescribed by the HCM 6th Edition. For side-street stop-controlled intersections, this study reports the weighted average control delay for movements that yield the right-of-way, as described in the Placer County Department of Public Works *Impact Analysis Methodology of Assessment* memorandum (2015). Further details about side-street stop control delay calculations are described on the next page of this report.

The delay ranges and LOS criteria for unsignalized intersections differ somewhat from the criteria for signalized intersections, primarily because user perceptions differ between these facility types. Users expect that a signalized intersection is designed to carry higher traffic volumes and will present greater delay than an unsignalized intersection. Unsignalized intersections are also associated with more uncertainty for users as delays are less predictable than they are at signals. Table 4 presents the delay range for each LOS for unsignalized intersections.

Table 4: Level of Service Criteria – Unsignalized Intersections

Level of Service	Control Delay[1]
A	≤ 10
B	>10 to 15
C	>15 to 25
D	>25 to 35
E	>35 to 50
F	>50

Notes:

1. Control delay presented in seconds per vehicle. Delay values are rounded to the nearest second and evaluated for LOS based on the above thresholds (i.e., 10 seconds per vehicle = LOS A)

Source: *Highway Capacity Manual, 6th Edition*, Transportation Research Board, 2016.

This study analyzes signalized and stop-controlled intersections using the Synchro software program. Synchro applies the methodologies presented in the HCM 6th Edition. This program considers traffic volumes, lane configurations, signal timings, signal coordination, and other pertinent parameters of intersection operations.

Side-Street Stop Control Analysis

As noted above, traffic operations at side-street stop-controlled intersections is based on the weighted average control delay for movements that yield the right-of-way. "Free" movements on the major street, typically the through and right-turn movements, are able to pass through these intersections without delay, and therefore are not included in the calculation per the HCM methodology. The weighted average control delay calculation for side-street stop-controlled intersections is as follows:

$$\text{Weighted Average Control Delay} = \frac{\text{Major Street Left Turn Delay} + \text{Minor Street Movements Delay}}{\text{Major Street Left Turn Volume} + \text{Minor Street Movements Volume}}$$

The left-turn movements on the major street, which yield to on-coming through traffic on the major street, typically experiences less delay than stop-controlled movements from the side-street, particularly when the major street carries substantial traffic volumes. For example, at the Greyhawk Drive / Eureka Road intersection, the existing delay for the major street left turn on Eureka Road is 8.9 seconds; whereas the delay for the stop-controlled southbound movements on Greyhawk Drive is 25.3 seconds. If traffic increases on the major street left-turn, it is possible for the weighted average control delay for the intersection to decrease even if the delay for these movements increase. This is due to trips being added to a movement with higher volume and comparatively less delay, which causes the weighted average to decrease.

Woodgrove Way/Quail Oaks Drive / Douglas Boulevard

The Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection is a unique intersection where the HCM methodology calculates an extremely high delay for the side-street left-turn and through movements across all scenarios. This unrealistically high delay calculation is the result of high traffic volumes on Douglas Boulevard that make it difficult to cross the intersection. For example, under existing conditions during the a.m. peak hour, the HCM methodology calculates that the 5 northbound left-turn vehicles from Woodgrove Way are delayed an average of over 28 minutes (1731.9 seconds), and that the 1 southbound through vehicle on Quail Oaks Drive is delayed an average of over 18 minutes (1111.1 seconds). While the conflicting volumes on Douglas Boulevard make these side-street movements difficult, drivers would not wait an average of over 18 or 28 minutes to make these movements as these calculations would suggest, since 5 vehicles make the northbound left-turn during the a.m. peak hour (i.e., in 60 minutes). In reality, drivers would either more aggressively find a gap in traffic or find an alternate route after waiting several minutes. However, during some of the analysis scenarios the HCM methodology does not report a delay value for the northbound shared through/left-turn movement, because it exceeds the limits of the analysis model. For these scenarios, the study applies a delay of 5,000 seconds under the existing analysis scenarios and 10,000 seconds under cumulative analysis scenarios. This approach is consistent with other analysis conducted for Placer County in the study area.

The traffic counts show that very few vehicles (less than 5 per hour) make these side-street through and left-turn movements. This indicates that drivers are either using an alternate route (such as Greyhawk Drive to Eureka Road, Rolling Oaks Drive to Seeno Avenue, or Rolling Oaks Drive to Cavitt Stallman Road South) or choosing to turn right onto Douglas Boulevard and make a U-turn at the first opportunity. Those that do make these through and left-turn movements from the side street are likely waiting no more than 5 minutes; and are assisted in crossing Douglas Boulevard with gaps created by upstream signals at Cavitt Stallman Road South (for eastbound traffic) and Seeno Avenue (for westbound traffic).

However, the tables in this study report the delay and LOS results as calculated using the HCM calculated delay to maintain consistency with the HCM 6th Edition methodology. For informational purposes, this study also calculates and presents the weighted average control delay if the delay on the side street movements are capped at 600 seconds (i.e., 10 minutes), a conservative upper limit on how long a driver would wait on average.

The Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection is also a representative example of where trips added to the major street left-turn result in a decreased weighted average control delay. While the HCM calculates delays in excess of 1000 seconds for the relatively few northbound left-turn and southbound through vehicles, the 41 existing westbound left-turn vehicles from Douglas Boulevard experience an average delay of 14.2 seconds during the a.m. peak hour. Similarly, the 57 existing northbound right-turning vehicles and 99 existing southbound right-turning vehicles from the side-street experience an average control delay of 17.1 seconds and 31.6 seconds, respectively. Even when the delays for these movements increase with the addition of trips from the proposed Whitehawk I and/or Whitehawk II projects, the overall effect of adding trips to these movements with substantially higher volume and less delay than the side-street left-turn and through movements results in a decreased weighted average control delay, under some analysis scenarios. These are reflected in the results presented in this study.

Signal Warrant Analysis

This study also analyzes peak hour signal warrants for unsignalized study intersections for all scenarios. This analysis applies the criteria described in Section 4C.04 of the California Manual on Uniform Traffic Control Devices (MUTCD). The MUTCD criteria includes two peak hour warrant charts: a standard chart for use in most urban locations and a "70% Factor" chart that has a lower traffic volume threshold (i.e., more likely to show a traffic signal is warranted). The MUTCD states that the 70% Factor chart may be used in place of the standard chart if the posted speed limit or the 85th-percentile speed on the major street exceeds 40 miles per hour (mph). Since Douglas Boulevard has a posted speed limit of 55 mph at Woodgrove Way, this study uses the 70% factor for the signal warrant analysis the Douglas Boulevard / Woodgrove Way/Quail Oaks Drive study intersection. The unsignalized study intersection at Eureka Road / Greyhawk Drive is located

along a segment of Eureka Road that has a posted speed limit of 35 mph. Therefore, this study uses the standard chart for the signal warrant analysis at this intersection.

The peak hour signal warrant is one of nine warrants included in the MUTCD. The MUTCD states that the investigation of the need for a traffic control signal shall include the applicable factors contained in these nine warrants. As stated in the MUTCD, the satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal. For purposes of this study, the peak hour signal warrant is used as an indicator of whether peak hour traffic conditions may warrant a signal. However, a full engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of a specific intersection would be necessary to fully determine if a traffic signal is justified.

Traffic Forecasting

This study utilizes a 2036 travel forecasting model that was developed for the Granite Bay Community Plan Circulation Element Update by Fehr & Peers in 2018 to forecast future traffic volumes in the study area. A travel forecasting model is a computer program that simulates traffic levels and travel patterns for a specific geographic area. The Granite Bay model is run in Citilabs Cube software and consists of input files that summarize the area's land use and roadway network. The output includes projections of traffic volumes on major roads and peak hour turning movements at key intersections.

The Granite Bay 2036 travel forecasting model is based on SACOG's 2036 SACMET travel forecasting model, which is consistent with the horizon year of SACOG's current 2016 MTP/SCS. Since the Granite Bay travel forecasting model is based on the 2036 SACMET model, it includes approved and planned development throughout the SACOG region according to development forecasts used in the 2016 MTP/SCS. Within Granite Bay, the travel forecasting model has additional travel analysis zone (TAZ), roadway network, and land use detail than the regional SACMET model upon which it is based. This allows the Granite Bay travel forecasting model to more accurately model travel activity in and around Granite Bay.

Regulatory Setting

This section summarizes the local transportation policies and regulations that are applied as part of this study. This information provides context for the impact discussion related to the proposed project's consistency with applicable regulatory conditions. Further, this study analyzes impacts to traffic operations by comparing the LOS analysis results against LOS policies and standards established by Placer County and the City of Roseville.

Placer County

Placer County General Plan

The *Placer County General Plan* (Placer County, 2013) provides long-range direction and policies for the use of land within Placer County. With regard to the transportation and circulation system serving the project, the Placer County General Plan establishes an overall roadway system including a roadway functional classification system and designates a series of transit development corridors generally along I-80 and SR 65. In addition, six modal goals are presented, each of which is supported by numerous policies and implementation programs. For the purposes of this study, the goals and policies of the Placer County General Plan are used in developing the impact significance criteria.

The following transportation policies in the Placer County General Plan are relevant for this study:

Policy 3.A.5. Through-traffic shall be accommodated in a manner that discourages the use of neighborhood roadways, particularly local streets. This through-traffic, including through truck traffic, shall be directed to appropriate routes in order to maintain public safety and local quality of life.

Policy 3.A.7. The County shall develop and manage its roadway system to maintain the following minimum levels of service (LOS), or as otherwise specified in a community or specific plan.

a. LOS "C" on rural roadways, except within one-half mile of state highways where the standard shall be LOS "D".
b. LOS "C" on urban/suburban roadways except within one-half mile of state highways where the standard shall be LOS "D".
c. An LOS no worse than specified in the Placer County Congestion Management Program (CMP) for the state highway system.

Temporary slippage in LOS C may be acceptable at specific locations until adequate funding has been collected for the construction of programmed improvements.

The County may allow exceptions to the level of service standards where it finds that the improvements or other measures required to achieve the LOS standards are unacceptable based on established criteria. In allowing any exception to the standards, the County shall consider the following factors:

- The number of hours per day that the intersection or roadway segment would operate at conditions worse than the standard.

- The ability of the required improvement to significantly reduce peak hour delay and improve traffic operations.
- The right-of-way needs and the physical impacts on surrounding properties.
- The visual aesthetics of the required improvement and its impact on community identity and character.
- Environmental impacts including air quality and noise impacts.
- Construction and right-of-way acquisition costs.
- The impacts on general safety.
- The impacts of the required construction phasing and traffic maintenance.
- The impacts on quality of life as perceived by residents.
- Consideration of other environmental, social, or economic factors on which the County may base findings to allow an exceedance of the standards.

Exceptions to the standards will only be allowed after all feasible measures and options are explored, including alternative forms of transportation.

Policy 3.A.8. The County shall work with neighboring jurisdictions to provide acceptable and compatible levels of service and joint funding on the roadways that may occur on the circulation network in the Cities and the unincorporated area.

Policy 3.A.11. The County shall require an analysis of the effects of traffic from all land development projects. Each such project shall construct or fund improvements necessary to mitigate the effects of traffic from the project consistent with Policy 3.A.7. Such improvements may include a fair share of improvements that provide benefits to others.

Policy 3.B.1. The County shall work with transit providers to plan and implement additional transit services within and to the County that are timely, cost-effective, and responsive to growth patterns and existing and future transit demand.

Policy 3.D.12. Provide safe and comfortable routes for walking, cycling, and where feasible, public transportation, to encourage use of these modes of transportation, enable convenient and active travel as part of daily activities, reduce pollution, and meet the needs of all users of the roadway system.

Implementation Program 3.21: The County shall require that bikeways recommended in the Bikeways/Trails Master Plan be developed when roadway projects are constructed and when street frontage improvements are required of new development.

Granite Bay Community Plan

The Granite Bay Community Plan is a long-range planning document designed to guide development in a manner that enhances the quality of life in the Granite Bay community. The purpose of the Community Plan is to give clear direction as to how physical development and land-use decisions should take place in Granite Bay to meet the current and future needs of its residents. The Community Plan sets forth goals, policies, standards and implementation measures to guide future development in Granite Bay. The Granite Bay Community Plan encompasses an area of approximately 26 square miles generally west of the Cities of Roseville and Loomis, south of Horseshoe Bar/Newcastle, east of Folsom Lake, and north of the City of Folsom and Orangevale.

While Policy 3.A.7 of the Placer County General Plan establishes a general LOS minimum for the County, it also allows community or specific plans to include policies that establish a minimum LOS standard that differs from the Countywide LOS minimums identified in Policy 3.A.7. To that end, the following policies in the Granite Bay Community Plan specify the following minimum LOS standards for Granite Bay:

Policy 1.3 The level of service (LOS) on major roadways (i.e., arterial and collector routes) and intersections shall be at Level "C" or better during the A.M. and/or P.M. peak hour. The exceptions to this are intersections along Auburn-Folsom from Douglas Boulevard southerly, and along Douglas Boulevard from Auburn-Folsom Road westerly, where the level of service shall be LOS "E" or better during the A.M. and/or P.M. peak hour.

Policy 1.4 The intersection of Douglas Boulevard and Sierra College Boulevard shall have a LOS goal of "E" or better. The County shall work towards providing LOS E at this location until all reasonable improvements (three through lanes, two left turn lanes and a separate right turn lane on all approaches) are made. It is recognized that after all reasonable improvements have been made that the LOS may become worse than LOS "E" during the A.M. and/or P.M. peak hour.

Policy 1.5 Land development projects shall be approved only if LOS C (or the exception cited earlier) can be achieved on roads and intersections after: a) traffic from approved projects has been added to the system, and b) improvements funded by the capital improvement program (CIP) have been constructed. This will result in temporary slippage of the LOS below the adopted standards until adequate funding has been collected for the construction of CIP improvements.

In addition to the policies listed above, the Granite Bay Community Plan also contains the following transportation policies, which are relevant for this study:

Policy 1.7 "Through" traffic that must pass through the community shall be accommodated in a manner that will not encourage the use of residential or private roads. Through traffic shall be directed to Douglas Boulevard, Auburn-Folsom Road and Sierra College Boulevard. These routes provide access to Folsom Lake from all directions, and provide a through north-south route as well as a west-south route.

Policy 1.8 The County shall work with neighboring jurisdictions and the Regional Transportation Planning Agencies to develop alternative routes for through traffic, as this through traffic has significant impacts on roads in the Granite Bay community.

Policy 1.10 Through trucks shall be limited to Auburn-Folsom Road, Douglas Boulevard and Sierra College Boulevard.

Placer County Impact Analysis Methodology of Assessment

The *Placer County Impact Analysis Methodology of Assessment* memorandum (Placer County, 2015) identifies the general procedures for traffic impact analyses in the County. The Placer County Department of Public Works and Facilities prepared the memorandum to ensure that project associated mitigation(s) are proportionate to the level of impact a specific project has on an intersection or roadway. This study uses the traffic impact assessment criteria outlined in the *Impact Analysis Methodology of Assessment* memorandum to assess the significance of project traffic impacts for Placer County facilities.

Placer County Regional Bikeway Plan

The Placer County General Plan calls for the development of a comprehensive bikeway system that would provide connections between the major urban areas of the county, with linkages to bikeway systems in other jurisdictions. At the time this study was prepared, the Placer County Regional Bikeway Plan adopted by the County in 2002 was being updated by the Placer County Transportation Planning Agency (PCTPA). The Regional Bikeway Plan provides guidelines for the development of a countywide network of bicycle facilities and design standards (based on Caltrans standards) for new bicycle facilities. The updated Placer County Regional Bikeway Plan was recently adopted by the Placer County Board of Supervisors in October 2018.

City of Roseville

Roseville General Plan 2035

The *City of Roseville General Plan 2035* (City of Roseville, 2016) serves as a long-term policy guide for the physical, economic, and environmental growth of Roseville. With regard to the transportation and circulation system, the General Plan presents five modal topics – Functional Classification, Level of Service, Transit, Transportation Systems Management, and Bikeways/Trails – each of which is supported by goals, policies, and implementation measures. For the purposes of this study, the goals and policies of this document are used in developing the impact significance criteria.

The *City of Roseville General Plan 2035* includes the following goal and policy related to transportation and circulation that are relevant to this analysis.

LOS Goal 1 Maintain an adequate level of transportation service for all of Roseville's residents and employees through a balanced transportation system, which considers automobiles, transit, bicyclists, and pedestrians.

LOS Policy 1 Maintain a level of service (LOS) "C" standard at a minimum of 70 percent of all signalized intersections and roadway segments in the City during the p.m. peak hours. Exceptions to the LOS "C" standard may be considered for intersections where the City finds that the required improvements are unacceptable based on established criteria identified in the implementation measures. In addition, Pedestrian Districts may be exempted from the LOS standard.

The Implementation Measures for this policy notes that the City strives to maintain LOS C at all locations during the weekday A.M. and P.M. peak hours.

Significance Criteria

The following thresholds of significance have been used to determine whether implementing the proposed project would result in a significant transportation impact. These thresholds of significance are derived from questions posed in Appendix G of the CEQA Guidelines, thresholds of significance from applicable general plans and previous environmental documents, and professional judgment. A description of the significance criteria for each jurisdiction is provided.

Roadway System

Placer County

As noted above, Policy 3.A.7 in the Placer County *General Plan* (May 2013) establishes a minimum LOS C standard for County roadways and intersections, except within one-half mile of state highways where the standard shall be LOS D. Policy 3.A.7 also acknowledges that a community or specific plan may specify a different minimum LOS standard. To that end, the Granite Bay Community Plan LOS policy establishes a LOS C standard for major roadways and intersections during the a.m. and p.m. peak hour, with the exception of intersections along Auburn Folsom Road south of Douglas Boulevard, and along Douglas Boulevard west of Auburn Folsom Road, where a LOS E or better standard is applied during the a.m. and/or p.m. peak hour.

The Placer County Department of Public Works *Impact Analysis Methodology of Assessment* memorandum (2015) identifies the use of a 0.05 increase in the volume-to-capacity (v/c) ratio or an increase in ADT of 100 or more project generated trips per lane as the threshold as the significance criteria for determining impacts to roadway segments that already operate unacceptably. Similarly, the *Impact Analysis Methodology of Assessment* memorandum identifies a four-second threshold for signalized intersections and 2.5-second threshold for unsignalized intersections as the significance criteria for determining impacts to intersections that already operate unacceptably.

The project would have a significant impact if it would:

1. Cause a signalized intersection or roadway in Placer County to worsen from an acceptable LOS to an unacceptable LOS during the a.m. or p.m. peak hours.
2. Cause an unsignalized intersection in Placer County to worsen from an acceptable LOS to an unacceptable LOS during the a.m. or p.m. peak hours and cause the intersection to meet the MUTCD peak hour traffic signal warrant.
3. Increase the average daily traffic (ADT) volume by 100 or more project generated trips per lane on a roadway segment in Placer County that is currently (or projected to be) operating at an unacceptable LOS.
4. Cause a signalized intersection in Placer County that is currently (or projected to be) operating at an unacceptable LOS during the a.m. or p.m. peak hours to experience an increase in the overall average intersection delay of 4 seconds or greater.
5. Cause an unsignalized intersection in Placer County that is currently (or projected to be) operating at an unacceptable LOS during the a.m. or p.m. peak hours and meets the MUTCD peak hour traffic signal warrant to experience a 2.5-second or greater increase in delay.

City of Roseville

The City of Roseville's *General Plan 2035* (June 2016) identifies a level of service policy that calls for maintaining LOS C or better operations at a minimum of 70 percent of all signalized intersections and roadway segments in the City during the a.m. and p.m. peak hours. Exceptions to the LOS "C" standard may be considered for intersection where the City finds that the required improvements are unacceptable based on established criteria identified in the implementation measures. In addition, Pedestrian Districts may be exempted from the LOS standard.

The project would have a significant impact if it would:

- Cause a signalized intersection in Roseville to be degraded as follows under existing or 2036 Cumulative Conditions during the a.m. or p.m. peak hours:
    - For intersections currently operating at LOS C or better: worsen operations to LOS D or worse.
    - For intersections that currently operate at less than LOS C: cause operations to further worsen by one or more service levels (e.g., LOS D to LOS E).
    - For intersections that currently operate at LOS F: cause intersection delay to worsen by 12.5 seconds or greater.

Bicycle System

The project would have a significant impact on the bicycle system if it would:

- Not meet the policies related to bicycle travel outlined in the *Placer County General Plan*
- Interfere with the operation of an existing bicycle facility or preclude the construction of a planned bicycle facility in the *Placer County General Plan* or *Placer County Regional Bikeway Plan*

Pedestrian System

The project would have a significant impact on the pedestrian system if it would:

- Not meet the policies related to pedestrian travel outlined in the *Placer County General Plan*
- Interfere with the operation of an existing pedestrian facility or preclude the construction of a planned pedestrian facility

Transit System

The project would have a significant impact on the transit system if it would:

- Not meet the policies related to transit travel outlined in the *Placer County General Plan*
- Interfere with the operation of an existing transit facility or preclude the construction of a planned transit facility
- Have a negative impact on transit operations, travel times, and/or circulation

3. Existing Conditions

This chapter describes the existing transportation system and traffic conditions within the study area, including the roadway, bicycle, pedestrian, and transit networks, and traffic operations at study roadway segments and intersections.

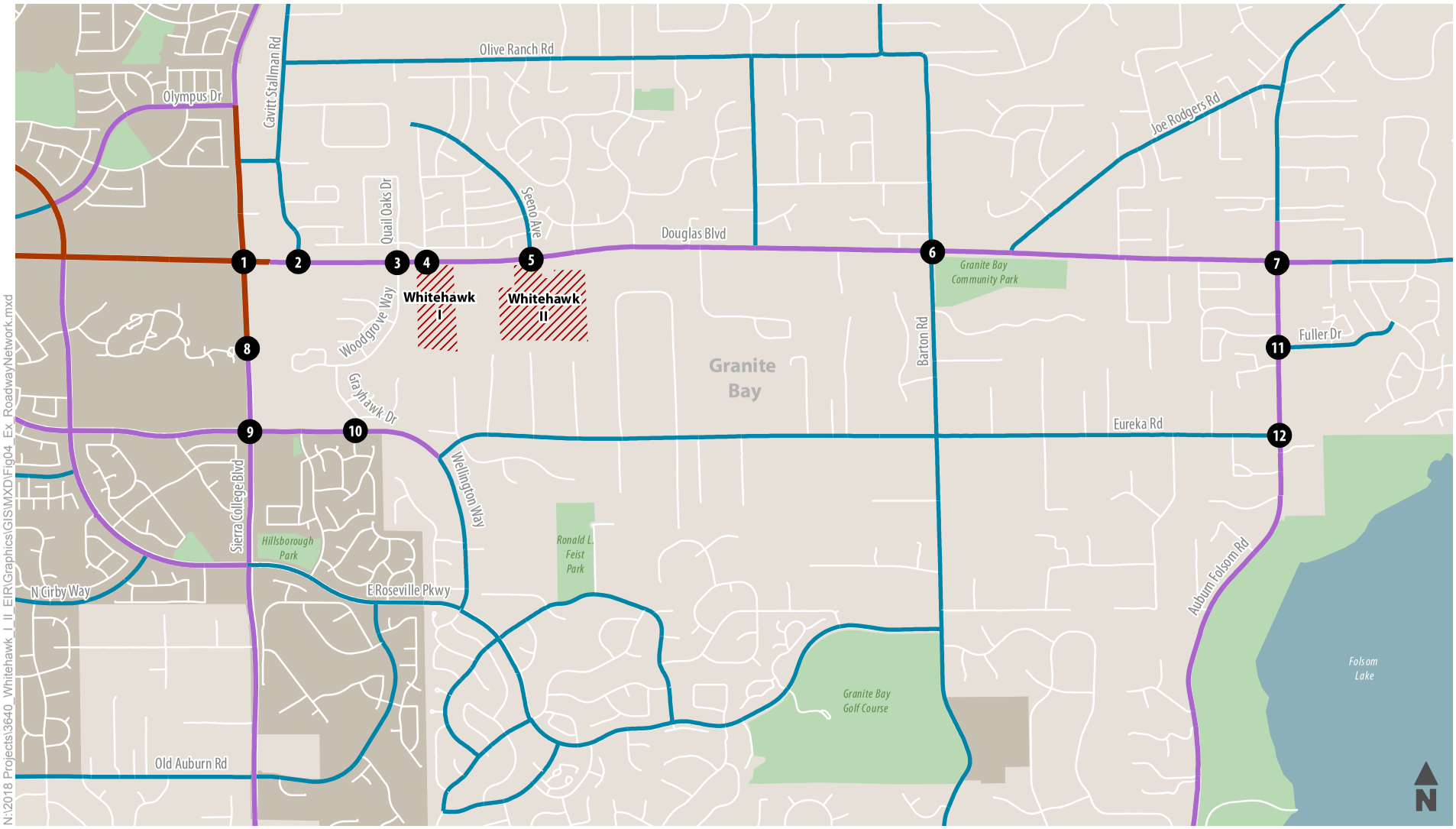
Roadway Network

Figure 4 displays the existing roadway network in the project vicinity, including the existing number of travel lanes on major roadways.

Access to and from the proposed project sites is provided via Douglas Boulevard. In addition to Douglas Boulevard, several major local roadways would serve traffic generated by the proposed project. Key roadway facilities within the study area are described below.

- **Douglas Boulevard** is an east-west arterial that forms the northern edge of the proposed project sites. Douglas Boulevard is a four-lane major arterial with a posted speed limit of 50 to 55 miles per hour (mph) from just west of Cavitt Stallman Road South to Auburn Folsom Road. As it approaches Sierra College Boulevard and enters the City of Roseville to the west of the project sites, it widens to a six-lane arterial and reduces to a posted speed limit of 45 mph. To the west of the study area, it has an interchange at Interstate 80 (I-80) and ultimately ends at Riverside Avenue near Downtown Roseville. East of Auburn Folsom Road, it narrows to a two-lane minor arterial with a posted speed limit of 40 mph and terminates at the Folsom Lake State Recreation Area.

- **Sierra College Boulevard** is a north-south arterial that generally forms the western boundary of the Granite Bay Community Plan area and runs along the Roseville City Limits from Eureka Road to Scarborough Drive. Sierra College Boulevard is a six-lane major arterial with a posted speed limit of 45 mph from just south of the Renaissance Creek Shopping Center/Granite Bay Business Park traffic signal to Olympus Drive. North of Olympus Drive and south of the Renaissance Creek shopping center, it narrows to a four-lane major arterial. To the north, Sierra College Boulevard travels into Rocklin and features an interchange with I-80 before ultimately reaching State Route 193 (SR 193). To the south, Sierra College Boulevard becomes Hazel Avenue as it crosses into Sacramento County, which ultimately travels southerly to Folsom Boulevard with an interchange at US-50.



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1 Study Intersection

Number of Lanes
- 2
- 4
- 6

Whitehawk I & II Project Location

City of Roseville City Limits

Figure 4

Existing Roadway Network

- **Auburn Folsom Road** is a north-south arterial that is the primary north-south roadway in the eastern portion of the Granite Bay Community Plan. South of Douglas Boulevard, it is a four-lane major arterial with a posted speed limit of 45 mph. South of Eureka Road, the posted speed limit increases to 55 mph as it travels towards the City of Folsom. North of Douglas Boulevard, Auburn Folsom Road narrows to a two-lane minor arterial with a posted speed limit of 45 mph as it travels towards Horseshoe Bar, Newcastle, and Auburn.

- **Eureka Road** is an east-west minor arterial that is approximately 1/3-mile south of the project sites. East of Sierra College Boulevard, Eureka Road has a posted speed limit of 35 mph and is a four-lane roadway to Wellington Way. East of Wellington Way, it narrows to two lanes and becomes more rural in character. West of Sierra College Boulevard, it features a raised landscaped median and has a posted speed limit of 40 mph as it travels into the City of Roseville. West of the study area, it has an interchange at I-80 where it becomes Atlantic Street, which travels westerly into Downtown Roseville.

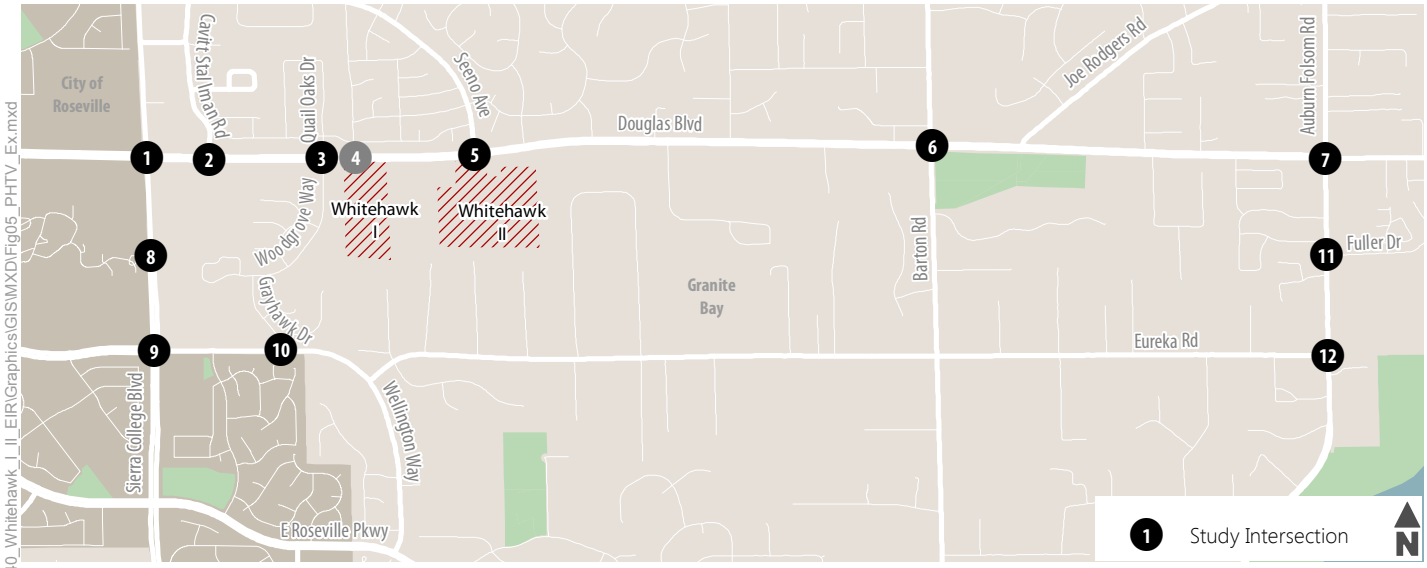
- **Seeno Avenue** is a two-lane collector roadway with a posted speed limit of 25 mph that travels north from Douglas Boulevard into a residential neighborhood. It ends approximately ½-mile north of Douglas Boulevard near Greenhills Elementary School.

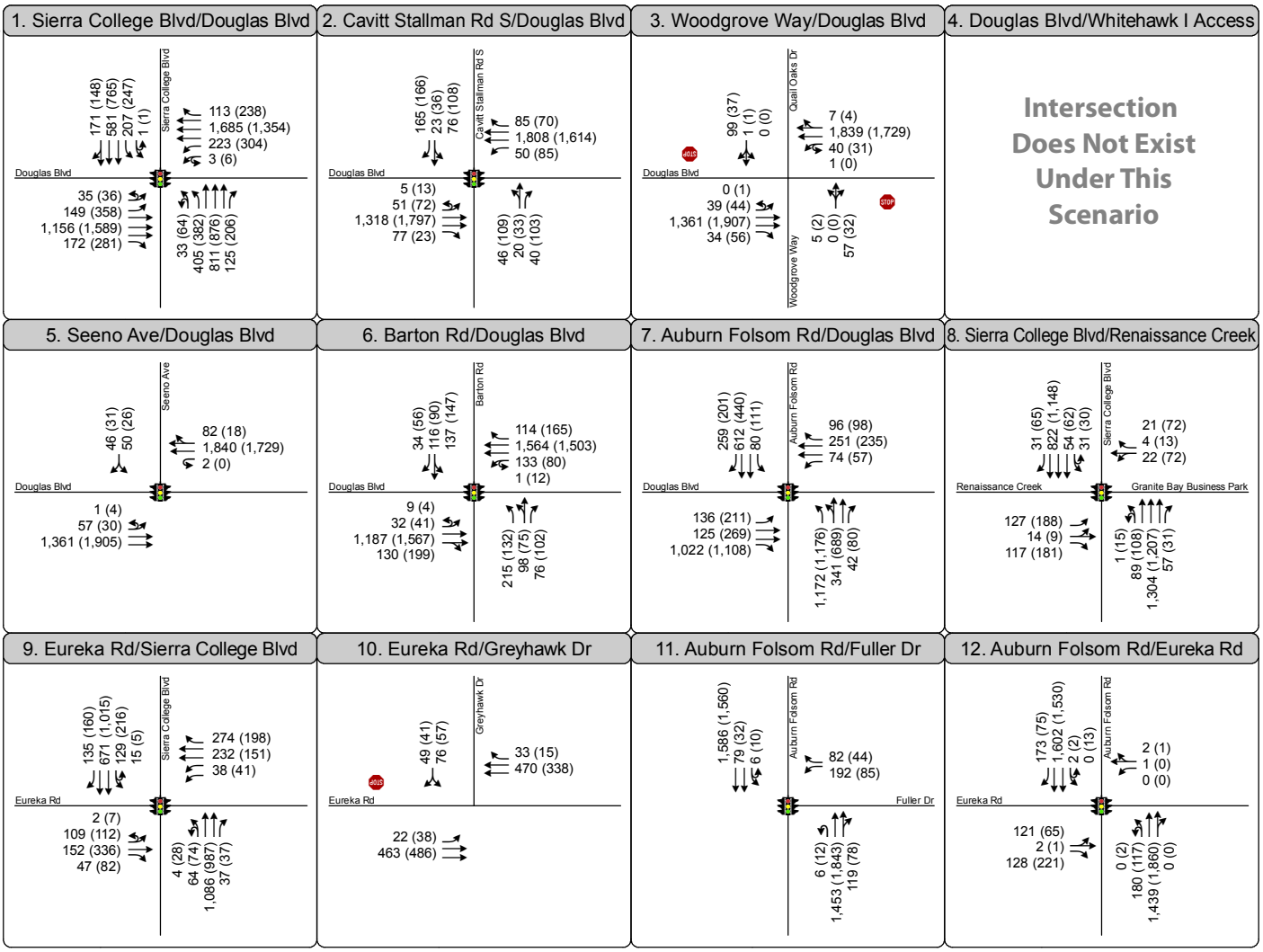
- **Woodgrove Way** and **Greyhawk Drive** are two-lane local roadways with a posted speed limit of 25 mph that travel primarily through single-family residential neighborhoods. Woodgrove Way travels south from Douglas Boulevard for approximately ½ mile before intersecting Greyhawk Drive. Greyhawk Drive travels north from Eureka Road for approximately ¼ mile before intersecting Woodgrove Way. Together, these two streets create a north-south travel route between Eureka Road and Douglas Boulevard for local residents. The roadway is also used as a travel route between the neighborhoods along Douglas Boulevard and Granite Bay High School.

Existing Traffic Volumes

Intersection turning movement counts were collected at study intersections on Thursday, May 18, 2017 during the morning (7:00 a.m. to 9:00 a.m.) and evening (4:00 p.m. to 6:00 p.m.) peak periods (refer to Appendix A for raw traffic count data). Figure 5 presents the intersection turning lane geometrics, traffic control, and existing a.m. and p.m. peak hour traffic volumes for the 12 study intersections. The a.m. peak hour is defined as the one-hour of peak traffic flow (which is the highest total volume count over four consecutive 15-minute count periods) counted between 7:00 a.m. and 9:00 a.m. on a typical weekday. The p.m. peak hour is defined as the one-hour of peak traffic flow counted between 4:00 p.m. and 6:00 p.m. on a typical weekday.

In addition, daily traffic counts were collected at the ten study roadway segments on Thursday, May 18, 2017 (refer to Appendix A for raw traffic count data).





Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Stop Sign

Figure 5

Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions

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Roadway Operations

Table 5 presents the existing roadway classification, average daily traffic (ADT) volumes, volume-to-capacity (v/c) ratio, and LOS for the nine study roadway segments. The ADT volumes are based on the daily traffic counts collected on Thursday, May 18, 2017.

As shown in Table 5, the following roadway segments currently operate at an unacceptable LOS D or worse:

- Douglas Boulevard: Sierra College Boulevard to Cavitt Stallman Road South
- Douglas Boulevard: Cavitt Stallman Road South to Woodgrove Way/Quail Oaks Drive
- Douglas Boulevard: Woodgrove Way/Quail Oaks Drive to Seeno Avenue
- Douglas Boulevard: Seeno Avenue to Barton Road
- Douglas Boulevard: Barton Road to Auburn Folsom Road
- Sierra College Boulevard: Renaissance Creek/Granite Bay Business Park to Eureka Road
- Auburn Folsom Road: Douglas Boulevard to Eureka Road

Table 5: Roadway Segment Daily Traffic Volumes – Existing Conditions

Segment	Classification	Existing Conditions		
		ADT[1]	V/C	LOS
1. Douglas Blvd.: Sierra College Blvd. to Cavitt Stallman Rd. South	4-lane Arterial – MAC	47,560	1.32	**F**
2. Douglas Blvd.: Cavitt Stallman Rd. South to Woodgrove Way	4-lane Arterial – HAC	46,830	1.17	**F**
3. Douglas Blvd.: Woodgrove Way to Seeno Ave.	4-lane Arterial – HAC	45,230	1.13	**F**
4. Douglas Blvd.: Seeno Ave. to Barton Rd.	4-lane Arterial – HAC	44,800	1.12	**F**
5. Douglas Blvd.: Barton Rd. to Auburn Folsom Rd.	4-lane Arterial – HAC	42,620	1.07	**F**
6. Sierra College Blvd.: Olympus Dr. to Douglas Blvd.	6-lane Arterial – MAC	26,950	0.50	A
7. Sierra College Blvd.: Douglas Blvd. to Renaissance Creek	6-lane Arterial – MAC	34,450	0.64	B
8. Sierra College Blvd.: Renaissance Creek to Eureka Rd.	4-lane Arterial – MAC	32,330	0.90	**D**
9. Auburn Folsom Rd.: Douglas Blvd. to Eureka Rd.	4-lane Arterial – MAC	39,670	1.10	**F**

Notes:
MAC = moderate access control; HAC = high access control
1. ADT = average daily traffic volume. ADT values are rounded to the nearest 10 vehicles.
Bold text indicates unacceptable operations.
Source: Fehr & Peers, 2018.

Douglas Boulevard – Diverted Traffic Evaluation

As noted in the NOP comment letter discussion of the introduction, this study evaluates travel speeds on Douglas Boulevard between Seeno Avenue and Cavitt Stallman Road South to determine the relative attractiveness for through traffic to divert off Douglas Boulevard and use parallel local roadways such as Rolling Oaks Drive and Wood Thrush Way through the Quail Oaks neighborhood. Fehr & Peers conducted travel time runs along Douglas Boulevard on Tuesday, May 23, 2017 during the a.m. and p.m. peak hours to evaluate travel speeds in the study area. Figure 6 and Figure 7 present the average travel speeds during the a.m. and p.m. peak hour, respectively, based on these travel time runs.

As shown in Figure 6 and Figure 7, the average travel speed on westbound Douglas Boulevard from Seeno Avenue to Cavitt Stallman Road South is 39 mph during both the a.m. and p.m. peak hours. Given the prima facie 25 mph speed limit on local residential roadways (per Section 22352(b)(1) of the California Vehicle Code), the 39 mph travel speed indicates that Douglas Boulevard is faster than diverting through the Quail Oaks neighborhood. Similarly, the average travel speed on eastbound Douglas Boulevard from Cavitt Stallman Road South to Seeno Avenue is greater than 55 mph during both peak hours. This indicates that most motorists would stay on Douglas Boulevard, and that infrequent vehicles that divert off Douglas Boulevard through the Quail Oaks neighborhood would not have a travel time benefit in using this route.

In addition to the observed travel speeds, this study uses the HCS7 software urban streets module to model travel speeds on Douglas Boulevard to forecast how travel speeds would change on Douglas Boulevard with the proposed projects. Table 6 presents the HCS calculated weekday a.m. and p.m. peak hour travel speeds on Douglas Boulevard and compares these travel speeds to the observed travel speeds.

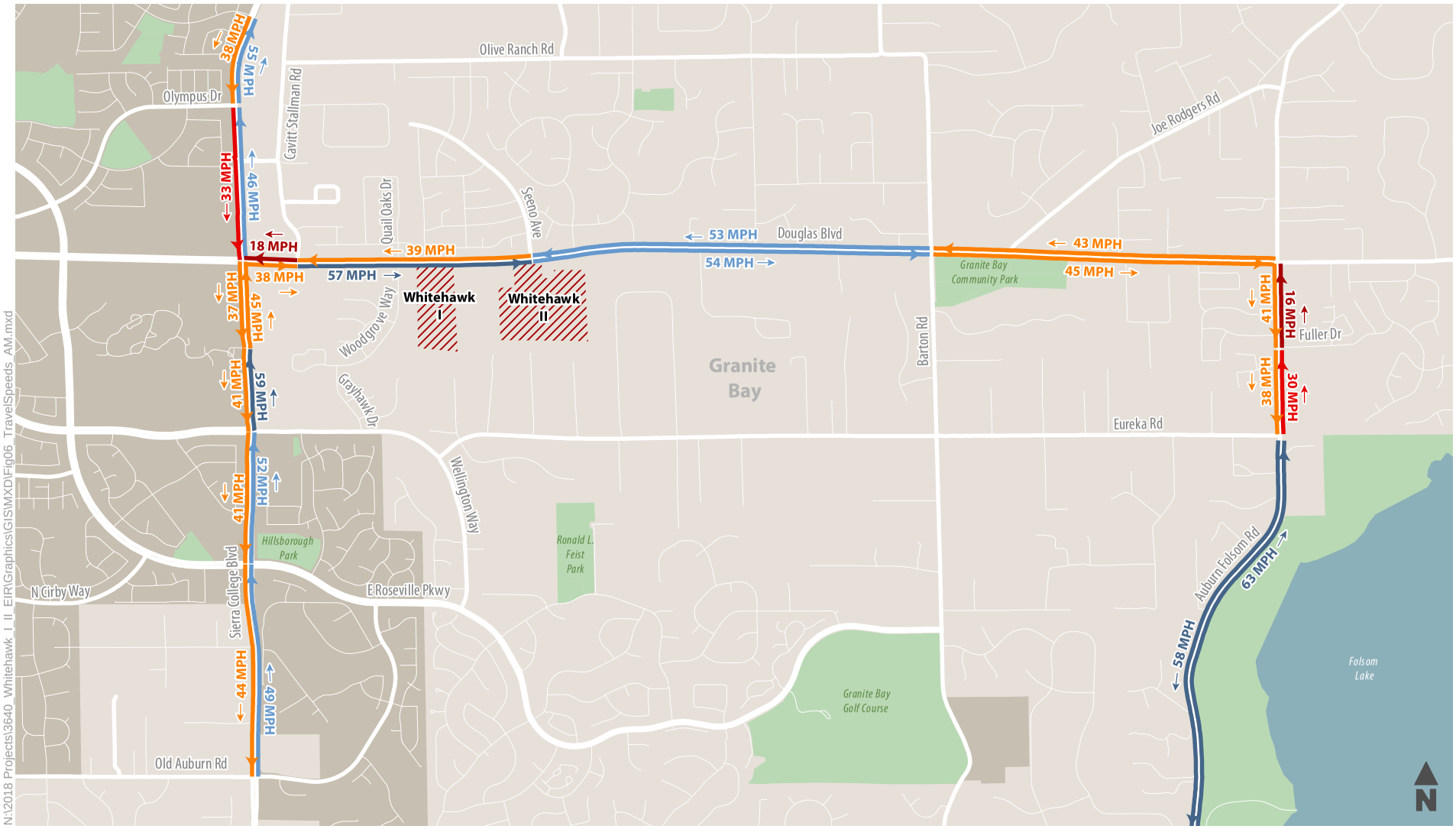
Table 6: Douglas Boulevard Peak Hour Travel Speed – Existing Conditions

Roadway Segment	Direction	HCS7 Calculation		Field Observation	
		Travel Speed[1]	%BFFS[2]	Travel Speed[1]	%BFFS[2]
Douglas Boulevard – AM Peak Hour					
1. Cavitt Stallman Rd. South to Seeno Ave.	Eastbound	51	83%	57	93%
	Westbound	46	74%	39	63%
Douglas Boulevard – PM Peak Hour					
1. Cavitt Stallman Rd. South to Seeno Ave.	Eastbound	52	84%	60	97%
	Westbound	41	67%	39	63%

Notes:

1. Travel speed calculated based on methodologies contained in the *Highway Capacity Manual* (HCM) *6th Edition*.
2. Percent of base free-flow speed (BFFS) as calculated by HCS.

Source: Fehr & Peers, 2018.



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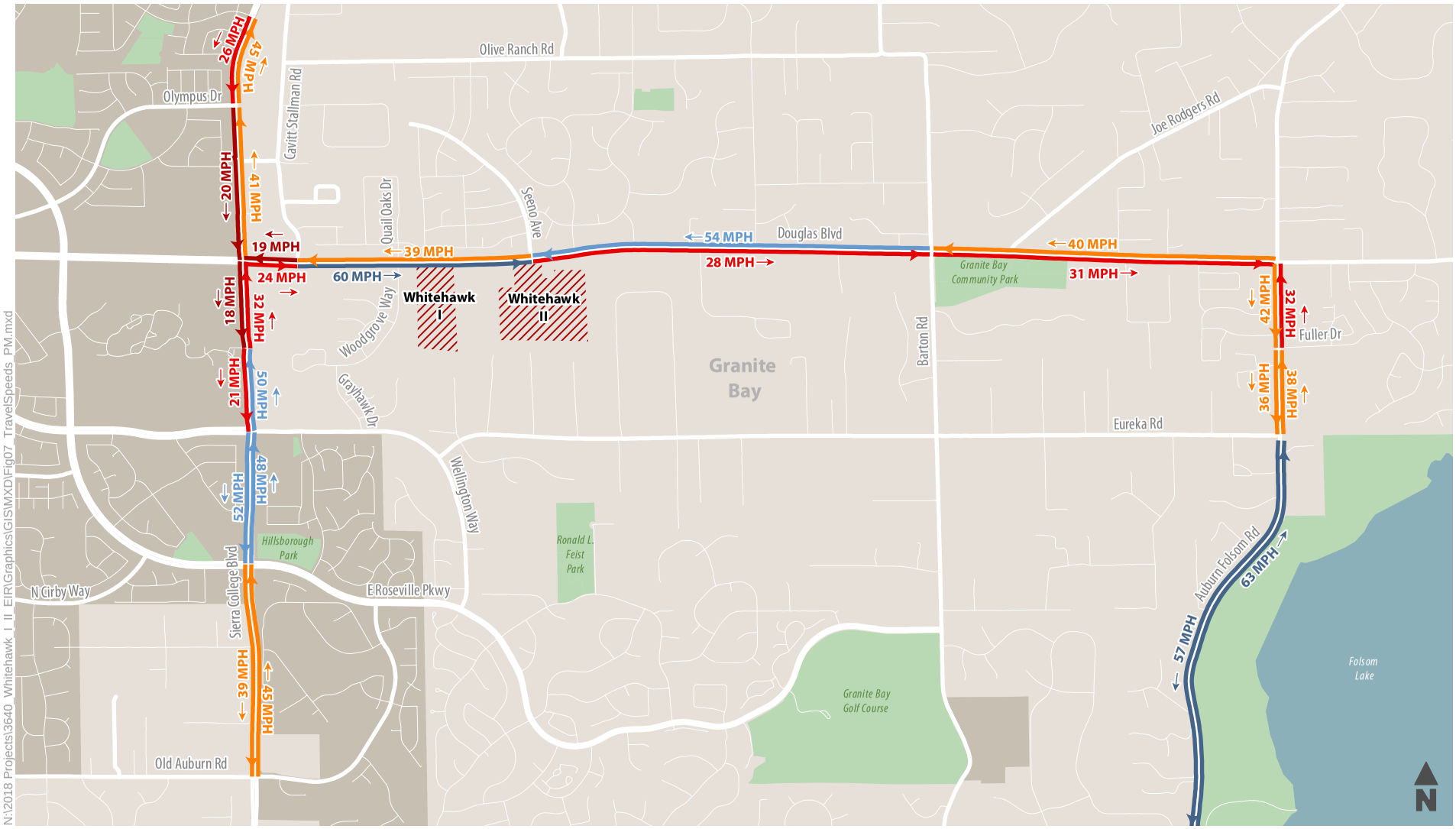
Average Travel Speed

- 0 - 20 MPH
- 21 - 35 MPH
- 36 - 45 MPH
- 45 - 55 MPH
- > 55 MPH

Figure 6

Existing Roadway Segment Travel Speed - AM Peak Hour



Average Travel Speed

- 0 - 20 MPH
- 21 - 35 MPH
- 36 - 45 MPH
- 46 - 55 MPH
- > 55 MPH

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Figure 7

Existing Roadway Segment Travel Speed - PM Peak Hour

As shown in Table 6, the HCS calculated travel speed is generally consistent with the observed travel speeds on the segment of Douglas Boulevard between Cavitt Stallman Road South and Seeno Avenue. The HCS calculated travel speed is slightly low in the eastbound direction and slightly high in the westbound direction compared to the travel time runs.

Intersection Operations

Table 7 presents the existing weekday a.m. and p.m. peak hour traffic operations analysis results at the 12 study intersections (refer to Appendix B for technical calculations). As shown, all study intersections operate at an acceptable LOS under existing conditions except the following three intersections, which operate at an unacceptable LOS under existing conditions:

- Sierra College Boulevard / Douglas Boulevard (#1) – LOS D during the a.m. peak hour and LOS E during the p.m. peak hour
- Woodgrove Way/Quail Oaks Drive / Douglas Boulevard (#3) – LOS F during the a.m. and p.m. peak hours
- Sierra College Boulevard / Eureka Road (#9) – LOS D during the a.m. peak hour and LOS E during the p.m. peak hour

Table 7: Peak Hour Intersection Operations – Existing Conditions

Intersection	Traffic Control[1]	Peak Hour	Existing Conditions	
			Delay[2]	LOS[3]
1. Sierra College Blvd. / Douglas Blvd.	Signal	A.M.	**43.0**	**D**
		P.M.	**60.0**	**E**
2. Cavitt Stallman Rd. South / Douglas Blvd.	Signal	A.M.	13.9	B
		P.M.	20.8	C
3. Woodgrove Way/Quail Oaks Dr. / Douglas Blvd.	SSSC	A.M.	**63.0**[4]	**F**
		P.M.	**120.6**[4]	**F**
4. Whitehawk I Access / Douglas Blvd.[5]	N/A	A.M.		
		P.M.		
5. Seeno Ave. / Douglas Blvd.	Signal	A.M.	7.3	A
		P.M.	4.5	A
6. Barton Rd. / Douglas Blvd.	Signal	A.M.	38.9	D
		P.M.	42.7	D
7. Auburn Folsom Rd. / Douglas Blvd.	Signal	A.M.	39.0	D
		P.M.	36.1	D

Table 7: Peak Hour Intersection Operations – Existing Conditions

Intersection	Traffic Control[1]	Peak Hour	Existing Conditions	
			Delay[2]	LOS[3]
8. Sierra College Blvd. / Renaissance Creek/ Granite Bay Business Park	Signal	A.M.	25.0	C
		P.M.	28.7	C
9. Sierra College Blvd. / Eureka Rd.	Signal	A.M.	**41.4**	**D**
		P.M.	**64.7**	**E**
10. Grayhawk Dr. / Eureka Rd.	SSSC	A.M.	22.8	C
		P.M.	13.9	B
11. Auburn Folsom Rd. / Fuller Dr.	Signal	A.M.	13.4	B
		P.M.	9.0	A
12. Auburn Folsom Rd. / Eureka Rd.	Signal	A.M.	15.4	B
		P.M.	9.1	A

Notes:

1. Signal = traffic signal-controlled intersection; SSSC = side-street stop-controlled intersection
2. Average control delay for signalized intersections is the weighted average for all movements. Average control delay at SSSC intersections is the "overall weighted average delay for movements yielding the right-of-way."
3. LOS = level of service; calculated based on methodologies contained in the *Highway Capacity Manual* (HCM) *6th Edition*.
4. Delay and LOS based on high delay calculations for the side-street movements consistent with HCM procedures.
5. Whitehawk I Access does not exist today.

Bold text indicates unacceptable operations.

All intersections are analyzed in Synchro 10.

Source: Fehr & Peers, 2018.

Woodgrove Way/Quail Oaks Drive / Douglas Boulevard

As noted in the methodology section of this report, the Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection is a unique case where the HCM methodology calculates extremely high delays for the few vehicles on the side-street left-turn and through movements. However, Table 7 presents delay and LOS results that are consistent with the HCM 6th Edition methodology and reflect these high delay calculations.

For informational purposes, this study also calculates the average control delay and LOS for this intersection if the average control delay on the side street movement was capped at 600 seconds (i.e., 10 minutes). Using a maximum of 600 seconds of average delay on these movements, the weighted average control delay for movements yielding the right-of-way at this intersection would be 38 seconds (LOS E) during the a.m. peak hour; and 32 seconds (LOS D) during the p.m. peak hour.

Peak Hour Signal Warrant Analysis

The peak hour signal warrant analysis shows that both Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection and Greyhawk Drive / Eureka Road intersection meet the peak hour signal warrant (Warrant 3B) under existing conditions during the a.m. peak hour, but not during the p.m. peak hour.

Bicycle and Pedestrian Network

Bicycle Facilities

The California Highway Design Manual (Caltrans, 2017) identifies four primary types of bicycle facilities: Class I bike paths (including shared use paths), Class II bike lanes, Class III bike routes, and Class IV separated bikeways.

- Class I (Bike Path): A facility with exclusive right-of-way with cross flows by vehicles minimized. Motor vehicles are prohibited from bike paths. Unless adjacent to an adequate pedestrian facility, Class I facilities are for the exclusive use of bicycles and pedestrians.
- Class II (Bike Lane): A dedicated facility for bicyclists adjacent to motor vehicle traffic on streets. They are identified with striping, pavement markings, and signage. The striping on Class II bike lanes are intended to delineate the right of way assigned to bicyclists and motorist and to provide for more predictable movements by each.
- Class III (Bike Route): On-street bicycle routes where bicycles and motor vehicles share the road. They are identified with signage and may be also indicated with pavement markings (e.g.., sharrows). Class III facilities are intended to provide continuity to other bicycle facilities (usually Class II bikeways) or designate preferred routes through high demand corridors. are typically assigned to low-volume and/or low-speed streets,
- Class IV (Separated Bikeway): A facility for the exclusive use of bicycles that is separated from adjacent vehicular traffic. The separation may include, but is not limited to, grade separation, flexible posts, inflexible barriers, or on-street parking. Also referred to as protected bicycle lanes or cycle tracks.

Figure 8 shows the existing and planned bicycle facilities near the project site. As shown, Class II bike lanes are present on Sierra College Boulevard and Eureka Road west of Quail Lane. A striped shoulder is present on Douglas Boulevard, but bike lane pavement markings and signage are intermittent. As a result, there is sufficient width along Douglas Boulevard to provide a Class II bike lane. However, bike lanes do not currently

exist on all segments of Douglas Boulevard. Eureka Road east of Quail Lane and Cavitt Stallman Road South are designated as Class III bike routes.

Figure 8 also shows proposed Class II bike lanes on Barton Road and proposed Class I shared-use paths and multi-use trails throughout the study area, as identified in the Granite Bay Community Plan. It should also be noted that the recently adopted *Placer County Regional Bikeway Plan* shows the following proposed bicycle facilities in the study area in addition to the facilities shown in Figure 8 and identified in the Granite Bay Community Plan:

Buffered Bike Lanes

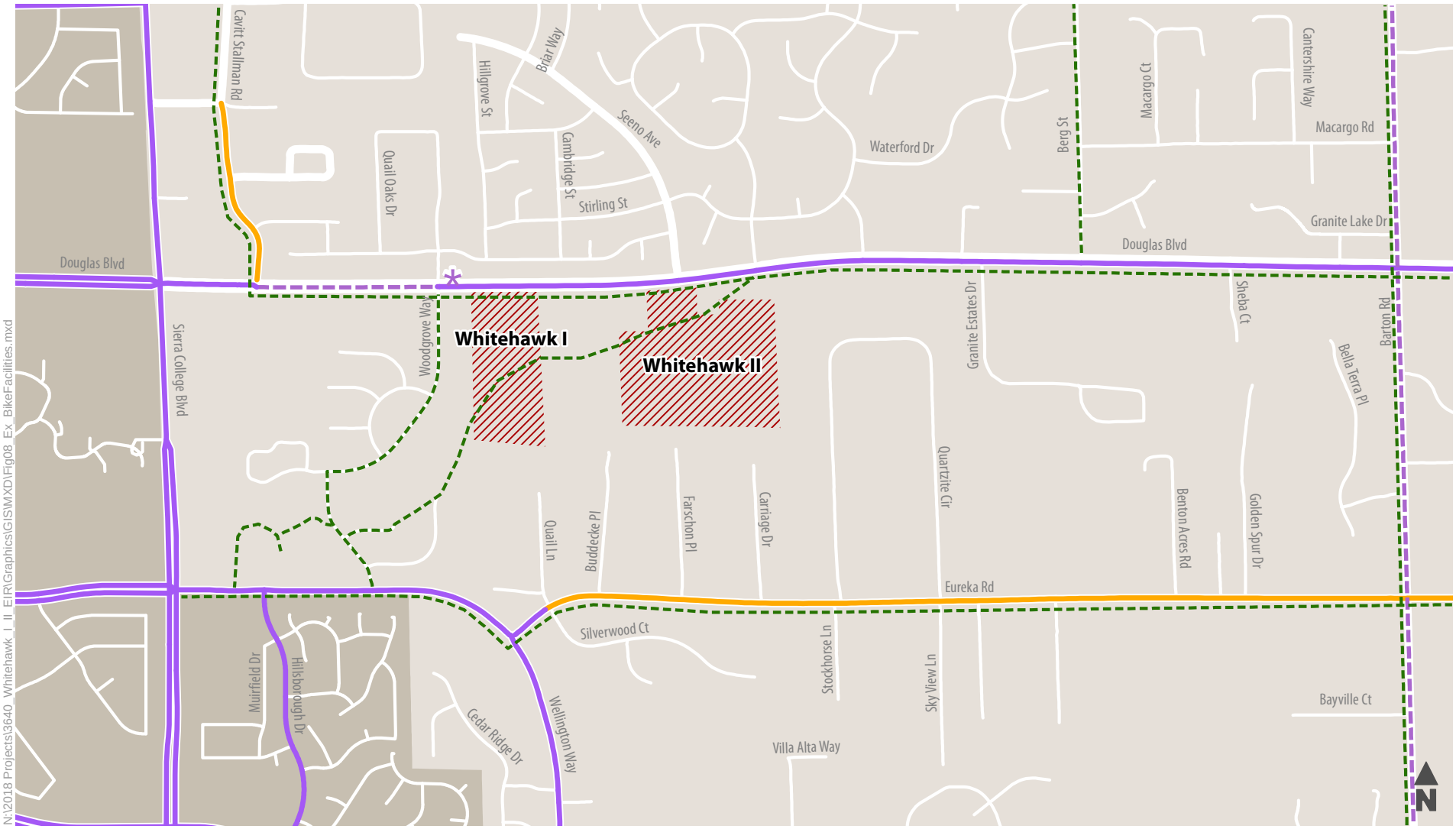
- Auburn Folsom Road: Auburn City Limits to Eureka Road
- Barton Road: Loomis City Limits to Sacramento County Line
- Douglas Boulevard: east of Sierra College Boulevard

Class II Bike Lanes

- Cavitt Stallman Road & Cavitt Stallman Road South: Douglas Boulevard to Auburn Folsom Road
- Eureka Road: Wellington Way to Auburn Folsom Road

Class III Bike Routes

- Olive Ranch Road: Cavitt Stallman Road to Barton Road
- Joe Rodgers Road: Douglas Boulevard to Auburn Folsom Road



Class I/Multi-Purpose Trail (Proposed)
Class II Bike Lane
City of Roseville City Limits
Class II Bike Lane (Proposed)
Class III Bike Route

* *Note: Generally, there is a striped shoulder with sufficient width for a bike lane along Douglas Blvd.; however, bike lane pavement markings and signage are intermittent along Douglas Blvd.*

Figure 8

Existing and Planned Bicycle Facilities

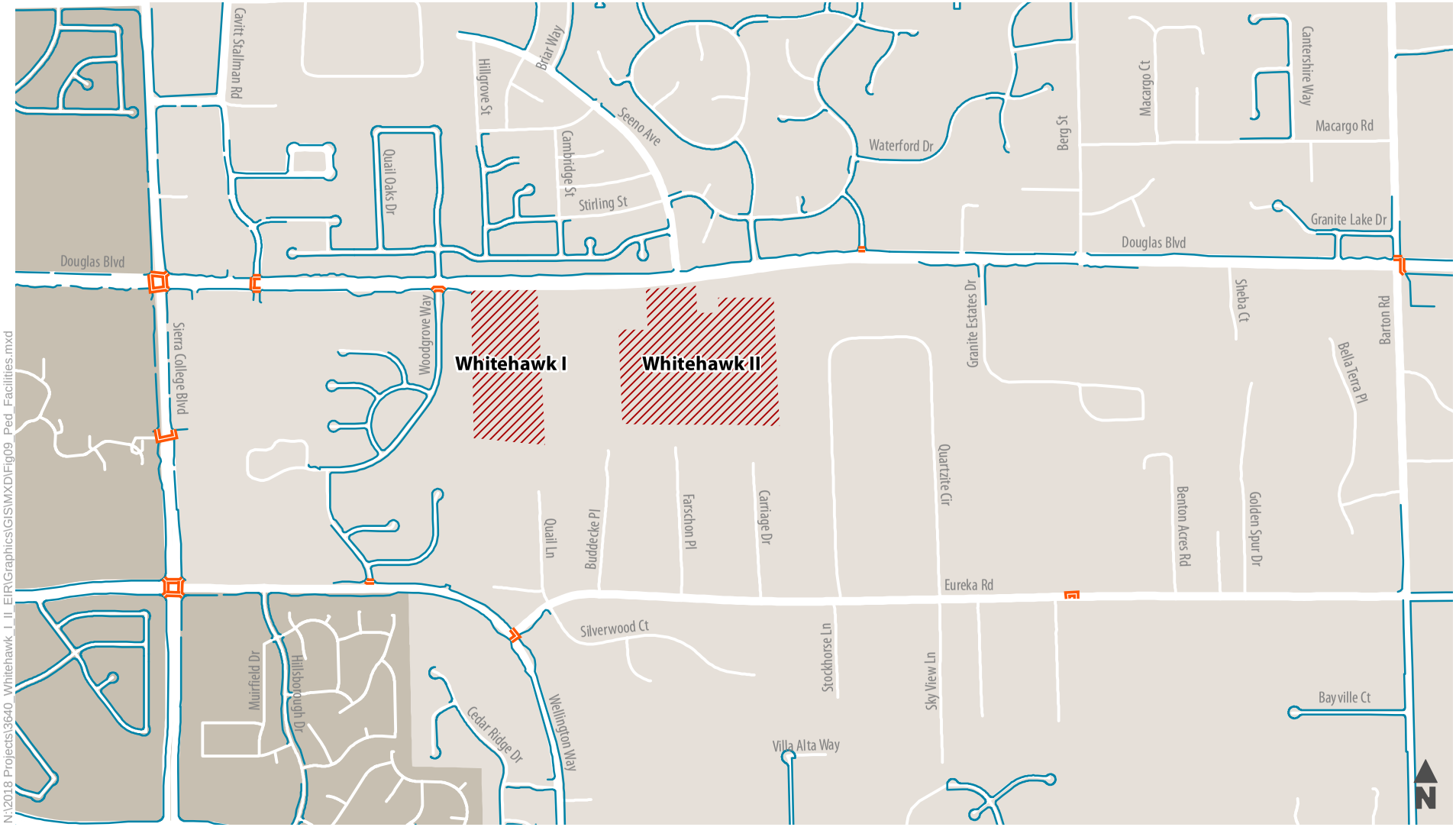
Pedestrian Facilities

Figure 9 shows the existing pedestrian facilities near the project site. As shown, sidewalks exist on both sides of many roadways in the study area, including Douglas Boulevard west of Whitehawk I, Sierra College Boulevard, Woodgrove Way, Eureka Road/Wellington Way from west of Greyhawk Drive to East Roseville Parkway, and the residential streets in the Quail Oaks and Greyhawk neighborhoods to the north and west of the proposed projects, respectively.

In some locations, however, sidewalks are only present on one side of the street, including Douglas Boulevard from the Whitehawk I project site east to Granite Estates Drive, Greyhawk Drive from Woodgrove Way to Streamside Court, and along many local roadways north of Douglas Boulevard, notably on Seeno Avenue adjacent to Greenhills Elementary School and the Grosvenor Downs and Douglas Ranch neighborhoods.

No sidewalks are provided along Seeno Avenue from Douglas Boulevard to Greenhills Way, on neighborhood streets south and east of Greenhills Elementary School, and along rural residential streets south of the proposed project sites.

Marked crosswalks exist at major intersections within the study area but are not present at a couple intersections near the proposed project sites, notably Seeno Avenue and Quail Oaks Drive at Douglas Boulevard. At the Douglas Boulevard / Seeno Avenue traffic signal, pedestrian signal equipment is in place, but a crosswalk is not striped.



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Existing Pedestrian Facilities

Sidewalk

Crosswalk

City of Roseville City Limits

Figure 9

Existing Pedestrian Facilities

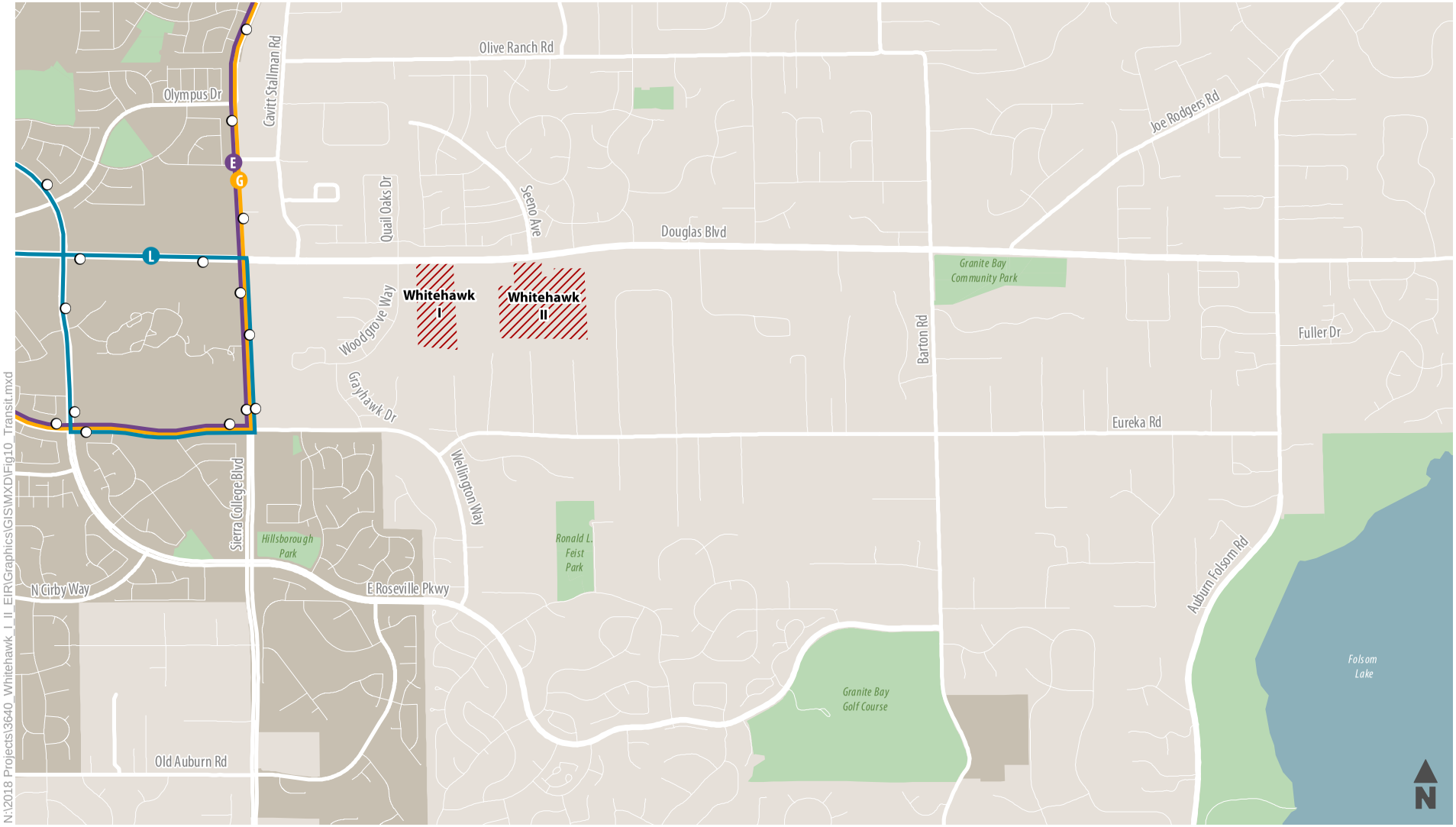
Transit Network

The nearest fixed-route transit service to the project sites is located approximately ½-mile west of Whitehawk I at Sierra College Boulevard. Figure 10 shows the three fixed-route bus lines that run along Sierra College Boulevard north of Eureka Road and Douglas Boulevard west of Sierra College Boulevard. As shown, all three fixed-route service lines are part of Roseville Transit. The City of Roseville operates fixed-route bus service throughout much of Roseville.

Route E and G are weekday service routes that operate Monday through Friday every other hour (i.e., every two hours). Route E operates from 7:53 a.m. to 6:30 p.m. and generally runs in a clockwise loop along Sierra College Boulevard, Eureka Road, Douglas Boulevard, I-80, and Rocklin Road; while Route G operates from 6:53 a.m. to 5:30 p.m. on a counter-clockwise loop using the same general roadways. These routes connect East Roseville to the Sierra Gardens Transfer Point and Sierra College campus in Rocklin.

Route L is a six-day per week service that operates hourly on Monday through Friday from 6:25 a.m. to 6:15 p.m. and on Saturday from 8:25 a.m. to 5:02 p.m. Route L generally serves the Douglas Boulevard corridor from the Civic Center Transfer Point in Downtown Roseville in the west to the Renaissance Creek Shopping Center at Sierra College Boulevard in the east. It also stops at the Sierra Gardens Transfer Point and provides access to retail centers along Douglas Boulevard as well as the Kaiser Roseville Medical Center.

In addition to fixed-route service, Placer County Transit provides dial-a-ride service in the Granite Bay area on weekday mornings (9:00 a.m. to 11:00 a.m.) and afternoons (2:00 p.m. to 4:00 p.m.). Dial-a-ride is a shared-ride service that operates on a demand-response basis (i.e., individuals make requests in advance for pick-up and drop-off).



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Bus Stop

City of Roseville Local Transit Route

- Route E
- Route G
- Route L

City of Roseville City Limits

Whitehawk I & II Project Location

Figure 10

Existing Transit Network

4. Existing Plus Project

This chapter describes the expected travel characteristics of the proposed projects. This includes the proposed access to the project site, the project trip generation, and project trip distribution. Refer to Figure 2 for the proposed site plans for the Whitehawk I and Whitehawk II projects.

Project Travel Characteristics

Proposed Access

Primary access to the proposed Whitehawk I and Whitehawk II projects would be provided via Douglas Boulevard. The Whitehawk I site would be accessed from a new private, gated road that extends south from Douglas Boulevard approximately 500 feet east of Woodgrove Way. Due to the existing raised median on Douglas Boulevard at this location, access at this new private, gated road would be restricted to right-in/ right-out movements. Outbound traffic to the west would travel east to the Seeno Avenue traffic signal and make a U-turn onto westbound Douglas Boulevard. Inbound traffic from the east would travel past the Whitehawk I access to Woodgrove Way and make a U-turn onto eastbound Douglas Boulevard to backtrack to the project access.

The Whitehawk II site would be accessed from a new private, gated road that extends south from the existing Douglas Boulevard / Seeno Avenue intersection. Since the Douglas Boulevard / Seeno Avenue intersection is already signalized, full access to and from the project would be provided at this intersection without the need for U-turns or backtracking that is necessary for the Whitehawk I project site. The existing westbound U-turn lane at Douglas Boulevard / Seeno Avenue would be lengthened and become a left-turn lane for inbound vehicle trips.

Although the NOP identified an off-site improvement to install a partial median closure at the Douglas Boulevard / Woodgrove Way/Quail Oaks Drive intersection, County staff has indicated this is not funded or finalized as part of the proposed projects plans. Therefore, this study analyzes this intersection remaining as it exists today in allowing all side-street movements from Woodgrove Way/Quail Oaks Drive with the proposed projects. This provides a conservative analysis of operations at this intersection since through and left-turn movements from the side-street incur the most delay.

Vehicle Trip Generation

This study estimates the vehicle trip generation for the proposed Whitehawk I and II projects using trip generation data contained in *Trip Generation Manual, 9th Edition* (Institute of Transportation Engineers, 2012). Fehr & Peers consulted with County staff regarding the use of the Institute of Transportation Engineers (ITE) recently published *Trip Generation Manual, 10th Edition* (Institute of Transportation Engineers, 2017), as well as trip generation data collected at existing residential neighborhoods throughout Granite Bay. In reviewing these options, the *Trip Generation Manual, 9th Edition* was selected for the following reasons:

- Placer County uses the trip generation rates in the 9th Edition for its current traffic impact fee program; and does not have a timeline established for changing over to the 10th Edition.
- While the trip generation estimates had minimal variation among these three sources, the *Trip Generation Manual, 9th Edition* data produced the highest trip generation estimate.
- By using the *Trip Generation Manual, 9th Edition* data, this study is consistent with the County's adopted fee program and conducts a conservative analysis.

The proposed Whitehawk I and II planned residential developments are consistent with the land use description for single-family detached housing in *Trip Generation Manual, 9th Edition*. Based on the guidance contained in the *Trip Generation Manual*, this study uses the fitted curve trip generation equations for single-family detached housing in the *Trip Generation Manual* to estimate the proposed projects' trip generation. Table 8 presents Whitehawk I and Whitehawk II daily, a.m., and p.m. peak hour trip generation estimates.

Table 8: Proposed Project Vehicle Trip Generation Estimate

Project	Dwelling Units	Trip Generation Estimate[1]						
		Daily	A.M. Peak Hour			P.M. Peak Hour		
		Total	Total	In	Out	Total	In	Out
Whitehawk I	24	283	27	7	20	29	18	11
Whitehawk II	55	606	48	12	36	61	38	23
Whitehawk I & II Combined	79	889	75	19	56	90	56	34

Notes:

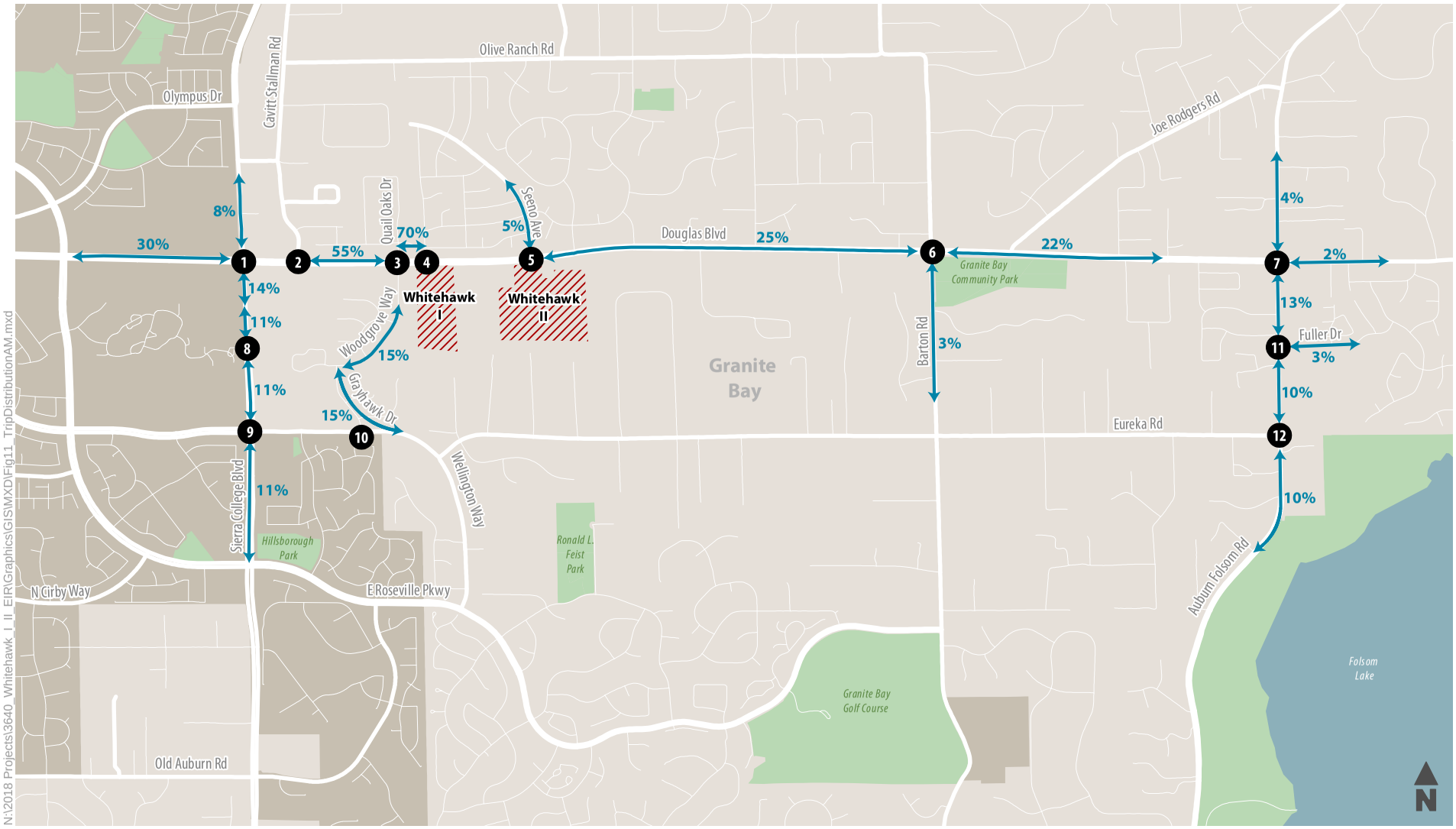
1. Vehicle trip generation estimate calculated using fitted curve equations obtained from *Trip Generation Manual, 9th Edition* (Institute of Transportation Engineers, 2012) for single-family detached housing (land use code 210).

Source: Fehr & Peers, 2018.

Vehicle Trip Distribution

The project vehicle trip distribution is based on a review of existing traffic counts, Eureka Union School District boundaries for school trips, and a select zone analysis of the Granite Bay travel forecasting model. The select zone analysis isolates and tracks the trips generated by the proposed Whitehawk I and Whitehawk II projects. Since the proposed Whitehawk I and Whitehawk II projects are located in close proximity to each other and consist of similar single-family residences, this study uses the same vehicle trip distribution for both projects.

Due to differences in trip activity and trip purposes between the a.m. and p.m. peak hour (i.e., a.m. peak hour trips to/from Greenhills Elementary School, Ridgeview Elementary School, and Granite Bay High School; higher frequency of commercial/shopping trips during the p.m. peak hour; etc.), this study uses one trip distribution for the a.m. peak hour and another for the p.m. peak hour. Figure 11 presents the a.m. peak hour vehicle trip distribution for the proposed Whitehawk I and II projects; while Figure 12 presents the p.m. peak hour vehicle trip distribution.



1 Study Intersection

Trip Distribution Percentage

City of Roseville City Limits

Whitehawk I & II Project Location

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Figure 11

Project Trip Distribution - AM Peak Hour

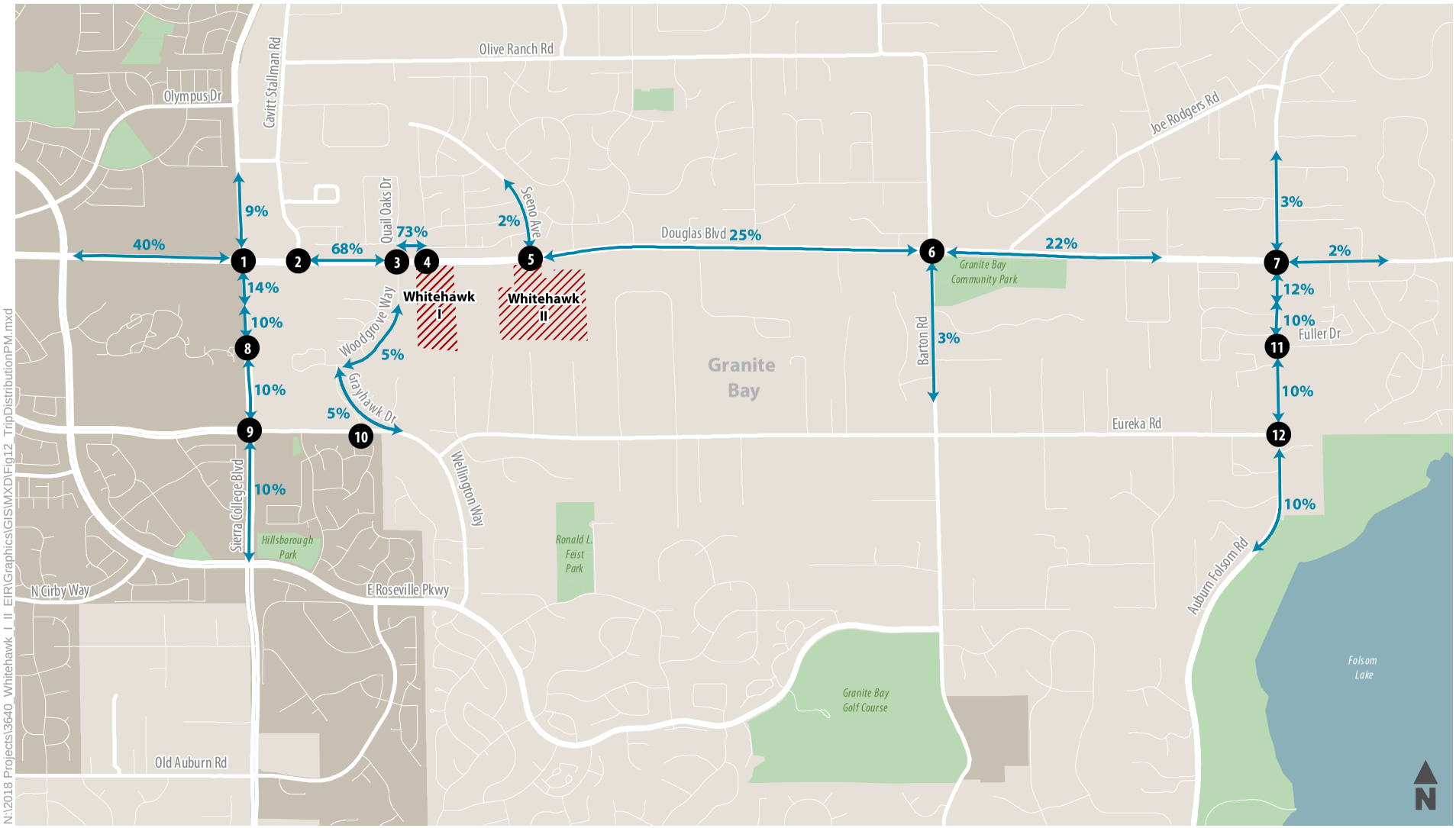


Figure 12

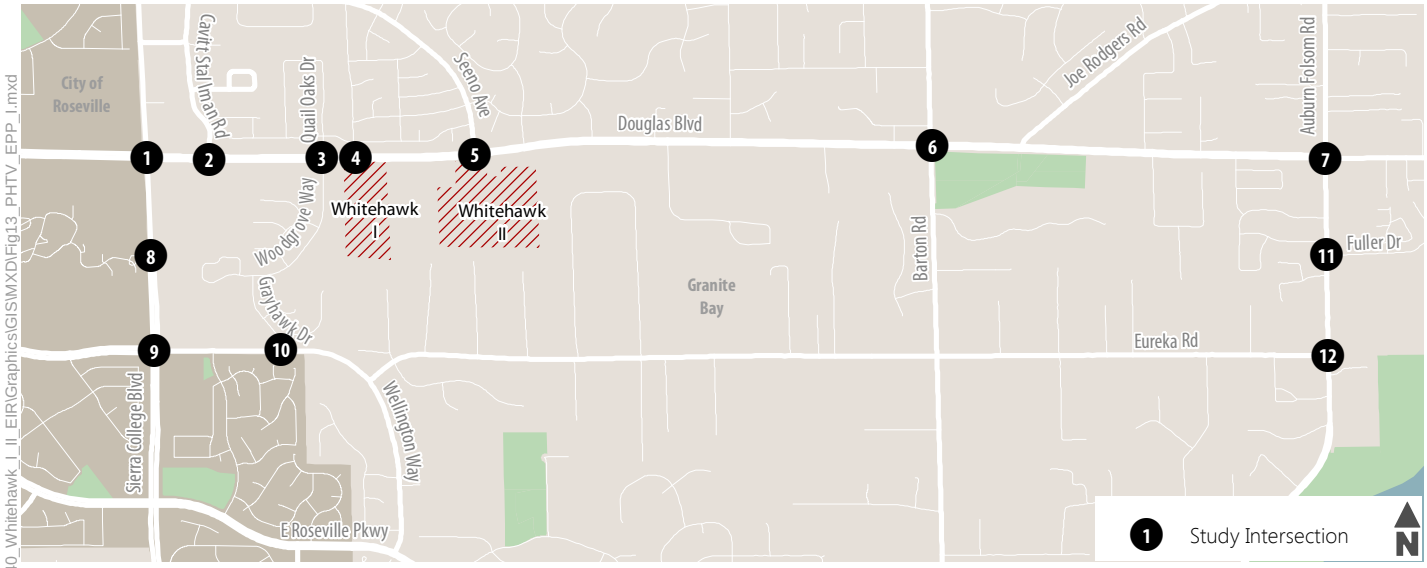
Project Trip Distribution - PM Peak Hour

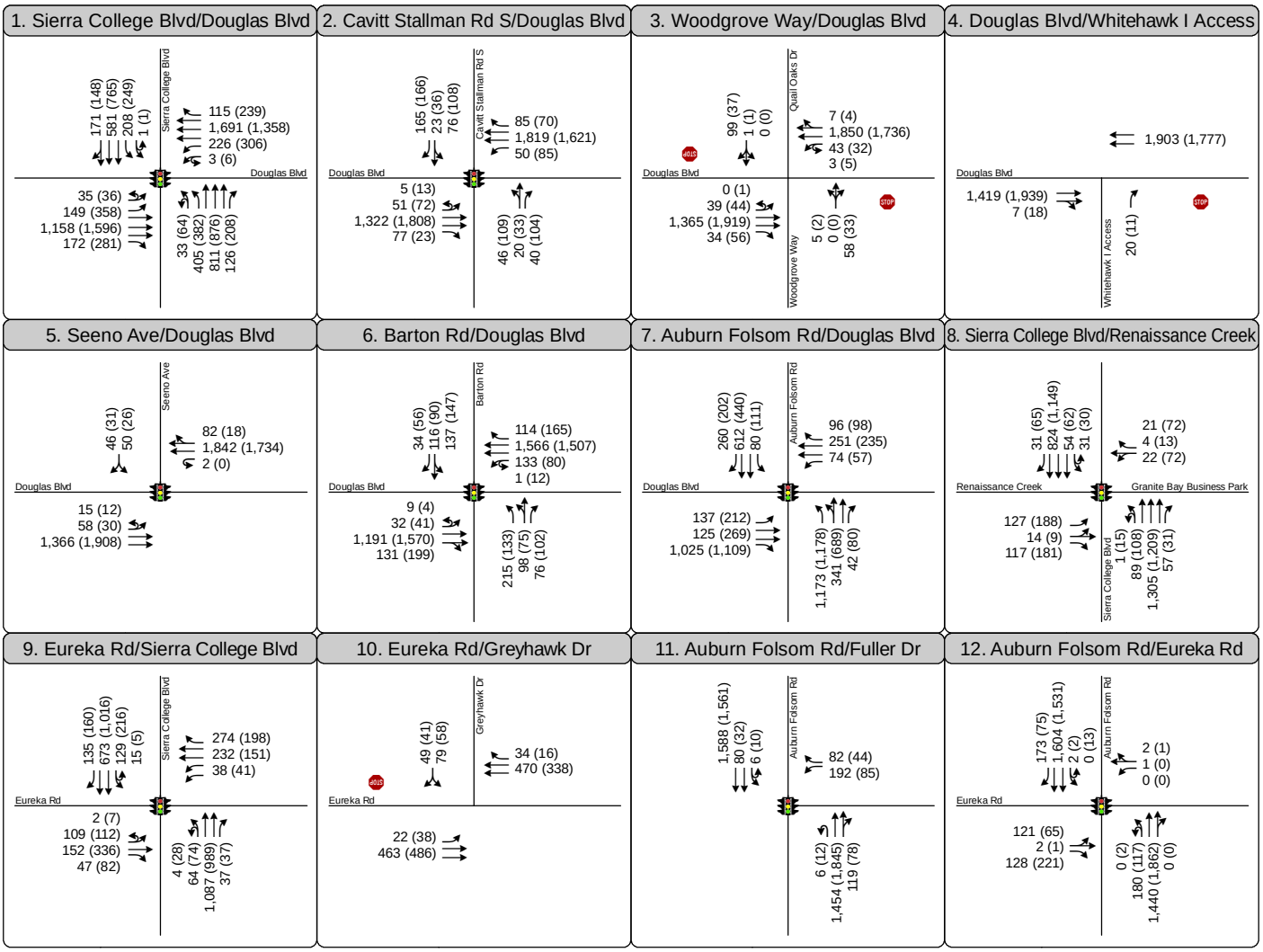
Roadway Network

Project Traffic Forecasts

Vehicle trips generated by the proposed Whitehawk I and Whitehawk II projects are signed to the roadway network based on the vehicle trip generation estimates in Table 8 and vehicle trip distribution shown in Figure 11 and Figure 12. These project trips are added to existing traffic counts to forecast existing plus project traffic volumes.

Figure 13 presents the resulting weekday a.m. and p.m. peak hour turning movement forecasts at study intersections under existing plus Whitehawk I conditions. Figure 14 presents the resulting weekday a.m. and p.m. peak hour turning movement forecasts at study intersections under existing plus Whitehawk II conditions. Figure 15 presents the resulting weekday a.m. and p.m. peak hour turning movement forecasts at study intersections under existing plus Whitehawk I and Whitehawk II conditions.





Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Stop Sign

Figure 13

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Whitehawk I Conditions

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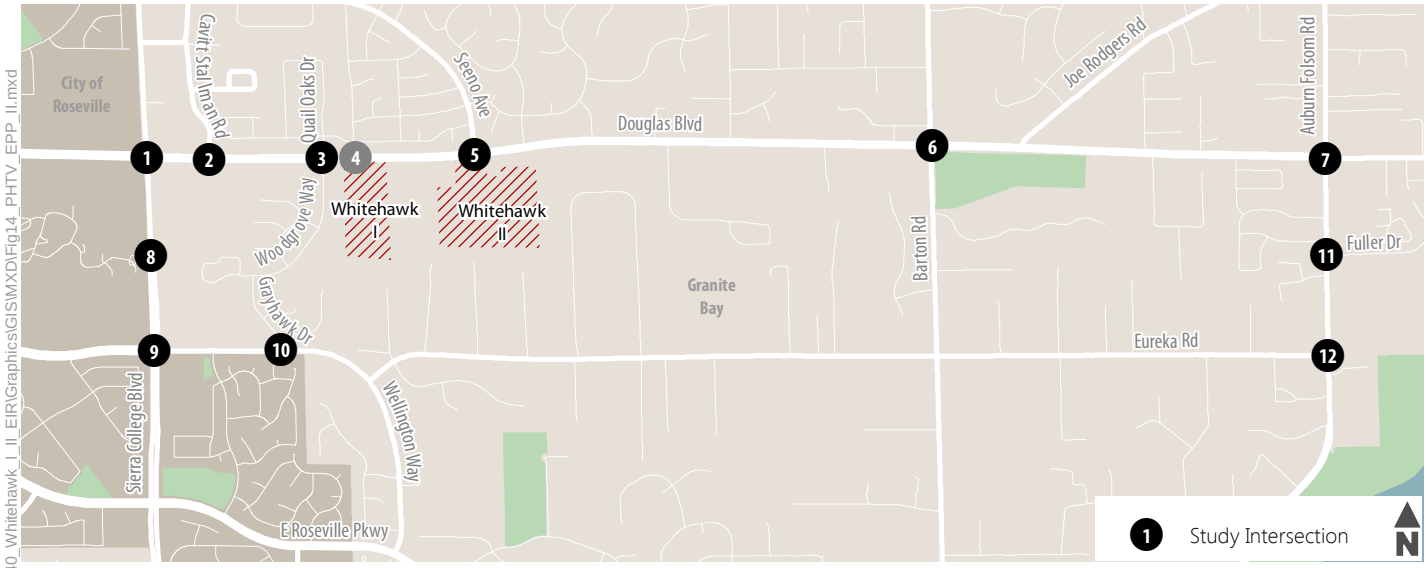

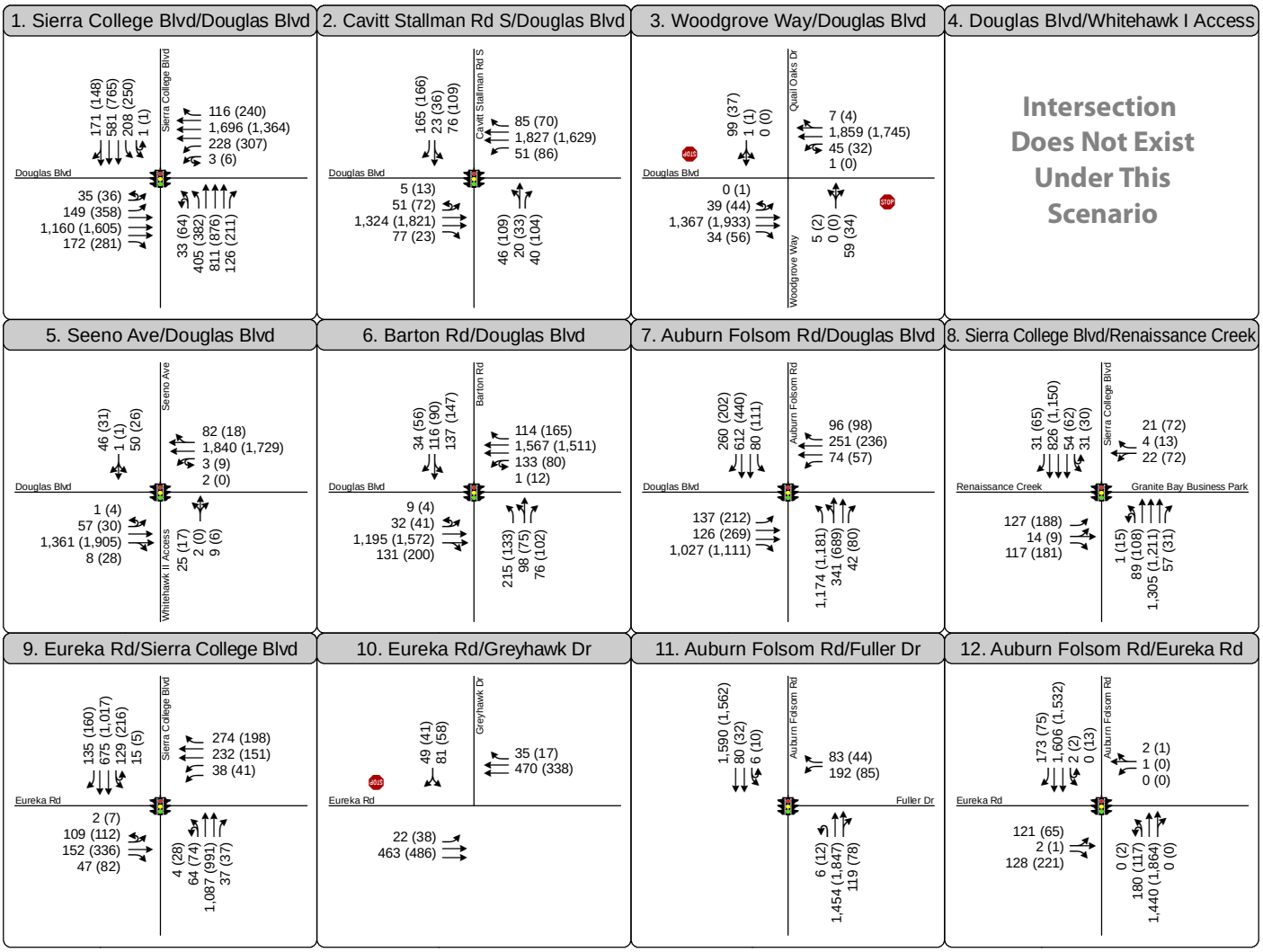

Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Stop Sign

Figure 14

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Whitehawk II Conditions

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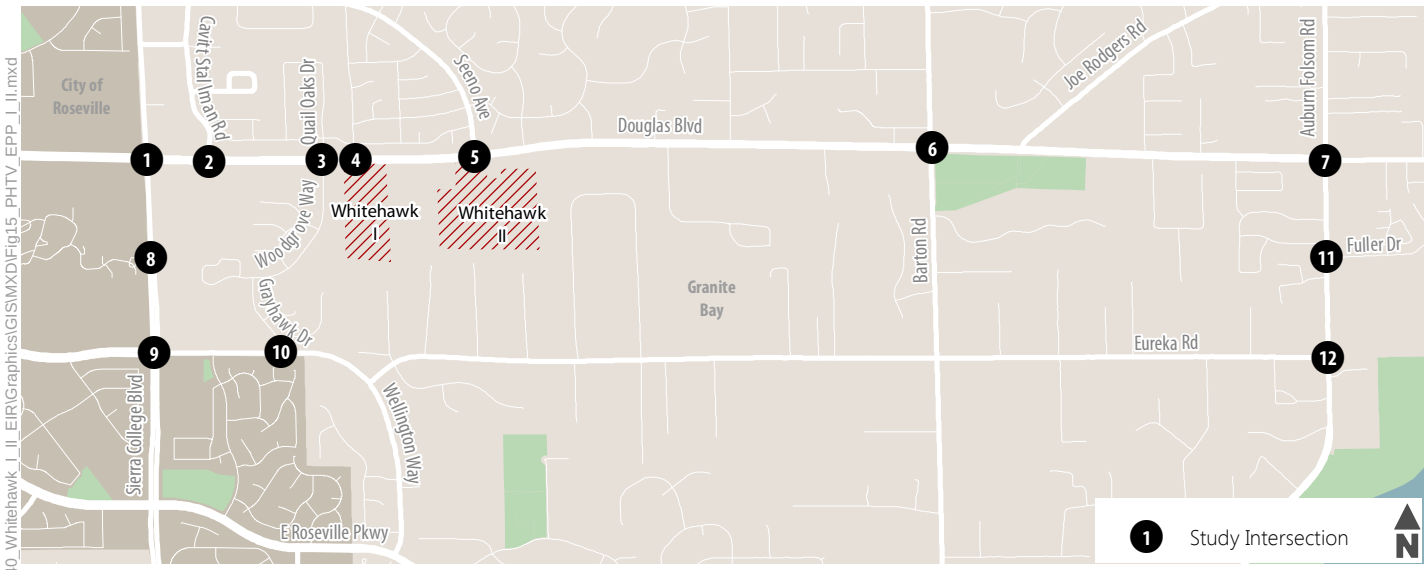

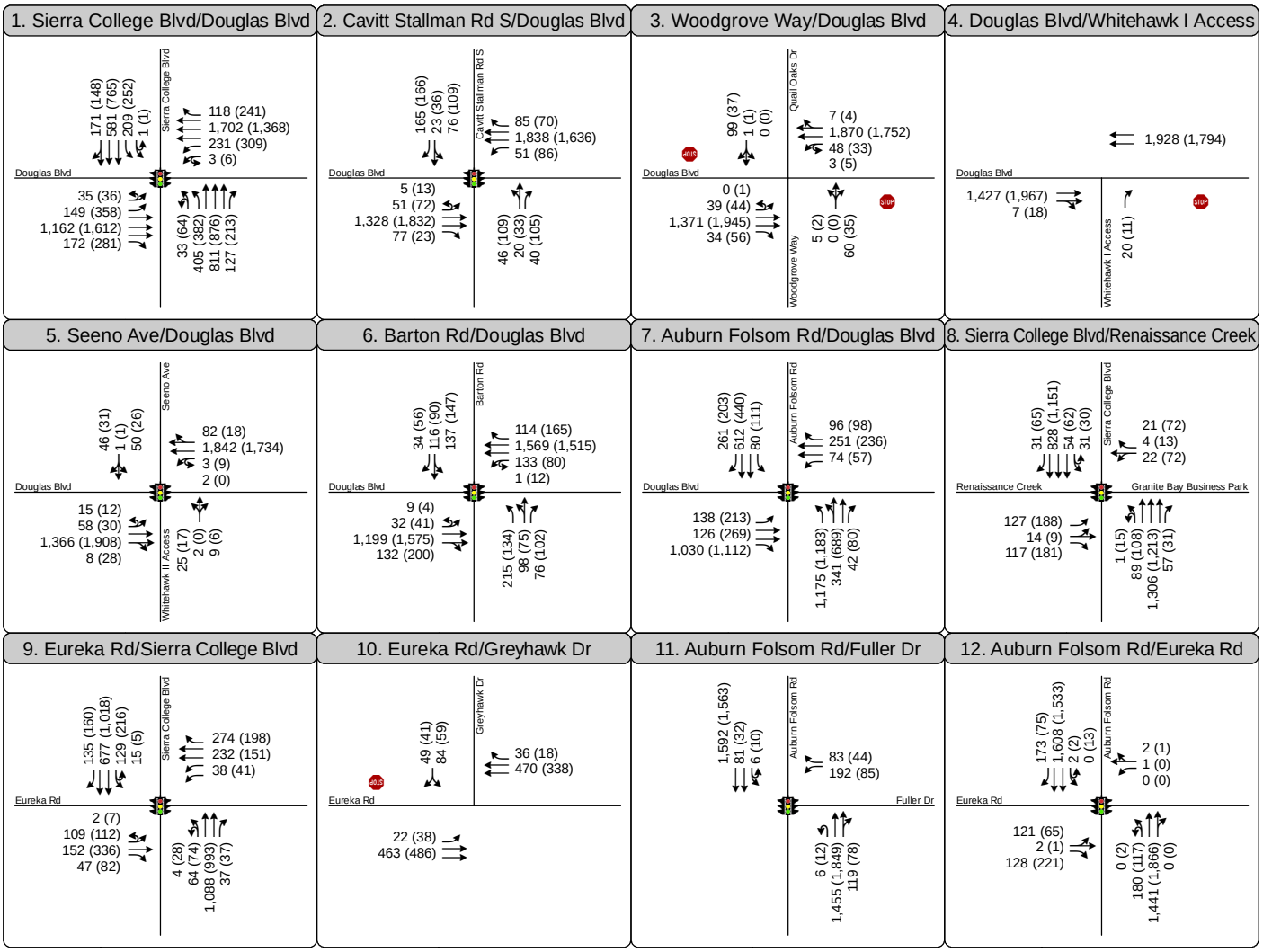

Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Stop Sign

Figure 15

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Whitehawk I & II Conditions

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Traffic Operations

This section presents the traffic operations analysis (i.e., LOS) results under existing plus Whitehawk I, existing plus Whitehawk II, and existing plus Whitehawk I and II conditions.

Existing Plus Whitehawk I

The following presents the traffic operations analysis results for the proposed Whitehawk I development.

Roadway Operations

Vehicle trips generated by the proposed Whitehawk I project on a daily basis are added to study roadway segments based on the vehicle trip generation estimates in Table 8 and an average of the vehicle trip distributions shown in Figure 11 and Figure 12. Table 9 presents the resulting ADT volumes, volume-to-capacity (v/c) ratio, and LOS for the nine study roadway segments.

As shown in Table 9, the following roadway segments would continue to operate at an unacceptable LOS D or worse under existing plus Whitehawk I conditions:

- Douglas Boulevard: Sierra College Boulevard to Cavitt Stallman Road South
- Douglas Boulevard: Cavitt Stallman Road South to Woodgrove Way/Quail Oaks Drive
- Douglas Boulevard: Woodgrove Way/Quail Oaks Drive to Seeno Avenue
- Douglas Boulevard: Seeno Avenue to Barton Road
- Douglas Boulevard: Barton Road to Auburn Folsom Road
- Sierra College Boulevard: Renaissance Creek/Granite Bay Business Park to Eureka Road
- Auburn Folsom Road: Douglas Boulevard to Eureka Road

However, none of the roadway segments would experience a daily traffic volume increase greater than 200 vehicles. The largest increase in ADT on the above segments is on Douglas Boulevard from Woodgrove Way to Seeno Avenue, which increases by 200 ADT. Since this is less than 100 ADT per lane (Douglas Boulevard is four lanes on this segment), this impact is **less-than-significant**.

Table 9: Roadway Segment Daily Traffic Volumes – Existing Plus Whitehawk I Conditions

Segment	Classification	Existing Conditions			Existing + Whitehawk I		
		ADT[1]	V/C	LOS	ADT[1]	V/C	LOS
1. Douglas Blvd.: Sierra College Blvd. to Cavitt Stallman Rd. South	4-lane Arterial – MAC	47,560	1.32	**F**	47,730	1.33	**F**
2. Douglas Blvd.: Cavitt Stallman Rd. South to Woodgrove Way	4-lane Arterial – HAC	46,830	1.17	**F**	47,010	1.18	**F**
3. Douglas Blvd.: Woodgrove Way to Seeno Ave.	4-lane Arterial – HAC	45,230	1.13	**F**	45,430	1.14	**F**
4. Douglas Blvd.: Seeno Ave. to Barton Rd.	4-lane Arterial – HAC	44,800	1.12	**F**	44,870	1.12	**F**
5. Douglas Blvd.: Barton Rd. to Auburn Folsom Rd.	4-lane Arterial – HAC	42,620	1.07	**F**	42,690	1.07	**F**
6. Sierra College Blvd.: Olympus Dr. to Douglas Blvd.	6-lane Arterial – MAC	26,950	0.50	A	26,970	0.50	A
7. Sierra College Blvd.: Douglas Blvd. to Renaissance Creek	6-lane Arterial – MAC	34,450	0.64	B	34,490	0.64	B
8. Sierra College Blvd.: Renaissance Creek to Eureka Rd.	4-lane Arterial – MAC	32,330	0.90	**D**	32,360	0.90	**D**
9. Auburn Folsom Rd.: Douglas Blvd. to Eureka Rd.	4-lane Arterial – MAC	39,670	1.10	**F**	39,700	1.10	**F**

Notes:

MAC = moderate access control; HAC = high access control

1. ADT = average daily traffic volume. ADT values are rounded to the nearest 10 vehicles.

Bold text indicates unacceptable operations.

Source: Fehr & Peers, 2018.

Douglas Boulevard – Diverted Traffic Evaluation

Table 10 presents the weekday a.m. and p.m. peak hour average travel speeds on Douglas Boulevard for the segment between Seeno Avenue to Cavitt Stallman Road South under existing plus Whitehawk I conditions. As shown in Table 10, the average travel speed on westbound Douglas Boulevard from Seeno Avenue to Cavitt Stallman Road South would remain unchanged during both the a.m. and p.m. peak hours under existing plus Whitehawk I conditions. Since these speeds remain relatively unchanged from existing conditions, the proposed Whitehawk I project would not increase the attractiveness for through traffic to divert off Douglas Boulevard through the Quail Oaks neighborhood.

Table 10: Douglas Boulevard Peak Hour Travel Speed – Existing Plus Whitehawk I Conditions

Roadway Segment	Direction	Existing Conditions		Existing + Whitehawk I	
		Travel Speed[1]	%BFFS[2]	Travel Speed[1]	%BFFS[2]
Douglas Boulevard – AM Peak Hour					
1. Cavitt Stallman Rd. South to Seeno Ave.	Eastbound	51	83%	51	82%
	Westbound	46	74%	46	74%
Douglas Boulevard – PM Peak Hour					
1. Cavitt Stallman Rd. South to Seeno Ave.	Eastbound	52	84%	52	84%
	Westbound	41	67%	41	67%

Notes:
1. Travel speed calculated based on methodologies contained in the *Highway Capacity Manual* (HCM) *6th Edition*.
2. Percent of base free-flow speed (BFFS) as calculated by HCS.

Source: Fehr & Peers, 2018.

Intersection Operations

Table 11 presents the average delay and LOS at the study intersections under existing plus Whitehawk I conditions during the weekday a.m. and p.m. peak hours (refer to Appendix C for technical calculations). As shown, all study intersections continue to operate at an acceptable LOS under existing plus Whitehawk I conditions except the following three intersections, which continue to operate at an unacceptable LOS under existing plus Whitehawk I conditions:

- Sierra College Boulevard / Douglas Boulevard (#1) – LOS D during the a.m. peak hour and LOS E during the p.m. peak hour
- Woodgrove Way/Quail Oaks Drive / Douglas Boulevard (#3) – LOS F during the a.m. and p.m. peak hours
- Sierra College Boulevard / Eureka Road (#9) – LOS D during the a.m. peak hour and LOS E during the p.m. peak hour

These intersections operate at an unacceptable LOS under existing conditions and would continue to operate at an unacceptable LOS under existing plus Whitehawk I conditions. However, the vehicle trips generated by Whitehawk I would not degrade the operations by a service level (i.e., LOS D to LOS E) at the City of Roseville intersections – Sierra College Boulevard / Douglas Boulevard and Sierra College Boulevard / Eureka Road. Furthermore, it would increase the weighted average control delay by less than 1 second at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard during the a.m. peak hour and reduce the average control delay during the p.m. peak hour. Therefore, this is considered a **less-than-significant** impact.

Table 11: Peak Hour Intersection Operations – Existing Plus Whitehawk I Conditions

Intersection	Traffic Control[1]	Peak Hour	Existing Conditions		Existing + WH I[2]	
			Delay[3]	LOS[4]	Delay[3]	LOS[4]
1. Sierra College Blvd. / Douglas Blvd.	Signal	A.M.	**43.0**	**D**	**43.1**	**D**
		P.M.	**60.0**	**E**	**60.2**	**E**
2. Cavitt Stallman Rd. South / Douglas Blvd.	Signal	A.M.	13.9	B	14.0	B
		P.M.	20.8	C	21.0	C
3. Woodgrove Way/Quail Oaks Dr. / Douglas Blvd.	SSSC	A.M.	**63.0**[4]	**F**	**63.7**[4]	**F**
		P.M.	**120.6**[4]	**F**	**116.7**[4]	**F**
4. Whitehawk I Access / Douglas Blvd.[5]	SSSC	A.M.			16.3	C
		P.M.			21.6	C
5. Seeno Ave. / Douglas Blvd.	Signal	A.M.	7.3	A	7.3	A
		P.M.	4.5	A	4.6	A
6. Barton Rd. / Douglas Blvd.	Signal	A.M.	38.9	D	39.2	D
		P.M.	42.7	D	43.2	D
7. Auburn Folsom Rd. / Douglas Blvd.	Signal	A.M.	39.0	D	39.1	D
		P.M.	36.1	D	36.2	D
8. Sierra College Blvd. / Renaissance Creek/ Granite Bay Business Park	Signal	A.M.	25.0	C	25.0	C
		P.M.	28.7	C	28.7	C
9. Sierra College Blvd. / Eureka Rd.	Signal	A.M.	**41.4**	**D**	**41.5**	**D**
		P.M.	**64.7**	**E**	**65.0**	**E**
10. Grayhawk Dr. / Eureka Rd.	SSSC	A.M.	22.8	C	23.5	C
		P.M.	13.9	B	14.1	B
11. Auburn Folsom Rd. / Fuller Dr.	Signal	A.M.	13.4	B	13.5	B
		P.M.	9.0	A	9.1	A
12. Auburn Folsom Rd. / Eureka Rd.	Signal	A.M.	15.4	B	15.4	B
		P.M.	9.1	A	9.1	A

Notes:

1. Signal = traffic signal-controlled intersection; SSSC = side-street stop-controlled intersection
2. WH I = Whitehawk I
3. Average control delay for signalized intersections is the weighted average for all movements. Average control delay at SSSC intersections is the "overall weighted average delay for movements yielding the right-of-way."
4. LOS = level of service; calculated based on methodologies contained in the *Highway Capacity Manual* (HCM) *6th Edition*.
5. Whitehawk I Access is constructed with the proposed Whitehawk I development. Does not exist under Existing Conditions.

Bold text indicates unacceptable operations.

All intersections are analyzed in Synchro 10.

Source: Fehr & Peers, 2018.

Woodgrove Way/Quail Oaks Drive / Douglas Boulevard

As with existing conditions, the HCM delay calculations at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection show extremely high delays for the side-street through and left-turn movements under existing plus Whitehawk I conditions. As noted under existing conditions, while the conflicting volumes on Douglas Boulevard make these side-street movements difficult, drivers would not wait more than 25 minutes to make these movements as the HCM delay calculations would suggest. However, to maintain consistency with the HCM 6th Edition methodology, this study uses the delay and LOS results presented in Table 11, which reflect these high delay calculations.

The average control delay for the movements yielding the right-of-way at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard decreases from existing conditions during the p.m. peak hour because Whitehawk I would add trips to movements with less delay – such as the westbound left-turn and the northbound right-turn. Comparatively, the side-street through and left-turn movements, which experience the highest delays, have much smaller volumes. As a result, the weighted average control delay decreases since the additional project trips are added to movements with considerably less delay.

For informational purposes, this study also calculates the average control delay and LOS for this intersection if the average control delay on the side street movement was capped at 600 seconds (i.e., 10 minutes). Using these delay values, the average control delay for movements yielding the right-of-way at this intersection would be 37 seconds – LOS E – during the a.m. peak hour; and 32 seconds – LOS D – during the p.m. peak hour under existing plus Whitehawk I conditions. This is a slight improvement to the average control delay under existing conditions, which is 38 seconds during the a.m. peak hour and 32 seconds during the p.m. peak hour.

Peak Hour Signal Warrant Analysis

The peak hour signal warrant analysis shows that both Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection and Greyhawk Drive / Eureka Road intersection meet the peak hour signal warrant (Warrant 3B) under existing plus Whitehawk I conditions during the a.m. peak hour, but not during the p.m. peak hour.

Existing Plus Whitehawk II

The following presents the traffic operations analysis results for the proposed Whitehawk II development.

Roadway Operations

Vehicle trips generated by the proposed Whitehawk II project on a daily basis are added to study roadway segments based on the vehicle trip generation estimates in Table 8 and an average of the vehicle trip distributions shown in Figure 11 and Figure 12. Table 12 presents the resulting ADT volumes, volume-to-capacity (v/c) ratio, and LOS for the nine study roadway segments.

As shown in Table 12, the following roadway segments would continue to operate at an unacceptable LOS D or worse under existing plus Whitehawk II conditions:

- Douglas Boulevard: Sierra College Boulevard to Cavitt Stallman Road South
- Douglas Boulevard: Cavitt Stallman Road South to Woodgrove Way/Quail Oaks Drive
- Douglas Boulevard: Woodgrove Way/Quail Oaks Drive to Seeno Avenue
- Douglas Boulevard: Seeno Avenue to Barton Road
- Douglas Boulevard: Barton Road to Auburn Folsom Road
- Sierra College Boulevard: Renaissance Creek/Granite Bay Business Park to Eureka Road
- Auburn Folsom Road: Douglas Boulevard to Eureka Road

The segment of Douglas Boulevard from Woodgrove Way to Seeno Avenue would experience an increases of 440 ADT. Since this is slightly more than 100 ADT per lane (Douglas Boulevard is four lanes on this segment), this is considered a **significant** impact. However, the rest of the roadway segments would experience a daily traffic volume increase less than 400 daily vehicles. Therefore, Whitehawk II would have a **less-than-significant** impact on the remaining segments.

Table 12: Roadway Segment Daily Traffic Volumes – Existing Plus Whitehawk II Conditions

Segment	Classification	Existing Conditions			Existing + Whitehawk II		
		ADT[1]	V/C	LOS	ADT[1]	V/C	LOS
1. Douglas Blvd.: Sierra College Blvd. to Cavitt Stallman Rd. South	4-lane Arterial – MAC	47,560	1.32	**F**	47,930	1.33	**F**
2. Douglas Blvd.: Cavitt Stallman Rd. South to Woodgrove Way	4-lane Arterial – HAC	46,830	1.17	**F**	47,220	1.18	**F**

Table 12: Roadway Segment Daily Traffic Volumes – Existing Plus Whitehawk II Conditions

Segment	Classification	Existing Conditions			Existing + Whitehawk II		
		ADT[1]	V/C	LOS	ADT[1]	V/C	LOS
3. Douglas Blvd.: Woodgrove Way to Seeno Ave.	4-lane Arterial – HAC	45,230	1.13	**F**	45,670	1.14	**F**
4. Douglas Blvd.: Seeno Ave. to Barton Rd.	4-lane Arterial – HAC	44,800	1.12	**F**	44,950	1.12	**F**
5. Douglas Blvd.: Barton Rd. to Auburn Folsom Rd.	4-lane Arterial – HAC	42,620	1.07	**F**	42,760	1.07	**F**
6. Sierra College Blvd.: Olympus Dr. to Douglas Blvd.	6-lane Arterial – MAC	26,950	0.50	A	27,000	0.50	A
7. Sierra College Blvd.: Douglas Blvd. to Renaissance Creek	6-lane Arterial – MAC	34,450	0.64	B	34,540	0.64	B
8. Sierra College Blvd.: Renaissance Creek to Eureka Rd.	4-lane Arterial – MAC	32,330	0.90	**D**	32,390	0.90	**D**
9. Auburn Folsom Rd.: Douglas Blvd. to Eureka Rd.	4-lane Arterial – MAC	39,670	1.10	**F**	39,740	1.10	**F**

Notes:
MAC = moderate access control; HAC = high access control
1. ADT = average daily traffic volume. ADT values are rounded to the nearest 10 vehicles.
Bold text indicates unacceptable operations. **Bold and highlighted** text indicates significant impacts.
Source: Fehr & Peers, 2018.

Douglas Boulevard – Diverted Traffic Evaluation

Table 13 presents the weekday a.m. and p.m. peak hour average travel speeds on Douglas Boulevard for the segment between Seeno Avenue to Cavitt Stallman Road South under existing plus Whitehawk II conditions. As shown in Table 13, the average travel speed on westbound Douglas Boulevard from Seeno Avenue to Cavitt Stallman Road South would remain unchanged during both the a.m. and p.m. peak hours under existing plus Whitehawk II conditions. Since these speeds remain relatively unchanged from existing conditions, the proposed Whitehawk II project would not increase the attractiveness for through traffic to divert off Douglas Boulevard through the Quail Oaks neighborhood. While the speeds on eastbound Douglas Boulevard are forecasted to decrease due to the additional leg and signal phase at the Seeno Avenue signal, the travel speed would still be significantly higher than diverting off Douglas Boulevard.

Table 13: Douglas Boulevard Peak Hour Travel Speed – Existing Plus Whitehawk II Conditions

Roadway Segment	Direction	Existing Conditions		Existing + Whitehawk II	
		Travel Speed[1]	%BFFS[2]	Travel Speed[1]	%BFFS[2]
Douglas Boulevard – AM Peak Hour					
1. Cavitt Stallman Rd. South to Seeno Ave.	Eastbound	51	83%	47	76%
	Westbound	46	74%	46	74%
Douglas Boulevard – PM Peak Hour					
1. Cavitt Stallman Rd. South to Seeno Ave.	Eastbound	52	84%	46	73%
	Westbound	41	67%	41	67%

Notes:

1. Travel speed calculated based on methodologies contained in the *Highway Capacity Manual* (HCM) *6th Edition*.
2. Percent of base free-flow speed (BFFS) as calculated by HCS.

Source: Fehr & Peers, 2018.

Intersection Operations

Table 14 presents the average delay and LOS at the study intersections under existing plus Whitehawk II conditions during the weekday a.m. and p.m. peak hours (refer to Appendix D for technical calculations). As shown, all study intersections continue to operate at an acceptable LOS under existing plus Whitehawk II conditions except the following three intersections, which continue to operate at an unacceptable LOS under existing plus Whitehawk II conditions:

- Sierra College Boulevard / Douglas Boulevard (#1) – LOS D during the a.m. peak hour and LOS E during the p.m. peak hour
- Woodgrove Way/Quail Oaks Drive / Douglas Boulevard (#3) – LOS F during the a.m. and p.m. peak hours
- Sierra College Boulevard / Eureka Road (#9) – LOS D during the a.m. peak hour and LOS E during the p.m. peak hour

These intersections operate at an unacceptable LOS under existing conditions and would continue to operate at an unacceptable LOS under existing plus Whitehawk II conditions. However, the vehicle trips generated by Whitehawk II would not degrade the operations by a service level (i.e., LOS D to LOS E) at the City of Roseville intersections – Sierra College Boulevard / Douglas Boulevard and Sierra College Boulevard / Eureka Road. Furthermore, it would increase the weighted average control delay by less than 1 seconds at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard during the a.m. peak hour and reduce the average control delay during the p.m. peak hour. Therefore, this is considered a **less-than-significant** impact.

Table 14: Peak Hour Intersection Operations – Existing Plus Whitehawk II Conditions

Intersection	Traffic Control[1]	Peak Hour	Existing Conditions		Existing + WH II[2]	
			Delay[3]	LOS[4]	Delay[3]	LOS[4]
1. Sierra College Blvd. / Douglas Blvd.	Signal	A.M.	**43.0**	**D**	**43.1**	**D**
		P.M.	**60.0**	**E**	**60.4**	**E**
2. Cavitt Stallman Rd. South / Douglas Blvd.	Signal	A.M.	13.9	B	13.7	B
		P.M.	20.8	C	21.2	C
3. Woodgrove Way/Quail Oaks Dr. / Douglas Blvd.	SSSC	A.M.	**63.0[4]**	**F**	**63.7[4]**	**F**
		P.M.	**120.6[4]**	**F**	**119.1[4]**	**F**
4. Whitehawk I Access / Douglas Blvd.[5]	N/A	A.M.				
		P.M.				
5. Seeno Ave. / Douglas Blvd.	Signal	A.M.	7.3	A	14.1	B
		P.M.	4.5	A	8.6	A
6. Barton Rd. / Douglas Blvd.	Signal	A.M.	38.9	D	39.3	D
		P.M.	42.7	D	43.5	D
7. Auburn Folsom Rd. / Douglas Blvd.	Signal	A.M.	39.0	D	39.1	D
		P.M.	36.1	D	36.3	D
8. Sierra College Blvd. / Renaissance Creek/ Granite Bay Business Park	Signal	A.M.	25.0	C	25.0	C
		P.M.	28.7	C	28.7	C
9. Sierra College Blvd. / Eureka Rd.	Signal	A.M.	**41.4**	**D**	**41.5**	**D**
		P.M.	**64.7**	**E**	**65.2**	**E**
10. Grayhawk Dr. / Eureka Rd.	SSSC	A.M.	22.8	C	24.0	C
		P.M.	13.9	B	14.1	B
11. Auburn Folsom Rd. / Fuller Dr.	Signal	A.M.	13.4	B	13.5	B
		P.M.	9.0	A	9.1	A
12. Auburn Folsom Rd. / Eureka Rd.	Signal	A.M.	15.4	B	15.4	B
		P.M.	9.1	A	9.1	A

Notes:

1. Signal = traffic signal-controlled intersection; SSSC = side-street stop-controlled intersection
2. WH II = Whitehawk II
3. Average control delay (rounded to nearest second) for signalized intersections is the weighted average for all movements. Average control delay at SSSC intersections is the "overall weighted average delay for movements yielding the right-of-way."
4. LOS = level of service; calculated based on methodologies contained in the *Highway Capacity Manual* (HCM) *6th Edition*.
5. Whitehawk I Access does not exist under Existing Conditions and would not exist under Existing Plus Whitehawk II conditions.

Bold text indicates unacceptable operations.

All intersections are analyzed in Synchro 10.

Source: Fehr & Peers, 2018.

Woodgrove Way/Quail Oaks Drive / Douglas Boulevard

As with existing conditions, the HCM delay calculations at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection show extremely high delays for the side-street through and left-turn movements under existing plus Whitehawk II conditions. As noted under existing conditions, while the conflicting volumes on Douglas Boulevard make these side-street movements difficult, drivers would not wait more than 25 minutes to make these movements as the HCM delay calculations would suggest. However, to maintain consistency with the HCM 6th Edition methodology, this study uses the delay and LOS results presented in Table 14, which reflect these high delay calculations.

The average control delay for the movements yielding the right-of-way at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard decreases from existing conditions during the p.m. peak hour because Whitehawk II would add trips to movements with less delay – such as the westbound left-turn and the northbound right-turn. Comparatively, the side-street through and left-turn movements, which experience the most extreme delay according to the HCM calculations, have much smaller volumes. As a result, the weighted average control delay decreases since the additional project trips are added to movements with considerably less delay.

For informational purposes, this study also calculates the average control delay and LOS for this intersection if the average control delay on the side street movement was capped at 600 seconds (i.e., 10 minutes). Using these delay values, the average control delay for movements yielding the right-of-way at this intersection would be 37 seconds – LOS E – during the a.m. peak hour; and 32 seconds – LOS D – during the p.m. peak hour under existing plus Whitehawk II conditions. This is a slight improvement to the average control delay under existing conditions, which is 38 seconds during the a.m. peak hour and 32 seconds during the p.m. peak hour.

Peak Hour Signal Warrant Analysis

The peak hour signal warrant analysis shows that both Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection and Greyhawk Drive / Eureka Road intersection meet the peak hour signal warrant (Warrant 3B) under existing plus Whitehawk II conditions during the a.m. peak hour, but not during the p.m. peak hour.

Existing Plus Whitehawk I & II

The following presents the traffic operations analysis results when viewing the two proposed projects – Whitehawk I and Whitehawk II – together.

Roadway Operations

Vehicle trips generated by the proposed Whitehawk I and Whitehawk II projects on a daily basis are added to study roadway segments based on the vehicle trip generation estimates in Table 8 and an average of the vehicle trip distributions shown in Figure 11 and Figure 12. Table 15 presents the resulting ADT volumes, volume-to-capacity (v/c) ratio, and LOS for the nine study roadway segments.

As shown in Table 15, the following roadway segments would continue to operate at an unacceptable LOS D or worse under existing plus Whitehawk I and II conditions:

- Douglas Boulevard: Sierra College Boulevard to Cavitt Stallman Road South
- Douglas Boulevard: Cavitt Stallman Road South to Woodgrove Way/Quail Oaks Drive
- Douglas Boulevard: Woodgrove Way/Quail Oaks Drive to Seeno Avenue
- Douglas Boulevard: Seeno Avenue to Barton Road
- Douglas Boulevard: Barton Road to Auburn Folsom Road
- Sierra College Boulevard: Renaissance Creek/Granite Bay Business Park to Eureka Road
- Auburn Folsom Road: Douglas Boulevard to Eureka Road

The segments of Douglas Boulevard from Sierra College Boulevard to Seeno Avenue would experience increases of 540 to 640 ADT. Since this is more than 100 ADT per lane (Douglas Boulevard is four lanes on these segments), this is considered a **significant** impact. However, the rest of the roadway segments would experience a daily traffic volume increase less than 250 daily vehicles. Therefore, the combined impact of Whitehawk I and Whitehawk II would be **less-than-significant** on the remaining segments.

Table 15: Roadway Segment Daily Traffic Volumes – Existing Plus Whitehawk I & II Conditions

Segment	Classification	Existing Conditions			Existing + WH I & II[1]		
		ADT[2]	V/C	LOS	ADT[2]	V/C	LOS
1. Douglas Blvd.: Sierra College Blvd. to Cavitt Stallman Rd. South	4-lane Arterial – MAC	47,560	1.32	**F**	48,100	1.33	**F**

Table 15: Roadway Segment Daily Traffic Volumes – Existing Plus Whitehawk I & II Conditions

Segment	Classification	Existing Conditions			Existing + WH I & II[1]		
		ADT[2]	V/C	LOS	ADT[2]	V/C	LOS
2. Douglas Blvd.: Cavitt Stallman Rd. South to Woodgrove Way	4-lane Arterial – HAC	46,830	1.17	**F**	47,400	1.18	**F**
3. Douglas Blvd.: Woodgrove Way to Seeno Ave.	4-lane Arterial – HAC	45,230	1.13	**F**	45,870	1.14	**F**
4. Douglas Blvd.: Seeno Ave. to Barton Rd.	4-lane Arterial – HAC	44,800	1.12	**F**	45,020	1.12	**F**
5. Douglas Blvd.: Barton Rd. to Auburn Folsom Rd.	4-lane Arterial – HAC	42,620	1.07	**F**	42,820	1.07	**F**
6. Sierra College Blvd.: Olympus Dr. to Douglas Blvd.	6-lane Arterial – MAC	26,950	0.50	A	27,020	0.50	A
7. Sierra College Blvd.: Douglas Blvd. to Renaissance Creek	6-lane Arterial – MAC	34,450	0.64	B	34,580	0.64	B
8. Sierra College Blvd.: Renaissance Creek to Eureka Rd.	4-lane Arterial – MAC	32,330	0.90	**D**	32,420	0.90	**D**
9. Auburn Folsom Rd.: Douglas Blvd. to Eureka Rd.	4-lane Arterial – MAC	39,670	1.10	**F**	39,780	1.10	**F**

Notes:
MAC = moderate access control; HAC = high access control
1. WH I & II = Whitehawk I & Whitehawk II
2. ADT = average daily traffic volume. ADT values are rounded to the nearest 10 vehicles.
Bold text indicates unacceptable operations. **Bold and highlighted** text indicates significant impacts.
Source: Fehr & Peers, 2018.

Douglas Boulevard – Diverted Traffic Evaluation

Table 16 presents the weekday a.m. and p.m. peak hour average travel speeds on Douglas Boulevard for the segment between Seeno Avenue to Cavitt Stallman Road South under existing plus Whitehawk I and II conditions. As shown in Table 16, the average travel speed on westbound Douglas Boulevard from Seeno Avenue to Cavitt Stallman Road South would remain unchanged during both the a.m. and p.m. peak hours under existing plus Whitehawk I and II conditions. Since these speeds remain relatively unchanged from existing conditions, the combined effect of the Whitehawk I and II projects would not increase the attractiveness for through traffic to divert off Douglas Boulevard through the Quail Oaks neighborhood. While the speeds on eastbound Douglas Boulevard are forecasted to decrease due to the additional leg and signal phase at the Seeno Avenue signal, the travel speed would still be significantly higher than diverting off Douglas Boulevard.

Table 16: Douglas Boulevard Peak Hour Travel Speed – Existing Plus Whitehawk I & II Conditions

Roadway Segment	Direction	Existing Conditions		Existing + Whitehawk I & II	
		Travel Speed[1]	%BFFS[2]	Travel Speed[1]	%BFFS[2]
Douglas Boulevard – AM Peak Hour					
1. Cavitt Stallman Rd. South to Seeno Ave.	Eastbound	51	83%	47	76%
	Westbound	46	74%	46	74%
Douglas Boulevard – PM Peak Hour					
1. Cavitt Stallman Rd. South to Seeno Ave.	Eastbound	52	84%	46	73%
	Westbound	41	67%	41	67%

Notes:
1. Travel speed calculated based on methodologies contained in the *Highway Capacity Manual* (HCM) *6th Edition*.
2. Percent of base free-flow speed (BFFS) as calculated by HCS.

Source: Fehr & Peers, 2018.

Intersection Operations

Table 17 presents the average delay and LOS at the study intersections under existing plus Whitehawk I and II conditions during the weekday a.m. and p.m. peak hours (refer to Appendix E for technical calculations). As shown, all study intersections continue to operate at an acceptable LOS under existing plus Whitehawk I and II conditions except the following three intersections, which continue to operate at an unacceptable LOS under existing plus Whitehawk I and II conditions:

- Sierra College Boulevard / Douglas Boulevard (#1) – LOS D during the a.m. peak hour and LOS E during the p.m. peak hour
- Woodgrove Way/Quail Oaks Drive / Douglas Boulevard (#3) – LOS F during the a.m. and p.m. peak hours
- Sierra College Boulevard / Eureka Road (#9) – LOS D during the a.m. peak hour and LOS E during the p.m. peak hour

These intersections operate at an unacceptable LOS under existing conditions and would continue to operate at an unacceptable LOS under existing plus Whitehawk I and II conditions. However, the vehicle trips generated by Whitehawk I and Whitehawk II would not degrade the operations by a service level (i.e., LOS D to LOS E) at the City of Roseville intersections (Sierra College Boulevard / Douglas Boulevard and Sierra College Boulevard / Eureka Road). Therefore, this is considered a **less-than-significant** impact.

However, the weighted average control delay at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard would increase by 12.8 seconds from existing conditions during the a.m. peak hour and would decrease during the p.m. peak hour by 5.6 seconds. Since the weighted average control delay increases by more than 2.5 seconds during the a.m. peak hour and the intersection meets the MUTCD traffic signal warrant, this is considered a **significant** impact per the significance criteria for unsignalized intersections in the Placer County *Impact Analysis Methodology of Assessment* memorandum.

Table 17: Peak Hour Intersection Operations – Existing Plus Whitehawk I & II Conditions

Intersection	Traffic Control[1]	Peak Hour	Existing Conditions		Existing + WH I & II[2]	
			Delay[3]	LOS[4]	Delay[3]	LOS[4]
1. Sierra College Blvd. / Douglas Blvd.	Signal	A.M.	**43.0**	**D**	**43.2**	**D**
		P.M.	**60.0**	**E**	**60.6**	**E**
2. Cavitt Stallman Rd. South / Douglas Blvd.	Signal	A.M.	13.9	B	14.2	B
		P.M.	20.8	C	21.3	C
3. Woodgrove Way/Quail Oaks Dr. / Douglas Blvd.	SSSC	A.M.	**63.0[4]**	**F**	**75.8[4]**	**F**
		P.M.	**120.6[4]**	**F**	**115.0[4]**	**F**
4. Whitehawk I Access / Douglas Blvd.[5]	SSSC	A.M.			16.4	C
		P.M.			22.0	C
5. Seeno Ave. / Douglas Blvd.	Signal	A.M.	7.3	A	14.7	C
		P.M.	4.5	A	10.7	B
6. Barton Rd. / Douglas Blvd.	Signal	A.M.	38.9	D	39.7	D
		P.M.	42.7	D	43.9	D
7. Auburn Folsom Rd. / Douglas Blvd.	Signal	A.M.	39.0	D	39.4	D
		P.M.	36.1	D	36.4	D
8. Sierra College Blvd. / Renaissance Creek/ Granite Bay Business Park	Signal	A.M.	25.0	C	25.0	C
		P.M.	28.7	C	28.7	C
9. Sierra College Blvd. / Eureka Rd.	Signal	A.M.	**41.4**	**D**	**41.5**	**D**
		P.M.	**64.7**	**E**	**65.4**	**E**
10. Grayhawk Dr. / Eureka Rd.	SSSC	A.M.	22.8	C	24.7	C
		P.M.	13.9	B	14.2	B
11. Auburn Folsom Rd. / Fuller Dr.	Signal	A.M.	13.4	B	13.6	B
		P.M.	9.0	A	9.1	A

Table 17: Peak Hour Intersection Operations – Existing Plus Whitehawk I & II Conditions

Intersection	Traffic Control[1]	Peak Hour	Existing Conditions		Existing + WH I & II[2]	
			Delay[3]	LOS[4]	Delay[3]	LOS[4]
12. Auburn Folsom Rd. / Eureka Rd.	Signal	A.M.	15.4	B	15.5	B
		P.M.	9.1	A	9.1	A

Notes:
1. Signal = traffic signal-controlled intersection; SSSC = side-street stop-controlled intersection
2. WH I = Whitehawk I; WH II = Whitehawk II
3. Average control delay (rounded to nearest second) for signalized intersections is the weighted average for all movements. Average control delay at SSSC intersections is the "overall weighted average delay for movements yielding the right-of-way."
4. LOS = level of service; calculated based on methodologies contained in the *Highway Capacity Manual* (HCM) 6th *Edition*.
5. Whitehawk I Access is constructed with the proposed Whitehawk I development. Does not exist under Existing Conditions.

Bold text indicates unacceptable operations. **Bold and highlighted** text indicates significant impacts.

All intersections are analyzed in Synchro 10.

Source: Fehr & Peers, 2018.

Woodgrove Way/Quail Oaks Drive / Douglas Boulevard

The HCM delay calculations at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection show extremely high delays for the side-street through and left-turn movements under existing plus Whitehawk I and II conditions. As noted under existing conditions, while the conflicting volumes on Douglas Boulevard make these side-street movements difficult, drivers would not wait more than 25 minutes to make these movements as the HCM delay calculations would suggest. However, to maintain consistency with the HCM 6th Edition methodology, this study uses the delay and LOS results presented in Table 17, which reflect these high delay calculations.

The average control delay for the movements yielding the right-of-way at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard decreases from existing conditions during the p.m. peak hour because trips generated by Whitehawk I and II would be added to movements with less delay – such as the westbound left-turn and the northbound right-turn. Comparatively, the side-street through and left-turn movements, which experience the most extreme delay according to the HCM calculations, have much smaller volumes. As a result, the weighted average control delay decreases since the additional project trips are added to movements with considerably less delay.

For informational purposes, this study also calculates the average control delay and LOS for this intersection if the average control delay on the side street movement was capped at 600 seconds (i.e., 10 minutes). Using these delay values, the average control delay for movements yielding the right-of-way at this intersection would be 37 seconds – LOS E – during the a.m. peak hour; and 32 seconds – LOS D – during the p.m. peak hour under existing plus Whitehawk I and II conditions. This is a slight improvement to the average control

delay under existing conditions, which is 38 seconds during the a.m. peak hour and 32 seconds during the p.m. peak hour.

Peak Hour Signal Warrant Analysis

The peak hour signal warrant analysis shows that both Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection and Greyhawk Drive / Eureka Road intersection meet the peak hour signal warrant (Warrant 3B) under existing plus Whitehawk I and II conditions during the a.m. peak hour, but not during the p.m. peak hour.

Bicycle and Pedestrian Network

Consistent with the Granite Bay Community Plan, both Whitehawk I and Whitehawk II projects would include an eight-foot wide, concrete, meandering sidewalk/bike trail along the south side of Douglas Boulevard along the project frontage. The trail will connect to the existing trail segment immediately west of the Whitehawk I project site. It will also connect to future trail segments between the Whitehawk I and Whitehawk II sites as well as east of Whitehawk II to the recently completed office buildings on Douglas Boulevard just west of Granite Estates Drive.

The existing Douglas Boulevard sidewalk/trail extends west of the Whitehawk I site to Cavitt Stallman Road South along the south side of Douglas Boulevard. The connection to the proposed Whitehawk I site will provide a bicycle and pedestrian facility from Whitehawk I to the commercial retail and businesses at the Sierra Oaks Plaza. Additionally, the sidewalk along Douglas Boulevard west of Cavitt Stallman Road South would provide a pedestrian travel route to existing bus stops along Sierra College Boulevard.

However, a gap in the Douglas Boulevard sidewalk/trail would remain between the Whitehawk I and Whitehawk II project sites until future development occurs or the County initiates a project to fill the gap.

On-site Trail Network

Within the proposed Whitehawk neighborhoods, a trail system of five-foot wide trails would provide residents with a passive recreation amenity for walking and provide access among residential units, open space, and the park site. The five-foot wide trail within the project sites would be maintained by the homeowners association and would consist of a surface constructed of native materials such as compacted, decomposed granite or rock in an alignment cleared of brush and vegetation.

Whitehawk I

From the east-west sidewalk/bike trail along Douglas Boulevard, the five-foot trail would extend south over Strap Ravine to the southern portion of the Whitehawk I project site. These segments of the trail would be located adjacent to the roadway. Along the southern end of the Whitehawk I project site, a segment of the five-foot trail would extend south to connect to an existing trail that currently ends at the western property line. This trail would connect to the existing trail within the Greyhawk subdivision that is located on the south side of Strap Ravine with connections to Streamside and Chestnut Courts. This trail is planned to extend to Eureka Road and Sierra College Boulevard. An easement between Lots 17 and 18 of Whitehawk I would also allow for a future trail connection to and through the property located between Whitehawk I and Whitehawk II.

Whitehawk II

A five-foot wide, 0.7-mile long public trail would be constructed within the Whitehawk II project site. From the east-west sidewalk/bike trail along Douglas Boulevard, the five-foot trail would extend south of the gated entryway, over Strap Ravine, and around the looped roadway. Segments of the five-foot trail would extend south along the courts to an east-west segment of five-foot trail along the southern boundary of the Whitehawk II site. A future trail segment would link to the property between Whitehawk I and Whitehawk II if or when that property is developed.

Transit Network

As noted under existing conditions, the nearest fixed-route transit service is located approximately ½-mile west of Whitehawk I at Sierra College Boulevard. The proposed extension of the existing sidewalk along the south side of Douglas Boulevard to Whitehawk I would provide a pedestrian route from Whitehawk I to existing bus stops on Sierra College Boulevard. Since there would be a gap in the sidewalk between Whitehawk I and II on the south side of Douglas Boulevard, a crosswalk at Douglas Boulevard / Seeno Avenue would be required to provide a pedestrian route from Whitehawk II to the sidewalk along the north side of Douglas Boulevard. If a crosswalk is provided, the sidewalk along the north side of Douglas Boulevard would provide a pedestrian route from Whitehawk II to existing bus stops on Sierra College Boulevard.

Given the small size and low density of the proposed Whitehawk I and II projects, transit demand generated by the proposed projects would be minimal. For transit-dependent populations, the limited dial-a-ride service provided by Placer County Transit would provide a mobility option; however, the hours of the dial-a-ride operation are limited. Other private mobility services, such as transportation network companies (i.e., Uber, Lyft, etc.) also serve the area.

5. Cumulative Conditions

This chapter presents the traffic forecasts and operations analysis of cumulative conditions. The cumulative conditions analysis consists of several scenarios that represent projected future conditions based on proposed land developments and planned roadway improvements. These scenarios include:

- Cumulative No Project
- Cumulative Plus Whitehawk I
- Cumulative Plus Whitehawk II
- Cumulative Plus Whitehawk I and II

The cumulative conditions analysis is conducted to assess the proposed projects' incremental contribution to future transportation and traffic conditions. This study determines whether the proposed projects' contribution is cumulatively considerable by comparing the cumulative transportation and traffic conditions with the proposed project against the cumulative transportation and traffic conditions without the proposed projects.

Cumulative Setting

As noted in the Study Methodology chapter, this study utilizes the 2036 Granite Bay travel forecasting model to forecast future traffic volumes in the study area. The Traffic Forecasting section of the Study Methodology chapter includes background information on the Granite Bay travel forecasting model.

Land Use & Transportation Network Inputs

The land use and transportation inputs for the 2036 Granite Bay travel forecasting model are based on land development projections and funded transportation improvements contained in SACOG's 2016 MTP/SCS. The land development projections and transportation improvements within Granite Bay were further refined by County planning staff to reflect approved, pending, and known projects in the Granite Bay Community Plan, as well as land development potential in Granite Bay based on underlying zoning and the Placer County General Plan land use designations. Additional details regarding the cumulative travel forecasting model land use inputs and transportation network inputs are described below.

Land Use Inputs

As noted above, the land use inputs for the cumulative conditions analysis are consistent with land development projections contained in SACOG's 2016 MTP/SCS. This includes new land development throughout the Sacramento metropolitan region in accordance with regional population and employment growth projections. Within Granite Bay, County planning staff further refined the land development projections by comparing the SACOG land use forecasts to the County's list of approved, pending, and known projects in the Granite Bay Community Plan area, as well as land development potential in Granite Bay based on underlying zoning and the Placer County General Plan land use designations.

The list of approved, pending, and known projects in the Granite Bay Community Plan area include but is not limited to:

- Amazing Facts Church
- Barton Ranch
- Chabad of Roseville
- Eureka at Granite Bay
- Granite Bay Medical Complex
- Granite Bay Memory Care
- Greyhawk III
- Hawk Homestead
- Ovation Senior Living
- Pardee Court
- Park at Granite Bay
- Placer Retirement Residence
- Pond Pavilion and Lofts
- Premier Granite Bay
- Quarry Ridge Professional
- Rancho Del Oro
- St. Joseph Marello Church
- Ventura at Granite Bay

It should be noted that the Hawk Homestead and Pardee Court developments are no longer moving forward at this time. However, they are still included and reflected in the cumulative traffic forecasts since they were reasonably foreseeable at the time this study was initiated. As a result, the cumulative traffic forecasts may be slightly high if these developments do not come to fruition.

Transportation Network Inputs

The future changes to the transportation network are primarily based on the SACOG 2016 MTP/SCS Tier 1 project list. The Tier 1 project list is a financially constrained list of funded transportation enhancements and expansions to the roadway, transit, and bicycle and pedestrian facilities in the SACOG region that are expected to occur over the life of the plan (i.e., by 2036).

In addition to the SACOG 2016 MTP/SCS Tier 1 project list, this study incorporates improvements that are identified in the Granite Bay Benefit District of the Placer Countywide Capital Improvement Program (CIP), South Placer Regional Transportation Agency (SPRTA) fee program, and the City of Roseville CIP.

Major roadway improvements identified in the SACOG 2016 MTP/SCS Tier 1 project list for the South Placer County region include:

- I-80 improvements including new auxiliary lanes on I-80 eastbound from SR 65 to Rocklin Road and on I-80 westbound from Douglas Boulevard to Riverside Avenue
- Full construction of the I-80 / SR 65 Interchange Improvement project, including widening of all four freeway-to-freeway ramps, new auxiliary lanes on SR 65 northbound and southbound from I-80 to Pleasant Grove Boulevard, and a new HOV-to-HOV direct connector
- State Route 65 is widened to six continuous lanes and auxiliary lanes in each direction between I-80 and Blue Oaks Boulevard
- New auxiliary lanes on State Route 65 from Blue Oaks Boulevard to Lincoln Boulevard.
- Placer Parkway Phase 1 is constructed as four lanes from SR 65 to Foothills Boulevard
- Sierra College Boulevard widened to five lanes from Nightwatch Drive to I-80 in Rocklin

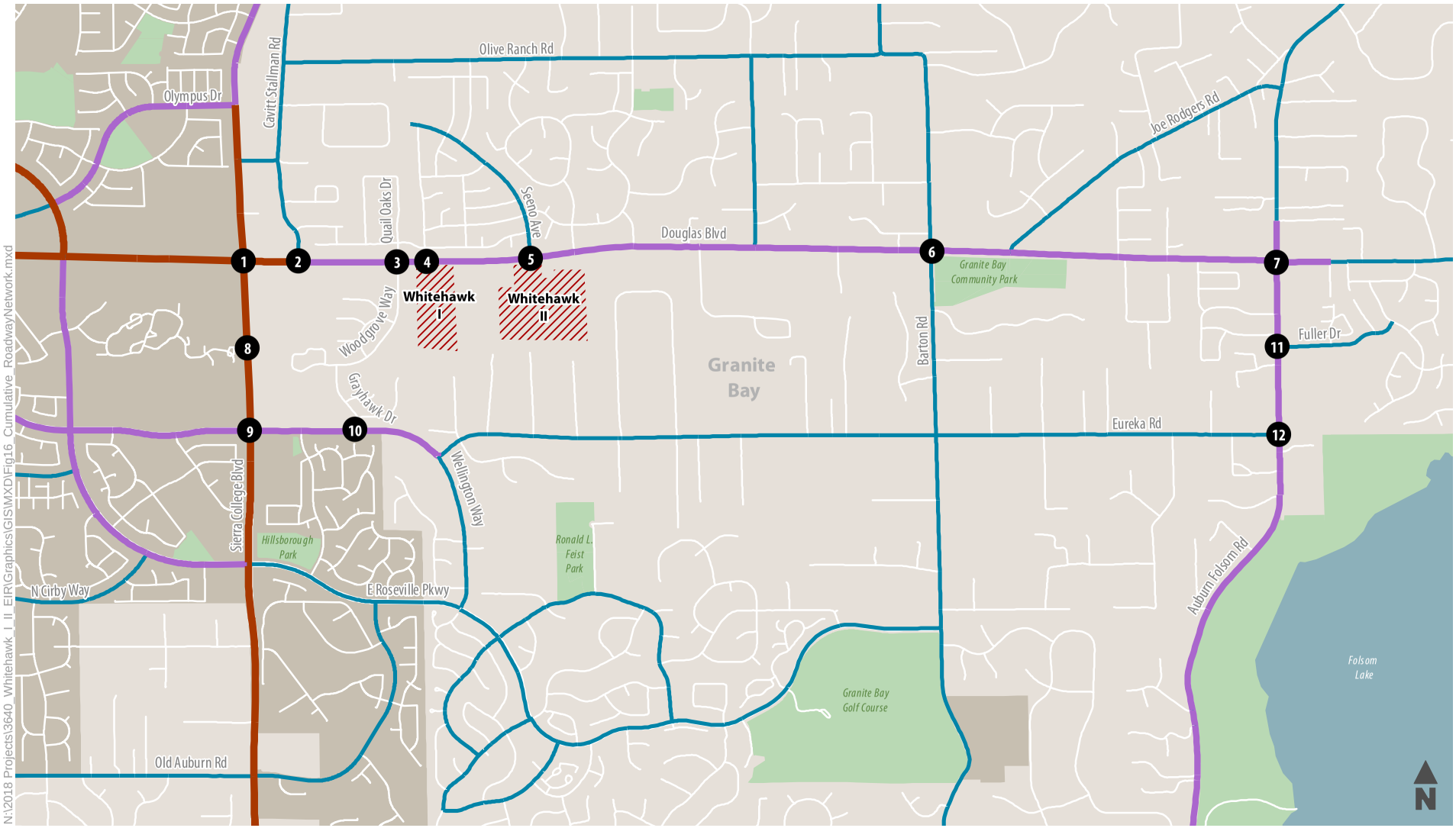
This study includes the following improvements at study roadways and intersections based on information contained in the SACOG 2016 MTP/SCS Tier 1 project list, Granite Bay Benefit District of the Placer Countywide CIP, SPRTA fee program, and City of Roseville CIP.

- Douglas Boulevard is widened to six lanes with Class II bike lanes from Sierra College Boulevard to Cavitt Stallman Road South. The eastbound leg of the Douglas Boulevard/Cavitt Stallman Road South intersection would be striped to accommodate two through lanes and one through/right turn lane.; while the existing third westbound through lane approaching Sierra College Boulevard would be extended easterly to Cavitt Stallman Road South.
- Sierra College Boulevard is widened to six lanes from Sacramento County line to Olympus Drive; this includes widening the northbound and southbound approaches to three through lanes at the Sierra College Boulevard / Eureka Road study intersection. At the Sierra College Boulevard / Eureka Road intersection, the City of Roseville also plans to add a second northbound and southbound left-turn lane, as well as re-stripe the eastbound approach to have one left-turn pocket, two through lanes, and one right-turn pocket.
- Sierra College Boulevard / Douglas Boulevard: intersection improvements, including widening the southbound approach to accommodate a right-turn pocket.

- Barton Road / Douglas Boulevard: intersection improvements, including widening the southbound approach to accommodate a left turn pocket and widening the eastbound approach to accommodate a right-turn pocket.

All of the improvements listed above are considered reasonably foreseeable projects since they are included in either a financially constrained projection (i.e., SACOG 2016 MTP/SCS Tier I project list) or a funded local capital improvement program or fee program.

Figure 16 displays the cumulative roadway network within the project area.



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1 Study Intersection

Number of Lanes
- 2
- 4
- 6

Whitehawk I & II Project Location

City of Roseville City Limits

Figure 16

Cumulative Roadway Network

Cumulative No Project Conditions

The cumulative no project conditions scenario reflects future conditions without the proposed Whitehawk I and Whitehawk II projects. This scenario includes reasonably foreseeable growth in the region as well as funded transportation improvements as described in the land use and transportation inputs section of the Cumulative Setting above.

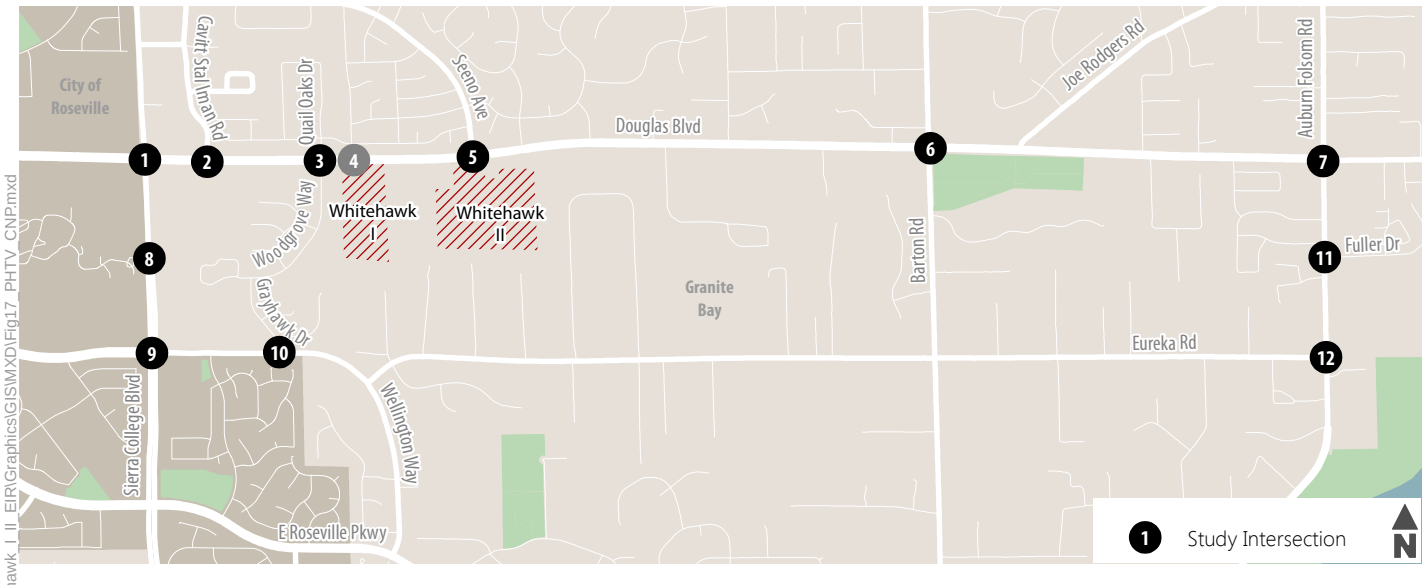
Traffic Forecasts

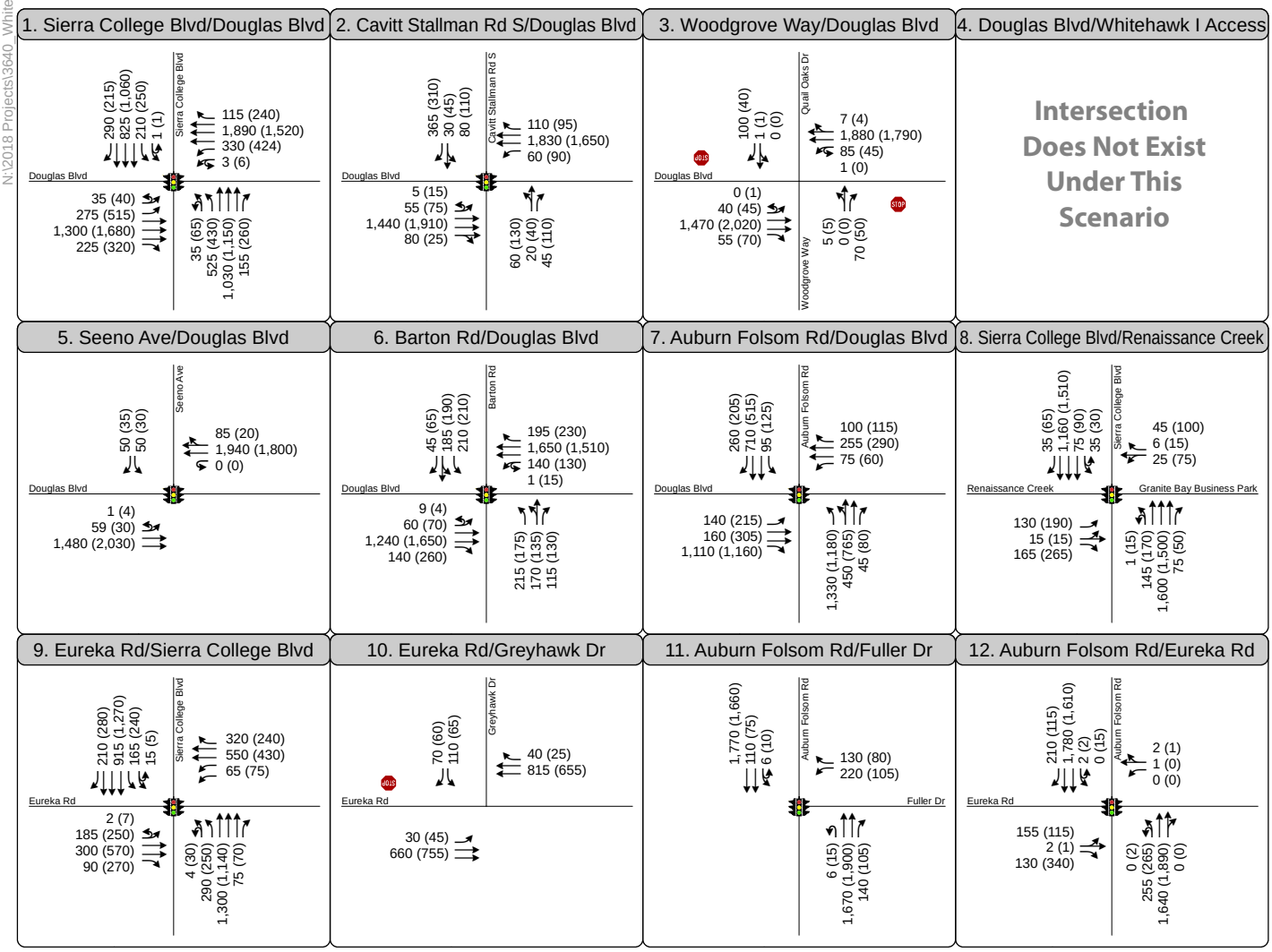
The Granite Bay travel forecasting model is used to forecast cumulative no project traffic levels at study roadway segments and intersections. This study applies a forecasting procedure known as the "difference method" to develop future year forecasts. The difference method takes the difference between future year and base year traffic volumes from the model and adds them to existing traffic volumes at the study intersections to develop future year forecasts. This method corrects any potential anomalies within the model. This forecasting procedure is calculated as follows:

Cumulative No Project Forecast = Existing Traffic Count +
("Cumulative No Project" Raw Model Volume – Base Year Raw Model Volume)

In instances where a roadway currently does not exist, the Cumulative No Project raw model volume is used directly.

Figure 17 presents the intersection turning lane geometrics, traffic control, and cumulative no project a.m. and p.m. peak hour traffic forecasts for the 12 study intersections.





Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Stop Sign

Figure 17

Peak Hour Traffic Volumes and Lane Configurations - Cumulative No Project Conditions

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Roadway Operations

Table 18 presents the cumulative no project ADT forecasts, roadway classification, ADT volumes, volume-to-capacity (v/c) ratio, and LOS for the nine study roadway segments. Existing conditions ADT volumes are also included for reference.

As shown in Table 18, the following roadway segments are forecasted to operate at an unacceptable LOS F under cumulative no project conditions:

- Douglas Boulevard: Sierra College Boulevard to Cavitt Stallman Road South
- Douglas Boulevard: Cavitt Stallman Road South to Woodgrove Way/Quail Oaks Drive
- Douglas Boulevard: Woodgrove Way/Quail Oaks Drive to Seeno Avenue
- Douglas Boulevard: Seeno Avenue to Barton Road
- Douglas Boulevard: Barton Road to Auburn Folsom Road
- Auburn Folsom Road: Douglas Boulevard to Eureka Road

It should be noted that per the cumulative transportation improvements described above, Douglas Boulevard from Sierra College Boulevard to Cavitt Stallman Road South and Sierra College Boulevard from Renaissance Creek to Eureka Road are widened to 6-lane arterials under cumulative no project conditions.

Table 18: Roadway Segment Daily Traffic Volumes – Cumulative No Project Conditions

Segment	Classification[1]	Existing Conditions			Cumulative No Project		
		ADT[2]	V/C	LOS	ADT[2]	V/C	LOS
1. Douglas Blvd.: Sierra College Blvd. to Cavitt Stallman Rd. South	6-lane Arterial – MAC	47,560	1.32	**F**	54,140	1.00	**F**
2. Douglas Blvd.: Cavitt Stallman Rd. South to Woodgrove Way	4-lane Arterial – HAC	46,830	1.17	**F**	51,710	1.29	**F**
3. Douglas Blvd.: Woodgrove Way to Seeno Ave.	4-lane Arterial – HAC	45,230	1.13	**F**	50,170	1.25	**F**
4. Douglas Blvd.: Seeno Ave. to Barton Rd.	4-lane Arterial – HAC	44,800	1.12	**F**	49,880	1.25	**F**
5. Douglas Blvd.: Barton Rd. to Auburn Folsom Rd.	4-lane Arterial – HAC	42,620	1.07	**F**	48,670	1.22	**F**
6. Sierra College Blvd.: Olympus Dr. to Douglas Blvd.	6-lane Arterial – MAC	26,950	0.50	A	33,940	0.63	B
7. Sierra College Blvd.: Douglas Blvd. to Renaissance Creek	6-lane Arterial – MAC	34,450	0.64	B	43,120	0.80	C

Table 18: Roadway Segment Daily Traffic Volumes – Cumulative No Project Conditions

Segment	Classification[1]	Existing Conditions			Cumulative No Project		
		ADT[2]	V/C	LOS	ADT[2]	V/C	LOS
8. Sierra College Blvd.: Renaissance Creek to Eureka Rd.	6-lane Arterial – MAC	32,330	0.90	**D**	39,960	0.74	C
9. Auburn Folsom Rd.: Douglas Blvd. to Eureka Rd.	4-lane Arterial – MAC	39,670	1.10	**F**	45,110	1.25	**F**

Notes:
MAC = moderate access control; HAC = high access control
1. Roadway classification for cumulative no project conditions
2. ADT = average daily traffic volume. ADT values are rounded to the nearest 10 vehicles.
Bold text indicates unacceptable operations.
Source: Fehr & Peers, 2018.

Douglas Boulevard – Diverted Traffic Evaluation

Table 19 presents the weekday a.m. and p.m. peak hour average travel speeds on Douglas Boulevard between Seeno Avenue to Cavitt Stallman Road South under cumulative no project conditions. As shown in Table 19, these travel speeds are similar to existing conditions speeds and are higher than the permitted speeds on parallel residential streets (i.e., Rolling Oaks Drive and Wood Thrush Way). Therefore, most vehicles are anticipated to stay on Douglas Boulevard. The few vehicles that divert off Douglas Boulevard through the Quail Oaks neighborhood are not expected to have a travel time benefit to taking this route.

Table 19: Douglas Boulevard Peak Hour Travel Speed – Cumulative No Project Conditions

Roadway Segment	Direction	Existing Conditions		Cumulative No Project	
		Travel Speed[1]	%BFFS[2]	Travel Speed[1]	%BFFS[2]
Douglas Boulevard – AM Peak Hour					
1. Cavitt Stallman Rd. South to Seeno Ave.	Eastbound	51	83%	51	82%
	Westbound	46	74%	45	72%
Douglas Boulevard – PM Peak Hour					
1. Cavitt Stallman Rd. South to Seeno Ave.	Eastbound	52	84%	52	83%
	Westbound	41	67%	39	63%

Notes:
1. Travel speed calculated based on methodologies contained in the *Highway Capacity Manual* (HCM) *6th Edition*.
2. Percent of base free-flow speed (BFFS) as calculated by HCS.
Source: Fehr & Peers, 2018.

Intersection Operations

Table 20 presents the cumulative no project weekday a.m. and p.m. peak hour traffic operations analysis results at the 12 study intersections (refer to Appendix F for technical calculations). As shown, all study intersections operate at an acceptable LOS under cumulative no project conditions except the following three intersections, which operate at an unacceptable LOS under cumulative no project conditions:

- Sierra College Boulevard / Douglas Boulevard (#1) – LOS E during the a.m. and p.m. peak hours
- Woodgrove Way/Quail Oaks Drive / Douglas Boulevard (#3) – LOS F during the a.m. and p.m. peak hours
- Sierra College Boulevard / Eureka Road (#9) – LOS D during the a.m. and p.m. peak hours

Table 20 also includes the existing conditions LOS results as a point of reference. Generally, delays are forecasted to increase and/or LOS is anticipated to degrade from existing to cumulative no project conditions. However, operations at Barton Road / Douglas Boulevard (#6) and Sierra College Boulevard / Eureka Road (#9) are forecasted to improve under cumulative no project conditions. The improvement in delay and LOS at Barton Road / Douglas Boulevard is the result of a CIP funded improvement to add an eastbound right-turn pocket and southbound left-turn pocket at the intersection. The improvement in delay and LOS at Sierra College Boulevard / Eureka Road is the result of a CIP funded improvement to add a third northbound and southbound through lane, a second northbound and southbound left-turn lane, and a second eastbound through lane at the intersection.

Table 20: Peak Hour Intersection Operations – Cumulative No Project Conditions

Intersection	Traffic Control[1]	Peak Hour	Existing Conditions		Cumulative NP	
			Delay[2]	LOS[3]	Delay[2]	LOS[3]
1. Sierra College Blvd. / Douglas Blvd.	Signal	A.M.	**43.0**	**D**	**61.2**	**E**
		P.M.	**60.0**	**E**	**70.9**	**E**
2. Cavitt Stallman Rd. South / Douglas Blvd.	Signal	A.M.	13.9	B	14.6	B
		P.M.	20.8	C	22.4	C
3. Woodgrove Way/Quail Oaks Dr. / Douglas Blvd.	SSSC	A.M.	**63.0[4]**	**F**	**92.8[4]**	**F**
		P.M.	**120.6[4]**	**F**	**316.0[4]**	**F**
4. Whitehawk I Access / Douglas Blvd.[5]	SSSC	A.M.				
		P.M.				
5. Seeno Ave. / Douglas Blvd.	Signal	A.M.	7.3	A	7.8	A
		P.M.	4.5	A	17.2	B

Table 20: Peak Hour Intersection Operations – Cumulative No Project Conditions

Intersection	Traffic Control[1]	Peak Hour	Existing Conditions		Cumulative NP	
			Delay[2]	LOS[3]	Delay[2]	LOS[3]
6. Barton Rd. / Douglas Blvd.	Signal	A.M.	38.9	D	32.3	C
		P.M.	42.7	D	29.8	C
7. Auburn Folsom Rd. / Douglas Blvd.	Signal	A.M.	39.0	D	50.7	D
		P.M.	36.1	D	46.7	D
8. Sierra College Blvd. / Renaissance Creek/ Granite Bay Business Park	Signal	A.M.	25.0	C	26.6	C
		P.M.	28.7	C	31.4	C
9. Sierra College Blvd. / Eureka Rd.	Signal	A.M.	**41.4**	**D**	**40.7**	**D**
		P.M.	**64.7**	**E**	**43.6**	**D**
10. Grayhawk Dr. / Eureka Rd.	SSSC	A.M.	22.8	C	28.8	D
		P.M.	13.9	B	15.0	C
11. Auburn Folsom Rd. / Fuller Dr.	Signal	A.M.	13.4	B	17.0	B
		P.M.	9.0	A	9.4	A
12. Auburn Folsom Rd. / Eureka Rd.	Signal	A.M.	15.4	B	21.2	C
		P.M.	9.1	A	11.7	B

Notes:

1. Signal = traffic signal-controlled intersection; SSSC = side-street stop-controlled intersection
2. Average control delay (rounded to nearest second) for signalized intersections is the weighted average for all movements. Average control delay at SSSC intersections is the "overall weighted average delay for movements yielding the right-of-way."
3. LOS = level of service; calculated based on methodologies contained in the *Highway Capacity Manual* (HCM) 6th *Edition*.
4. Delay and LOS based on high delay calculations for the side-street movements consistent with HCM procedures.
5. Whitehawk I Access does not exist under Existing Conditions and would not exist under Cumulative No Project conditions.

Bold text indicates unacceptable operations.

All intersections are analyzed in Synchro 10.

Source: Fehr & Peers, 2018.

Woodgrove Way/Quail Oaks Drive / Douglas Boulevard

As with existing conditions, the HCM delay calculations at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection show extremely high delays for the side-street through and left-turn movements under cumulative no project conditions. While the conflicting volumes on Douglas Boulevard make these side-street movements difficult, drivers would not wait more than 60 minutes to make these movements as the HCM delay calculations would suggest. However, to maintain consistency with the HCM 6th Edition methodology, this study uses the delay and LOS results presented in Table 20, which reflect these high delay calculations.

For informational purposes, this study also calculates the average control delay and LOS for this intersection if the average control delay on the side street movement was capped at 600 seconds (i.e., 10 minutes). Using these delay values, the average control delay for movements yielding the right-of-way at this intersection would be 35 seconds – LOS D – during the a.m. peak hour; and 42 seconds – LOS E – during the p.m. peak hour under cumulative no project conditions. During the a.m. peak hour, this is a decrease in average control delay compared to existing conditions when using this methodology, which is 38 seconds – LOS E. During the p.m. peak hour, this is an increase in average control delay compared to existing conditions using this methodology, which is 32 seconds – LOS D.

Peak Hour Signal Warrant Analysis

The peak hour signal warrant analysis shows that both Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection and Greyhawk Drive / Eureka Road intersection meet the peak hour signal warrant under cumulative no project conditions. The Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection meets both Warrant 3A and 3B during the a.m. peak hour; and Warrant 3B only during the p.m. peak hour. The Greyhawk Drive / Eureka Road intersection meets Warrant 3B during both the a.m. and p.m. peak hours but does not meet Warrant 3A in either peak hour.

Cumulative Plus Project Conditions

This section describes the forecasted cumulative transportation and traffic effects of the proposed projects. There are no major changes in regional development patterns in Granite Bay or the surrounding area; or major travel shifting transportation improvements, such as a major roadway widening or new high capacity facility, proposed for the Granite Bay area. Therefore, this study uses the same project trip generation and project trip distribution described in the project travel characteristics in Chapter 4 of this report.

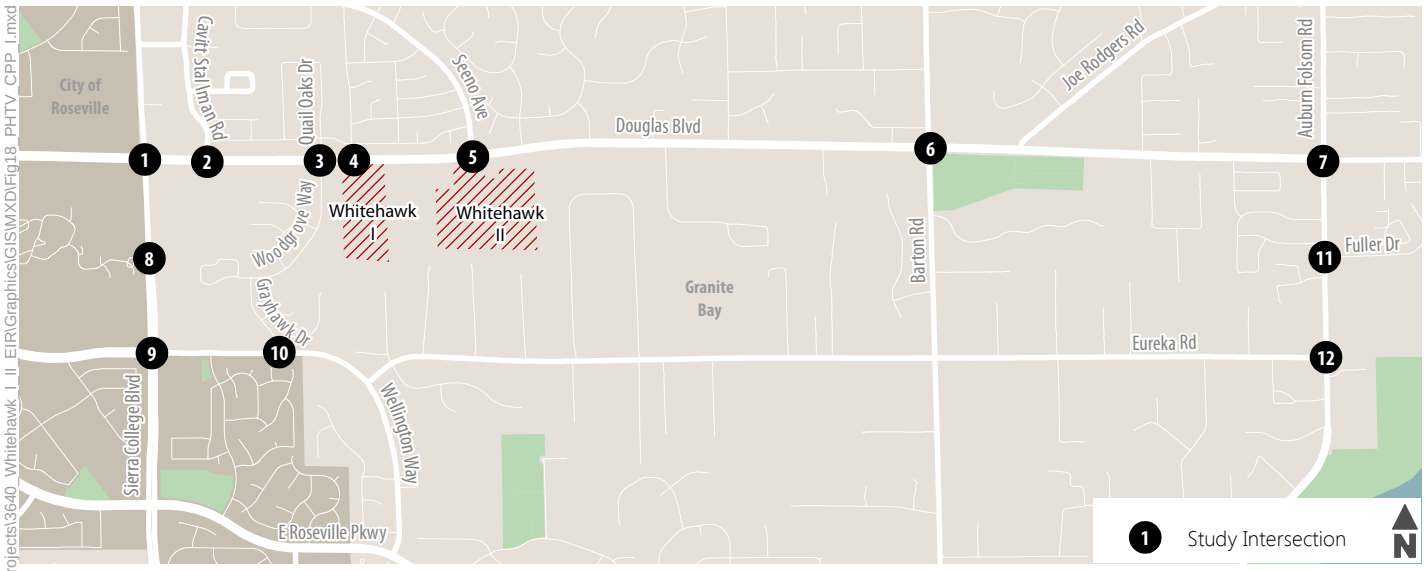
Traffic Forecasts

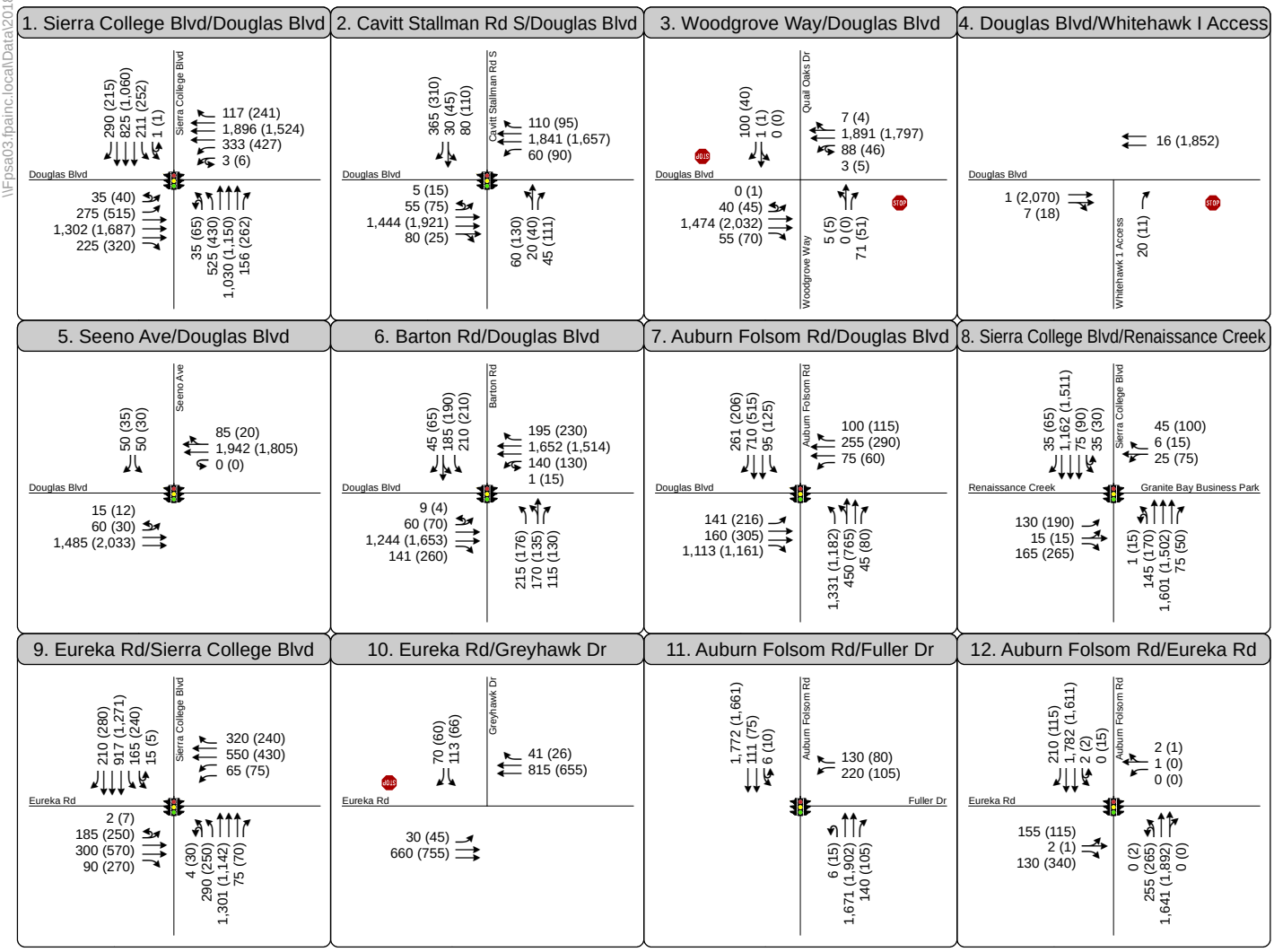
Vehicle trips generated by the proposed Whitehawk I and Whitehawk II projects are signed to the roadway network based on the vehicle trip generation estimates in Table 8 and vehicle trip distribution shown in Figure 11 and Figure 12. These project trips are added to the cumulative no project volumes shown in Figure 17 to develop cumulative plus project forecasts.

Figure 18 presents the resulting weekday a.m. and p.m. peak hour turning movement forecasts at study intersections under cumulative plus Whitehawk I conditions. Figure 19 presents the resulting weekday a.m. and p.m. peak hour turning movement forecasts at study intersections under cumulative plus Whitehawk II

conditions. Figure 20 presents the resulting weekday a.m. and p.m. peak hour turning movement forecasts at study intersections under cumulative plus Whitehawk I and Whitehawk II conditions.

The a.m. and p.m. peak hour forecasts at study intersections shown in Figure 18, Figure 19, and Figure 20 are also used for the arterial roadway operations analysis on Douglas Boulevard, Sierra College Boulevard, and Auburn Folsom Road.





Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Stop Sign

Figure 18

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Whitehawk I Conditions

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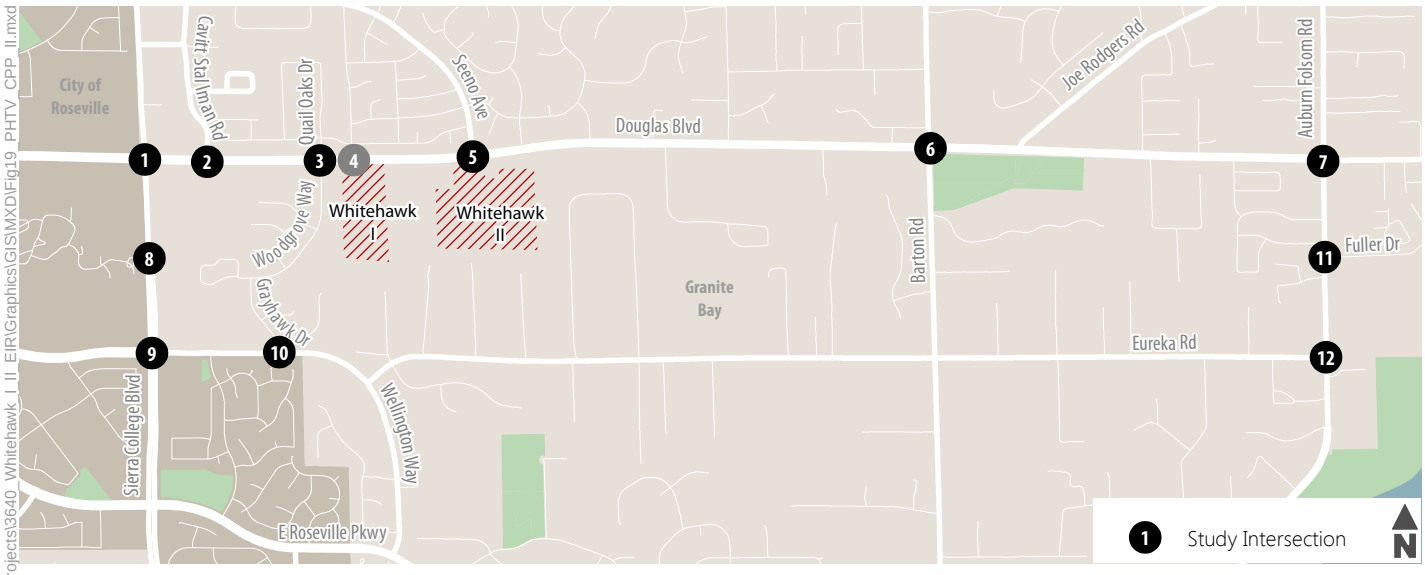

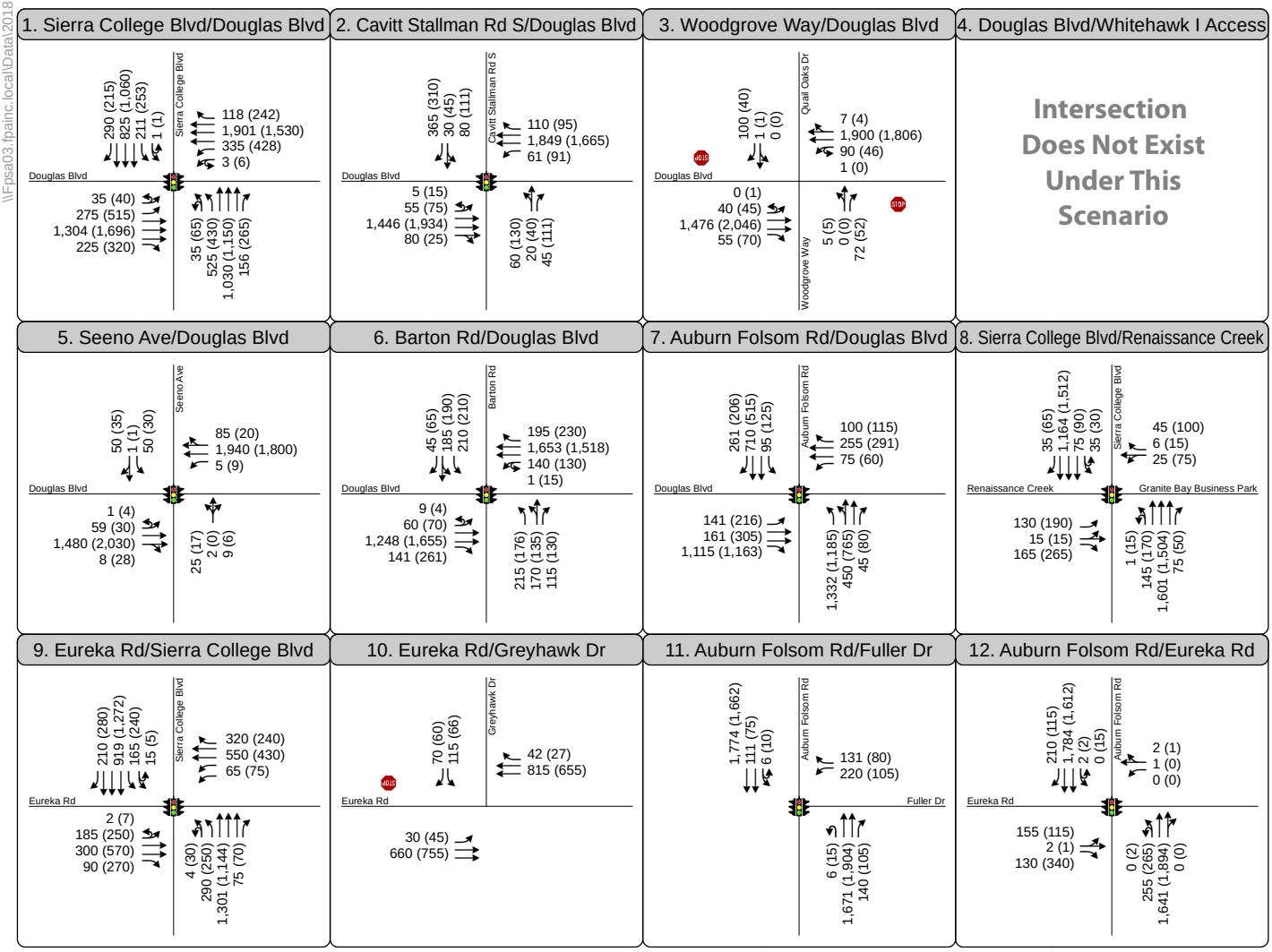

Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Stop Sign

Figure 19

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Whitehawk II Conditions

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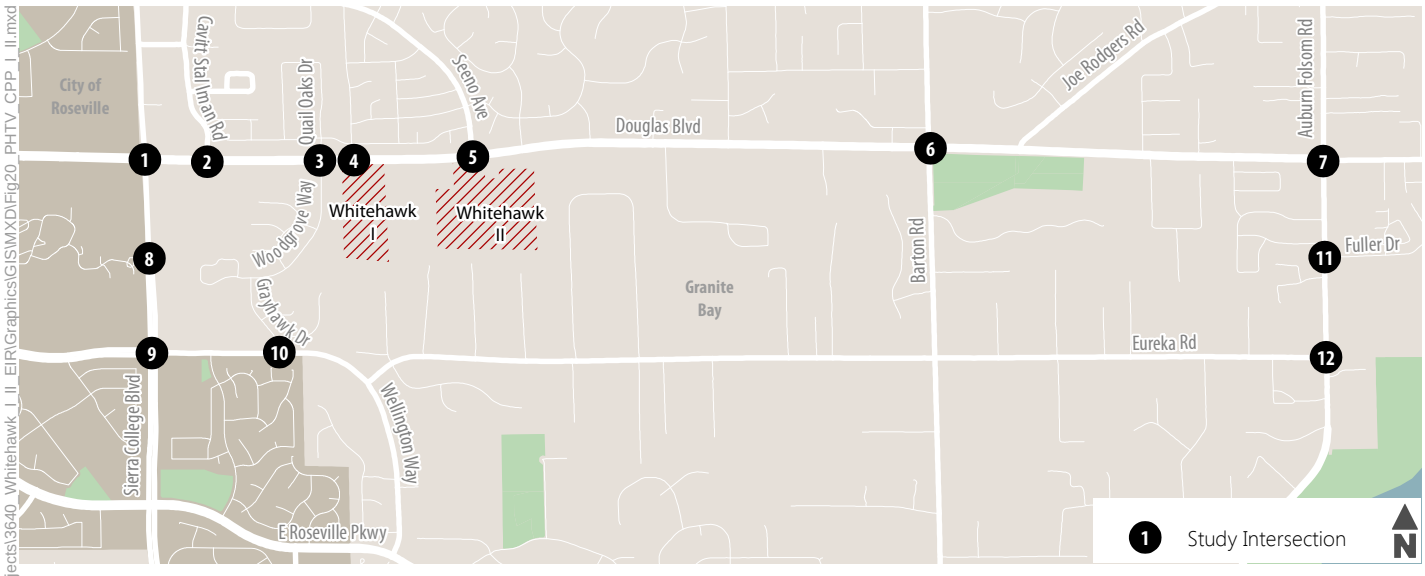

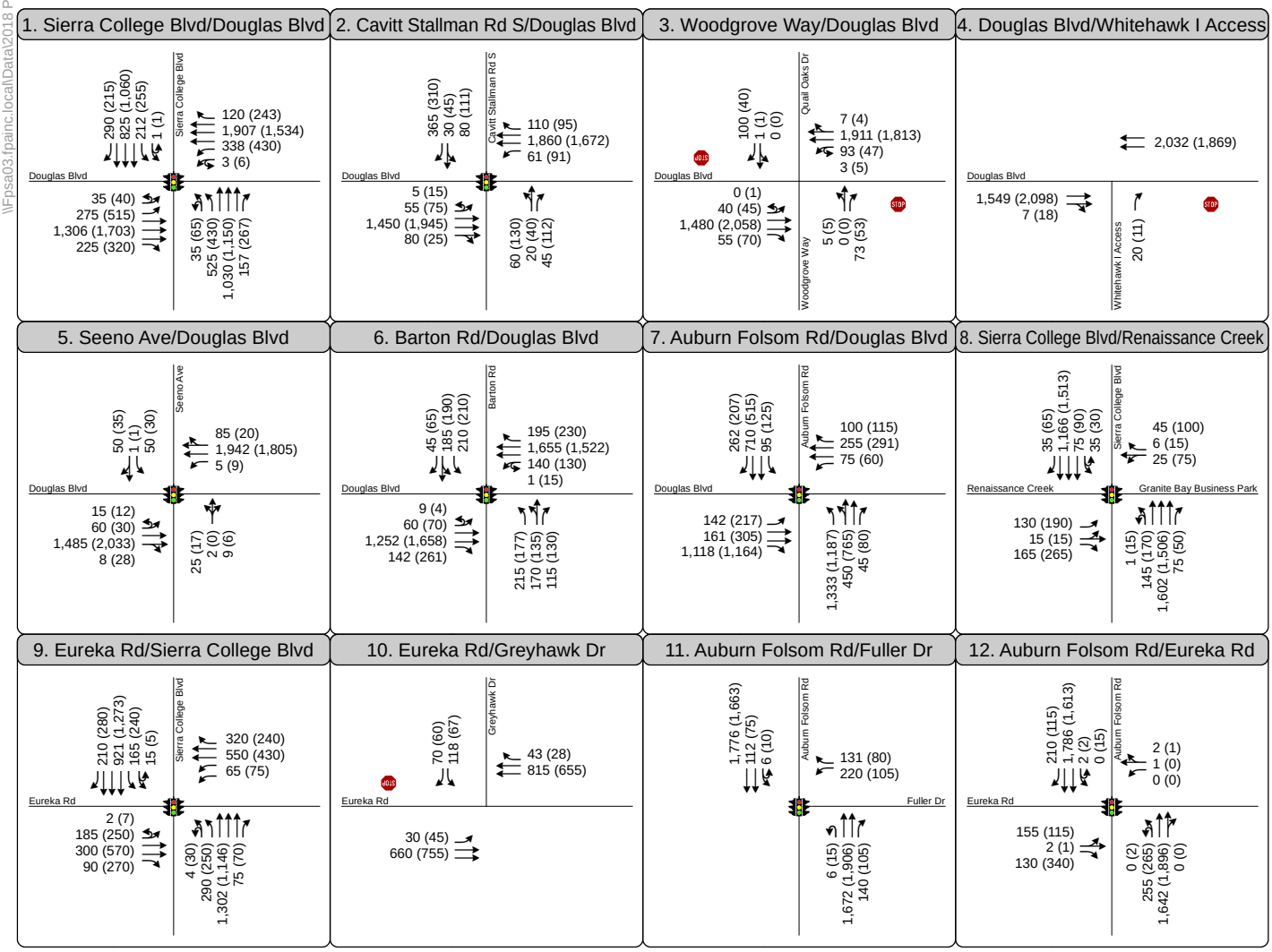

Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Stop Sign

Figure 20

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Whitehawk I & II Conditions

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Cumulative Plus Whitehawk I

The following presents the traffic operations analysis results for cumulative plus Whitehawk I conditions. This scenario assesses the incremental cumulative traffic effects of Whitehawk I when viewed in light of reasonably foreseeable land development and transportation projects.

Roadway Operations

Daily vehicle trips generated by the proposed Whitehawk I project on a daily basis are added to the forecasted cumulative no project volumes on study roadway segments based on the vehicle trip generation estimates in Table 8 and an average of the vehicle trip distributions shown in Figure 11 and Figure 12. Table 21 presents the resulting ADT volumes, volume-to-capacity (v/c) ratio, and LOS for the nine study roadway segments.

As shown in Table 21, the following roadway segments are forecasted to operate at an unacceptable LOS F under cumulative plus Whitehawk I conditions:

- Douglas Boulevard: Sierra College Boulevard to Cavitt Stallman Road South
- Douglas Boulevard: Cavitt Stallman Road South to Woodgrove Way/Quail Oaks Drive
- Douglas Boulevard: Woodgrove Way/Quail Oaks Drive to Seeno Avenue
- Douglas Boulevard: Seeno Avenue to Barton Road
- Douglas Boulevard: Barton Road to Auburn Folsom Road
- Auburn Folsom Road: Douglas Boulevard to Eureka Road

However, none of the roadway segments would experience a daily traffic volume increase greater than 200 vehicles over cumulative no project conditions. The largest increase in ADT on the above segments is on Douglas Boulevard from Woodgrove Way to Seeno Avenue, which increases by 200 ADT. Since this is less than 100 ADT per lane (Douglas Boulevard is four lanes on this segment), this impact is **less-than-significant**.

Table 21: Roadway Segment Daily Traffic Volumes – Cumulative Plus Whitehawk I Conditions

Segment	Classification	Cumulative No Project			Cumulative + WH I[1]		
		ADT[2]	V/C	LOS	ADT[2]	V/C	LOS
1. Douglas Blvd.: Sierra College Blvd. to Cavitt Stallman Rd. South	6-lane Arterial – MAC	54,140	1.00	**F**	54,310	1.01	**F**

Table 21: Roadway Segment Daily Traffic Volumes – Cumulative Plus Whitehawk I Conditions

Segment	Classification	Cumulative No Project			Cumulative + WH I[1]		
		ADT[2]	V/C	LOS	ADT[2]	V/C	LOS
2. Douglas Blvd.: Cavitt Stallman Rd. South to Woodgrove Way	4-lane Arterial – HAC	51,710	1.29	**F**	51,890	1.30	**F**
3. Douglas Blvd.: Woodgrove Way to Seeno Ave.	4-lane Arterial – HAC	50,170	1.25	**F**	50,370	1.26	**F**
4. Douglas Blvd.: Seeno Ave. to Barton Rd.	4-lane Arterial – HAC	49,880	1.25	**F**	49,950	1.25	**F**
5. Douglas Blvd.: Barton Rd. to Auburn Folsom Rd.	4-lane Arterial – HAC	48,670	1.22	**F**	48,730	1.22	**F**
6. Sierra College Blvd.: Olympus Dr. to Douglas Blvd.	6-lane Arterial – MAC	33,940	0.63	B	33,960	0.63	B
7. Sierra College Blvd.: Douglas Blvd. to Renaissance Creek	6-lane Arterial – MAC	43,120	0.80	C	43,160	0.80	C
8. Sierra College Blvd.: Renaissance Creek to Eureka Rd.	6-lane Arterial – MAC	39,960	0.74	C	39,990	0.74	C
9. Auburn Folsom Rd.: Douglas Blvd. to Eureka Rd.	4-lane Arterial – MAC	45,110	1.25	**F**	45,150	1.25	**F**

Notes:
MAC = moderate access control; HAC = high access control
1. WH I = Whitehawk I
2. ADT = average daily traffic volume. ADT values are rounded to the nearest 10 vehicles.
Bold text indicates unacceptable operations.
Source: Fehr & Peers, 2018.

Douglas Boulevard – Diverted Traffic Evaluation

Table 22 presents the weekday a.m. and p.m. peak hour average travel speeds on Douglas Boulevard between Seeno Avenue to Cavitt Stallman Road South under cumulative plus Whitehawk I conditions. As shown in Table 22, the average travel speed on westbound Douglas Boulevard from Seeno Avenue to Cavitt Stallman Road South would remain unchanged during both the a.m. and p.m. peak hours under cumulative plus Whitehawk I conditions. Since these speeds remain unchanged from cumulative no project conditions, the proposed Whitehawk I project would not increase the attractiveness for through traffic to divert off Douglas Boulevard through the Quail Oaks neighborhood under cumulative conditions.

Table 22: Douglas Boulevard Peak Hour Travel Speed – Cumulative Plus Whitehawk I Conditions

Roadway Segment	Direction	Cumulative No Project		Cumulative + Whitehawk I	
		Travel Speed[1]	%BFFS[2]	Travel Speed[1]	%BFFS[2]
Douglas Boulevard – AM Peak Hour					
1. Cavitt Stallman Rd. South to Seeno Ave.	Eastbound	51	82%	51	82%
	Westbound	45	72%	45	72%
Douglas Boulevard – PM Peak Hour					
1. Cavitt Stallman Rd. South to Seeno Ave.	Eastbound	52	83%	52	83%
	Westbound	39	63%	39	63%

Notes:

1. Travel speed calculated based on methodologies contained in the *Highway Capacity Manual* (HCM) *6th Edition*.
2. Percent of base free-flow speed (BFFS) as calculated by HCS.

Source: Fehr & Peers, 2018.

Intersection Operations

Table 23 presents the average delay and LOS at the study intersections under cumulative plus Whitehawk I conditions during the weekday a.m. and p.m. peak hours (refer to Appendix G for technical calculations). As shown, all study intersections continue to operate at an acceptable LOS under cumulative plus Whitehawk I conditions except the following three intersections, which continue to operate at an unacceptable LOS under cumulative plus Whitehawk I conditions:

- Sierra College Boulevard / Douglas Boulevard (#1) – LOS E during the a.m. and p.m. peak hours
- Woodgrove Way/Quail Oaks Drive / Douglas Boulevard (#3) – LOS F during the a.m. and p.m. peak hours
- Sierra College Boulevard / Eureka Road (#9) – LOS D during the a.m. and p.m. peak hours

These intersections operate at an unacceptable LOS under cumulative no project conditions and would continue to operate at an unacceptable LOS under cumulative plus Whitehawk I conditions. However, the vehicle trips generated by Whitehawk I would not degrade the operations by a service level (i.e., LOS D to LOS E) at the City of Roseville intersection – Sierra College Boulevard / Douglas Boulevard and Sierra College Boulevard / Eureka Road – from cumulative no project conditions. Furthermore, the weighted average control delay at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard would decrease during the a.m. and p.m. peak hours when compared to cumulative no project conditions. Therefore, the cumulative impact of Whitehawk I on intersection operations is **less-than-significant**.

Table 23: Peak Hour Intersection Operations – Cumulative Plus Whitehawk I Conditions

Intersection	Traffic Control[1]	Peak Hour	Cumulative NP		Cumulative + WH I[2]	
			Delay[3]	LOS[4]	Delay[3]	LOS[4]
1. Sierra College Blvd. / Douglas Blvd.	Signal	A.M.	**61.2**	**E**	**61.6**	**E**
		P.M.	**70.9**	**E**	**71.4**	**E**
2. Cavitt Stallman Rd. South / Douglas Blvd.	Signal	A.M.	14.6	B	14.7	B
		P.M.	22.4	C	22.5	C
3. Woodgrove Way/Quail Oaks Dr. / Douglas Blvd.	SSSC	A.M.	**92.8[4]**	**F**	**91.6[4]**	**F**
		P.M.	**316.0[4]**	**F**	**305.9[4]**	**F**
4. Whitehawk I Access / Douglas Blvd.[5]	SSSC	A.M.			17.6	C
		P.M.			23.6	C
5. Seeno Ave. / Douglas Blvd.	Signal	A.M.	7.8	A	6.8	A
		P.M.	17.2	B	13.3	B
6. Barton Rd. / Douglas Blvd.	Signal	A.M.	32.3	C	32.4	C
		P.M.	29.8	C	30.0	C
7. Auburn Folsom Rd. / Douglas Blvd.	Signal	A.M.	50.7	D	51.0	D
		P.M.	46.7	D	46.8	D
8. Sierra College Blvd. / Renaissance Creek/ Granite Bay Business Park	Signal	A.M.	26.6	C	26.6	C
		P.M.	31.4	C	31.4	C
9. Sierra College Blvd. / Eureka Rd.	Signal	A.M.	**40.7**	**D**	**40.7**	**D**
		P.M.	**43.6**	**D**	**43.6**	**D**
10. Grayhawk Dr. / Eureka Rd.	SSSC	A.M.	28.8	D	29.8	D
		P.M.	15.0	C	15.0	C
11. Auburn Folsom Rd. / Fuller Dr.	Signal	A.M.	17.0	B	17.1	B
		P.M.	9.4	A	9.4	A
12. Auburn Folsom Rd. / Eureka Rd.	Signal	A.M.	21.2	C	21.3	C
		P.M.	11.7	B	11.7	B

Notes:

1. Signal = traffic signal-controlled intersection; SSSC = side-street stop-controlled intersection
2. WH I = Whitehawk I
3. Average control delay (rounded to nearest second) for signalized intersections is the weighted average for all movements. Average control delay at SSSC intersections is the "overall weighted average delay for movements yielding the right-of-way."
4. LOS = level of service; calculated based on methodologies contained in the *Highway Capacity Manual* (HCM) *6th Edition*.
5. Whitehawk I Access is constructed with the proposed Whitehawk I project. Would not exist under cumulative no project condition.

Bold text indicates unacceptable operations.

All intersections are analyzed in Synchro 10.

Source: Fehr & Peers, 2018.

Woodgrove Way/Quail Oaks Drive / Douglas Boulevard

As with the other scenarios presented in this report, the HCM delay calculations at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection show extremely high delays for the side-street through and left-turn movements under cumulative plus Whitehawk I conditions. While the conflicting volumes on Douglas Boulevard would make these side-street movements difficult, drivers would not wait more than 60 minutes to make these movements as the HCM delay calculations would suggest. However, to maintain consistency with the HCM 6th Edition methodology, this study uses the delay and LOS results presented in Table 23, which reflect these high delay calculations.

The average control delay for the movements yielding the right-of-way at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard decreases from cumulative no project conditions. This is because Whitehawk I would add trips to movements with less delay – such as the westbound left-turn and the northbound right-turn. Comparatively, the side-street through and left-turn movements, which experience the most extreme delay according to the HCM calculations, have much smaller volumes. As a result, the weighted average control delay decreases since the additional project trips are added to movements with considerably less delay.

For informational purposes, this study also calculates the average control delay and LOS for this intersection if the average control delay on the side street movement was capped at 600 seconds (i.e., 10 minutes). Using these delay values, the average control delay for movements yielding the right-of-way at this intersection would be 35 seconds – LOS D – during the a.m. peak hour; and 41 seconds – LOS E – during the p.m. peak hour under cumulative plus Whitehawk I conditions. This is a slight improvement to the average control delay under cumulative no project conditions, which is 35 seconds during the a.m. peak hour and 42 seconds during the p.m. peak hour.

Peak Hour Signal Warrant Analysis

The peak hour signal warrant analysis shows that both Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection and Greyhawk Drive / Eureka Road intersection meet the peak hour signal warrant (Warrant 3B) under cumulative plus Whitehawk I conditions during the a.m. and p.m. peak hours.

Cumulative Plus Whitehawk II

The following presents the traffic operations analysis results for cumulative plus Whitehawk II conditions. This scenario assesses the incremental cumulative traffic effects of Whitehawk II when viewed in light of reasonably foreseeable land development and transportation projects.

Roadway Operations

Daily vehicle trips generated by the proposed Whitehawk II project on a daily basis are added to the forecasted cumulative no project volumes on study roadway segments based on the vehicle trip generation estimates in Table 8 and an average of the vehicle trip distributions shown in Figure 11 and Figure 12. Table 24 presents the resulting ADT volumes, volume-to-capacity (v/c) ratio, and LOS for the nine study roadway segments.

As shown in Table 24, the following roadway segments are forecasted to operate at an unacceptable LOS D or worse under cumulative plus Whitehawk II conditions:

- Douglas Boulevard: Sierra College Boulevard to Cavitt Stallman Road South
- Douglas Boulevard: Cavitt Stallman Road South to Woodgrove Way/Quail Oaks Drive
- Douglas Boulevard: Woodgrove Way/Quail Oaks Drive to Seeno Avenue
- Douglas Boulevard: Seeno Avenue to Barton Road
- Douglas Boulevard: Barton Road to Auburn Folsom Road
- Sierra College Boulevard: Douglas Boulevard to Renaissance Creek/Granite Bay Business Park
- Auburn Folsom Road: Douglas Boulevard to Eureka Road

The segment of Sierra College Boulevard from Douglas Boulevard to Renaissance Creek would degrade from an acceptable LOS C under cumulative no project conditions to an unacceptable LOS D with vehicle trips generated by the proposed Whitehawk II development. This is considered a **significant** impact.

The segment of Douglas Boulevard from Woodgrove Way to Seeno Avenue would continue to operate at LOS F and experience an increase of 430 ADT. Since this is slightly more than 100 ADT per lane (Douglas Boulevard is four lanes on this segment), this is considered a **significant** impact.

The rest of the roadway segments would experience a daily traffic volume increase less than 400 daily vehicles. Therefore, Whitehawk II would have a **less-than-significant** impact on the remaining segments listed above.

Table 24: Roadway Segment Daily Traffic Volumes – Cumulative Plus Whitehawk II Conditions

Segment	Classification	Cumulative No Project			Cumulative + WH II[1]		
		ADT[2]	V/C	LOS	ADT[2]	V/C	LOS
1. Douglas Blvd.: Sierra College Blvd. to Cavitt Stallman Rd. South	6-lane Arterial – MAC	54,140	1.00	**F**	54,500	1.01	**F**
2. Douglas Blvd.: Cavitt Stallman Rd. South to Woodgrove Way	4-lane Arterial – HAC	51,710	1.29	**F**	52,100	1.30	**F**
3. Douglas Blvd.: Woodgrove Way to Seeno Ave.	4-lane Arterial – HAC	50,170	1.25	**F**	50,600	1.27	**F**
4. Douglas Blvd.: Seeno Ave. to Barton Rd.	4-lane Arterial – HAC	49,880	1.25	**F**	50,030	1.25	**F**
5. Douglas Blvd.: Barton Rd. to Auburn Folsom Rd.	4-lane Arterial – HAC	48,670	1.22	**F**	48,800	1.22	**F**
6. Sierra College Blvd.: Olympus Dr. to Douglas Blvd.	6-lane Arterial – MAC	33,940	0.63	B	33,990	0.63	B
7. Sierra College Blvd.: Douglas Blvd. to Renaissance Creek	6-lane Arterial – MAC	43,120	0.80	C	43,210	0.80	**D**
8. Sierra College Blvd.: Renaissance Creek to Eureka Rd.	6-lane Arterial – MAC	39,960	0.74	C	40,020	0.74	C
9. Auburn Folsom Rd.: Douglas Blvd. to Eureka Rd.	4-lane Arterial – MAC	45,110	1.25	**F**	45,190	1.26	**F**

Notes:
MAC = moderate access control; HAC = high access control
1. WH II = Whitehawk II
2. ADT = average daily traffic volume. ADT values are rounded to the nearest 10 vehicles.
Bold text indicates unacceptable operations. **Bold and highlighted** text indicates significant impacts.
Source: Fehr & Peers, 2018.

Douglas Boulevard – Diverted Traffic Evaluation

Table 25 presents the weekday a.m. and p.m. peak hour average travel speeds on Douglas Boulevard between Seeno Avenue to Cavitt Stallman Road South under cumulative plus Whitehawk II conditions. As shown in Table 25, the average travel speed on westbound Douglas Boulevard from Seeno Avenue to Cavitt Stallman Road South would remain unchanged during both the a.m. and p.m. peak hours under cumulative plus Whitehawk II conditions. Since these speeds remain unchanged from cumulative no project conditions, the proposed Whitehawk II project would not increase the attractiveness for through traffic to divert off Douglas Boulevard through the Quail Oaks neighborhood. While the speeds on eastbound Douglas Boulevard are forecasted to decrease due to the additional leg and signal phase at the Seeno Avenue signal, the travel speed would still be significantly higher than diverting off Douglas Boulevard.

Table 25: Douglas Boulevard Peak Hour Travel Speed – Cumulative Plus Whitehawk II Conditions

Roadway Segment	Direction	Cumulative No Project		Cumulative + Whitehawk II	
		Travel Speed[1]	%BFFS[2]	Travel Speed[1]	%BFFS[2]
Douglas Boulevard – AM Peak Hour					
1. Cavitt Stallman Rd. South to Seeno Ave.	Eastbound	51	82%	47	75%
	Westbound	45	72%	45	72%
Douglas Boulevard – PM Peak Hour					
1. Cavitt Stallman Rd. South to Seeno Ave.	Eastbound	52	83%	46	74%
	Westbound	39	63%	39	63%

Notes:
1. Travel speed calculated based on methodologies contained in the *Highway Capacity Manual* (HCM) *6th Edition*.
2. Percent of base free-flow speed (BFFS) as calculated by HCS.

Source: Fehr & Peers, 2018.

Intersection Operations

Table 26 presents the average delay and LOS at the study intersections under cumulative plus Whitehawk II conditions during the weekday a.m. and p.m. peak hours (refer to Appendix H for technical calculations). As shown, all study intersections continue to operate at an acceptable LOS under cumulative plus Whitehawk II conditions except the following three intersections, which continue to operate at an unacceptable LOS under cumulative plus Whitehawk II conditions:

- Sierra College Boulevard / Douglas Boulevard (#1) – LOS E during the a.m. and p.m. peak hours
- Woodgrove Way/Quail Oaks Drive / Douglas Boulevard (#3) – LOS F during the a.m. and p.m. peak hours
- Sierra College Boulevard / Eureka Road (#9) – LOS D during the a.m. and p.m. peak hours

These intersections operate at an unacceptable LOS under cumulative no project conditions and would continue to operate at an unacceptable LOS under cumulative plus Whitehawk II conditions. However, the vehicle trips generated by Whitehawk II would not degrade the operations by a service level (i.e., LOS D to LOS E) at the City of Roseville intersection – Sierra College Boulevard / Douglas Boulevard and Sierra College Boulevard / Eureka Road – from cumulative no project conditions. Furthermore, the weighted average control delay at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard would decrease during the a.m. and p.m. peak hours when compared to cumulative no project conditions. Therefore, the cumulative impact of Whitehawk II on intersection operations is **less-than-significant**.

Table 26: Peak Hour Intersection Operations – Cumulative Plus Whitehawk II Conditions

Intersection	Traffic Control[1]	Peak Hour	Cumulative NP		Cumulative + WH II[2]	
			Delay[3]	LOS[4]	Delay[3]	LOS[4]
1. Sierra College Blvd. / Douglas Blvd.	Signal	A.M.	**61.2**	**E**	**61.9**	**E**
		P.M.	**70.9**	**E**	**71.9**	**E**
2. Cavitt Stallman Rd. South / Douglas Blvd.	Signal	A.M.	14.6	B	14.8	B
		P.M.	22.4	C	22.6	C
3. Woodgrove Way/Quail Oaks Dr. / Douglas Blvd.	SSSC	A.M.	**92.8[4]**	**F**	**91.5[4]**	**F**
		P.M.	**316.0[4]**	**F**	**311.9[4]**	**F**
4. Whitehawk I Access / Douglas Blvd.[5]	N/A	A.M.				
		P.M.				
5. Seeno Ave. / Douglas Blvd.	Signal	A.M.	7.8	A	13.5	B
		P.M.	17.2	B	19.4	B
6. Barton Rd. / Douglas Blvd.	Signal	A.M.	32.3	C	32.5	C
		P.M.	29.8	C	30.1	C
7. Auburn Folsom Rd. / Douglas Blvd.	Signal	A.M.	50.7	D	51.0	D
		P.M.	46.7	D	46.9	D
8. Sierra College Blvd. / Renaissance Creek/ Granite Bay Business Park	Signal	A.M.	26.6	C	26.3	C
		P.M.	31.4	C	31.4	C
9. Sierra College Blvd. / Eureka Rd.	Signal	A.M.	**40.7**	**D**	**40.7**	**D**
		P.M.	**43.6**	**D**	**43.6**	**D**
10. Grayhawk Dr. / Eureka Rd.	SSSC	A.M.	28.8	D	30.4	C
		P.M.	15.0	C	15.0	C
11. Auburn Folsom Rd. / Fuller Dr.	Signal	A.M.	17.0	B	17.1	B
		P.M.	9.4	A	9.4	A
12. Auburn Folsom Rd. / Eureka Rd.	Signal	A.M.	21.2	C	21.4	C
		P.M.	11.7	B	11.7	B

Notes:

1. Signal = traffic signal-controlled intersection; SSSC = side-street stop-controlled intersection
2. WH II = Whitehawk II
3. Average control delay (rounded to nearest second) for signalized intersections is the weighted average for all movements. Average control delay at SSSC intersections is the "overall weighted average delay for movements yielding the right-of-way."
4. LOS = level of service; calculated based on methodologies contained in the *Highway Capacity Manual* (HCM) *6th Edition*.
5. Whitehawk I Access would not exist under Cumulative No Project and Cumulative Plus Whitehawk II conditions.

Bold text indicates unacceptable operations.

All intersections are analyzed in Synchro 10.

Source: Fehr & Peers, 2018.

Woodgrove Way/Quail Oaks Drive / Douglas Boulevard

As with the other scenarios presented in this report, the HCM delay calculations at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection show extremely high delays for the side-street through and left-turn movements under cumulative plus Whitehawk II conditions. While the conflicting volumes on Douglas Boulevard would make these side-street movements difficult, drivers would not wait more than 60 minutes to make these movements as the HCM delay calculations would suggest. However, to maintain consistency with the HCM 6th Edition methodology, this study uses the delay and LOS results presented in Table 26, which reflect these high delay calculations.

The average control delay for the movements yielding the right-of-way at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard decreases from cumulative no project conditions. This is because Whitehawk II would add trips to movements with less delay – such as the westbound left-turn and the northbound right-turn. Comparatively, the side-street through and left-turn movements, which experience the most extreme delay according to the HCM calculations, have much smaller volumes. As a result, the weighted average control delay decreases since the additional project trips are added to movements with considerably less delay.

For informational purposes, this study also calculates the average control delay and LOS for this intersection if the average control delay on the side street movement was capped at 600 seconds (i.e., 10 minutes). Using these delay values, the average control delay for movements yielding the right-of-way at this intersection would be 35 seconds – LOS D – during the a.m. peak hour; and 42 seconds – LOS E – during the p.m. peak hour under cumulative plus Whitehawk II conditions. This is the same as the average control delay under cumulative no project conditions.

Peak Hour Signal Warrant Analysis

The peak hour signal warrant analysis shows that both Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection and Greyhawk Drive / Eureka Road intersection meet the peak hour signal warrant (Warrant 3B) under cumulative plus Whitehawk II conditions during the a.m. and p.m. peak hours.

Cumulative Plus Whitehawk I & II

The following presents the traffic operations analysis results cumulative plus Whitehawk I and II conditions. This scenario assesses the incremental cumulative traffic effects of both Whitehawk I and Whitehawk II projects together when viewed in light of reasonably foreseeable land development and transportation projects.

Roadway Operations

Vehicle trips generated by the proposed Whitehawk I and Whitehawk II projects on a daily basis are added to the forecasted cumulative no project volumes on study roadway segments based on the vehicle trip generation estimates in Table 8 and an average of the vehicle trip distributions shown in Figure 11 and Figure 12. Table 27 presents the resulting ADT volumes, volume-to-capacity (v/c) ratio, and LOS for the nine study roadway segments.

As shown in Table 27, the following roadway segments are forecasted to operate at an unacceptable LOS D or worse under cumulative plus Whitehawk I and II conditions:

- Douglas Boulevard: Sierra College Boulevard to Cavitt Stallman Road South
- Douglas Boulevard: Cavitt Stallman Road South to Woodgrove Way/Quail Oaks Drive
- Douglas Boulevard: Woodgrove Way/Quail Oaks Drive to Seeno Avenue
- Douglas Boulevard: Seeno Avenue to Barton Road
- Douglas Boulevard: Barton Road to Auburn Folsom Road
- Sierra College Boulevard: Douglas Boulevard to Renaissance Creek/Granite Bay Business Park
- Auburn Folsom Road: Douglas Boulevard to Eureka Road

The segment of Sierra College Boulevard from Douglas Boulevard to Renaissance Creek would degrade from an acceptable LOS C under cumulative no project conditions to an unacceptable LOS D with vehicle trips generated by the proposed Whitehawk I and Whitehawk II projects. This is considered a **significant** impact.

The segments of Douglas Boulevard from Cavitt Stallman Road South to Seeno Avenue would experience increases of 580 to 640 ADT. Since this is more than 100 ADT per lane (Douglas Boulevard is four lanes on these segments), this is considered a **significant** impact.

The segment of Douglas Boulevard from Sierra College Boulevard to Cavitt Stallman Road South would experience an increase of 530 ADT. This is less than 100 ADT per lane since Douglas Boulevard is six lanes

on this segment under cumulative conditions. Therefore, this is a **less-than-significant** impact. Similarly, the other segments of Douglas Boulevard and Auburn Folsom Road listed above would experience a daily traffic volume increase less than 250 daily vehicles. Therefore, the combined impact of Whitehawk I and Whitehawk II would be **less-than-significant** on the remaining segments.

Table 27: Roadway Segment Daily Traffic Volumes – Cumulative Plus Whitehawk I & II Conditions

Segment	Classification	Cumulative No Project			Cumulative + WH I & II[1]		
		ADT[2]	V/C	LOS	ADT[2]	V/C	LOS
1. Douglas Blvd.: Sierra College Blvd. to Cavitt Stallman Rd. South	6-lane Arterial – MAC	54,140	1.00	**F**	54,670	1.01	**F**
2. Douglas Blvd.: Cavitt Stallman Rd. South to Woodgrove Way	4-lane Arterial – HAC	51,710	1.29	**F**	52,290	1.31	**F**
3. Douglas Blvd.: Woodgrove Way to Seeno Ave.	4-lane Arterial – HAC	50,170	1.25	**F**	50,810	1.27	**F**
4. Douglas Blvd.: Seeno Ave. to Barton Rd.	4-lane Arterial – HAC	49,880	1.25	**F**	50,100	1.25	**F**
5. Douglas Blvd.: Barton Rd. to Auburn Folsom Rd.	4-lane Arterial – HAC	48,670	1.22	**F**	48,870	1.22	**F**
6. Sierra College Blvd.: Olympus Dr. to Douglas Blvd.	6-lane Arterial – MAC	33,940	0.63	B	34,020	0.63	B
7. Sierra College Blvd.: Douglas Blvd. to Renaissance Creek	6-lane Arterial – MAC	43,120	0.80	C	43,250	0.80	**D**
8. Sierra College Blvd.: Renaissance Creek to Eureka Rd.	6-lane Arterial – MAC	39,960	0.74	C	40,050	0.74	C
9. Auburn Folsom Rd.: Douglas Blvd. to Eureka Rd.	4-lane Arterial – MAC	45,110	1.25	**F**	45,220	1.26	**F**

Notes:
MAC = moderate access control; HAC = high access control
1. WH I = Whitehawk I; WH II = Whitehawk II
2. ADT = average daily traffic volume. ADT values are rounded to the nearest 10 vehicles.
Bold text indicates unacceptable operations. **Bold and highlighted** text indicates significant impacts.
Source: Fehr & Peers, 2018.

Douglas Boulevard – Diverted Traffic Evaluation

Table 28 presents the weekday a.m. and p.m. peak hour average travel speeds on Douglas Boulevard between Seeno Avenue to Cavitt Stallman Road South under cumulative plus Whitehawk I and II conditions. As shown in Table 28, the average travel speed on westbound Douglas Boulevard from Seeno Avenue to Cavitt Stallman Road South would remain unchanged during both the a.m. and p.m. peak hours under

cumulative plus Whitehawk I and II conditions. Since these speeds remain relatively unchanged from cumulative no project conditions, the trips generated by both the Whitehawk I and II projects would not increase the attractiveness for through traffic to divert off Douglas Boulevard through the Quail Oaks neighborhood under cumulative conditions. While the speeds on eastbound Douglas Boulevard are forecasted to decrease due to the additional leg and signal phase at the Seeno Avenue signal, the travel speed would still be significantly higher than diverting off Douglas Boulevard.

Table 28: Douglas Boulevard Peak Hour Travel Speed – Cumulative Plus Whitehawk I & II Conditions

Roadway Segment	Direction	Cumulative No Project		Cumulative + Whitehawk I & II	
		Travel Speed[1]	%BFFS[2]	Travel Speed[1]	%BFFS[2]
Douglas Boulevard – AM Peak Hour					
1. Cavitt Stallman Rd. South to Seeno Ave.	Eastbound	51	82%	47	75%
	Westbound	45	72%	45	72%
Douglas Boulevard – PM Peak Hour					
1. Cavitt Stallman Rd. South to Seeno Ave.	Eastbound	52	83%	46	74%
	Westbound	39	63%	39	63%

Notes:

1. Travel speed calculated based on methodologies contained in the *Highway Capacity Manual* (HCM) *6th Edition*.
2. Percent of base free-flow speed (BFFS) as calculated by HCS.

Source: Fehr & Peers, 2018.

Intersection Operations

Table 29 presents the average delay and LOS at the study intersections under cumulative plus Whitehawk I and II conditions during the weekday a.m. and p.m. peak hours (refer to Appendix I for technical calculations). As shown, all study intersections continue to operate at an acceptable LOS under cumulative plus Whitehawk I and II conditions except the following three intersections, which continue to operate at an unacceptable LOS under cumulative plus Whitehawk I and II conditions:

- Sierra College Boulevard / Douglas Boulevard (#1) – LOS E during the a.m. and p.m. peak hours
- Woodgrove Way/Quail Oaks Drive / Douglas Boulevard (#3) – LOS F during the a.m. and p.m. peak hours
- Sierra College Boulevard / Eureka Road (#9) – LOS E during the a.m. and p.m. peak hours

These intersections operate at an unacceptable LOS under cumulative no project conditions and would continue to operate at an unacceptable LOS under cumulative plus Whitehawk I and II conditions. However,

the trips generated by both the Whitehawk I and II projects would not degrade the operations by a service level (i.e., LOS D to LOS E) at the City of Roseville intersection – Sierra College Boulevard / Douglas Boulevard and Sierra College Boulevard / Eureka Road – from cumulative no project conditions. Therefore, this is considered a **less-than-significant** impact.

However, the weighted average control delay at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard would increase by more than 50 seconds during the a.m. peak hour and decrease during the p.m. peak hour when compared to cumulative no project conditions. Since the weighted average control delay increases by more than 2.5 seconds during the a.m. peak hour and the intersection meets the MUTCD traffic signal warrant, the cumulative impact of both Whitehawk I and II combined on intersection operations is **significant** per the significance criteria for unsignalized intersections in the Placer County *Impact Analysis Methodology of Assessment* memorandum.

Table 29: Peak Hour Intersection Operations – Cumulative Plus Whitehawk I & II

Intersection	Traffic Control[1]	Peak Hour	Cumulative NP		Cumulative + WH I&II[2]	
			Delay[3]	LOS[4]	Delay[3]	LOS[4]
1. Sierra College Blvd. / Douglas Blvd.	Signal	A.M.	**61.2**	**E**	**62.5**	**E**
		P.M.	**70.9**	**E**	**72.3**	**E**
2. Cavitt Stallman Rd. South / Douglas Blvd.	Signal	A.M.	14.6	B	14.9	B
		P.M.	22.4	C	22.6	C
3. Woodgrove Way/Quail Oaks Dr. / Douglas Blvd.	SSSC	A.M.	**92.8[4]**	**F**	**154.4[4]**	**F**
		P.M.	**316.09[4]**	**F**	**302.2[4]**	**F**
4. Whitehawk I Access / Douglas Blvd.[5]	SSSC	A.M.			17.7	C
		P.M.			24.2	C
5. Seeno Ave. / Douglas Blvd.	Signal	A.M.	7.8	A	13.7	B
		P.M.	17.2	B	19.7	B
6. Barton Rd. / Douglas Blvd.	Signal	A.M.	32.3	C	32.6	C
		P.M.	29.8	C	30.3	C
7. Auburn Folsom Rd. / Douglas Blvd.	Signal	A.M.	50.7	D	51.3	D
		P.M.	46.7	D	47.0	D
8. Sierra College Blvd. / Renaissance Creek/ Granite Bay Business Park	Signal	A.M.	26.6	C	26.6	C
		P.M.	31.4	C	31.5	C
9. Sierra College Blvd. / Eureka Rd.	Signal	A.M.	**40.7**	**D**	**40.7**	**D**
		P.M.	**43.6**	**D**	**43.6**	**D**
10. Grayhawk Dr. / Eureka Rd.	SSSC	A.M.	28.8	D	31.4	C
		P.M.	15.0	C	15.1	C

Table 29: Peak Hour Intersection Operations – Cumulative Plus Whitehawk I & II

Intersection	Traffic Control[1]	Peak Hour	Cumulative NP		Cumulative + WH I&II[2]	
			Delay[3]	LOS[4]	Delay[3]	LOS[4]
11. Auburn Folsom Rd. / Fuller Dr.	Signal	A.M.	17.0	B	17.2	B
		P.M.	9.4	A	9.4	A
12. Auburn Folsom Rd. / Eureka Rd.	Signal	A.M.	21.2	C	21.4	C
		P.M.	11.7	B	11.8	B

Notes:

1. Signal = traffic signal-controlled intersection; SSSC = side-street stop-controlled intersection
2. WH I = Whitehawk I; WH II = Whitehawk II
3. Average control delay (rounded to nearest second) for signalized intersections is the weighted average for all movements. Average control delay at SSSC intersections is the "overall weighted average delay for movements yielding the right-of-way."
4. LOS = level of service; calculated based on methodologies contained in the *Highway Capacity Manual* (HCM) *6th Edition*.
5. Whitehawk I Access is constructed with the proposed Whitehawk I project. Would not exist under cumulative no project condition.

Bold text indicates unacceptable operations. **Bold and highlighted** text indicates significant impacts.

All intersections are analyzed in Synchro 10.

Source: Fehr & Peers, 2018.

Woodgrove Way/Quail Oaks Drive / Douglas Boulevard

As with the other scenarios presented in this report, the HCM delay calculations at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection show extremely high delays for the side-street through and left-turn movements under cumulative plus Whitehawk II conditions. While the conflicting volumes on Douglas Boulevard would make these side-street movements difficult, drivers would not wait more than 60 minutes to make these movements as the HCM delay calculations would suggest. However, to maintain consistency with the HCM 6th Edition methodology, this study uses the delay and LOS results presented in Table 29, which reflect these high delay calculations.

The average control delay for the movements yielding the right-of-way at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard decreases from cumulative no project conditions during the p.m. peak hour because trips generated by Whitehawk I and II would be added to movements with less delay – such as the westbound left-turn and the northbound right-turn. Comparatively, the side-street through and left-turn movements, which experience the most extreme delay according to the HCM calculations, have much smaller volumes. As a result, the weighted average control delay decreases since the additional project trips are added to movements with considerably less delay.

For informational purposes, this study also calculates the average control delay and LOS for this intersection if the average control delay on the side street movement was capped at 600 seconds (i.e., 10 minutes). Using these delay values, the average control delay for movements yielding the right-of-way at this intersection

would be 35 seconds – LOS D – during the a.m. peak hour; and 42 seconds – LOS E – during the p.m. peak hour under cumulative plus Whitehawk I and II conditions. This is the same as the average control delay under cumulative no project conditions.

Peak Hour Signal Warrant Analysis

The peak hour signal warrant analysis shows that both Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection and Greyhawk Drive / Eureka Road intersection meet the peak hour signal warrant (Warrant 3B) under cumulative plus Whitehawk I and II conditions during the a.m. and p.m. peak hours.

6. Impacts and Mitigation Measures

This chapter summarizes the significance of transportation and traffic impacts (both project-specific and cumulatively considerable) using the criteria described in Chapter 1. Where impacts are deemed significant, mitigation measures are recommended to lessen their significance. This study identifies the transportation and traffic impacts of Whitehawk I and Whitehawk II separately (i.e., Whitehawk I only, Whitehawk II only), as well as the impacts of the two projects combined (i.e., Whitehawk I and II). In some cases, the transportation/traffic effects of the two projects would be similar or the same both individually and collectively. In these cases, a single impact statement is provided that applies to all plus project conditions (Whitehawk I only, Whitehawk II only, both Whitehawk I and II).

Project-Specific Impacts

Vehicle Travel

Vehicle trips generated by the proposed projects would increase traffic volumes on study roadway segments and intersections, as described below.

Roadway Operations

Whitehawk I

<u>Impact-1 – WH I</u>: Vehicle trips generated by Whitehawk I would increase traffic volumes on study roadway segments. However, these project trips would not cause a study roadway segment to worsen from an acceptable LOS to an unacceptable LOS. Furthermore, these project trips would not exceed Placer County's threshold of 100 or more trips per lane for roadway segments that currently operate at an unacceptable LOS without Whitehawk I. Therefore, this is a less-than-significant impact.

The development of Whitehawk I would add vehicle trips to roadway segments currently operating at an unacceptable LOS. Of the segments operating at an unacceptable LOS, the project would the greatest number of vehicle trips (200 daily trips) to the segment of Douglas Boulevard from Woodgrove Way/Quail Oaks Drive to Seeno Avenue. Since Douglas Boulevard is four lanes on this segment, the additional 200 daily vehicle trips are less than the 100 or more daily vehicle trips per lane threshold (i.e., 400 vehicle trips for this segment) identified in Placer County's significance criteria. All other segments that currently operate

at an unacceptable LOS experience an increase of fewer than 180 vehicle trips across at least four travel lanes. Therefore, this is a **less-than-significant** impact.

Mitigation Measures

No mitigation is required.

Whitehawk II

Impact-2 – WH II: Vehicle trips generated by Whitehawk II would increase traffic volumes on study roadway segments. These project trips would not cause a study roadway segment to worsen from an acceptable LOS to an unacceptable LOS. However, these project trips would exceed Placer County's threshold of 100 or more trips per lane for the roadway segment of Douglas Boulevard from Woodgrove Way/Quail Oaks Drive to Seeno Avenue, which currently operates at an unacceptable LOS without Whitehawk II. Therefore, this is considered a significant impact.

The development of Whitehawk II would add vehicle trips to roadway segments currently operating at an unacceptable LOS. Of the segments operating at an unacceptable LOS, the project would add the greatest number of vehicle trips (440 daily trips) to the segment of Douglas Boulevard from Woodgrove Way/Quail Oaks Drive to Seeno Avenue. Since Douglas Boulevard is four lanes on this segment, the additional 440 daily vehicle trips is slightly more than the 100 or more daily vehicle trips per lane threshold (i.e., 400 vehicle trips for this segment) identified in Placer County's significance criteria. Therefore, this would be considered a **significant** impact. All other segments that currently operate at an unacceptable LOS experience an increase of no more than 390 daily vehicle trips across at least four travel lanes; and are not significantly impacted.

Mitigation Measures

No feasible mitigation.

Widening Douglas Boulevard from 4 lanes to 6 lanes on this segment between Woodgrove Way/Quail Oaks Drive to Seeno Avenue would improve operations to LOS C. However, the Granite Bay Community Plan Circulation Element establishes that Douglas Boulevard remain 4 lanes from Cavitt Stallman Road South to Auburn Folsom Road. The Granite Bay Community Plan Circulation Element also acknowledges that the community overwhelmingly supported no further widening of Douglas Boulevard. Based on recent conversations with County staff, this position of no further widening of Douglas Boulevard has not changed. Therefore, widening Douglas Boulevard from 4 lanes to 6 lanes is considered infeasible.

Significance after Mitigation

Since there is no feasible mitigation for this segment, this impact would remain **significant-and-unavoidable**.

Whitehawk I & II

Impact-3 – WH I & II: Vehicle trips generated by a combination of Whitehawk I and II projects would increase traffic volumes on study roadway segments. These project trips would not cause a study roadway segment to worsen from an acceptable LOS to an unacceptable LOS. However, these project trips would exceed Placer County's threshold of 100 or more trips per lane for roadway segments along Douglas Boulevard from Sierra College Boulevard to Seeno Avenue, which currently operate at an unacceptable LOS without Whitehawk I and II. Therefore, this is considered a significant impact.

The development of Whitehawk I and II would add vehicle trips to roadway segments currently operating at an unacceptable LOS. Of the segments operating at an unacceptable LOS, the vehicle trips generated from both projects combined would add the greatest number of vehicle trips (640 daily trips) to the segment of Douglas Boulevard from Woodgrove Way/Quail Oaks Drive to Seeno Avenue. The vehicle trips generated from both projects combined would also add 540 to 570 daily vehicle trips to Douglas Boulevard from Sierra College Boulevard to Woodgrove Way/Quail Oaks Drive. Since Douglas Boulevard is four lanes on these segments, the additional 540 to 640 daily vehicle trips would exceed the 100 or more daily vehicle trips per lane threshold (i.e., 400 vehicle trips for these segments) identified in Placer County's significance criteria. Therefore, this would be considered a **significant** impact. All other segments that currently operate at an unacceptable LOS experience an increase of fewer than 220 daily vehicle trips across at least four travel lanes; and are not significantly impacted.

Mitigation Measures

No feasible mitigation for Douglas Boulevard from Cavitt Stallman Road South to Seeno Avenue.

Widening Douglas Boulevard from 4 lanes to 6 lanes between Cavitt Stallman Road South to Seeno Avenue would improve operations to LOS C. However, the Granite Bay Community Plan Circulation Element establishes that Douglas Boulevard remain 4 lanes from Cavitt Stallman Road South to Auburn Folsom Road. The Granite Bay Community Plan Circulation Element also acknowledges that the community overwhelmingly supported no further widening of Douglas Boulevard. Based on recent conversations with County staff, this position of no further widening of Douglas Boulevard has not changed. Therefore, widening Douglas Boulevard from 4 lanes to 6 lanes from Cavitt Stallman Road South to Seeno Avenue is considered infeasible.

<u>Mitigation Measure-3</u>: Widen Douglas Boulevard from Sierra College Boulevard to Cavitt Stallman Road South to six lanes.

This measure would extend the six lanes of Douglas Boulevard from where it currently transitions to four lanes east of Sierra College Boulevard to the Cavitt Stallman Road South intersection. The eastbound leg of the Douglas Boulevard/Cavitt Stallman Road South intersection would be striped to accommodate two through lanes and one through/right turn lane. The existing third westbound through lane at the Douglas Boulevard / Sierra College Boulevard intersection would be extended back to Cavitt Stallman Road South. This would better balance lane utilization at the Sierra College Boulevard / Douglas Boulevard intersection.

This improvement is included in the Granite Bay Benefit District of the Placer County Countywide CIP (August 2017) and considered feasible. Since this improvement is in the Countywide CIP, the project applicants for Whitehawk I and II shall pay the applicable countywide traffic impact fees, which will provide funding for this improvement. If the County requires the project applicant of Whitehawk I or II to construct this improvement, the constructing party shall be subject to fee credits for the applicable countywide traffic impact fees, as applicable.

<u>Significance after Mitigation</u>

With six lanes on the segment of Douglas Boulevard from Sierra College Boulevard to Cavitt Stallman Road South, the LOS would improve to LOS D. While this is still unacceptable, the widening would also increase the significance threshold to 600 daily vehicles based on Placer County's significance threshold of 100 or more daily project vehicle trips per lane. Since the two projects together would increase the ADT by 540 vehicles on this segment, this would now be less than the County's significance threshold. Therefore, the impact to the segment of Douglas Boulevard from Sierra College Boulevard to Cavitt Stallman Road South would be mitigated to a **less-than-significant** level after mitigation.

Since there is no feasible mitigation for the segments of Douglas Boulevard between Cavitt Stallman Road South to Seeno Avenue, the impact to these segments would remain **significant-and-unavoidable**.

Intersection Operations

Whitehawk I

<u>Impact-4 – WH I</u>: Vehicle trips generated by Whitehawk I would increase traffic volumes at study intersections. However, these project trips would not cause operations to degrade from an acceptable LOS to an unacceptable LOS. These project trips would not cause a City of Roseville intersection currently operating at an unacceptable LOS without Whitehawk I to worsen by one or more service level. Furthermore, these project trips would not increase the average control delay by more than one second at Placer County intersections that currently operate at an unacceptable LOS without Whitehawk I. Therefore, this is a less-than-significant impact.

While the development of Whitehawk I would add vehicle trips to study intersections currently operating at an unacceptable LOS, these trips would not degrade the operations by a service level (i.e., LOS D to LOS E) at the two City of Roseville intersections – Sierra College Boulevard / Douglas Boulevard and Sierra College Boulevard / Eureka Road – that operate at an unacceptable LOS under existing conditions. Furthermore, it would only increase the average control delay by 1 second at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard during the a.m. peak hour and reduce the average control delay during the p.m. peak hour. Therefore, this is a **less-than-significant** impact.

<u>Mitigation Measures</u>

No mitigation is required.

Whitehawk II

<u>Impact-5 – WH II</u>: Vehicle trips generated by Whitehawk II would increase traffic volumes at study intersections. However, these project trips would not cause operations to degrade from an acceptable LOS to an unacceptable LOS. These project trips would not cause a City of Roseville intersection currently operating at an unacceptable LOS without Whitehawk II to worsen by one or more service level. Furthermore, these project trips would not increase the average control delay by more than one second at Placer County intersections that currently operate at an unacceptable LOS without Whitehawk II. Therefore, this is a less-than-significant impact.

While the development of Whitehawk II would add vehicle trips to study intersections currently operating at an unacceptable LOS, these trips would not degrade the operations by a service level (i.e., LOS D to LOS E) at the two City of Roseville intersections – Sierra College Boulevard / Douglas Boulevard and Sierra College Boulevard / Eureka Road – that operate at an unacceptable LOS under existing conditions. Furthermore, it would only increase the average control delay by 1 second at Woodgrove Way/Quail Oaks

Drive / Douglas Boulevard during the a.m. peak hour and reduce the average control delay during the p.m. peak hour. Therefore, this is a **less-than-significant** impact.

Mitigation Measures

No mitigation is required.

Whitehawk I & II

Impact-6 – WH I & II: Vehicle trips generated by a combination of Whitehawk I and II projects would increase traffic volumes at study intersections. This increase in trips would not cause operations to degrade from an acceptable LOS to an unacceptable LOS. These project trips would not cause a City of Roseville intersection currently operating at an unacceptable LOS without Whitehawk I and II to worsen by one or more service level. However, these project trips would increase average control delay by more than 12 seconds at the Woodgrove Way/Quail Oaks Drive/Douglas Boulevard intersection, which currently operates at an unacceptable LOS and meets the MUTCD traffic signal warrant without Whitehawk I and II. Therefore, this is a significant impact.

The development of both Whitehawk I and II would add vehicle trips to study intersections currently operating at an unacceptable LOS. The increase in trips from Whitehawk I and II would cause an increase in average control delay at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard by over 12 seconds under existing conditions during the a.m. peak hour. Since the weighted average control delay increases by more than 2.5 seconds during the a.m. peak hour and the intersection meets the MUTCD traffic signal warrant, this is a **significant** impact.

Mitigation Measure-6: Install a raised median at the Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection to restrict access to left-in and right-in/right-out movements.

This measure would eliminate the northbound and southbound left-turn and through movements at the intersection, which would limit access to left-in and right-in/right-out movements only. The following summarizes alternatives routes that can accommodate displaced turn movements. The relatively low volume using the turn movements that will be displaced with implementation of this mitigation measure is an indication that alternative routes are available today for drivers that may want to use them but avoid them due to high delay. Consequently, implementation of traffic signal control as a mitigation, although warranted, is not appropriate given the low volume using these movements.

Displaced Movements				Alternative Routes	
Approach	Movement	Peak Hour Volume AM	Peak Hour Volume PM	Description	Out-of-Direction Travel
NB	Left	5	2	• NB right-turn at Woodgrove Way • EB U-turn at Seeno Avenue • WB Thru at Woodgrove Way	4,100 feet
	Thru	0	0	• NB right-turn at Woodgrove Way • EB Left-turn at Seeno Avenue OR • NB Right-turn at Woodgrove Way • EB U-turn at Seeno Avenue • WB Right-turn at Woodgrove Way	Up to 4,100 feet
SB	Left	0	0	• Rolling Oaks Drive to Seeno Avenue • SB Left-turn at Seeno Avenue	No Change
	Through	1	1	• Rolling Oaks Drive to Seeno Avenue • SB Right-turn at Seeno Avenue • WB Left-turn at Woodgrove Way	Up to 4,100 feet

Significance after Mitigation

With this improvement, the Woodgrove Way/Quail Oaks Drive / Douglas Boulevard would operate acceptably at LOS C during the a.m. peak hour. Therefore, the impact to the Woodgrove Way / Quail Oaks Drive / Douglas Boulevard intersection would be **less-than-significant** level after mitigation.

Left-Turn Storage

Whitehawk I

Impact-7 – WH I: Vehicle trips generated by Whitehawk I would increase traffic volumes using left-turn lanes on Douglas Boulevard. Most of the study-area left-turn lanes on Douglas Boulevard provide adequate storage and deceleration length to satisfy guidance provided by the *Highway Design Manual (HDM)*, Caltrans, except for the westbound left-turn lane at the Seeno Avenue / Douglas Boulevard intersection. However, Whitehawk I does not add trips to this left-turn lane. Therefore, this is a less-than-significant impact.

The posted speed limit on Douglas Boulevard is 55 miles per hour (mph). For this design speed, the HDM identifies a deceleration lane length of 485 feet. The HDM allows for partial deceleration in the adjacent through lanes (prior to the bay taper) in developed areas, with a reduction of up to 20 mph in design speed is allowed. Assuming a design speed of 35 mph (55 mph – 20 mph), a deceleration lane length of 275 feet should be provided. The westbound left-turn lane at the Seeno Avenue / Douglas Boulevard intersection

provides 220 feet. Assuming a queue of 25 feet (i.e., about 1 vehicle), the westbound left-turn lane should provide 300 feet of deceleration length (275 feet + 25 feet). Therefore, the length of the existing turn lane should be increased to provide this standard. While the length of the existing turn pocket should be increased, development of Whitehawk I would not added trips to the westbound left-turn lane at the Seeno Avenue / Douglas Boulevard intersection. Therefore, this is a **less-than-significant** impact.

Mitigation Measures

No mitigation is required.

Whitehawk II

Impact-8 – WH II: Vehicle trips generated by Whitehawk II would increase traffic volumes using left-turn lanes on Douglas Boulevard. Most of the study-area left-turn lanes on Douglas Boulevard provide adequate storage and deceleration length to satisfy guidance provided by the *Highway Design Manual (HDM)*, Caltrans, except for the westbound left-turn lane at the Seeno Avenue / Douglas Boulevard intersection. Whitehawk II adds trips to this left-turn lane. Therefore, this is a significant impact.

The posted speed limit on Douglas Boulevard is 55 miles per hour (mph). For this design speed, the HDM identifies a deceleration lane length of 485 feet. The HDM allows for partial deceleration in the adjacent through lanes (prior to the bay taper) in developed areas, with a reduction of up to 20 mph in design speed is allowed. Assuming a design speed of 35 mph (55 mph – 20 mph), a deceleration lane length of 275 feet should be provided. The westbound left-turn lane at the Seeno Avenue / Douglas Boulevard intersection provides 220 feet. Assuming a queue of 25 feet (i.e., about 1 vehicle), the westbound left-turn lane should provide 300 feet of deceleration length (275 feet + 25 feet). Therefore, the length of the existing turn lane should be increased to provide this standard. Development of Whitehawk II would add trips to the westbound left-turn lane at the Seeno Avenue / Douglas Boulevard intersection. Therefore, this is a **significant** impact.

Mitigation Measure-8: Increase the deceleration length of the westbound left-turn lane at the Seeno Avenue / Douglas Boulevard intersection to 300 feet.

Significance after Mitigation

With this improvement, the westbound left-turn lane at the Seeno Avenue / Douglas Boulevard intersection would meet the guidance for deceleration length, which is 300 feet. Therefore, the impact would be **less-than-significant** after mitigation.

Whitehawk I & II

<u>Impact-9 – WH I & II</u>: Vehicle trips generated by Whitehawk I & II would increase traffic volumes using left-turn lanes on Douglas Boulevard. Most of the study-area left-turn lanes on Douglas Boulevard provide adequate storage and deceleration length to satisfy guidance provided by the *Highway Design Manual (HDM)*, Caltrans, except for the westbound left-turn lane at the Seeno Avenue / Douglas Boulevard intersection. Whitehawk I & II adds trips to this left-turn lane. Therefore, this is a significant impact.

The posted speed limit on Douglas Boulevard is 55 miles per hour (mph). For this design speed, the HDM identifies a deceleration lane length of 485 feet. The HDM allows for partial deceleration in the adjacent through lanes (prior to the bay taper) in developed areas, with a reduction of up to 20 mph in design speed is allowed. Assuming a design speed of 35 mph (55 mph – 20 mph), a deceleration lane length of 275 feet should be provided. The westbound left-turn lane at the Seeno Avenue / Douglas Boulevard intersection provides 220 feet. Assuming a queue of 25 feet (i.e., about 1 vehicle), the westbound left-turn lane should provide 300 feet of deceleration length (275 feet + 25 feet). Therefore, the length of the existing turn lane should be increased to provide this standard. Development of Whitehawk I and II would add trips to the westbound left-turn lane at the Seeno Avenue / Douglas Boulevard intersection. Therefore, this is a **significant** impact.

<u>Mitigation Measure-9</u>: Increase the deceleration length of the westbound left-turn lane at the Seeno Avenue / Douglas Boulevard intersection to 300 feet.

<u>Significance after Mitigation</u>

With this improvement, the westbound left-turn lane at the Seeno Avenue / Douglas Boulevard intersection would meet the guidance for deceleration length, which is 300 feet. Therefore, the impact would be **less-than-significant** after mitigation.

Bicycle Travel

Both the proposed Whitehawk I and Whitehawk II projects would have similar effects on bicycle travel, both as independent projects and when viewed in combination together. Therefore, a single impact statement on bicycle travel is provided below.

<u>Impact-10 – WH I & II</u>: The proposed development of Whitehawk I and II projects, both independently and collectively, would be consistent with *Placer County General Plan* policies related to bicycle travel, and would not interfere with existing or preclude the implementation of planned future bicycle facilities. Therefore, this is a less-than-significant impact.

The proposed Whitehawk I and Whitehawk II projects would not interfere with existing or planned bicycle facilities on Douglas Boulevard along the project frontage. Although Douglas Boulevard has a striped shoulder along the frontage of both project sites, bike lane pavement markings and signage consistent with the California MUTCD are not present. The striped shoulder provides sufficient width for bike lanes, which were originally identified as proposed facilities in the *Placer County Regional Bikeway Plan* adopted in 2002. The recently adopted update to the *Placer County Regional Bikeway Plan* shows proposed buffered bike lanes along Douglas Boulevard. Since there is sufficient pavement width, the proposed projects would not preclude the implementation of signage, pavement markings, and striping improvements necessary to create the proposed bicycle facilities.

Lastly, The proposed projects would be consistent with *Placer County General Plan* policies related to bicycle travel.

<u>Mitigation Measures</u>

No mitigation is required.

Pedestrian Travel

Both the proposed Whitehawk I and Whitehawk II projects would generally have similar effects on pedestrian travel, both as independent projects and when viewed in combination together. However, there are some slight differences in how the proposed Whitehawk I and Whitehawk II projects will connect to existing pedestrian facilities. Therefore, the effects of Whitehawk I and Whitehawk II projects on pedestrian travel are described separately below.

Whitehawk I

<u>Impact-11 – WH I</u>: The proposed development of Whitehawk I would be consistent with *Placer County General Plan* policies related to pedestrian travel, and would not interfere with existing or preclude the implementation of planned future pedestrian facilities. Therefore, this is a less-than-significant impact.

The proposed Whitehawk I project would connect to and extend the existing eight-foot wide sidewalk/bike trail along the south side of Douglas Boulevard along the project frontage. An internal trail network of five-

foot wide trails would provide pedestrian facilities within the project site and connect to this sidewalk/bike trail. Therefore, the proposed project would provide a safe and comfortable route for walking to existing pedestrian facilities, consistent with Policy 3.D.12 in the *Placer County General Plan*. Furthermore, by connecting to existing facilities and allowing for future connections to planned pedestrian facilities, the project does not interfere with existing pedestrian facilities on Douglas Boulevard, nor does it preclude the implementation of future pedestrian facilities.

Mitigation Measures

No mitigation is required.

Whitehawk II

Impact-12 – WH II: The proposed development of Whitehawk II would not interfere with existing or preclude the implementation of planned future pedestrian facilities. However, the proposed development of Whitehawk II may not be connected to existing pedestrian facilities, which would limit the ability for pedestrians to travel outside of Whitehawk II safely or comfortably. Therefore, this is considered a significant impact.

The proposed Whitehawk II project would provide an eight-foot wide sidewalk/bike trail along the south side of Douglas Boulevard along the project frontage. This would eventually connect to future sidewalk/trail segments immediately west and east of Whitehawk II, which are currently undeveloped. In addition, the proposed internal trail network on the project site would allow for future connections to adjacent undeveloped properties. Therefore, the proposed Whitehawk II project does not interfere with existing pedestrian facilities nor does it preclude the implementation of future pedestrian facilities.

The internal trail network of five-foot wide trails would provide pedestrian facilities within the project site and connect to the proposed sidewalk/bike trail along the project frontage on the south side of Douglas Boulevard. However, since this sidewalk/trail would not connect to existing facilities due to gaps along the adjacent undeveloped properties, there would be no connection to existing sidewalks east and west of the project on the south side of Douglas Boulevard. This would require pedestrians to walk along the southern shoulder of the high-speed Douglas Boulevard facility for a short distance until adjacent properties are developed. This would not be a safe or comfortable route for pedestrians, and therefore is considered a **significant** impact.

Mitigation Measures

Mitigation Measure-12: Provide a striped north-south crosswalk across Douglas Boulevard at the existing Seeno Avenue signal.

This measure would connect the proposed Whitehawk II project to existing sidewalk facilities on the north side of Douglas Boulevard. Pedestrian signal equipment is currently installed; therefore, the addition of the striped crosswalk will support safe and comfortable pedestrian travel from the project to destinations along Douglas Boulevard to the west and east, in addition to providing a pedestrian route from Whitehawk II towards Greenhills Elementary School. This north-south crosswalk is necessary to provide a pedestrian connection from Whitehawk II to destinations along Douglas Boulevard since there would be gaps between Whitehawk II and existing sidewalk facilities on the south side of Douglas Boulevard east and west of the project site.

Significance after Mitigation

With the provision of this crosswalk, a safe and comfortable pedestrian route would be established between the proposed Whitehawk II project and existing destinations to the north, west, and east. Therefore, this mitigation would make the project compliant with Policy 3.D.12 in the *Placer County General Plan*, and the project impact would be mitigated to a **less-than-significant** level after mitigation.

Transit Travel

Both the proposed Whitehawk I and Whitehawk II projects would have similar effects on transit travel, both as independent projects and when viewed in combination together. Therefore, a single impact statement on transit travel is provided below.

Impact-13 – WH I & II: The proposed development of Whitehawk I and II projects, both independently and collectively, would be consistent with *Placer County General Plan* policies related to transit travel, would not interfere with the operation of an existing transit facility, would not preclude the implementation of a planned future transit facility, or have a negative impact on transit operations. Therefore, this is a less-than-significant impact.

As noted in the existing conditions transit travel discussion, the nearest fixed-route transit service to the proposed Whitehawk I and II projects is on Sierra College Boulevard approximately ½-mile west of the Whitehawk I project site. No future transit service is planned for the immediate project area along Douglas Boulevard.

The proposed Whitehawk I and II projects would generate a limited demand for transit travel given their small size and lower density. The existing fixed-route service on City of Roseville Routes E, G, and L have limited ridership and therefore extra capacity to handle the few transit trips that could be generated by the proposed project.

Furthermore, the traffic operations results show that the proposed projects would have a less-than-significant impact on roadway and intersection operations along Sierra College Boulevard where existing transit service is provided. Therefore, the proposed project would not have a negative impact on transit operations, travel times, or circulation.

Mitigation Measures

No mitigation is required.

Project Construction

Both the proposed Whitehawk I and Whitehawk II projects would have similar transportation and traffic effects during their construction, both as independent projects and when viewed in combination together. Therefore, a single impact statement on project construction is provided below.

Impact-14 – WH I & II: The proposed development of Whitehawk I and II projects, both independently and collectively, would involve construction activities that could cause temporary impacts on transportation facilities, including degrading roadway pavement conditions, traffic operations, and causing conflicts with bicyclists and pedestrians. It could also require temporary traffic controls and lane closures when transporting certain building materials or constructing street improvements within the public right-of-way. This is considered a significant impact.

Most construction activity would occur on the proposed project sites. Construction access to the proposed project sites would occur from Douglas Boulevard at their proposed access points – approximately 500 feet east of Woodgrove Way and at Seeno Avenue for Whitehawk I and Whitehawk II, respectively. Construction trips would include construction employee trips to and from the project site as well as delivery trucks for materials and equipment.

In addition to construction activity on the project sites, certain construction activities would involve activity within the existing right-of-way on Douglas Boulevard. For example, the extension of the existing waterline on Douglas Boulevard and the improvements to the Douglas Boulevard / Seeno Avenue intersection for Whitehawk II would both require construction activity within the existing right-of-way of Douglas Boulevard.

Mitigation Measures

Mitigation Measure-14: Prior to the issuance of any grading or building permits, the project applicant shall prepare a Construction Traffic Management Plan (TMP) to the satisfaction of the Placer County Department of Public Works and Engineering / Surveying Division.

The Construction TMP shall include, but not be limited to, items such as:

- approved truck circulation routes/patterns;
- monitoring for roadbed damage and timing for completing repairs;
- preservation of safe and convenient passage for bicyclists and pedestrians through/around construction areas;
- methods for partial (i.e., single lane)/complete street closures (e.g., timing, signage, location and duration restrictions), if necessary;
- identification of detour routes for roadways subject to partial/complete street closures
- criteria for use of flaggers and other traffic controls;
- provide a point of contact for nearby residents to obtain construction information and have questions answered.

The Construction TMP should be developed such that the following performance standards are achieved throughout project construction.

1. Construction traffic should be minimized during a.m. and p.m. peak periods in which the adjacent street traffic on Douglas Boulevard is at its highest.
2. Any construction-related partial/complete closures of Douglas Boulevard east of Woodgrove Way (to accommodate the proposed waterline extension) or at Seeno Avenue (to accommodate improvements related to the proposed fourth-leg) should occur during off-peak periods and be accompanied with appropriate construction signage including detour routing.
3. Detour routing should be limited to County-maintained collector and arterial roadways, such as Eureka Road and Olive Ranch Road, and should include measures to minimize traffic increases on local residential roadways. This may include signage and law enforcement presence during partial/complete closures of Douglas Boulevard to discourage through traffic use of local residential roadways.
4. Roadways, sidewalks, crosswalks, and bicycle facilities shall be maintained clear of debris (e.g., rocks) that could otherwise impede travel and impact public safety

Significance after Mitigation

With the implementation of the Construction TMP (including the performance standards that must be achieved), the severity of construction-related transportation and traffic impacts would be mitigated to a **less-than-significant** level after mitigation.

Emergency Vehicle Access

Both the proposed Whitehawk I and Whitehawk II projects would have similar effects on emergency vehicle access, both as independent projects and when viewed in combination together. Therefore, a single impact statement on this subject is provided below.

Impact-15 – WH I & II: The proposed development of Whitehawk I and II projects, both independently and collectively, would provide multiple access points for emergency vehicles and would not significantly affect emergency vehicle travel times as a result of implementation. Therefore, this is a less-than-significant impact.

As noted in the project description, both Whitehawk I and Whitehawk II include proposed emergency vehicle access points in addition to their full access points on Douglas Boulevard. For Whitehawk I, an emergency vehicle access (EVA) route would be provided between the internal project roadway network and Chestnut Court in the Greyhawk subdivision southwest of the proposed project. This EVA route already exists from Chestnut Court to the western property line of Whitehawk I.

For Whitehawk II, an EVA route would be constructed from the internal project roadway network to Quartzite Circle to the east of the proposed project. The proposed project would construct a 20-foot unpaved EVA within a 25-foot easement from the eastern property line for approximately 500 feet east to Quartzite Circle to create this EVA route.

As noted in the traffic operations analysis, the proposed projects do not result in significant increases in delay to the study intersections in the study area. Therefore, emergency vehicle travel times would not be significantly affected.

Since the proposed project would provide multiple emergency vehicle access points and not significantly affect emergency vehicle travel times, the proposed projects would have a **less-than-significant** impact on emergency vehicle access.

Mitigation Measures

No mitigation is required.

Cumulative Impacts

Vehicle Travel

Vehicle trips generated by the proposed project would increase traffic volumes on study roadway segments and intersections, as described below.

Roadway Operations

Whitehawk I

Impact-16 – WH I: Vehicle trips generated by Whitehawk I in combination with background traffic from reasonably foreseeable projects would increase traffic volumes on study roadway segments under cumulative conditions. However, the project trips generated by Whitehawk I would not cause a study roadway segment to worsen from an acceptable LOS under cumulative no project conditions to an unacceptable LOS. Furthermore, these project trips would not increase traffic by more than 100 or more daily trips per lane for roadway segments that operate at an unacceptable LOS under cumulative no project conditions. Therefore, this is a less-than-significant impact.

The development of Whitehawk I would add vehicle trips to roadway segments operating at an unacceptable LOS under cumulative no project conditions. Of the segments operating at an unacceptable LOS, the project would add the greatest number of vehicle trips (200 daily trips) to the segment of Douglas Boulevard from Woodgrove Way/Quail Oaks Drive to Seeno Avenue. Since Douglas Boulevard is four lanes on this segment, the additional 170 daily vehicle trips are less than the 100 or more daily vehicle trips per lane threshold (i.e., 400 vehicle trips for this segment) identified in Placer County's significance criteria. All other segments that currently operate at an unacceptable LOS experience an increase of fewer than 200 vehicle trips across at least four travel lanes. Therefore, this is a **less-than-significant** impact.

Mitigation Measures

No mitigation is required.

Whitehawk II

<u>Impact-17 – WH II</u>: Vehicle trips generated by Whitehawk II in combination with background traffic from reasonably foreseeable projects would increase traffic volumes on study roadway segments under cumulative conditions. The project trips generated by Whitehawk II would cause Sierra College Boulevard from Douglas Boulevard to Renaissance Creek to worsen from an acceptable LOS C under cumulative no project conditions to an unacceptable LOS D. Furthermore, the project trips generated by Whitehawk II would increase traffic by more than 100 or more trips per lane for the roadway segment of Douglas Boulevard from Woodgrove Way/Quail Oaks Drive to Seeno Avenue, which currently operates at an unacceptable LOS without Whitehawk II. Therefore, this is considered a significant impact.

The development of Whitehawk II would add vehicle trips to study roadway segments. On the segment of Sierra College Boulevard from Douglas Boulevard to Renaissance Creek, these additional vehicle trips would degrade operations from an acceptable LOS C under cumulative no project conditions to an unacceptable LOS D. This is considered a **significant** impact.

Similarly, the development of Whitehawk II would add vehicle trips to study roadway segments that are forecasted to operate at an unacceptable LOS under cumulative no project conditions. Of the segments operating at an unacceptable LOS, the project would add the greatest number of vehicle trips (430 daily trips) to the segment of Douglas Boulevard from Woodgrove Way/Quail Oaks Drive to Seeno Avenue. Since Douglas Boulevard is four lanes on this segment, the additional 430 daily vehicle trips is slightly more than the 100 or more daily vehicle trips per lane threshold (i.e., 400 vehicle trips for this segment) identified in Placer County's significance criteria. Therefore, this would be considered a **significant** impact. All other segments that operate at an unacceptable LOS under cumulative no project conditions experience an increase of no more than 390 daily vehicle trips across at least four travel lanes; and are not significantly impacted.

<u>Mitigation Measures</u>

No feasible mitigation.

Widening Sierra College Boulevard from its current 6 lanes to 8 lanes on the segment between Douglas Boulevard and Renaissance Creek is not feasible due to existing development on both sides of the street. Furthermore, this widening is not consistent with the City of Roseville General Plan or Granite Bay Community Plan.

Widening Douglas Boulevard from 4 lanes to 6 lanes on the segment between Woodgrove Way/Quail Oaks Drive to Seeno Avenue would improve operations to LOS C. However, the Granite Bay Community Plan

Circulation Element establishes that Douglas Boulevard remain 4 lanes from Cavitt Stallman Road South to Auburn Folsom Road. The Granite Bay Community Plan Circulation Element also acknowledges that the community overwhelmingly supported no further widening of Douglas Boulevard. Based on recent conversations with County staff, this position of no further widening of Douglas Boulevard has not changed. Therefore, widening Douglas Boulevard from 4 lanes to 6 lanes is considered infeasible.

Significance after Mitigation

Since there is no feasible mitigation for these impacted segments, this impact would remain **significant-and-unavoidable**.

Whitehawk I & II

Impact-18 – WH I & II: Vehicle trips generated by a combination of Whitehawk I and II projects in addition to background traffic from reasonably foreseeable projects would increase traffic volumes on study roadway segments under cumulative conditions. These project trips generated by Whitehawk I and II would cause Sierra College Boulevard from Douglas Boulevard to Renaissance Creek to worsen from an acceptable LOS C under cumulative no project conditions to an unacceptable LOS D. Furthermore, these project trips would increase traffic by more than 100 or more daily trips per lane for the roadway segments of Douglas Boulevard from Cavitt Stallman Road South to Seeno Avenue, which currently operate at an unacceptable LOS under cumulative no project conditions. Therefore, this is a less-than-significant impact.

The development of Whitehawk I and II would add vehicle trips to study roadway segments. On the segment of Sierra College Boulevard from Douglas Boulevard to Renaissance Creek, these additional vehicle trips would degrade operations from an acceptable LOS C under cumulative no project conditions to an unacceptable LOS D. This is considered a **significant** impact.

Similarly, the development of Whitehawk I and II would add vehicle trips to roadway segments that are forecasted to operate at an unacceptable LOS under cumulative no project conditions. Of the segments operating at an unacceptable LOS, the travel generated from both projects combined would add 580 to 640 daily trips to the segments of Douglas Boulevard from Cavitt Stallman Road South to Seeno Avenue. Since Douglas Boulevard is four lanes on this segment, the additional 580 to 640 daily vehicle trips is more than the 100 or more daily vehicle trips per lane threshold (i.e., 400 vehicle trips for this segment) identified in Placer County's significance criteria. Therefore, this is considered a **significant** impact.

The segment of Douglas Boulevard from Sierra College Boulevard to Cavitt Stallman Road South would experience an increase of 530 ADT. This is less than 100 ADT per lane threshold since Douglas Boulevard is widened to six lanes on this segment under cumulative conditions. All other segments that operate at an

unacceptable LOS under cumulative no project conditions experience an increase of no more than 220 daily vehicle trips across at least four travel lanes; and are not significantly impacted.

Mitigation Measures

No feasible mitigation.

Widening Sierra College Boulevard from its current 6 lanes to 8 lanes on the segment between Douglas Boulevard and Renaissance Creek is not feasible due to existing development on both sides of the street. Furthermore, this widening is not consistent with the City of Roseville General Plan or Granite Bay Community Plan.

Widening Douglas Boulevard from 4 lanes to 6 lanes on the segment between Cavitt Stallman Road South to Seeno Avenue would improve operations to LOS C. However, the Granite Bay Community Plan Circulation Element establishes that Douglas Boulevard remain 4 lanes from Cavitt Stallman Road South to Auburn Folsom Road. The Granite Bay Community Plan Circulation Element also acknowledges that the community overwhelmingly supported no further widening of Douglas Boulevard. Based on recent conversations with County staff, this position of no further widening of Douglas Boulevard has not changed. Therefore, widening Douglas Boulevard from 4 lanes to 6 lanes is considered infeasible.

Significance after Mitigation

Since there is no feasible mitigation for these impacted segments, this impact would remain **significant-and-unavoidable**.

Intersection Operations

Whitehawk I

Impact-19 – WH I: Vehicle trips generated by Whitehawk I in combination with background traffic from reasonably foreseeable projects would increase traffic volumes at study intersections under cumulative conditions. However, these project trips would not cause operations to degrade from an acceptable LOS under cumulative no project conditions to an unacceptable LOS. These project trips would not cause a City of Roseville intersection operating at an unacceptable LOS under cumulative no project conditions to worsen by one or more service level. Furthermore, these project trips would not increase the average control delay at Placer County intersections that operate at an unacceptable LOS under cumulative no project condition. Therefore, this is a less-than-significant impact.

The development of Whitehawk I would add vehicle trips to study intersections operating at an unacceptable LOS under cumulative no project conditions. However, the incremental effect of these project

trips would not degrade the operations by a service level (i.e., LOS D to LOS E) at the two City of Roseville intersections – Sierra College Boulevard / Douglas Boulevard and Sierra College Boulevard / Eureka Road – which operate at an unacceptable LOS under cumulative no project conditions. Furthermore, the average control delay at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard would decrease during the a.m. and p.m. peak hours when compared to cumulative no project conditions. Therefore, this is a **less-than-significant** impact.

Mitigation Measures

No mitigation is required.

Whitehawk II

Impact-20 – WH II: Vehicle trips generated by Whitehawk II in combination with background traffic from reasonably foreseeable projects would increase traffic volumes at study intersections under cumulative conditions. However, these project trips would not cause operations to degrade from an acceptable LOS under cumulative no project conditions to an unacceptable LOS. These project trips would not cause a City of Roseville intersection operating at an unacceptable LOS under cumulative no project conditions to worsen by one or more service level. Furthermore, these project trips would not increase the average control delay by more than one second at Placer County intersections that operate at an unacceptable LOS under cumulative no project condition. Therefore, this is a less-than-significant impact.

The development of Whitehawk II would add vehicle trips to study intersections operating at an unacceptable LOS under cumulative no project conditions. However, the incremental effect of these project trips would not degrade the operations by a service level (i.e., LOS D to LOS E) at the two City of Roseville intersections – Sierra College Boulevard / Douglas Boulevard and Sierra College Boulevard / Eureka Road – which operate at an unacceptable LOS under cumulative no project conditions. Furthermore, the average control delay at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard would decrease during the a.m. and p.m. peak hours when compared to cumulative no project conditions. Therefore, this is a **less-than-significant** impact.

Mitigation Measures

No mitigation is required.

Whitehawk I & II

<u>Impact-21 – WH I & II</u>: Vehicle trips generated by a combination of Whitehawk I and II projects in addition to background traffic from reasonably foreseeable projects would increase traffic volumes at study intersections under cumulative conditions. However, these project trips would not cause operations to degrade from an acceptable LOS under cumulative no project conditions to an unacceptable LOS. These project trips would not cause a City of Roseville intersection operating at an unacceptable LOS under cumulative no project conditions to worsen by one or more service level. However, these project trips would increase the weighted average control delay by over 61 seconds at the Woodgrove Way/Quail Oaks Drive/Douglas Boulevard intersection, which would operate at an unacceptable LOS and meet the MUTCD traffic signal warrant under cumulative no project conditions. Therefore, this is a significant impact.

The development of Whitehawk I and II would add vehicle trips to study intersections operating at an unacceptable LOS under cumulative no project conditions. The increase in trips from Whitehawk I and II would cause an increase in average control delay at Woodgrove Way/Quail Oaks Drive / Douglas Boulevard by over 61 seconds compared to cumulative not project conditions during the a.m. peak hour. Since the weighted average control delay increases by more than 2.5 seconds during the a.m. peak hour and the intersection meets the MUTCD traffic signal warrant, this is a **significant** impact.

<u>Mitigation Measure-21</u>: Implement Mitigation Measure-6. Install a raised median at the Woodgrove Way/Quail Oaks Drive / Douglas Boulevard intersection to restrict access to left-in and right-in/right-out movements.

This measure would eliminate the northbound and southbound left-turn and through movements at the intersection, which would limit access to left-in and right-in/right-out movements only. The following summarizes alternatives routes that can accommodate displaced turn movements. The relatively low volume using the turn movements that will be displaced with implementation of this mitigation measure is an indication that alternative routes are available today for drivers that may want to use them but avoid them due to high delay. Consequently, implementation of traffic signal control as a mitigation, although warranted, is not appropriate given the low volume using these movements.

Displaced Movements				Alternative Routes	
Approach	Movement	Peak Hour Volume		Description	Out-of-Direction Travel
		AM	PM		
NB	Left	5	2	• NB right-turn at Woodgrove Way • EB U-turn at Seeno Avenue • WB Thru at Woodgrove Way	4,100 feet
	Thru	0	0	• NB right-turn at Woodgrove Way • EB Left-turn at Seeno Avenue OR • NB Right-turn at Woodgrove Way • EB U-turn at Seeno Avenue • WB Right-turn at Woodgrove Way	Up to 4,100 feet
SB	Left	0	0	• Rolling Oaks Drive to Seeno Avenue • SB Left-turn at Seeno Avenue	No Change
	Through	1	1	• Rolling Oaks Drive to Seeno Avenue • SB Right-turn at Seeno Avenue • WB Left-turn at Woodgrove Way	Up to 4,100 feet

Significance after Mitigation

With this improvement, the Woodgrove Way/Quail Oaks Drive / Douglas Boulevard would operate at LOS C during the a.m. peak hour. Therefore, the impact to the Woodgrove Way / Quail Oaks Drive / Douglas Boulevard intersection would be **less-than-significant** level after mitigation.

Appendix A:
Traffic Count Data

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-007 Sierra College Blvd & Douglas Blvd
Date : 5/18/2017

Unshifted Count = All Vehicles & Uturns

	Sierra College Blvd Southbound					Douglas Blvd Westbound					Sierra College Blvd Northbound					Douglas Blvd 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	Uturns Total
7:00	32	161	24	0	217	46	326	34	2	408	45	155	31	8	239	35	266	20	1	322	1186	11
7:15	37	176	35	0	248	30	318	26	1	375	70	196	33	6	305	33	267	42	2	344	1272	9
7:30	56	161	26	1	244	43	447	36	1	527	71	246	29	6	352	44	308	34	8	394	1517	16
7:45	72	167	58	0	297	62	395	30	2	489	133	226	29	9	397	42	261	61	3	367	1550	14
Total	197	665	143	1	1006	181	1486	126	6	1799	319	823	122	29	1293	154	1102	157	14	1427	5525	50
8:00	44	124	40	0	208	59	477	29	0	565	83	171	29	10	293	29	323	36	15	403	1469	25
8:15	35	129	47	0	211	59	356	13	0	428	118	168	38	8	332	34	264	41	9	348	1319	17
8:30	33	127	61	0	221	92	402	32	0	526	84	149	50	9	292	60	322	61	7	450	1489	16
8:45	54	161	36	1	252	73	358	28	1	460	101	204	51	19	375	36	271	47	9	363	1450	30
Total	166	541	184	1	892	283	1593	102	1	1979	386	692	168	46	1292	159	1180	185	40	1564	5727	88
16:00	58	148	44	1	251	94	373	45	1	513	95	212	49	14	370	79	394	69	23	565	1699	39
16:15	69	181	40	0	290	66	297	48	5	416	124	265	34	17	440	67	335	65	8	475	1621	30
16:30	48	165	45	0	258	57	341	49	1	448	117	226	40	12	395	62	420	63	7	552	1653	20
16:45	58	163	41	0	262	70	356	61	0	487	92	209	51	16	368	68	370	72	6	516	1633	22
Total	233	657	170	1	1061	287	1367	203	7	1864	428	912	174	59	1573	276	1519	269	44	2108	6606	111
17:00	73	197	42	1	313	74	340	61	2	477	94	189	55	18	356	100	419	76	12	607	1753	33
17:15	71	206	31	0	308	82	336	61	2	481	108	229	52	14	403	105	423	72	11	611	1803	27
17:30	45	199	34	0	278	78	322	55	2	457	88	249	48	16	401	85	377	61	7	530	1666	25
17:45	59	154	29	0	242	76	333	70	2	481	89	183	37	14	323	77	366	45	7	495	1541	23
Total	248	756	136	1	1141	310	1331	247	8	1896	379	850	192	62	1483	367	1585	254	37	2243	6763	108
Grand Total	844	2619	633	4	4100	1061	5777	678	22	7538	1512	3277	656	196	5641	956	5386	865	135	7342	24621	357
Apprch %	20.6%	63.9%	15.4%	0.1%		14.1%	76.6%	9.0%	0.3%		26.8%	58.1%	11.6%	3.5%		13.0%	73.4%	11.8%	1.8%			
Total %	3.4%	10.6%	2.6%	0.0%	16.7%	4.3%	23.5%	2.8%	0.1%	30.6%	6.1%	13.3%	2.7%	0.8%	22.9%	3.9%	21.9%	3.5%	0.5%	29.8%	100.0%	

AM PEAK HOUR	Sierra College Blvd Southbound					Douglas Blvd Westbound					Sierra College Blvd Northbound					Douglas Blvd 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																					
7:30	56	161	26	1	244	43	447	36	1	527	71	246	29	6	352	44	308	34	8	394	1517
7:45	72	167	58	0	297	62	395	30	2	489	133	226	29	9	397	42	261	61	3	367	1550
8:00	44	124	40	0	208	59	477	29	0	565	83	171	29	10	293	29	323	36	15	403	1469
8:15	35	129	47	0	211	59	356	13	0	428	118	168	38	8	332	34	264	41	9	348	1319
Total Volume	207	581	171	1	960	223	1675	108	3	2009	405	811	125	33	1374	149	1156	172	35	1512	5855
% App Total	21.6%	60.5%	17.8%	0.1%		11.1%	83.4%	5.4%	0.1%		29.5%	59.0%	9.1%	2.4%		9.9%	76.5%	11.4%	2.3%		
PHF	.719	.870	.737	.250	.808	.899	.878	.750	.375	.889	.761	.824	.822	.825	.865	.847	.895	.705	.583	.938	.944

PM PEAK HOUR	Sierra College Blvd Southbound					Douglas Blvd Westbound					Sierra College Blvd Northbound					Douglas Blvd 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 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	58	163	41	0	262	70	356	61	0	487	92	209	51	16	368	68	370	72	6	516	1633
17:00	73	197	42	1	313	74	340	61	2	477	94	189	55	18	356	100	419	76	12	607	1753
17:15	71	206	31	0	308	82	336	61	2	481	108	229	52	14	403	105	423	72	11	611	1803
17:30	45	199	34	0	278	78	322	55	2	457	88	249	48	16	401	85	377	61	7	530	1666
Total Volume	247	765	148	1	1161	304	1354	238	6	1902	382	876	206	64	1528	358	1589	281	36	2264	6855
% App Total	21.3%	65.9%	12.7%	0.1%		16.0%	71.2%	12.5%	0.3%		25.0%	57.3%	13.5%	4.2%		15.8%	70.2%	12.4%	1.6%		
PHF	.846	.928	.881	.250	.927	.927	.951	.975	.750	.976	.884	.880	.936	.889	.948	.852	.939	.924	.750	.926	.950

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-007 Sierra College Blvd & Douglas Blvd
Date : 5/18/2017

Bank 1 Count = Bikes & Peds

	Sierra College Blvd Southbound					Douglas Blvd Westbound					Sierra College Blvd Northbound					Douglas Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	0	0	0	1	0	3	1
7:15	0	2	0	1	2	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	4	1
7:30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0
7:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Total	0	2	0	1	2	0	3	0	0	3	0	4	0	0	4	0	0	0	1	0	9	2
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	1	1	3
8:15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3
8:30	0	1	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	2	2
8:45	1	3	0	0	4	0	1	0	0	1	0	1	0	0	1	0	0	0	2	0	6	2
Total	1	4	0	2	5	0	2	0	0	2	0	1	0	1	1	0	1	0	7	1	9	10
16:00	1	0	0	1	1	0	0	0	1	0	0	0	0	4	0	0	0	0	1	0	1	7
16:15	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	1	1	2	1
16:30	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	1	1
16:45	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2	0
Total	1	0	0	1	1	0	1	2	2	3	0	1	0	4	1	0	1	0	2	1	6	9
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
17:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:45	0	0	0	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	4
Total	0	0	0	2	0	0	0	0	3	0	0	0	0	1	0	0	0	0	1	0	0	7
Grand Total	2	6	0	6	8	0	6	2	5	8	0	6	0	6	6	0	2	0	11	2	24	28
Apprch %	25.0%	75.0%	0.0%			0.0%	75.0%	25.0%			0.0%	100.0%	0.0%			0.0%	100.0%	0.0%				
Total %	8.3%	25.0%	0.0%		33.3%	0.0%	25.0%	8.3%		33.3%	0.0%	25.0%	0.0%		25.0%	0.0%	8.3%	0.0%		8.3%	100.0%	

AM PEAK HOUR	Sierra College Blvd Southbound					Douglas Blvd Westbound					Sierra College Blvd Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
7:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	1	1
8:15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Total Volume	0	0	0	1	0	0	1	0	0	1	0	1	0	1	1	0	1	0	4	1	3
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	100.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.250	.000		.250	.000	.250	.000		.250	.000	.250	.000		.250	.750

PM PEAK HOUR	Sierra College Blvd Southbound					Douglas Blvd Westbound					Sierra College Blvd Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
17:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	1	0	0	0	2	0	2	0	0	0	1	0	0	0	0	1	0	2
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	100.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.250		.250	.000	.000	.000		.000	.000	.000	.000		.000	.250

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-007 Sierra College Blvd & Douglas Blvd
Date : 5/18/2017

Bank 2 Count = Heavy Trucks

	Sierra College Blvd Southbound					Douglas Blvd Westbound					Sierra College Blvd Northbound					Douglas Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	2	1	0	0	3	5	7	0	0	12	3	1	4	0	8	23	0
7:15	1	4	0	0	5	0	1	0	0	1	2	6	0	0	8	0	1	4	0	5	19	0
7:30	1	2	1	0	4	1	2	2	0	5	4	5	0	0	9	1	1	5	0	7	25	0
7:45	1	5	1	0	7	0	4	2	0	6	4	7	0	0	11	1	5	3	0	9	33	0
Total	3	11	2	0	16	3	8	4	0	15	15	25	0	0	40	5	8	16	0	29	100	0
8:00	0	2	0	0	2	1	1	1	0	3	4	6	0	0	10	0	4	2	0	6	21	0
8:15	0	5	1	0	6	1	6	0	0	7	9	8	1	0	18	0	5	4	0	9	40	0
8:30	1	5	1	0	7	0	6	0	0	6	6	2	1	0	9	1	4	5	0	10	32	0
8:45	0	8	1	0	9	0	4	0	0	4	5	9	0	0	14	1	3	3	0	7	34	0
Total	1	20	3	0	24	2	17	1	0	20	24	25	2	0	51	2	16	14	0	32	127	0
16:00	1	5	2	0	8	2	3	1	0	6	3	4	1	0	8	1	3	3	0	7	29	0
16:15	0	8	0	0	8	1	3	0	0	4	3	1	0	0	4	0	1	1	0	2	18	0
16:30	0	4	0	0	4	1	4	2	0	7	5	5	0	0	10	1	1	1	0	3	24	0
16:45	0	5	0	0	5	0	3	1	0	4	0	8	0	0	8	0	3	1	0	4	21	0
Total	1	22	2	0	25	4	13	4	0	21	11	18	1	0	30	2	8	6	0	16	92	0
17:00	0	7	2	0	9	0	3	0	0	3	1	5	0	0	6	0	2	1	0	3	21	0
17:15	0	2	0	0	2	0	2	0	0	2	5	4	1	0	10	0	2	2	0	4	18	0
17:30	0	5	1	0	6	2	1	1	0	4	1	2	0	0	3	0	2	2	0	4	17	0
17:45	0	1	0	0	1	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	4	0
Total	0	15	3	0	18	2	7	1	0	10	7	13	1	0	21	0	6	5	0	11	60	0
Grand Total	5	68	10	0	83	11	45	10	0	66	57	81	4	0	142	9	38	41	0	88	379	0
Apprch %	6.0%	81.9%	12.0%			16.7%	68.2%	15.2%			40.1%	57.0%	2.8%			10.2%	43.2%	46.6%				
Total %	1.3%	17.9%	2.6%		21.9%	2.9%	11.9%	2.6%		17.4%	15.0%	21.4%	1.1%		37.5%	2.4%	10.0%	10.8%		23.2%	100.0%	

AM PEAK HOUR	Sierra College Blvd Southbound					Douglas Blvd Westbound					Sierra College Blvd Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	1	2	1	0	4	1	2	2	0	5	4	5	0	0	9	1	1	5	0	7	25
7:45	1	5	1	0	7	0	4	2	0	6	4	7	0	0	11	1	5	3	0	9	33
8:00	0	2	0	0	2	1	1	1	0	3	4	6	0	0	10	0	4	2	0	6	21
8:15	0	5	1	0	6	1	6	0	0	7	9	8	1	0	18	0	5	4	0	9	40
Total Volume	2	14	3	0	19	3	13	5	0	21	21	26	1	0	48	2	15	14	0	31	119
% App Total	10.5%	73.7%	15.8%			14.3%	61.9%	23.8%			43.8%	54.2%	2.1%			6.5%	48.4%	45.2%			
PHF	.500	.700	.750		.679	.750	.542	.625		.750	.583	.813	.250		.667	.500	.750	.700		.861	.744

PM PEAK HOUR	Sierra College Blvd Southbound					Douglas Blvd Westbound					Sierra College Blvd Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	5	0	0	5	0	3	1	0	4	0	8	0	0	8	0	3	1	0	4	21
17:00	0	7	2	0	9	0	3	0	0	3	1	5	0	0	6	0	2	1	0	3	21
17:15	0	2	0	0	2	0	2	0	0	2	5	4	1	0	10	0	2	2	0	4	18
17:30	0	5	1	0	6	2	1	1	0	4	1	2	0	0	3	0	2	2	0	4	17
Total Volume	0	19	3	0	22	2	9	2	0	13	7	19	1	0	27	0	9	6	0	15	77
% App Total	0.0%	86.4%	13.6%			15.4%	69.2%	15.4%			25.9%	70.4%	3.7%			0.0%	60.0%	40.0%			
PHF	.000	.679	.375		.611	.250	.750	.500		.813	.350	.594	.250		.675	.000	.750	.750		.938	.917

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-008 Cavitt Stallman Rd & Douglas Blvd
Date : 5/18/2017

Unshifted Count = All Vehicles & Uturns

	Cavitt Stallman Rd Southbound					Douglas Blvd Westbound					Cavitt Stallman Rd Northbound					Douglas Blvd 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	Uturns Total
7:00	21	2	34	0	57	11	363	11	0	385	10	1	7	0	18	10	281	11	0	302	762	0
7:15	19	8	36	0	63	13	349	27	0	389	7	2	8	0	17	11	329	12	0	352	821	0
7:30	27	6	34	0	67	10	450	23	0	483	15	6	10	0	31	6	365	13	0	384	965	0
7:45	15	9	50	0	74	10	446	23	0	479	17	5	10	0	32	15	316	21	3	355	940	3
Total	82	25	154	0	261	44	1608	84	0	1736	49	14	35	0	98	42	1291	57	3	1393	3488	3
8:00	16	3	33	0	52	11	493	20	0	524	8	5	7	0	20	9	346	35	0	390	986	0
8:15	18	5	48	0	71	17	401	17	0	435	6	4	13	0	23	21	306	8	2	337	866	2
8:30	18	13	60	0	91	14	435	30	1	480	10	4	12	0	26	22	341	23	2	388	985	3
8:45	18	5	54	0	77	27	419	28	1	475	12	3	11	0	26	30	309	13	3	355	933	4
Total	70	26	195	0	291	69	1748	95	2	1914	36	16	43	0	95	82	1302	79	7	1470	3770	9
16:00	25	5	49	0	79	14	410	24	0	448	33	7	36	0	76	12	441	9	4	466	1069	4
16:15	29	4	34	0	67	11	373	18	0	402	27	11	20	0	58	15	396	10	3	424	951	3
16:30	23	5	47	0	75	14	396	19	1	430	20	5	29	0	54	7	455	7	6	475	1034	7
16:45	31	9	33	0	73	25	412	19	0	456	26	11	35	0	72	20	408	6	3	437	1038	3
Total	108	23	163	0	294	64	1591	80	1	1736	106	34	120	0	260	54	1700	32	16	1802	4092	17
17:00	25	8	44	0	77	17	416	20	0	453	30	7	30	0	67	16	489	8	4	517	1114	4
17:15	29	10	48	0	87	29	423	14	0	466	25	6	21	0	52	21	478	9	3	511	1116	3
17:30	25	9	41	0	75	14	394	16	0	424	28	9	19	0	56	15	422	0	3	440	995	3
17:45	26	8	38	0	72	23	413	13	0	449	16	6	31	0	53	12	410	2	2	426	1000	2
Total	105	35	171	0	311	83	1646	63	0	1792	99	28	101	0	228	64	1799	19	12	1894	4225	12
Grand Total	365	109	683	0	1157	260	6593	322	3	7178	290	92	299	0	681	242	6092	187	38	6559	15575	41
Apprch %	31.5%	9.4%	59.0%	0.0%		3.6%	91.9%	4.5%	0.0%		42.6%	13.5%	43.9%	0.0%		3.7%	92.9%	2.9%	0.6%			
Total %	2.3%	0.7%	4.4%	0.0%	7.4%	1.7%	42.3%	2.1%	0.0%	46.1%	1.9%	0.6%	1.9%	0.0%	4.4%	1.6%	39.1%	1.2%	0.2%	42.1%	100.0%	

AM PEAK HOUR	Cavitt Stallman Rd Southbound					Douglas Blvd Westbound					Cavitt Stallman Rd Northbound					Douglas Blvd 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 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	15	9	50	0	74	10	446	23	0	479	17	5	10	0	32	15	316	21	3	355	940
8:00	16	3	33	0	52	11	493	20	0	524	8	5	7	0	20	9	346	35	0	390	986
8:15	18	5	48	0	71	17	401	17	0	435	6	4	13	0	23	21	306	8	2	337	866
8:30	18	13	60	0	91	14	435	30	1	480	10	4	12	0	26	22	341	23	2	388	985
Total Volume	67	30	191	0	288	52	1775	90	1	1918	41	18	42	0	101	67	1309	87	7	1470	3777
% App Total	23.3%	10.4%	66.3%	0.0%		2.7%	92.5%	4.7%	0.1%		40.6%	17.8%	41.6%	0.0%		4.6%	89.0%	5.9%	0.5%		
PHF	.931	.577	.796	.000	.791	.765	.900	.750	.250	.915	.603	.900	.808	.000	.789	.761	.946	.621	.583	.942	.958

PM PEAK HOUR	Cavitt Stallman Rd Southbound					Douglas Blvd Westbound					Cavitt Stallman Rd Northbound					Douglas Blvd 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	23	5	47	0	75	14	396	19	1	430	20	5	29	0	54	7	455	7	6	475	1034
16:45	31	9	33	0	73	25	412	19	0	456	26	11	35	0	72	20	408	6	3	437	1038
17:00	25	8	44	0	77	17	416	20	0	453	30	7	30	0	67	16	489	8	4	517	1114
17:15	29	10	48	0	87	29	423	14	0	466	25	6	21	0	52	21	478	9	3	511	1116
Total Volume	108	32	172	0	312	85	1647	72	1	1805	101	29	115	0	245	64	1830	30	16	1940	4302
% App Total	34.6%	10.3%	55.1%	0.0%		4.7%	91.2%	4.0%	0.1%		41.2%	11.8%	46.9%	0.0%		3.3%	94.3%	1.5%	0.8%		
PHF	.871	.800	.896	.000	.897	.733	.973	.900	.250	.968	.842	.659	.821	.000	.851	.762	.936	.833	.667	.938	.964

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-008 Cavitt Stallman Rd & Douglas Blvd
Date : 5/18/2017

Bank 1 Count = Bikes & Peds

	Cavitt Stallman Rd Southbound					Douglas Blvd Westbound					Cavitt Stallman Rd Northbound					Douglas Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	0
7:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1
Total	1	0	0	0	1	0	2	1	0	3	0	0	0	0	0	0	0	0	1	0	4	1
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	2	2	1
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
Total	0	0	0	0	0	3	0	0	0	3	0	0	0	1	0	0	3	0	0	3	6	1
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
16:15	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	0	1	0	1	1	2	3
16:30	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
16:45	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0
Total	2	0	0	3	2	0	3	0	0	3	0	0	0	0	0	0	2	0	1	2	7	4
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	2
Grand Total	4	0	0	3	4	3	5	1	0	9	0	0	0	2	0	0	5	0	3	5	18	8
Apprch %	100.0%	0.0%	0.0%			33.3%	55.6%	11.1%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%				
Total %	22.2%	0.0%	0.0%		22.2%	16.7%	27.8%	5.6%		50.0%	0.0%	0.0%	0.0%		0.0%	0.0%	27.8%	0.0%		27.8%	100.0%	

AM PEAK HOUR	Cavitt Stallman Rd Southbound					Douglas Blvd Westbound					Cavitt Stallman Rd Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	2	2
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
Total Volume	0	0	0	0	0	3	1	0	0	4	0	0	0	1	0	0	2	0	1	2	6
% App Total	0.0%	0.0%	0.0%			75.0%	25.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.000	.000		.000	.250	.250	.000		.333	.000	.000	.000		.000	.000	.250	.000		.250	.500

PM PEAK HOUR	Cavitt Stallman Rd Southbound					Douglas Blvd Westbound					Cavitt Stallman Rd Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:45	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	2	0	0	1	2	0	2	0	0	2	0	0	0	1	0	0	0	0	0	0	4
% App Total	100.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.500	.000	.000		.500	.000	.250	.000		.250	.000	.000	.000		.000	.000	.000	.000		.000	.333

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-008 Cavitt Stallman Rd & Douglas Blvd
Date : 5/18/2017

Bank 2 Count = Heavy Trucks

	Cavitt Stallman Rd Southbound					Douglas Blvd Westbound					Cavitt Stallman Rd Northbound					Douglas Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	2	0	2	0	1	1	0	2	0	1	1	0	2	0	1	0	0	1	7	0
7:15	0	1	1	0	2	1	2	0	0	3	0	0	0	0	0	0	2	0	0	2	7	0
7:30	0	0	0	0	0	0	3	0	0	3	1	0	0	0	1	0	2	0	0	2	6	0
7:45	0	0	0	0	0	0	3	0	0	3	2	0	0	0	2	0	5	0	0	5	10	0
Total	0	1	3	0	4	1	9	1	0	11	3	1	1	0	5	0	10	0	0	10	30	0
8:00	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	6	0
8:15	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	7	0	0	7	14	0
8:30	0	0	0	0	0	0	5	1	0	6	0	0	1	0	1	0	7	1	0	8	15	0
8:45	3	0	0	0	3	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	12	0
Total	3	0	1	0	4	0	19	1	0	20	0	0	1	0	1	0	21	1	0	22	47	0
16:00	0	1	0	0	1	0	6	0	0	6	0	0	1	0	1	0	5	1	0	6	14	0
16:15	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	0	1	0	0	1	7	0
16:30	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	1	0	0	1	9	0
16:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4	0
Total	0	1	0	0	1	0	20	1	0	21	0	0	1	0	1	0	10	1	0	11	34	0
17:00	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5	0
17:15	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5	0
17:30	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4	0
17:45	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0
Total	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	0	5	0	0	5	16	0
Grand Total	3	2	4	0	9	1	59	3	0	63	3	1	3	0	7	0	46	2	0	48	127	0
Apprch %	33.3%	22.2%	44.4%			1.6%	93.7%	4.8%			42.9%	14.3%	42.9%			0.0%	95.8%	4.2%				
Total %	2.4%	1.6%	3.1%		7.1%	0.8%	46.5%	2.4%		49.6%	2.4%	0.8%	2.4%		5.5%	0.0%	36.2%	1.6%		37.8%	100.0%	

AM PEAK HOUR	Cavitt Stallman Rd Southbound					Douglas Blvd Westbound					Cavitt Stallman Rd Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	0	0	0	0	0	0	3	0	0	3	2	0	0	0	2	0	5	0	0	5	10
8:00	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	6
8:15	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	7	0	0	7	14
8:30	0	0	0	0	0	0	5	1	0	6	0	0	1	0	1	0	7	1	0	8	15
Total Volume	0	0	1	0	1	0	17	1	0	18	2	0	1	0	3	0	22	1	0	23	45
% App Total	0.0%	0.0%	100.0%			0.0%	94.4%	5.6%			66.7%	0.0%	33.3%			0.0%	95.7%	4.3%			
PHF	.000	.000	.250		.250	.000	.607	.250		.643	.250	.000	.250		.375	.000	.786	.250		.719	.750

PM PEAK HOUR	Cavitt Stallman Rd Southbound					Douglas Blvd Westbound					Cavitt Stallman Rd Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	1	0	0	1	9
16:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
17:00	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
17:15	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
Total Volume	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	0	8	0	0	8	23
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.469	.000		.469	.000	.000	.000		.000	.000	.667	.000		.667	.639

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-009 Quail Oaks Dr / Woodgrove Way & Douglas Blvd
Date : 5/18/2017

Unshifted Count = All Vehicles & Uturns

	Quail Oaks Dr / Woodgrove Way Southbound					Douglas Blvd Westbound					Quail Oaks Dr / Woodgrove Way Northbound					Douglas Blvd 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	Uturns Total
7:00	1	0	12	0	13	15	389	1	0	405	2	0	7	0	9	7	285	13	0	305	732	0
7:15	0	1	10	0	11	28	393	0	0	421	0	0	13	0	13	1	342	8	0	351	796	0
7:30	0	0	19	0	19	17	464	1	1	483	0	0	20	0	20	5	380	8	0	393	915	1
7:45	0	1	19	0	20	9	485	1	0	495	3	0	15	0	18	8	316	11	0	335	868	0
Total	1	2	60	0	63	69	1731	3	1	1804	5	0	55	0	60	21	1323	40	0	1384	3311	1
8:00	0	0	18	0	18	8	457	1	0	466	2	0	10	0	12	7	349	10	0	366	862	0
8:15	0	0	43	0	43	6	414	4	0	424	0	0	12	0	12	19	299	5	0	323	802	0
8:30	0	0	37	0	37	13	466	2	0	481	0	0	5	0	5	5	351	10	0	366	889	0
8:45	1	0	25	0	26	16	413	2	1	432	1	0	16	0	17	7	319	7	2	335	810	3
Total	1	0	123	0	124	43	1750	9	1	1803	3	0	43	0	46	38	1318	32	2	1390	3363	3
16:00	1	0	16	1	18	7	403	2	0	412	1	0	9	0	10	14	472	7	0	493	933	1
16:15	0	0	11	0	11	8	407	4	0	419	0	0	11	0	11	10	414	9	1	434	875	1
16:30	0	0	12	0	12	8	477	4	0	489	0	0	8	0	8	9	503	14	2	528	1037	2
16:45	0	0	11	0	11	9	449	1	0	459	0	0	4	0	4	10	463	12	0	485	959	0
Total	1	0	50	1	52	32	1736	11	0	1779	1	0	32	0	33	43	1852	42	3	1940	3804	4
17:00	0	1	7	0	8	10	447	0	0	457	1	0	12	0	13	8	510	11	1	530	1008	1
17:15	0	0	9	0	9	5	428	2	0	435	0	0	14	0	14	15	489	19	0	523	981	0
17:30	0	0	10	0	10	7	408	1	0	416	1	0	2	0	3	9	442	12	0	463	892	0
17:45	0	0	11	0	11	9	428	1	0	438	1	0	8	0	9	19	433	11	1	464	922	1
Total	0	1	37	0	38	31	1711	4	0	1746	3	0	36	0	39	51	1874	53	2	1980	3803	2
Grand Total	3	3	270	1	277	175	6928	27	2	7132	12	0	166	0	178	153	6367	167	7	6694	14281	10
Apprch %	1.1%	1.1%	97.5%	0.4%		2.5%	97.1%	0.4%	0.0%		6.7%	0.0%	93.3%	0.0%		2.3%	95.1%	2.5%	0.1%			
Total %	0.0%	0.0%	1.9%	0.0%	1.9%	1.2%	48.5%	0.2%	0.0%	49.9%	0.1%	0.0%	1.2%	0.0%	1.2%	1.1%	44.6%	1.2%	0.0%	46.9%	100.0%	

AM PEAK HOUR	Quail Oaks Dr / Woodgrove Way Southbound					Douglas Blvd Westbound					Quail Oaks Dr / Woodgrove Way Northbound					Douglas Blvd 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																					
7:30	0	0	19	0	19	17	464	1	1	483	0	0	20	0	20	5	380	8	0	393	915
7:45	0	1	19	0	20	9	485	1	0	495	3	0	15	0	18	8	316	11	0	335	868
8:00	0	0	18	0	18	8	457	1	0	466	2	0	10	0	12	7	349	10	0	366	862
8:15	0	0	43	0	43	6	414	4	0	424	0	0	12	0	12	19	299	5	0	323	802
Total Volume	0	1	99	0	100	40	1820	7	1	1868	5	0	57	0	62	39	1344	34	0	1417	3447
% App Total	0.0%	1.0%	99.0%	0.0%		2.1%	97.4%	0.4%	0.1%		8.1%	0.0%	91.9%	0.0%		2.8%	94.8%	2.4%	0.0%		
PHF	.000	.250	.576	.000	.581	.588	.938	.438	.250	.943	.417	.000	.713	.000	.775	.513	.884	.773	.000	.901	.942

PM PEAK HOUR	Quail Oaks Dr / Woodgrove Way Southbound					Douglas Blvd Westbound					Quail Oaks Dr / Woodgrove Way Northbound					Douglas Blvd 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	0	0	12	0	12	8	477	4	0	489	0	0	8	0	8	9	503	14	2	528	1037
16:45	0	0	11	0	11	9	449	1	0	459	0	0	4	0	4	10	463	12	0	485	959
17:00	0	1	7	0	8	10	447	0	0	457	1	0	12	0	13	8	510	11	1	530	1008
17:15	0	0	9	0	9	5	428	2	0	435	0	0	14	0	14	15	489	19	0	523	981
Total Volume	0	1	39	0	40	32	1801	7	0	1840	1	0	38	0	39	42	1965	56	3	2066	3985
% App Total	0.0%	2.5%	97.5%	0.0%		1.7%	97.9%	0.4%	0.0%		2.6%	0.0%	97.4%	0.0%		2.0%	95.1%	2.7%	0.1%		
PHF	.000	.250	.813	.000	.833	.800	.944	.438	.000	.941	.250	.000	.679	.000	.696	.700	.963	.737	.375	.975	.961

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-009 Quail Oaks Dr / Woodgrove Way & Douglas Blvd
Date : 5/18/2017

Bank 1 Count = Bikes & Peds

	Quail Oaks Dr / Woodgrove Way Southbound					Douglas Blvd Westbound					Quail Oaks Dr / Woodgrove Way Northbound					Douglas Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0
7:15	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	2	0
7:30	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
7:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Total	0	1	1	0	2	1	3	1	0	5	0	0	0	0	0	0	0	0	0	0	7	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
8:30	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8:45	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	2	0
Total	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	3	0	0	3	5	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
16:15	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2	0
16:30	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	2
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5	2
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	2	0
Grand Total	0	1	2	2	3	2	5	1	0	8	0	0	0	0	0	1	7	0	0	8	19	2
Apprch %	0.0%	33.3%	66.7%			25.0%	62.5%	12.5%			0.0%	0.0%	0.0%			12.5%	87.5%	0.0%				
Total %	0.0%	5.3%	10.5%		15.8%	10.5%	26.3%	5.3%		42.1%	0.0%	0.0%	0.0%		0.0%	5.3%	36.8%	0.0%		42.1%	100.0%	

AM PEAK HOUR	Quail Oaks Dr / Woodgrove Way Southbound					Douglas Blvd Westbound					Quail Oaks Dr / Woodgrove Way Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total Volume	0	1	1	0	2	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	5
% App Total	0.0%	50.0%	50.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.250	.250		.250	.000	.250	.000		.250	.000	.000	.000		.000	.000	.500	.000		.500	.625

PM PEAK HOUR	Quail Oaks Dr / Woodgrove Way Southbound					Douglas Blvd Westbound					Quail Oaks Dr / Woodgrove Way Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	3
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			33.3%	66.7%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.250	.250	.000		.375	.375

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-009 Quail Oaks Dr / Woodgrove Way & Douglas Blvd
Date : 5/18/2017

Bank 2 Count = Heavy Trucks

	Quail Oaks Dr / Woodgrove Way Southbound					Douglas Blvd Westbound					Quail Oaks Dr / Woodgrove Way Northbound					Douglas Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4	0
7:15	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	7	0
7:30	0	0	0	0	0	1	5	0	0	6	0	0	0	0	0	0	2	0	0	2	8	0
7:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5	0
Total	0	0	0	0	0	1	11	0	0	12	0	0	0	0	0	0	12	0	0	12	24	0
8:00	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4	0
8:15	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	1	7	0	0	8	15	0
8:30	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	7	0	0	7	13	0
8:45	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	7	1	0	8	14	0
Total	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	1	23	1	0	25	46	0
16:00	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	9	0
16:15	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	1	0	0	1	7	0
16:30	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	0	1	0	0	1	12	0
16:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2	0
Total	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	0	9	0	0	9	30	0
17:00	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	7	0
17:15	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5	0
17:30	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3	0
17:45	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3	0
Total	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	0	7	0	0	7	18	0
Grand Total	0	0	0	0	0	1	64	0	0	65	0	0	0	0	0	1	51	1	0	53	118	0
Apprch %	0.0%	0.0%	0.0%			1.5%	98.5%	0.0%			0.0%	0.0%	0.0%			1.9%	96.2%	1.9%				
Total %	0.0%	0.0%	0.0%		0.0%	0.8%	54.2%	0.0%		55.1%	0.0%	0.0%	0.0%		0.0%	0.8%	43.2%	0.8%		44.9%	100.0%	

AM PEAK HOUR	Quail Oaks Dr / Woodgrove Way Southbound					Douglas Blvd Westbound					Quail Oaks Dr / Woodgrove Way Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	0	0	0	0	1	5	0	0	6	0	0	0	0	0	0	2	0	0	2	8
7:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
8:00	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
8:15	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	1	7	0	0	8	15
Total Volume	0	0	0	0	0	1	15	0	0	16	0	0	0	0	0	1	15	0	0	16	32
% App Total	0.0%	0.0%	0.0%			6.3%	93.8%	0.0%			0.0%	0.0%	0.0%			6.3%	93.8%	0.0%			
PHF	.000	.000	.000		.000	.250	.536	.000		.571	.000	.000	.000		.000	.250	.536	.000		.500	.533

PM PEAK HOUR	Quail Oaks Dr / Woodgrove Way Southbound					Douglas Blvd Westbound					Quail Oaks Dr / Woodgrove Way Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	0	1	0	0	1	12
16:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
17:00	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	7
17:15	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
Total Volume	0	0	0	0	0	0	19	0	0	19	0	0	0	0	0	0	7	0	0	7	26
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.432	.000		.432	.000	.000	.000		.000	.000	.583	.000		.583	.542

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-010 Seeno Ave & Douglas Blvd
Date : 5/18/2017

Unshifted Count = All Vehicles & Uturns

	Seeno Ave Southbound					Douglas Blvd Westbound					Seeno Ave Northbound					Douglas Blvd 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	Uturns Total
7:00	5	0	22	0	27	0	387	4	0	391	0	0	0	0	0	3	278	0	0	281	699	0
7:15	13	0	16	0	29	0	415	1	0	416	0	0	0	0	0	2	358	0	0	360	805	0
7:30	5	0	14	0	19	0	485	5	1	491	0	0	0	0	0	5	398	0	0	403	913	1
7:45	8	0	10	0	18	0	472	6	1	479	0	0	0	0	0	13	318	0	1	332	829	2
Total	31	0	62	0	93	0	1759	16	2	1777	0	0	0	0	0	23	1352	0	1	1376	3246	3
8:00	7	0	7	0	14	0	464	25	0	489	0	0	0	0	0	17	337	0	0	354	857	0
8:15	30	0	15	0	45	0	449	46	0	495	0	0	0	0	0	22	303	0	0	325	865	0
8:30	34	0	21	0	55	0	433	6	0	439	0	0	0	0	0	4	350	0	0	354	848	0
8:45	6	0	10	0	16	0	399	2	0	401	0	0	0	0	0	9	322	0	0	331	748	0
Total	77	0	53	0	130	0	1745	79	0	1824	0	0	0	0	0	52	1312	0	0	1364	3318	0
16:00	18	0	8	0	26	0	395	7	1	403	0	0	0	0	0	10	476	0	0	486	915	1
16:15	0	0	6	0	6	0	423	5	2	430	0	0	0	0	0	2	425	0	1	428	864	3
16:30	11	0	5	0	16	0	434	5	0	439	0	0	0	0	0	9	471	0	2	482	937	2
16:45	8	0	2	0	10	0	431	7	0	438	0	0	0	0	0	7	441	0	2	450	898	2
Total	37	0	21	0	58	0	1683	24	3	1710	0	0	0	0	0	28	1813	0	5	1846	3614	8
17:00	7	0	9	0	16	0	449	5	0	454	0	0	0	0	0	7	515	0	1	523	993	1
17:15	5	0	12	0	17	0	426	2	0	428	0	0	0	0	0	2	496	0	1	499	944	1
17:30	6	0	8	0	14	0	423	4	0	427	0	0	0	0	0	13	434	0	0	447	888	0
17:45	7	0	5	0	12	0	441	5	1	447	0	0	0	0	0	4	444	0	0	448	907	1
Total	25	0	34	0	59	0	1739	16	1	1756	0	0	0	0	0	26	1889	0	2	1917	3732	3
Grand Total	170	0	170	0	340	0	6926	135	6	7067	0	0	0	0	0	129	6366	0	8	6503	13910	14
Apprch %	50.0%	0.0%	50.0%	0.0%		0.0%	98.0%	1.9%	0.1%		0.0%	0.0%	0.0%	0.0%		2.0%	97.9%	0.0%	0.1%			
Total %	1.2%	0.0%	1.2%	0.0%	2.4%	0.0%	49.8%	1.0%	0.0%	50.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	45.8%	0.0%	0.1%	46.8%	100.0%	

AM PEAK HOUR	Seeno Ave Southbound					Douglas Blvd Westbound					Seeno Ave Northbound					Douglas Blvd 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																					
7:30	5	0	14	0	19	0	485	5	1	491	0	0	0	0	0	5	398	0	0	403	913
7:45	8	0	10	0	18	0	472	6	1	479	0	0	0	0	0	13	318	0	1	332	829
8:00	7	0	7	0	14	0	464	25	0	489	0	0	0	0	0	17	337	0	0	354	857
8:15	30	0	15	0	45	0	449	46	0	495	0	0	0	0	0	22	303	0	0	325	865
Total Volume	50	0	46	0	96	0	1870	82	2	1954	0	0	0	0	0	57	1356	0	1	1414	3464
% App Total	52.1%	0.0%	47.9%	0.0%		0.0%	95.7%	4.2%	0.1%		0.0%	0.0%	0.0%	0.0%		4.0%	95.9%	0.0%	0.1%		
PHF	.417	.000	.767	.000	.533	.000	.964	.446	.500	.987	.000	.000	.000	.000	.000	.648	.852	.000	.250	.877	.949

PM PEAK HOUR	Seeno Ave Southbound					Douglas Blvd Westbound					Seeno Ave Northbound					Douglas Blvd 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	11	0	5	0	16	0	434	5	0	439	0	0	0	0	0	9	471	0	2	482	937
16:45	8	0	2	0	10	0	431	7	0	438	0	0	0	0	0	7	441	0	2	450	898
17:00	7	0	9	0	16	0	449	5	0	454	0	0	0	0	0	7	515	0	1	523	993
17:15	5	0	12	0	17	0	426	2	0	428	0	0	0	0	0	2	496	0	1	499	944
Total Volume	31	0	28	0	59	0	1740	19	0	1759	0	0	0	0	0	25	1923	0	6	1954	3772
% App Total	52.5%	0.0%	47.5%	0.0%		0.0%	98.9%	1.1%	0.0%		0.0%	0.0%	0.0%	0.0%		1.3%	98.4%	0.0%	0.3%		
PHF	.705	.000	.583	.000	.868	.000	.969	.679	.000	.969	.000	.000	.000	.000	.000	.694	.933	.000	.750	.934	.950

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-010 Seeno Ave & Douglas Blvd
Date : 5/18/2017

Bank 1 Count = Bikes & Peds

	Seeno Ave Southbound					Douglas Blvd Westbound					Seeno Ave Northbound					Douglas Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	1	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3	1
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Total	0	0	0	1	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	5	1
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2	1
Total	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4	1
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	0
16:15	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2	1
16:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:45	0	0	0	1	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3	1
Total	0	0	0	3	0	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	7	3
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Grand Total	1	0	0	5	1	0	9	0	0	9	0	0	0	0	0	0	7	0	0	7	17	5
Apprch %	100.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%				
Total %	5.9%	0.0%	0.0%		5.9%	0.0%	52.9%	0.0%		52.9%	0.0%	0.0%	0.0%		0.0%	0.0%	41.2%	0.0%		41.2%	100.0%	

AM PEAK HOUR	Seeno Ave Southbound					Douglas Blvd Westbound					Seeno Ave Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total Volume	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.500	.000		.500	.000	.000	.000		.000	.000	.500	.000		.500	1.000

PM PEAK HOUR	Seeno Ave Southbound					Douglas Blvd Westbound					Seeno Ave Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	1	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	2	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.250	.000		.250	.000	.000	.000		.000	.000	.250	.000		.250	.250

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-010 Seeno Ave & Douglas Blvd
Date : 5/18/2017

Bank 2 Count = Heavy Trucks

	Seeno Ave Southbound					Douglas Blvd Westbound					Seeno Ave Northbound					Douglas Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	4	0	0	4	6	0
7:15	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	1	0	0	1	6	0
7:30	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	8	0
7:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5	0
Total	0	0	0	0	0	0	11	1	0	12	0	0	0	0	0	0	13	0	0	13	25	0
8:00	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6	0
8:15	2	0	1	0	3	0	7	0	0	7	0	0	0	0	0	1	5	0	0	6	16	0
8:30	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	7	0	0	7	14	0
8:45	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	11	0
Total	2	0	1	0	3	0	21	0	0	21	0	0	0	0	0	1	22	0	0	23	47	0
16:00	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	5	0	0	5	8	0
16:15	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	6	0
16:30	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	2	0	0	2	11	0
16:45	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5	0
Total	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	0	9	0	0	9	30	0
17:00	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	5	0
17:15	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5	0
17:30	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4	0
17:45	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4	0
Total	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	0	7	0	0	7	18	0
Grand Total	2	0	1	0	3	0	64	1	0	65	0	0	0	0	0	1	51	0	0	52	120	0
Apprch %	66.7%	0.0%	33.3%			0.0%	98.5%	1.5%			0.0%	0.0%	0.0%			1.9%	98.1%	0.0%				
Total %	1.7%	0.0%	0.8%		2.5%	0.0%	53.3%	0.8%		54.2%	0.0%	0.0%	0.0%		0.0%	0.8%	42.5%	0.0%		43.3%	100.0%	

AM PEAK HOUR	Seeno Ave Southbound					Douglas Blvd Westbound					Seeno Ave Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	8
7:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
8:00	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6
8:15	2	0	1	0	3	0	7	0	0	7	0	0	0	0	0	1	5	0	0	6	16
Total Volume	2	0	1	0	3	0	14	0	0	14	0	0	0	0	0	1	17	0	0	18	35
% App Total	66.7%	0.0%	33.3%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			5.6%	94.4%	0.0%			
PHF	.250	.000	.250		.250	.000	.500	.000		.500	.000	.000	.000		.000	.250	.850	.000		.750	.547

PM PEAK HOUR	Seeno Ave Southbound					Douglas Blvd Westbound					Seeno Ave Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	2	0	0	2	11
16:45	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
17:00	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	5
17:15	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
Total Volume	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	0	9	0	0	9	26
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.472	.000		.472	.000	.000	.000		.000	.000	.563	.000		.563	.591

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-012 Barton Rd & Douglas Blvd
Date : 5/18/2017

Unshifted Count = All Vehicles & Uturns

	Barton Rd Southbound					Douglas Blvd Westbound					Barton Rd Northbound					Douglas Blvd 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	Uturns Total
7:00	29	28	10	0	67	40	309	31	0	380	47	7	7	0	61	2	235	22	1	260	768	1
7:15	31	52	13	0	96	65	354	22	0	441	38	18	11	0	67	6	325	37	0	368	972	0
7:30	42	25	8	0	75	26	405	31	0	462	70	36	24	0	130	5	316	36	2	359	1026	2
7:45	24	17	6	0	47	19	422	31	0	472	65	25	30	0	120	11	284	28	4	327	966	4
Total	126	122	37	0	285	150	1490	115	0	1755	220	86	72	0	378	24	1160	123	7	1314	3732	7
8:00	40	22	7	1	70	23	383	30	1	437	42	19	11	0	72	10	262	29	3	304	883	5
8:15	38	27	15	0	80	17	387	37	0	441	49	21	17	0	87	14	275	45	0	334	942	0
8:30	30	18	11	0	59	28	388	37	0	453	44	21	15	0	80	10	318	43	1	372	964	1
8:45	28	21	5	0	54	26	293	34	0	353	39	13	23	0	75	11	259	34	1	305	787	1
Total	136	88	38	1	263	94	1451	138	1	1684	174	74	66	0	314	45	1114	151	5	1315	3576	7
16:00	35	21	9	0	65	18	336	37	0	391	32	19	24	0	75	11	372	57	0	440	971	0
16:15	34	18	10	0	62	22	338	50	2	412	28	17	26	0	71	14	347	62	0	423	968	2
16:30	30	18	15	0	63	26	391	38	2	457	36	21	24	0	81	19	390	41	0	450	1051	2
16:45	35	27	12	0	74	14	362	33	2	411	31	10	34	0	75	7	365	51	0	423	983	2
Total	134	84	46	0	264	80	1427	158	6	1671	127	67	108	0	302	51	1474	211	0	1736	3973	6
17:00	34	17	18	0	69	21	390	44	2	457	34	22	23	0	79	5	414	51	4	474	1079	6
17:15	48	28	11	0	87	19	360	50	6	435	31	22	21	0	74	10	398	56	0	464	1060	6
17:30	50	34	8	0	92	27	368	42	0	437	27	18	20	0	65	11	359	53	5	428	1022	5
17:45	26	19	11	0	56	33	381	47	1	462	39	14	16	0	69	11	357	50	0	418	1005	1
Total	158	98	48	0	304	100	1499	183	9	1791	131	76	80	0	287	37	1528	210	9	1784	4166	18
Grand Total	554	392	169	1	1116	424	5867	594	16	6901	652	303	326	0	1281	157	5276	695	21	6149	15447	38
Apprch %	49.6%	35.1%	15.1%	0.1%		6.1%	85.0%	8.6%	0.2%		50.9%	23.7%	25.4%	0.0%		2.6%	85.8%	11.3%	0.3%			
Total %	3.6%	2.5%	1.1%	0.0%	7.2%	2.7%	38.0%	3.8%	0.1%	44.7%	4.2%	2.0%	2.1%	0.0%	8.3%	1.0%	34.2%	4.5%	0.1%	39.8%	100.0%	

AM PEAK HOUR	Barton Rd Southbound					Douglas Blvd Westbound					Barton Rd Northbound					Douglas Blvd 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																					
7:15	31	52	13	0	96	65	354	22	0	441	38	18	11	0	67	6	325	37	0	368	972
7:30	42	25	8	0	75	26	405	31	0	462	70	36	24	0	130	5	316	36	2	359	1026
7:45	24	17	6	0	47	19	422	31	0	472	65	25	30	0	120	11	284	28	4	327	966
8:00	40	22	7	1	70	23	383	30	1	437	42	19	11	0	72	10	262	29	3	304	883
Total Volume	137	116	34	1	288	133	1564	114	1	1812	215	98	76	0	389	32	1187	130	9	1358	3847
% App Total	47.6%	40.3%	11.8%	0.3%		7.3%	86.3%	6.3%	0.1%		55.3%	25.2%	19.5%	0.0%		2.4%	87.4%	9.6%	0.7%		
PHF	.815	.558	.654	.250	.750	.512	.927	.919	.250	.960	.768	.681	.633	.000	.748	.727	.913	.878	.563	.923	.937

PM PEAK HOUR	Barton Rd Southbound					Douglas Blvd Westbound					Barton Rd Northbound					Douglas Blvd 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	30	18	15	0	63	26	391	38	2	457	36	21	24	0	81	19	390	41	0	450	1051
16:45	35	27	12	0	74	14	362	33	2	411	31	10	34	0	75	7	365	51	0	423	983
17:00	34	17	18	0	69	21	390	44	2	457	34	22	23	0	79	5	414	51	4	474	1079
17:15	48	28	11	0	87	19	360	50	6	435	31	22	21	0	74	10	398	56	0	464	1060
Total Volume	147	90	56	0	293	80	1503	165	12	1760	132	75	102	0	309	41	1567	199	4	1811	4173
% App Total	50.2%	30.7%	19.1%	0.0%		4.5%	85.4%	9.4%	0.7%		42.7%	24.3%	33.0%	0.0%		2.3%	86.5%	11.0%	0.2%		
PHF	.766	.804	.778	.000	.842	.769	.961	.825	.500	.963	.917	.852	.750	.000	.954	.539	.946	.888	.250	.955	.967

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-012 Barton Rd & Douglas Blvd
Date : 5/18/2017

Bank 1 Count = Bikes & Peds

	Barton Rd Southbound					Douglas Blvd Westbound					Barton Rd Northbound					Douglas Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	4	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1
7:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Total	0	1	0	1	1	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	6	1
8:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	3	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	3	0
Total	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	2	1	0	3	7	0
16:00	0	2	0	1	2	0	0	0	0	0	0	1	0	0	1	0	1	1	0	2	5	1
16:15	0	1	0	0	1	0	1	1	0	2	0	1	0	0	1	0	0	0	0	0	4	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
16:45	0	0	0	0	0	1	0	2	0	3	2	2	0	0	4	0	0	1	0	1	8	0
Total	0	3	0	1	3	1	1	3	0	5	2	4	0	0	6	0	2	2	0	4	18	1
17:00	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
17:45	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Total	1	0	0	1	1	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	3	1
Grand Total	1	7	0	3	8	1	5	4	0	10	2	5	0	0	7	0	6	3	0	9	34	3
Apprch %	12.5%	87.5%	0.0%			10.0%	50.0%	40.0%			28.6%	71.4%	0.0%			0.0%	66.7%	33.3%				
Total %	2.9%	20.6%	0.0%		23.5%	2.9%	14.7%	11.8%		29.4%	5.9%	14.7%	0.0%		20.6%	0.0%	17.6%	8.8%		26.5%	100.0%	

AM PEAK HOUR	Barton Rd Southbound					Douglas Blvd Westbound					Barton Rd Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	1	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
% App Total	0.0%	100.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.250	.000		.250	.000	.500	.000		.500	.000	.000	.000		.000	.000	.000	.000		.000	.750

PM PEAK HOUR	Barton Rd Southbound					Douglas Blvd Westbound					Barton Rd Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
16:45	0	0	0	0	0	1	0	2	0	3	2	2	0	0	4	0	0	1	0	1	8
17:00	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	1	0	1	0	3	0	4	2	2	0	0	4	0	1	1	0	2	10
% App Total	0.0%	0.0%	0.0%			25.0%	0.0%	75.0%			50.0%	50.0%	0.0%			0.0%	50.0%	50.0%			
PHF	.000	.000	.000		.000	.250	.000	.375		.333	.250	.250	.000		.250	.000	.250	.250		.500	.313

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-012 Barton Rd & Douglas Blvd
Date : 5/18/2017

Bank 2 Count = Heavy Trucks

	Barton Rd Southbound					Douglas Blvd Westbound					Barton Rd Northbound					Douglas Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	1	1	0	0	2	0	0	1	0	1	0	1	3	0	4	7	0
7:15	0	0	0	0	0	0	4	0	0	4	1	1	0	0	2	0	2	0	0	2	8	0
7:30	0	0	1	0	1	1	2	0	0	3	0	2	1	0	3	0	3	0	0	3	10	0
7:45	0	1	0	0	1	1	2	0	0	3	1	0	1	0	2	0	6	0	0	6	12	0
Total	0	1	1	0	2	3	9	0	0	12	2	3	3	0	8	0	12	3	0	15	37	0
8:00	2	1	1	0	4	1	5	3	0	9	0	0	0	0	0	2	3	1	0	6	19	0
8:15	2	0	0	0	2	0	3	0	0	3	1	0	1	0	2	1	6	1	0	8	15	0
8:30	0	1	1	0	2	1	6	0	0	7	1	0	2	0	3	0	6	1	0	7	19	0
8:45	0	2	0	0	2	1	3	0	0	4	0	0	0	0	0	0	5	0	0	5	11	0
Total	4	4	2	0	10	3	17	3	0	23	2	0	3	0	5	3	20	3	0	26	64	0
16:00	1	1	0	0	2	0	1	0	0	1	0	0	0	0	0	2	2	0	0	4	7	0
16:15	1	1	1	0	3	2	5	1	0	8	1	0	0	0	1	1	1	0	0	2	14	0
16:30	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	0	2	0	0	2	7	0
16:45	0	0	2	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4	0
Total	2	2	3	0	7	3	12	1	0	16	1	0	0	0	1	3	5	0	0	8	32	0
17:00	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4	0
17:15	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	5	0
17:30	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	1	1	0	2	5	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
Total	1	0	1	0	2	0	6	0	0	6	0	0	0	0	0	0	6	1	0	7	15	0
Grand Total	7	7	7	0	21	9	44	4	0	57	5	3	6	0	14	6	43	7	0	56	148	0
Apprch %	33.3%	33.3%	33.3%			15.8%	77.2%	7.0%			35.7%	21.4%	42.9%			10.7%	76.8%	12.5%				
Total %	4.7%	4.7%	4.7%		14.2%	6.1%	29.7%	2.7%		38.5%	3.4%	2.0%	4.1%		9.5%	4.1%	29.1%	4.7%		37.8%	100.0%	

AM PEAK HOUR	Barton Rd Southbound					Douglas Blvd Westbound					Barton Rd Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	0	0	0	0	0	4	0	0	4	1	1	0	0	2	0	2	0	0	2	8
7:30	0	0	1	0	1	1	2	0	0	3	0	2	1	0	3	0	3	0	0	3	10
7:45	0	1	0	0	1	1	2	0	0	3	1	0	1	0	2	0	6	0	0	6	12
8:00	2	1	1	0	4	1	5	3	0	9	0	0	0	0	0	2	3	1	0	6	19
Total Volume	2	2	2	0	6	3	13	3	0	19	2	3	2	0	7	2	14	1	0	17	49
% App Total	33.3%	33.3%	33.3%			15.8%	68.4%	15.8%			28.6%	42.9%	28.6%			11.8%	82.4%	5.9%			
PHF	.250	.500	.500		.375	.750	.650	.250		.528	.500	.375	.500		.583	.250	.583	.250		.708	.645

PM PEAK HOUR	Barton Rd Southbound					Douglas Blvd Westbound					Barton Rd Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	0	2	0	0	2	7
16:45	0	0	2	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
17:00	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4
17:15	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	5
Total Volume	1	0	2	0	3	1	10	0	0	11	0	0	0	0	0	0	6	0	0	6	20
% App Total	33.3%	0.0%	66.7%			9.1%	90.9%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.250	.000	.250		.375	.250	.625	.000		.550	.000	.000	.000		.000	.000	.500	.000		.500	.714

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-013 Auburn-Folsom Rd & Douglas Blvd
Date : 5/18/2017

Unshifted Count = All Vehicles & Uturns

	Auburn-Folsom Rd Southbound					Douglas Blvd Westbound					Auburn-Folsom Rd Northbound					Douglas Blvd 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	Uturns Total
7:00	16	135	42	0	193	22	69	10	0	101	257	78	9	0	344	20	19	212	0	251	889	0
7:15	20	167	69	0	256	23	64	27	0	114	259	75	12	0	346	27	24	260	0	311	1027	0
7:30	14	177	57	0	248	21	64	18	0	103	299	85	14	0	398	24	34	306	0	364	1113	0
7:45	23	121	64	0	208	13	64	24	0	101	326	101	7	0	434	49	32	246	0	327	1070	0
Total	73	600	232	0	905	79	261	79	0	419	1141	339	42	0	1522	120	109	1024	0	1253	4099	0
8:00	23	147	69	0	239	17	59	27	0	103	288	80	9	0	377	36	35	210	0	281	1000	0
8:15	23	135	68	0	226	20	65	16	0	101	273	98	12	0	383	35	53	194	0	282	992	0
8:30	26	112	61	0	199	23	56	20	0	99	279	74	4	0	357	31	50	219	0	300	955	0
8:45	24	94	58	0	176	21	59	22	0	102	206	85	11	0	302	41	49	206	0	296	876	0
Total	96	488	256	0	840	81	239	85	0	405	1046	337	36	0	1419	143	187	829	0	1159	3823	0
16:00	28	109	57	0	194	15	45	23	0	83	269	165	17	0	451	52	87	220	0	359	1087	0
16:15	31	100	43	0	174	23	61	25	0	109	290	155	18	0	463	51	70	259	0	380	1126	0
16:30	30	115	57	0	202	15	63	24	0	102	303	182	21	0	506	45	59	284	0	388	1198	0
16:45	34	94	45	0	173	19	57	27	0	103	270	152	19	0	441	58	72	259	0	389	1106	0
Total	123	418	202	0	743	72	226	99	0	397	1132	654	75	0	1861	206	288	1022	0	1516	4517	0
17:00	26	119	42	0	187	15	61	24	0	100	292	170	18	0	480	60	64	281	0	405	1172	0
17:15	21	112	57	0	190	8	54	23	0	85	311	185	22	0	518	48	74	284	0	406	1199	0
17:30	32	129	53	0	214	21	51	23	0	95	269	144	22	0	435	64	68	264	0	396	1140	0
17:45	28	88	44	0	160	20	63	18	0	101	320	163	18	0	501	56	68	249	0	373	1135	0
Total	107	448	196	0	751	64	229	88	0	381	1192	662	80	0	1934	228	274	1078	0	1580	4646	0
Grand Total	399	1954	886	0	3239	296	955	351	0	1602	4511	1992	233	0	6736	697	858	3953	0	5508	17085	0
Apprch %	12.3%	60.3%	27.4%	0.0%		18.5%	59.6%	21.9%	0.0%		67.0%	29.6%	3.5%	0.0%		12.7%	15.6%	71.8%	0.0%			
Total %	2.3%	11.4%	5.2%	0.0%	19.0%	1.7%	5.6%	2.1%	0.0%	9.4%	26.4%	11.7%	1.4%	0.0%	39.4%	4.1%	5.0%	23.1%	0.0%	32.2%	100.0%	

AM PEAK HOUR	Auburn-Folsom Rd Southbound					Douglas Blvd Westbound					Auburn-Folsom Rd Northbound					Douglas Blvd 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																					
7:15	20	167	69	0	256	23	64	27	0	114	259	75	12	0	346	27	24	260	0	311	1027
7:30	14	177	57	0	248	21	64	18	0	103	299	85	14	0	398	24	34	306	0	364	1113
7:45	23	121	64	0	208	13	64	24	0	101	326	101	7	0	434	49	32	246	0	327	1070
8:00	23	147	69	0	239	17	59	27	0	103	288	80	9	0	377	36	35	210	0	281	1000
Total Volume	80	612	259	0	951	74	251	96	0	421	1172	341	42	0	1555	136	125	1022	0	1283	4210
% App Total	8.4%	64.4%	27.2%	0.0%		17.6%	59.6%	22.8%	0.0%		75.4%	21.9%	2.7%	0.0%		10.6%	9.7%	79.7%	0.0%		
PHF	.870	.864	.938	.000	.929	.804	.980	.889	.000	.923	.899	.844	.750	.000	.896	.694	.893	.835	.000	.881	.946

PM PEAK HOUR	Auburn-Folsom Rd Southbound					Douglas Blvd Westbound					Auburn-Folsom Rd Northbound					Douglas Blvd 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	30	115	57	0	202	15	63	24	0	102	303	182	21	0	506	45	59	284	0	388	1198
16:45	34	94	45	0	173	19	57	27	0	103	270	152	19	0	441	58	72	259	0	389	1106
17:00	26	119	42	0	187	15	61	24	0	100	292	170	18	0	480	60	64	281	0	405	1172
17:15	21	112	57	0	190	8	54	23	0	85	311	185	22	0	518	48	74	284	0	406	1199
Total Volume	111	440	201	0	752	57	235	98	0	390	1176	689	80	0	1945	211	269	1108	0	1588	4675
% App Total	14.8%	58.5%	26.7%	0.0%		14.6%	60.3%	25.1%	0.0%		60.5%	35.4%	4.1%	0.0%		13.3%	16.9%	69.8%	0.0%		
PHF	.816	.924	.882	.000	.931	.750	.933	.907	.000	.947	.945	.931	.909	.000	.939	.879	.909	.975	.000	.978	.975

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-013 Auburn-Folsom Rd & Douglas Blvd
Date : 5/18/2017

Bank 1 Count = Bikes & Peds

	Auburn-Folsom Rd Southbound					Douglas Blvd Westbound					Auburn-Folsom Rd Northbound					Douglas Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0
7:15	0	3	0	0	3	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	5	0
7:30	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1
7:45	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Total	1	3	0	0	4	0	1	0	0	1	2	0	0	0	2	0	0	1	1	1	8	1
8:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	2
Total	0	1	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	1	1	1	2	3
16:00	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	4	0
16:15	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0	0	0	0	2	1
16:30	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	1
16:45	0	0	1	0	1	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	3	0
Total	1	1	1	1	3	0	0	1	1	1	3	0	0	0	3	0	4	0	0	4	11	2
17:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0
17:15	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	3
17:30	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	4	0
17:45	0	0	0	0	0	0	0	1	0	1	0	1	1	0	2	0	0	1	0	1	4	0
Total	0	2	0	1	2	0	1	1	0	2	0	2	2	1	4	0	1	1	1	2	10	3
Grand Total	2	7	1	2	10	0	2	2	2	4	5	2	2	2	9	0	5	3	3	8	31	9
Apprch %	20.0%	70.0%	10.0%			0.0%	50.0%	50.0%			55.6%	22.2%	22.2%			0.0%	62.5%	37.5%				
Total %	6.5%	22.6%	3.2%		32.3%	0.0%	6.5%	6.5%		12.9%	16.1%	6.5%	6.5%		29.0%	0.0%	16.1%	9.7%		25.8%	100.0%	

AM PEAK HOUR	Auburn-Folsom Rd Southbound					Douglas Blvd Westbound					Auburn-Folsom Rd Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	3	0	0	3	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	5
7:30	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1
7:45	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	3	0	0	4	0	1	0	1	1	1	0	0	0	1	0	0	1	1	1	7
% App Total	25.0%	75.0%	0.0%			0.0%	100.0%	0.0%			100.0%	0.0%	0.0%			0.0%	0.0%	100.0%			
PHF	.250	.250	.000		.333	.000	.250	.000		.250	.250	.000	.000		.250	.000	.000	.250		.250	.350

PM PEAK HOUR	Auburn-Folsom Rd Southbound					Douglas Blvd Westbound					Auburn-Folsom Rd Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
16:45	0	0	1	0	1	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	3
17:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
17:15	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
Total Volume	0	2	1	2	3	0	0	0	0	0	2	0	1	1	3	0	1	0	1	1	7
% App Total	0.0%	66.7%	33.3%			0.0%	0.0%	0.0%			66.7%	0.0%	33.3%			0.0%	100.0%	0.0%			
PHF	.000	.500	.250		.750	.000	.000	.000		.000	.250	.000	.250		.375	.000	.250	.000		.250	.583

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-013 Auburn-Folsom Rd & Douglas Blvd
Date : 5/18/2017

Bank 2 Count = Heavy Trucks

	Auburn-Folsom Rd Southbound					Douglas Blvd Westbound					Auburn-Folsom Rd Northbound					Douglas Blvd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	1	0	0	1	0	1	0	0	1	2	0	0	0	2	0	1	0	0	1	5	0
7:15	2	1	1	0	4	0	1	3	0	4	1	3	0	0	4	0	0	2	0	2	14	0
7:30	1	1	0	0	2	0	2	0	0	2	0	1	1	0	2	1	0	1	0	2	8	0
7:45	0	3	2	0	5	0	0	2	0	2	3	2	0	0	5	2	1	5	0	8	20	0
Total	3	6	3	0	12	0	4	5	0	9	6	6	1	0	13	3	2	8	0	13	47	0
8:00	0	0	4	0	4	0	0	1	0	1	4	1	0	0	5	0	0	3	0	3	13	0
8:15	0	1	0	0	1	0	0	0	0	0	2	2	0	0	4	3	3	3	0	9	14	0
8:30	2	3	1	0	6	0	0	1	0	1	2	3	0	0	5	0	1	4	0	5	17	0
8:45	0	2	2	0	4	1	2	0	0	3	0	2	0	0	2	1	0	3	0	4	13	0
Total	2	6	7	0	15	1	2	2	0	5	8	8	0	0	16	4	4	13	0	21	57	0
16:00	0	1	0	0	1	0	1	1	0	2	0	1	0	0	1	2	0	4	0	6	10	0
16:15	0	1	2	0	3	0	2	0	0	2	4	3	0	0	7	0	0	1	0	1	13	0
16:30	0	1	3	0	4	0	1	0	0	1	2	3	0	0	5	0	1	1	0	2	12	0
16:45	0	1	0	0	1	1	0	0	0	1	1	1	1	0	3	0	0	0	0	0	5	0
Total	0	4	5	0	9	1	4	1	0	6	7	8	1	0	16	2	1	6	0	9	40	0
17:00	0	1	2	0	3	1	1	1	0	3	1	1	2	0	4	0	0	1	0	1	11	0
17:15	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	1	2	0	3	6	0
17:30	0	0	0	0	0	1	0	0	0	1	2	2	1	0	5	0	0	2	0	2	8	0
17:45	0	1	0	0	1	0	0	1	0	1	0	1	0	0	1	0	0	2	0	2	5	0
Total	0	3	2	0	5	2	1	2	0	5	3	6	3	0	12	0	1	7	0	8	30	0
Grand Total	5	19	17	0	41	4	11	10	0	25	24	28	5	0	57	9	8	34	0	51	174	0
Apprch %	12.2%	46.3%	41.5%			16.0%	44.0%	40.0%			42.1%	49.1%	8.8%			17.6%	15.7%	66.7%				
Total %	2.9%	10.9%	9.8%		23.6%	2.3%	6.3%	5.7%		14.4%	13.8%	16.1%	2.9%		32.8%	5.2%	4.6%	19.5%		29.3%	100.0%	

AM PEAK HOUR	Auburn-Folsom Rd Southbound					Douglas Blvd Westbound					Auburn-Folsom Rd Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	2	1	1	0	4	0	1	3	0	4	1	3	0	0	4	0	0	2	0	2	14
7:30	1	1	0	0	2	0	2	0	0	2	0	1	1	0	2	1	0	1	0	2	8
7:45	0	3	2	0	5	0	0	2	0	2	3	2	0	0	5	2	1	5	0	8	20
8:00	0	0	4	0	4	0	0	1	0	1	4	1	0	0	5	0	0	3	0	3	13
Total Volume	3	5	7	0	15	0	3	6	0	9	8	7	1	0	16	3	1	11	0	15	55
% App Total	20.0%	33.3%	46.7%			0.0%	33.3%	66.7%			50.0%	43.8%	6.3%			20.0%	6.7%	73.3%			
PHF	.375	.417	.438		.750	.000	.375	.500		.563	.500	.583	.250		.800	.375	.250	.550		.469	.688

PM PEAK HOUR	Auburn-Folsom Rd Southbound					Douglas Blvd Westbound					Auburn-Folsom Rd Northbound					Douglas Blvd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	1	3	0	4	0	1	0	0	1	2	3	0	0	5	0	1	1	0	2	12
16:45	0	1	0	0	1	1	0	0	0	1	1	1	1	0	3	0	0	0	0	0	5
17:00	0	1	2	0	3	1	1	1	0	3	1	1	2	0	4	0	0	1	0	1	11
17:15	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	1	2	0	3	6
Total Volume	0	4	5	0	9	2	2	1	0	5	4	7	3	0	14	0	2	4	0	6	34
% App Total	0.0%	44.4%	55.6%			40.0%	40.0%	20.0%			28.6%	50.0%	21.4%			0.0%	33.3%	66.7%			
PHF	.000	1.000	.417		.563	.500	.500	.250		.417	.500	.583	.375		.700	.000	.500	.500		.500	.708

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-014 Sierra College Blvd & Indigo Creek
Date : 5/18/2017

Unshifted Count = All Vehicles & Uturns

	Sierra College Blvd Southbound					Indigo Creek Westbound					Sierra College Blvd Northbound					Indigo Creek 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	Uturns Total
7:00	6	212	10	2	230	2	2	4	0	8	3	212	9	0	224	26	0	34	0	60	522	2
7:15	6	201	4	5	216	5	0	1	0	6	7	288	9	0	304	28	1	33	0	62	588	5
7:30	6	219	6	8	239	5	1	3	0	9	19	356	13	0	388	29	1	30	0	60	696	8
7:45	19	227	12	9	267	4	0	1	0	5	17	365	15	0	397	33	5	28	0	66	735	9
Total	37	859	32	24	952	16	3	9	0	28	46	1221	46	0	1313	116	7	125	0	248	2541	24
8:00	18	178	8	5	209	8	0	9	0	17	20	256	17	0	293	39	1	27	0	67	586	5
8:15	11	198	5	9	223	5	3	8	0	16	33	327	12	1	373	26	7	32	0	65	677	10
8:30	17	219	11	14	261	13	2	2	0	17	20	268	9	0	297	35	2	32	0	69	644	14
8:45	14	237	12	7	270	2	0	7	0	9	23	345	11	0	379	23	2	32	0	57	715	7
Total	60	832	36	35	963	28	5	26	0	59	96	1196	49	1	1342	123	12	123	0	258	2622	36
16:00	9	255	20	11	295	13	1	18	0	32	24	317	1	1	343	58	1	47	0	106	776	12
16:15	15	284	16	17	332	16	1	18	0	35	21	315	2	0	338	46	1	45	0	92	797	17
16:30	13	239	12	9	273	18	3	19	0	40	28	295	7	4	334	63	1	49	0	113	760	13
16:45	20	268	14	8	310	20	4	17	0	41	30	311	13	2	356	42	5	34	0	81	788	10
Total	57	1046	62	45	1210	67	9	72	0	148	103	1238	23	7	1371	209	8	175	0	392	3121	52
17:00	14	310	13	7	344	24	3	30	0	57	29	266	7	5	307	46	3	49	0	98	806	12
17:15	18	288	26	5	337	18	2	15	0	35	29	364	7	4	404	47	1	48	0	96	872	9
17:30	10	282	12	10	314	10	4	10	0	24	20	266	4	4	294	53	0	50	0	103	735	14
17:45	5	256	23	9	293	19	0	15	0	34	32	273	5	3	313	37	0	46	0	83	723	12
Total	47	1136	74	31	1288	71	9	70	0	150	110	1169	23	16	1318	183	4	193	0	380	3136	47
Grand Total	201	3873	204	135	4413	182	26	177	0	385	355	4824	141	24	5344	631	31	616	0	1278	11420	159
Apprch %	4.6%	87.8%	4.6%	3.1%		47.3%	6.8%	46.0%	0.0%		6.6%	90.3%	2.6%	0.4%		49.4%	2.4%	48.2%	0.0%			
Total %	1.8%	33.9%	1.8%	1.2%	38.6%	1.6%	0.2%	1.5%	0.0%	3.4%	3.1%	42.2%	1.2%	0.2%	46.8%	5.5%	0.3%	5.4%	0.0%	11.2%	100.0%	

AM PEAK HOUR	Sierra College Blvd Southbound					Indigo Creek Westbound					Sierra College Blvd Northbound					Indigo Creek 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																					
7:30	6	219	6	8	239	5	1	3	0	9	19	356	13	0	388	29	1	30	0	60	696
7:45	19	227	12	9	267	4	0	1	0	5	17	365	15	0	397	33	5	28	0	66	735
8:00	18	178	8	5	209	8	0	9	0	17	20	256	17	0	293	39	1	27	0	67	586
8:15	11	198	5	9	223	5	3	8	0	16	33	327	12	1	373	26	7	32	0	65	677
Total Volume	54	822	31	31	938	22	4	21	0	47	89	1304	57	1	1451	127	14	117	0	258	2694
% App Total	5.8%	87.6%	3.3%	3.3%		46.8%	8.5%	44.7%	0.0%		6.1%	89.9%	3.9%	0.1%		49.2%	5.4%	45.3%	0.0%		
PHF	.711	.905	.646	.861	.878	.688	.333	.583	.000	.691	.674	.893	.838	.250	.914	.814	.500	.914	.000	.963	.916

PM PEAK HOUR	Sierra College Blvd Southbound					Indigo Creek Westbound					Sierra College Blvd Northbound					Indigo Creek 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	239	12	9	273	18	3	19	0	40	28	295	7	4	334	63	1	49	0	113	760
16:45	20	268	14	8	310	20	4	17	0	41	30	311	13	2	356	42	5	34	0	81	788
17:00	14	310	13	7	344	24	3	30	0	57	29	266	7	5	307	46	3	49	0	98	806
17:15	18	288	26	5	337	18	2	15	0	35	29	364	7	4	404	47	1	48	0	96	872
Total Volume	65	1105	65	29	1264	80	12	81	0	173	116	1236	34	15	1401	198	10	180	0	388	3226
% App Total	5.1%	87.4%	5.1%	2.3%		46.2%	6.9%	46.8%	0.0%		8.3%	88.2%	2.4%	1.1%		51.0%	2.6%	46.4%	0.0%		
PHF	.813	.891	.625	.806	.919	.833	.750	.675	.000	.759	.967	.849	.654	.750	.867	.786	.500	.918	.000	.858	.925

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-014 Sierra College Blvd & Indigo Creek
Date : 5/18/2017

Bank 1 Count = Bikes & Peds

	Sierra College Blvd Southbound					Indigo Creek Westbound					Sierra College Blvd Northbound					Indigo Creek Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	2	0	1	2	0	0	0	0	0	2	1
7:15	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	0
7:30	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4
Total	0	2	0	0	2	0	0	0	0	0	0	4	0	1	4	0	0	0	4	0	6	5
8:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	4
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:30	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0
8:45	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4	0
Total	0	3	0	0	3	0	0	0	1	0	0	2	1	0	3	0	0	0	4	0	6	5
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
16:15	0	1	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	2
16:30	0	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	0	0	0	0	1	2
16:45	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	1	0	0	1	0	0	0	3	0	0	1	0	4	1	0	0	0	0	0	2	7
17:00	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	2	0	0	10
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	1	0	0	4
17:45	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	1	2
Total	0	0	0	0	0	0	0	0	5	0	1	0	0	7	1	0	0	0	4	0	1	16
Grand Total	0	6	0	0	6	0	0	0	9	0	1	7	1	12	9	0	0	0	12	0	15	33
Apprch %	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			11.1%	77.8%	11.1%			0.0%	0.0%	0.0%				
Total %	0.0%	40.0%	0.0%		40.0%	0.0%	0.0%	0.0%		0.0%	6.7%	46.7%	6.7%		60.0%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	Sierra College Blvd Southbound					Indigo Creek Westbound					Sierra College Blvd Northbound					Indigo Creek Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0
8:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Total Volume	0	1	0	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	8	0	2
% App Total	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.250	.000		.250	.000	.000	.000		.000	.000	.250	.000		.250	.000	.000	.000		.000	.250

PM PEAK HOUR	Sierra College Blvd Southbound					Indigo Creek Westbound					Sierra College Blvd Northbound					Indigo Creek Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	0	0	0	0	1
16:45	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	2	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	6	0	0	1	0	6	1	0	0	0	2	0	1
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.250	.000		.250	.000	.000	.000		.000	.250

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-014 Sierra College Blvd & Indigo Creek
Date : 5/18/2017

Bank 2 Count = Heavy Trucks

	Sierra College Blvd Southbound					Indigo Creek Westbound					Sierra College Blvd Northbound					Indigo Creek Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	8	0	0	8	0	0	0	0	0	0	10	1	0	11	0	0	0	0	0	19	0
7:15	0	8	0	0	8	1	0	0	0	1	0	10	0	0	10	2	0	0	0	2	21	0
7:30	0	7	0	0	7	0	0	1	0	1	0	11	1	0	12	1	0	0	0	1	21	0
7:45	1	9	0	0	10	0	0	0	0	0	0	9	0	0	9	2	0	0	0	2	21	0
Total	1	32	0	0	33	1	0	1	0	2	0	40	2	0	42	5	0	0	0	5	82	0
8:00	0	5	0	0	5	2	0	0	0	2	0	11	0	0	11	0	0	0	0	0	18	0
8:15	0	8	0	0	8	0	0	0	0	0	0	16	0	0	16	1	0	0	0	1	25	0
8:30	0	11	0	0	11	1	0	0	0	1	0	10	1	0	11	2	0	0	0	2	25	0
8:45	0	9	0	0	9	0	0	0	0	0	0	13	1	0	14	0	0	0	0	0	23	0
Total	0	33	0	0	33	3	0	0	0	3	0	50	2	0	52	3	0	0	0	3	91	0
16:00	0	11	0	0	11	0	0	1	0	1	0	5	0	0	5	1	0	0	0	1	18	0
16:15	0	9	0	0	9	0	0	0	0	0	0	4	0	0	4	2	0	0	0	2	15	0
16:30	0	6	0	0	6	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	15	0
16:45	0	7	0	0	7	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	16	0
Total	0	33	0	0	33	0	0	1	0	1	0	26	0	0	26	4	0	0	0	4	64	0
17:00	0	6	0	0	6	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	13	0
17:15	0	5	0	0	5	0	0	0	0	0	0	7	0	0	7	1	0	0	0	1	13	0
17:30	0	7	0	0	7	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	11	0
17:45	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	7	0
Total	0	21	0	0	21	0	0	0	0	0	1	21	0	0	22	1	0	0	0	1	44	0
Grand Total	1	119	0	0	120	4	0	2	0	6	1	137	4	0	142	13	0	0	0	13	281	0
Apprch %	0.8%	99.2%	0.0%			66.7%	0.0%	33.3%			0.7%	96.5%	2.8%			100.0%	0.0%	0.0%				
Total %	0.4%	42.3%	0.0%		42.7%	1.4%	0.0%	0.7%		2.1%	0.4%	48.8%	1.4%		50.5%	4.6%	0.0%	0.0%		4.6%	100.0%	

AM PEAK HOUR	Sierra College Blvd Southbound					Indigo Creek Westbound					Sierra College Blvd Northbound					Indigo Creek Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	7	0	0	7	0	0	1	0	1	0	11	1	0	12	1	0	0	0	1	21
7:45	1	9	0	0	10	0	0	0	0	0	0	9	0	0	9	2	0	0	0	2	21
8:00	0	5	0	0	5	2	0	0	0	2	0	11	0	0	11	0	0	0	0	0	18
8:15	0	8	0	0	8	0	0	0	0	0	0	16	0	0	16	1	0	0	0	1	25
Total Volume	1	29	0	0	30	2	0	1	0	3	0	47	1	0	48	4	0	0	0	4	85
% App Total	3.3%	96.7%	0.0%			66.7%	0.0%	33.3%			0.0%	97.9%	2.1%			100.0%	0.0%	0.0%			
PHF	.250	.806	.000		.750	.250	.000	.250		.375	.000	.734	.250		.750	.500	.000	.000		.500	.850

PM PEAK HOUR	Sierra College Blvd Southbound					Indigo Creek Westbound					Sierra College Blvd Northbound					Indigo Creek Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	6	0	0	6	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	15
16:45	0	7	0	0	7	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	16
17:00	0	6	0	0	6	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	13
17:15	0	5	0	0	5	0	0	0	0	0	0	7	0	0	7	1	0	0	0	1	13
Total Volume	0	24	0	0	24	0	0	0	0	0	1	30	0	0	31	2	0	0	0	2	57
% App Total	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			3.2%	96.8%	0.0%			100.0%	0.0%	0.0%			
PHF	.000	.857	.000		.857	.000	.000	.000		.000	.250	.833	.000		.861	.500	.000	.000		.500	.891

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-015 Sierra College Blvd & Eureka Rd
Date : 5/18/2017

Unshifted Count = All Vehicles & Uturns

	Sierra College Blvd Southbound					Eureka Rd Westbound					Sierra College Blvd Northbound					Eureka Rd 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	Uturns Total
7:00	49	176	14	2	241	11	31	36	0	78	10	168	14	0	192	8	66	7	0	81	592	2
7:15	68	144	13	1	226	14	76	56	0	146	10	220	23	0	253	18	96	12	1	127	752	2
7:30	63	181	19	1	264	15	61	98	0	174	12	291	17	1	321	20	60	13	1	94	853	3
7:45	24	185	26	4	239	12	73	80	0	165	18	283	9	0	310	20	29	9	0	58	772	4
Total	204	686	72	8	970	52	241	270	0	563	50	962	63	1	1076	66	251	41	2	360	2969	11
8:00	21	161	44	8	234	6	38	42	0	86	19	235	8	2	264	30	30	13	1	74	658	11
8:15	21	144	46	2	213	5	60	54	0	119	15	277	3	1	296	39	33	12	0	84	712	3
8:30	24	206	52	7	289	6	32	38	0	76	22	247	8	2	279	27	28	17	3	75	719	12
8:45	33	154	71	2	260	7	72	61	0	140	38	250	6	2	296	58	42	22	0	122	818	4
Total	99	665	213	19	996	24	202	195	0	421	94	1009	25	7	1135	154	133	64	4	355	2907	30
16:00	46	243	40	0	329	14	53	59	0	126	17	264	4	5	290	22	63	19	2	106	851	7
16:15	35	245	36	0	316	15	60	41	0	116	14	259	12	5	290	20	56	20	3	99	821	8
16:30	59	239	35	0	333	12	43	66	0	121	15	263	8	5	291	25	64	15	2	106	851	7
16:45	48	203	40	1	292	19	37	53	0	109	17	228	3	1	249	32	71	13	2	118	768	4
Total	188	930	151	1	1270	60	193	219	0	472	63	1014	27	16	1120	99	254	67	9	429	3291	26
17:00	57	286	39	2	384	8	33	52	0	93	17	236	12	7	272	35	80	34	2	151	900	11
17:15	60	237	37	1	335	9	51	51	0	111	19	270	14	10	313	32	100	21	2	155	914	13
17:30	51	289	44	1	385	5	30	42	0	77	21	253	8	10	292	13	85	14	1	113	867	12
17:45	46	204	52	2	304	12	52	39	0	103	20	227	7	5	259	20	67	13	1	101	767	8
Total	214	1016	172	6	1408	34	166	184	0	384	77	986	41	32	1136	100	332	82	6	520	3448	44
Grand Total	705	3297	608	34	4644	170	802	868	0	1840	284	3971	156	56	4467	419	970	254	21	1664	12615	111
Apprch %	15.2%	71.0%	13.1%	0.7%		9.2%	43.6%	47.2%	0.0%		6.4%	88.9%	3.5%	1.3%		25.2%	58.3%	15.3%	1.3%			
Total %	5.6%	26.1%	4.8%	0.3%	36.8%	1.3%	6.4%	6.9%	0.0%	14.6%	2.3%	31.5%	1.2%	0.4%	35.4%	3.3%	7.7%	2.0%	0.2%	13.2%	100.0%	

AM PEAK HOUR	Sierra College Blvd Southbound					Eureka Rd Westbound					Sierra College Blvd Northbound					Eureka Rd 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																					
7:15	68	144	13	1	226	14	76	56	0	146	10	220	23	0	253	18	96	12	1	127	752
7:30	63	181	19	1	264	15	61	98	0	174	12	291	17	1	321	20	60	13	1	94	853
7:45	24	185	26	4	239	12	73	80	0	165	18	283	9	0	310	20	29	9	0	58	772
8:00	21	161	44	8	234	6	38	42	0	86	19	235	8	2	264	30	30	13	1	74	658
Total Volume	176	671	102	14	963	47	248	276	0	571	59	1029	57	3	1148	88	215	47	3	353	3035
% App Total	18.3%	69.7%	10.6%	1.5%		8.2%	43.4%	48.3%	0.0%		5.1%	89.6%	5.0%	0.3%		24.9%	60.9%	13.3%	0.8%		
PHF	.647	.907	.580	.438	.912	.783	.816	.704	.000	.820	.776	.884	.620	.375	.894	.733	.560	.904	.750	.695	.890

PM PEAK HOUR	Sierra College Blvd Southbound					Eureka Rd Westbound					Sierra College Blvd Northbound					Eureka Rd 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 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	48	203	40	1	292	19	37	53	0	109	17	228	3	1	249	32	71	13	2	118	768
17:00	57	286	39	2	384	8	33	52	0	93	17	236	12	7	272	35	80	34	2	151	900
17:15	60	237	37	1	335	9	51	51	0	111	19	270	14	10	313	32	100	21	2	155	914
17:30	51	289	44	1	385	5	30	42	0	77	21	253	8	10	292	13	85	14	1	113	867
Total Volume	216	1015	160	5	1396	41	151	198	0	390	74	987	37	28	1126	112	336	82	7	537	3449
% App Total	15.5%	72.7%	11.5%	0.4%		10.5%	38.7%	50.8%	0.0%		6.6%	87.7%	3.3%	2.5%		20.9%	62.6%	15.3%	1.3%		
PHF	.900	.878	.909	.625	.906	.539	.740	.934	.000	.878	.881	.914	.661	.700	.899	.800	.840	.603	.875	.866	.943

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-015 Sierra College Blvd & Eureka Rd
Date : 5/18/2017

Bank 1 Count = Bikes & Peds

	Sierra College Blvd Southbound					Eureka Rd Westbound					Sierra College Blvd Northbound					Eureka Rd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	1	0	2	1
7:15	0	1	0	2	1	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	2	4
7:30	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2	1
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	1	0	3	1	0	0	0	2	0	0	4	0	1	4	0	1	0	1	1	6	7
8:00	0	0	0	2	0	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	1	4
8:15	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	1	0	1	2
8:30	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0
8:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2	0
Total	0	0	0	2	0	0	2	1	2	3	0	1	0	1	1	0	1	0	1	1	5	6
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	1	0	0	1	1	3
16:15	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	0
16:30	0	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	0	0	1	0	1	3
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	1
Total	0	1	0	0	1	0	0	1	0	1	0	1	0	6	1	0	2	0	1	2	5	7
17:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2
Total	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	5
Grand Total	0	2	0	6	2	0	2	2	4	4	0	6	0	11	6	0	4	0	4	4	16	25
Apprch %	0.0%	100.0%	0.0%			0.0%	50.0%	50.0%			0.0%	100.0%	0.0%			0.0%	100.0%	0.0%				
Total %	0.0%	12.5%	0.0%		12.5%	0.0%	12.5%	12.5%		25.0%	0.0%	37.5%	0.0%		37.5%	0.0%	25.0%	0.0%		25.0%	100.0%	

AM PEAK HOUR	Sierra College Blvd Southbound					Eureka Rd Westbound					Sierra College Blvd Northbound					Eureka Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	1	0	2	1	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	2
7:30	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
8:00	0	0	0	2	0	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	5	1	0	1	0	4	1	0	2	0	1	2	0	1	0	0	1	5
% App Total	0.0%	100.0%	0.0%			0.0%	100.0%	0.0%			0.0%	100.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.250	.000		.250	.000	.250	.000		.250	.000	.500	.000		.500	.000	.250	.000		.250	.625

PM PEAK HOUR	Sierra College Blvd Southbound					Eureka Rd Westbound					Sierra College Blvd Northbound					Eureka Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1
17:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Total Volume	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	1	0	0	1	1
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.250	.000		.250	.250

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-015 Sierra College Blvd & Eureka Rd
Date : 5/18/2017

Bank 2 Count = Heavy Trucks

	Sierra College Blvd Southbound					Eureka Rd Westbound					Sierra College Blvd Northbound					Eureka Rd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	7	0	0	7	0	0	1	0	1	0	7	0	0	7	2	1	0	0	3	18	0
7:15	1	7	0	0	8	0	1	1	0	2	1	9	2	0	12	0	0	0	0	0	22	0
7:30	0	8	0	0	8	0	1	3	0	4	0	9	0	0	9	0	0	0	0	0	21	0
7:45	0	4	2	0	6	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	13	0
Total	1	26	2	0	29	0	2	5	0	7	1	32	2	0	35	2	1	0	0	3	74	0
8:00	1	7	0	0	8	0	0	0	0	0	1	12	0	0	13	0	0	0	0	0	21	0
8:15	0	7	1	0	8	0	0	1	0	1	0	15	0	0	15	0	1	0	0	1	25	0
8:30	0	11	0	0	11	0	1	1	0	2	0	12	0	0	12	0	0	0	0	0	25	0
8:45	2	10	2	0	14	0	2	0	0	2	1	12	0	0	13	1	2	0	0	3	32	0
Total	3	35	3	0	41	0	3	2	0	5	2	51	0	0	53	1	3	0	0	4	103	0
16:00	0	12	0	0	12	0	0	0	0	0	1	5	0	0	6	0	0	0	0	0	18	0
16:15	0	7	1	0	8	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	12	0
16:30	0	5	0	0	5	0	0	0	0	0	0	9	0	0	9	0	1	0	0	1	15	0
16:45	0	6	1	0	7	1	0	0	0	1	0	8	0	0	8	0	0	0	0	0	16	0
Total	0	30	2	0	32	1	0	0	0	1	1	26	0	0	27	0	1	0	0	1	61	0
17:00	0	4	1	0	5	0	0	0	0	0	0	6	0	0	6	1	1	0	0	2	13	0
17:15	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	11	0
17:30	0	8	0	0	8	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	11	0
17:45	0	2	1	0	3	0	0	0	0	0	0	5	0	0	5	0	0	1	0	1	9	0
Total	0	19	2	0	21	0	0	0	0	0	0	20	0	0	20	1	1	1	0	3	44	0
Grand Total	4	110	9	0	123	1	5	7	0	13	4	129	2	0	135	4	6	1	0	11	282	0
Apprch %	3.3%	89.4%	7.3%			7.7%	38.5%	53.8%			3.0%	95.6%	1.5%			36.4%	54.5%	9.1%				
Total %	1.4%	39.0%	3.2%		43.6%	0.4%	1.8%	2.5%		4.6%	1.4%	45.7%	0.7%		47.9%	1.4%	2.1%	0.4%		3.9%	100.0%	

AM PEAK HOUR	Sierra College Blvd Southbound					Eureka Rd Westbound					Sierra College Blvd Northbound					Eureka Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	1	7	0	0	8	0	1	1	0	2	1	9	2	0	12	0	0	0	0	0	22
7:30	0	8	0	0	8	0	1	3	0	4	0	9	0	0	9	0	0	0	0	0	21
7:45	0	4	2	0	6	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	13
8:00	1	7	0	0	8	0	0	0	0	0	1	12	0	0	13	0	0	0	0	0	21
Total Volume	2	26	2	0	30	0	2	4	0	6	2	37	2	0	41	0	0	0	0	0	77
% App Total	6.7%	86.7%	6.7%			0.0%	33.3%	66.7%			4.9%	90.2%	4.9%			0.0%	0.0%	0.0%			
PHF	.500	.813	.250		.938	.000	.500	.333		.375	.500	.771	.250		.788	.000	.000	.000		.000	.875

PM PEAK HOUR	Sierra College Blvd Southbound					Eureka Rd Westbound					Sierra College Blvd Northbound					Eureka Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	6	1	0	7	1	0	0	0	1	0	8	0	0	8	0	0	0	0	0	16
17:00	0	4	1	0	5	0	0	0	0	0	0	6	0	0	6	1	1	0	0	2	13
17:15	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	11
17:30	0	8	0	0	8	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	11
Total Volume	0	23	2	0	25	1	0	0	0	1	0	23	0	0	23	1	1	0	0	2	51
% App Total	0.0%	92.0%	8.0%			100.0%	0.0%	0.0%			0.0%	100.0%	0.0%			50.0%	50.0%	0.0%			
PHF	.000	.719	.500		.781	.250	.000	.000		.250	.000	.719	.000		.719	.250	.250	.000		.250	.797

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-018 Grayhawk Dr & Eureka Rd
Date : 5/18/2017

Unshifted Count = All Vehicles & Uturns

	Grayhawk Dr Southbound					Eureka Rd Westbound					Grayhawk Dr Northbound					Eureka Rd 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	Uturns Total
7:00	18	0	9	0	27	0	64	3	0	67	0	0	0	0	0	1	120	0	0	121	215	0
7:15	25	0	7	0	32	0	123	7	0	130	0	0	0	0	0	7	180	0	0	187	349	0
7:30	21	0	20	0	41	0	161	15	0	176	0	0	0	0	0	9	121	0	0	130	347	0
7:45	11	0	13	0	24	0	122	8	0	130	0	0	0	0	0	5	34	0	0	39	193	0
Total	75	0	49	0	124	0	470	33	0	503	0	0	0	0	0	22	455	0	0	477	1104	0
8:00	10	0	8	0	18	0	63	6	0	69	0	0	0	0	0	5	46	0	0	51	138	0
8:15	12	0	11	0	23	0	99	7	0	106	0	0	0	0	0	5	46	0	0	51	180	0
8:30	13	0	9	0	22	0	63	2	0	65	0	0	0	0	0	2	40	0	0	42	129	0
8:45	12	0	19	0	31	0	96	5	0	101	0	0	0	0	0	6	57	0	0	63	195	0
Total	47	0	47	0	94	0	321	20	0	341	0	0	0	0	0	18	189	0	0	207	642	0
16:00	11	0	9	0	20	0	111	8	0	119	0	0	0	0	0	7	111	0	0	118	257	0
16:15	9	0	8	0	17	0	97	1	0	98	0	0	0	0	0	5	73	0	0	78	193	0
16:30	10	0	11	0	21	0	100	2	0	102	0	0	0	0	0	9	104	0	0	113	236	0
16:45	18	0	9	0	27	0	92	3	0	95	0	0	0	0	0	5	107	0	0	112	234	0
Total	48	0	37	0	85	0	400	14	0	414	0	0	0	0	0	26	395	0	0	421	920	0
17:00	14	0	11	0	25	0	67	4	0	71	0	0	0	0	0	11	122	0	0	133	229	0
17:15	15	0	10	0	25	0	83	6	0	89	0	0	0	0	0	13	153	0	0	166	280	0
17:30	18	0	9	0	27	0	59	2	0	61	0	0	0	0	0	8	123	0	0	131	219	0
17:45	14	0	12	0	26	0	77	6	0	83	0	0	0	0	0	6	106	0	0	112	221	0
Total	61	0	42	0	103	0	286	18	0	304	0	0	0	0	0	38	504	0	0	542	949	0
Grand Total	231	0	175	0	406	0	1477	85	0	1562	0	0	0	0	0	104	1543	0	0	1647	3615	0
Apprch %	56.9%	0.0%	43.1%	0.0%		0.0%	94.6%	5.4%	0.0%		0.0%	0.0%	0.0%	0.0%		6.3%	93.7%	0.0%	0.0%			
Total %	6.4%	0.0%	4.8%	0.0%	11.2%	0.0%	40.9%	2.4%	0.0%	43.2%	0.0%	0.0%	0.0%	0.0%	0.0%	2.9%	42.7%	0.0%	0.0%	45.6%	100.0%	

AM PEAK HOUR	Grayhawk Dr Southbound					Eureka Rd Westbound					Grayhawk Dr Northbound					Eureka Rd 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 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	18	0	9	0	27	0	64	3	0	67	0	0	0	0	0	1	120	0	0	121	215
7:15	25	0	7	0	32	0	123	7	0	130	0	0	0	0	0	7	180	0	0	187	349
7:30	21	0	20	0	41	0	161	15	0	176	0	0	0	0	0	9	121	0	0	130	347
7:45	11	0	13	0	24	0	122	8	0	130	0	0	0	0	0	5	34	0	0	39	193
Total Volume	75	0	49	0	124	0	470	33	0	503	0	0	0	0	0	22	455	0	0	477	1104
% App Total	60.5%	0.0%	39.5%	0.0%		0.0%	93.4%	6.6%	0.0%		0.0%	0.0%	0.0%	0.0%		4.6%	95.4%	0.0%	0.0%		
PHF	.750	.000	.613	.000	.756	.000	.730	.550	.000	.714	.000	.000	.000	.000	.000	.611	.632	.000	.000	.638	.791

PM PEAK HOUR	Grayhawk Dr Southbound					Eureka Rd Westbound					Grayhawk Dr Northbound					Eureka Rd 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	10	0	11	0	21	0	100	2	0	102	0	0	0	0	0	9	104	0	0	113	236
16:45	18	0	9	0	27	0	92	3	0	95	0	0	0	0	0	5	107	0	0	112	234
17:00	14	0	11	0	25	0	67	4	0	71	0	0	0	0	0	11	122	0	0	133	229
17:15	15	0	10	0	25	0	83	6	0	89	0	0	0	0	0	13	153	0	0	166	280
Total Volume	57	0	41	0	98	0	342	15	0	357	0	0	0	0	0	38	486	0	0	524	979
% App Total	58.2%	0.0%	41.8%	0.0%		0.0%	95.8%	4.2%	0.0%		0.0%	0.0%	0.0%	0.0%		7.3%	92.7%	0.0%	0.0%		
PHF	.792	.000	.932	.000	.907	.000	.855	.625	.000	.875	.000	.000	.000	.000	.000	.731	.794	.000	.000	.789	.874

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-018 Grayhawk Dr & Eureka Rd
Date : 5/18/2017

Bank 1 Count = Bikes & Peds

	Grayhawk Dr Southbound					Eureka Rd Westbound					Grayhawk Dr Northbound					Eureka Rd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	1
7:30	2	0	1	3	3	0	0	0	1	0	0	0	0	0	0	0	3	0	0	3	6	4
7:45	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	3	0	1	6	4	0	0	0	1	0	0	0	0	0	0	0	4	0	0	4	8	7
8:00	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
8:45	1	0	0	0	1	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	3	0
Total	1	0	0	0	1	0	2	2	0	4	0	0	0	0	0	0	0	0	0	0	5	0
16:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	0
16:15	0	0	0	0	0	0	3	0	1	3	0	0	0	0	0	0	0	0	0	0	3	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	1	0	3	0	1	3	0	0	0	0	0	0	1	0	0	1	5	1
17:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1
17:15	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	2	1	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	3	2
Grand Total	4	0	3	8	7	0	5	3	2	8	0	0	0	0	0	0	6	0	0	6	21	10
Apprch %	57.1%	0.0%	42.9%			0.0%	62.5%	37.5%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%				
Total %	19.0%	0.0%	14.3%		33.3%	0.0%	23.8%	14.3%		38.1%	0.0%	0.0%	0.0%		0.0%	0.0%	28.6%	0.0%		28.6%	100.0%	

AM PEAK HOUR	Grayhawk Dr Southbound					Eureka Rd Westbound					Grayhawk Dr Northbound					Eureka Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
7:30	2	0	1	3	3	0	0	0	1	0	0	0	0	0	0	0	3	0	0	3	6
7:45	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	3	0	1	6	4	0	0	0	1	0	0	0	0	0	0	0	4	0	0	4	8
% App Total	75.0%	0.0%	25.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.375	.000	.250		.333	.000	.000	.000		.000	.000	.000	.000		.000	.000	.333	.000		.333	.333

PM PEAK HOUR	Grayhawk Dr Southbound					Eureka Rd Westbound					Grayhawk Dr Northbound					Eureka Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
17:15	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	0	1	1	1	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	3
% App Total	0.0%	0.0%	100.0%			0.0%	0.0%	100.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.000	.250		.250	.000	.000	.250		.250	.000	.000	.000		.000	.000	.250	.000		.250	.375

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-018 Grayhawk Dr & Eureka Rd
Date : 5/18/2017

Bank 2 Count = Heavy Trucks

	Grayhawk Dr Southbound					Eureka Rd Westbound					Grayhawk Dr Northbound					Eureka Rd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3	0
7:15	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5	0
7:30	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	4	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	1	0	7	0	0	7	0	0	0	0	0	0	4	0	0	4	12	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2	0
8:30	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0
8:45	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	4	0
Total	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	8	0
16:00	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2	0
16:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Total	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	0
Grand Total	0	0	2	0	2	0	13	0	0	13	0	0	0	0	0	0	11	0	0	11	26	0
Apprch %	0.0%	0.0%	100.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%				
Total %	0.0%	0.0%	7.7%		7.7%	0.0%	50.0%	0.0%		50.0%	0.0%	0.0%	0.0%		0.0%	0.0%	42.3%	0.0%		42.3%	100.0%	

AM PEAK HOUR	Grayhawk Dr Southbound					Eureka Rd Westbound					Grayhawk Dr Northbound					Eureka Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
7:15	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
7:30	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	4
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	0	1	0	7	0	0	7	0	0	0	0	0	0	4	0	0	4	12
% App Total	0.0%	0.0%	100.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.000	.250		.250	.000	.583	.000		.583	.000	.000	.000		.000	.000	.333	.000		.333	.600

PM PEAK HOUR	Grayhawk Dr Southbound					Eureka Rd Westbound					Grayhawk Dr Northbound					Eureka Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
16:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.500	.000		.500	.000	.000	.000		.000	.000	.500	.000		.500	.500

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-020 Auburn Folsom Rd & Fuller Dr
Date : 5/18/2017

Unshifted Count = All Vehicles & Uturns

	Auburn Folsom Rd Southbound					Fuller Dr Westbound					Auburn Folsom Rd Northbound					Fuller Dr 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	Uturns Total
7:00	7	365	0	0	372	39	0	7	0	46	0	318	10	1	329	0	0	0	0	0	747	1
7:15	12	419	0	1	432	50	0	13	0	63	0	354	26	0	380	0	0	0	0	0	875	1
7:30	45	430	0	2	477	68	0	36	0	104	0	360	69	1	430	0	0	0	0	0	1011	3
7:45	15	388	0	2	405	41	0	20	0	61	0	381	14	4	399	0	0	0	0	0	865	6
Total	79	1602	0	5	1686	198	0	76	0	274	0	1413	119	6	1538	0	0	0	0	0	3498	11
8:00	7	349	0	1	357	33	0	13	0	46	0	358	10	1	369	0	0	0	0	0	772	2
8:15	6	336	0	1	343	19	0	9	0	28	0	359	5	2	366	0	0	0	0	0	737	3
8:30	4	313	0	0	317	31	0	4	0	35	0	345	9	1	355	0	0	0	0	0	707	1
8:45	5	320	0	3	328	20	0	4	0	24	0	293	11	2	306	0	0	0	0	0	658	5
Total	22	1318	0	5	1345	103	0	30	0	133	0	1355	35	6	1396	0	0	0	0	0	2874	11
16:00	12	323	0	4	339	33	0	18	0	51	0	446	27	3	476	0	0	0	0	0	866	7
16:15	5	371	0	1	377	28	0	11	0	39	0	443	19	3	465	0	0	0	0	0	881	4
16:30	11	399	0	5	415	22	0	11	0	33	0	480	17	0	497	0	0	0	0	0	945	5
16:45	10	358	0	1	369	21	0	15	0	36	0	439	19	3	461	0	0	0	0	0	866	4
Total	38	1451	0	11	1500	104	0	55	0	159	0	1808	82	9	1899	0	0	0	0	0	3558	20
17:00	6	397	0	4	407	24	0	10	0	34	0	446	27	5	478	0	0	0	0	0	919	9
17:15	5	406	0	0	411	18	0	8	0	26	0	478	15	4	497	0	0	0	0	0	934	4
17:30	13	396	0	2	411	23	0	13	0	36	0	443	17	5	465	0	0	0	0	0	912	7
17:45	20	332	0	2	354	22	0	11	0	33	0	464	19	2	485	0	0	0	0	0	872	4
Total	44	1531	0	8	1583	87	0	42	0	129	0	1831	78	16	1925	0	0	0	0	0	3637	24
Grand Total	183	5902	0	29	6114	492	0	203	0	695	0	6407	314	37	6758	0	0	0	0	0	13567	66
Apprch %	3.0%	96.5%	0.0%	0.5%		70.8%	0.0%	29.2%	0.0%		0.0%	94.8%	4.6%	0.5%		0.0%	0.0%	0.0%	0.0%			
Total %	1.3%	43.5%	0.0%	0.2%	45.1%	3.6%	0.0%	1.5%	0.0%	5.1%	0.0%	47.2%	2.3%	0.3%	49.8%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	Auburn Folsom Rd Southbound					Fuller Dr Westbound					Auburn Folsom Rd Northbound					Fuller Dr 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																					
7:15	12	419	0	1	432	50	0	13	0	63	0	354	26	0	380	0	0	0	0	0	875
7:30	45	430	0	2	477	68	0	36	0	104	0	360	69	1	430	0	0	0	0	0	1011
7:45	15	388	0	2	405	41	0	20	0	61	0	381	14	4	399	0	0	0	0	0	865
8:00	7	349	0	1	357	33	0	13	0	46	0	358	10	1	369	0	0	0	0	0	772
Total Volume	79	1586	0	6	1671	192	0	82	0	274	0	1453	119	6	1578	0	0	0	0	0	3523
% App Total	4.7%	94.9%	0.0%	0.4%		70.1%	0.0%	29.9%	0.0%		0.0%	92.1%	7.5%	0.4%		0.0%	0.0%	0.0%	0.0%		
PHF	.439	.922	.000	.750	.876	.706	.000	.569	.000	.659	.000	.953	.431	.375	.917	.000	.000	.000	.000	.000	.871

PM PEAK HOUR	Auburn Folsom Rd Southbound					Fuller Dr Westbound					Auburn Folsom Rd Northbound					Fuller Dr 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	11	399	0	5	415	22	0	11	0	33	0	480	17	0	497	0	0	0	0	0	945
16:45	10	358	0	1	369	21	0	15	0	36	0	439	19	3	461	0	0	0	0	0	866
17:00	6	397	0	4	407	24	0	10	0	34	0	446	27	5	478	0	0	0	0	0	919
17:15	5	406	0	0	411	18	0	8	0	26	0	478	15	4	497	0	0	0	0	0	934
Total Volume	32	1560	0	10	1602	85	0	44	0	129	0	1843	78	12	1933	0	0	0	0	0	3664
% App Total	2.0%	97.4%	0.0%	0.6%		65.9%	0.0%	34.1%	0.0%		0.0%	95.3%	4.0%	0.6%		0.0%	0.0%	0.0%	0.0%		
PHF	.727	.961	.000	.500	.965	.885	.000	.733	.000	.896	.000	.960	.722	.600	.972	.000	.000	.000	.000	.000	.969

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-020 Auburn Folsom Rd & Fuller Dr
Date : 5/18/2017

Bank 1 Count = Bikes & Peds

	Auburn Folsom Rd Southbound					Fuller Dr Westbound					Auburn Folsom Rd Northbound					Fuller Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	1
7:15	0	3	0	3	3	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	3
7:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	3	0	5	3	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	5	5
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8:30	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
8:45	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0
Total	0	3	0	2	3	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	2
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0
16:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
16:45	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2	0
Total	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4	0
17:00	0	1	0	1	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	1
17:15	0	1	0	1	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	1
17:30	0	1	0	0	1	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0
17:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0
Total	0	3	0	2	3	0	0	0	0	0	0	3	2	0	5	0	0	0	0	0	8	2
Grand Total	0	10	0	9	10	2	0	0	0	2	0	7	2	0	9	0	0	0	0	0	21	9
Apprch %	0.0%	100.0%	0.0%			100.0%	0.0%	0.0%			0.0%	77.8%	22.2%			0.0%	0.0%	0.0%				
Total %	0.0%	47.6%	0.0%		47.6%	9.5%	0.0%	0.0%		9.5%	0.0%	33.3%	9.5%		42.9%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	Auburn Folsom Rd Southbound					Fuller Dr Westbound					Auburn Folsom Rd Northbound					Fuller Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	3	0	3	3	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
7:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	3	0	4	3	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
% App Total	0.0%	100.0%	0.0%			100.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.250	.000		.250	.250	.000	.000		.250	.000	.000	.000		.000	.000	.000	.000		.000	.250

PM PEAK HOUR	Auburn Folsom Rd Southbound					Fuller Dr Westbound					Auburn Folsom Rd Northbound					Fuller Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:45	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
17:00	0	1	0	1	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
17:15	0	1	0	1	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Total Volume	0	3	0	2	3	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	7
% App Total	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.750	.000		.750	.000	.000	.000		.000	.000	.500	.000		.500	.000	.000	.000		.000	.875

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-020 Auburn Folsom Rd & Fuller Dr
Date : 5/18/2017

Bank 2 Count = Heavy Trucks

	Auburn Folsom Rd Southbound					Fuller Dr Westbound					Auburn Folsom Rd Northbound					Fuller Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0
7:15	0	3	0	0	3	0	0	0	0	0	0	1	4	0	5	0	0	0	0	0	8	0
7:30	1	1	0	0	2	2	0	0	0	2	0	1	0	0	1	0	0	0	0	0	5	0
7:45	0	6	0	0	6	0	0	2	0	2	0	4	0	0	4	0	0	0	0	0	12	0
Total	1	10	0	0	11	2	0	2	0	4	0	7	4	0	11	0	0	0	0	0	26	0
8:00	1	3	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	8	0
8:15	0	1	0	0	1	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	4	0
8:30	0	8	0	0	8	1	0	1	0	2	0	4	0	0	4	0	0	0	0	0	14	0
8:45	0	5	0	0	5	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	8	0
Total	1	17	0	0	18	2	0	1	0	3	0	12	1	0	13	0	0	0	0	0	34	0
16:00	3	3	0	0	6	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	8	0
16:15	0	2	0	0	2	1	0	0	0	1	0	4	0	0	4	0	0	0	0	0	7	0
16:30	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	6	0
16:45	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	6	0
Total	3	10	0	0	13	1	0	1	0	2	0	12	0	0	12	0	0	0	0	0	27	0
17:00	1	1	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4	0
17:15	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5	0
17:30	1	2	0	0	3	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	7	0
17:45	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3	0
Total	2	7	0	0	9	0	0	1	0	1	0	9	0	0	9	0	0	0	0	0	19	0
Grand Total	7	44	0	0	51	5	0	5	0	10	0	40	5	0	45	0	0	0	0	0	106	0
Apprch %	13.7%	86.3%	0.0%			50.0%	0.0%	50.0%			0.0%	88.9%	11.1%			0.0%	0.0%	0.0%				
Total %	6.6%	41.5%	0.0%		48.1%	4.7%	0.0%	4.7%		9.4%	0.0%	37.7%	4.7%		42.5%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	Auburn Folsom Rd Southbound					Fuller Dr Westbound					Auburn Folsom Rd Northbound					Fuller Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	3	0	0	3	0	0	0	0	0	0	1	4	0	5	0	0	0	0	0	8
7:30	1	1	0	0	2	2	0	0	0	2	0	1	0	0	1	0	0	0	0	0	5
7:45	0	6	0	0	6	0	0	2	0	2	0	4	0	0	4	0	0	0	0	0	12
8:00	1	3	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	8
Total Volume	2	13	0	0	15	2	0	2	0	4	0	10	4	0	14	0	0	0	0	0	33
% App Total	13.3%	86.7%	0.0%			50.0%	0.0%	50.0%			0.0%	71.4%	28.6%			0.0%	0.0%	0.0%			
PHF	.500	.542	.000		.625	.250	.000	.250		.500	.000	.625	.250		.700	.000	.000	.000		.000	.688

PM PEAK HOUR	Auburn Folsom Rd Southbound					Fuller Dr Westbound					Auburn Folsom Rd Northbound					Fuller Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	6
16:45	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	6
17:00	1	1	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
17:15	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5
Total Volume	1	8	0	0	9	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	21
% App Total	11.1%	88.9%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.250	.667	.000		.750	.000	.000	.000		.000	.000	.750	.000		.750	.000	.000	.000		.000	.875

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-021 Auburn Folsom Rd & Eureka Dr
Date : 5/18/2017

Unshifted Count = All Vehicles & Uturns

	Auburn Folsom Rd Southbound					Eureka Dr Westbound					Auburn Folsom Rd Northbound					Eureka Dr 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	Uturns Total
7:00	0	357	41	0	398	1	1	0	0	2	26	308	0	0	334	13	0	24	0	37	771	0
7:15	0	408	53	0	461	0	1	0	0	1	29	370	0	0	399	29	1	35	0	65	926	0
7:30	2	449	52	0	503	0	0	1	0	1	55	371	0	0	426	62	1	41	0	104	1034	0
7:45	0	390	47	0	437	0	0	1	0	1	52	356	0	0	408	17	0	31	0	48	894	0
Total	2	1604	193	0	1799	1	2	2	0	5	162	1405	0	0	1567	121	2	131	0	254	3625	0
8:00	0	355	21	0	376	0	0	0	0	0	44	342	0	0	386	13	0	21	0	34	796	0
8:15	0	344	15	3	362	2	0	1	0	3	29	334	0	0	363	15	1	30	0	46	774	3
8:30	1	316	27	2	346	0	2	0	0	2	26	346	0	1	373	13	1	30	0	44	765	3
8:45	1	309	21	2	333	0	1	0	0	1	29	299	0	1	329	22	0	19	0	41	704	3
Total	2	1324	84	7	1417	2	3	1	0	6	128	1321	0	2	1451	63	2	100	0	165	3039	9
16:00	2	323	20	0	345	0	0	0	0	0	33	460	0	0	493	24	0	55	0	79	917	0
16:15	0	398	25	2	425	0	0	0	0	0	32	448	0	2	482	13	0	46	0	59	966	4
16:30	0	376	19	5	400	0	0	0	0	0	36	464	0	0	500	10	0	51	0	61	961	5
16:45	1	365	16	4	386	0	0	0	0	0	24	457	0	1	482	21	0	55	0	76	944	5
Total	3	1462	80	11	1556	0	0	0	0	0	125	1829	0	3	1957	68	0	207	0	275	3788	14
17:00	0	381	24	1	406	0	0	0	0	0	25	468	0	1	494	15	0	41	0	56	956	2
17:15	1	408	16	3	428	0	0	1	0	1	32	471	0	0	503	19	1	74	0	94	1026	3
17:30	0	407	25	0	432	0	0	1	0	1	31	455	1	0	487	11	0	72	0	83	1003	0
17:45	0	329	27	1	357	0	0	0	0	0	26	466	0	0	492	12	0	43	0	55	904	1
Total	1	1525	92	5	1623	0	0	2	0	2	114	1860	1	1	1976	57	1	230	0	288	3889	6
Grand Total	8	5915	449	23	6395	3	5	5	0	13	529	6415	1	6	6951	309	5	668	0	982	14341	29
Apprch %	0.1%	92.5%	7.0%	0.4%		23.1%	38.5%	38.5%	0.0%		7.6%	92.3%	0.0%	0.1%		31.5%	0.5%	68.0%	0.0%			
Total %	0.1%	41.2%	3.1%	0.2%	44.6%	0.0%	0.0%	0.0%	0.0%	0.1%	3.7%	44.7%	0.0%	0.0%	48.5%	2.2%	0.0%	4.7%	0.0%	6.8%	100.0%	

AM PEAK HOUR	Auburn Folsom Rd Southbound					Eureka Dr Westbound					Auburn Folsom Rd Northbound					Eureka Dr 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																					
7:15	0	408	53	0	461	0	1	0	0	1	29	370	0	0	399	29	1	35	0	65	926
7:30	2	449	52	0	503	0	0	1	0	1	55	371	0	0	426	62	1	41	0	104	1034
7:45	0	390	47	0	437	0	0	1	0	1	52	356	0	0	408	17	0	31	0	48	894
8:00	0	355	21	0	376	0	0	0	0	0	44	342	0	0	386	13	0	21	0	34	796
Total Volume	2	1602	173	0	1777	0	1	2	0	3	180	1439	0	0	1619	121	2	128	0	251	3650
% App Total	0.1%	90.2%	9.7%	0.0%		0.0%	33.3%	66.7%	0.0%		11.1%	88.9%	0.0%	0.0%		48.2%	0.8%	51.0%	0.0%		
PHF	.250	.892	.816	.000	.883	.000	.250	.500	.000	.750	.818	.970	.000	.000	.950	.488	.500	.780	.000	.603	.882

PM PEAK HOUR	Auburn Folsom Rd Southbound					Eureka Dr Westbound					Auburn Folsom Rd Northbound					Eureka Dr 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 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	1	365	16	4	386	0	0	0	0	0	24	457	0	1	482	21	0	55	0	76	944
17:00	0	381	24	1	406	0	0	0	0	0	25	468	0	1	494	15	0	41	0	56	956
17:15	1	408	16	3	428	0	0	1	0	1	32	471	0	0	503	19	1	74	0	94	1026
17:30	0	407	25	0	432	0	0	1	0	1	31	455	1	0	487	11	0	72	0	83	1003
Total Volume	2	1561	81	8	1652	0	0	2	0	2	112	1851	1	2	1966	66	1	242	0	309	3929
% App Total	0.1%	94.5%	4.9%	0.5%		0.0%	0.0%	100.0%	0.0%		5.7%	94.2%	0.1%	0.1%		21.4%	0.3%	78.3%	0.0%		
PHF	.500	.956	.810	.500	.956	.000	.000	.500	.000	.500	.875	.982	.250	.500	.977	.786	.250	.818	.000	.822	.957

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-021 Auburn Folsom Rd & Eureka Dr
Date : 5/18/2017

Bank 1 Count = Bikes & Peds

	Auburn Folsom Rd Southbound					Eureka Dr Westbound					Auburn Folsom Rd Northbound					Eureka Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0
7:15	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	1
7:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	6	1
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0
8:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
8:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	1
Total	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	5	2
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2
16:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
16:45	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2	0
Total	0	1	0	0	1	0	0	0	1	0	0	2	0	0	2	0	0	0	1	0	3	2
17:00	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	3	0
17:15	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3	0
17:30	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
17:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0
Total	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	9	0
Grand Total	0	13	0	0	13	0	0	0	1	0	0	6	0	0	6	0	0	4	4	4	23	5
Apprch %	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	100.0%				
Total %	0.0%	56.5%	0.0%		56.5%	0.0%	0.0%	0.0%		0.0%	0.0%	26.1%	0.0%		26.1%	0.0%	0.0%	17.4%		17.4%	100.0%	

AM PEAK HOUR	Auburn Folsom Rd Southbound					Eureka Dr Westbound					Auburn Folsom Rd Northbound					Eureka Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4
7:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	5
% App Total	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.313	.000		.313	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.313

PM PEAK HOUR	Auburn Folsom Rd Southbound					Eureka Dr Westbound					Auburn Folsom Rd Northbound					Eureka Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
17:00	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	3
17:15	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
17:30	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	0	0	1	0	1	10
% App Total	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	100.0%			
PHF	.000	.500	.000		.500	.000	.000	.000		.000	.000	.625	.000		.625	.000	.000	.250		.250	.833

National Data and Surveying Services

City of Granite Bay
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7441-021 Auburn Folsom Rd & Eureka Dr
Date : 5/18/2017

Bank 2 Count = Heavy Trucks

	Auburn Folsom Rd Southbound					Eureka Dr Westbound					Auburn Folsom Rd Northbound					Eureka Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	3	0
7:15	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	4	0	0	0	4	7	0
7:30	1	2	1	0	4	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	6	0
7:45	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	9	0
Total	1	8	3	0	12	0	0	0	0	0	1	7	0	0	8	4	0	1	0	5	25	0
8:00	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5	0
8:15	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5	0
8:30	0	5	4	0	9	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	13	0
8:45	1	3	0	0	4	0	1	0	0	1	0	4	0	0	4	1	0	0	0	1	10	0
Total	1	13	4	0	18	0	1	0	0	1	0	12	0	0	12	1	0	1	0	2	33	0
16:00	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4	0
16:15	0	2	2	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	8	0
16:30	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	7	0
16:45	0	2	0	0	2	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	7	0
Total	0	10	2	0	12	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	26	0
17:00	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2	0
17:15	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	5	0
17:30	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5	0
17:45	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3	0
Total	0	6	0	0	6	0	0	0	0	0	0	8	0	0	8	0	0	1	0	1	15	0
Grand Total	2	37	9	0	48	0	1	0	0	1	1	41	0	0	42	5	0	3	0	8	99	0
Apprch %	4.2%	77.1%	18.8%			0.0%	100.0%	0.0%			2.4%	97.6%	0.0%			62.5%	0.0%	37.5%				
Total %	2.0%	37.4%	9.1%		48.5%	0.0%	1.0%	0.0%		1.0%	1.0%	41.4%	0.0%		42.4%	5.1%	0.0%	3.0%		8.1%	100.0%	

AM PEAK HOUR	Auburn Folsom Rd Southbound					Eureka Dr Westbound					Auburn Folsom Rd Northbound					Eureka Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	4	0	0	0	4	7
7:30	1	2	1	0	4	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	6
7:45	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	9
8:00	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
Total Volume	1	11	2	0	14	0	0	0	0	0	1	8	0	0	9	4	0	0	0	4	27
% App Total	7.1%	78.6%	14.3%			0.0%	0.0%	0.0%			11.1%	88.9%	0.0%			100.0%	0.0%	0.0%			
PHF	.250	.550	.500		.700	.000	.000	.000		.000	.250	.500	.000		.563	.250	.000	.000		.250	.750

PM PEAK HOUR	Auburn Folsom Rd Southbound					Eureka Dr Westbound					Auburn Folsom Rd Northbound					Eureka Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	2	0	0	2	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	7
17:00	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
17:15	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	5
17:30	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5
Total Volume	0	6	0	0	6	0	0	0	0	0	0	12	0	0	12	0	0	1	0	1	19
% App Total	0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	100.0%			
PHF	.000	.750	.000		.750	.000	.000	.000		.000	.000	.600	.000		.600	.000	.000	.250		.250	.679

Appendix B:
Existing Conditions – Technical Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	1156	172	226	1685	113	438	811	125	208	581	171
Future Volume (veh/h)	184	1156	172	226	1685	113	438	811	125	208	581	171
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	200	1257	53	246	1832	0	476	882	0	226	632	138
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	259	1659	508	533	2149		531	1298		288	773	166
Arrive On Green	0.07	0.32	0.32	0.15	0.42	0.00	0.20	0.34	0.00	0.08	0.18	0.18
Sat Flow, veh/h	3456	5106	1564	3456	5106	1585	3456	5106	1585	3456	4202	903
Grp Volume(v), veh/h	200	1257	53	246	1832	0	476	882	0	226	510	260
Grp Sat Flow(s),veh/h/ln	1728	1702	1564	1728	1702	1585	1728	1702	1585	1728	1702	1701
Q Serve(g_s), s	6.8	26.5	1.8	7.8	38.9	0.0	16.1	17.8	0.0	7.7	17.3	17.7
Cycle Q Clear(g_c), s	6.8	26.5	1.8	7.8	38.9	0.0	16.1	17.8	0.0	7.7	17.3	17.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	259	1659	508	533	2149		531	1298		288	626	313
V/C Ratio(X)	0.77	0.76	0.10	0.46	0.85		0.90	0.68		0.79	0.81	0.83
Avail Cap(c_a), veh/h	461	1659	508	533	2149		605	1298		605	681	340
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	36.3	11.9	46.2	31.4	0.0	46.8	35.5	0.0	53.9	47.0	47.2
Incr Delay (d2), s/veh	1.9	3.3	0.4	0.2	3.6	0.0	13.8	1.6	0.0	1.8	7.6	15.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	11.0	1.1	3.3	15.7	0.0	7.4	6.8	0.0	3.3	7.8	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.3	39.6	12.3	46.4	35.0	0.0	60.6	37.1	0.0	55.8	54.6	63.1
LnGrp LOS	E	D	B	D	C		E	D		E	D	E
Approach Vol, veh/h		1510			2078	A		1358	A		996	
Approach Delay, s/veh		40.8			36.3			45.4			57.1	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.5	45.0	22.4	28.1	13.0	56.5	14.0	36.5
Change Period (Y+Rc), s	6.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	14.0	39.0	21.0	24.0	16.0	39.0	21.0	24.0
Max Q Clear Time (g_c+I1), s	9.8	28.5	18.1	19.7	8.8	40.9	9.7	19.8
Green Ext Time (p_c), s	0.2	7.2	0.3	2.3	0.2	0.0	0.3	2.4

Intersection Summary	
HCM 6th Ctrl Delay	43.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved ignoring U-Turning movement.
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	1318	77	50	1808	85	46	20	40	76	23	165
Future Volume (veh/h)	56	1318	77	50	1808	85	46	20	40	76	23	165
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	61	1433	48	54	1965	56	50	22	0	83	25	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	78	2414	1053	70	2397	1047	65	29	82	111	33	126
Arrive On Green	0.09	1.00	1.00	0.04	0.67	0.67	0.05	0.05	0.00	0.08	0.08	0.08
Sat Flow, veh/h	1781	3554	1550	1781	3554	1552	1255	552	1585	1384	417	1579
Grp Volume(v), veh/h	61	1433	48	54	1965	56	72	0	0	108	0	8
Grp Sat Flow(s),veh/h/ln	1781	1777	1550	1781	1777	1552	1808	0	1585	1801	0	1579
Q Serve(g_s), s	4.0	0.0	0.0	3.6	48.3	1.5	4.7	0.0	0.0	7.0	0.0	0.6
Cycle Q Clear(g_c), s	4.0	0.0	0.0	3.6	48.3	1.5	4.7	0.0	0.0	7.0	0.0	0.6
Prop In Lane	1.00		1.00	1.00		1.00	0.69		1.00	0.77		1.00
Lane Grp Cap(c), veh/h	78	2414	1053	70	2397	1047	94	0	82	144	0	126
V/C Ratio(X)	0.78	0.59	0.05	0.77	0.82	0.05	0.77	0.00	0.00	0.75	0.00	0.06
Avail Cap(c_a), veh/h	238	2414	1053	238	2397	1047	241	0	211	465	0	408
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)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.2	0.0	0.0	57.1	14.2	6.6	56.2	0.0	0.0	54.0	0.0	51.1
Incr Delay (d2), s/veh	6.2	1.1	0.1	6.7	2.4	0.0	4.9	0.0	0.0	3.0	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(50%),veh/ln	1.8	0.4	0.0	1.7	15.9	0.4	2.3	0.0	0.0	3.3	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.4	1.1	0.1	63.8	16.6	6.6	61.1	0.0	0.0	57.0	0.0	51.1
LnGrp LOS	E	A	A	E	B	A	E	A	A	E	A	D
Approach Vol, veh/h		1542			2075			72			116	
Approach Delay, s/veh		3.4			17.6			61.1			56.6	
Approach LOS		A			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.7	87.5		13.6	9.3	86.9		10.2
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0
Max Green Setting (Gmax), s	16.0	39.0		31.0	16.0	39.0		16.0
Max Q Clear Time (g_c+I1), s	5.6	2.0		9.0	6.0	50.3		6.7
Green Ext Time (p_c), s	0.0	15.3		0.4	0.0	0.0		0.1

Intersection Summary	
HCM 6th Ctrl Delay	13.9
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved ignoring U-Turning movement.

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	1361	34	41	1839	7	5	0	57	0	1	99
Future Vol, veh/h	39	1361	34	41	1839	7	5	0	57	0	1	99
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	150	-	100	175	-	-	-	-	125	-	-	25
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	42	1479	37	45	1999	8	5	0	62	0	1	108

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2007	0	0	1516	0	0	2653	3660	740	2917	3693	1004
Stage 1	-	-	-	-	-	-	1563	1563	-	2093	2093	-
Stage 2	-	-	-	-	-	-	1090	2097	-	824	1600	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	281	-	-	437	-	-	11	5	359	7	5	240
Stage 1	-	-	-	-	-	-	117	171	-	54	92	-
Stage 2	-	-	-	-	-	-	230	92	-	333	164	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	281	-	-	437	-	-	~ 4	4	359	5	4	240
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 4	4	-	5	4	-
Stage 1	-	-	-	-	-	-	100	146	-	46	83	-
Stage 2	-	-	-	-	-	-	112	83	-	234	140	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.3	155.4	42.4
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	4	359	281	-	-	437	-	-	4	240
HCM Lane V/C Ratio	1.359	0.173	0.151	-	-	0.102	-	-	0.272	0.448
HCM Control Delay (s)	$ 1731.9	17.1	20.1	-	-	14.2	-		$ 1111.1	31.6
HCM Lane LOS	F	C	C	-	-	B	-	-	F	D
HCM 95th %tile Q(veh)	1.5	0.6	0.5	-	-	0.3	-	-	0.5	2.2

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	1361	0	2	1840	82	0	0	0	50	0	46
Future Volume (veh/h)	58	1361	0	2	1840	82	0	0	0	50	0	46
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98				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
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1870	1870	0	1870	1870	1870				1870	0	1870
Adj Flow Rate, veh/h	63	1479	0	2	2000	88				54	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	2	2	2				2	0	2
Cap, veh/h	80	2609	0	78	2540	111				70	0	62
Arrive On Green	0.04	0.73	0.00	0.04	0.73	0.73				0.04	0.00	0.04
Sat Flow, veh/h	1781	3647	0	1781	3465	151				1781	0	1585
Grp Volume(v), veh/h	63	1479	0	2	1017	1071				54	0	1
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1839				1781	0	1585
Q Serve(g_s), s	2.4	12.9	0.0	0.1	24.4	25.4				2.1	0.0	0.0
Cycle Q Clear(g_c), s	2.4	12.9	0.0	0.1	24.4	25.4				2.1	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.08				1.00		1.00
Lane Grp Cap(c), veh/h	80	2609	0	78	1302	1348				70	0	62
V/C Ratio(X)	0.79	0.57	0.00	0.03	0.78	0.79				0.78	0.00	0.02
Avail Cap(c_a), veh/h	600	3485	0	339	1743	1804				886	0	789
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	32.3	4.1	0.0	31.3	5.7	5.8				32.5	0.0	31.6
Incr Delay (d2), s/veh	6.2	0.2	0.0	0.0	1.7	1.8				6.8	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
%ile BackOfQ(50%),veh/ln	1.1	1.4	0.0	0.0	3.2	3.4				1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.5	4.3	0.0	31.3	7.4	7.7				39.3	0.0	31.6
LnGrp LOS	D	A	A	C	A	A				D	A	C
Approach Vol, veh/h		1542			2090						55	
Approach Delay, s/veh		5.7			7.5						39.2	
Approach LOS		A			A						D	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	6.1	56.1		6.2	6.0	56.2
Change Period (Y+Rc), s	3.0	6.0		3.5	3.0	6.0
Max Green Setting (Gmax), s	23.0	67.0		34.0	13.0	67.0
Max Q Clear Time (g_c+I1), s	4.4	27.4		4.1	2.1	14.9
Green Ext Time (p_c), s	0.0	22.7		0.1	0.0	14.0

Intersection Summary	
HCM 6th Ctrl Delay	7.3
HCM 6th LOS	A

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	1187	130	134	1564	114	215	98	76	137	116	34
Future Volume (veh/h)	41	1187	130	134	1564	114	215	98	76	137	116	34
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		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	44	1263	131	143	1664	76	166	191	0	146	123	4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	56	1367	141	175	1733	755	220	231		166	140	263
Arrive On Green	0.03	0.42	0.42	0.10	0.48	0.48	0.12	0.12	0.00	0.17	0.17	0.17
Sat Flow, veh/h	1795	3276	339	1795	3582	1562	1795	1885	1598	996	839	1576
Grp Volume(v), veh/h	44	688	706	143	1664	76	166	191	0	269	0	4
Grp Sat Flow(s),veh/h/ln	1795	1791	1824	1795	1791	1562	1795	1885	1598	1835	0	1576
Q Serve(g_s), s	2.2	33.1	33.4	7.1	40.7	2.4	8.1	9.0	0.0	13.0	0.0	0.2
Cycle Q Clear(g_c), s	2.2	33.1	33.4	7.1	40.7	2.4	8.1	9.0	0.0	13.0	0.0	0.2
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	0.54		1.00
Lane Grp Cap(c), veh/h	56	747	761	175	1733	755	220	231		306	0	263
V/C Ratio(X)	0.79	0.92	0.93	0.81	0.96	0.10	0.75	0.83		0.88	0.00	0.02
Avail Cap(c_a), veh/h	296	788	803	395	1773	773	395	415		404	0	347
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.7	25.1	25.2	40.2	22.6	12.7	38.6	38.9	0.0	37.0	0.0	31.6
Incr Delay (d2), s/veh	8.7	15.2	15.8	3.5	12.9	0.0	2.0	2.9	0.0	13.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	15.1	15.6	3.1	17.5	0.7	3.6	4.2	0.0	6.8	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.5	40.3	41.0	43.7	35.6	12.8	40.5	41.8	0.0	50.2	0.0	31.6
LnGrp LOS	D	D	D	D	D	B	D	D		D	A	C
Approach Vol, veh/h		1438			1883			357	A		273	
Approach Delay, s/veh		41.0			35.3			41.2			49.9	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.9	43.9		19.6	5.8	50.0		15.5
Change Period (Y+Rc), s	3.0	6.0		4.4	3.0	6.0		4.4
Max Green Setting (Gmax), s	20.0	40.0		20.0	15.0	45.0		20.0
Max Q Clear Time (g_c+I1), s	9.1	35.4		15.0	4.2	42.7		11.0
Green Ext Time (p_c), s	0.0	1.4		0.2	0.0	1.3		0.1

Intersection Summary	
HCM 6th Ctrl Delay	38.9
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	125	1022	74	251	96	1172	341	42	80	612	259
Future Volume (veh/h)	136	125	1022	74	251	96	1172	341	42	80	612	259
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	151	139	0	82	279	0	1302	379	0	89	680	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	183	516		105	362		1384	727		384	766	
Arrive On Green	0.10	0.14	0.00	0.06	0.10	0.00	0.39	0.39	0.00	0.21	0.21	0.00
Sat Flow, veh/h	1795	3582	1598	1795	3582	1598	3591	1885	1598	1795	3582	1598
Grp Volume(v), veh/h	151	139	0	82	279	0	1302	379	0	89	680	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1598	1795	1885	1598	1795	1791	1598
Q Serve(g_s), s	8.0	3.4	0.0	4.4	7.4	0.0	34.1	15.1	0.0	4.0	18.0	0.0
Cycle Q Clear(g_c), s	8.0	3.4	0.0	4.4	7.4	0.0	34.1	15.1	0.0	4.0	18.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	183	516		105	362		1384	727		384	766	
V/C Ratio(X)	0.83	0.27		0.78	0.77		0.94	0.52		0.23	0.89	
Avail Cap(c_a), veh/h	460	918		276	735		1657	870		460	918	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.0	37.2	0.0	45.3	42.7	0.0	28.9	23.0	0.0	31.7	37.2	0.0
Incr Delay (d2), s/veh	3.6	0.1	0.0	4.6	1.3	0.0	9.3	0.2	0.0	0.1	8.3	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(50%),veh/ln	3.6	1.4	0.0	2.0	3.2	0.0	15.4	6.3	0.0	1.7	8.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.6	37.3	0.0	49.9	44.1	0.0	38.2	23.3	0.0	31.8	45.5	0.0
LnGrp LOS	D	D		D	D		D	C		C	D	
Approach Vol, veh/h		290	A		361	A		1681	A		769	A
Approach Delay, s/veh		42.1			45.4			34.8			43.9	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.7	19.8		26.2	12.9	15.6		42.9
Change Period (Y+Rc), s	3.0	5.7		5.3	3.0	* 5.7		5.3
Max Green Setting (Gmax), s	15.0	25.0		25.0	25.0	* 20		45.0
Max Q Clear Time (g_c+I1), s	6.4	5.4		20.0	10.0	9.4		36.1
Green Ext Time (p_c), s	0.0	0.2		0.9	0.0	0.5		1.5

Intersection Summary	
HCM 6th Ctrl Delay	39.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	14	117	22	4	21	90	1304	57	85	822	31
Future Volume (veh/h)	127	14	117	22	4	21	90	1304	57	85	822	31
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		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	149	0	4	24	4	0	98	1417	35	92	893	19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	325	0	144	86	14	88	123	1885	572	574	3252	983
Arrive On Green	0.09	0.00	0.09	0.06	0.06	0.00	0.07	0.37	0.37	0.64	1.00	1.00
Sat Flow, veh/h	3563	0	1585	1537	256	1585	1781	5106	1550	1781	5106	1543
Grp Volume(v), veh/h	149	0	4	28	0	0	98	1417	35	92	893	19
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1793	0	1585	1781	1702	1550	1781	1702	1543
Q Serve(g_s), s	4.8	0.0	0.3	1.8	0.0	0.0	6.5	29.1	1.7	2.5	0.0	0.0
Cycle Q Clear(g_c), s	4.8	0.0	0.3	1.8	0.0	0.0	6.5	29.1	1.7	2.5	0.0	0.0
Prop In Lane	1.00		1.00	0.86		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	325	0	144	100	0	88	123	1885	572	574	3252	983
V/C Ratio(X)	0.46	0.00	0.03	0.28	0.00	0.00	0.80	0.75	0.06	0.16	0.27	0.02
Avail Cap(c_a), veh/h	623	0	277	314	0	277	312	1885	572	574	3252	983
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	49.7	54.4	0.0	0.0	55.1	33.0	24.4	14.9	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.6	0.0	0.0	4.5	2.8	0.2	0.0	0.1	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	2.2	0.0	0.1	0.8	0.0	0.0	3.0	11.9	0.7	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.1	0.0	49.7	54.9	0.0	0.0	59.5	35.9	24.6	14.9	0.1	0.0
LnGrp LOS	D	A	D	D	A	A	E	D	C	B	A	A
Approach Vol, veh/h		153			28			1550			1004	
Approach Delay, s/veh		52.0			54.9			37.1			1.5	
Approach LOS		D			D			D			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	44.4	50.0		14.9	12.3	82.1		10.7
Change Period (Y+Rc), s	5.7	* 5.7		4.0	4.0	5.7		4.0
Max Green Setting (Gmax), s	16.3	* 44		21.0	21.0	39.3		21.0
Max Q Clear Time (g_c+I1), s	14.5	31.1		6.8	8.5	2.0		3.8
Green Ext Time (p_c), s	0.1	10.8		0.2	0.1	14.3		0.0

Intersection Summary	
HCM 6th Ctrl Delay	25.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	152	47	38	232	274	68	1086	37	144	671	135
Future Volume (veh/h)	111	152	47	38	232	274	68	1086	37	144	671	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	121	165	0	41	252	0	74	1180	0	157	729	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	226		215	356		122	1385		185	1460	
Arrive On Green	0.08	0.12	0.00	0.06	0.10	0.00	0.07	0.39	0.00	0.10	0.41	0.00
Sat Flow, veh/h	1781	1870	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	121	165	0	41	252	0	74	1180	0	157	729	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.0	10.2	0.0	1.4	8.2	0.0	4.8	36.4	0.0	10.4	18.2	0.0
Cycle Q Clear(g_c), s	8.0	10.2	0.0	1.4	8.2	0.0	4.8	36.4	0.0	10.4	18.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	147	226		215	356		122	1385		185	1460	
V/C Ratio(X)	0.82	0.73		0.19	0.71		0.61	0.85		0.85	0.50	
Avail Cap(c_a), veh/h	238	301		461	572		238	1385		386	1460	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.2	50.9	0.0	53.4	52.3	0.0	54.3	33.5	0.0	52.8	26.2	0.0
Incr Delay (d2), s/veh	5.2	8.7	0.0	0.2	4.4	0.0	1.8	5.6	0.0	4.1	1.2	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	3.7	5.2	0.0	0.6	3.9	0.0	2.2	15.9	0.0	4.7	7.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.4	59.6	0.0	53.6	56.7	0.0	56.1	39.1	0.0	56.9	27.4	0.0
LnGrp LOS	E	E		D	E		E	D		E	C	
Approach Vol, veh/h		286	A		293	A		1254	A		886	A
Approach Delay, s/veh		59.5			56.2			40.1			32.7	
Approach LOS		E			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	52.5	11.5	20.2	13.9	55.0	13.9	17.7
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	5.7
Max Green Setting (Gmax), s	26.0	39.3	16.0	19.3	16.0	* 49	16.0	19.3
Max Q Clear Time (g_c+I1), s	12.4	38.4	3.4	12.2	6.8	20.2	10.0	10.2
Green Ext Time (p_c), s	0.2	0.7	0.0	0.6	0.0	8.3	0.1	1.4

Intersection Summary	
HCM 6th Ctrl Delay	41.4
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved ignoring U-Turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	22	463	470	33	76	49
Future Vol, veh/h	22	463	470	33	76	49
Conflicting Peds, #/hr	6	0	0	6	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	28	586	595	42	96	62

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	643	0	-	0	951	304
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	350	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	945	-	-	-	260	695
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	687	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	940	-	-	-	249	691
Mov Cap-2 Maneuver	-	-	-	-	249	-
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	683	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	25.3
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	940	-	-	-	332
HCM Lane V/C Ratio	0.03	-	-	-	0.477
HCM Control Delay (s)	8.9	-	-	-	25.3
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	192	0	82	6	1453	119	85	1586	0
Future Volume (veh/h)	0	0	0	192	0	82	6	1453	119	85	1586	0
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1885	0	1885	1870	1885	1885	1885	1885	0
Adj Flow Rate, veh/h				213	0	10	7	1614	104	94	1762	0
Peak Hour Factor				0.90	0.92	0.90	0.92	0.90	0.90	0.90	0.90	0.92
Percent Heavy Veh, %				1	0	1	2	1	1	1	1	0
Cap, veh/h				276	0	246	13	2012	897	122	2229	0
Arrive On Green				0.15	0.00	0.15	0.01	0.56	0.56	0.07	0.62	0.00
Sat Flow, veh/h				1795	0	1598	1781	3582	1598	1795	3676	0
Grp Volume(v), veh/h				213	0	10	7	1614	104	94	1762	0
Grp Sat Flow(s),veh/h/ln				1795	0	1598	1781	1791	1598	1795	1791	0
Q Serve(g_s), s				7.2	0.0	0.3	0.2	22.7	1.9	3.3	23.1	0.0
Cycle Q Clear(g_c), s				7.2	0.0	0.3	0.2	22.7	1.9	3.3	23.1	0.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				276	0	246	13	2012	897	122	2229	0
V/C Ratio(X)				0.77	0.00	0.04	0.54	0.80	0.12	0.77	0.79	0.00
Avail Cap(c_a), veh/h				710	0	632	564	2266	1011	568	2266	0
HCM Platoon Ratio				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	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				25.7	0.0	22.8	31.3	11.0	6.5	29.0	8.9	0.0
Incr Delay (d2), s/veh				5.5	0.0	0.1	12.1	2.0	0.1	3.9	1.9	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
%ile BackOfQ(50%),veh/ln				3.3	0.0	0.1	0.1	7.0	0.5	1.4	6.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.2	0.0	22.9	43.4	13.1	6.6	32.8	10.8	0.0
LnGrp LOS				C	A	C	D	B	A	C	B	A
Approach Vol, veh/h					223			1725			1856	
Approach Delay, s/veh					30.8			12.8			11.9	
Approach LOS					C			B			B	

Timer - Assigned Phs	1	2		5	6	8
Phs Duration (G+Y+Rc), s	8.3	41.2		4.5	45.0	13.7
Change Period (Y+Rc), s	4.0	5.7		4.0	* 5.7	4.0
Max Green Setting (Gmax), s	20.0	40.0		20.0	* 40	25.0
Max Q Clear Time (g_c+I1), s	5.3	24.7		2.2	25.1	9.2
Green Ext Time (p_c), s	0.0	10.8		0.0	10.5	0.7

Intersection Summary	
HCM 6th Ctrl Delay	13.4
HCM 6th LOS	B

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	2	128	0	1	2	180	1439	0	2	1602	173
Future Volume (veh/h)	121	2	128	0	1	2	180	1439	0	2	1602	173
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	134	2	1	0	1	0	200	1599	0	2	1780	143
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	172	3	156	2	3	0	242	2307	0	72	1968	857
Arrive On Green	0.10	0.10	0.10	0.00	0.00	0.00	0.13	0.64	0.00	0.04	0.55	0.55
Sat Flow, veh/h	1770	26	1598	1795	1885	0	1795	3676	0	1795	3582	1559
Grp Volume(v), veh/h	136	0	1	0	1	0	200	1599	0	2	1780	143
Grp Sat Flow(s),veh/h/ln	1797	0	1598	1795	1885	0	1795	1791	0	1795	1791	1559
Q Serve(g_s), s	5.5	0.0	0.0	0.0	0.0	0.0	8.1	21.5	0.0	0.1	33.4	3.4
Cycle Q Clear(g_c), s	5.5	0.0	0.0	0.0	0.0	0.0	8.1	21.5	0.0	0.1	33.4	3.4
Prop In Lane	0.99		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	0	156	2	3	0	242	2307	0	72	1968	857
V/C Ratio(X)	0.78	0.00	0.01	0.00	0.39	0.00	0.83	0.69	0.00	0.03	0.90	0.17
Avail Cap(c_a), veh/h	598	0	532	239	251	0	359	2863	0	239	2863	1246
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	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	0.0	30.6	0.0	37.4	0.0	31.6	8.6	0.0	34.6	15.1	8.4
Incr Delay (d2), s/veh	2.8	0.0	0.0	0.0	31.4	0.0	6.2	0.3	0.0	0.1	2.5	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(50%),veh/ln	2.4	0.0	0.0	0.0	0.0	0.0	3.6	5.4	0.0	0.0	11.4	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.9	0.0	30.6	0.0	68.8	0.0	37.8	8.9	0.0	34.7	17.6	8.4
LnGrp LOS	D	A	C	A	E	A	D	A	A	C	B	A
Approach Vol, veh/h		137			1			1799			1925	
Approach Delay, s/veh		35.8			68.8			12.1			17.0	
Approach LOS		D			E			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	54.0		11.4	13.1	46.9		3.6
Change Period (Y+Rc), s	3.0	5.7		4.1	3.0	5.7		3.5
Max Green Setting (Gmax), s	10.0	60.0		25.0	15.0	60.0		10.0
Max Q Clear Time (g_c+I1), s	2.1	23.5		7.5	10.1	35.4		2.0
Green Ext Time (p_c), s	0.0	4.3		0.2	0.1	5.8		0.0

Intersection Summary	
HCM 6th Ctrl Delay	15.4
HCM 6th 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												
Traffic Volume (veh/h)	394	1589	281	310	1354	238	446	876	206	248	765	148
Future Volume (veh/h)	394	1589	281	310	1354	238	446	876	206	248	765	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	419	1690	153	330	1440	0	474	932	0	264	814	137
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	466	1784	553	551	1979		522	1330		313	881	147
Arrive On Green	0.13	0.35	0.35	0.16	0.38	0.00	0.15	0.26	0.00	0.09	0.20	0.20
Sat Flow, veh/h	3483	5147	1596	3483	5147	1598	3483	5147	1598	3483	4439	742
Grp Volume(v), veh/h	419	1690	153	330	1440	0	474	932	0	264	628	323
Grp Sat Flow(s),veh/h/ln	1742	1716	1596	1742	1716	1598	1742	1716	1598	1742	1716	1750
Q Serve(g_s), s	17.8	47.9	6.9	13.2	35.9	0.0	20.1	24.6	0.0	11.2	26.9	27.2
Cycle Q Clear(g_c), s	17.8	47.9	6.9	13.2	35.9	0.0	20.1	24.6	0.0	11.2	26.9	27.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	466	1784	553	551	1979		522	1330		313	681	347
V/C Ratio(X)	0.90	0.95	0.28	0.60	0.73		0.91	0.70		0.84	0.92	0.93
Avail Cap(c_a), veh/h	534	1784	553	551	1979		604	1330		488	686	350
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.0	47.7	15.8	58.7	39.4	0.0	62.7	50.4	0.0	67.2	59.0	59.1
Incr Delay (d2), s/veh	15.5	12.0	1.2	1.3	2.4	0.0	15.0	1.8	0.0	4.5	18.2	31.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	21.8	4.0	5.8	15.2	0.0	9.8	10.6	0.0	5.1	13.2	14.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.5	59.7	17.1	60.0	41.8	0.0	77.8	52.2	0.0	71.7	77.2	90.2
LnGrp LOS	E	E	B	E	D		E	D		E	E	F
Approach Vol, veh/h		2262			1770	A		1406	A		1215	
Approach Delay, s/veh		60.5			45.2			60.8			79.5	
Approach LOS		E			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.7	58.0	26.5	35.8	24.1	63.7	17.5	44.8
Change Period (Y+Rc), s	6.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	20.0	52.0	26.0	30.0	23.0	51.0	21.0	35.0
Max Q Clear Time (g_c+I1), s	15.2	49.9	22.1	29.2	19.8	37.9	13.2	26.6
Green Ext Time (p_c), s	0.3	1.9	0.4	0.5	0.3	8.1	0.3	4.4

Intersection Summary	
HCM 6th Ctrl Delay	60.0
HCM 6th LOS	E

Notes

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

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	1797	23	85	1614	70	109	33	103	108	36	166
Future Volume (veh/h)	85	1797	23	85	1614	70	109	33	103	108	36	166
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		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	90	1912	13	90	1717	45	116	35	13	115	38	9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	110	2232	995	111	2234	976	135	41	155	134	44	157
Arrive On Green	0.12	1.00	1.00	0.06	0.62	0.62	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1795	3582	1596	1795	3582	1565	1395	421	1598	1366	451	1598
Grp Volume(v), veh/h	90	1912	13	90	1717	45	151	0	13	153	0	9
Grp Sat Flow(s),veh/h/ln	1795	1791	1596	1795	1791	1565	1815	0	1598	1817	0	1598
Q Serve(g_s), s	7.3	0.0	0.0	7.4	52.0	1.7	12.3	0.0	1.1	12.4	0.0	0.8
Cycle Q Clear(g_c), s	7.3	0.0	0.0	7.4	52.0	1.7	12.3	0.0	1.1	12.4	0.0	0.8
Prop In Lane	1.00		1.00	1.00		1.00	0.77		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	110	2232	995	111	2234	976	176	0	155	178	0	157
V/C Ratio(X)	0.82	0.86	0.01	0.81	0.77	0.05	0.86	0.00	0.08	0.86	0.00	0.06
Avail Cap(c_a), veh/h	251	2232	995	251	2234	976	254	0	224	254	0	224
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)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	65.0	0.0	0.0	69.5	20.4	10.9	66.7	0.0	61.7	66.6	0.0	61.4
Incr Delay (d2), s/veh	5.6	4.5	0.0	5.3	2.6	0.1	12.9	0.0	0.1	13.5	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(50%),veh/ln	3.3	1.4	0.0	3.5	20.1	0.6	6.4	0.0	0.5	6.5	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.6	4.5	0.0	74.8	23.0	11.0	79.6	0.0	61.7	80.2	0.0	61.4
LnGrp LOS	E	A	A	E	C	B	E	A	E	F	A	E
Approach Vol, veh/h		2015			1852			164			162	
Approach Delay, s/veh		7.4			25.2			78.2			79.1	
Approach LOS		A			C			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.3	99.5		18.7	13.2	99.6		18.6
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0
Max Green Setting (Gmax), s	21.0	69.0		21.0	21.0	69.0		21.0
Max Q Clear Time (g_c+I1), s	9.4	2.0		14.4	9.3	54.0		14.3
Green Ext Time (p_c), s	0.1	31.1		0.3	0.1	10.5		0.3

Intersection Summary	
HCM 6th Ctrl Delay	20.8
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	1907	56	31	1729	4	2	0	32	0	1	37
Future Vol, veh/h	45	1907	56	31	1729	4	2	0	32	0	1	37
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	150	-	100	175	-	-	-	-	125	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	48	2029	60	33	1839	4	2	0	34	0	1	39

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1843	0	0	2089	0	0	3111	4034	1015	3018	4092	922
Stage 1	-	-	-	-	-	-	2125	2125	-	1907	1907	-
Stage 2	-	-	-	-	-	-	986	1909	-	1111	2185	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.52	6.52	6.92	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Follow-up Hdwy	2.21	-	-	2.21	-	-	3.51	4.01	3.31	3.51	4.01	3.31
Pot Cap-1 Maneuver	330	-	-	265	-	-	5	3	238	6	2	274
Stage 1	-	-	-	-	-	-	52	90	-	71	116	-
Stage 2	-	-	-	-	-	-	268	116	-	225	84	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	330	-	-	265	-	-	-	2	238	4	~ 1	274
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	2	-	4	~ 1	-
Stage 1	-	-	-	-	-	-	44	77	-	61	102	-
Stage 2	-	-	-	-	-	-	199	102	-	165	72	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.4		149.6
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	238	330	-	-	265	-	-	1	274
HCM Lane V/C Ratio	-	0.143	0.145	-	-	0.124	-	-	1.064	0.144
HCM Control Delay (s)	-	22.6	17.8	-	-	20.5	-	$	4932.2	20.3
HCM Lane LOS	-	C	C	-	-	C	-	-	F	C
HCM 95th %tile Q(veh)	-	0.5	0.5	-	-	0.4	-	-	0.6	0.5

Notes

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

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	34	1905	1729	18	26	31
Future Volume (veh/h)	34	1905	1729	18	26	31
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	36	2027	1839	19	28	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	43	2837	2581	27	47	42
Arrive On Green	0.02	0.79	0.71	0.71	0.03	0.03
Sat Flow, veh/h	1795	3676	3725	37	1795	1598
Grp Volume(v), veh/h	36	2027	906	952	28	1
Grp Sat Flow(s),veh/h/ln	1795	1791	1791	1877	1795	1598
Q Serve(g_s), s	1.0	14.2	15.5	15.6	0.8	0.0
Cycle Q Clear(g_c), s	1.0	14.2	15.5	15.6	0.8	0.0
Prop In Lane	1.00			0.02	1.00	1.00
Lane Grp Cap(c), veh/h	43	2837	1273	1334	47	42
V/C Ratio(X)	0.84	0.71	0.71	0.71	0.59	0.02
Avail Cap(c_a), veh/h	790	4592	2296	2407	1168	1039
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	1.00	1.00
Uniform Delay (d), s/veh	25.4	2.6	4.4	4.4	25.2	24.8
Incr Delay (d2), s/veh	15.0	0.3	0.7	0.7	4.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.1	0.6	0.7	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.5	2.9	5.2	5.2	29.5	24.9
LnGrp LOS	D	A	A	A	C	C
Approach Vol, veh/h		2063	1858		29	
Approach Delay, s/veh		3.6	5.2		29.4	
Approach LOS		A	A		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	4.2	43.1		4.9		47.4
Change Period (Y+Rc), s	3.0	6.0		3.5		6.0
Max Green Setting (Gmax), s	23.0	67.0		34.0		67.0
Max Q Clear Time (g_c+I1), s	3.0	17.6		2.8		16.2
Green Ext Time (p_c), s	0.0	19.6		0.0		25.0

Intersection Summary	
HCM 6th Ctrl Delay	4.5
HCM 6th LOS	A

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	1567	199	92	1503	165	132	75	102	147	90	56
Future Volume (veh/h)	45	1567	199	92	1503	165	132	75	102	147	90	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	46	1615	198	95	1549	128	106	118	0	152	93	7
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	58	1549	187	122	1856	827	154	162		178	109	250
Arrive On Green	0.03	0.48	0.48	0.07	0.51	0.51	0.09	0.09	0.00	0.16	0.16	0.16
Sat Flow, veh/h	1810	3235	390	1810	3610	1609	1810	1900	1610	1143	700	1610
Grp Volume(v), veh/h	46	888	925	95	1549	128	106	118	0	245	0	7
Grp Sat Flow(s),veh/h/ln	1810	1805	1820	1810	1805	1609	1810	1900	1610	1843	0	1610
Q Serve(g_s), s	2.1	40.0	40.0	4.3	30.5	3.5	4.8	5.1	0.0	10.8	0.0	0.3
Cycle Q Clear(g_c), s	2.1	40.0	40.0	4.3	30.5	3.5	4.8	5.1	0.0	10.8	0.0	0.3
Prop In Lane	1.00		0.21	1.00		1.00	1.00		1.00	0.62		1.00
Lane Grp Cap(c), veh/h	58	864	872	122	1856	827	154	162		286	0	250
V/C Ratio(X)	0.79	1.03	1.06	0.78	0.83	0.15	0.69	0.73		0.86	0.00	0.03
Avail Cap(c_a), veh/h	325	864	872	433	1945	867	433	455		441	0	386
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.1	21.8	21.8	38.3	17.3	10.7	37.1	37.3	0.0	34.4	0.0	29.9
Incr Delay (d2), s/veh	8.4	37.9	48.0	4.0	2.9	0.0	2.0	2.4	0.0	6.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	22.5	25.1	1.9	10.9	1.0	2.1	2.4	0.0	5.2	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.5	59.6	69.7	42.3	20.2	10.7	39.2	39.6	0.0	40.6	0.0	29.9
LnGrp LOS	D	F	F	D	C	B	D	D		D	A	C
Approach Vol, veh/h		1859			1772			224	A		252	
Approach Delay, s/veh		64.4			20.7			39.4			40.3	
Approach LOS		E			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.6	46.0		17.4	5.7	48.9		11.5
Change Period (Y+Rc), s	3.0	6.0		4.4	3.0	6.0		4.4
Max Green Setting (Gmax), s	20.0	40.0		20.0	15.0	45.0		20.0
Max Q Clear Time (g_c+I1), s	6.3	42.0		12.8	4.1	32.5		7.1
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	3.5		0.1

Intersection Summary	
HCM 6th Ctrl Delay	42.7
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	269	1108	57	235	98	1176	689	80	111	440	201
Future Volume (veh/h)	211	269	1108	57	235	98	1176	689	80	111	440	201
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	220	280	0	59	245	0	1225	718	0	116	458	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	253	693		76	339		1461	767		277	553	
Arrive On Green	0.14	0.19	0.00	0.04	0.09	0.00	0.41	0.41	0.00	0.15	0.15	0.00
Sat Flow, veh/h	1795	3582	1598	1795	3582	1598	3591	1885	1598	1795	3582	1598
Grp Volume(v), veh/h	220	280	0	59	245	0	1225	718	0	116	458	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1598	1795	1885	1598	1795	1791	1598
Q Serve(g_s), s	11.4	6.5	0.0	3.1	6.3	0.0	29.2	34.7	0.0	5.6	11.8	0.0
Cycle Q Clear(g_c), s	11.4	6.5	0.0	3.1	6.3	0.0	29.2	34.7	0.0	5.6	11.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	253	693		76	339		1461	767		277	553	
V/C Ratio(X)	0.87	0.40		0.78	0.72		0.84	0.94		0.42	0.83	
Avail Cap(c_a), veh/h	471	940		283	752		1696	891		471	940	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	40.0	33.6	0.0	45.2	41.9	0.0	25.4	27.0	0.0	36.4	39.0	0.0
Incr Delay (d2), s/veh	3.5	0.1	0.0	6.2	1.1	0.0	3.0	14.6	0.0	0.4	1.2	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	5.0	2.7	0.0	1.5	2.8	0.0	12.1	17.4	0.0	2.4	5.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.6	33.7	0.0	51.3	43.0	0.0	28.4	41.7	0.0	36.8	40.3	0.0
LnGrp LOS	D	C		D	D		C	D		D	D	
Approach Vol, veh/h		500	A		304	A		1943	A		574	A
Approach Delay, s/veh		38.1			44.6			33.3			39.6	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.0	24.1		20.0	16.4	14.7		44.1
Change Period (Y+Rc), s	3.0	5.7		5.3	3.0	* 5.7		5.3
Max Green Setting (Gmax), s	15.0	25.0		25.0	25.0	* 20		45.0
Max Q Clear Time (g_c+I1), s	5.1	8.5		13.8	13.4	8.3		36.7
Green Ext Time (p_c), s	0.0	0.5		0.8	0.1	0.4		2.0

Intersection Summary	
HCM 6th Ctrl Delay	36.1
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	9	181	72	13	72	123	1207	31	92	1148	65
Future Volume (veh/h)	188	9	181	72	13	72	123	1207	31	92	1148	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	207	0	11	77	14	4	131	1284	16	98	1221	35
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	358	0	156	134	24	140	158	1900	584	506	2969	919
Arrive On Green	0.10	0.00	0.10	0.09	0.09	0.09	0.09	0.37	0.37	0.28	0.58	0.58
Sat Flow, veh/h	3591	0	1569	1530	278	1598	1795	5147	1582	1795	5147	1593
Grp Volume(v), veh/h	207	0	11	91	0	4	131	1284	16	98	1221	35
Grp Sat Flow(s),veh/h/ln	1795	0	1569	1809	0	1598	1795	1716	1582	1795	1716	1593
Q Serve(g_s), s	6.6	0.0	0.8	5.8	0.0	0.3	8.6	25.2	0.8	5.0	15.8	1.1
Cycle Q Clear(g_c), s	6.6	0.0	0.8	5.8	0.0	0.3	8.6	25.2	0.8	5.0	15.8	1.1
Prop In Lane	1.00		1.00	0.85		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	358	0	156	159	0	140	158	1900	584	506	2969	919
V/C Ratio(X)	0.58	0.00	0.07	0.57	0.00	0.03	0.83	0.68	0.03	0.19	0.41	0.04
Avail Cap(c_a), veh/h	628	0	275	317	0	280	314	1900	584	506	2969	919
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.6	0.0	49.0	52.6	0.0	50.1	53.8	31.8	24.1	32.7	14.1	11.0
Incr Delay (d2), s/veh	0.6	0.0	0.1	1.2	0.0	0.0	4.2	1.9	0.1	0.1	0.2	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	3.0	0.0	0.3	2.7	0.0	0.1	4.0	10.3	0.3	2.1	5.7	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.2	0.0	49.0	53.8	0.0	50.1	58.0	33.8	24.2	32.8	14.3	11.0
LnGrp LOS	D	A	D	D	A	D	E	C	C	C	B	B
Approach Vol, veh/h		218			95			1431			1354	
Approach Delay, s/veh		52.0			53.6			35.9			15.6	
Approach LOS		D			D			D			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	39.5	50.0		16.0	14.6	74.9		14.5
Change Period (Y+Rc), s	5.7	* 5.7		4.0	4.0	5.7		4.0
Max Green Setting (Gmax), s	16.0	* 44		21.0	21.0	39.3		21.0
Max Q Clear Time (g_c+I1), s	17.0	27.2		8.6	10.6	17.8		7.8
Green Ext Time (p_c), s	0.1	12.5		0.3	0.1	14.4		0.2

Intersection Summary	
HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	336	82	41	151	198	102	987	37	221	1015	160
Future Volume (veh/h)	119	336	82	41	151	198	102	987	37	221	1015	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	127	357	0	44	161	0	109	1050	0	235	1080	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	154	382		223	647		162	1024		262	1173	
Arrive On Green	0.09	0.20	0.00	0.06	0.18	0.00	0.09	0.29	0.00	0.15	0.33	0.00
Sat Flow, veh/h	1795	1885	1598	3483	3582	1598	1795	3582	1598	1795	3582	1598
Grp Volume(v), veh/h	127	357	0	44	161	0	109	1050	0	235	1080	0
Grp Sat Flow(s),veh/h/ln	1795	1885	1598	1742	1791	1598	1795	1791	1598	1795	1791	1598
Q Serve(g_s), s	8.3	22.4	0.0	1.4	4.6	0.0	7.1	34.3	0.0	15.4	34.8	0.0
Cycle Q Clear(g_c), s	8.3	22.4	0.0	1.4	4.6	0.0	7.1	34.3	0.0	15.4	34.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	154	382		223	647		162	1024		262	1173	
V/C Ratio(X)	0.82	0.94		0.20	0.25		0.67	1.03		0.90	0.92	
Avail Cap(c_a), veh/h	389	382		610	647		239	1024		314	1173	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.9	47.1	0.0	53.2	42.2	0.0	52.9	42.8	0.0	50.3	38.8	0.0
Incr Delay (d2), s/veh	4.1	30.5	0.0	0.2	0.3	0.0	1.8	34.8	0.0	21.6	13.0	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	3.9	13.5	0.0	0.6	2.1	0.0	3.2	19.4	0.0	8.3	16.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.1	77.6	0.0	53.4	42.5	0.0	54.7	77.7	0.0	71.9	51.9	0.0
LnGrp LOS	E	E		D	D		D	F		E	D	
Approach Vol, veh/h		484	A		205	A		1159	A		1315	A
Approach Delay, s/veh		72.5			44.9			75.5			55.5	
Approach LOS		E			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.5	40.0	11.7	30.0	16.5	45.0	14.3	27.4
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	5.7
Max Green Setting (Gmax), s	21.0	34.3	21.0	24.3	16.0	* 39	26.0	19.3
Max Q Clear Time (g_c+I1), s	10.4	36.3	3.4	24.4	9.1	36.8	10.3	6.6
Green Ext Time (p_c), s	0.1	0.0	0.0	0.0	0.1	1.9	0.1	1.0

Intersection Summary	
HCM 6th Ctrl Delay	64.7
HCM 6th LOS	E

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	38	486	338	15	57	41
Future Vol, veh/h	38	486	338	15	57	41
Conflicting Peds, #/hr	6	0	0	6	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	44	559	389	17	66	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	412	0	-	0	764	201
Stage 1	-	-	-	-	395	-
Stage 2	-	-	-	-	369	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1158	-	-	-	344	813
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	675	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1151	-	-	-	327	808
Mov Cap-2 Maneuver	-	-	-	-	327	-
Stage 1	-	-	-	-	627	-
Stage 2	-	-	-	-	671	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	16.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1151	-	-	-	435
HCM Lane V/C Ratio	0.038	-	-	-	0.259
HCM Control Delay (s)	8.3	-	-	-	16.1
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	85	0	44	12	1843	78	42	1560	0
Future Volume (veh/h)	0	0	0	85	0	44	12	1843	78	42	1560	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		0.98	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
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1885	0	1885	1870	1885	1885	1885	1885	0
Adj Flow Rate, veh/h				89	0	4	12	1920	76	44	1625	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				1	0	1	2	1	1	1	1	0
Cap, veh/h				122	0	109	22	2324	1014	79	2438	0
Arrive On Green				0.07	0.00	0.07	0.01	0.65	0.65	0.04	0.68	0.00
Sat Flow, veh/h				1795	0	1598	1781	3582	1562	1795	3676	0
Grp Volume(v), veh/h				89	0	4	12	1920	76	44	1625	0
Grp Sat Flow(s),veh/h/ln				1795	0	1598	1781	1791	1562	1795	1791	0
Q Serve(g_s), s				2.8	0.0	0.1	0.4	23.2	1.0	1.4	15.2	0.0
Cycle Q Clear(g_c), s				2.8	0.0	0.1	0.4	23.2	1.0	1.4	15.2	0.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				122	0	109	22	2324	1014	79	2438	0
V/C Ratio(X)				0.73	0.00	0.04	0.56	0.83	0.07	0.56	0.67	0.00
Avail Cap(c_a), veh/h				784	0	697	622	2501	1091	627	2501	0
HCM Platoon Ratio				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	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				26.2	0.0	24.9	28.1	7.6	3.7	26.8	5.3	0.0
Incr Delay (d2), s/veh				9.6	0.0	0.2	8.0	2.3	0.0	2.3	0.7	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
%ile BackOfQ(50%),veh/ln				1.4	0.0	0.1	0.2	5.4	0.2	0.6	2.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				35.8	0.0	25.1	36.2	9.9	3.7	29.1	6.0	0.0
LnGrp LOS				D	A	C	D	A	A	C	A	A
Approach Vol, veh/h					93			2008			1669	
Approach Delay, s/veh					35.3			9.9			6.6	
Approach LOS					D			A			A	

Timer - Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	6.5	42.9			4.7	44.7		7.9				
Change Period (Y+Rc), s	4.0	5.7			4.0	* 5.7		4.0				
Max Green Setting (Gmax), s	20.0	40.0			20.0	* 40		25.0				
Max Q Clear Time (g_c+I1), s	3.4	25.2			2.4	17.2		4.8				
Green Ext Time (p_c), s	0.0	11.9			0.0	13.0		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	9.0
HCM 6th LOS	A

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	1	221	0	0	1	119	1860	0	15	1530	75
Future Volume (veh/h)	65	1	221	0	0	1	119	1860	0	15	1530	75
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	68	1	10	0	0	0	124	1938	0	16	1594	45
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	118	2	107	4	4	0	161	2202	0	109	2097	915
Arrive On Green	0.07	0.07	0.07	0.00	0.00	0.00	0.09	0.61	0.00	0.06	0.59	0.59
Sat Flow, veh/h	1771	26	1598	1795	1885	0	1795	3676	0	1795	3582	1563
Grp Volume(v), veh/h	69	0	10	0	0	0	124	1938	0	16	1594	45
Grp Sat Flow(s),veh/h/ln	1797	0	1598	1795	1885	0	1795	1791	0	1795	1791	1563
Q Serve(g_s), s	1.8	0.0	0.3	0.0	0.0	0.0	3.4	22.5	0.0	0.4	16.5	0.6
Cycle Q Clear(g_c), s	1.8	0.0	0.3	0.0	0.0	0.0	3.4	22.5	0.0	0.4	16.5	0.6
Prop In Lane	0.99		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	120	0	107	4	4	0	161	2202	0	109	2097	915
V/C Ratio(X)	0.57	0.00	0.09	0.00	0.00	0.00	0.77	0.88	0.00	0.15	0.76	0.05
Avail Cap(c_a), veh/h	905	0	805	362	380	0	543	4332	0	362	4332	1890
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	0.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.5	0.0	21.7	0.0	0.0	0.0	22.1	8.0	0.0	22.1	7.7	4.4
Incr Delay (d2), s/veh	1.6	0.0	0.1	0.0	0.0	0.0	2.9	0.5	0.0	0.2	0.2	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	0.1	0.0	0.0	0.0	1.3	3.4	0.0	0.2	3.5	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.1	0.0	21.9	0.0	0.0	0.0	25.0	8.5	0.0	22.3	7.9	4.4
LnGrp LOS	C	A	C	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		79			0			2062			1655	
Approach Delay, s/veh		23.8			0.0			9.5			7.9	
Approach LOS		C						A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	36.2		7.4	7.5	34.7		0.0
Change Period (Y+Rc), s	3.0	5.7		4.1	3.0	5.7		3.5
Max Green Setting (Gmax), s	10.0	60.0		25.0	15.0	60.0		10.0
Max Q Clear Time (g_c+I1), s	2.4	24.5		3.8	5.4	18.5		0.0
Green Ext Time (p_c), s	0.0	6.0		0.1	0.1	5.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	9.1
HCM 6th LOS	A

Notes

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

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Woodgrove Way / Quail Oaks Dr & Douglas Blvd
Scenario	Existing

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Yield*	*Free*	*Free*	*Yield*	*Free*	*Free*
AM Peak Hour Volume	5	0	57	0	1	99	39	1361	34	41	1839	7
AM Peak Hour Delay (s)	1731.9	1731.9	17.1	1111.1	1111.1	31.6	20.1	0	0	14.2	0	0
PM Peak Hour Volume	2	0	32	0	1	37	45	1907	56	31	1729	4
PM Peak Hour Delay (s)	5000	5000	22.6	4932.2	4932.2	20.3	17.8	0	0	20.5	0	0

AM Delay	**63.0**
AM LOS	**F**

PM Delay	**120.6**
PM LOS	**F**

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Woodgrove Way / Quail Oaks Dr & Douglas Blvd
Scenario	Existing

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Yield*	*Free*	*Free*	*Yield*	*Free*	*Free*
AM Peak Hour Volume	5	0	57	0	1	99	39	1361	34	41	1839	7
AM Peak Hour Delay (s)	600	0	17.1	0	600	31.6	20.1	0	0	14.2	0	0
PM Peak Hour Volume	2	0	32	0	1	37	45	1907	56	31	1729	4
PM Peak Hour Delay (s)	600	0	22.6	0	600	20.3	17.8	0	0	20.5	0	0

AM Delay	**37.5**
AM LOS	**E**

PM Delay	**31.8**
PM LOS	**D**

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	10. Eureka Rd & Greyhawk Dr
Scenario	Existing

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control				*Stop*		*Stop*	*Yield*	*Free*			*Free*	*Free*
AM Peak Hour Volume				76		49	22	463			470	33
AM Peak Hour Delay (s)				25.3		25.3	8.9	0			0	0
PM Peak Hour Volume				57		41	38	486			338	15
PM Peak Hour Delay (s)				16.1		16.1	8.3	0			0	0

AM Delay	**22.8**
AM LOS	**C**

PM Delay	**13.9**
PM LOS	**B**

Appendix C:
Existing Plus Whitehawk I Conditions – Technical Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	1158	172	229	1691	115	438	811	126	209	581	171
Future Volume (veh/h)	184	1158	172	229	1691	115	438	811	126	209	581	171
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	200	1259	53	249	1838	0	476	882	0	227	632	138
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	260	1659	508	533	2148		531	1297		289	773	166
Arrive On Green	0.08	0.32	0.32	0.15	0.42	0.00	0.20	0.34	0.00	0.08	0.18	0.18
Sat Flow, veh/h	3456	5106	1564	3456	5106	1585	3456	5106	1585	3456	4202	903
Grp Volume(v), veh/h	200	1259	53	249	1838	0	476	882	0	227	510	260
Grp Sat Flow(s),veh/h/ln	1728	1702	1564	1728	1702	1585	1728	1702	1585	1728	1702	1701
Q Serve(g_s), s	6.8	26.5	1.8	7.9	39.1	0.0	16.1	17.8	0.0	7.7	17.3	17.7
Cycle Q Clear(g_c), s	6.8	26.5	1.8	7.9	39.1	0.0	16.1	17.8	0.0	7.7	17.3	17.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	260	1659	508	533	2148		531	1297		289	626	313
V/C Ratio(X)	0.77	0.76	0.10	0.47	0.86		0.90	0.68		0.79	0.81	0.83
Avail Cap(c_a), veh/h	461	1659	508	533	2148		605	1297		605	681	340
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	36.3	11.9	46.3	31.5	0.0	46.8	35.5	0.0	53.9	47.0	47.2
Incr Delay (d2), s/veh	1.8	3.3	0.4	0.2	3.7	0.0	13.8	1.6	0.0	1.8	7.6	15.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	11.4	1.1	3.3	15.8	0.0	7.4	6.8	0.0	3.4	7.8	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.3	39.6	12.3	46.5	35.1	0.0	60.6	37.1	0.0	55.8	54.6	63.1
LnGrp LOS	E	D	B	D	D		E	D		E	D	E
Approach Vol, veh/h		1512			2087	A		1358	A		997	
Approach Delay, s/veh		40.8			36.5			45.4			57.1	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.5	45.0	22.4	28.1	13.0	56.5	14.0	36.5
Change Period (Y+Rc), s	6.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	14.0	39.0	21.0	24.0	16.0	39.0	21.0	24.0
Max Q Clear Time (g_c+I1), s	9.9	28.5	18.1	19.7	8.8	41.1	9.7	19.8
Green Ext Time (p_c), s	0.2	7.5	0.3	2.3	0.2	0.0	0.3	2.4

Intersection Summary	
HCM 6th Ctrl Delay	43.1
HCM 6th LOS	D

Notes

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

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	1322	77	50	1819	85	46	20	40	76	23	165
Future Volume (veh/h)	56	1322	77	50	1819	85	46	20	40	76	23	165
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	61	1437	48	54	1977	56	50	22	0	83	25	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	78	2414	1053	70	2397	1047	65	29	82	111	33	126
Arrive On Green	0.09	1.00	1.00	0.04	0.67	0.67	0.05	0.05	0.00	0.08	0.08	0.08
Sat Flow, veh/h	1781	3554	1550	1781	3554	1552	1255	552	1585	1384	417	1579
Grp Volume(v), veh/h	61	1437	48	54	1977	56	72	0	0	108	0	8
Grp Sat Flow(s),veh/h/ln	1781	1777	1550	1781	1777	1552	1808	0	1585	1801	0	1579
Q Serve(g_s), s	4.0	0.0	0.0	3.6	49.0	1.5	4.7	0.0	0.0	7.0	0.0	0.6
Cycle Q Clear(g_c), s	4.0	0.0	0.0	3.6	49.0	1.5	4.7	0.0	0.0	7.0	0.0	0.6
Prop In Lane	1.00		1.00	1.00		1.00	0.69		1.00	0.77		1.00
Lane Grp Cap(c), veh/h	78	2414	1053	70	2397	1047	94	0	82	144	0	126
V/C Ratio(X)	0.78	0.60	0.05	0.77	0.82	0.05	0.77	0.00	0.00	0.75	0.00	0.06
Avail Cap(c_a), veh/h	238	2414	1053	238	2397	1047	241	0	211	465	0	408
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)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.2	0.0	0.0	57.1	14.3	6.6	56.2	0.0	0.0	54.0	0.0	51.1
Incr Delay (d2), s/veh	6.2	1.1	0.1	6.7	2.5	0.0	4.9	0.0	0.0	3.0	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(50%),veh/ln	1.8	0.4	0.0	1.7	16.1	0.4	2.3	0.0	0.0	3.3	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.4	1.1	0.1	63.8	16.8	6.6	61.1	0.0	0.0	57.0	0.0	51.1
LnGrp LOS	E	A	A	E	B	A	E	A	A	E	A	D
Approach Vol, veh/h		1546			2087			72			116	
Approach Delay, s/veh		3.4			17.8			61.1			56.6	
Approach LOS		A			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.7	87.5		13.6	9.3	86.9		10.2
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0
Max Green Setting (Gmax), s	16.0	39.0		31.0	16.0	39.0		16.0
Max Q Clear Time (g_c+I1), s	5.6	2.0		9.0	6.0	51.0		6.7
Green Ext Time (p_c), s	0.0	15.3		0.4	0.0	0.0		0.1

Intersection Summary	
HCM 6th Ctrl Delay	14.0
HCM 6th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	1365	34	46	1850	7	5	0	58	0	1	99
Future Vol, veh/h	39	1365	34	46	1850	7	5	0	58	0	1	99
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	150	-	100	175	-	-	-	-	125	-	-	25
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	42	1484	37	50	2011	8	5	0	63	0	1	108

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2019	0	0	1521	0	0	2674	3687	742	2941	3720	1010
Stage 1	-	-	-	-	-	-	1568	1568	-	2115	2115	-
Stage 2	-	-	-	-	-	-	1106	2119	-	826	1605	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	278	-	-	435	-	-	11	5	358	7	4	238
Stage 1	-	-	-	-	-	-	116	170	-	52	90	-
Stage 2	-	-	-	-	-	-	224	90	-	332	163	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	278	-	-	435	-	-	~ 4	4	358	5	3	238
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 4	4	-	5	3	-
Stage 1	-	-	-	-	-	-	98	144	-	44	80	-
Stage 2	-	-	-	-	-	-	107	80	-	232	138	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.3	153.3	46.9
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	4	358	278	-	-	435	-	-	3	238
HCM Lane V/C Ratio	1.359	0.176	0.152	-	-	0.115	-	-	0.362	0.452
HCM Control Delay (s)	$ 1731.9	17.2	20.3	-	-	14.3	-	-	$ 1526.5	32
HCM Lane LOS	F	C	C	-	-	B	-	-	F	D
HCM 95th %tile Q(veh)	1.5	0.6	0.5	-	-	0.4	-	-	0.5	2.2

Notes

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1419	7	0	1903	0	20
Future Vol, veh/h	1419	7	0	1903	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1542	8	0	2068	0	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	775
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	341
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	341
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	16.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	341	-	-	-
HCM Lane V/C Ratio	0.064	-	-	-
HCM Control Delay (s)	16.3	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	1366	0	2	1842	82	0	0	0	50	0	46
Future Volume (veh/h)	73	1366	0	2	1842	82	0	0	0	50	0	46
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98				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
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1870	1870	0	1870	1870	1870				1870	0	1870
Adj Flow Rate, veh/h	79	1485	0	2	2002	88				54	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	2	2	2				2	0	2
Cap, veh/h	102	2778	0	3	2517	110				70	0	62
Arrive On Green	0.06	0.78	0.00	0.00	0.73	0.73				0.04	0.00	0.04
Sat Flow, veh/h	1781	3647	0	1781	3465	151				1781	0	1585
Grp Volume(v), veh/h	79	1485	0	2	1018	1072				54	0	1
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1839				1781	0	1585
Q Serve(g_s), s	3.1	11.0	0.0	0.1	25.9	26.9				2.1	0.0	0.0
Cycle Q Clear(g_c), s	3.1	11.0	0.0	0.1	25.9	26.9				2.1	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.08				1.00		1.00
Lane Grp Cap(c), veh/h	102	2778	0	3	1291	1336				70	0	62
V/C Ratio(X)	0.78	0.53	0.00	0.69	0.79	0.80				0.78	0.00	0.02
Avail Cap(c_a), veh/h	582	3383	0	329	1691	1751				861	0	766
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	32.7	2.9	0.0	35.1	6.2	6.3				33.5	0.0	32.5
Incr Delay (d2), s/veh	4.8	0.2	0.0	71.9	1.9	2.1				6.7	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
%ile BackOfQ(50%),veh/ln	1.3	0.4	0.0	0.1	3.9	4.2				1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.5	3.0	0.0	107.0	8.1	8.4				40.2	0.0	32.6
LnGrp LOS	D	A	A	F	A	A				D	A	C
Approach Vol, veh/h		1564			2092						55	
Approach Delay, s/veh		4.8			8.4						40.1	
Approach LOS		A			A						D	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	7.0	57.1		6.3	3.1	61.0
Change Period (Y+Rc), s	3.0	6.0		3.5	3.0	6.0
Max Green Setting (Gmax), s	23.0	67.0		34.0	13.0	67.0
Max Q Clear Time (g_c+I1), s	5.1	28.9		4.1	2.1	13.0
Green Ext Time (p_c), s	0.0	22.2		0.1	0.0	14.2

Intersection Summary	
HCM 6th Ctrl Delay	7.3
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	1191	131	134	1566	114	215	98	76	137	116	34
Future Volume (veh/h)	41	1191	131	134	1566	114	215	98	76	137	116	34
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		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	44	1267	132	143	1666	76	166	191	0	146	123	4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	56	1367	142	175	1733	756	220	231		166	140	263
Arrive On Green	0.03	0.42	0.42	0.10	0.48	0.48	0.12	0.12	0.00	0.17	0.17	0.17
Sat Flow, veh/h	1795	3275	340	1795	3582	1562	1795	1885	1598	996	839	1576
Grp Volume(v), veh/h	44	691	708	143	1666	76	166	191	0	269	0	4
Grp Sat Flow(s),veh/h/ln	1795	1791	1824	1795	1791	1562	1795	1885	1598	1835	0	1576
Q Serve(g_s), s	2.2	33.3	33.6	7.1	40.8	2.4	8.1	9.0	0.0	13.0	0.0	0.2
Cycle Q Clear(g_c), s	2.2	33.3	33.6	7.1	40.8	2.4	8.1	9.0	0.0	13.0	0.0	0.2
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	0.54		1.00
Lane Grp Cap(c), veh/h	56	747	761	175	1733	756	220	231		306	0	263
V/C Ratio(X)	0.79	0.92	0.93	0.81	0.96	0.10	0.75	0.83		0.88	0.00	0.02
Avail Cap(c_a), veh/h	296	787	802	395	1771	772	395	414		403	0	346
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.8	25.1	25.2	40.2	22.7	12.7	38.6	39.0	0.0	37.0	0.0	31.7
Incr Delay (d2), s/veh	8.7	15.6	16.3	3.5	13.1	0.0	2.0	2.9	0.0	13.3	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(50%),veh/ln	1.1	15.3	15.9	3.1	17.6	0.7	3.6	4.2	0.0	6.8	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.5	40.8	41.5	43.7	35.7	12.8	40.6	41.9	0.0	50.3	0.0	31.7
LnGrp LOS	D	D	D	D	D	B	D	D		D	A	C
Approach Vol, veh/h		1443			1885			357	A		273	
Approach Delay, s/veh		41.5			35.4			41.3			50.0	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.9	44.0		19.6	5.8	50.0		15.5
Change Period (Y+Rc), s	3.0	6.0		4.4	3.0	6.0		4.4
Max Green Setting (Gmax), s	20.0	40.0		20.0	15.0	45.0		20.0
Max Q Clear Time (g_c+I1), s	9.1	35.6		15.0	4.2	42.8		11.0
Green Ext Time (p_c), s	0.0	1.4		0.2	0.0	1.2		0.1

Intersection Summary	
HCM 6th Ctrl Delay	39.2
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	125	1025	74	251	96	1173	341	42	80	612	260
Future Volume (veh/h)	137	125	1025	74	251	96	1173	341	42	80	612	260
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	152	139	0	82	279	0	1303	379	0	89	680	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	184	518		105	362		1385	727		384	766	
Arrive On Green	0.10	0.14	0.00	0.06	0.10	0.00	0.39	0.39	0.00	0.21	0.21	0.00
Sat Flow, veh/h	1795	3582	1598	1795	3582	1598	3591	1885	1598	1795	3582	1598
Grp Volume(v), veh/h	152	139	0	82	279	0	1303	379	0	89	680	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1598	1795	1885	1598	1795	1791	1598
Q Serve(g_s), s	8.1	3.4	0.0	4.4	7.4	0.0	34.2	15.1	0.0	4.0	18.0	0.0
Cycle Q Clear(g_c), s	8.1	3.4	0.0	4.4	7.4	0.0	34.2	15.1	0.0	4.0	18.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	184	518		105	362		1385	727		384	766	
V/C Ratio(X)	0.83	0.27		0.78	0.77		0.94	0.52		0.23	0.89	
Avail Cap(c_a), veh/h	459	916		275	733		1653	868		459	916	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.0	37.2	0.0	45.4	42.9	0.0	29.0	23.1	0.0	31.8	37.3	0.0
Incr Delay (d2), s/veh	3.6	0.1	0.0	4.6	1.3	0.0	9.4	0.2	0.0	0.1	8.4	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	3.6	1.4	0.0	2.0	3.3	0.0	15.4	6.4	0.0	1.7	8.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.7	37.3	0.0	50.0	44.2	0.0	38.3	23.3	0.0	31.9	45.7	0.0
LnGrp LOS	D	D		D	D		D	C		C	D	
Approach Vol, veh/h		291	A		361	A		1682	A		769	A
Approach Delay, s/veh		42.2			45.5			35.0			44.1	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.7	19.8		26.2	13.0	15.6		43.0
Change Period (Y+Rc), s	3.0	5.7		5.3	3.0	* 5.7		5.3
Max Green Setting (Gmax), s	15.0	25.0		25.0	25.0	* 20		45.0
Max Q Clear Time (g_c+I1), s	10.4	5.4		20.0	10.1	9.4		36.2
Green Ext Time (p_c), s	0.0	0.2		0.9	0.0	0.5		1.5

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

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	14	117	22	4	21	90	1305	57	85	824	31
Future Volume (veh/h)	127	14	117	22	4	21	90	1305	57	85	824	31
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		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	149	0	4	24	4	0	98	1418	35	92	896	19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	325	0	144	86	14	88	123	1885	572	574	3252	983
Arrive On Green	0.09	0.00	0.09	0.06	0.06	0.00	0.07	0.37	0.37	0.64	1.00	1.00
Sat Flow, veh/h	3563	0	1585	1537	256	1585	1781	5106	1550	1781	5106	1543
Grp Volume(v), veh/h	149	0	4	28	0	0	98	1418	35	92	896	19
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1793	0	1585	1781	1702	1550	1781	1702	1543
Q Serve(g_s), s	4.8	0.0	0.3	1.8	0.0	0.0	6.5	29.1	1.7	2.5	0.0	0.0
Cycle Q Clear(g_c), s	4.8	0.0	0.3	1.8	0.0	0.0	6.5	29.1	1.7	2.5	0.0	0.0
Prop In Lane	1.00		1.00	0.86		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	325	0	144	100	0	88	123	1885	572	574	3252	983
V/C Ratio(X)	0.46	0.00	0.03	0.28	0.00	0.00	0.80	0.75	0.06	0.16	0.28	0.02
Avail Cap(c_a), veh/h	623	0	277	314	0	277	312	1885	572	574	3252	983
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	49.7	54.4	0.0	0.0	55.1	33.1	24.4	14.9	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.6	0.0	0.0	4.5	2.8	0.2	0.0	0.1	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	2.2	0.0	0.1	0.8	0.0	0.0	3.0	11.9	0.7	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.1	0.0	49.7	54.9	0.0	0.0	59.5	35.9	24.6	14.9	0.1	0.0
LnGrp LOS	D	A	D	D	A	A	E	D	C	B	A	A
Approach Vol, veh/h		153			28			1551			1007	
Approach Delay, s/veh		52.0			54.9			37.1			1.5	
Approach LOS		D			D			D			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	44.4	50.0		14.9	12.3	82.1		10.7
Change Period (Y+Rc), s	5.7	* 5.7		4.0	4.0	5.7		4.0
Max Green Setting (Gmax), s	16.3	* 44		21.0	21.0	39.3		21.0
Max Q Clear Time (g_c+I1), s	4.5	31.1		6.8	8.5	2.0		3.8
Green Ext Time (p_c), s	0.1	10.7		0.2	0.1	15.5		0.0

Intersection Summary	
HCM 6th Ctrl Delay	25.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	152	47	38	232	274	68	1087	37	144	673	135
Future Volume (veh/h)	111	152	47	38	232	274	68	1087	37	144	673	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	121	165	0	41	252	0	74	1182	0	157	732	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	226		215	356		122	1385		185	1460	
Arrive On Green	0.08	0.12	0.00	0.06	0.10	0.00	0.07	0.39	0.00	0.10	0.41	0.00
Sat Flow, veh/h	1781	1870	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	121	165	0	41	252	0	74	1182	0	157	732	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.0	10.2	0.0	1.4	8.2	0.0	4.8	36.5	0.0	10.4	18.3	0.0
Cycle Q Clear(g_c), s	8.0	10.2	0.0	1.4	8.2	0.0	4.8	36.5	0.0	10.4	18.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	147	226		215	356		122	1385		185	1460	
V/C Ratio(X)	0.82	0.73		0.19	0.71		0.61	0.85		0.85	0.50	
Avail Cap(c_a), veh/h	238	301		461	572		238	1385		386	1460	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.2	50.9	0.0	53.4	52.3	0.0	54.3	33.5	0.0	52.8	26.2	0.0
Incr Delay (d2), s/veh	5.2	8.7	0.0	0.2	4.4	0.0	1.8	5.7	0.0	4.1	1.2	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	3.7	5.2	0.0	0.6	3.9	0.0	2.2	16.0	0.0	4.7	7.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.4	59.6	0.0	53.6	56.7	0.0	56.1	39.2	0.0	56.9	27.5	0.0
LnGrp LOS	E	E		D	E		E	D		E	C	
Approach Vol, veh/h		286	A		293	A		1256	A		889	A
Approach Delay, s/veh		59.5			56.2			40.2			32.7	
Approach LOS		E			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	52.5	11.5	20.2	13.9	55.0	13.9	17.7
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	5.7
Max Green Setting (Gmax), s	26.0	39.3	16.0	19.3	16.0	* 49	16.0	19.3
Max Q Clear Time (g_c+I1), s	12.4	38.5	3.4	12.2	6.8	20.3	10.0	10.2
Green Ext Time (p_c), s	0.2	0.7	0.0	0.6	0.0	8.3	0.1	1.4

Intersection Summary	
HCM 6th Ctrl Delay	41.5
HCM 6th LOS	D

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	22	463	470	34	79	49
Future Vol, veh/h	22	463	470	34	79	49
Conflicting Peds, #/hr	6	0	0	6	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	28	586	595	43	100	62

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	644	0	-	0	951	304
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	350	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	944	-	-	-	260	695
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	687	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	939	-	-	-	249	691
Mov Cap-2 Maneuver	-	-	-	-	249	-
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	683	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	26
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	939	-	-	-	330
HCM Lane V/C Ratio	0.03	-	-	-	0.491
HCM Control Delay (s)	9	-	-	-	26
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	192	0	82	6	1454	119	86	1588	0
Future Volume (veh/h)	0	0	0	192	0	82	6	1454	119	86	1588	0
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1885	0	1885	1870	1885	1885	1885	1885	0
Adj Flow Rate, veh/h				213	0	10	7	1616	104	96	1764	0
Peak Hour Factor				0.90	0.92	0.90	0.92	0.90	0.90	0.90	0.90	0.92
Percent Heavy Veh, %				1	0	1	2	1	1	1	1	0
Cap, veh/h				276	0	245	13	2010	897	124	2232	0
Arrive On Green				0.15	0.00	0.15	0.01	0.56	0.56	0.07	0.62	0.00
Sat Flow, veh/h				1795	0	1598	1781	3582	1598	1795	3676	0
Grp Volume(v), veh/h				213	0	10	7	1616	104	96	1764	0
Grp Sat Flow(s),veh/h/ln				1795	0	1598	1781	1791	1598	1795	1791	0
Q Serve(g_s), s				7.2	0.0	0.3	0.2	22.9	1.9	3.3	23.2	0.0
Cycle Q Clear(g_c), s				7.2	0.0	0.3	0.2	22.9	1.9	3.3	23.2	0.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				276	0	245	13	2010	897	124	2232	0
V/C Ratio(X)				0.77	0.00	0.04	0.54	0.80	0.12	0.77	0.79	0.00
Avail Cap(c_a), veh/h				708	0	630	562	2259	1007	566	2259	0
HCM Platoon Ratio				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	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				25.8	0.0	22.9	31.4	11.1	6.5	29.0	8.9	0.0
Incr Delay (d2), s/veh				5.5	0.0	0.1	12.1	2.0	0.1	3.8	2.0	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
%ile BackOfQ(50%),veh/ln				3.3	0.0	0.1	0.1	7.0	0.5	1.5	6.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.3	0.0	22.9	43.5	13.2	6.6	32.8	10.8	0.0
LnGrp LOS				C	A	C	D	B	A	C	B	A
Approach Vol, veh/h					223			1727			1860	
Approach Delay, s/veh					30.9			12.9			12.0	
Approach LOS					C			B			B	

Timer - Assigned Phs	1	2		5	6		8
Phs Duration (G+Y+Rc), s	8.4	41.3		4.5	45.2		13.7
Change Period (Y+Rc), s	4.0	5.7		4.0	* 5.7		4.0
Max Green Setting (Gmax), s	20.0	40.0		20.0	* 40		25.0
Max Q Clear Time (g_c+I1), s	5.3	24.9		2.2	25.2		9.2
Green Ext Time (p_c), s	0.1	10.7		0.0	10.5		0.7

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	2	128	0	1	2	180	1440	0	2	1604	173
Future Volume (veh/h)	121	2	128	0	1	2	180	1440	0	2	1604	173
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	134	2	1	0	1	0	200	1600	0	2	1782	143
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	172	3	156	2	3	0	241	2309	0	72	1970	857
Arrive On Green	0.10	0.10	0.10	0.00	0.00	0.00	0.13	0.64	0.00	0.04	0.55	0.55
Sat Flow, veh/h	1770	26	1598	1795	1885	0	1795	3676	0	1795	3582	1559
Grp Volume(v), veh/h	136	0	1	0	1	0	200	1600	0	2	1782	143
Grp Sat Flow(s),veh/h/ln	1797	0	1598	1795	1885	0	1795	1791	0	1795	1791	1559
Q Serve(g_s), s	5.6	0.0	0.0	0.0	0.0	0.0	8.2	21.6	0.0	0.1	33.5	3.4
Cycle Q Clear(g_c), s	5.6	0.0	0.0	0.0	0.0	0.0	8.2	21.6	0.0	0.1	33.5	3.4
Prop In Lane	0.99		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	0	156	2	3	0	241	2309	0	72	1970	857
V/C Ratio(X)	0.78	0.00	0.01	0.00	0.39	0.00	0.83	0.69	0.00	0.03	0.90	0.17
Avail Cap(c_a), veh/h	597	0	531	239	251	0	358	2858	0	239	2858	1244
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	0.0	30.6	0.0	37.5	0.0	31.7	8.6	0.0	34.7	15.2	8.4
Incr Delay (d2), s/veh	2.8	0.0	0.0	0.0	31.4	0.0	6.2	0.3	0.0	0.1	2.5	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(50%),veh/ln	2.5	0.0	0.0	0.0	0.0	0.0	3.6	5.4	0.0	0.0	11.5	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.9	0.0	30.7	0.0	68.9	0.0	37.9	8.9	0.0	34.8	17.7	8.4
LnGrp LOS	D	A	C	A	E	A	D	A	A	C	B	A
Approach Vol, veh/h		137			1			1800			1927	
Approach Delay, s/veh		35.9			68.9			12.1			17.0	
Approach LOS		D			E			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	54.2		11.4	13.1	47.1		3.6
Change Period (Y+Rc), s	3.0	5.7		4.1	3.0	5.7		3.5
Max Green Setting (Gmax), s	10.0	60.0		25.0	15.0	60.0		10.0
Max Q Clear Time (g_c+I1), s	2.1	23.6		7.6	10.2	35.5		2.0
Green Ext Time (p_c), s	0.0	4.3		0.2	0.1	5.8		0.0

Intersection Summary	
HCM 6th Ctrl Delay	15.4
HCM 6th 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												
Traffic Volume (veh/h)	394	1596	281	312	1358	239	446	876	208	250	765	148
Future Volume (veh/h)	394	1596	281	312	1358	239	446	876	208	250	765	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	419	1698	153	332	1445	0	474	932	0	266	814	137
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	466	1784	553	551	1979		522	1327		315	881	147
Arrive On Green	0.13	0.35	0.35	0.16	0.38	0.00	0.15	0.26	0.00	0.09	0.20	0.20
Sat Flow, veh/h	3483	5147	1596	3483	5147	1598	3483	5147	1598	3483	4439	742
Grp Volume(v), veh/h	419	1698	153	332	1445	0	474	932	0	266	628	323
Grp Sat Flow(s),veh/h/ln	1742	1716	1596	1742	1716	1598	1742	1716	1598	1742	1716	1750
Q Serve(g_s), s	17.8	48.3	6.9	13.3	36.0	0.0	20.1	24.6	0.0	11.3	26.9	27.2
Cycle Q Clear(g_c), s	17.8	48.3	6.9	13.3	36.0	0.0	20.1	24.6	0.0	11.3	26.9	27.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	466	1784	553	551	1979		522	1327		315	681	347
V/C Ratio(X)	0.90	0.95	0.28	0.60	0.73		0.91	0.70		0.84	0.92	0.93
Avail Cap(c_a), veh/h	534	1784	553	551	1979		604	1327		488	686	350
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.0	47.8	15.8	58.7	39.5	0.0	62.7	50.4	0.0	67.2	59.0	59.1
Incr Delay (d2), s/veh	15.5	12.6	1.2	1.3	2.4	0.0	15.0	1.8	0.0	4.7	18.2	31.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	22.1	4.0	5.9	15.2	0.0	9.8	10.6	0.0	5.2	13.2	14.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.5	60.4	17.1	60.0	41.9	0.0	77.8	52.3	0.0	71.9	77.2	90.2
LnGrp LOS	E	E	B	E	D		E	D		E	E	F
Approach Vol, veh/h		2270			1777	A		1406	A		1217	
Approach Delay, s/veh		61.0			45.3			60.9			79.5	
Approach LOS		E			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.7	58.0	26.5	35.8	24.1	63.7	17.6	44.7
Change Period (Y+Rc), s	6.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	20.0	52.0	26.0	30.0	23.0	51.0	21.0	35.0
Max Q Clear Time (g_c+I1), s	15.3	50.3	22.1	29.2	19.8	38.0	13.3	26.6
Green Ext Time (p_c), s	0.3	1.6	0.4	0.5	0.3	8.0	0.3	4.4

Intersection Summary	
HCM 6th Ctrl Delay	60.2
HCM 6th LOS	E

Notes

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

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	1808	23	85	1621	70	109	33	104	108	36	166
Future Volume (veh/h)	85	1808	23	85	1621	70	109	33	104	108	36	166
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		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	90	1923	13	90	1724	45	116	35	14	115	38	9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	110	2229	993	111	2231	975	135	41	155	135	45	157
Arrive On Green	0.12	1.00	1.00	0.06	0.62	0.62	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1795	3582	1596	1795	3582	1565	1395	421	1598	1366	451	1593
Grp Volume(v), veh/h	90	1923	13	90	1724	45	151	0	14	153	0	9
Grp Sat Flow(s),veh/h/ln	1795	1791	1596	1795	1791	1565	1815	0	1598	1817	0	1593
Q Serve(g_s), s	7.3	0.0	0.0	7.4	52.5	1.7	12.3	0.0	1.2	12.4	0.0	0.8
Cycle Q Clear(g_c), s	7.3	0.0	0.0	7.4	52.5	1.7	12.3	0.0	1.2	12.4	0.0	0.8
Prop In Lane	1.00		1.00	1.00		1.00	0.77		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	110	2229	993	111	2231	975	176	0	155	180	0	157
V/C Ratio(X)	0.82	0.86	0.01	0.81	0.77	0.05	0.86	0.00	0.09	0.85	0.00	0.06
Avail Cap(c_a), veh/h	251	2229	993	251	2231	975	254	0	224	254	0	223
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)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	65.0	0.0	0.0	69.5	20.6	11.0	66.7	0.0	61.7	66.5	0.0	61.3
Incr Delay (d2), s/veh	5.6	4.7	0.0	5.3	2.7	0.1	12.9	0.0	0.1	12.9	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(50%),veh/ln	3.3	1.5	0.0	3.5	20.3	0.6	6.4	0.0	0.5	6.5	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.6	4.7	0.0	74.8	23.2	11.1	79.6	0.0	61.8	79.4	0.0	61.3
LnGrp LOS	E	A	A	E	C	B	E	A	E	E	A	E
Approach Vol, veh/h		2026			1859			165			162	
Approach Delay, s/veh		7.6			25.4			78.1			78.4	
Approach LOS		A			C			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.3	99.3		18.8	13.2	99.4		18.6
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0
Max Green Setting (Gmax), s	21.0	69.0		21.0	21.0	69.0		21.0
Max Q Clear Time (g_c+I1), s	9.4	2.0		14.4	9.3	54.5		14.3
Green Ext Time (p_c), s	0.1	31.4		0.3	0.1	10.3		0.3

Intersection Summary	
HCM 6th Ctrl Delay	21.0
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	1919	56	37	1736	4	2	0	33	0	1	37
Future Vol, veh/h	45	1919	56	37	1736	4	2	0	33	0	1	37
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	150	-	100	175	-	-	-	-	125	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	48	2041	60	39	1847	4	2	0	35	0	1	39

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1851	0	0	2101	0	0	3139	4066	1021	3044	4124	926
Stage 1	-	-	-	-	-	-	2137	2137	-	1927	1927	-
Stage 2	-	-	-	-	-	-	1002	1929	-	1117	2197	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.52	6.52	6.92	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Follow-up Hdwy	2.21	-	-	2.21	-	-	3.51	4.01	3.31	3.51	4.01	3.31
Pot Cap-1 Maneuver	328	-	-	262	-	-	5	3	236	6	2	272
Stage 1	-	-	-	-	-	-	51	89	-	69	114	-
Stage 2	-	-	-	-	-	-	262	113	-	223	83	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	328	-	-	262	-	-	-	2	236	4	~ 1	272
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	2	-	4	~ 1	-
Stage 1	-	-	-	-	-	-	44	76	-	59	97	-
Stage 2	-	-	-	-	-	-	189	96	-	162	71	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.4		149.8
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	236	328	-	-	262	-	-	1	272
HCM Lane V/C Ratio	-	0.149	0.146	-	-	0.15	-	-	1.064	0.145
HCM Control Delay (s)	-	22.9	17.8	-	-	21.2	-	-	$ 4932.2	20.5
HCM Lane LOS	-	C	C	-	-	C	-	-	F	C
HCM 95th %tile Q(veh)	-	0.5	0.5	-	-	0.5	-	-	0.6	0.5

Notes

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1939	18	0	1777	0	11
Future Vol, veh/h	1939	18	0	1777	0	11
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	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	2063	19	0	1890	0	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1041
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	-	0	-	0	228
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	228
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	21.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	228	-	-	-
HCM Lane V/C Ratio	0.051	-	-	-
HCM Control Delay (s)	21.6	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	42	1908	1734	18	26	31
Future Volume (veh/h)	42	1908	1734	18	26	31
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	45	2030	1845	19	28	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	55	2849	2573	26	47	42
Arrive On Green	0.03	0.80	0.71	0.71	0.03	0.03
Sat Flow, veh/h	1795	3676	3725	37	1795	1598
Grp Volume(v), veh/h	45	2030	908	956	28	1
Grp Sat Flow(s),veh/h/ln	1795	1791	1791	1877	1795	1598
Q Serve(g_s), s	1.3	14.3	16.0	16.1	0.8	0.0
Cycle Q Clear(g_c), s	1.3	14.3	16.0	16.1	0.8	0.0
Prop In Lane	1.00			0.02	1.00	1.00
Lane Grp Cap(c), veh/h	55	2849	1269	1330	47	42
V/C Ratio(X)	0.82	0.71	0.72	0.72	0.60	0.02
Avail Cap(c_a), veh/h	776	4507	2254	2362	1146	1020
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	1.00	1.00
Uniform Delay (d), s/veh	25.7	2.6	4.6	4.6	25.6	25.3
Incr Delay (d2), s/veh	10.8	0.3	0.8	0.7	4.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.1	0.9	0.9	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.5	2.9	5.4	5.3	30.1	25.3
LnGrp LOS	D	A	A	A	C	C
Approach Vol, veh/h		2075	1864		29	
Approach Delay, s/veh		3.6	5.4		29.9	
Approach LOS		A	A		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	4.6	43.7		4.9		48.3
Change Period (Y+Rc), s	3.0	6.0		3.5		6.0
Max Green Setting (Gmax), s	23.0	67.0		34.0		67.0
Max Q Clear Time (g_c+I1), s	3.3	18.1		2.8		16.3
Green Ext Time (p_c), s	0.0	19.6		0.0		25.1

Intersection Summary	
HCM 6th Ctrl Delay	4.6
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	1570	199	92	1507	165	133	75	102	147	90	56
Future Volume (veh/h)	45	1570	199	92	1507	165	133	75	102	147	90	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	46	1619	198	95	1554	128	107	119	0	152	93	7
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	58	1549	186	122	1855	826	155	163		178	109	250
Arrive On Green	0.03	0.48	0.48	0.07	0.51	0.51	0.09	0.09	0.00	0.16	0.16	0.16
Sat Flow, veh/h	1810	3236	389	1810	3610	1609	1810	1900	1610	1143	700	1610
Grp Volume(v), veh/h	46	890	927	95	1554	128	107	119	0	245	0	7
Grp Sat Flow(s),veh/h/ln	1810	1805	1820	1810	1805	1609	1810	1900	1610	1843	0	1610
Q Serve(g_s), s	2.1	40.0	40.0	4.3	30.7	3.5	4.8	5.1	0.0	10.8	0.0	0.3
Cycle Q Clear(g_c), s	2.1	40.0	40.0	4.3	30.7	3.5	4.8	5.1	0.0	10.8	0.0	0.3
Prop In Lane	1.00		0.21	1.00		1.00	1.00		1.00	0.62		1.00
Lane Grp Cap(c), veh/h	58	864	871	122	1855	826	155	163		286	0	250
V/C Ratio(X)	0.79	1.03	1.06	0.78	0.84	0.15	0.69	0.73		0.86	0.00	0.03
Avail Cap(c_a), veh/h	325	864	871	433	1944	866	433	455		441	0	385
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.2	21.8	21.8	38.4	17.4	10.7	37.1	37.3	0.0	34.4	0.0	29.9
Incr Delay (d2), s/veh	8.3	38.7	49.0	4.0	3.0	0.0	2.0	2.4	0.0	6.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	22.7	25.4	1.9	11.0	1.1	2.1	2.4	0.0	5.2	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.5	60.5	70.8	42.3	20.4	10.8	39.2	39.6	0.0	40.6	0.0	30.0
LnGrp LOS	D	F	F	D	C	B	D	D		D	A	C
Approach Vol, veh/h		1863			1777			226	A		252	
Approach Delay, s/veh		65.3			20.9			39.4			40.3	
Approach LOS		E			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.6	46.0		17.4	5.7	48.9		11.6
Change Period (Y+Rc), s	3.0	6.0		4.4	3.0	6.0		4.4
Max Green Setting (Gmax), s	20.0	40.0		20.0	15.0	45.0		20.0
Max Q Clear Time (g_c+I1), s	6.3	42.0		12.8	4.1	32.7		7.1
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	3.5		0.1

Intersection Summary	
HCM 6th Ctrl Delay	43.2
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	269	1109	57	235	98	1178	689	80	111	440	202
Future Volume (veh/h)	212	269	1109	57	235	98	1178	689	80	111	440	202
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	221	280	0	59	245	0	1227	718	0	116	458	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	254	695		76	339		1461	767		277	553	
Arrive On Green	0.14	0.19	0.00	0.04	0.09	0.00	0.41	0.41	0.00	0.15	0.15	0.00
Sat Flow, veh/h	1795	3582	1598	1795	3582	1598	3591	1885	1598	1795	3582	1598
Grp Volume(v), veh/h	221	280	0	59	245	0	1227	718	0	116	458	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1598	1795	1885	1598	1795	1791	1598
Q Serve(g_s), s	11.5	6.5	0.0	3.1	6.3	0.0	29.4	34.8	0.0	5.6	11.8	0.0
Cycle Q Clear(g_c), s	11.5	6.5	0.0	3.1	6.3	0.0	29.4	34.8	0.0	5.6	11.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	254	695		76	339		1461	767		277	553	
V/C Ratio(X)	0.87	0.40		0.78	0.72		0.84	0.94		0.42	0.83	
Avail Cap(c_a), veh/h	470	938		282	751		1694	889		470	938	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	40.1	33.6	0.0	45.2	42.0	0.0	25.5	27.1	0.0	36.5	39.1	0.0
Incr Delay (d2), s/veh	3.5	0.1	0.0	6.2	1.1	0.0	3.1	14.7	0.0	0.4	1.2	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	5.0	2.7	0.0	1.5	2.8	0.0	12.1	17.5	0.0	2.4	5.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.6	33.8	0.0	51.4	43.1	0.0	28.5	41.8	0.0	36.8	40.3	0.0
LnGrp LOS	D	C		D	D		C	D		D	D	
Approach Vol, veh/h		501	A		304	A		1945	A		574	A
Approach Delay, s/veh		38.1			44.7			33.4			39.6	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.0	24.2		20.0	16.5	14.7		44.1
Change Period (Y+Rc), s	3.0	5.7		5.3	3.0	* 5.7		5.3
Max Green Setting (Gmax), s	15.0	25.0		25.0	25.0	* 20		45.0
Max Q Clear Time (g_c+I1), s	5.1	8.5		13.8	13.5	8.3		36.8
Green Ext Time (p_c), s	0.0	0.5		0.8	0.1	0.4		2.0

Intersection Summary	
HCM 6th Ctrl Delay	36.2
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	9	181	72	13	72	123	1209	31	92	1149	65
Future Volume (veh/h)	188	9	181	72	13	72	123	1209	31	92	1149	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	207	0	11	77	14	4	131	1286	16	98	1222	35
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	358	0	156	134	24	140	158	1900	584	506	2969	919
Arrive On Green	0.10	0.00	0.10	0.09	0.09	0.09	0.09	0.37	0.37	0.28	0.58	0.58
Sat Flow, veh/h	3591	0	1569	1530	278	1598	1795	5147	1582	1795	5147	1593
Grp Volume(v), veh/h	207	0	11	91	0	4	131	1286	16	98	1222	35
Grp Sat Flow(s),veh/h/ln	1795	0	1569	1809	0	1598	1795	1716	1582	1795	1716	1593
Q Serve(g_s), s	6.6	0.0	0.8	5.8	0.0	0.3	8.6	25.2	0.8	5.0	15.8	1.1
Cycle Q Clear(g_c), s	6.6	0.0	0.8	5.8	0.0	0.3	8.6	25.2	0.8	5.0	15.8	1.1
Prop In Lane	1.00		1.00	0.85		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	358	0	156	159	0	140	158	1900	584	506	2969	919
V/C Ratio(X)	0.58	0.00	0.07	0.57	0.00	0.03	0.83	0.68	0.03	0.19	0.41	0.04
Avail Cap(c_a), veh/h	628	0	275	317	0	280	314	1900	584	506	2969	919
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.6	0.0	49.0	52.6	0.0	50.1	53.8	31.8	24.1	32.7	14.1	11.0
Incr Delay (d2), s/veh	0.6	0.0	0.1	1.2	0.0	0.0	4.2	2.0	0.1	0.1	0.2	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	3.0	0.0	0.3	2.7	0.0	0.1	4.0	10.3	0.3	2.2	6.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.2	0.0	49.0	53.8	0.0	50.1	58.0	33.8	24.2	32.8	14.3	11.0
LnGrp LOS	D	A	D	D	A	D	E	C	C	C	B	B
Approach Vol, veh/h		218			95			1433			1355	
Approach Delay, s/veh		52.0			53.6			35.9			15.6	
Approach LOS		D			D			D			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	39.5	50.0		16.0	14.6	74.9		14.5
Change Period (Y+Rc), s	5.7	* 5.7		4.0	4.0	5.7		4.0
Max Green Setting (Gmax), s	16.0	* 44		21.0	21.0	39.3		21.0
Max Q Clear Time (g_c+I1), s	17.0	27.2		8.6	10.6	17.8		7.8
Green Ext Time (p_c), s	0.1	12.5		0.3	0.1	15.1		0.2

Intersection Summary	
HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	336	82	41	151	198	102	989	37	221	1016	160
Future Volume (veh/h)	119	336	82	41	151	198	102	989	37	221	1016	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	127	357	0	44	161	0	109	1052	0	235	1081	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	154	382		223	647		162	1024		262	1173	
Arrive On Green	0.09	0.20	0.00	0.06	0.18	0.00	0.09	0.29	0.00	0.15	0.33	0.00
Sat Flow, veh/h	1795	1885	1598	3483	3582	1598	1795	3582	1598	1795	3582	1598
Grp Volume(v), veh/h	127	357	0	44	161	0	109	1052	0	235	1081	0
Grp Sat Flow(s),veh/h/ln	1795	1885	1598	1742	1791	1598	1795	1791	1598	1795	1791	1598
Q Serve(g_s), s	8.3	22.4	0.0	1.4	4.6	0.0	7.1	34.3	0.0	15.4	34.9	0.0
Cycle Q Clear(g_c), s	8.3	22.4	0.0	1.4	4.6	0.0	7.1	34.3	0.0	15.4	34.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	154	382		223	647		162	1024		262	1173	
V/C Ratio(X)	0.82	0.94		0.20	0.25		0.67	1.03		0.90	0.92	
Avail Cap(c_a), veh/h	389	382		610	647		239	1024		314	1173	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.9	47.1	0.0	53.2	42.2	0.0	52.9	42.8	0.0	50.3	38.9	0.0
Incr Delay (d2), s/veh	4.1	30.5	0.0	0.2	0.3	0.0	1.8	35.4	0.0	21.6	13.1	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	3.9	13.5	0.0	0.6	2.1	0.0	3.2	19.5	0.0	8.3	16.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.1	77.6	0.0	53.4	42.5	0.0	54.7	78.2	0.0	71.9	52.0	0.0
LnGrp LOS	E	E		D	D		D	F		E	D	
Approach Vol, veh/h		484	A		205	A		1161	A		1316	A
Approach Delay, s/veh		72.5			44.9			76.0			55.6	
Approach LOS		E			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.5	40.0	11.7	30.0	16.5	45.0	14.3	27.4
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	5.7
Max Green Setting (Gmax), s	21.0	34.3	21.0	24.3	16.0	* 39	26.0	19.3
Max Q Clear Time (g_c+I1), s	17.4	36.3	3.4	24.4	9.1	36.9	10.3	6.6
Green Ext Time (p_c), s	0.1	0.0	0.0	0.0	0.1	1.8	0.1	1.0

Intersection Summary	
HCM 6th Ctrl Delay	65.0
HCM 6th LOS	E

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	38	486	338	16	58	41
Future Vol, veh/h	38	486	338	16	58	41
Conflicting Peds, #/hr	6	0	0	6	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	44	559	389	18	67	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	413	0	-	0	764	201
Stage 1	-	-	-	-	395	-
Stage 2	-	-	-	-	369	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	1150	-	-	-	342	809
Stage 1	-	-	-	-	653	-
Stage 2	-	-	-	-	673	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1143	-	-	-	325	804
Mov Cap-2 Maneuver	-	-	-	-	325	-
Stage 1	-	-	-	-	624	-
Stage 2	-	-	-	-	669	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	16.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1143	-	-	-	431
HCM Lane V/C Ratio	0.038	-	-	-	0.264
HCM Control Delay (s)	8.3	-	-	-	16.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	85	0	44	12	1845	78	42	1561	0
Future Volume (veh/h)	0	0	0	85	0	44	12	1845	78	42	1561	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		0.98	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
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1885	0	1885	1885	1885	1885	1885	1885	0
Adj Flow Rate, veh/h				89	0	4	12	1922	76	44	1626	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				1	0	1	1	1	1	1	1	0
Cap, veh/h				122	0	109	22	2325	1014	79	2439	0
Arrive On Green				0.07	0.00	0.07	0.01	0.65	0.65	0.04	0.68	0.00
Sat Flow, veh/h				1795	0	1598	1795	3582	1562	1795	3676	0
Grp Volume(v), veh/h				89	0	4	12	1922	76	44	1626	0
Grp Sat Flow(s),veh/h/ln				1795	0	1598	1795	1791	1562	1795	1791	0
Q Serve(g_s), s				2.8	0.0	0.1	0.4	23.3	1.0	1.4	15.2	0.0
Cycle Q Clear(g_c), s				2.8	0.0	0.1	0.4	23.3	1.0	1.4	15.2	0.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				122	0	109	22	2325	1014	79	2439	0
V/C Ratio(X)				0.73	0.00	0.04	0.55	0.83	0.07	0.56	0.67	0.00
Avail Cap(c_a), veh/h				783	0	697	627	2500	1090	627	2500	0
HCM Platoon Ratio				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	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				26.2	0.0	25.0	28.2	7.6	3.7	26.8	5.3	0.0
Incr Delay (d2), s/veh				9.6	0.0	0.2	7.8	2.3	0.0	2.3	0.7	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
%ile BackOfQ(50%),veh/ln				1.4	0.0	0.1	0.2	5.4	0.2	0.6	2.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				35.8	0.0	25.1	36.0	10.0	3.7	29.1	6.0	0.0
LnGrp LOS				D	A	C	D	A	A	C	A	A
Approach Vol, veh/h					93			2010			1670	
Approach Delay, s/veh					35.3			9.9			6.6	
Approach LOS					D			A			A	

Timer - Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	6.5	42.9			4.7	44.7		7.9				
Change Period (Y+Rc), s	4.0	5.7			4.0	* 5.7		4.0				
Max Green Setting (Gmax), s	20.0	40.0			20.0	* 40		25.0				
Max Q Clear Time (g_c+I1), s	3.4	25.3			2.4	17.2		4.8				
Green Ext Time (p_c), s	0.0	11.9			0.0	13.0		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	9.1
HCM 6th LOS	A

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	1	221	0	0	1	119	1862	0	15	1531	75
Future Volume (veh/h)	65	1	221	0	0	1	119	1862	0	15	1531	75
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	68	1	10	0	0	0	124	1940	0	16	1595	45
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	118	2	107	4	4	0	161	2203	0	108	2098	915
Arrive On Green	0.07	0.07	0.07	0.00	0.00	0.00	0.09	0.62	0.00	0.06	0.59	0.59
Sat Flow, veh/h	1771	26	1598	1795	1885	0	1795	3676	0	1795	3582	1563
Grp Volume(v), veh/h	69	0	10	0	0	0	124	1940	0	16	1595	45
Grp Sat Flow(s),veh/h/ln	1797	0	1598	1795	1885	0	1795	1791	0	1795	1791	1563
Q Serve(g_s), s	1.9	0.0	0.3	0.0	0.0	0.0	3.4	22.6	0.0	0.4	16.5	0.6
Cycle Q Clear(g_c), s	1.9	0.0	0.3	0.0	0.0	0.0	3.4	22.6	0.0	0.4	16.5	0.6
Prop In Lane	0.99		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	120	0	107	4	4	0	161	2203	0	108	2098	915
V/C Ratio(X)	0.57	0.00	0.09	0.00	0.00	0.00	0.77	0.88	0.00	0.15	0.76	0.05
Avail Cap(c_a), veh/h	904	0	804	361	379	0	542	4326	0	361	4326	1887
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	0.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.5	0.0	21.8	0.0	0.0	0.0	22.1	8.0	0.0	22.1	7.7	4.4
Incr Delay (d2), s/veh	1.6	0.0	0.1	0.0	0.0	0.0	2.9	0.5	0.0	0.2	0.2	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	0.1	0.0	0.0	0.0	1.3	3.4	0.0	0.2	3.5	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.1	0.0	21.9	0.0	0.0	0.0	25.0	8.5	0.0	22.4	7.9	4.4
LnGrp LOS	C	A	C	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		79			0			2064			1656	
Approach Delay, s/veh		23.8			0.0			9.5			7.9	
Approach LOS		C						A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	36.3		7.4	7.5	34.8		0.0
Change Period (Y+Rc), s	3.0	5.7		4.1	3.0	5.7		3.5
Max Green Setting (Gmax), s	10.0	60.0		25.0	15.0	60.0		10.0
Max Q Clear Time (g_c+I1), s	2.4	24.6		3.9	5.4	18.5		0.0
Green Ext Time (p_c), s	0.0	6.0		0.1	0.1	5.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	9.1
HCM 6th LOS	A

Notes

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

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Woodgrove Way / Quail Oaks Dr & Douglas Blvd
Scenario	Existing Plus WHI

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Yield*	*Free*	*Free*	*Yield*	*Free*	*Free*
AM Peak Hour Volume	5	0	58	0	1	99	39	1365	34	46	1850	7
AM Peak Hour Delay (s)	1731.9	1731.9	17.2	1526.5	1526.5	32.00	20.3	0	0	14.3	0	0
PM Peak Hour Volume	2	0	33	0	1	37	45	1919	56	37	1736	4
PM Peak Hour Delay (s)	5000	5000	22.9	4932.2	4932.2	20.5	17.8	0	0	22.9	0	0

AM Delay	**63.7**
AM LOS	**F**

PM Delay	**116.7**
PM LOS	**F**

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Woodgrove Way / Quail Oaks Dr & Douglas Blvd
Scenario	Existing Plus WHI

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Yield*	*Free*	*Free*	*Yield*	*Free*	*Free*
AM Peak Hour Volume	5	0	58	0	1	99	39	1365	34	46	1850	7
AM Peak Hour Delay (s)	600	0	17.2	0	600	32.00	20.3	0	0	14.3	0	0
PM Peak Hour Volume	2	0	33	0	1	37	45	1919	56	37	1736	4
PM Peak Hour Delay (s)	600	0	22.9	0	600	20.5	17.8	0	0	22.9	0	0

AM Delay	**37.2**
AM LOS	**E**

PM Delay	**32.0**
PM LOS	**D**

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	10. Eureka Rd & Greyhawk Dr
Scenario	Existing Plus WHI

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control				*Stop*		*Stop*	*Yield*	*Free*			*Free*	*Free*
AM Peak Hour Volume				79		49	22	463			470	34
AM Peak Hour Delay (s)				26.0		26	9.0	0			0	0
PM Peak Hour Volume				58		41	38	486			338	16
PM Peak Hour Delay (s)				16.3		16.3	8.3	0			0	0

AM Delay	**23.5**
AM LOS	**C**

PM Delay	**14.1**
PM LOS	**B**

Appendix D:
Existing Plus Whitehawk II Conditions – Technical Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	1160	172	231	1696	116	438	811	126	209	581	171
Future Volume (veh/h)	184	1160	172	231	1696	116	438	811	126	209	581	171
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	200	1261	53	251	1843	0	476	882	0	227	632	138
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	259	1659	508	533	2149		531	1297		289	773	166
Arrive On Green	0.07	0.32	0.32	0.15	0.42	0.00	0.20	0.34	0.00	0.08	0.18	0.18
Sat Flow, veh/h	3456	5106	1564	3456	5106	1585	3456	5106	1585	3456	4202	903
Grp Volume(v), veh/h	200	1261	53	251	1843	0	476	882	0	227	510	260
Grp Sat Flow(s),veh/h/ln	1728	1702	1564	1728	1702	1585	1728	1702	1585	1728	1702	1701
Q Serve(g_s), s	6.8	26.6	1.8	7.9	39.3	0.0	16.1	17.8	0.0	7.7	17.3	17.7
Cycle Q Clear(g_c), s	6.8	26.6	1.8	7.9	39.3	0.0	16.1	17.8	0.0	7.7	17.3	17.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	259	1659	508	533	2149		531	1297		289	626	313
V/C Ratio(X)	0.77	0.76	0.10	0.47	0.86		0.90	0.68		0.79	0.81	0.83
Avail Cap(c_a), veh/h	461	1659	508	533	2149		605	1297		605	681	340
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	36.3	11.9	46.3	31.5	0.0	46.8	35.5	0.0	53.9	47.0	47.2
Incr Delay (d2), s/veh	1.9	3.3	0.4	0.2	3.7	0.0	13.8	1.6	0.0	1.8	7.6	15.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	11.1	1.1	3.4	15.9	0.0	7.4	6.8	0.0	3.4	7.8	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.3	39.6	12.3	46.5	35.2	0.0	60.6	37.1	0.0	55.8	54.6	63.1
LnGrp LOS	E	D	B	D	D		E	D		E	D	E
Approach Vol, veh/h		1514			2094	A		1358	A		997	
Approach Delay, s/veh		40.9			36.6			45.4			57.1	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.5	45.0	22.4	28.1	13.0	56.5	14.0	36.5
Change Period (Y+Rc), s	6.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	14.0	39.0	21.0	24.0	16.0	39.0	21.0	24.0
Max Q Clear Time (g_c+I1), s	9.9	28.6	18.1	19.7	8.8	41.3	9.7	19.8
Green Ext Time (p_c), s	0.2	7.2	0.3	2.3	0.2	0.0	0.3	2.4

Intersection Summary	
HCM 6th Ctrl Delay	43.1
HCM 6th LOS	D

Notes

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

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (veh/h)	5	51	1324	77	51	1827	85	46	20	40	76	23	165
Future Volume (veh/h)	5	51	1324	77	51	1827	85	46	20	40	76	23	165
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No			No			No			No	
Adj Sat Flow, veh/h/ln		1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		55	1439	48	55	1986	56	50	22	0	83	25	8
Peak Hour Factor		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h		71	2411	1052	71	2412	1054	65	29	82	111	33	126
Arrive On Green		0.08	1.00	1.00	0.04	0.68	0.68	0.05	0.05	0.00	0.08	0.08	0.08
Sat Flow, veh/h		1781	3554	1550	1781	3554	1552	1255	552	1585	1384	417	1579
Grp Volume(v), veh/h		55	1439	48	55	1986	56	72	0	0	108	0	8
Grp Sat Flow(s),veh/h/ln		1781	1777	1550	1781	1777	1552	1808	0	1585	1801	0	1579
Q Serve(g_s), s		3.6	0.0	0.0	3.7	48.8	1.4	4.7	0.0	0.0	7.0	0.0	0.6
Cycle Q Clear(g_c), s		3.6	0.0	0.0	3.7	48.8	1.4	4.7	0.0	0.0	7.0	0.0	0.6
Prop In Lane		1.00		1.00	1.00		1.00	0.69		1.00	0.77		1.00
Lane Grp Cap(c), veh/h		71	2411	1052	71	2412	1054	94	0	82	144	0	126
V/C Ratio(X)		0.78	0.60	0.05	0.77	0.82	0.05	0.77	0.00	0.00	0.75	0.00	0.06
Avail Cap(c_a), veh/h		238	2411	1052	238	2412	1054	241	0	211	465	0	408
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)		1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh		54.7	0.0	0.0	57.1	14.0	6.4	56.2	0.0	0.0	54.0	0.0	51.1
Incr Delay (d2), s/veh		6.7	1.1	0.1	6.5	2.5	0.0	4.9	0.0	0.0	3.0	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(50%),veh/ln		1.7	0.4	0.0	1.7	15.9	0.4	2.3	0.0	0.0	3.3	0.0	0.2
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh		61.5	1.1	0.1	63.6	16.5	6.4	61.1	0.0	0.0	57.0	0.0	51.1
LnGrp LOS		E	A	A	E	B	A	E	A	A	E	A	D
Approach Vol, veh/h			1542			2097			72			116	
Approach Delay, s/veh			3.2			17.5			61.1			56.6	
Approach LOS			A			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.8	87.4		13.6	8.8	87.4		10.2
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0
Max Green Setting (Gmax), s	16.0	39.0		31.0	16.0	39.0		16.0
Max Q Clear Time (g_c+I1), s	5.7	2.0		9.0	5.6	50.8		6.7
Green Ext Time (p_c), s	0.0	15.3		0.4	0.0	0.0		0.1

Intersection Summary	
HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved ignoring U-Turning movement.

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	1367	34	46	1859	7	5	0	59	0	1	99
Future Vol, veh/h	39	1367	34	46	1859	7	5	0	59	0	1	99
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	150	-	100	175	-	-	-	-	125	-	-	25
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	42	1486	37	50	2021	8	5	0	64	0	1	108

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2029	0	0	1523	0	0	2681	3699	743	2952	3732	1015
Stage 1	-	-	-	-	-	-	1570	1570	-	2125	2125	-
Stage 2	-	-	-	-	-	-	1111	2129	-	827	1607	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	276	-	-	434	-	-	11	5	358	6	4	236
Stage 1	-	-	-	-	-	-	116	170	-	51	89	-
Stage 2	-	-	-	-	-	-	223	89	-	332	163	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	276	-	-	434	-	-	~ 4	4	358	4	3	236
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 4	4	-	4	3	-
Stage 1	-	-	-	-	-	-	98	144	-	43	79	-
Stage 2	-	-	-	-	-	-	106	79	-	231	138	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.3	151.2	47.3
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	4	358	276	-	-	434	-	-	3	236
HCM Lane V/C Ratio	1.359	0.179	0.154	-	-	0.115	-	-	0.362	0.456
HCM Control Delay (s)	$ 1731.9	17.2	20.4	-	-	14.4	-	-	$ 1526.5	32.4
HCM Lane LOS	F	C	C	-	-	B	-	-	F	D
HCM 95th %tile Q(veh)	1.5	0.6	0.5	-	-	0.4	-	-	0.5	2.2

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	1361	8	3	1840	82	25	2	9	50	1	46
Future Volume (veh/h)	58	1361	8	3	1840	82	25	2	9	50	1	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	1479	9	3	2000	88	27	2	10	54	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	2579	16	4	2318	101	53	4	19	98	46	46
Arrive On Green	0.05	0.71	0.71	0.00	0.67	0.67	0.04	0.04	0.04	0.05	0.05	0.05
Sat Flow, veh/h	1781	3621	22	1781	3464	151	1179	87	437	1781	836	836
Grp Volume(v), veh/h	63	726	762	3	1017	1071	39	0	0	54	0	2
Grp Sat Flow(s),veh/h/ln	1781	1777	1866	1781	1777	1839	1703	0	0	1781	0	1672
Q Serve(g_s), s	3.1	17.6	17.7	0.1	39.4	41.0	2.0	0.0	0.0	2.6	0.0	0.1
Cycle Q Clear(g_c), s	3.1	17.6	17.7	0.1	39.4	41.0	2.0	0.0	0.0	2.6	0.0	0.1
Prop In Lane	1.00		0.01	1.00		0.08	0.69		0.26	1.00		0.50
Lane Grp Cap(c), veh/h	81	1266	1329	4	1189	1230	76	0	0	98	0	92
V/C Ratio(X)	0.78	0.57	0.57	0.70	0.86	0.87	0.51	0.00	0.00	0.55	0.00	0.02
Avail Cap(c_a), veh/h	461	1340	1407	261	1340	1386	642	0	0	682	0	640
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.0	6.2	6.2	44.3	11.4	11.6	41.5	0.0	0.0	40.9	0.0	39.7
Incr Delay (d2), s/veh	5.9	0.5	0.5	55.3	5.2	5.7	2.0	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	1.4	4.0	4.2	0.1	11.6	12.6	0.9	0.0	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.8	6.8	6.7	99.6	16.5	17.4	43.5	0.0	0.0	42.7	0.0	39.8
LnGrp LOS	D	A	A	F	B	B	D	A	A	D	A	D
Approach Vol, veh/h		1551			2091			39			56	
Approach Delay, s/veh		8.4			17.1			43.5			42.6	
Approach LOS		A			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.0	65.5		8.4	3.2	69.3		8.0
Change Period (Y+Rc), s	3.0	6.0		3.5	3.0	6.0		4.0
Max Green Setting (Gmax), s	23.0	67.0		34.0	13.0	67.0		33.5
Max Q Clear Time (g_c+I1), s	5.1	43.0		4.6	2.1	19.7		4.0
Green Ext Time (p_c), s	0.0	16.5		0.1	0.0	12.3		0.1

Intersection Summary		
HCM 6th Ctrl Delay		14.1
HCM 6th LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	1195	131	134	1565	114	215	98	76	137	116	34
Future Volume (veh/h)	41	1195	131	134	1565	114	215	98	76	137	116	34
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		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	44	1271	132	143	1665	76	166	191	0	146	123	4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	56	1367	141	175	1733	756	220	231		166	140	263
Arrive On Green	0.03	0.42	0.42	0.10	0.48	0.48	0.12	0.12	0.00	0.17	0.17	0.17
Sat Flow, veh/h	1795	3276	339	1795	3582	1562	1795	1885	1598	996	839	1576
Grp Volume(v), veh/h	44	693	710	143	1665	76	166	191	0	269	0	4
Grp Sat Flow(s),veh/h/ln	1795	1791	1824	1795	1791	1562	1795	1885	1598	1835	0	1576
Q Serve(g_s), s	2.2	33.4	33.8	7.1	40.8	2.4	8.1	9.0	0.0	13.0	0.0	0.2
Cycle Q Clear(g_c), s	2.2	33.4	33.8	7.1	40.8	2.4	8.1	9.0	0.0	13.0	0.0	0.2
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	0.54		1.00
Lane Grp Cap(c), veh/h	56	747	761	175	1733	756	220	231		306	0	263
V/C Ratio(X)	0.79	0.93	0.93	0.81	0.96	0.10	0.75	0.83		0.88	0.00	0.02
Avail Cap(c_a), veh/h	296	788	802	395	1772	773	395	414		404	0	347
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.8	25.2	25.3	40.2	22.6	12.7	38.6	39.0	0.0	37.0	0.0	31.7
Incr Delay (d2), s/veh	8.7	16.0	16.7	3.5	13.0	0.0	2.0	2.9	0.0	13.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	15.5	16.0	3.1	17.5	0.7	3.6	4.2	0.0	6.8	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.5	41.2	42.0	43.7	35.6	12.8	40.6	41.8	0.0	50.2	0.0	31.7
LnGrp LOS	D	D	D	D	D	B	D	D		D	A	C
Approach Vol, veh/h		1447			1884			357	A		273	
Approach Delay, s/veh		42.0			35.3			41.2			50.0	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.9	44.0		19.6	5.8	50.0		15.5
Change Period (Y+Rc), s	3.0	6.0		4.4	3.0	6.0		4.4
Max Green Setting (Gmax), s	20.0	40.0		20.0	15.0	45.0		20.0
Max Q Clear Time (g_c+I1), s	9.1	35.8		15.0	4.2	42.8		11.0
Green Ext Time (p_c), s	0.0	1.3		0.2	0.0	1.2		0.1

Intersection Summary	
HCM 6th Ctrl Delay	39.3
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	126	1027	74	251	96	1173	341	42	80	612	259
Future Volume (veh/h)	137	126	1027	74	251	96	1173	341	42	80	612	259
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	152	140	0	82	279	0	1303	379	0	89	680	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	184	518		105	362		1385	727		384	766	
Arrive On Green	0.10	0.14	0.00	0.06	0.10	0.00	0.39	0.39	0.00	0.21	0.21	0.00
Sat Flow, veh/h	1795	3582	1598	1795	3582	1598	3591	1885	1598	1795	3582	1598
Grp Volume(v), veh/h	152	140	0	82	279	0	1303	379	0	89	680	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1598	1795	1885	1598	1795	1791	1598
Q Serve(g_s), s	8.1	3.4	0.0	4.4	7.4	0.0	34.2	15.1	0.0	4.0	18.0	0.0
Cycle Q Clear(g_c), s	8.1	3.4	0.0	4.4	7.4	0.0	34.2	15.1	0.0	4.0	18.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	184	518		105	362		1385	727		384	766	
V/C Ratio(X)	0.83	0.27		0.78	0.77		0.94	0.52		0.23	0.89	
Avail Cap(c_a), veh/h	459	916		275	733		1653	868		459	916	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.0	37.2	0.0	45.4	42.9	0.0	29.0	23.1	0.0	31.8	37.3	0.0
Incr Delay (d2), s/veh	3.6	0.1	0.0	4.6	1.3	0.0	9.4	0.2	0.0	0.1	8.4	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	3.6	1.4	0.0	2.0	3.3	0.0	15.4	6.4	0.0	1.7	8.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.7	37.3	0.0	50.0	44.2	0.0	38.3	23.3	0.0	31.9	45.7	0.0
LnGrp LOS	D	D		D	D		D	C		C	D	
Approach Vol, veh/h		292	A		361	A		1682	A		769	A
Approach Delay, s/veh		42.2			45.5			35.0			44.1	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.7	19.8		26.2	13.0	15.6		43.0
Change Period (Y+Rc), s	3.0	5.7		5.3	3.0	* 5.7		5.3
Max Green Setting (Gmax), s	15.0	25.0		25.0	25.0	* 20		45.0
Max Q Clear Time (g_c+I1), s	10.4	5.4		20.0	10.1	9.4		36.2
Green Ext Time (p_c), s	0.0	0.2		0.9	0.0	0.5		1.5

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

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	14	117	22	4	21	90	1305	57	85	826	31
Future Volume (veh/h)	127	14	117	22	4	21	90	1305	57	85	826	31
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		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	149	0	4	24	4	0	98	1418	35	92	898	19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	325	0	144	86	14	88	123	1885	572	574	3252	983
Arrive On Green	0.09	0.00	0.09	0.06	0.06	0.00	0.07	0.37	0.37	0.64	1.00	1.00
Sat Flow, veh/h	3563	0	1585	1537	256	1585	1781	5106	1550	1781	5106	1543
Grp Volume(v), veh/h	149	0	4	28	0	0	98	1418	35	92	898	19
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1793	0	1585	1781	1702	1550	1781	1702	1543
Q Serve(g_s), s	4.8	0.0	0.3	1.8	0.0	0.0	6.5	29.1	1.7	2.5	0.0	0.0
Cycle Q Clear(g_c), s	4.8	0.0	0.3	1.8	0.0	0.0	6.5	29.1	1.7	2.5	0.0	0.0
Prop In Lane	1.00		1.00	0.86		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	325	0	144	100	0	88	123	1885	572	574	3252	983
V/C Ratio(X)	0.46	0.00	0.03	0.28	0.00	0.00	0.80	0.75	0.06	0.16	0.28	0.02
Avail Cap(c_a), veh/h	623	0	277	314	0	277	312	1885	572	574	3252	983
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	49.7	54.4	0.0	0.0	55.1	33.1	24.4	14.9	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.6	0.0	0.0	4.5	2.8	0.2	0.0	0.1	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	2.2	0.0	0.1	0.8	0.0	0.0	3.0	11.9	0.7	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.1	0.0	49.7	54.9	0.0	0.0	59.5	35.9	24.6	14.9	0.1	0.0
LnGrp LOS	D	A	D	D	A	A	E	D	C	B	A	A
Approach Vol, veh/h		153			28			1551			1009	
Approach Delay, s/veh		52.0			54.9			37.1			1.5	
Approach LOS		D			D			D			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	44.4	50.0		14.9	12.3	82.1		10.7
Change Period (Y+Rc), s	5.7	* 5.7		4.0	4.0	5.7		4.0
Max Green Setting (Gmax), s	16.3	* 44		21.0	21.0	39.3		21.0
Max Q Clear Time (g_c+I1), s	14.5	31.1		6.8	8.5	2.0		3.8
Green Ext Time (p_c), s	0.1	10.7		0.2	0.1	14.4		0.0

Intersection Summary	
HCM 6th Ctrl Delay	25.0
HCM 6th LOS	C

Notes

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

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	152	47	38	232	274	68	1087	37	144	675	135
Future Volume (veh/h)	111	152	47	38	232	274	68	1087	37	144	675	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	121	165	0	41	252	0	74	1182	0	157	734	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	226		215	356		122	1385		185	1460	
Arrive On Green	0.08	0.12	0.00	0.06	0.10	0.00	0.07	0.39	0.00	0.10	0.41	0.00
Sat Flow, veh/h	1781	1870	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	121	165	0	41	252	0	74	1182	0	157	734	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.0	10.2	0.0	1.4	8.2	0.0	4.8	36.5	0.0	10.4	18.4	0.0
Cycle Q Clear(g_c), s	8.0	10.2	0.0	1.4	8.2	0.0	4.8	36.5	0.0	10.4	18.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	147	226		215	356		122	1385		185	1460	
V/C Ratio(X)	0.82	0.73		0.19	0.71		0.61	0.85		0.85	0.50	
Avail Cap(c_a), veh/h	238	301		461	572		238	1385		386	1460	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.2	50.9	0.0	53.4	52.3	0.0	54.3	33.5	0.0	52.8	26.2	0.0
Incr Delay (d2), s/veh	5.2	8.7	0.0	0.2	4.4	0.0	1.8	5.7	0.0	4.1	1.2	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	3.7	5.2	0.0	0.6	3.9	0.0	2.2	16.0	0.0	4.7	7.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.4	59.6	0.0	53.6	56.7	0.0	56.1	39.2	0.0	56.9	27.5	0.0
LnGrp LOS	E	E		D	E		E	D		E	C	
Approach Vol, veh/h		286	A		293	A		1256	A		891	A
Approach Delay, s/veh		59.5			56.2			40.2			32.7	
Approach LOS		E			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	52.5	11.5	20.2	13.9	55.0	13.9	17.7
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	5.7
Max Green Setting (Gmax), s	26.0	39.3	16.0	19.3	16.0	* 49	16.0	19.3
Max Q Clear Time (g_c+I1), s	12.4	38.5	3.4	12.2	6.8	20.4	10.0	10.2
Green Ext Time (p_c), s	0.2	0.7	0.0	0.6	0.0	8.3	0.1	1.4

Intersection Summary	
HCM 6th Ctrl Delay	41.5
HCM 6th LOS	D

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	22	463	470	35	81	49
Future Vol, veh/h	22	463	470	35	81	49
Conflicting Peds, #/hr	6	0	0	6	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	28	586	595	44	103	62

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	645	0	-	0	951	304
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	350	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	943	-	-	-	260	695
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	687	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	938	-	-	-	249	691
Mov Cap-2 Maneuver	-	-	-	-	249	-
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	683	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	26.5
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	938	-	-	-	328
HCM Lane V/C Ratio	0.03	-	-	-	0.502
HCM Control Delay (s)	9	-	-	-	26.5
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	192	0	82	6	1454	119	86	1590	0
Future Volume (veh/h)	0	0	0	192	0	82	6	1454	119	86	1590	0
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1885	0	1885	1870	1885	1885	1885	1885	0
Adj Flow Rate, veh/h				213	0	10	7	1616	104	96	1767	0
Peak Hour Factor				0.90	0.92	0.90	0.92	0.90	0.90	0.90	0.90	0.92
Percent Heavy Veh, %				1	0	1	2	1	1	1	1	0
Cap, veh/h				276	0	245	13	2010	897	124	2232	0
Arrive On Green				0.15	0.00	0.15	0.01	0.56	0.56	0.07	0.62	0.00
Sat Flow, veh/h				1795	0	1598	1781	3582	1598	1795	3676	0
Grp Volume(v), veh/h				213	0	10	7	1616	104	96	1767	0
Grp Sat Flow(s),veh/h/ln				1795	0	1598	1781	1791	1598	1795	1791	0
Q Serve(g_s), s				7.2	0.0	0.3	0.2	22.9	1.9	3.3	23.3	0.0
Cycle Q Clear(g_c), s				7.2	0.0	0.3	0.2	22.9	1.9	3.3	23.3	0.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				276	0	245	13	2010	897	124	2232	0
V/C Ratio(X)				0.77	0.00	0.04	0.54	0.80	0.12	0.77	0.79	0.00
Avail Cap(c_a), veh/h				708	0	630	562	2259	1007	566	2259	0
HCM Platoon Ratio				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	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				25.8	0.0	22.9	31.4	11.1	6.5	29.0	8.9	0.0
Incr Delay (d2), s/veh				5.5	0.0	0.1	12.1	2.0	0.1	3.8	2.0	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
%ile BackOfQ(50%),veh/ln				3.3	0.0	0.1	0.1	7.0	0.5	1.5	6.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.3	0.0	22.9	43.5	13.2	6.6	32.8	10.9	0.0
LnGrp LOS				C	A	C	D	B	A	C	B	A
Approach Vol, veh/h					223			1727			1863	
Approach Delay, s/veh					30.9			12.9			12.0	
Approach LOS					C			B			B	

Timer - Assigned Phs	1	2		5	6	8
Phs Duration (G+Y+Rc), s	8.4	41.3		4.5	45.2	13.7
Change Period (Y+Rc), s	4.0	5.7		4.0	* 5.7	4.0
Max Green Setting (Gmax), s	20.0	40.0		20.0	* 40	25.0
Max Q Clear Time (g_c+I1), s	5.3	24.9		2.2	25.3	9.2
Green Ext Time (p_c), s	0.1	10.7		0.0	10.5	0.7

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	2	128	0	1	2	180	1440	0	2	1606	173
Future Volume (veh/h)	121	2	128	0	1	2	180	1440	0	2	1606	173
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	134	2	1	0	1	0	200	1600	0	2	1784	143
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	172	3	156	2	3	0	241	2310	0	72	1971	858
Arrive On Green	0.10	0.10	0.10	0.00	0.00	0.00	0.13	0.65	0.00	0.04	0.55	0.55
Sat Flow, veh/h	1770	26	1598	1795	1885	0	1795	3676	0	1795	3582	1559
Grp Volume(v), veh/h	136	0	1	0	1	0	200	1600	0	2	1784	143
Grp Sat Flow(s),veh/h/ln	1797	0	1598	1795	1885	0	1795	1791	0	1795	1791	1559
Q Serve(g_s), s	5.6	0.0	0.0	0.0	0.0	0.0	8.2	21.6	0.0	0.1	33.6	3.4
Cycle Q Clear(g_c), s	5.6	0.0	0.0	0.0	0.0	0.0	8.2	21.6	0.0	0.1	33.6	3.4
Prop In Lane	0.99		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	0	156	2	3	0	241	2310	0	72	1971	858
V/C Ratio(X)	0.78	0.00	0.01	0.00	0.39	0.00	0.83	0.69	0.00	0.03	0.90	0.17
Avail Cap(c_a), veh/h	596	0	530	238	250	0	358	2853	0	238	2853	1242
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	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.2	0.0	30.7	0.0	37.6	0.0	31.8	8.6	0.0	34.8	15.2	8.4
Incr Delay (d2), s/veh	2.8	0.0	0.0	0.0	31.4	0.0	6.3	0.3	0.0	0.1	2.5	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(50%),veh/ln	2.5	0.0	0.0	0.0	0.0	0.0	3.6	5.4	0.0	0.0	11.5	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.0	0.0	30.7	0.0	68.9	0.0	38.1	8.9	0.0	34.8	17.7	8.4
LnGrp LOS	D	A	C	A	E	A	D	A	A	C	B	A
Approach Vol, veh/h		137			1			1800			1929	
Approach Delay, s/veh		36.0			68.9			12.2			17.0	
Approach LOS		D			E			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	54.3		11.4	13.1	47.2		3.6
Change Period (Y+Rc), s	3.0	5.7		4.1	3.0	5.7		3.5
Max Green Setting (Gmax), s	10.0	60.0		25.0	15.0	60.0		10.0
Max Q Clear Time (g_c+I1), s	2.1	23.6		7.6	10.2	35.6		2.0
Green Ext Time (p_c), s	0.0	4.3		0.2	0.1	5.9		0.0

Intersection Summary	
HCM 6th Ctrl Delay	15.4
HCM 6th 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												
Traffic Volume (veh/h)	394	1605	281	313	1364	240	446	876	211	251	765	148
Future Volume (veh/h)	394	1605	281	313	1364	240	446	876	211	251	765	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	419	1707	153	333	1451	0	474	932	0	267	814	137
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	466	1784	553	551	1979		522	1326		316	881	147
Arrive On Green	0.13	0.35	0.35	0.16	0.38	0.00	0.15	0.26	0.00	0.09	0.20	0.20
Sat Flow, veh/h	3483	5147	1596	3483	5147	1598	3483	5147	1598	3483	4439	742
Grp Volume(v), veh/h	419	1707	153	333	1451	0	474	932	0	267	628	323
Grp Sat Flow(s),veh/h/ln	1742	1716	1596	1742	1716	1598	1742	1716	1598	1742	1716	1750
Q Serve(g_s), s	17.8	48.6	6.9	13.3	36.2	0.0	20.1	24.6	0.0	11.3	26.9	27.2
Cycle Q Clear(g_c), s	17.8	48.6	6.9	13.3	36.2	0.0	20.1	24.6	0.0	11.3	26.9	27.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	466	1784	553	551	1979		522	1326		316	681	347
V/C Ratio(X)	0.90	0.96	0.28	0.60	0.73		0.91	0.70		0.84	0.92	0.93
Avail Cap(c_a), veh/h	534	1784	553	551	1979		604	1326		488	686	350
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.0	47.9	15.8	58.7	39.6	0.0	62.7	50.5	0.0	67.1	59.0	59.1
Incr Delay (d2), s/veh	15.5	13.3	1.2	1.3	2.4	0.0	15.0	1.8	0.0	4.8	18.2	31.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	22.3	4.0	5.9	15.3	0.0	9.8	10.6	0.0	5.2	13.2	14.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.5	61.2	17.1	60.1	42.0	0.0	77.8	52.3	0.0	72.0	77.2	90.2
LnGrp LOS	E	E	B	E	D		E	D		E	E	F
Approach Vol, veh/h		2279			1784	A		1406	A		1218	
Approach Delay, s/veh		61.6			45.4			60.9			79.5	
Approach LOS		E			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.7	58.0	26.5	35.8	24.1	63.7	17.6	44.6
Change Period (Y+Rc), s	6.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	20.0	52.0	26.0	30.0	23.0	51.0	21.0	35.0
Max Q Clear Time (g_c+I1), s	15.3	50.6	22.1	29.2	19.8	38.2	13.3	26.6
Green Ext Time (p_c), s	0.3	1.3	0.4	0.5	0.3	7.9	0.3	4.4

Intersection Summary	
HCM 6th Ctrl Delay	60.4
HCM 6th LOS	E

Notes

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

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	1821	23	86	1629	70	109	33	104	109	36	166
Future Volume (veh/h)	85	1821	23	86	1629	70	109	33	104	109	36	166
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		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	90	1937	13	91	1733	45	116	35	14	116	38	9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	110	2225	992	112	2229	974	135	41	155	136	45	158
Arrive On Green	0.12	1.00	1.00	0.06	0.62	0.62	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1795	3582	1596	1795	3582	1565	1395	421	1598	1368	448	1593
Grp Volume(v), veh/h	90	1937	13	91	1733	45	151	0	14	154	0	9
Grp Sat Flow(s),veh/h/ln	1795	1791	1596	1795	1791	1565	1815	0	1598	1817	0	1593
Q Serve(g_s), s	7.3	0.0	0.0	7.5	53.1	1.7	12.3	0.0	1.2	12.5	0.0	0.8
Cycle Q Clear(g_c), s	7.3	0.0	0.0	7.5	53.1	1.7	12.3	0.0	1.2	12.5	0.0	0.8
Prop In Lane	1.00		1.00	1.00		1.00	0.77		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	110	2225	992	112	2229	974	176	0	155	181	0	158
V/C Ratio(X)	0.82	0.87	0.01	0.81	0.78	0.05	0.86	0.00	0.09	0.85	0.00	0.06
Avail Cap(c_a), veh/h	251	2225	992	251	2229	974	254	0	224	254	0	223
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)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	65.0	0.0	0.0	69.5	20.7	11.0	66.7	0.0	61.7	66.5	0.0	61.2
Incr Delay (d2), s/veh	5.6	5.0	0.0	5.3	2.7	0.1	12.9	0.0	0.1	13.2	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(50%),veh/ln	3.3	1.5	0.0	3.5	20.5	0.6	6.4	0.0	0.5	6.5	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.6	5.0	0.0	74.7	23.5	11.1	79.6	0.0	61.8	79.7	0.0	61.2
LnGrp LOS	E	A	A	E	C	B	E	A	E	E	A	E
Approach Vol, veh/h		2040			1869			165			163	
Approach Delay, s/veh		7.9			25.7			78.1			78.7	
Approach LOS		A			C			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.4	99.2		18.9	13.2	99.4		18.6
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0
Max Green Setting (Gmax), s	21.0	69.0		21.0	21.0	69.0		21.0
Max Q Clear Time (g_c+I1), s	9.5	2.0		14.5	9.3	55.1		14.3
Green Ext Time (p_c), s	0.1	31.9		0.3	0.1	10.0		0.3

Intersection Summary	
HCM 6th Ctrl Delay	21.2
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	1933	56	32	1745	4	2	0	34	0	1	37
Future Vol, veh/h	45	1933	56	32	1745	4	2	0	34	0	1	37
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	150	-	100	175	-	-	-	-	125	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	48	2056	60	34	1856	4	2	0	36	0	1	39

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1860	0	0	2116	0	0	3149	4080	1028	3050	4138	930
Stage 1	-	-	-	-	-	-	2152	2152	-	1926	1926	-
Stage 2	-	-	-	-	-	-	997	1928	-	1124	2212	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.52	6.52	6.92	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Follow-up Hdwy	2.21	-	-	2.21	-	-	3.51	4.01	3.31	3.51	4.01	3.31
Pot Cap-1 Maneuver	325	-	-	258	-	-	5	3	233	5	2	271
Stage 1	-	-	-	-	-	-	50	87	-	69	114	-
Stage 2	-	-	-	-	-	-	264	114	-	220	81	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	325	-	-	258	-	-	-	2	233	3	~ 1	271
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	2	-	3	~ 1	-
Stage 1	-	-	-	-	-	-	43	74	-	59	99	-
Stage 2	-	-	-	-	-	-	194	99	-	158	69	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.4		149.8
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	233	325	-	-	258	-	-	1	271
HCM Lane V/C Ratio	-	0.155	0.147	-	-	0.132	-	-	1.064	0.145
HCM Control Delay (s)	-	23.3	18	-	-	21.1	-	-	$ 4932.2	20.5
HCM Lane LOS	-	C	C	-	-	C	-	-	F	C
HCM 95th %tile Q(veh)	-	0.5	0.5	-	-	0.4	-	-	0.6	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												
Traffic Volume (veh/h)	34	1905	28	9	1729	18	17	0	6	26	1	31
Future Volume (veh/h)	34	1905	28	9	1729	18	17	0	6	26	1	31
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		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	36	2027	30	10	1839	19	18	0	6	28	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	44	2580	38	14	2531	26	28	0	9	46	22	22
Arrive On Green	0.02	0.71	0.71	0.01	0.70	0.70	0.02	0.00	0.02	0.03	0.03	0.03
Sat Flow, veh/h	1795	3613	53	1795	3631	37	1306	0	435	1795	865	865
Grp Volume(v), veh/h	36	1002	1055	10	906	952	24	0	0	28	0	2
Grp Sat Flow(s),veh/h/ln	1795	1791	1876	1795	1791	1877	1742	0	0	1795	0	1730
Q Serve(g_s), s	1.4	25.1	25.4	0.4	21.4	21.5	0.9	0.0	0.0	1.1	0.0	0.1
Cycle Q Clear(g_c), s	1.4	25.1	25.4	0.4	21.4	21.5	0.9	0.0	0.0	1.1	0.0	0.1
Prop In Lane	1.00		0.03	1.00		0.02	0.75		0.25	1.00		0.50
Lane Grp Cap(c), veh/h	44	1279	1339	14	1248	1309	37	0	0	46	0	44
V/C Ratio(X)	0.82	0.78	0.79	0.73	0.73	0.73	0.64	0.00	0.00	0.62	0.00	0.05
Avail Cap(c_a), veh/h	598	1738	1820	598	1738	1822	858	0	0	884	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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.5	6.4	6.5	34.2	6.4	6.4	33.5	0.0	0.0	33.3	0.0	32.8
Incr Delay (d2), s/veh	12.9	1.7	1.7	24.3	0.9	0.9	6.8	0.0	0.0	4.9	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(50%),veh/ln	0.7	4.0	4.2	0.2	3.6	3.8	0.5	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.4	8.1	8.1	58.5	7.3	7.3	40.3	0.0	0.0	38.3	0.0	33.0
LnGrp LOS	D	A	A	E	A	A	D	A	A	D	A	C
Approach Vol, veh/h		2093			1868			24			30	
Approach Delay, s/veh		8.8			7.6			40.3			37.9	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.7	54.1		5.3	3.5	55.3		5.0
Change Period (Y+Rc), s	3.0	6.0		3.5	3.0	6.0		3.5
Max Green Setting (Gmax), s	23.0	67.0		34.0	23.0	67.0		34.0
Max Q Clear Time (g_c+I1), s	3.4	23.5		3.1	2.4	27.4		2.9
Green Ext Time (p_c), s	0.0	18.7		0.0	0.0	21.9		0.1

Intersection Summary	
HCM 6th Ctrl Delay	8.6
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	1572	200	92	1511	165	133	75	102	147	90	56
Future Volume (veh/h)	45	1572	200	92	1511	165	133	75	102	147	90	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	46	1621	199	95	1558	128	107	119	0	152	93	7
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	58	1548	187	122	1855	826	155	163		178	109	250
Arrive On Green	0.03	0.48	0.48	0.07	0.51	0.51	0.09	0.09	0.00	0.16	0.16	0.16
Sat Flow, veh/h	1810	3235	390	1810	3610	1609	1810	1900	1610	1143	700	1610
Grp Volume(v), veh/h	46	891	929	95	1558	128	107	119	0	245	0	7
Grp Sat Flow(s),veh/h/ln	1810	1805	1820	1810	1805	1609	1810	1900	1610	1843	0	1610
Q Serve(g_s), s	2.1	40.0	40.0	4.3	30.9	3.5	4.8	5.1	0.0	10.8	0.0	0.3
Cycle Q Clear(g_c), s	2.1	40.0	40.0	4.3	30.9	3.5	4.8	5.1	0.0	10.8	0.0	0.3
Prop In Lane	1.00		0.21	1.00		1.00	1.00		1.00	0.62		1.00
Lane Grp Cap(c), veh/h	58	864	871	122	1855	826	155	163		286	0	250
V/C Ratio(X)	0.79	1.03	1.07	0.78	0.84	0.15	0.69	0.73		0.86	0.00	0.03
Avail Cap(c_a), veh/h	325	864	871	433	1944	866	433	455		441	0	385
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.2	21.8	21.8	38.4	17.4	10.7	37.1	37.3	0.0	34.4	0.0	29.9
Incr Delay (d2), s/veh	8.3	39.1	49.7	4.0	3.1	0.0	2.0	2.4	0.0	6.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	22.8	25.5	1.9	11.1	1.1	2.1	2.4	0.0	5.2	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.5	60.9	71.5	42.3	20.5	10.8	39.2	39.6	0.0	40.6	0.0	30.0
LnGrp LOS	D	F	F	D	C	B	D	D		D	A	C
Approach Vol, veh/h		1866			1781			226	A		252	
Approach Delay, s/veh		65.9			21.0			39.4			40.3	
Approach LOS		E			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.6	46.0		17.4	5.7	48.9		11.6
Change Period (Y+Rc), s	3.0	6.0		4.4	3.0	6.0		4.4
Max Green Setting (Gmax), s	20.0	40.0		20.0	15.0	45.0		20.0
Max Q Clear Time (g_c+I1), s	6.3	42.0		12.8	4.1	32.9		7.1
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	3.5		0.1

Intersection Summary	
HCM 6th Ctrl Delay	43.5
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	269	1111	57	236	98	1181	689	80	111	440	202
Future Volume (veh/h)	212	269	1111	57	236	98	1181	689	80	111	440	202
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	221	280	0	59	246	0	1230	718	0	116	458	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	254	696		76	340		1461	767		277	553	
Arrive On Green	0.14	0.19	0.00	0.04	0.09	0.00	0.41	0.41	0.00	0.15	0.15	0.00
Sat Flow, veh/h	1795	3582	1598	1795	3582	1598	3591	1885	1598	1795	3582	1598
Grp Volume(v), veh/h	221	280	0	59	246	0	1230	718	0	116	458	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1598	1795	1885	1598	1795	1791	1598
Q Serve(g_s), s	11.5	6.5	0.0	3.1	6.4	0.0	29.5	34.8	0.0	5.6	11.8	0.0
Cycle Q Clear(g_c), s	11.5	6.5	0.0	3.1	6.4	0.0	29.5	34.8	0.0	5.6	11.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	254	696		76	340		1461	767		277	553	
V/C Ratio(X)	0.87	0.40		0.78	0.72		0.84	0.94		0.42	0.83	
Avail Cap(c_a), veh/h	470	938		282	750		1692	888		470	938	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	40.1	33.6	0.0	45.3	42.0	0.0	25.5	27.1	0.0	36.5	39.1	0.0
Incr Delay (d2), s/veh	3.5	0.1	0.0	6.2	1.1	0.0	3.1	14.7	0.0	0.4	1.2	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	5.0	2.7	0.0	1.5	2.8	0.0	12.2	17.5	0.0	2.4	5.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.7	33.8	0.0	51.4	43.1	0.0	28.7	41.8	0.0	36.9	40.4	0.0
LnGrp LOS	D	C		D	D		C	D		D	D	
Approach Vol, veh/h		501	A		305	A		1948	A		574	A
Approach Delay, s/veh		38.1			44.7			33.5			39.7	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.0	24.2		20.0	16.5	14.8		44.2
Change Period (Y+Rc), s	3.0	5.7		5.3	3.0	* 5.7		5.3
Max Green Setting (Gmax), s	15.0	25.0		25.0	25.0	* 20		45.0
Max Q Clear Time (g_c+I1), s	5.1	8.5		13.8	13.5	8.4		36.8
Green Ext Time (p_c), s	0.0	0.5		0.8	0.1	0.4		2.0

Intersection Summary	
HCM 6th Ctrl Delay	36.3
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	9	181	72	13	72	123	1211	31	92	1150	65
Future Volume (veh/h)	188	9	181	72	13	72	123	1211	31	92	1150	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	207	0	11	77	14	4	131	1288	16	98	1223	35
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	358	0	156	134	24	140	158	1900	584	506	2969	919
Arrive On Green	0.10	0.00	0.10	0.09	0.09	0.09	0.09	0.37	0.37	0.28	0.58	0.58
Sat Flow, veh/h	3591	0	1569	1530	278	1598	1795	5147	1582	1795	5147	1593
Grp Volume(v), veh/h	207	0	11	91	0	4	131	1288	16	98	1223	35
Grp Sat Flow(s),veh/h/ln	1795	0	1569	1809	0	1598	1795	1716	1582	1795	1716	1593
Q Serve(g_s), s	6.6	0.0	0.8	5.8	0.0	0.3	8.6	25.3	0.8	5.0	15.8	1.1
Cycle Q Clear(g_c), s	6.6	0.0	0.8	5.8	0.0	0.3	8.6	25.3	0.8	5.0	15.8	1.1
Prop In Lane	1.00		1.00	0.85		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	358	0	156	159	0	140	158	1900	584	506	2969	919
V/C Ratio(X)	0.58	0.00	0.07	0.57	0.00	0.03	0.83	0.68	0.03	0.19	0.41	0.04
Avail Cap(c_a), veh/h	628	0	275	317	0	280	314	1900	584	506	2969	919
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.6	0.0	49.0	52.6	0.0	50.1	53.8	31.8	24.1	32.7	14.1	11.0
Incr Delay (d2), s/veh	0.6	0.0	0.1	1.2	0.0	0.0	4.2	2.0	0.1	0.1	0.2	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	3.0	0.0	0.3	2.7	0.0	0.1	4.0	10.3	0.3	2.1	5.7	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.2	0.0	49.0	53.8	0.0	50.1	58.0	33.8	24.2	32.8	14.3	11.0
LnGrp LOS	D	A	D	D	A	D	E	C	C	C	B	B
Approach Vol, veh/h		218			95			1435			1356	
Approach Delay, s/veh		52.0			53.6			35.9			15.6	
Approach LOS		D			D			D			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	39.5	50.0		16.0	14.6	74.9		14.5
Change Period (Y+Rc), s	5.7	* 5.7		4.0	4.0	5.7		4.0
Max Green Setting (Gmax), s	16.0	* 44		21.0	21.0	39.3		21.0
Max Q Clear Time (g_c+I1), s	17.0	27.3		8.6	10.6	17.8		7.8
Green Ext Time (p_c), s	0.1	12.5		0.3	0.1	14.4		0.2

Intersection Summary	
HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	336	82	41	151	198	102	991	37	221	1017	160
Future Volume (veh/h)	119	336	82	41	151	198	102	991	37	221	1017	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	127	357	0	44	161	0	109	1054	0	235	1082	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	154	382		223	647		162	1024		262	1173	
Arrive On Green	0.09	0.20	0.00	0.06	0.18	0.00	0.09	0.29	0.00	0.15	0.33	0.00
Sat Flow, veh/h	1795	1885	1598	3483	3582	1598	1795	3582	1598	1795	3582	1598
Grp Volume(v), veh/h	127	357	0	44	161	0	109	1054	0	235	1082	0
Grp Sat Flow(s),veh/h/ln	1795	1885	1598	1742	1791	1598	1795	1791	1598	1795	1791	1598
Q Serve(g_s), s	8.3	22.4	0.0	1.4	4.6	0.0	7.1	34.3	0.0	15.4	34.9	0.0
Cycle Q Clear(g_c), s	8.3	22.4	0.0	1.4	4.6	0.0	7.1	34.3	0.0	15.4	34.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	154	382		223	647		162	1024		262	1173	
V/C Ratio(X)	0.82	0.94		0.20	0.25		0.67	1.03		0.90	0.92	
Avail Cap(c_a), veh/h	389	382		610	647		239	1024		314	1173	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.9	47.1	0.0	53.2	42.2	0.0	52.9	42.8	0.0	50.3	38.9	0.0
Incr Delay (d2), s/veh	4.1	30.5	0.0	0.2	0.3	0.0	1.8	35.9	0.0	21.6	13.2	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	3.9	13.5	0.0	0.6	2.1	0.0	3.2	19.6	0.0	8.3	16.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.1	77.6	0.0	53.4	42.5	0.0	54.7	78.8	0.0	71.9	52.1	0.0
LnGrp LOS	E	E		D	D		D	F		E	D	
Approach Vol, veh/h		484	A		205	A		1163	A		1317	A
Approach Delay, s/veh		72.5			44.9			76.5			55.6	
Approach LOS		E			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.5	40.0	11.7	30.0	16.5	45.0	14.3	27.4
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	5.7
Max Green Setting (Gmax), s	21.0	34.3	21.0	24.3	16.0	* 39	26.0	19.3
Max Q Clear Time (g_c+I1), s	17.4	36.3	3.4	24.4	9.1	36.9	10.3	6.6
Green Ext Time (p_c), s	0.1	0.0	0.0	0.0	0.1	1.8	0.1	1.0

Intersection Summary	
HCM 6th Ctrl Delay	65.2
HCM 6th LOS	E

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	38	486	338	17	58	41
Future Vol, veh/h	38	486	338	17	58	41
Conflicting Peds, #/hr	6	0	0	6	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	44	559	389	20	67	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	415	0	-	0	764	201
Stage 1	-	-	-	-	395	-
Stage 2	-	-	-	-	369	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	1148	-	-	-	342	809
Stage 1	-	-	-	-	653	-
Stage 2	-	-	-	-	673	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1141	-	-	-	325	804
Mov Cap-2 Maneuver	-	-	-	-	325	-
Stage 1	-	-	-	-	624	-
Stage 2	-	-	-	-	669	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	16.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1141	-	-	-	431
HCM Lane V/C Ratio	0.038	-	-	-	0.264
HCM Control Delay (s)	8.3	-	-	-	16.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	85	0	44	12	1847	78	42	1562	0
Future Volume (veh/h)	0	0	0	85	0	44	12	1847	78	42	1562	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		0.98	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
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1885	0	1885	1870	1885	1885	1885	1885	0
Adj Flow Rate, veh/h				89	0	4	12	1924	81	44	1627	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				1	0	1	2	1	1	1	1	0
Cap, veh/h				122	0	109	22	2325	1014	79	2439	0
Arrive On Green				0.07	0.00	0.07	0.01	0.65	0.65	0.04	0.68	0.00
Sat Flow, veh/h				1795	0	1598	1781	3582	1562	1795	3676	0
Grp Volume(v), veh/h				89	0	4	12	1924	81	44	1627	0
Grp Sat Flow(s),veh/h/ln				1795	0	1598	1781	1791	1562	1795	1791	0
Q Serve(g_s), s				2.8	0.0	0.1	0.4	23.3	1.1	1.4	15.2	0.0
Cycle Q Clear(g_c), s				2.8	0.0	0.1	0.4	23.3	1.1	1.4	15.2	0.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				122	0	109	22	2325	1014	79	2439	0
V/C Ratio(X)				0.73	0.00	0.04	0.56	0.83	0.08	0.56	0.67	0.00
Avail Cap(c_a), veh/h				783	0	696	621	2498	1090	626	2498	0
HCM Platoon Ratio				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	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				26.2	0.0	25.0	28.2	7.6	3.7	26.9	5.3	0.0
Incr Delay (d2), s/veh				9.6	0.0	0.2	8.0	2.3	0.0	2.3	0.7	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
%ile BackOfQ(50%),veh/ln				1.4	0.0	0.1	0.2	5.5	0.2	0.6	2.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				35.8	0.0	25.1	36.2	10.0	3.8	29.1	6.0	0.0
LnGrp LOS				D	A	C	D	A	A	C	A	A
Approach Vol, veh/h					93			2017			1671	
Approach Delay, s/veh					35.3			9.9			6.6	
Approach LOS					D			A			A	

Timer - Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	6.5	42.9			4.7	44.8		7.9				
Change Period (Y+Rc), s	4.0	5.7			4.0	* 5.7		4.0				
Max Green Setting (Gmax), s	20.0	40.0			20.0	* 40		25.0				
Max Q Clear Time (g_c+I1), s	3.4	25.3			2.4	17.2		4.8				
Green Ext Time (p_c), s	0.0	11.9			0.0	13.0		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	9.1
HCM 6th LOS	A

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	1	221	0	0	1	119	1864	0	15	1532	75
Future Volume (veh/h)	65	1	221	0	0	1	119	1864	0	15	1532	75
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	68	1	10	0	0	1	124	1942	0	16	1596	45
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	110	2	99	3	0	3	161	2165	0	93	2030	885
Arrive On Green	0.06	0.06	0.06	0.00	0.00	0.00	0.09	0.60	0.00	0.05	0.57	0.57
Sat Flow, veh/h	1771	26	1598	1795	0	1598	1795	3676	0	1795	3582	1563
Grp Volume(v), veh/h	69	0	10	0	0	1	124	1942	0	16	1596	45
Grp Sat Flow(s),veh/h/ln	1797	0	1598	1795	0	1598	1795	1791	0	1795	1791	1563
Q Serve(g_s), s	2.2	0.0	0.3	0.0	0.0	0.0	3.9	27.2	0.0	0.5	20.2	0.7
Cycle Q Clear(g_c), s	2.2	0.0	0.3	0.0	0.0	0.0	3.9	27.2	0.0	0.5	20.2	0.7
Prop In Lane	0.99		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	111	0	99	3	0	3	161	2165	0	93	2030	885
V/C Ratio(X)	0.62	0.00	0.10	0.00	0.00	0.36	0.77	0.90	0.00	0.17	0.79	0.05
Avail Cap(c_a), veh/h	773	0	687	309	0	275	463	3698	0	309	3698	1613
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	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	0.0	25.7	0.0	0.0	29.0	25.9	9.9	0.0	26.4	9.8	5.6
Incr Delay (d2), s/veh	2.1	0.0	0.2	0.0	0.0	27.3	3.0	0.9	0.0	0.3	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(50%),veh/ln	0.9	0.0	0.1	0.0	0.0	0.0	1.6	5.8	0.0	0.2	5.3	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.7	0.0	25.9	0.0	0.0	56.3	28.8	10.8	0.0	26.7	10.1	5.6
LnGrp LOS	C	A	C	A	A	E	C	B	A	C	B	A
Approach Vol, veh/h		79			1			2066			1657	
Approach Delay, s/veh		28.3			56.3			11.9			10.1	
Approach LOS		C			E			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	40.8		7.7	8.2	38.6		3.6
Change Period (Y+Rc), s	3.0	5.7		4.1	3.0	5.7		3.5
Max Green Setting (Gmax), s	10.0	60.0		25.0	15.0	60.0		10.0
Max Q Clear Time (g_c+I1), s	2.5	29.2		4.2	5.9	22.2		2.0
Green Ext Time (p_c), s	0.0	5.9		0.1	0.1	5.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	11.5
HCM 6th LOS	B

Notes

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

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Woodgrove Way / Quail Oaks Dr & Douglas Blvd
Scenario	Existing Plus WHII

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Yield*	*Free*	*Free*	*Yield*	*Free*	*Free*
AM Peak Hour Volume	5	0	59	0	1	99	39	1367	34	46	1859	7
AM Peak Hour Delay (s)	1731.9	1731.9	17.2	1526.5	1526.5	32.4	20.4	0	0	14.4	0	0
PM Peak Hour Volume	2	0	34	0	1	37	45	1933	56	32	1745	4
PM Peak Hour Delay (s)	5000	5000	23.3	4932.2	4932.2	21.1	18.0	0	0	21.1	0	0

AM Delay	**63.7**
AM LOS	**F**

PM Delay	**119.1**
PM LOS	**F**

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Woodgrove Way / Quail Oaks Dr & Douglas Blvd
Scenario	Existing Plus WHII

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Yield*	*Free*	*Free*	*Yield*	*Free*	*Free*
AM Peak Hour Volume	5	0	59	0	1	99	39	1367	34	46	1859	7
AM Peak Hour Delay (s)	600	0	17.2	0	600	32.4	20.4	0	0	14.4	0	0
PM Peak Hour Volume	2	0	34	0	1	37	45	1933	56	32	1745	4
PM Peak Hour Delay (s)	600	0	23.3	0	600	21.1	18.0	0	0	21.1	0	0

AM Delay	**37.3**
AM LOS	**E**

PM Delay	**32.2**
PM LOS	**D**

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	10. Eureka Rd & Greyhawk Dr
Scenario	Existing Plus WHII

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control				*Stop*		*Stop*	*Yield*	*Free*			*Free*	*Free*
AM Peak Hour Volume				81		49	22	463			470	35
AM Peak Hour Delay (s)				26.5		26.5	9.0	0			0	0
PM Peak Hour Volume				58		41	38	486			338	17
PM Peak Hour Delay (s)				16.3		16.3	8.3	0			0	0

AM Delay	**24.0**
AM LOS	**C**

PM Delay	**14.1**
PM LOS	**B**

Appendix E:
Existing Plus Whitehawk I & II Conditions – Technical Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	1162	172	234	1702	118	438	811	127	210	581	171
Future Volume (veh/h)	184	1162	172	234	1702	118	438	811	127	210	581	171
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	200	1263	53	254	1850	0	476	882	0	228	632	138
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	259	1659	508	533	2149		531	1295		290	773	166
Arrive On Green	0.07	0.32	0.32	0.15	0.42	0.00	0.20	0.34	0.00	0.08	0.18	0.18
Sat Flow, veh/h	3456	5106	1564	3456	5106	1585	3456	5106	1585	3456	4202	903
Grp Volume(v), veh/h	200	1263	53	254	1850	0	476	882	0	228	510	260
Grp Sat Flow(s),veh/h/ln	1728	1702	1564	1728	1702	1585	1728	1702	1585	1728	1702	1701
Q Serve(g_s), s	6.8	26.6	1.8	8.1	39.5	0.0	16.1	17.8	0.0	7.8	17.3	17.7
Cycle Q Clear(g_c), s	6.8	26.6	1.8	8.1	39.5	0.0	16.1	17.8	0.0	7.8	17.3	17.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	259	1659	508	533	2149		531	1295		290	626	313
V/C Ratio(X)	0.77	0.76	0.10	0.48	0.86		0.90	0.68		0.79	0.81	0.83
Avail Cap(c_a), veh/h	461	1659	508	533	2149		605	1295		605	681	340
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	36.3	11.9	46.3	31.6	0.0	46.8	35.6	0.0	53.9	47.0	47.2
Incr Delay (d2), s/veh	1.9	3.4	0.4	0.2	3.9	0.0	13.8	1.6	0.0	1.8	7.6	15.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	11.1	1.1	3.4	16.0	0.0	7.4	6.8	0.0	3.4	7.8	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.3	39.7	12.3	46.6	35.4	0.0	60.6	37.2	0.0	55.7	54.6	63.1
LnGrp LOS	E	D	B	D	D		E	D		E	D	E
Approach Vol, veh/h		1516			2104	A		1358	A		998	
Approach Delay, s/veh		40.9			36.8			45.4			57.1	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.5	45.0	22.4	28.1	13.0	56.5	14.1	36.4
Change Period (Y+Rc), s	6.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	14.0	39.0	21.0	24.0	16.0	39.0	21.0	24.0
Max Q Clear Time (g_c+I1), s	10.1	28.6	18.1	19.7	8.8	41.5	9.8	19.8
Green Ext Time (p_c), s	0.2	7.1	0.3	2.3	0.2	0.0	0.3	2.4

Intersection Summary	
HCM 6th Ctrl Delay	43.2
HCM 6th LOS	D

Notes

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

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	1328	77	51	1838	85	46	20	40	76	23	165
Future Volume (veh/h)	56	1328	77	51	1838	85	46	20	40	76	23	165
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	61	1443	48	55	1998	56	50	22	0	83	25	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	78	2411	1052	71	2397	1047	65	29	82	111	33	126
Arrive On Green	0.09	1.00	1.00	0.04	0.67	0.67	0.05	0.05	0.00	0.08	0.08	0.08
Sat Flow, veh/h	1781	3554	1550	1781	3554	1552	1255	552	1585	1384	417	1579
Grp Volume(v), veh/h	61	1443	48	55	1998	56	72	0	0	108	0	8
Grp Sat Flow(s),veh/h/ln	1781	1777	1550	1781	1777	1552	1808	0	1585	1801	0	1579
Q Serve(g_s), s	4.0	0.0	0.0	3.7	50.2	1.5	4.7	0.0	0.0	7.0	0.0	0.6
Cycle Q Clear(g_c), s	4.0	0.0	0.0	3.7	50.2	1.5	4.7	0.0	0.0	7.0	0.0	0.6
Prop In Lane	1.00		1.00	1.00		1.00	0.69		1.00	0.77		1.00
Lane Grp Cap(c), veh/h	78	2411	1052	71	2397	1047	94	0	82	144	0	126
V/C Ratio(X)	0.78	0.60	0.05	0.77	0.83	0.05	0.77	0.00	0.00	0.75	0.00	0.06
Avail Cap(c_a), veh/h	238	2411	1052	238	2397	1047	241	0	211	465	0	408
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)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.2	0.0	0.0	57.1	14.5	6.6	56.2	0.0	0.0	54.0	0.0	51.1
Incr Delay (d2), s/veh	6.2	1.1	0.1	6.5	2.7	0.0	4.9	0.0	0.0	3.0	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(50%),veh/ln	1.8	0.4	0.0	1.7	16.5	0.4	2.3	0.0	0.0	3.3	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.4	1.1	0.1	63.6	17.2	6.6	61.1	0.0	0.0	57.0	0.0	51.1
LnGrp LOS	E	A	A	E	B	A	E	A	A	E	A	D
Approach Vol, veh/h		1552			2109			72			116	
Approach Delay, s/veh		3.4			18.2			61.1			56.6	
Approach LOS		A			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.8	87.4		13.6	9.3	86.9		10.2
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0
Max Green Setting (Gmax), s	16.0	39.0		31.0	16.0	39.0		16.0
Max Q Clear Time (g_c+I1), s	5.7	2.0		9.0	6.0	52.2		6.7
Green Ext Time (p_c), s	0.0	15.4		0.4	0.0	0.0		0.1

Intersection Summary	
HCM 6th Ctrl Delay	14.2
HCM 6th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	1371	34	51	1870	7	5	0	60	0	1	99
Future Vol, veh/h	39	1371	34	51	1870	7	5	0	60	0	1	99
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	150	-	100	175	-	-	-	-	125	-	-	25
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	42	1490	37	55	2033	8	5	0	65	0	1	108

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2041	0	0	1527	0	0	2701	3725	745	2976	3758	1021
Stage 1	-	-	-	-	-	-	1574	1574	-	2147	2147	-
Stage 2	-	-	-	-	-	-	1127	2151	-	829	1611	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	273	-	-	432	-	-	10	4	357	6	4	234
Stage 1	-	-	-	-	-	-	115	169	-	50	87	-
Stage 2	-	-	-	-	-	-	218	86	-	331	162	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	273	-	-	432	-	-	~ 3	3	357	4	3	234
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 3	3	-	4	3	-
Stage 1	-	-	-	-	-	-	97	143	-	42	76	-
Stage 2	-	-	-	-	-	-	101	75	-	229	137	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.4	200.1	47.7
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	3	357	273	-	-	432	-	-	3	234
HCM Lane V/C Ratio	1.812	0.183	0.155	-	-	0.128	-	-	0.362	0.46
HCM Control Delay (s)	$ 2393.4	17.3	20.6	-	-	14.6	-	-	$ 1526.5	32.8
HCM Lane LOS	F	C	C	-	-	B	-	-	F	D
HCM 95th %tile Q(veh)	1.6	0.7	0.5	-	-	0.4	-	-	0.5	2.2

Notes

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1427	7	0	1928	0	20
Future Vol, veh/h	1427	7	0	1928	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1551	8	0	2096	0	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	780
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	338
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	338
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	16.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	338	-	-	-
HCM Lane V/C Ratio	0.064	-	-	-
HCM Control Delay (s)	16.4	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	1366	8	5	1842	82	25	2	9	50	1	46
Future Volume (veh/h)	73	1366	8	5	1842	82	25	2	9	50	1	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	79	1485	9	5	2002	88	27	2	10	54	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	2603	16	7	2306	101	53	4	20	98	46	46
Arrive On Green	0.06	0.72	0.72	0.00	0.67	0.67	0.04	0.04	0.04	0.05	0.05	0.05
Sat Flow, veh/h	1781	3621	22	1781	3465	151	1179	87	437	1781	836	836
Grp Volume(v), veh/h	79	729	765	5	1018	1072	39	0	0	54	0	2
Grp Sat Flow(s),veh/h/ln	1781	1777	1866	1781	1777	1839	1703	0	0	1781	0	1672
Q Serve(g_s), s	3.9	17.6	17.7	0.3	40.5	42.2	2.0	0.0	0.0	2.7	0.0	0.1
Cycle Q Clear(g_c), s	3.9	17.6	17.7	0.3	40.5	42.2	2.0	0.0	0.0	2.7	0.0	0.1
Prop In Lane	1.00		0.01	1.00		0.08	0.69		0.26	1.00		0.50
Lane Grp Cap(c), veh/h	102	1277	1341	7	1183	1224	77	0	0	98	0	92
V/C Ratio(X)	0.78	0.57	0.57	0.72	0.86	0.88	0.51	0.00	0.00	0.55	0.00	0.02
Avail Cap(c_a), veh/h	454	1319	1385	257	1319	1365	642	0	0	671	0	630
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.0	6.0	6.0	44.9	11.8	12.1	42.1	0.0	0.0	41.6	0.0	40.3
Incr Delay (d2), s/veh	4.7	0.6	0.5	39.8	5.5	6.2	5.1	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	1.8	3.9	4.1	0.2	12.3	13.3	1.0	0.0	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.7	6.6	6.6	84.7	17.4	18.3	47.3	0.0	0.0	43.4	0.0	40.4
LnGrp LOS	D	A	A	F	B	B	D	A	A	D	A	D
Approach Vol, veh/h		1573			2095			39			56	
Approach Delay, s/veh		8.6			18.0			47.3			43.2	
Approach LOS		A			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.1	66.1		8.5	3.4	70.9		7.6
Change Period (Y+Rc), s	3.0	6.0		3.5	3.0	6.0		3.5
Max Green Setting (Gmax), s	23.0	67.0		34.0	13.0	67.0		34.0
Max Q Clear Time (g_c+I1), s	5.9	44.2		4.7	2.3	19.7		4.0
Green Ext Time (p_c), s	0.0	15.9		0.1	0.0	12.4		0.2

Intersection Summary			
HCM 6th Ctrl Delay			14.7
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	1199	132	134	1569	114	215	98	76	137	116	34
Future Volume (veh/h)	41	1199	132	134	1569	114	215	98	76	137	116	34
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		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	44	1276	133	143	1669	76	166	191	0	146	123	4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	56	1368	142	175	1735	756	220	231		166	140	263
Arrive On Green	0.03	0.42	0.42	0.10	0.48	0.48	0.12	0.12	0.00	0.17	0.17	0.17
Sat Flow, veh/h	1795	3275	340	1795	3582	1562	1795	1885	1598	996	839	1576
Grp Volume(v), veh/h	44	696	713	143	1669	76	166	191	0	269	0	4
Grp Sat Flow(s),veh/h/ln	1795	1791	1824	1795	1791	1562	1795	1885	1598	1835	0	1576
Q Serve(g_s), s	2.2	33.7	34.1	7.1	41.0	2.4	8.1	9.0	0.0	13.0	0.0	0.2
Cycle Q Clear(g_c), s	2.2	33.7	34.1	7.1	41.0	2.4	8.1	9.0	0.0	13.0	0.0	0.2
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	0.54		1.00
Lane Grp Cap(c), veh/h	56	748	762	175	1735	756	220	231		306	0	263
V/C Ratio(X)	0.79	0.93	0.94	0.82	0.96	0.10	0.75	0.83		0.88	0.00	0.02
Avail Cap(c_a), veh/h	296	786	801	394	1769	771	394	414		403	0	346
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.8	25.3	25.4	40.3	22.7	12.7	38.7	39.0	0.0	37.1	0.0	31.7
Incr Delay (d2), s/veh	8.7	16.5	17.3	3.5	13.3	0.0	2.0	2.9	0.0	13.3	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(50%),veh/ln	1.1	15.6	16.2	3.1	17.7	0.7	3.6	4.2	0.0	6.8	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.6	41.8	42.7	43.8	36.0	12.8	40.6	41.9	0.0	50.4	0.0	31.7
LnGrp LOS	D	D	D	D	D	B	D	D		D	A	C
Approach Vol, veh/h		1453			1888			357	A		273	
Approach Delay, s/veh		42.6			35.6			41.3			50.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.9	44.1		19.6	5.8	50.1		15.6
Change Period (Y+Rc), s	3.0	6.0		4.4	3.0	6.0		4.4
Max Green Setting (Gmax), s	20.0	40.0		20.0	15.0	45.0		20.0
Max Q Clear Time (g_c+I1), s	9.1	36.1		15.0	4.2	43.0		11.0
Green Ext Time (p_c), s	0.0	1.3		0.2	0.0	1.1		0.1

Intersection Summary	
HCM 6th Ctrl Delay	39.7
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	126	1030	74	251	96	1175	341	42	80	612	261
Future Volume (veh/h)	138	126	1030	74	251	96	1175	341	42	80	612	261
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	153	140	0	82	279	0	1306	379	0	89	680	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	185	520		105	361		1387	728		384	765	
Arrive On Green	0.10	0.15	0.00	0.06	0.10	0.00	0.39	0.39	0.00	0.21	0.21	0.00
Sat Flow, veh/h	1795	3582	1598	1795	3582	1598	3591	1885	1598	1795	3582	1598
Grp Volume(v), veh/h	153	140	0	82	279	0	1306	379	0	89	680	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1598	1795	1885	1598	1795	1791	1598
Q Serve(g_s), s	8.2	3.4	0.0	4.4	7.5	0.0	34.5	15.2	0.0	4.0	18.1	0.0
Cycle Q Clear(g_c), s	8.2	3.4	0.0	4.4	7.5	0.0	34.5	15.2	0.0	4.0	18.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	185	520		105	361		1387	728		384	765	
V/C Ratio(X)	0.83	0.27		0.78	0.77		0.94	0.52		0.23	0.89	
Avail Cap(c_a), veh/h	457	912		274	729		1645	864		457	912	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.2	37.4	0.0	45.6	43.1	0.0	29.1	23.2	0.0	31.9	37.5	0.0
Incr Delay (d2), s/veh	3.6	0.1	0.0	4.6	1.3	0.0	9.5	0.2	0.0	0.1	8.5	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(50%),veh/ln	3.6	1.4	0.0	2.1	3.3	0.0	15.6	6.4	0.0	1.7	8.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.8	37.5	0.0	50.2	44.4	0.0	38.6	23.4	0.0	32.1	46.0	0.0
LnGrp LOS	D	D		D	D		D	C		C	D	
Approach Vol, veh/h		293	A		361	A		1685	A		769	A
Approach Delay, s/veh		42.4			45.7			35.2			44.4	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.8	19.9		26.3	13.1	15.6		43.2
Change Period (Y+Rc), s	3.0	5.7		5.3	3.0	* 5.7		5.3
Max Green Setting (Gmax), s	15.0	25.0		25.0	25.0	* 20		45.0
Max Q Clear Time (g_c+I1), s	10.4	5.4		20.1	10.2	9.5		36.5
Green Ext Time (p_c), s	0.0	0.2		0.9	0.0	0.4		1.5

Intersection Summary	
HCM 6th Ctrl Delay	39.4
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	14	117	22	4	21	90	1306	57	85	828	31
Future Volume (veh/h)	127	14	117	22	4	21	90	1306	57	85	828	31
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		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	149	0	4	24	4	0	98	1420	35	92	900	19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	325	0	144	86	14	88	123	1885	572	574	3252	983
Arrive On Green	0.09	0.00	0.09	0.06	0.06	0.00	0.07	0.37	0.37	0.64	1.00	1.00
Sat Flow, veh/h	3563	0	1585	1537	256	1585	1781	5106	1550	1781	5106	1543
Grp Volume(v), veh/h	149	0	4	28	0	0	98	1420	35	92	900	19
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1793	0	1585	1781	1702	1550	1781	1702	1543
Q Serve(g_s), s	4.8	0.0	0.3	1.8	0.0	0.0	6.5	29.2	1.7	2.5	0.0	0.0
Cycle Q Clear(g_c), s	4.8	0.0	0.3	1.8	0.0	0.0	6.5	29.2	1.7	2.5	0.0	0.0
Prop In Lane	1.00		1.00	0.86		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	325	0	144	100	0	88	123	1885	572	574	3252	983
V/C Ratio(X)	0.46	0.00	0.03	0.28	0.00	0.00	0.80	0.75	0.06	0.16	0.28	0.02
Avail Cap(c_a), veh/h	623	0	277	314	0	277	312	1885	572	574	3252	983
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	49.7	54.4	0.0	0.0	55.1	33.1	24.4	14.9	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.6	0.0	0.0	4.5	2.8	0.2	0.0	0.1	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	2.2	0.0	0.1	0.8	0.0	0.0	3.0	11.9	0.7	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.1	0.0	49.7	54.9	0.0	0.0	59.5	35.9	24.6	14.9	0.1	0.0
LnGrp LOS	D	A	D	D	A	A	E	D	C	B	A	A
Approach Vol, veh/h		153			28			1553			1011	
Approach Delay, s/veh		52.0			54.9			37.2			1.5	
Approach LOS		D			D			D			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	44.4	50.0		14.9	12.3	82.1		10.7
Change Period (Y+Rc), s	5.7	* 5.7		4.0	4.0	5.7		4.0
Max Green Setting (Gmax), s	16.3	* 44		21.0	21.0	39.3		21.0
Max Q Clear Time (g_c+I1), s	4.5	31.2		6.8	8.5	2.0		3.8
Green Ext Time (p_c), s	0.1	10.7		0.2	0.1	14.4		0.0

Intersection Summary	
HCM 6th Ctrl Delay	25.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	152	47	38	232	274	68	1088	37	144	677	135
Future Volume (veh/h)	111	152	47	38	232	274	68	1088	37	144	677	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	121	165	0	41	252	0	74	1183	0	157	736	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	226		215	356		122	1385		185	1460	
Arrive On Green	0.08	0.12	0.00	0.06	0.10	0.00	0.07	0.39	0.00	0.10	0.41	0.00
Sat Flow, veh/h	1781	1870	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	121	165	0	41	252	0	74	1183	0	157	736	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.0	10.2	0.0	1.4	8.2	0.0	4.8	36.5	0.0	10.4	18.5	0.0
Cycle Q Clear(g_c), s	8.0	10.2	0.0	1.4	8.2	0.0	4.8	36.5	0.0	10.4	18.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	147	226		215	356		122	1385		185	1460	
V/C Ratio(X)	0.82	0.73		0.19	0.71		0.61	0.85		0.85	0.50	
Avail Cap(c_a), veh/h	238	301		461	572		238	1385		386	1460	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.2	50.9	0.0	53.4	52.3	0.0	54.3	33.5	0.0	52.8	26.3	0.0
Incr Delay (d2), s/veh	5.2	8.7	0.0	0.2	4.4	0.0	1.8	5.7	0.0	4.1	1.2	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	3.7	5.2	0.0	0.6	3.9	0.0	2.2	16.0	0.0	4.7	7.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.4	59.6	0.0	53.6	56.7	0.0	56.1	39.2	0.0	56.9	27.5	0.0
LnGrp LOS	E	E		D	E		E	D		E	C	
Approach Vol, veh/h		286	A		293	A		1257	A		893	A
Approach Delay, s/veh		59.5			56.2			40.2			32.7	
Approach LOS		E			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	52.5	11.5	20.2	13.9	55.0	13.9	17.7
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	5.7
Max Green Setting (Gmax), s	26.0	39.3	16.0	19.3	16.0	* 49	16.0	19.3
Max Q Clear Time (g_c+I1), s	12.4	38.5	3.4	12.2	6.8	20.5	10.0	10.2
Green Ext Time (p_c), s	0.2	0.6	0.0	0.6	0.0	8.3	0.1	1.4

Intersection Summary	
HCM 6th Ctrl Delay	41.5
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	22	463	470	36	84	49
Future Vol, veh/h	22	463	470	36	84	49
Conflicting Peds, #/hr	6	0	0	6	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	28	586	595	46	106	62

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	647	0	-	0	951	304
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	350	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	941	-	-	-	260	695
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	687	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	936	-	-	-	249	691
Mov Cap-2 Maneuver	-	-	-	-	249	-
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	683	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	27.3
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	936	-	-	-	326
HCM Lane V/C Ratio	0.03	-	-	-	0.516
HCM Control Delay (s)	9	-	-	-	27.3
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	192	0	83	6	1455	119	87	1592	0
Future Volume (veh/h)	0	0	0	192	0	83	6	1455	119	87	1592	0
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1885	0	1885	1870	1885	1885	1885	1885	0
Adj Flow Rate, veh/h				213	0	11	7	1617	104	97	1769	0
Peak Hour Factor				0.90	0.92	0.90	0.92	0.90	0.90	0.90	0.90	0.92
Percent Heavy Veh, %				1	0	1	2	1	1	1	1	0
Cap, veh/h				276	0	245	13	2009	896	126	2233	0
Arrive On Green				0.15	0.00	0.15	0.01	0.56	0.56	0.07	0.62	0.00
Sat Flow, veh/h				1795	0	1598	1781	3582	1598	1795	3676	0
Grp Volume(v), veh/h				213	0	11	7	1617	104	97	1769	0
Grp Sat Flow(s),veh/h/ln				1795	0	1598	1781	1791	1598	1795	1791	0
Q Serve(g_s), s				7.2	0.0	0.4	0.2	23.0	1.9	3.4	23.4	0.0
Cycle Q Clear(g_c), s				7.2	0.0	0.4	0.2	23.0	1.9	3.4	23.4	0.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				276	0	245	13	2009	896	126	2233	0
V/C Ratio(X)				0.77	0.00	0.04	0.54	0.80	0.12	0.77	0.79	0.00
Avail Cap(c_a), veh/h				706	0	628	561	2254	1005	565	2254	0
HCM Platoon Ratio				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	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				25.8	0.0	22.9	31.4	11.2	6.6	29.1	8.9	0.0
Incr Delay (d2), s/veh				5.5	0.0	0.1	12.2	2.1	0.1	3.7	2.0	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
%ile BackOfQ(50%),veh/ln				3.3	0.0	0.1	0.1	7.1	0.5	1.5	6.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.3	0.0	23.0	43.6	13.2	6.6	32.8	10.9	0.0
LnGrp LOS				C	A	C	D	B	A	C	B	A
Approach Vol, veh/h					224			1728			1866	
Approach Delay, s/veh					30.9			13.0			12.0	
Approach LOS					C			B			B	

Timer - Assigned Phs	1	2		5	6		8
Phs Duration (G+Y+Rc), s	8.4	41.3		4.5	45.3		13.8
Change Period (Y+Rc), s	4.0	5.7		4.0	* 5.7		4.0
Max Green Setting (Gmax), s	20.0	40.0		20.0	* 40		25.0
Max Q Clear Time (g_c+I1), s	5.4	25.0		2.2	25.4		9.2
Green Ext Time (p_c), s	0.1	10.7		0.0	10.4		0.7

Intersection Summary	
HCM 6th Ctrl Delay	13.6
HCM 6th LOS	B

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	2	128	0	1	2	180	1441	0	2	1608	173
Future Volume (veh/h)	121	2	128	0	1	2	180	1441	0	2	1608	173
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	134	2	1	0	1	0	200	1601	0	2	1787	143
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	172	3	156	2	3	0	241	2313	0	71	1974	859
Arrive On Green	0.10	0.10	0.10	0.00	0.00	0.00	0.13	0.65	0.00	0.04	0.55	0.55
Sat Flow, veh/h	1770	26	1598	1795	1885	0	1795	3676	0	1795	3582	1559
Grp Volume(v), veh/h	136	0	1	0	1	0	200	1601	0	2	1787	143
Grp Sat Flow(s),veh/h/ln	1797	0	1598	1795	1885	0	1795	1791	0	1795	1791	1559
Q Serve(g_s), s	5.6	0.0	0.0	0.0	0.0	0.0	8.2	21.6	0.0	0.1	33.8	3.4
Cycle Q Clear(g_c), s	5.6	0.0	0.0	0.0	0.0	0.0	8.2	21.6	0.0	0.1	33.8	3.4
Prop In Lane	0.99		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	0	156	2	3	0	241	2313	0	71	1974	859
V/C Ratio(X)	0.78	0.00	0.01	0.00	0.39	0.00	0.83	0.69	0.00	0.03	0.91	0.17
Avail Cap(c_a), veh/h	595	0	529	238	250	0	357	2845	0	238	2845	1238
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	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.3	0.0	30.8	0.0	37.7	0.0	31.8	8.6	0.0	34.9	15.2	8.4
Incr Delay (d2), s/veh	2.8	0.0	0.0	0.0	31.4	0.0	6.4	0.3	0.0	0.1	2.6	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(50%),veh/ln	2.5	0.0	0.0	0.0	0.0	0.0	3.7	5.4	0.0	0.0	11.6	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.1	0.0	30.8	0.0	69.0	0.0	38.3	8.9	0.0	34.9	17.8	8.4
LnGrp LOS	D	A	C	A	E	A	D	A	A	C	B	A
Approach Vol, veh/h		137			1			1801			1932	
Approach Delay, s/veh		36.1			69.0			12.2			17.1	
Approach LOS		D			E			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	54.5		11.5	13.2	47.3		3.6
Change Period (Y+Rc), s	3.0	5.7		4.1	3.0	5.7		3.5
Max Green Setting (Gmax), s	10.0	60.0		25.0	15.0	60.0		10.0
Max Q Clear Time (g_c+I1), s	7.6	23.6		7.6	10.2	35.8		2.0
Green Ext Time (p_c), s	0.0	4.3		0.2	0.1	5.9		0.0

Intersection Summary	
HCM 6th Ctrl Delay	15.5
HCM 6th 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												
Traffic Volume (veh/h)	394	1612	281	315	1368	241	446	876	213	253	765	148
Future Volume (veh/h)	394	1612	281	315	1368	241	446	876	213	253	765	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	419	1715	153	335	1455	0	474	932	0	269	814	137
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	466	1784	553	551	1979		522	1323		318	881	147
Arrive On Green	0.13	0.35	0.35	0.16	0.38	0.00	0.15	0.26	0.00	0.09	0.20	0.20
Sat Flow, veh/h	3483	5147	1596	3483	5147	1598	3483	5147	1598	3483	4439	742
Grp Volume(v), veh/h	419	1715	153	335	1455	0	474	932	0	269	628	323
Grp Sat Flow(s),veh/h/ln	1742	1716	1596	1742	1716	1598	1742	1716	1598	1742	1716	1750
Q Serve(g_s), s	17.8	49.0	6.9	13.4	36.4	0.0	20.1	24.6	0.0	11.4	26.9	27.2
Cycle Q Clear(g_c), s	17.8	49.0	6.9	13.4	36.4	0.0	20.1	24.6	0.0	11.4	26.9	27.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	466	1784	553	551	1979		522	1323		318	681	347
V/C Ratio(X)	0.90	0.96	0.28	0.61	0.74		0.91	0.70		0.85	0.92	0.93
Avail Cap(c_a), veh/h	534	1784	553	551	1979		604	1323		488	686	350
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.0	48.0	15.8	58.8	39.6	0.0	62.7	50.6	0.0	67.1	59.0	59.1
Incr Delay (d2), s/veh	15.5	13.9	1.2	1.4	2.5	0.0	15.0	1.9	0.0	5.1	18.2	31.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	22.6	4.0	5.9	15.4	0.0	9.8	10.6	0.0	5.2	13.2	14.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.5	61.9	17.1	60.2	42.1	0.0	77.8	52.4	0.0	72.2	77.2	90.2
LnGrp LOS	E	E	B	E	D		E	D		E	E	F
Approach Vol, veh/h		2287			1790	A		1406	A		1220	
Approach Delay, s/veh		62.1			45.5			61.0			79.5	
Approach LOS		E			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.7	58.0	26.5	35.8	24.1	63.7	17.7	44.6
Change Period (Y+Rc), s	6.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	20.0	52.0	26.0	30.0	23.0	51.0	21.0	35.0
Max Q Clear Time (g_c+I1), s	15.4	51.0	22.1	29.2	19.8	38.4	13.4	26.6
Green Ext Time (p_c), s	0.3	1.0	0.4	0.5	0.3	7.9	0.3	4.4

Intersection Summary	
HCM 6th Ctrl Delay	60.6
HCM 6th LOS	E

Notes

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

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	1832	23	86	1636	70	109	33	105	109	36	166
Future Volume (veh/h)	85	1832	23	86	1636	70	109	33	105	109	36	166
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		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	90	1949	13	91	1740	45	116	35	15	116	38	9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	110	2225	992	112	2229	974	135	41	155	136	45	158
Arrive On Green	0.12	1.00	1.00	0.06	0.62	0.62	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1795	3582	1596	1795	3582	1565	1395	421	1598	1368	448	1593
Grp Volume(v), veh/h	90	1949	13	91	1740	45	151	0	15	154	0	9
Grp Sat Flow(s),veh/h/ln	1795	1791	1596	1795	1791	1565	1815	0	1598	1817	0	1593
Q Serve(g_s), s	7.3	0.0	0.0	7.5	53.5	1.7	12.3	0.0	1.3	12.5	0.0	0.8
Cycle Q Clear(g_c), s	7.3	0.0	0.0	7.5	53.5	1.7	12.3	0.0	1.3	12.5	0.0	0.8
Prop In Lane	1.00		1.00	1.00		1.00	0.77		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	110	2225	992	112	2229	974	176	0	155	181	0	158
V/C Ratio(X)	0.82	0.88	0.01	0.81	0.78	0.05	0.86	0.00	0.10	0.85	0.00	0.06
Avail Cap(c_a), veh/h	251	2225	992	251	2229	974	254	0	224	254	0	223
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)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	65.0	0.0	0.0	69.5	20.8	11.0	66.7	0.0	61.7	66.5	0.0	61.2
Incr Delay (d2), s/veh	5.6	5.2	0.0	5.3	2.8	0.1	12.9	0.0	0.1	13.2	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(50%),veh/ln	3.3	1.6	0.0	3.5	20.7	0.6	6.4	0.0	0.5	6.5	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.6	5.2	0.0	74.7	23.6	11.1	79.6	0.0	61.8	79.7	0.0	61.2
LnGrp LOS	E	A	A	E	C	B	E	A	E	E	A	E
Approach Vol, veh/h		2052			1876			166			163	
Approach Delay, s/veh		8.1			25.8			78.0			78.7	
Approach LOS		A			C			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.4	99.2		18.9	13.2	99.4		18.6
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0
Max Green Setting (Gmax), s	21.0	69.0		21.0	21.0	69.0		21.0
Max Q Clear Time (g_c+I1), s	9.5	2.0		14.5	9.3	55.5		14.3
Green Ext Time (p_c), s	0.1	32.3		0.3	0.1	9.8		0.3

Intersection Summary	
HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	1945	56	38	1752	4	2	0	35	0	1	37
Future Vol, veh/h	45	1945	56	38	1752	4	2	0	35	0	1	37
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	150	-	100	175	-	-	-	-	125	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	48	2069	60	40	1864	4	2	0	37	0	1	39

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1868	0	0	2129	0	0	3178	4113	1035	3077	4171	934
Stage 1	-	-	-	-	-	-	2165	2165	-	1946	1946	-
Stage 2	-	-	-	-	-	-	1013	1948	-	1131	2225	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.52	6.52	6.92	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Follow-up Hdwy	2.21	-	-	2.21	-	-	3.51	4.01	3.31	3.51	4.01	3.31
Pot Cap-1 Maneuver	323	-	-	255	-	-	4	2	231	5	2	269
Stage 1	-	-	-	-	-	-	49	86	-	67	111	-
Stage 2	-	-	-	-	-	-	258	111	-	218	80	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	323	-	-	255	-	-	-	1	231	3	~ 1	269
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	1	-	3	~ 1	-
Stage 1	-	-	-	-	-	-	42	73	-	57	94	-
Stage 2	-	-	-	-	-	-	184	94	-	156	68	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.5		150
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	231	323	-	-	255	-	-	1	269
HCM Lane V/C Ratio	-	0.161	0.148	-	-	0.159	-	-	1.064	0.146
HCM Control Delay (s)	-	23.6	18.1	-	-	21.8	-	$	4932.2	20.7
HCM Lane LOS	-	C	C	-	-	C	-	-	F	C
HCM 95th %tile Q(veh)	-	0.6	0.5	-	-	0.6	-	-	0.6	0.5

Notes

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1967	18	0	1794	0	11
Future Vol, veh/h	1967	18	0	1794	0	11
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	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	2093	19	0	1909	0	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1056
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	-	0	-	0	223
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	223
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	22
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	223	-	-	-
HCM Lane V/C Ratio	0.052	-	-	-
HCM Control Delay (s)	22	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	1908	28	9	1734	18	17	0	6	26	1	31
Future Volume (veh/h)	42	1908	28	9	1734	18	17	0	6	26	1	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	45	2030	30	10	1845	19	18	0	6	28	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	56	2520	37	14	2447	25	49	0	16	75	35	35
Arrive On Green	0.03	0.70	0.70	0.01	0.67	0.67	0.04	0.00	0.04	0.04	0.04	0.04
Sat Flow, veh/h	1795	3612	53	1795	3631	37	1289	0	430	1795	842	842
Grp Volume(v), veh/h	45	1004	1056	10	908	956	24	0	0	28	0	2
Grp Sat Flow(s),veh/h/ln	1795	1791	1874	1795	1791	1877	1718	0	0	1795	0	1684
Q Serve(g_s), s	1.9	28.6	29.0	0.4	24.9	25.1	1.0	0.0	0.0	1.1	0.0	0.1
Cycle Q Clear(g_c), s	1.9	28.6	29.0	0.4	24.9	25.1	1.0	0.0	0.0	1.1	0.0	0.1
Prop In Lane	1.00		0.03	1.00		0.02	0.75		0.25	1.00		0.50
Lane Grp Cap(c), veh/h	56	1250	1308	14	1207	1265	65	0	0	75	0	70
V/C Ratio(X)	0.80	0.80	0.81	0.74	0.75	0.76	0.37	0.00	0.00	0.38	0.00	0.03
Avail Cap(c_a), veh/h	556	1614	1689	556	1614	1692	786	0	0	821	0	771
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.8	7.7	7.8	36.8	8.0	8.0	34.9	0.0	0.0	34.7	0.0	34.2
Incr Delay (d2), s/veh	9.1	2.3	2.3	25.0	1.4	1.4	3.4	0.0	0.0	3.1	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(50%),veh/ln	0.9	5.9	6.2	0.3	5.5	5.8	0.5	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.9	10.0	10.1	61.8	9.4	9.4	38.3	0.0	0.0	37.8	0.0	34.3
LnGrp LOS	D	B	B	E	A	A	D	A	A	D	A	C
Approach Vol, veh/h		2105			1874			24			30	
Approach Delay, s/veh		10.8			9.7			38.3			37.6	
Approach LOS		B			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.3	56.1		6.6	3.6	57.9		6.3
Change Period (Y+Rc), s	3.0	6.0		3.5	3.0	6.0		3.5
Max Green Setting (Gmax), s	23.0	67.0		34.0	23.0	67.0		34.0
Max Q Clear Time (g_c+I1), s	3.9	27.1		3.1	2.4	31.0		3.0
Green Ext Time (p_c), s	0.0	18.2		0.1	0.0	20.8		0.1

Intersection Summary	
HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	1575	200	92	1515	165	134	75	102	147	90	56
Future Volume (veh/h)	45	1575	200	92	1515	165	134	75	102	147	90	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	46	1624	199	95	1562	128	108	120	0	152	93	7
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	58	1547	186	122	1853	826	156	164		178	109	250
Arrive On Green	0.03	0.48	0.48	0.07	0.51	0.51	0.09	0.09	0.00	0.16	0.16	0.16
Sat Flow, veh/h	1810	3236	389	1810	3610	1609	1810	1900	1610	1143	700	1610
Grp Volume(v), veh/h	46	893	930	95	1562	128	108	120	0	245	0	7
Grp Sat Flow(s),veh/h/ln	1810	1805	1820	1810	1805	1609	1810	1900	1610	1843	0	1610
Q Serve(g_s), s	2.1	40.0	40.0	4.3	31.0	3.5	4.9	5.2	0.0	10.8	0.0	0.3
Cycle Q Clear(g_c), s	2.1	40.0	40.0	4.3	31.0	3.5	4.9	5.2	0.0	10.8	0.0	0.3
Prop In Lane	1.00		0.21	1.00		1.00	1.00		1.00	0.62		1.00
Lane Grp Cap(c), veh/h	58	863	870	122	1853	826	156	164		286	0	250
V/C Ratio(X)	0.79	1.03	1.07	0.78	0.84	0.15	0.69	0.73		0.86	0.00	0.03
Avail Cap(c_a), veh/h	324	863	870	433	1942	865	433	454		441	0	385
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.2	21.8	21.8	38.4	17.5	10.8	37.1	37.3	0.0	34.4	0.0	30.0
Incr Delay (d2), s/veh	8.3	39.8	50.6	4.0	3.2	0.0	2.0	2.4	0.0	6.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	23.0	25.8	1.9	11.2	1.1	2.1	2.4	0.0	5.2	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.5	61.7	72.4	42.4	20.6	10.8	39.2	39.6	0.0	40.7	0.0	30.0
LnGrp LOS	D	F	F	D	C	B	D	D		D	A	C
Approach Vol, veh/h		1869			1785			228	A		252	
Approach Delay, s/veh		66.7			21.1			39.4			40.4	
Approach LOS		E			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.6	46.0		17.4	5.7	48.9		11.6
Change Period (Y+Rc), s	3.0	6.0		4.4	3.0	6.0		4.4
Max Green Setting (Gmax), s	20.0	40.0		20.0	15.0	45.0		20.0
Max Q Clear Time (g_c+I1), s	6.3	42.0		12.8	4.1	33.0		7.2
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	3.4		0.1

Intersection Summary	
HCM 6th Ctrl Delay	43.9
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	213	269	1112	57	236	98	1183	689	80	111	440	203
Future Volume (veh/h)	213	269	1112	57	236	98	1183	689	80	111	440	203
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	222	280	0	59	246	0	1232	718	0	116	458	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	255	697		76	340		1461	767		277	553	
Arrive On Green	0.14	0.19	0.00	0.04	0.09	0.00	0.41	0.41	0.00	0.15	0.15	0.00
Sat Flow, veh/h	1795	3582	1598	1795	3582	1598	3591	1885	1598	1795	3582	1598
Grp Volume(v), veh/h	222	280	0	59	246	0	1232	718	0	116	458	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1598	1795	1885	1598	1795	1791	1598
Q Serve(g_s), s	11.6	6.5	0.0	3.1	6.4	0.0	29.6	34.9	0.0	5.6	11.9	0.0
Cycle Q Clear(g_c), s	11.6	6.5	0.0	3.1	6.4	0.0	29.6	34.9	0.0	5.6	11.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	255	697		76	340		1461	767		277	553	
V/C Ratio(X)	0.87	0.40		0.78	0.72		0.84	0.94		0.42	0.83	
Avail Cap(c_a), veh/h	469	936		281	749		1689	887		469	936	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	40.2	33.7	0.0	45.4	42.1	0.0	25.6	27.2	0.0	36.6	39.2	0.0
Incr Delay (d2), s/veh	3.5	0.1	0.0	6.2	1.1	0.0	3.2	14.8	0.0	0.4	1.2	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	5.1	2.7	0.0	1.5	2.8	0.0	12.3	17.6	0.0	2.4	5.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.7	33.8	0.0	51.5	43.2	0.0	28.8	42.0	0.0	36.9	40.5	0.0
LnGrp LOS	D	C		D	D		C	D		D	D	
Approach Vol, veh/h		502	A		305	A		1950	A		574	A
Approach Delay, s/veh		38.2			44.8			33.7			39.7	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.1	24.3		20.1	16.6	14.8		44.2
Change Period (Y+Rc), s	3.0	5.7		5.3	3.0	* 5.7		5.3
Max Green Setting (Gmax), s	15.0	25.0		25.0	25.0	* 20		45.0
Max Q Clear Time (g_c+I1), s	5.1	8.5		13.9	13.6	8.4		36.9
Green Ext Time (p_c), s	0.0	0.5		0.8	0.1	0.4		2.0

Intersection Summary	
HCM 6th Ctrl Delay	36.4
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	9	181	72	13	72	123	1213	31	92	1151	65
Future Volume (veh/h)	188	9	181	72	13	72	123	1213	31	92	1151	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	207	0	11	77	14	4	131	1290	16	98	1224	35
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	358	0	156	134	24	140	158	1900	584	506	2969	919
Arrive On Green	0.10	0.00	0.10	0.09	0.09	0.09	0.09	0.37	0.37	0.28	0.58	0.58
Sat Flow, veh/h	3591	0	1569	1530	278	1598	1795	5147	1582	1795	5147	1593
Grp Volume(v), veh/h	207	0	11	91	0	4	131	1290	16	98	1224	35
Grp Sat Flow(s),veh/h/ln	1795	0	1569	1809	0	1598	1795	1716	1582	1795	1716	1593
Q Serve(g_s), s	6.6	0.0	0.8	5.8	0.0	0.3	8.6	25.3	0.8	5.0	15.8	1.1
Cycle Q Clear(g_c), s	6.6	0.0	0.8	5.8	0.0	0.3	8.6	25.3	0.8	5.0	15.8	1.1
Prop In Lane	1.00		1.00	0.85		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	358	0	156	159	0	140	158	1900	584	506	2969	919
V/C Ratio(X)	0.58	0.00	0.07	0.57	0.00	0.03	0.83	0.68	0.03	0.19	0.41	0.04
Avail Cap(c_a), veh/h	628	0	275	317	0	280	314	1900	584	506	2969	919
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.6	0.0	49.0	52.6	0.0	50.1	53.8	31.9	24.1	32.7	14.1	11.0
Incr Delay (d2), s/veh	0.6	0.0	0.1	1.2	0.0	0.0	4.2	2.0	0.1	0.1	0.2	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	3.0	0.0	0.3	2.7	0.0	0.1	4.0	10.4	0.3	2.1	5.7	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.2	0.0	49.0	53.8	0.0	50.1	58.0	33.8	24.2	32.8	14.3	11.0
LnGrp LOS	D	A	D	D	A	D	E	C	C	C	B	B
Approach Vol, veh/h		218			95			1437			1357	
Approach Delay, s/veh		52.0			53.6			35.9			15.6	
Approach LOS		D			D			D			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	39.5	50.0		16.0	14.6	74.9		14.5
Change Period (Y+Rc), s	5.7	* 5.7		4.0	4.0	5.7		4.0
Max Green Setting (Gmax), s	16.0	* 44		21.0	21.0	39.3		21.0
Max Q Clear Time (g_c+I1), s	17.0	27.3		8.6	10.6	17.8		7.8
Green Ext Time (p_c), s	0.1	12.4		0.3	0.1	14.4		0.2

Intersection Summary	
HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	336	82	41	151	198	102	993	37	221	1018	160
Future Volume (veh/h)	119	336	82	41	151	198	102	993	37	221	1018	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	127	357	0	44	161	0	109	1056	0	235	1083	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	154	382		223	647		162	1024		262	1173	
Arrive On Green	0.09	0.20	0.00	0.06	0.18	0.00	0.09	0.29	0.00	0.15	0.33	0.00
Sat Flow, veh/h	1795	1885	1598	3483	3582	1598	1795	3582	1598	1795	3582	1598
Grp Volume(v), veh/h	127	357	0	44	161	0	109	1056	0	235	1083	0
Grp Sat Flow(s),veh/h/ln	1795	1885	1598	1742	1791	1598	1795	1791	1598	1795	1791	1598
Q Serve(g_s), s	8.3	22.4	0.0	1.4	4.6	0.0	7.1	34.3	0.0	15.4	35.0	0.0
Cycle Q Clear(g_c), s	8.3	22.4	0.0	1.4	4.6	0.0	7.1	34.3	0.0	15.4	35.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	154	382		223	647		162	1024		262	1173	
V/C Ratio(X)	0.82	0.94		0.20	0.25		0.67	1.03		0.90	0.92	
Avail Cap(c_a), veh/h	389	382		610	647		239	1024		314	1173	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.9	47.1	0.0	53.2	42.2	0.0	52.9	42.8	0.0	50.3	38.9	0.0
Incr Delay (d2), s/veh	4.1	30.5	0.0	0.2	0.3	0.0	1.8	36.5	0.0	21.6	13.3	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(50%),veh/ln	3.9	13.5	0.0	0.6	2.1	0.0	3.2	19.7	0.0	8.3	16.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.1	77.6	0.0	53.4	42.5	0.0	54.7	79.4	0.0	71.9	52.2	0.0
LnGrp LOS	E	E		D	D		D	F		E	D	
Approach Vol, veh/h		484	A		205	A		1165	A		1318	A
Approach Delay, s/veh		72.5			44.9			77.0			55.7	
Approach LOS		E			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.5	40.0	11.7	30.0	16.5	45.0	14.3	27.4
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	5.7
Max Green Setting (Gmax), s	21.0	34.3	21.0	24.3	16.0	* 39	26.0	19.3
Max Q Clear Time (g_c+I1), s	17.4	36.3	3.4	24.4	9.1	37.0	10.3	6.6
Green Ext Time (p_c), s	0.1	0.0	0.0	0.0	0.1	1.8	0.1	1.0

Intersection Summary	
HCM 6th Ctrl Delay	65.4
HCM 6th LOS	E

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	38	486	338	18	59	41
Future Vol, veh/h	38	486	338	18	59	41
Conflicting Peds, #/hr	6	0	0	6	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	44	559	389	21	68	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	416	0	-	0	764	201
Stage 1	-	-	-	-	395	-
Stage 2	-	-	-	-	369	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	1147	-	-	-	342	809
Stage 1	-	-	-	-	653	-
Stage 2	-	-	-	-	673	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1140	-	-	-	325	804
Mov Cap-2 Maneuver	-	-	-	-	325	-
Stage 1	-	-	-	-	624	-
Stage 2	-	-	-	-	669	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	16.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1140	-	-	-	430
HCM Lane V/C Ratio	0.038	-	-	-	0.267
HCM Control Delay (s)	8.3	-	-	-	16.4
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	85	0	44	12	1849	78	42	1563	0
Future Volume (veh/h)	0	0	0	85	0	44	12	1849	78	42	1563	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		0.98	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
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1885	0	1885	1870	1885	1885	1885	1885	0
Adj Flow Rate, veh/h				89	0	4	12	1926	76	44	1628	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				1	0	1	2	1	1	1	1	0
Cap, veh/h				122	0	109	22	2325	1014	79	2439	0
Arrive On Green				0.07	0.00	0.07	0.01	0.65	0.65	0.04	0.68	0.00
Sat Flow, veh/h				1795	0	1598	1781	3582	1562	1795	3676	0
Grp Volume(v), veh/h				89	0	4	12	1926	76	44	1628	0
Grp Sat Flow(s),veh/h/ln				1795	0	1598	1781	1791	1562	1795	1791	0
Q Serve(g_s), s				2.8	0.0	0.1	0.4	23.4	1.0	1.4	15.2	0.0
Cycle Q Clear(g_c), s				2.8	0.0	0.1	0.4	23.4	1.0	1.4	15.2	0.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				122	0	109	22	2325	1014	79	2439	0
V/C Ratio(X)				0.73	0.00	0.04	0.56	0.83	0.07	0.56	0.67	0.00
Avail Cap(c_a), veh/h				782	0	696	621	2498	1089	626	2498	0
HCM Platoon Ratio				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	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				26.2	0.0	25.0	28.2	7.6	3.7	26.9	5.3	0.0
Incr Delay (d2), s/veh				9.6	0.0	0.2	8.0	2.4	0.0	2.3	0.7	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
%ile BackOfQ(50%),veh/ln				1.4	0.0	0.1	0.2	5.5	0.2	0.6	2.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				35.8	0.0	25.1	36.2	10.0	3.7	29.2	6.0	0.0
LnGrp LOS				D	A	C	D	B	A	C	A	A
Approach Vol, veh/h					93			2014			1672	
Approach Delay, s/veh					35.3			9.9			6.6	
Approach LOS					D			A			A	

Timer - Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	6.5	42.9			4.7	44.8		7.9				
Change Period (Y+Rc), s	4.0	5.7			4.0	* 5.7		4.0				
Max Green Setting (Gmax), s	20.0	40.0			20.0	* 40		25.0				
Max Q Clear Time (g_c+I1), s	3.4	25.4			2.4	17.2		4.8				
Green Ext Time (p_c), s	0.0	11.8			0.0	13.0		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	9.1
HCM 6th LOS	A

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	1	221	0	0	1	119	1866	0	15	1533	75
Future Volume (veh/h)	65	1	221	0	0	1	119	1866	0	15	1533	75
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	68	1	10	0	0	0	124	1944	0	16	1597	45
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	118	2	107	4	4	0	161	2207	0	108	2101	917
Arrive On Green	0.07	0.07	0.07	0.00	0.00	0.00	0.09	0.62	0.00	0.06	0.59	0.59
Sat Flow, veh/h	1771	26	1598	1795	1885	0	1795	3676	0	1795	3582	1563
Grp Volume(v), veh/h	69	0	10	0	0	0	124	1944	0	16	1597	45
Grp Sat Flow(s),veh/h/ln	1797	0	1598	1795	1885	0	1795	1791	0	1795	1791	1563
Q Serve(g_s), s	1.9	0.0	0.3	0.0	0.0	0.0	3.4	22.7	0.0	0.4	16.6	0.6
Cycle Q Clear(g_c), s	1.9	0.0	0.3	0.0	0.0	0.0	3.4	22.7	0.0	0.4	16.6	0.6
Prop In Lane	0.99		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	120	0	107	4	4	0	161	2207	0	108	2101	917
V/C Ratio(X)	0.58	0.00	0.09	0.00	0.00	0.00	0.77	0.88	0.00	0.15	0.76	0.05
Avail Cap(c_a), veh/h	902	0	802	360	378	0	541	4314	0	360	4314	1882
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	0.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	0.0	21.8	0.0	0.0	0.0	22.2	8.0	0.0	22.2	7.7	4.4
Incr Delay (d2), s/veh	1.6	0.0	0.1	0.0	0.0	0.0	2.9	0.5	0.0	0.2	0.2	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	0.1	0.0	0.0	0.0	1.3	3.4	0.0	0.2	3.5	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.2	0.0	22.0	0.0	0.0	0.0	25.1	8.5	0.0	22.4	7.9	4.4
LnGrp LOS	C	A	C	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		79			0			2068			1658	
Approach Delay, s/veh		23.9			0.0			9.5			7.9	
Approach LOS		C						A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	36.4		7.4	7.5	34.9		0.0
Change Period (Y+Rc), s	3.0	5.7		4.1	3.0	5.7		3.5
Max Green Setting (Gmax), s	10.0	60.0		25.0	15.0	60.0		10.0
Max Q Clear Time (g_c+I1), s	2.4	24.7		3.9	5.4	18.6		0.0
Green Ext Time (p_c), s	0.0	6.0		0.1	0.1	5.1		0.0

Intersection Summary	
HCM 6th Ctrl Delay	9.1
HCM 6th LOS	A

Notes

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

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Woodgrove Way / Quail Oaks Dr & Douglas Blvd
Scenario	Existing Plus WHI & WHII

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Yield*	*Free*	*Free*	*Yield*	*Free*	*Free*
AM Peak Hour Volume	5	0	60	0	1	99	39	1371	34	51	1870	7
AM Peak Hour Delay (s)	2393.4	2393.4	17.3	1526.5	1526.5	32.8	20.6	0	0	14.6	0	0
PM Peak Hour Volume	2	0	35	0	1	37	45	1945	56	38	1752	4
PM Peak Hour Delay (s)	5000	5000	23.6	4932.2	4932.2	20.7	18.1	0	0	21.8	0	0

AM Delay	**75.8**
AM LOS	**F**

PM Delay	**115.0**
PM LOS	**F**

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Woodgrove Way / Quail Oaks Dr & Douglas Blvd
Scenario	Existing Plus WHI & WHII

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Yield*	*Free*	*Free*	*Yield*	*Free*	*Free*
AM Peak Hour Volume	5	0	60	0	1	99	39	1371	34	51	1870	7
AM Peak Hour Delay (s)	600	0	17.3	0	600	32.8	20.6	0	0	14.6	0	0
PM Peak Hour Volume	2	0	35	0	1	37	45	1945	56	38	1752	4
PM Peak Hour Delay (s)	600	0	23.6	0	600	20.7	18.1	0	0	21.8	0	0

AM Delay	**37.0**
AM LOS	**E**

PM Delay	**31.9**
PM LOS	**D**

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Woodgrove Way / Quail Oaks Dr & Douglas Blvd
Scenario	Existing Plus WHI & WHII - Mitigation

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Yield*	*Free*	*Free*	*Yield*	*Free*	*Free*
AM Peak Hour Volume	0	0	65	0	0	100	39	1371	34	51	1870	7
AM Peak Hour Delay (s)	0	0	17.6	0	0	33.1	20.6	0	0	14.6	0	0
PM Peak Hour Volume	2	0	35	0	1	37	45	1945	56	38	1752	4
PM Peak Hour Delay (s)	5000	5000	23.6	4932.2	4932.2	20.7	18.1	0	0	21.8	0	0

AM Delay	**23.5**
AM LOS	**C**

PM Delay	**115.0**
PM LOS	**F**

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	10. Eureka Rd & Greyhawk Dr
Scenario	Existing Plus WHI & WHII

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control				*Stop*		*Stop*	*Yield*	*Free*			*Free*	*Free*
AM Peak Hour Volume				84		49	22	463			470	36
AM Peak Hour Delay (s)				27.3		27.3	9.0	0			0	0
PM Peak Hour Volume				59		41	38	486			338	18
PM Peak Hour Delay (s)				16.4		16.4	8.3	0			0	0

AM Delay	**24.7**
AM LOS	**C**

PM Delay	**14.2**
PM LOS	**B**

Appendix F:
Cumulative No Project Conditions – Technical Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	310	1300	225	333	1890	115	560	1030	155	211	825	290
Future Volume (veh/h)	310	1300	225	333	1890	115	560	1030	155	211	825	290
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	337	1413	66	362	2054	0	609	1120	0	229	897	168
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	394	1745	534	475	1865		605	1549		291	1085	308
Arrive On Green	0.11	0.34	0.34	0.14	0.37	0.00	0.23	0.40	0.00	0.08	0.21	0.20
Sat Flow, veh/h	3456	5106	1564	3456	5106	1585	3456	5106	1585	3456	5106	1575
Grp Volume(v), veh/h	337	1413	66	362	2054	0	609	1120	0	229	897	168
Grp Sat Flow(s),veh/h/ln	1728	1702	1564	1728	1702	1585	1728	1702	1585	1728	1702	1575
Q Serve(g_s), s	11.5	30.2	2.0	12.1	43.8	0.0	21.0	22.2	0.0	7.8	20.1	11.5
Cycle Q Clear(g_c), s	11.5	30.2	2.0	12.1	43.8	0.0	21.0	22.2	0.0	7.8	20.1	11.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	394	1745	534	475	1865		605	1549		291	1085	308
V/C Ratio(X)	0.86	0.81	0.12	0.76	1.10		1.01	0.72		0.79	0.83	0.54
Avail Cap(c_a), veh/h	461	1745	534	475	1865		605	1549		605	1106	315
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.2	36.0	9.2	49.8	38.1	0.0	46.0	31.5	0.0	53.9	45.1	43.4
Incr Delay (d2), s/veh	11.7	4.2	0.5	6.4	54.3	0.0	38.3	1.8	0.0	1.8	5.5	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	12.6	1.3	5.5	26.6	0.0	11.4	8.2	0.0	3.4	8.8	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.9	40.1	9.7	56.2	92.4	0.0	84.4	33.4	0.0	55.7	50.6	46.0
LnGrp LOS	E	D	A	E	F		F	C		E	D	D
Approach Vol, veh/h		1816			2416	A		1729	A		1294	
Approach Delay, s/veh		43.4			87.0			51.3			50.9	
Approach LOS		D			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.5	45.0	25.0	29.5	17.7	47.8	14.1	40.4
Change Period (Y+Rc), s	6.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	14.0	39.0	21.0	24.0	16.0	39.0	21.0	24.0
Max Q Clear Time (g_c+I1), s	14.1	32.2	23.0	22.1	13.5	45.8	9.8	24.2
Green Ext Time (p_c), s	0.0	5.3	0.0	1.3	0.2	0.0	0.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	61.2
HCM 6th LOS	E

Notes

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

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1440	80	60	1830	110	60	20	45	80	30	365
Future Volume (veh/h)	60	1440	80	60	1830	110	60	20	45	80	30	365
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	1565	50	65	1989	83	65	22	-4	87	33	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	83	3403	109	84	2382	1041	83	28	97	116	44	140
Arrive On Green	0.09	1.00	1.00	0.05	0.67	0.67	0.06	0.06	0.00	0.09	0.09	0.09
Sat Flow, veh/h	1781	5079	162	1781	3554	1552	1347	456	1585	1309	496	1580
Grp Volume(v), veh/h	65	1049	566	65	1989	83	87	0	-4	120	0	50
Grp Sat Flow(s),veh/h/ln	1781	1702	1837	1781	1777	1552	1803	0	1585	1805	0	1580
Q Serve(g_s), s	4.3	0.0	0.0	4.3	50.3	2.2	5.7	0.0	0.0	7.8	0.0	3.6
Cycle Q Clear(g_c), s	4.3	0.0	0.0	4.3	50.3	2.2	5.7	0.0	0.0	7.8	0.0	3.6
Prop In Lane	1.00		0.09	1.00		1.00	0.75		1.00	0.72		1.00
Lane Grp Cap(c), veh/h	83	2281	1231	84	2382	1041	111	0	97	159	0	140
V/C Ratio(X)	0.78	0.46	0.46	0.78	0.83	0.08	0.79	0.00	-0.04	0.75	0.00	0.36
Avail Cap(c_a), veh/h	238	2281	1231	238	2382	1041	240	0	211	466	0	408
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)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.8	0.0	0.0	56.6	14.8	6.9	55.5	0.0	0.0	53.4	0.0	51.5
Incr Delay (d2), s/veh	5.9	0.7	1.2	5.7	2.8	0.0	4.6	0.0	0.0	2.7	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(50%),veh/ln	1.9	0.2	0.4	2.0	16.7	0.6	2.8	0.0	0.0	3.7	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.7	0.7	1.2	62.3	17.6	6.9	60.2	0.0	0.0	56.1	0.0	52.1
LnGrp LOS	E	A	A	E	B	A	E	A	A	E	A	D
Approach Vol, veh/h		1680			2137			83			170	
Approach Delay, s/veh		3.1			18.5			63.1			54.9	
Approach LOS		A			B			E			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	84.4		14.6	9.6	84.4		11.4
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0
Max Green Setting (Gmax), s	16.0	39.0		31.0	16.0	39.0		16.0
Max Q Clear Time (g_c+I1), s	6.3	2.0		9.8	6.3	52.3		7.7
Green Ext Time (p_c), s	0.0	15.8		0.5	0.0	0.0		0.1

Intersection Summary	
HCM 6th Ctrl Delay	14.6
HCM 6th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	1470	55	86	1880	7	5	0	70	0	1	100
Future Vol, veh/h	40	1470	55	86	1880	7	5	0	70	0	1	100
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	150	-	100	175	-	-	-	-	125	-	-	25
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	43	1598	60	93	2043	8	5	0	76	0	1	109

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2051	0	0	1658	0	0	2892	3921	799	3118	3977	1026
Stage 1	-	-	-	-	-	-	1684	1684	-	2233	2233	-
Stage 2	-	-	-	-	-	-	1208	2237	-	885	1744	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	270	-	-	385	-	-	7	3	328	5	3	232
Stage 1	-	-	-	-	-	-	98	149	-	44	78	-
Stage 2	-	-	-	-	-	-	194	78	-	306	139	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	270	-	-	385	-	-	~ 2	2	328	3	2	232
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 2	2	-	3	2	-
Stage 1	-	-	-	-	-	-	82	125	-	37	59	-
Stage 2	-	-	-	-	-	-	77	59	-	198	117	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.8	266.3	56.7
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	2	328	270	-	-	385	-	-	2	232
HCM Lane V/C Ratio	2.717	0.232	0.161	-	-	0.243	-	-	0.543	0.469
HCM Control Delay (s)	$ 3724.5	19.3	20.9	-	-	17.3	-	-	$ 2373.7	33.5
HCM Lane LOS	F	C	C	-	-	C	-	-	F	D
HCM 95th %tile Q(veh)	1.7	0.9	0.6	-	-	0.9	-	-	0.6	2.3

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1480	0	2	1940	85	0	0	0	50	0	50
Future Volume (veh/h)	60	1480	0	2	1940	85	0	0	0	50	0	50
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98				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
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1870	1870	0	1870	1870	1870				1870	0	1870
Adj Flow Rate, veh/h	65	1609	0	2	2109	91				54	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	2	2	2				2	0	2
Cap, veh/h	51	2939	0	3	2730	117				59	0	53
Arrive On Green	0.03	0.83	0.00	0.00	0.79	0.76				0.03	0.00	0.03
Sat Flow, veh/h	1781	3647	0	1781	3468	148				1781	0	1585
Grp Volume(v), veh/h	65	1609	0	2	1072	1128				54	0	1
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1840				1781	0	1585
Q Serve(g_s), s	2.3	11.4	0.0	0.1	25.7	27.0				2.4	0.0	0.0
Cycle Q Clear(g_c), s	2.3	11.4	0.0	0.1	25.7	27.0				2.4	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.08				1.00		1.00
Lane Grp Cap(c), veh/h	51	2939	0	3	1399	1448				59	0	53
V/C Ratio(X)	1.27	0.55	0.00	0.69	0.77	0.78				0.91	0.00	0.02
Avail Cap(c_a), veh/h	179	4329	0	202	2053	2126				573	0	510
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	38.6	2.2	0.0	39.7	4.5	4.7				38.3	0.0	37.2
Incr Delay (d2), s/veh	133.0	0.2	0.0	72.2	1.0	1.1				17.8	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
%ile BackOfQ(50%),veh/ln	2.8	0.1	0.0	0.1	2.3	2.6				1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	171.7	2.3	0.0	111.9	5.6	5.9				56.2	0.0	37.3
LnGrp LOS	F	A	A	F	A	A				E	A	D
Approach Vol, veh/h		1674			2202						55	
Approach Delay, s/veh		8.9			5.8						55.8	
Approach LOS		A			A						E	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	6.3	66.6		6.6	3.1	69.8
Change Period (Y+Rc), s	3.0	6.0		3.5	3.0	6.0
Max Green Setting (Gmax), s	9.0	89.9		26.1	9.0	94.9
Max Q Clear Time (g_c+I1), s	4.3	29.0		4.4	2.1	13.4
Green Ext Time (p_c), s	0.0	31.6		0.1	0.0	17.4

Intersection Summary	
HCM 6th Ctrl Delay	7.8
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	1240	140	141	1650	195	215	170	115	210	185	45
Future Volume (veh/h)	69	1240	140	141	1650	195	215	170	115	210	185	45
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		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	73	1319	93	150	1755	169	205	215	0	210	215	4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	77	1730	741	164	1902	829	244	256		249	262	219
Arrive On Green	0.04	0.48	0.46	0.09	0.53	0.53	0.14	0.14	0.00	0.14	0.14	0.14
Sat Flow, veh/h	1795	3582	1598	1795	3582	1562	1795	1885	1598	1795	1885	1576
Grp Volume(v), veh/h	73	1319	93	150	1755	169	205	215	0	210	215	4
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1562	1795	1885	1598	1795	1885	1576
Q Serve(g_s), s	4.3	31.9	3.5	8.8	47.7	6.0	11.8	11.8	0.0	12.1	11.7	0.2
Cycle Q Clear(g_c), s	4.3	31.9	3.5	8.8	47.7	6.0	11.8	11.8	0.0	12.1	11.7	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	77	1730	741	164	1902	829	244	256		249	262	219
V/C Ratio(X)	0.94	0.76	0.13	0.92	0.92	0.20	0.84	0.84		0.84	0.82	0.02
Avail Cap(c_a), veh/h	136	2018	870	204	2289	998	499	524		560	588	492
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.5	22.4	16.1	47.7	22.8	13.1	44.6	44.6	0.0	44.4	44.3	39.3
Incr Delay (d2), s/veh	27.7	1.2	0.0	33.0	5.6	0.0	3.0	2.8	0.0	3.0	2.5	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(50%),veh/ln	2.4	12.0	1.2	5.3	18.7	1.9	5.3	5.6	0.0	5.5	5.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.2	23.6	16.2	80.7	28.4	13.1	47.6	47.4	0.0	47.4	46.7	39.3
LnGrp LOS	E	C	B	F	C	B	D	D		D	D	D
Approach Vol, veh/h		1485			2074			420	A		429	
Approach Delay, s/veh		25.8			30.9			47.5			47.0	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.6	55.1		18.7	8.6	60.2		18.4
Change Period (Y+Rc), s	3.0	6.0		4.4	3.0	6.0		4.4
Max Green Setting (Gmax), s	13.6	57.6		32.6	9.0	65.6		29.0
Max Q Clear Time (g_c+I1), s	10.8	33.9		14.1	6.3	49.7		13.8
Green Ext Time (p_c), s	0.0	2.9		0.2	0.0	4.5		0.2

Intersection Summary	
HCM 6th Ctrl Delay	32.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	160	1110	75	255	100	1330	450	45	95	710	260
Future Volume (veh/h)	140	160	1110	75	255	100	1330	450	45	95	710	260
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	156	178	0	83	283	0	1478	500	0	106	789	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	170	566		90	381		1486	780		422	842	
Arrive On Green	0.09	0.16	0.00	0.05	0.11	0.00	0.41	0.41	0.00	0.24	0.24	0.00
Sat Flow, veh/h	1795	3582	1598	1795	3582	1598	3591	1885	1598	1795	3582	1598
Grp Volume(v), veh/h	156	178	0	83	283	0	1478	500	0	106	789	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1598	1795	1885	1598	1795	1791	1598
Q Serve(g_s), s	9.6	4.9	0.0	5.2	8.6	0.0	45.9	23.7	0.0	5.4	24.2	0.0
Cycle Q Clear(g_c), s	9.6	4.9	0.0	5.2	8.6	0.0	45.9	23.7	0.0	5.4	24.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	170	566		90	381		1486	780		422	842	
V/C Ratio(X)	0.92	0.31		0.92	0.74		0.99	0.64		0.25	0.94	
Avail Cap(c_a), veh/h	385	855		225	669		1486	780		422	842	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.2	41.7	0.0	52.9	48.5	0.0	32.7	26.2	0.0	34.8	42.0	0.0
Incr Delay (d2), s/veh	7.8	0.1	0.0	13.4	1.1	0.0	22.0	1.4	0.0	0.1	17.5	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(50%),veh/ln	4.5	2.1	0.0	2.6	3.8	0.0	23.2	10.4	0.0	2.3	12.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.1	41.9	0.0	66.3	49.6	0.0	54.7	27.6	0.0	34.9	59.4	0.0
LnGrp LOS	E	D		E	D		D	C		C	E	
Approach Vol, veh/h		334	A		366	A		1978	A		895	A
Approach Delay, s/veh		49.4			53.4			47.8			56.5	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	21.7		30.3	14.6	16.7		50.3
Change Period (Y+Rc), s	3.0	5.7		5.3	3.0	* 5.7		5.3
Max Green Setting (Gmax), s	15.0	25.0		25.0	25.0	* 20		45.0
Max Q Clear Time (g_c+I1), s	7.2	6.9		26.2	11.6	10.6		47.9
Green Ext Time (p_c), s	0.0	0.3		0.0	0.0	0.4		0.0

Intersection Summary	
HCM 6th Ctrl Delay	50.7
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	15	165	25	6	45	146	1600	75	110	1160	35
Future Volume (veh/h)	130	15	165	25	6	45	146	1600	75	110	1160	35
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		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	0	0	27	7	-5	159	1739	42	120	1261	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	325	0	144	81	21	90	187	1957	594	572	3135	947
Arrive On Green	0.09	0.00	0.00	0.06	0.06	0.00	0.10	0.38	0.38	0.64	1.00	1.00
Sat Flow, veh/h	3563	0	1585	1429	370	1585	1781	5106	1550	1781	5106	1542
Grp Volume(v), veh/h	152	0	0	34	0	-5	159	1739	42	120	1261	17
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1799	0	1585	1781	1702	1550	1781	1702	1542
Q Serve(g_s), s	4.9	0.0	0.0	2.2	0.0	0.0	10.5	38.2	2.1	3.3	0.0	0.0
Cycle Q Clear(g_c), s	4.9	0.0	0.0	2.2	0.0	0.0	10.5	38.2	2.1	3.3	0.0	0.0
Prop In Lane	1.00		1.00	0.79		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	325	0	144	102	0	90	187	1957	594	572	3135	947
V/C Ratio(X)	0.47	0.00	0.00	0.33	0.00	-0.06	0.85	0.89	0.07	0.21	0.40	0.02
Avail Cap(c_a), veh/h	623	0	277	315	0	277	312	1957	594	572	3135	947
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	0.0	0.0	54.4	0.0	0.0	52.8	34.6	23.5	15.2	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.7	0.0	0.0	5.1	6.5	0.2	0.1	0.2	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	2.2	0.0	0.0	1.0	0.0	0.0	4.8	16.1	0.8	1.3	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.2	0.0	0.0	55.1	0.0	0.0	57.8	41.1	23.7	15.2	0.2	0.0
LnGrp LOS	D	A	A	E	A	A	E	D	C	B	A	A
Approach Vol, veh/h		152			29			1940			1398	
Approach Delay, s/veh		52.2			64.6			42.1			1.5	
Approach LOS		D			E			D			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	44.3	50.0		14.9	16.6	77.7		10.8
Change Period (Y+Rc), s	5.7	* 5.7		4.0	4.0	5.7		4.0
Max Green Setting (Gmax), s	16.6	* 44		21.0	21.0	39.3		21.0
Max Q Clear Time (g_c+I1), s	15.3	40.2		6.9	12.5	2.0		4.2
Green Ext Time (p_c), s	0.1	3.9		0.2	0.1	21.3		0.1

Intersection Summary	
HCM 6th Ctrl Delay	26.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	300	90	65	550	320	294	1300	75	180	915	210
Future Volume (veh/h)	187	300	90	65	550	320	294	1300	75	180	915	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	203	326	0	71	598	0	320	1413	0	196	995	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	229	811		261	622		377	2418		259	2170	
Arrive On Green	0.13	0.23	0.00	0.08	0.17	0.00	0.11	0.47	0.00	0.07	0.43	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	203	326	0	71	598	0	320	1413	0	196	995	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	13.4	9.4	0.0	2.3	20.0	0.0	10.9	24.2	0.0	6.7	16.7	0.0
Cycle Q Clear(g_c), s	13.4	9.4	0.0	2.3	20.0	0.0	10.9	24.2	0.0	6.7	16.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	229	811		261	622		377	2418		259	2170	
V/C Ratio(X)	0.89	0.40		0.27	0.96		0.85	0.58		0.76	0.46	
Avail Cap(c_a), veh/h	238	811		461	622		461	2418		749	2170	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.4	39.3	0.0	52.4	49.1	0.0	52.5	23.0	0.0	54.4	24.6	0.0
Incr Delay (d2), s/veh	28.6	0.6	0.0	0.2	26.9	0.0	10.1	0.5	0.0	1.7	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	4.1	0.0	1.0	11.1	0.0	5.1	9.2	0.0	2.9	6.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.0	39.9	0.0	52.6	76.0	0.0	62.6	23.5	0.0	56.2	25.3	0.0
LnGrp LOS	E	D		D	E		E	C		E	C	
Approach Vol, veh/h		529	A		669	A		1733	A		1191	A
Approach Delay, s/veh		55.3			73.6			30.7			30.4	
Approach LOS		E			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	60.8	13.1	31.4	18.8	55.0	19.4	25.0
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	5.7
Max Green Setting (Gmax), s	26.0	39.3	16.0	19.3	16.0	* 49	16.0	19.3
Max Q Clear Time (g_c+I1), s	8.7	26.2	4.3	11.4	12.9	18.7	15.4	22.0
Green Ext Time (p_c), s	0.3	9.7	0.1	1.7	0.2	12.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	40.7
HCM 6th LOS	D

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	660	815	40	110	70
Future Vol, veh/h	30	660	815	40	110	70
Conflicting Peds, #/hr	6	0	0	6	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	37	805	994	49	134	85

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1049	0	-	0	1478	503
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	478	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	665	-	-	-	~ 118	517
Stage 1	-	-	-	-	319	-
Stage 2	-	-	-	-	592	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	661	-	-	-	~ 110	514
Mov Cap-2 Maneuver	-	-	-	-	221	-
Stage 1	-	-	-	-	299	-
Stage 2	-	-	-	-	588	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	31.9
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	661	-	-	-	221	514
HCM Lane V/C Ratio	0.055	-	-	-	0.607	0.166
HCM Control Delay (s)	10.8	-	-	-	43.6	13.4
HCM Lane LOS	B	-	-	-	E	B
HCM 95th %tile Q(veh)	0.2	-	-	-	3.5	0.6

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	220	0	130	6	1670	140	116	1770	0
Future Volume (veh/h)	0	0	0	220	0	130	6	1670	140	116	1770	0
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1885	0	1885	1885	1885	1885	1885	1885	0
Adj Flow Rate, veh/h				244	0	30	7	1856	139	129	1967	0
Peak Hour Factor				0.90	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.92
Percent Heavy Veh, %				1	0	1	1	1	1	1	1	0
Cap, veh/h				299	0	266	13	2138	954	161	2434	0
Arrive On Green				0.17	0.00	0.17	0.01	0.60	0.60	0.09	0.68	0.00
Sat Flow, veh/h				1795	0	1598	1795	3582	1598	1795	3676	0
Grp Volume(v), veh/h				244	0	30	7	1856	139	129	1967	0
Grp Sat Flow(s),veh/h/ln				1795	0	1598	1795	1791	1598	1795	1791	0
Q Serve(g_s), s				10.7	0.0	1.3	0.3	35.5	3.1	5.8	32.0	0.0
Cycle Q Clear(g_c), s				10.7	0.0	1.3	0.3	35.5	3.1	5.8	32.0	0.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				299	0	266	13	2138	954	161	2434	0
V/C Ratio(X)				0.82	0.00	0.11	0.54	0.87	0.15	0.80	0.81	0.00
Avail Cap(c_a), veh/h				657	0	585	175	2229	994	175	2434	0
HCM Platoon Ratio				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	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				32.9	0.0	29.0	40.5	13.8	7.3	36.6	9.3	0.0
Incr Delay (d2), s/veh				6.4	0.0	0.2	12.5	3.9	0.1	18.9	2.1	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
%ile BackOfQ(50%),veh/ln				5.1	0.0	0.5	0.2	12.4	0.9	3.3	9.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				39.3	0.0	29.2	53.0	17.7	7.4	55.5	11.4	0.0
LnGrp LOS				D	A	C	D	B	A	E	B	A
Approach Vol, veh/h					274			2002			2096	
Approach Delay, s/veh					38.2			17.1			14.2	
Approach LOS					D			B			B	

Timer - Assigned Phs	1	2		5	6		8
Phs Duration (G+Y+Rc), s	11.4	52.9		4.6	59.7		17.7
Change Period (Y+Rc), s	4.0	5.7		4.0	* 5.7		4.0
Max Green Setting (Gmax), s	8.0	49.3		8.0	* 52		30.0
Max Q Clear Time (g_c+I1), s	7.8	37.5		2.3	34.0		12.7
Green Ext Time (p_c), s	0.0	9.7		0.0	13.6		0.9

Intersection Summary	
HCM 6th Ctrl Delay	17.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	2	130	0	1	2	255	1640	0	2	1780	210
Future Volume (veh/h)	155	2	130	0	1	2	255	1640	0	2	1780	210
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	172	2	3	0	1	-4	283	1822	0	2	1978	186
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	205	2	185	2	0	360	300	2655	0	37	2130	927
Arrive On Green	0.12	0.12	0.12	0.00	0.00	0.00	0.17	0.74	0.00	0.02	0.59	0.59
Sat Flow, veh/h	1776	21	1598	1795	1885	0	1795	3676	0	1795	3582	1559
Grp Volume(v), veh/h	174	0	3	0	-3	-3	283	1822	0	2	1978	186
Grp Sat Flow(s),veh/h/ln	1796	0	1598	1795	1885	1598	1795	1791	0	1795	1791	1559
Q Serve(g_s), s	9.3	0.0	0.2	0.0	0.0	0.0	15.2	26.2	0.0	0.1	48.9	5.4
Cycle Q Clear(g_c), s	9.3	0.0	0.2	0.0	0.0	0.0	15.2	26.2	0.0	0.1	48.9	5.4
Prop In Lane	0.99		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	208	0	185	2	0	0	300	2655	0	37	2130	927
V/C Ratio(X)	0.84	0.00	0.02	0.00	0.00	0.00	0.94	0.69	0.00	0.05	0.93	0.20
Avail Cap(c_a), veh/h	220	0	196	615	0	0	331	2985	0	147	2399	1045
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	0.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	0.0	38.3	0.0	0.0	0.0	40.3	6.7	0.0	47.0	17.9	9.1
Incr Delay (d2), s/veh	21.2	0.0	0.0	0.0	0.0	0.0	32.6	0.4	0.0	0.2	6.2	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	5.3	0.0	0.1	0.0	0.0	0.0	9.0	6.2	0.0	0.0	18.8	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.6	0.0	38.3	0.0	0.0	0.0	72.9	7.1	0.0	47.2	24.1	9.2
LnGrp LOS	E	A	D	A	A	A	E	A	A	D	C	A
Approach Vol, veh/h		177			-6			2105			2166	
Approach Delay, s/veh		63.1			0.0			15.9			22.9	
Approach LOS		E			A			B			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	76.5		15.3	20.3	62.2		0.0
Change Period (Y+Rc), s	3.0	5.7		4.1	3.0	5.7		3.5
Max Green Setting (Gmax), s	9.0	79.8		11.9	19.0	63.8		34.0
Max Q Clear Time (g_c+I1), s	2.1	28.2		11.3	17.2	50.9		0.0
Green Ext Time (p_c), s	0.0	5.4		0.0	0.1	5.6		0.0

Intersection Summary	
HCM 6th Ctrl Delay	21.2
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	555	1680	320	431	1520	240	495	1150	260	251	1060	215
Future Volume (veh/h)	555	1680	320	431	1520	240	495	1150	260	251	1060	215
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	590	1787	245	459	1617	0	527	1223	0	267	1128	68
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	557	1784	553	480	1670		488	1639		314	1383	429
Arrive On Green	0.16	0.35	0.35	0.14	0.32	0.00	0.14	0.32	0.00	0.09	0.27	0.27
Sat Flow, veh/h	3483	5147	1596	3483	5147	1598	3483	5147	1598	3483	5147	1596
Grp Volume(v), veh/h	590	1787	245	459	1617	0	527	1223	0	267	1128	68
Grp Sat Flow(s),veh/h/ln	1742	1716	1596	1742	1716	1598	1742	1716	1598	1742	1716	1596
Q Serve(g_s), s	24.0	52.0	11.8	19.6	46.4	0.0	21.0	31.9	0.0	11.3	30.8	4.9
Cycle Q Clear(g_c), s	24.0	52.0	11.8	19.6	46.4	0.0	21.0	31.9	0.0	11.3	30.8	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	557	1784	553	480	1670		488	1639		314	1383	429
V/C Ratio(X)	1.06	1.00	0.44	0.96	0.97		1.08	0.75		0.85	0.82	0.16
Avail Cap(c_a), veh/h	557	1784	553	480	1670		488	1639		418	1475	457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.0	49.0	16.6	64.2	49.9	0.0	64.5	45.7	0.0	67.2	51.4	41.9
Incr Delay (d2), s/veh	54.6	21.7	2.6	29.8	15.7	0.0	64.3	2.0	0.0	9.5	3.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.6	25.1	4.6	10.5	21.8	0.0	13.5	13.6	0.0	5.4	13.4	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	117.6	70.7	19.2	94.0	65.6	0.0	128.8	47.7	0.0	76.7	55.1	42.1
LnGrp LOS	F	F	B	F	E		F	D		E	E	D
Approach Vol, veh/h		2622			2076	A		1750	A		1463	
Approach Delay, s/veh		76.4			71.8			72.1			58.4	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.7	56.0	25.0	44.3	28.0	52.7	17.5	51.8
Change Period (Y+Rc), s	6.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	16.0	50.0	21.0	41.0	24.0	44.0	18.0	44.0
Max Q Clear Time (g_c+I1), s	21.6	54.0	23.0	32.8	26.0	48.4	13.3	33.9
Green Ext Time (p_c), s	0.0	0.0	0.0	5.5	0.0	0.0	0.2	6.4

Intersection Summary	
HCM 6th Ctrl Delay	70.9
HCM 6th LOS	E

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	1910	25	90	1650	95	130	40	110	110	45	310
Future Volume (veh/h)	90	1910	25	90	1650	95	130	40	110	110	45	310
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		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	96	2032	12	96	1755	71	138	43	31	117	48	110
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	116	3217	19	117	2185	955	157	49	181	136	56	168
Arrive On Green	0.13	1.00	1.00	0.07	0.61	0.61	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1795	5279	31	1795	3582	1565	1385	431	1598	1291	530	1598
Grp Volume(v), veh/h	96	1320	724	96	1755	71	181	0	31	165	0	110
Grp Sat Flow(s),veh/h/ln	1795	1716	1880	1795	1791	1565	1816	0	1598	1821	0	1598
Q Serve(g_s), s	7.8	0.0	0.0	7.9	56.2	2.8	14.7	0.0	2.6	13.4	0.0	9.9
Cycle Q Clear(g_c), s	7.8	0.0	0.0	7.9	56.2	2.8	14.7	0.0	2.6	13.4	0.0	9.9
Prop In Lane	1.00		0.02	1.00		1.00	0.76		1.00	0.71		1.00
Lane Grp Cap(c), veh/h	116	2091	1145	117	2185	955	206	0	181	192	0	168
V/C Ratio(X)	0.83	0.63	0.63	0.82	0.80	0.07	0.88	0.00	0.17	0.86	0.00	0.65
Avail Cap(c_a), veh/h	251	2091	1145	251	2185	955	254	0	224	255	0	224
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)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	64.5	0.0	0.0	69.2	22.4	11.9	65.5	0.0	60.1	66.0	0.0	64.5
Incr Delay (d2), s/veh	5.5	1.5	2.7	5.2	3.2	0.2	21.5	0.0	0.2	16.2	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.4	0.8	3.7	22.0	0.9	8.1	0.0	1.1	7.1	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.0	1.5	2.7	74.4	25.6	12.1	87.0	0.0	60.3	82.3	0.0	66.1
LnGrp LOS	E	A	A	E	C	B	F	A	E	F	A	E
Approach Vol, veh/h		2140			1922			212			275	
Approach Delay, s/veh		4.9			27.5			83.1			75.8	
Approach LOS		A			C			F			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.8	95.4		19.8	13.7	95.5		21.0
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0
Max Green Setting (Gmax), s	21.0	69.0		21.0	21.0	69.0		21.0
Max Q Clear Time (g_c+I1), s	9.9	2.0		15.4	9.8	58.2		16.7
Green Ext Time (p_c), s	0.1	29.2		0.4	0.1	8.3		0.3

Intersection Summary	
HCM 6th Ctrl Delay	22.4
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	2020	70	45	1790	4	5	0	50	0	1	40
Future Vol, veh/h	46	2020	70	45	1790	4	5	0	50	0	1	40
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	150	-	100	175	-	-	-	-	125	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	49	2149	74	48	1904	4	5	0	53	0	1	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1908	0	0	2223	0	0	3296	4251	1075	3175	4323	954
Stage 1	-	-	-	-	-	-	2247	2247	-	2002	2002	-
Stage 2	-	-	-	-	-	-	1049	2004	-	1173	2321	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.52	6.52	6.92	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Follow-up Hdwy	2.21	-	-	2.21	-	-	3.51	4.01	3.31	3.51	4.01	3.31
Pot Cap-1 Maneuver	311	-	-	235	-	-	~ 4	2	217	4	2	261
Stage 1	-	-	-	-	-	-	43	78	-	62	104	-
Stage 2	-	-	-	-	-	-	245	104	-	206	71	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	311	-	-	235	-	-	-	1	217	2	~ 1	261
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	1	-	2	~ 1	-
Stage 1	-	-	-	-	-	-	36	66	-	52	83	-
Stage 2	-	-	-	-	-	-	161	83	-	131	60	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.6		141.3
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	217	311	-	-	235	-	-	1	261
HCM Lane V/C Ratio	-	0.245	0.157	-	-	0.204	-	-	1.064	0.163
HCM Control Delay (s)	-	26.9	18.7	-	-	24.2	-	-	$ 4932.2	21.5
HCM Lane LOS	-	D	C	-	-	C	-	-	F	C
HCM 95th %tile Q(veh)	-	0.9	0.6	-	-	0.7	-	-	0.6	0.6

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	2030	0	0	1800	20	0	0	0	30	0	35
Future Volume (veh/h)	34	2030	0	0	1800	20	0	0	0	30	0	35
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98				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
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1885	1885	0	1885	1885	1885				1885	0	1885
Adj Flow Rate, veh/h	36	2160	0	0	1915	20				32	0	-4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	1	1	0	1	1	1				1	0	1
Cap, veh/h	8	2992	0	3	2747	29				29	0	26
Arrive On Green	0.00	0.84	0.00	0.00	0.76	0.72				0.02	0.00	0.00
Sat Flow, veh/h	1795	3676	0	1795	3630	38				1795	0	1598
Grp Volume(v), veh/h	36	2160	0	0	943	992				32	0	-4
Grp Sat Flow(s),veh/h/ln	1795	1791	0	1795	1791	1877				1795	0	1598
Q Serve(g_s), s	0.3	13.5	0.0	0.0	14.6	14.7				0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.3	13.5	0.0	0.0	14.6	14.7				0.9	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.02				1.00		1.00
Lane Grp Cap(c), veh/h	8	2992	0	3	1355	1420				29	0	26
V/C Ratio(X)	4.32	0.72	0.00	0.00	0.70	0.70				1.10	0.00	-0.16
Avail Cap(c_a), veh/h	266	4418	0	266	2143	2246				849	0	756
HCM Platoon Ratio	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	0.00	1.00	1.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	26.8	1.8	0.0	0.0	3.4	3.4				26.5	0.0	0.0
Incr Delay (d2), s/veh	1516.6	0.3	0.0	0.0	0.7	0.6				78.6	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
%ile BackOfQ(50%),veh/ln	3.6	0.1	0.0	0.0	0.2	0.2				1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1543.4	2.2	0.0	0.0	4.0	4.0				105.1	0.0	0.0
LnGrp LOS	F	A	A	A	A	A				F	A	A
Approach Vol, veh/h		2196			1935						28	
Approach Delay, s/veh		27.4			4.0						120.1	
Approach LOS		C			A						F	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	4.3	44.8		4.9	0.0	49.0
Change Period (Y+Rc), s	3.0	6.0		3.5	3.0	6.0
Max Green Setting (Gmax), s	9.0	62.5		26.0	9.0	64.5
Max Q Clear Time (g_c+I1), s	2.3	16.7		2.9	0.0	15.5
Green Ext Time (p_c), s	0.0	20.8		0.0	0.0	27.6

Intersection Summary	
HCM 6th Ctrl Delay	17.2
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	1650	260	145	1510	230	175	135	130	210	190	65
Future Volume (veh/h)	74	1650	260	145	1510	230	175	135	130	210	190	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	76	1701	189	149	1557	190	160	168	0	206	210	3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	81	1852	809	163	2015	898	200	210		244	256	217
Arrive On Green	0.04	0.51	0.51	0.09	0.56	0.56	0.11	0.11	0.00	0.13	0.13	0.13
Sat Flow, veh/h	1810	3610	1577	1810	3610	1609	1810	1900	1610	1810	1900	1610
Grp Volume(v), veh/h	76	1701	189	149	1557	190	160	168	0	206	210	3
Grp Sat Flow(s),veh/h/ln	1810	1805	1577	1810	1805	1609	1810	1900	1610	1810	1900	1610
Q Serve(g_s), s	4.4	45.8	7.0	8.6	35.4	6.2	9.1	9.1	0.0	11.7	11.3	0.2
Cycle Q Clear(g_c), s	4.4	45.8	7.0	8.6	35.4	6.2	9.1	9.1	0.0	11.7	11.3	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	81	1852	809	163	2015	898	200	210		244	256	217
V/C Ratio(X)	0.94	0.92	0.23	0.91	0.77	0.21	0.80	0.80		0.84	0.82	0.01
Avail Cap(c_a), veh/h	154	2564	1120	206	2667	1188	504	529		302	317	268
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.3	23.7	14.2	47.6	18.1	11.7	45.8	45.8	0.0	44.6	44.4	39.6
Incr Delay (d2), s/veh	16.5	3.8	0.1	32.0	0.7	0.0	2.8	2.7	0.0	13.8	10.7	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	2.3	17.5	2.2	5.2	12.8	2.0	4.2	4.4	0.0	6.1	6.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.8	27.4	14.3	79.6	18.8	11.7	48.6	48.5	0.0	58.4	55.1	39.6
LnGrp LOS	E	C	B	E	B	B	D	D		E	E	D
Approach Vol, veh/h		1966			1896			328	A		419	
Approach Delay, s/veh		27.7			22.9			48.6			56.6	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.5	58.2		18.3	8.7	62.9		15.7
Change Period (Y+Rc), s	3.0	6.0		4.4	3.0	6.0		4.4
Max Green Setting (Gmax), s	13.0	73.0		17.2	10.0	76.0		29.0
Max Q Clear Time (g_c+I1), s	10.6	47.8		13.7	6.4	37.4		11.1
Green Ext Time (p_c), s	0.0	4.4		0.1	0.0	4.1		0.1

Intersection Summary	
HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	305	1160	60	290	115	1180	765	80	125	515	205
Future Volume (veh/h)	215	305	1160	60	290	115	1180	765	80	125	515	205
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	224	318	0	62	302	0	1229	797	0	130	536	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	239	784		64	409		1504	790		326	651	
Arrive On Green	0.13	0.22	0.00	0.04	0.11	0.00	0.42	0.42	0.00	0.18	0.18	0.00
Sat Flow, veh/h	1795	3582	1598	1795	3582	1598	3591	1885	1598	1795	3582	1598
Grp Volume(v), veh/h	224	318	0	62	302	0	1229	797	0	130	536	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1598	1795	1885	1598	1795	1791	1598
Q Serve(g_s), s	13.7	8.4	0.0	3.8	9.0	0.0	33.4	46.3	0.0	7.1	15.9	0.0
Cycle Q Clear(g_c), s	13.7	8.4	0.0	3.8	9.0	0.0	33.4	46.3	0.0	7.1	15.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	239	784		64	409		1504	790		326	651	
V/C Ratio(X)	0.94	0.41		0.97	0.74		0.82	1.01		0.40	0.82	
Avail Cap(c_a), veh/h	390	865		227	677		1504	790		427	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	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.5	37.0	0.0	53.2	47.3	0.0	28.4	32.1	0.0	39.9	43.5	0.0
Incr Delay (d2), s/veh	15.8	0.1	0.0	24.3	1.0	0.0	3.4	34.3	0.0	0.3	3.9	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(50%),veh/ln	6.9	3.5	0.0	2.1	4.0	0.0	14.3	27.2	0.0	3.0	7.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.3	37.1	0.0	77.6	48.3	0.0	31.8	66.4	0.0	40.2	47.4	0.0
LnGrp LOS	E	D		E	D		C	F		D	D	
Approach Vol, veh/h		542	A		364	A		2026	A		666	A
Approach Delay, s/veh		47.9			53.3			45.4			46.0	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	28.2		24.1	18.7	17.4		50.3
Change Period (Y+Rc), s	3.0	5.7		5.3	3.0	* 5.7		5.3
Max Green Setting (Gmax), s	15.0	25.0		25.0	25.0	* 20		45.0
Max Q Clear Time (g_c+I1), s	5.8	10.4		17.9	15.7	11.0		48.3
Green Ext Time (p_c), s	0.0	0.5		0.8	0.1	0.5		0.0

Intersection Summary	
HCM 6th Ctrl Delay	46.7
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	15	265	75	15	100	185	1500	50	120	1510	65
Future Volume (veh/h)	190	15	265	75	15	100	185	1500	50	120	1510	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	213	0	13	80	16	-6	197	1596	25	128	1606	30
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	358	0	156	131	26	139	225	1973	607	507	2854	883
Arrive On Green	0.10	0.00	0.10	0.09	0.09	0.00	0.13	0.38	0.38	0.28	0.55	0.55
Sat Flow, veh/h	3591	0	1569	1508	302	1598	1795	5147	1583	1795	5147	1593
Grp Volume(v), veh/h	213	0	13	96	0	-6	197	1596	25	128	1606	30
Grp Sat Flow(s),veh/h/ln	1795	0	1569	1810	0	1598	1795	1716	1583	1795	1716	1593
Q Serve(g_s), s	6.8	0.0	0.9	6.1	0.0	0.0	12.9	33.3	1.2	6.6	24.3	1.0
Cycle Q Clear(g_c), s	6.8	0.0	0.9	6.1	0.0	0.0	12.9	33.3	1.2	6.6	24.3	1.0
Prop In Lane	1.00		1.00	0.83		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	358	0	156	158	0	139	225	1973	607	507	2854	883
V/C Ratio(X)	0.59	0.00	0.08	0.61	0.00	-0.04	0.88	0.81	0.04	0.25	0.56	0.03
Avail Cap(c_a), veh/h	628	0	275	317	0	280	314	1973	607	507	2854	883
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	49.0	52.8	0.0	0.0	51.6	33.1	23.2	33.3	17.3	12.1
Incr Delay (d2), s/veh	0.6	0.0	0.1	1.4	0.0	0.0	14.1	3.7	0.1	0.1	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(50%),veh/ln	3.1	0.0	0.4	2.9	0.0	0.0	6.5	13.8	0.5	2.8	8.9	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.3	0.0	49.1	54.2	0.0	0.0	65.6	36.8	23.3	33.4	17.8	12.2
LnGrp LOS	D	A	D	D	A	A	E	D	C	C	B	B
Approach Vol, veh/h		226			90			1818			1764	
Approach Delay, s/veh		52.1			57.8			39.7			18.8	
Approach LOS		D			E			D			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	39.6	50.0		16.0	19.0	70.5		14.5
Change Period (Y+Rc), s	5.7	* 5.7		4.0	4.0	5.7		4.0
Max Green Setting (Gmax), s	16.9	* 44		21.0	21.0	39.3		21.0
Max Q Clear Time (g_c+I1), s	19.6	35.3		8.8	14.9	26.3		8.1
Green Ext Time (p_c), s	0.1	8.0		0.3	0.1	11.3		0.2

Intersection Summary	
HCM 6th Ctrl Delay	31.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	257	570	270	75	430	240	280	1140	70	245	1270	280
Future Volume (veh/h)	257	570	270	75	430	240	280	1140	70	245	1270	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	273	606	0	80	457	0	298	1213	0	261	1351	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	301	903		270	580		357	1881		324	1758	
Arrive On Green	0.17	0.25	0.00	0.08	0.16	0.00	0.10	0.37	0.00	0.09	0.34	0.00
Sat Flow, veh/h	1795	3582	1598	3483	3582	1598	3483	5147	1598	3483	5147	1598
Grp Volume(v), veh/h	273	606	0	80	457	0	298	1213	0	261	1351	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1742	1791	1598	1742	1716	1598	1742	1716	1598
Q Serve(g_s), s	17.9	18.3	0.0	2.6	14.7	0.0	10.1	23.5	0.0	8.8	28.1	0.0
Cycle Q Clear(g_c), s	17.9	18.3	0.0	2.6	14.7	0.0	10.1	23.5	0.0	8.8	28.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	301	903		270	580		357	1881		324	1758	
V/C Ratio(X)	0.91	0.67		0.30	0.79		0.84	0.65		0.81	0.77	
Avail Cap(c_a), veh/h	389	903		610	627		464	1881		610	1758	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.0	40.4	0.0	52.3	48.3	0.0	52.9	31.6	0.0	53.4	35.3	0.0
Incr Delay (d2), s/veh	18.3	2.4	0.0	0.2	7.1	0.0	7.9	1.0	0.0	1.8	3.3	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(50%),veh/ln	9.4	8.2	0.0	1.1	7.1	0.0	4.7	9.5	0.0	3.8	11.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.3	42.8	0.0	52.5	55.4	0.0	60.7	32.6	0.0	55.2	38.6	0.0
LnGrp LOS	E	D		D	E		E	C		E	D	
Approach Vol, veh/h		879	A		537	A		1511	A		1612	A
Approach Delay, s/veh		50.4			55.0			38.1			41.2	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	47.8	13.3	34.2	18.0	45.0	24.1	23.4
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	5.7
Max Green Setting (Gmax), s	21.0	34.3	21.0	24.3	16.0	* 39	26.0	19.3
Max Q Clear Time (g_c+I1), s	10.8	25.5	4.6	20.3	12.1	30.1	19.9	16.7
Green Ext Time (p_c), s	0.3	6.3	0.1	1.9	0.2	7.0	0.2	1.0

Intersection Summary	
HCM 6th Ctrl Delay	43.6
HCM 6th LOS	D

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	755	655	25	65	60
Future Vol, veh/h	45	755	655	25	65	60
Conflicting Peds, #/hr	1	0	0	1	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	50	839	728	28	72	67

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	757	0	-	0	1252	365
Stage 1	-	-	-	-	729	-
Stage 2	-	-	-	-	523	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	863	-	-	-	167	638
Stage 1	-	-	-	-	444	-
Stage 2	-	-	-	-	565	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	862	-	-	-	157	637
Mov Cap-2 Maneuver	-	-	-	-	281	-
Stage 1	-	-	-	-	418	-
Stage 2	-	-	-	-	564	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	17
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	862	-	-	-	281	637
HCM Lane V/C Ratio	0.058	-	-	-	0.257	0.105
HCM Control Delay (s)	9.4	-	-	-	22.2	11.3
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	105	0	80	15	1900	105	85	1660	0
Future Volume (veh/h)	0	0	0	105	0	80	15	1900	105	85	1660	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		0.98	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
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1885	0	1885	1885	1885	1885	1885	1885	0
Adj Flow Rate, veh/h				109	0	9	16	1979	100	89	1729	0
Peak Hour Factor				0.96	0.92	0.96	0.96	0.96	0.96	0.96	0.96	0.92
Percent Heavy Veh, %				1	0	1	1	1	1	1	1	0
Cap, veh/h				150	0	134	27	2444	1066	115	2618	0
Arrive On Green				0.08	0.00	0.08	0.02	0.68	0.68	0.06	0.73	0.00
Sat Flow, veh/h				1795	0	1598	1795	3582	1562	1795	3676	0
Grp Volume(v), veh/h				109	0	9	16	1979	100	89	1729	0
Grp Sat Flow(s),veh/h/ln				1795	0	1598	1795	1791	1562	1795	1791	0
Q Serve(g_s), s				4.2	0.0	0.4	0.6	27.7	1.5	3.4	17.7	0.0
Cycle Q Clear(g_c), s				4.2	0.0	0.4	0.6	27.7	1.5	3.4	17.7	0.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				150	0	134	27	2444	1066	115	2618	0
V/C Ratio(X)				0.72	0.00	0.07	0.58	0.81	0.09	0.78	0.66	0.00
Avail Cap(c_a), veh/h				763	0	679	203	2689	1173	203	2739	0
HCM Platoon Ratio				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	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				31.6	0.0	29.8	34.5	8.0	3.8	32.6	4.9	0.0
Incr Delay (d2), s/veh				7.7	0.0	0.3	7.1	1.8	0.0	4.2	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
%ile BackOfQ(50%),veh/ln				2.1	0.0	0.1	0.3	7.0	0.3	1.5	3.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				39.3	0.0	30.1	41.7	9.8	3.8	36.7	5.5	0.0
LnGrp LOS				D	A	C	D	A	A	D	A	A
Approach Vol, veh/h					118			2095			1818	
Approach Delay, s/veh					38.6			9.8			7.0	
Approach LOS					D			A			A	

Timer - Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	8.5	52.2			5.1	55.6		9.9				
Change Period (Y+Rc), s	4.0	5.7			4.0	* 5.7		4.0				
Max Green Setting (Gmax), s	8.0	51.3			8.0	* 52		30.0				
Max Q Clear Time (g_c+I1), s	5.4	29.7			2.6	19.7		6.2				
Green Ext Time (p_c), s	0.0	16.8			0.0	17.3		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			9.4									
HCM 6th LOS			A									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	1	340	0	0	1	267	1890	0	17	1610	115
Future Volume (veh/h)	115	1	340	0	0	1	267	1890	0	17	1610	115
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	120	1	21	0	0	-4	278	1969	0	18	1677	84
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	164	1	147	3	0	360	306	2453	0	57	1956	853
Arrive On Green	0.09	0.09	0.09	0.00	0.00	0.00	0.17	0.68	0.00	0.03	0.55	0.55
Sat Flow, veh/h	1781	15	1598	1795	1885	0	1795	3676	0	1795	3582	1562
Grp Volume(v), veh/h	121	0	21	0	-4	-4	278	1969	0	18	1677	84
Grp Sat Flow(s),veh/h/ln	1796	0	1598	1795	1885	1598	1795	1791	0	1795	1791	1562
Q Serve(g_s), s	4.1	0.0	0.8	0.0	0.0	0.0	9.5	24.1	0.0	0.6	25.1	1.6
Cycle Q Clear(g_c), s	4.1	0.0	0.8	0.0	0.0	0.0	9.5	24.1	0.0	0.6	25.1	1.6
Prop In Lane	0.99		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	165	0	147	3	0	0	306	2453	0	57	1956	853
V/C Ratio(X)	0.73	0.00	0.14	0.00	0.00	0.00	0.91	0.80	0.00	0.31	0.86	0.10
Avail Cap(c_a), veh/h	309	0	275	959	0	0	572	4722	0	229	3694	1611
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	0.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	0.0	26.2	0.0	0.0	0.0	25.5	6.9	0.0	29.7	12.2	6.8
Incr Delay (d2), s/veh	2.3	0.0	0.2	0.0	0.0	0.0	4.2	0.2	0.0	1.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.3	0.0	0.0	0.0	3.9	3.8	0.0	0.3	7.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	0.0	26.4	0.0	0.0	0.0	29.7	7.2	0.0	30.9	12.6	6.9
LnGrp LOS	C	A	C	A	A	A	C	A	A	C	B	A
Approach Vol, veh/h		142			-8			2247			1779	
Approach Delay, s/veh		29.5			0.0			10.0			12.5	
Approach LOS		C			A			A			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	47.0		9.8	14.7	38.3		0.0
Change Period (Y+Rc), s	3.0	5.7		4.1	3.0	5.7		3.5
Max Green Setting (Gmax), s	9.0	81.0		10.7	21.0	63.0		34.0
Max Q Clear Time (g_c+I1), s	2.6	26.1		6.1	11.5	27.1		0.0
Green Ext Time (p_c), s	0.0	6.2		0.1	0.3	5.5		0.0

Intersection Summary	
HCM 6th Ctrl Delay	11.7
HCM 6th LOS	B

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Woodgrove Way / Quail Oaks Dr & Douglas Blvd
Scenario	Cumulative No Project

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Yield*	*Free*	*Free*	*Yield*	*Free*	*Free*
AM Peak Hour Volume	5	0	70	0	1	100	40	1470	55	86	1880	7
AM Peak Hour Delay (s)	3724.5	3724.5	19.3	2373.7	2373.7	33.5	20.9	0	0	17.3	0	0
PM Peak Hour Volume	5	0	50	0	1	40	46	2020	70	45	1790	4
PM Peak Hour Delay (s)	10000	0	26.9	4932.2	4932.2	21.5	18.7	0	0	24.2	0	0

AM Delay	**92.8**
AM LOS	**F**

PM Delay	**316.0**
PM LOS	**F**

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Woodgrove Way / Quail Oaks Dr & Douglas Blvd
Scenario	Cumulative No Project

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Yield*	*Free*	*Free*	*Yield*	*Free*	*Free*
AM Peak Hour Volume	5	0	70	0	1	100	40	1470	55	86	1880	7
AM Peak Hour Delay (s)	600	0	19.3	0	600	33.5	20.9	0	0	17.3	0	0
PM Peak Hour Volume	5	0	50	0	1	40	46	2020	70	45	1790	4
PM Peak Hour Delay (s)	600	0	26.9	0	600	21.5	18.7	0	0	24.2	0	0

AM Delay	**35.2**
AM LOS	**D**

PM Delay	**41.5**
PM LOS	**E**

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	10. Eureka Rd & Greyhawk Dr
Scenario	Cumulative No Project

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control				*Stop*		*Stop*	*Yield*	*Free*			*Free*	*Free*
AM Peak Hour Volume				110		70	30	660			815	40
AM Peak Hour Delay (s)				43.6		13.4	10.8	0			0	0
PM Peak Hour Volume				65		60	45	755			655	25
PM Peak Hour Delay (s)				22.2		11.3	9.4	0			0	0

AM Delay	**28.8**
AM LOS	**D**

PM Delay	**15.0**
PM LOS	**B**

Appendix G:
Cumulative Plus Whitehawk I Conditions – Technical Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	310	1302	225	336	1896	117	560	1030	156	212	825	290
Future Volume (veh/h)	310	1302	225	336	1896	117	560	1030	156	212	825	290
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	337	1415	66	365	2061	0	609	1120	0	230	897	168
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	394	1745	534	475	1865		605	1547		292	1085	308
Arrive On Green	0.11	0.34	0.34	0.14	0.37	0.00	0.23	0.40	0.00	0.08	0.21	0.20
Sat Flow, veh/h	3456	5106	1564	3456	5106	1585	3456	5106	1585	3456	5106	1575
Grp Volume(v), veh/h	337	1415	66	365	2061	0	609	1120	0	230	897	168
Grp Sat Flow(s),veh/h/ln	1728	1702	1564	1728	1702	1585	1728	1702	1585	1728	1702	1575
Q Serve(g_s), s	11.5	30.3	2.0	12.2	43.8	0.0	21.0	22.2	0.0	7.8	20.1	11.5
Cycle Q Clear(g_c), s	11.5	30.3	2.0	12.2	43.8	0.0	21.0	22.2	0.0	7.8	20.1	11.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	394	1745	534	475	1865		605	1547		292	1085	308
V/C Ratio(X)	0.86	0.81	0.12	0.77	1.10		1.01	0.72		0.79	0.83	0.54
Avail Cap(c_a), veh/h	461	1745	534	475	1865		605	1547		605	1106	315
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.2	36.0	9.2	49.9	38.1	0.0	46.0	31.6	0.0	53.9	45.1	43.4
Incr Delay (d2), s/veh	11.7	4.2	0.5	6.7	55.8	0.0	38.3	1.8	0.0	1.8	5.5	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	12.7	1.3	5.6	26.9	0.0	11.4	8.3	0.0	3.4	8.8	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.9	40.2	9.7	56.6	93.9	0.0	84.4	33.4	0.0	55.7	50.6	46.0
LnGrp LOS	E	D	A	E	F		F	C		E	D	D
Approach Vol, veh/h		1818			2426	A		1729	A		1295	
Approach Delay, s/veh		43.5			88.3			51.4			50.9	
Approach LOS		D			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.5	45.0	25.0	29.5	17.7	47.8	14.1	40.4
Change Period (Y+Rc), s	6.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	14.0	39.0	21.0	24.0	16.0	39.0	21.0	24.0
Max Q Clear Time (g_c+I1), s	14.2	32.3	23.0	22.1	13.5	45.8	9.8	24.2
Green Ext Time (p_c), s	0.0	5.3	0.0	1.3	0.2	0.0	0.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	61.6
HCM 6th LOS	E

Notes

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

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1444	80	60	1841	110	60	20	45	80	30	365
Future Volume (veh/h)	60	1444	80	60	1841	110	60	20	45	80	30	365
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	1570	50	65	2001	83	65	22	-4	87	33	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	83	3403	108	84	2382	1041	83	28	97	116	44	140
Arrive On Green	0.09	1.00	1.00	0.05	0.67	0.67	0.06	0.06	0.00	0.09	0.09	0.09
Sat Flow, veh/h	1781	5079	162	1781	3554	1552	1347	456	1585	1309	496	1580
Grp Volume(v), veh/h	65	1052	568	65	2001	83	87	0	-4	120	0	50
Grp Sat Flow(s),veh/h/ln	1781	1702	1837	1781	1777	1552	1803	0	1585	1805	0	1580
Q Serve(g_s), s	4.3	0.0	0.0	4.3	51.0	2.2	5.7	0.0	0.0	7.8	0.0	3.6
Cycle Q Clear(g_c), s	4.3	0.0	0.0	4.3	51.0	2.2	5.7	0.0	0.0	7.8	0.0	3.6
Prop In Lane	1.00		0.09	1.00		1.00	0.75		1.00	0.72		1.00
Lane Grp Cap(c), veh/h	83	2281	1231	84	2382	1041	111	0	97	159	0	140
V/C Ratio(X)	0.78	0.46	0.46	0.78	0.84	0.08	0.79	0.00	-0.04	0.75	0.00	0.36
Avail Cap(c_a), veh/h	238	2281	1231	238	2382	1041	240	0	211	466	0	408
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)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.8	0.0	0.0	56.6	14.9	6.9	55.5	0.0	0.0	53.4	0.0	51.5
Incr Delay (d2), s/veh	5.9	0.7	1.2	5.7	2.9	0.0	4.6	0.0	0.0	2.7	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(50%),veh/ln	1.9	0.2	0.4	2.0	17.0	0.6	2.8	0.0	0.0	3.7	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.7	0.7	1.2	62.3	17.8	6.9	60.2	0.0	0.0	56.1	0.0	52.1
LnGrp LOS	E	A	A	E	B	A	E	A	A	E	A	D
Approach Vol, veh/h		1685			2149			83			170	
Approach Delay, s/veh		3.1			18.7			63.1			54.9	
Approach LOS		A			B			E			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	84.4		14.6	9.6	84.4		11.4
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0
Max Green Setting (Gmax), s	16.0	39.0		31.0	16.0	39.0		16.0
Max Q Clear Time (g_c+I1), s	6.3	2.0		9.8	6.3	53.0		7.7
Green Ext Time (p_c), s	0.0	15.9		0.5	0.0	0.0		0.1

Intersection Summary	
HCM 6th Ctrl Delay	14.7
HCM 6th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	1474	55	91	1891	7	5	0	71	0	1	100
Future Vol, veh/h	40	1474	55	91	1891	7	5	0	71	0	1	100
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	150	-	100	175	-	-	-	-	125	-	-	25
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	43	1602	60	99	2055	8	5	0	77	0	1	109

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2063	0	0	1662	0	0	2914	3949	801	3144	4005	1032
Stage 1	-	-	-	-	-	-	1688	1688	-	2257	2257	-
Stage 2	-	-	-	-	-	-	1226	2261	-	887	1748	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	267	-	-	383	-	-	7	3	327	5	3	230
Stage 1	-	-	-	-	-	-	97	148	-	42	76	-
Stage 2	-	-	-	-	-	-	189	76	-	305	138	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	267	-	-	383	-	-	~ 2	2	327	3	2	230
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 2	2	-	3	2	-
Stage 1	-	-	-	-	-	-	81	124	-	35	56	-
Stage 2	-	-	-	-	-	-	72	56	-	195	116	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.8	263.2	57.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	2	327	267	-	-	383	-	-	2	230
HCM Lane V/C Ratio	2.717	0.236	0.163	-	-	0.258	-	-	0.543	0.473
HCM Control Delay (s)	$ 3724.5	19.4	21.1	-	-	17.6	-	-	$ 2373.7	33.9
HCM Lane LOS	F	C	C	-	-	C	-	-	F	D
HCM 95th %tile Q(veh)	1.7	0.9	0.6	-	-	1	-	-	0.6	2.3

Notes

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1541	7	0	2007	0	20
Future Vol, veh/h	1541	7	0	2007	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1675	8	0	2182	0	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	842
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	308
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	308
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	17.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	308	-	-	-
HCM Lane V/C Ratio	0.071	-	-	-
HCM Control Delay (s)	17.6	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	1485	0	2	1942	85	0	0	0	50	0	50
Future Volume (veh/h)	75	1485	0	2	1942	85	0	0	0	50	0	50
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98				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
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1870	1870	0	1870	1870	1870				1870	0	1870
Adj Flow Rate, veh/h	82	1614	0	2	2111	91				54	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	2	2	2				2	0	2
Cap, veh/h	85	2962	0	3	2690	115				60	0	53
Arrive On Green	0.05	0.83	0.00	0.00	0.78	0.75				0.03	0.00	0.03
Sat Flow, veh/h	1781	3647	0	1781	3468	148				1781	0	1585
Grp Volume(v), veh/h	82	1614	0	2	1073	1129				54	0	1
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1840				1781	0	1585
Q Serve(g_s), s	3.8	11.6	0.0	0.1	28.6	30.0				2.5	0.0	0.1
Cycle Q Clear(g_c), s	3.8	11.6	0.0	0.1	28.6	30.0				2.5	0.0	0.1
Prop In Lane	1.00		0.00	1.00		0.08				1.00		1.00
Lane Grp Cap(c), veh/h	85	2962	0	3	1378	1427				60	0	53
V/C Ratio(X)	0.97	0.54	0.00	0.69	0.78	0.79				0.90	0.00	0.02
Avail Cap(c_a), veh/h	170	4114	0	192	1951	2020				543	0	483
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	39.8	2.1	0.0	41.8	5.3	5.5				40.3	0.0	39.1
Incr Delay (d2), s/veh	20.8	0.2	0.0	72.5	1.3	1.5				16.5	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
%ile BackOfQ(50%),veh/ln	2.1	0.1	0.0	0.1	3.8	4.2				1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.6	2.3	0.0	114.3	6.7	7.0				56.8	0.0	39.2
LnGrp LOS	E	A	A	F	A	A				E	A	D
Approach Vol, veh/h		1696			2204						55	
Approach Delay, s/veh		5.1			6.9						56.5	
Approach LOS		A			A						E	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	8.0	68.9		6.8	3.1	73.8
Change Period (Y+Rc), s	3.0	6.0		3.5	3.0	6.0
Max Green Setting (Gmax), s	9.0	89.9		26.0	9.0	94.9
Max Q Clear Time (g_c+I1), s	5.8	32.0		4.5	2.1	13.6
Green Ext Time (p_c), s	0.0	30.9		0.1	0.0	17.6

Intersection Summary	
HCM 6th Ctrl Delay	6.8
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	1244	141	141	1652	195	215	170	115	210	185	45
Future Volume (veh/h)	69	1244	141	141	1652	195	215	170	115	210	185	45
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		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	73	1323	94	150	1757	169	205	215	0	210	215	4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	77	1731	742	164	1903	830	244	256		249	262	219
Arrive On Green	0.04	0.48	0.46	0.09	0.53	0.53	0.14	0.14	0.00	0.14	0.14	0.14
Sat Flow, veh/h	1795	3582	1598	1795	3582	1562	1795	1885	1598	1795	1885	1576
Grp Volume(v), veh/h	73	1323	94	150	1757	169	205	215	0	210	215	4
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1562	1795	1885	1598	1795	1885	1576
Q Serve(g_s), s	4.3	32.1	3.6	8.8	47.8	6.0	11.8	11.8	0.0	12.1	11.8	0.2
Cycle Q Clear(g_c), s	4.3	32.1	3.6	8.8	47.8	6.0	11.8	11.8	0.0	12.1	11.8	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	77	1731	742	164	1903	830	244	256		249	262	219
V/C Ratio(X)	0.94	0.76	0.13	0.92	0.92	0.20	0.84	0.84		0.84	0.82	0.02
Avail Cap(c_a), veh/h	135	2013	868	203	2284	996	498	523		559	587	490
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.6	22.4	16.2	47.8	22.9	13.1	44.7	44.7	0.0	44.5	44.4	39.4
Incr Delay (d2), s/veh	27.9	1.2	0.0	33.2	5.6	0.0	3.0	2.8	0.0	3.0	2.5	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(50%),veh/ln	2.4	12.0	1.2	5.3	18.7	1.9	5.3	5.6	0.0	5.5	5.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.5	23.7	16.2	80.9	28.5	13.1	47.7	47.5	0.0	47.5	46.8	39.4
LnGrp LOS	E	C	B	F	C	B	D	D		D	D	D
Approach Vol, veh/h		1490			2076			420	A		429	
Approach Delay, s/veh		25.9			31.0			47.6			47.1	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.7	55.2		18.7	8.6	60.3		18.4
Change Period (Y+Rc), s	3.0	6.0		4.4	3.0	6.0		4.4
Max Green Setting (Gmax), s	13.0	57.6		32.6	9.0	65.6		29.0
Max Q Clear Time (g_c+I1), s	10.8	34.1		14.1	6.3	49.8		13.8
Green Ext Time (p_c), s	0.0	3.0		0.2	0.0	4.5		0.2

Intersection Summary	
HCM 6th Ctrl Delay	32.4
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	160	1113	75	255	100	1331	450	45	95	710	261
Future Volume (veh/h)	141	160	1113	75	255	100	1331	450	45	95	710	261
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	157	178	0	83	283	0	1479	500	0	106	789	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	171	568		90	381		1485	779		422	841	
Arrive On Green	0.10	0.16	0.00	0.05	0.11	0.00	0.41	0.41	0.00	0.23	0.23	0.00
Sat Flow, veh/h	1795	3582	1598	1795	3582	1598	3591	1885	1598	1795	3582	1598
Grp Volume(v), veh/h	157	178	0	83	283	0	1479	500	0	106	789	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1598	1795	1885	1598	1795	1791	1598
Q Serve(g_s), s	9.7	4.9	0.0	5.2	8.6	0.0	46.0	23.7	0.0	5.4	24.2	0.0
Cycle Q Clear(g_c), s	9.7	4.9	0.0	5.2	8.6	0.0	46.0	23.7	0.0	5.4	24.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	171	568		90	381		1485	779		422	841	
V/C Ratio(X)	0.92	0.31		0.92	0.74		1.00	0.64		0.25	0.94	
Avail Cap(c_a), veh/h	385	854		224	669		1485	779		422	841	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.2	41.7	0.0	53.0	48.5	0.0	32.7	26.2	0.0	34.8	42.0	0.0
Incr Delay (d2), s/veh	7.8	0.1	0.0	13.4	1.1	0.0	22.4	1.4	0.0	0.1	17.6	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(50%),veh/ln	4.6	2.1	0.0	2.6	3.8	0.0	23.4	10.4	0.0	2.3	12.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.0	41.8	0.0	66.3	49.6	0.0	55.1	27.6	0.0	34.9	59.6	0.0
LnGrp LOS	E	D		E	D		E	C		C	E	
Approach Vol, veh/h		335	A		366	A		1979	A		895	A
Approach Delay, s/veh		49.4			53.4			48.2			56.7	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	21.7		30.3	14.7	16.7		50.3
Change Period (Y+Rc), s	3.0	5.7		5.3	3.0	* 5.7		5.3
Max Green Setting (Gmax), s	15.0	25.0		25.0	25.0	* 20		45.0
Max Q Clear Time (g_c+I1), s	7.2	6.9		26.2	11.7	10.6		48.0
Green Ext Time (p_c), s	0.0	0.3		0.0	0.0	0.4		0.0

Intersection Summary	
HCM 6th Ctrl Delay	51.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	15	165	25	6	45	146	1601	75	110	1162	35
Future Volume (veh/h)	130	15	165	25	6	45	146	1601	75	110	1162	35
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		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	0	0	27	7	-5	159	1740	42	120	1263	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	325	0	144	81	21	90	187	1957	594	572	3135	947
Arrive On Green	0.09	0.00	0.00	0.06	0.06	0.00	0.10	0.38	0.38	0.64	1.00	1.00
Sat Flow, veh/h	3563	0	1585	1429	370	1585	1781	5106	1550	1781	5106	1542
Grp Volume(v), veh/h	152	0	0	34	0	-5	159	1740	42	120	1263	17
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1799	0	1585	1781	1702	1550	1781	1702	1542
Q Serve(g_s), s	4.9	0.0	0.0	2.2	0.0	0.0	10.5	38.3	2.1	3.3	0.0	0.0
Cycle Q Clear(g_c), s	4.9	0.0	0.0	2.2	0.0	0.0	10.5	38.3	2.1	3.3	0.0	0.0
Prop In Lane	1.00		1.00	0.79		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	325	0	144	102	0	90	187	1957	594	572	3135	947
V/C Ratio(X)	0.47	0.00	0.00	0.33	0.00	-0.06	0.85	0.89	0.07	0.21	0.40	0.02
Avail Cap(c_a), veh/h	623	0	277	315	0	277	312	1957	594	572	3135	947
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	0.0	0.0	54.4	0.0	0.0	52.8	34.6	23.5	15.2	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.7	0.0	0.0	5.1	6.5	0.2	0.1	0.2	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	2.2	0.0	0.0	1.0	0.0	0.0	4.8	16.1	0.8	1.3	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.2	0.0	0.0	55.1	0.0	0.0	57.8	41.1	23.7	15.2	0.2	0.0
LnGrp LOS	D	A	A	E	A	A	E	D	C	B	A	A
Approach Vol, veh/h		152			29			1941			1400	
Approach Delay, s/veh		52.2			64.6			42.1			1.5	
Approach LOS		D			E			D			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.3	50.0		14.9	16.6	77.7		10.8
Change Period (Y+Rc), s	5.7	* 5.7		4.0	4.0	5.7		4.0
Max Green Setting (Gmax), s	16.6	* 44		21.0	21.0	39.3		21.0
Max Q Clear Time (g_c+I1), s	15.3	40.3		6.9	12.5	2.0		4.2
Green Ext Time (p_c), s	0.1	3.8		0.2	0.1	21.3		0.1

Intersection Summary	
HCM 6th Ctrl Delay	26.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	300	90	65	550	320	294	1301	75	180	917	210
Future Volume (veh/h)	187	300	90	65	550	320	294	1301	75	180	917	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	203	326	0	71	598	0	320	1414	0	196	997	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	229	811		261	622		377	2418		259	2170	
Arrive On Green	0.13	0.23	0.00	0.08	0.17	0.00	0.11	0.47	0.00	0.07	0.43	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	203	326	0	71	598	0	320	1414	0	196	997	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	13.4	9.4	0.0	2.3	20.0	0.0	10.9	24.2	0.0	6.7	16.7	0.0
Cycle Q Clear(g_c), s	13.4	9.4	0.0	2.3	20.0	0.0	10.9	24.2	0.0	6.7	16.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	229	811		261	622		377	2418		259	2170	
V/C Ratio(X)	0.89	0.40		0.27	0.96		0.85	0.58		0.76	0.46	
Avail Cap(c_a), veh/h	238	811		461	622		461	2418		749	2170	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.4	39.3	0.0	52.4	49.1	0.0	52.5	23.0	0.0	54.4	24.7	0.0
Incr Delay (d2), s/veh	28.6	0.6	0.0	0.2	26.9	0.0	10.1	0.5	0.0	1.7	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	4.1	0.0	1.0	11.1	0.0	5.1	9.2	0.0	2.9	6.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.0	39.9	0.0	52.6	76.0	0.0	62.6	23.5	0.0	56.2	25.4	0.0
LnGrp LOS	E	D		D	E		E	C		E	C	
Approach Vol, veh/h		529	A		669	A		1734	A		1193	A
Approach Delay, s/veh		55.3			73.6			30.7			30.4	
Approach LOS		E			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	60.8	13.1	31.4	18.8	55.0	19.4	25.0
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	5.7
Max Green Setting (Gmax), s	26.0	39.3	16.0	19.3	16.0	* 49	16.0	19.3
Max Q Clear Time (g_c+I1), s	8.7	26.2	4.3	11.4	12.9	18.7	15.4	22.0
Green Ext Time (p_c), s	0.3	9.7	0.1	1.7	0.2	12.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	40.7
HCM 6th LOS	D

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	660	815	41	113	70
Future Vol, veh/h	30	660	815	41	113	70
Conflicting Peds, #/hr	6	0	0	6	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	37	805	994	50	138	85

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1050	0	-	0	1478	503
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	478	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	665	-	-	-	~ 118	517
Stage 1	-	-	-	-	319	-
Stage 2	-	-	-	-	592	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	661	-	-	-	~ 110	514
Mov Cap-2 Maneuver	-	-	-	-	221	-
Stage 1	-	-	-	-	299	-
Stage 2	-	-	-	-	588	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	32.9
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	661	-	-	-	221	514
HCM Lane V/C Ratio	0.055	-	-	-	0.624	0.166
HCM Control Delay (s)	10.8	-	-	-	45	13.4
HCM Lane LOS	B	-	-	-	E	B
HCM 95th %tile Q(veh)	0.2	-	-	-	3.7	0.6

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	220	0	130	6	1671	140	117	1772	0
Future Volume (veh/h)	0	0	0	220	0	130	6	1671	140	117	1772	0
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1885	0	1885	1885	1885	1885	1885	1885	0
Adj Flow Rate, veh/h				244	0	30	7	1857	139	130	1969	0
Peak Hour Factor				0.90	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.92
Percent Heavy Veh, %				1	0	1	1	1	1	1	1	0
Cap, veh/h				299	0	266	13	2137	953	162	2435	0
Arrive On Green				0.17	0.00	0.17	0.01	0.60	0.60	0.09	0.68	0.00
Sat Flow, veh/h				1795	0	1598	1795	3582	1598	1795	3676	0
Grp Volume(v), veh/h				244	0	30	7	1857	139	130	1969	0
Grp Sat Flow(s),veh/h/ln				1795	0	1598	1795	1791	1598	1795	1791	0
Q Serve(g_s), s				10.8	0.0	1.3	0.3	35.6	3.2	5.8	32.1	0.0
Cycle Q Clear(g_c), s				10.8	0.0	1.3	0.3	35.6	3.2	5.8	32.1	0.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				299	0	266	13	2137	953	162	2435	0
V/C Ratio(X)				0.82	0.00	0.11	0.54	0.87	0.15	0.80	0.81	0.00
Avail Cap(c_a), veh/h				656	0	584	175	2226	993	175	2435	0
HCM Platoon Ratio				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	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				33.0	0.0	29.0	40.6	13.9	7.3	36.6	9.3	0.0
Incr Delay (d2), s/veh				6.4	0.0	0.2	12.5	3.9	0.1	19.3	2.1	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
%ile BackOfQ(50%),veh/ln				5.1	0.0	0.5	0.2	12.4	0.9	3.3	9.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				39.4	0.0	29.3	53.1	17.8	7.4	55.9	11.5	0.0
LnGrp LOS				D	A	C	D	B	A	E	B	A
Approach Vol, veh/h					274			2003			2099	
Approach Delay, s/veh					38.3			17.2			14.2	
Approach LOS					D			B			B	

Timer - Assigned Phs	1	2		5	6	8
Phs Duration (G+Y+Rc), s	11.4	53.0		4.6	59.8	17.7
Change Period (Y+Rc), s	4.0	5.7		4.0	* 5.7	4.0
Max Green Setting (Gmax), s	8.0	49.3		8.0	* 52	30.0
Max Q Clear Time (g_c+I1), s	7.8	37.6		2.3	34.1	12.8
Green Ext Time (p_c), s	0.0	9.6		0.0	13.6	0.9

Intersection Summary	
HCM 6th Ctrl Delay	17.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	2	130	0	1	2	255	1641	0	2	1782	210
Future Volume (veh/h)	155	2	130	0	1	2	255	1641	0	2	1782	210
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	172	2	3	0	1	-4	283	1823	0	2	1980	186
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	205	2	185	2	0	360	300	2656	0	37	2131	928
Arrive On Green	0.12	0.12	0.12	0.00	0.00	0.00	0.17	0.74	0.00	0.02	0.60	0.60
Sat Flow, veh/h	1776	21	1598	1795	1885	0	1795	3676	0	1795	3582	1559
Grp Volume(v), veh/h	174	0	3	0	-3	-3	283	1823	0	2	1980	186
Grp Sat Flow(s),veh/h/ln	1796	0	1598	1795	1885	1598	1795	1791	0	1795	1791	1559
Q Serve(g_s), s	9.3	0.0	0.2	0.0	0.0	0.0	15.3	26.2	0.0	0.1	49.0	5.4
Cycle Q Clear(g_c), s	9.3	0.0	0.2	0.0	0.0	0.0	15.3	26.2	0.0	0.1	49.0	5.4
Prop In Lane	0.99		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	208	0	185	2	0	0	300	2656	0	37	2131	928
V/C Ratio(X)	0.84	0.00	0.02	0.00	0.00	0.00	0.94	0.69	0.00	0.05	0.93	0.20
Avail Cap(c_a), veh/h	220	0	196	614	0	0	330	2980	0	147	2395	1043
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	0.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.4	0.0	38.4	0.0	0.0	0.0	40.4	6.7	0.0	47.1	18.0	9.1
Incr Delay (d2), s/veh	21.3	0.0	0.0	0.0	0.0	0.0	32.7	0.4	0.0	0.2	6.3	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(50%),veh/ln	5.3	0.0	0.1	0.0	0.0	0.0	9.1	6.2	0.0	0.0	18.9	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.8	0.0	38.4	0.0	0.0	0.0	73.1	7.1	0.0	47.3	24.2	9.2
LnGrp LOS	E	A	D	A	A	A	E	A	A	D	C	A
Approach Vol, veh/h		177			-6			2106			2168	
Approach Delay, s/veh		63.3			0.0			16.0			23.0	
Approach LOS		E			A			B			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	76.6		15.3	20.3	62.3		0.0
Change Period (Y+Rc), s	3.0	5.7		4.1	3.0	5.7		3.5
Max Green Setting (Gmax), s	9.0	79.8		11.9	19.0	63.8		34.0
Max Q Clear Time (g_c+I1), s	2.1	28.2		11.3	17.3	51.0		0.0
Green Ext Time (p_c), s	0.0	5.4		0.0	0.1	5.6		0.0

Intersection Summary	
HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	555	1687	320	433	1524	241	495	1150	262	253	1060	215
Future Volume (veh/h)	555	1687	320	433	1524	241	495	1150	262	253	1060	215
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	590	1795	245	461	1621	0	527	1223	0	269	1128	68
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	557	1784	553	480	1670		488	1636		316	1383	408
Arrive On Green	0.16	0.35	0.35	0.14	0.32	0.00	0.14	0.32	0.00	0.09	0.27	0.26
Sat Flow, veh/h	3483	5147	1596	3483	5147	1598	3483	5147	1598	3483	5147	1596
Grp Volume(v), veh/h	590	1795	245	461	1621	0	527	1223	0	269	1128	68
Grp Sat Flow(s),veh/h/ln	1742	1716	1596	1742	1716	1598	1742	1716	1598	1742	1716	1596
Q Serve(g_s), s	24.0	52.0	11.8	19.7	46.6	0.0	21.0	31.9	0.0	11.4	30.8	5.0
Cycle Q Clear(g_c), s	24.0	52.0	11.8	19.7	46.6	0.0	21.0	31.9	0.0	11.4	30.8	5.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	557	1784	553	480	1670		488	1636		316	1383	408
V/C Ratio(X)	1.06	1.01	0.44	0.96	0.97		1.08	0.75		0.85	0.82	0.17
Avail Cap(c_a), veh/h	557	1784	553	480	1670		488	1636		418	1475	436
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.0	49.0	16.6	64.2	50.0	0.0	64.5	45.8	0.0	67.2	51.4	43.4
Incr Delay (d2), s/veh	54.6	22.8	2.6	30.8	16.1	0.0	64.3	2.0	0.0	9.7	3.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.6	25.3	4.6	10.7	21.9	0.0	13.5	13.6	0.0	5.4	13.4	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	117.6	71.8	19.2	95.0	66.0	0.0	128.8	47.8	0.0	76.9	55.1	43.7
LnGrp LOS	F	F	B	F	E		F	D		E	E	D
Approach Vol, veh/h		2630			2082	A		1750	A		1465	
Approach Delay, s/veh		77.2			72.4			72.2			58.6	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.7	56.0	25.0	44.3	28.0	52.7	17.6	51.7
Change Period (Y+Rc), s	6.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	16.0	50.0	21.0	41.0	24.0	44.0	18.0	44.0
Max Q Clear Time (g_c+I1), s	21.7	54.0	23.0	32.8	26.0	48.6	13.4	33.9
Green Ext Time (p_c), s	0.0	0.0	0.0	5.5	0.0	0.0	0.2	6.4

Intersection Summary	
HCM 6th Ctrl Delay	71.4
HCM 6th LOS	E

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	1921	25	90	1657	95	130	40	111	110	45	310
Future Volume (veh/h)	90	1921	25	90	1657	95	130	40	111	110	45	310
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		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	96	2044	12	96	1763	71	138	43	32	117	48	110
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	116	3217	19	117	2185	955	157	49	181	136	56	168
Arrive On Green	0.13	1.00	1.00	0.07	0.61	0.61	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1795	5280	31	1795	3582	1565	1385	431	1598	1291	530	1598
Grp Volume(v), veh/h	96	1328	728	96	1763	71	181	0	32	165	0	110
Grp Sat Flow(s),veh/h/ln	1795	1716	1880	1795	1791	1565	1816	0	1598	1821	0	1598
Q Serve(g_s), s	7.8	0.0	0.0	7.9	56.7	2.8	14.7	0.0	2.7	13.4	0.0	9.9
Cycle Q Clear(g_c), s	7.8	0.0	0.0	7.9	56.7	2.8	14.7	0.0	2.7	13.4	0.0	9.9
Prop In Lane	1.00		0.02	1.00		1.00	0.76		1.00	0.71		1.00
Lane Grp Cap(c), veh/h	116	2091	1145	117	2185	955	206	0	181	192	0	168
V/C Ratio(X)	0.83	0.64	0.64	0.82	0.81	0.07	0.88	0.00	0.18	0.86	0.00	0.65
Avail Cap(c_a), veh/h	251	2091	1145	251	2185	955	254	0	224	255	0	224
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)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	64.5	0.0	0.0	69.2	22.5	11.9	65.5	0.0	60.2	66.0	0.0	64.5
Incr Delay (d2), s/veh	5.5	1.5	2.7	5.2	3.3	0.2	21.5	0.0	0.2	16.2	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.4	0.9	3.7	22.3	0.9	8.1	0.0	1.1	7.1	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.0	1.5	2.7	74.4	25.8	12.1	87.0	0.0	60.3	82.3	0.0	66.1
LnGrp LOS	E	A	A	E	C	B	F	A	E	F	A	E
Approach Vol, veh/h		2152			1930			213			275	
Approach Delay, s/veh		5.0			27.7			83.0			75.8	
Approach LOS		A			C			F			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.8	95.4		19.8	13.7	95.5		21.0
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0
Max Green Setting (Gmax), s	21.0	69.0		21.0	21.0	69.0		21.0
Max Q Clear Time (g_c+I1), s	9.9	2.0		15.4	9.8	58.7		16.7
Green Ext Time (p_c), s	0.1	29.6		0.4	0.1	8.0		0.3

Intersection Summary	
HCM 6th Ctrl Delay	22.5
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	2032	70	51	1797	4	5	0	51	0	1	40
Future Vol, veh/h	46	2032	70	51	1797	4	5	0	51	0	1	40
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	150	-	100	175	-	-	-	-	125	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	49	2162	74	54	1912	4	5	0	54	0	1	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1916	0	0	2236	0	0	3325	4284	1081	3201	4356	958
Stage 1	-	-	-	-	-	-	2260	2260	-	2022	2022	-
Stage 2	-	-	-	-	-	-	1065	2024	-	1179	2334	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.52	6.52	6.92	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Follow-up Hdwy	2.21	-	-	2.21	-	-	3.51	4.01	3.31	3.51	4.01	3.31
Pot Cap-1 Maneuver	309	-	-	232	-	-	~ 3	2	215	4	2	259
Stage 1	-	-	-	-	-	-	42	77	-	60	102	-
Stage 2	-	-	-	-	-	-	240	102	-	204	70	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	309	-	-	232	-	-	-	1	215	2	~ 1	259
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	1	-	2	~ 1	-
Stage 1	-	-	-	-	-	-	35	65	-	50	78	-
Stage 2	-	-	-	-	-	-	152	78	-	128	59	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.7		141.4
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	215	309	-	-	232	-	-	1	259
HCM Lane V/C Ratio	-	0.252	0.158	-	-	0.234	-	-	1.064	0.164
HCM Control Delay (s)	-	27.3	18.8	-	-	25.2	-	-	$ 4932.2	21.6
HCM Lane LOS	-	D	C	-	-	D	-	-	F	C
HCM 95th %tile Q(veh)	-	1	0.6	-	-	0.9	-	-	0.6	0.6

Notes

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2070	18	0	1852	0	11
Future Vol, veh/h	2070	18	0	1852	0	11
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	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	2202	19	0	1970	0	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1111
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	-	0	-	0	205
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	205
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	23.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	205	-	-	-
HCM Lane V/C Ratio	0.057	-	-	-
HCM Control Delay (s)	23.6	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	2033	0	0	1805	20	0	0	0	30	0	35
Future Volume (veh/h)	42	2033	0	0	1805	20	0	0	0	30	0	35
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98				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
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1885	1885	0	1885	1885	1885				1885	0	1885
Adj Flow Rate, veh/h	45	2163	0	0	1920	20				32	0	-4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	1	1	0	1	1	1				1	0	1
Cap, veh/h	16	2993	0	3	2734	28				29	0	26
Arrive On Green	0.01	0.84	0.00	0.00	0.75	0.72				0.02	0.00	0.00
Sat Flow, veh/h	1795	3676	0	1795	3631	38				1795	0	1598
Grp Volume(v), veh/h	45	2163	0	0	945	995				32	0	-4
Grp Sat Flow(s),veh/h/ln	1795	1791	0	1795	1791	1877				1795	0	1598
Q Serve(g_s), s	0.5	13.5	0.0	0.0	14.9	15.1				0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.5	13.5	0.0	0.0	14.9	15.1				0.9	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.02				1.00		1.00
Lane Grp Cap(c), veh/h	16	2993	0	3	1348	1414				29	0	26
V/C Ratio(X)	2.86	0.72	0.00	0.00	0.70	0.70				1.10	0.00	-0.16
Avail Cap(c_a), veh/h	266	4410	0	299	2139	2242				848	0	754
HCM Platoon Ratio	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	0.00	1.00	1.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	26.8	1.8	0.0	0.0	3.5	3.5				26.6	0.0	0.0
Incr Delay (d2), s/veh	852.4	0.3	0.0	0.0	0.7	0.7				78.3	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
%ile BackOfQ(50%),veh/ln	3.9	0.1	0.0	0.0	0.3	0.3				1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	879.2	2.2	0.0	0.0	4.2	4.2				104.9	0.0	0.0
LnGrp LOS	F	A	A	A	A	A				F	A	A
Approach Vol, veh/h		2208			1940						28	
Approach Delay, s/veh		20.1			4.2						119.9	
Approach LOS		C			A						F	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	4.5	44.7		4.9	0.0	49.1
Change Period (Y+Rc), s	3.0	6.0		3.5	3.0	6.0
Max Green Setting (Gmax), s	9.0	62.5		26.0	9.0	64.5
Max Q Clear Time (g_c+I1), s	2.5	17.1		2.9	0.0	15.5
Green Ext Time (p_c), s	0.0	20.8		0.0	0.0	27.6

Intersection Summary	
HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	1653	260	145	1514	230	176	135	130	210	190	65
Future Volume (veh/h)	74	1653	260	145	1514	230	176	135	130	210	190	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	76	1704	189	149	1561	190	160	168	0	206	210	3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	81	1855	780	163	2017	899	200	210		244	256	217
Arrive On Green	0.04	0.51	0.49	0.09	0.56	0.56	0.11	0.11	0.00	0.13	0.13	0.13
Sat Flow, veh/h	1810	3610	1577	1810	3610	1609	1810	1900	1610	1810	1900	1610
Grp Volume(v), veh/h	76	1704	189	149	1561	190	160	168	0	206	210	3
Grp Sat Flow(s),veh/h/ln	1810	1805	1577	1810	1805	1609	1810	1900	1610	1810	1900	1610
Q Serve(g_s), s	4.4	46.1	7.3	8.7	35.6	6.3	9.1	9.1	0.0	11.8	11.4	0.2
Cycle Q Clear(g_c), s	4.4	46.1	7.3	8.7	35.6	6.3	9.1	9.1	0.0	11.8	11.4	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	81	1855	780	163	2017	899	200	210		244	256	217
V/C Ratio(X)	0.94	0.92	0.24	0.92	0.77	0.21	0.80	0.80		0.84	0.82	0.01
Avail Cap(c_a), veh/h	154	2556	1086	205	2658	1184	502	527		301	316	267
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.4	23.7	15.4	47.8	18.2	11.7	46.0	46.0	0.0	44.7	44.6	39.7
Incr Delay (d2), s/veh	16.5	3.8	0.1	32.2	0.7	0.0	2.8	2.7	0.0	14.0	10.8	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(50%),veh/ln	2.3	17.6	2.3	5.2	12.8	2.0	4.2	4.4	0.0	6.1	6.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.9	27.6	15.4	80.0	18.9	11.7	48.8	48.7	0.0	58.7	55.4	39.7
LnGrp LOS	E	C	B	E	B	B	D	D		E	E	D
Approach Vol, veh/h		1969			1900			328	A		419	
Approach Delay, s/veh		27.9			23.0			48.7			56.9	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.5	58.4		18.3	8.8	63.2		15.7
Change Period (Y+Rc), s	3.0	6.0		4.4	3.0	6.0		4.4
Max Green Setting (Gmax), s	13.0	73.0		17.2	10.0	76.0		29.0
Max Q Clear Time (g_c+I1), s	10.7	48.1		13.8	6.4	37.6		11.1
Green Ext Time (p_c), s	0.0	4.4		0.1	0.0	4.1		0.1

Intersection Summary	
HCM 6th Ctrl Delay	30.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	305	1161	60	290	115	1182	765	80	125	515	206
Future Volume (veh/h)	216	305	1161	60	290	115	1182	765	80	125	515	206
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	225	318	0	62	302	0	1231	797	0	130	536	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	240	785		64	409		1503	789		326	651	
Arrive On Green	0.13	0.22	0.00	0.04	0.11	0.00	0.42	0.42	0.00	0.18	0.18	0.00
Sat Flow, veh/h	1795	3582	1598	1795	3582	1598	3591	1885	1598	1795	3582	1598
Grp Volume(v), veh/h	225	318	0	62	302	0	1231	797	0	130	536	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1598	1795	1885	1598	1795	1791	1598
Q Serve(g_s), s	13.7	8.4	0.0	3.8	9.0	0.0	33.5	46.3	0.0	7.1	15.9	0.0
Cycle Q Clear(g_c), s	13.7	8.4	0.0	3.8	9.0	0.0	33.5	46.3	0.0	7.1	15.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	240	785		64	409		1503	789		326	651	
V/C Ratio(X)	0.94	0.40		0.97	0.74		0.82	1.01		0.40	0.82	
Avail Cap(c_a), veh/h	390	865		227	677		1503	789		427	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	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.5	37.0	0.0	53.3	47.4	0.0	28.4	32.2	0.0	39.9	43.6	0.0
Incr Delay (d2), s/veh	16.1	0.1	0.0	24.3	1.0	0.0	3.5	34.5	0.0	0.3	3.9	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(50%),veh/ln	6.9	3.5	0.0	2.1	4.0	0.0	14.3	27.3	0.0	3.0	7.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.6	37.1	0.0	77.6	48.4	0.0	31.9	66.7	0.0	40.2	47.5	0.0
LnGrp LOS	E	D		E	D		C	F		D	D	
Approach Vol, veh/h		543	A		364	A		2028	A		666	A
Approach Delay, s/veh		48.1			53.3			45.6			46.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	28.3		24.1	18.8	17.4		50.3
Change Period (Y+Rc), s	3.0	5.7		5.3	3.0	* 5.7		5.3
Max Green Setting (Gmax), s	15.0	25.0		25.0	25.0	* 20		45.0
Max Q Clear Time (g_c+I1), s	5.8	10.4		17.9	15.7	11.0		48.3
Green Ext Time (p_c), s	0.0	0.5		0.8	0.1	0.5		0.0

Intersection Summary	
HCM 6th Ctrl Delay	46.8
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	15	265	75	15	100	185	1502	50	120	1511	65
Future Volume (veh/h)	190	15	265	75	15	100	185	1502	50	120	1511	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	213	0	13	80	16	-6	197	1598	25	128	1607	30
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	358	0	156	131	26	139	225	1973	607	507	2854	883
Arrive On Green	0.10	0.00	0.10	0.09	0.09	0.00	0.13	0.38	0.38	0.28	0.55	0.55
Sat Flow, veh/h	3591	0	1569	1508	302	1598	1795	5147	1583	1795	5147	1593
Grp Volume(v), veh/h	213	0	13	96	0	-6	197	1598	25	128	1607	30
Grp Sat Flow(s),veh/h/ln	1795	0	1569	1810	0	1598	1795	1716	1583	1795	1716	1593
Q Serve(g_s), s	6.8	0.0	0.9	6.1	0.0	0.0	12.9	33.3	1.2	6.6	24.3	1.0
Cycle Q Clear(g_c), s	6.8	0.0	0.9	6.1	0.0	0.0	12.9	33.3	1.2	6.6	24.3	1.0
Prop In Lane	1.00		1.00	0.83		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	358	0	156	158	0	139	225	1973	607	507	2854	883
V/C Ratio(X)	0.59	0.00	0.08	0.61	0.00	-0.04	0.88	0.81	0.04	0.25	0.56	0.03
Avail Cap(c_a), veh/h	628	0	275	317	0	280	314	1973	607	507	2854	883
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	49.0	52.8	0.0	0.0	51.6	33.1	23.2	33.3	17.3	12.1
Incr Delay (d2), s/veh	0.6	0.0	0.1	1.4	0.0	0.0	14.1	3.7	0.1	0.1	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(50%),veh/ln	3.1	0.0	0.4	2.9	0.0	0.0	6.5	13.8	0.5	2.8	8.9	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.3	0.0	49.1	54.2	0.0	0.0	65.6	36.8	23.3	33.4	17.8	12.2
LnGrp LOS	D	A	D	D	A	A	E	D	C	C	B	B
Approach Vol, veh/h		226			90			1820			1765	
Approach Delay, s/veh		52.1			57.8			39.8			18.8	
Approach LOS		D			E			D			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	39.6	50.0		16.0	19.0	70.5		14.5
Change Period (Y+Rc), s	5.7	* 5.7		4.0	4.0	5.7		4.0
Max Green Setting (Gmax), s	16.0	* 44		21.0	21.0	39.3		21.0
Max Q Clear Time (g_c+I1), s	19.6	35.3		8.8	14.9	26.3		8.1
Green Ext Time (p_c), s	0.1	8.0		0.3	0.1	11.3		0.2

Intersection Summary	
HCM 6th Ctrl Delay	31.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	257	570	270	75	430	240	280	1142	70	245	1271	280
Future Volume (veh/h)	257	570	270	75	430	240	280	1142	70	245	1271	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	273	606	0	80	457	0	298	1215	0	261	1352	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	301	903		270	580		357	1881		324	1758	
Arrive On Green	0.17	0.25	0.00	0.08	0.16	0.00	0.10	0.37	0.00	0.09	0.34	0.00
Sat Flow, veh/h	1795	3582	1598	3483	3582	1598	3483	5147	1598	3483	5147	1598
Grp Volume(v), veh/h	273	606	0	80	457	0	298	1215	0	261	1352	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1742	1791	1598	1742	1716	1598	1742	1716	1598
Q Serve(g_s), s	17.9	18.3	0.0	2.6	14.7	0.0	10.1	23.5	0.0	8.8	28.1	0.0
Cycle Q Clear(g_c), s	17.9	18.3	0.0	2.6	14.7	0.0	10.1	23.5	0.0	8.8	28.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	301	903		270	580		357	1881		324	1758	
V/C Ratio(X)	0.91	0.67		0.30	0.79		0.84	0.65		0.81	0.77	
Avail Cap(c_a), veh/h	389	903		610	627		464	1881		610	1758	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.0	40.4	0.0	52.3	48.3	0.0	52.9	31.6	0.0	53.4	35.3	0.0
Incr Delay (d2), s/veh	18.3	2.4	0.0	0.2	7.1	0.0	7.9	1.0	0.0	1.8	3.3	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(50%),veh/ln	9.4	8.2	0.0	1.1	7.1	0.0	4.7	9.5	0.0	3.8	11.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.3	42.8	0.0	52.5	55.4	0.0	60.7	32.6	0.0	55.2	38.6	0.0
LnGrp LOS	E	D		D	E		E	C		E	D	
Approach Vol, veh/h		879	A		537	A		1513	A		1613	A
Approach Delay, s/veh		50.4			55.0			38.1			41.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	47.8	13.3	34.2	18.0	45.0	24.1	23.4
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	5.7
Max Green Setting (Gmax), s	21.0	34.3	21.0	24.3	16.0	* 39	26.0	19.3
Max Q Clear Time (g_c+I1), s	10.8	25.5	4.6	20.3	12.1	30.1	19.9	16.7
Green Ext Time (p_c), s	0.3	6.3	0.1	1.9	0.2	7.0	0.2	1.0

Intersection Summary	
HCM 6th Ctrl Delay	43.6
HCM 6th LOS	D

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	755	655	26	66	60
Future Vol, veh/h	45	755	655	26	66	60
Conflicting Peds, #/hr	1	0	0	1	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	50	839	728	29	73	67

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	758	0	-	0	1252	365
Stage 1	-	-	-	-	729	-
Stage 2	-	-	-	-	523	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	862	-	-	-	167	638
Stage 1	-	-	-	-	444	-
Stage 2	-	-	-	-	565	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	861	-	-	-	157	637
Mov Cap-2 Maneuver	-	-	-	-	281	-
Stage 1	-	-	-	-	418	-
Stage 2	-	-	-	-	564	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	17.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	861	-	-	-	281	637
HCM Lane V/C Ratio	0.058	-	-	-	0.261	0.105
HCM Control Delay (s)	9.4	-	-	-	22.3	11.3
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	105	0	80	15	1902	105	85	1661	0
Future Volume (veh/h)	0	0	0	105	0	80	15	1902	105	85	1661	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		0.98	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
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1885	0	1885	1885	1885	1885	1885	1885	0
Adj Flow Rate, veh/h				109	0	9	16	1981	100	89	1730	0
Peak Hour Factor				0.96	0.92	0.96	0.96	0.96	0.96	0.96	0.96	0.92
Percent Heavy Veh, %				1	0	1	1	1	1	1	1	0
Cap, veh/h				150	0	134	27	2445	1066	115	2619	0
Arrive On Green				0.08	0.00	0.08	0.02	0.68	0.68	0.06	0.73	0.00
Sat Flow, veh/h				1795	0	1598	1795	3582	1562	1795	3676	0
Grp Volume(v), veh/h				109	0	9	16	1981	100	89	1730	0
Grp Sat Flow(s),veh/h/ln				1795	0	1598	1795	1791	1562	1795	1791	0
Q Serve(g_s), s				4.2	0.0	0.4	0.6	27.8	1.5	3.4	17.7	0.0
Cycle Q Clear(g_c), s				4.2	0.0	0.4	0.6	27.8	1.5	3.4	17.7	0.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				150	0	134	27	2445	1066	115	2619	0
V/C Ratio(X)				0.72	0.00	0.07	0.58	0.81	0.09	0.78	0.66	0.00
Avail Cap(c_a), veh/h				762	0	678	203	2687	1172	203	2738	0
HCM Platoon Ratio				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	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				31.6	0.0	29.8	34.6	8.0	3.8	32.6	4.9	0.0
Incr Delay (d2), s/veh				7.7	0.0	0.3	7.1	1.9	0.0	4.2	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
%ile BackOfQ(50%),veh/ln				2.1	0.0	0.1	0.3	7.0	0.3	1.5	3.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				39.3	0.0	30.1	41.7	9.8	3.8	36.8	5.5	0.0
LnGrp LOS				D	A	C	D	A	A	D	A	A
Approach Vol, veh/h					118			2097			1819	
Approach Delay, s/veh					38.6			9.8			7.0	
Approach LOS					D			A			A	

Timer - Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	8.5	52.2			5.1	55.7		9.9				
Change Period (Y+Rc), s	4.0	5.7			4.0	* 5.7		4.0				
Max Green Setting (Gmax), s	8.0	51.3			8.0	* 52		30.0				
Max Q Clear Time (g_c+I1), s	5.4	29.8			2.6	19.7		6.2				
Green Ext Time (p_c), s	0.0	16.8			0.0	17.3		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			9.4									
HCM 6th LOS			A									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	1	340	0	0	1	267	1892	0	17	1611	115
Future Volume (veh/h)	115	1	340	0	0	1	267	1892	0	17	1611	115
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	120	1	21	0	0	-4	278	1971	0	18	1678	84
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	164	1	147	3	0	360	306	2453	0	57	1956	853
Arrive On Green	0.09	0.09	0.09	0.00	0.00	0.00	0.17	0.68	0.00	0.03	0.55	0.55
Sat Flow, veh/h	1781	15	1598	1795	1885	0	1795	3676	0	1795	3582	1562
Grp Volume(v), veh/h	121	0	21	0	-4	-4	278	1971	0	18	1678	84
Grp Sat Flow(s),veh/h/ln	1796	0	1598	1795	1885	1598	1795	1791	0	1795	1791	1562
Q Serve(g_s), s	4.1	0.0	0.8	0.0	0.0	0.0	9.5	24.2	0.0	0.6	25.1	1.6
Cycle Q Clear(g_c), s	4.1	0.0	0.8	0.0	0.0	0.0	9.5	24.2	0.0	0.6	25.1	1.6
Prop In Lane	0.99		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	165	0	147	3	0	0	306	2453	0	57	1956	853
V/C Ratio(X)	0.73	0.00	0.14	0.00	0.00	0.00	0.91	0.80	0.00	0.31	0.86	0.10
Avail Cap(c_a), veh/h	309	0	275	958	0	0	572	4717	0	229	3690	1610
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	0.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.8	0.0	26.2	0.0	0.0	0.0	25.6	6.9	0.0	29.7	12.2	6.8
Incr Delay (d2), s/veh	2.3	0.0	0.2	0.0	0.0	0.0	4.2	0.2	0.0	1.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.3	0.0	0.0	0.0	3.9	3.8	0.0	0.3	7.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	0.0	26.4	0.0	0.0	0.0	29.8	7.2	0.0	30.9	12.6	6.9
LnGrp LOS	C	A	C	A	A	A	C	A	A	C	B	A
Approach Vol, veh/h		142			-8			2249			1780	
Approach Delay, s/veh		29.5			0.0			10.0			12.5	
Approach LOS		C			A			A			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	47.0		9.8	14.7	38.3		0.0
Change Period (Y+Rc), s	3.0	5.7		4.1	3.0	5.7		3.5
Max Green Setting (Gmax), s	9.0	81.0		10.7	21.0	63.0		34.0
Max Q Clear Time (g_c+I1), s	2.6	26.2		6.1	11.5	27.1		0.0
Green Ext Time (p_c), s	0.0	6.2		0.1	0.3	5.5		0.0

Intersection Summary	
HCM 6th Ctrl Delay	11.7
HCM 6th LOS	B

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Woodgrove Way / Quail Oaks Dr & Douglas Blvd
Scenario	Cumulative Plus WHI

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Yield*	*Free*	*Free*	*Yield*	*Free*	*Free*
AM Peak Hour Volume	5	0	71	0	1	100	40	1474	55	91	1891	7
AM Peak Hour Delay (s)	3724.5	3724.5	19.4	2373.7	2373.7	33.9	21.1	0	0	17.6	0	0
PM Peak Hour Volume	5	0	51	0	1	40	46	2032	70	51	1797	4
PM Peak Hour Delay (s)	10000		27.3	4932.2	4932.2	21.6	18.8	0	0	25.2	0	0

AM Delay	**91.6**
AM LOS	**F**

PM Delay	**305.9**
PM LOS	**F**

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Woodgrove Way / Quail Oaks Dr & Douglas Blvd
Scenario	Cumulative Plus WHI

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Yield*	*Free*	*Free*	*Yield*	*Free*	*Free*
AM Peak Hour Volume	5	0	71	0	1	100	40	1474	55	91	1891	7
AM Peak Hour Delay (s)	600	0	19.4	0	600	33.9	21.1	0	0	17.6	0	0
PM Peak Hour Volume	5	0	51	0	1	40	46	2032	70	51	1797	4
PM Peak Hour Delay (s)	600	0	27.3	0	600	21.6	18.8	0	0	25.2	0	0

AM Delay	**35.1**
AM LOS	**D**

PM Delay	**41.3**
PM LOS	**E**

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	10. Eureka Rd & Greyhawk Dr
Scenario	Cumulative Plus WHI

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control				*Stop*		*Stop*	*Yield*	*Free*			*Free*	*Free*
AM Peak Hour Volume				113		70	30	660			815	41
AM Peak Hour Delay (s)				45.0		13.4	10.8	0			0	0
PM Peak Hour Volume				66		60	45	755			655	26
PM Peak Hour Delay (s)				22.3		11.3	9.4	0			0	0

AM Delay	**29.8**
AM LOS	**D**

PM Delay	**15.0**
PM LOS	**C**

Appendix H:
Cumulative Plus Whitehawk II Conditions – Technical Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	310	1304	225	338	1901	118	560	1030	156	212	825	290
Future Volume (veh/h)	310	1304	225	338	1901	118	560	1030	156	212	825	290
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	337	1417	66	367	2066	0	609	1120	0	230	897	168
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	394	1745	534	475	1865		605	1547		292	1085	335
Arrive On Green	0.11	0.34	0.34	0.14	0.37	0.00	0.23	0.40	0.00	0.08	0.21	0.21
Sat Flow, veh/h	3456	5106	1564	3456	5106	1585	3456	5106	1585	3456	5106	1576
Grp Volume(v), veh/h	337	1417	66	367	2066	0	609	1120	0	230	897	168
Grp Sat Flow(s),veh/h/ln	1728	1702	1564	1728	1702	1585	1728	1702	1585	1728	1702	1576
Q Serve(g_s), s	11.5	30.3	2.0	12.3	43.8	0.0	21.0	22.2	0.0	7.8	20.1	11.3
Cycle Q Clear(g_c), s	11.5	30.3	2.0	12.3	43.8	0.0	21.0	22.2	0.0	7.8	20.1	11.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	394	1745	534	475	1865		605	1547		292	1085	335
V/C Ratio(X)	0.86	0.81	0.12	0.77	1.11		1.01	0.72		0.79	0.83	0.50
Avail Cap(c_a), veh/h	461	1745	534	475	1865		605	1547		605	1106	341
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.2	36.0	9.2	49.9	38.1	0.0	46.0	31.6	0.0	53.9	45.1	41.7
Incr Delay (d2), s/veh	11.7	4.2	0.5	7.0	56.9	0.0	38.3	1.8	0.0	1.8	5.5	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(50%),veh/ln	5.5	12.7	1.3	5.6	27.0	0.0	11.4	8.3	0.0	3.4	8.8	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.9	40.2	9.7	56.9	94.9	0.0	84.4	33.4	0.0	55.7	50.6	43.4
LnGrp LOS	E	D	A	E	F		F	C		E	D	D
Approach Vol, veh/h		1820			2433	A		1729	A		1295	
Approach Delay, s/veh		43.5			89.2			51.4			50.6	
Approach LOS		D			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.5	45.0	25.0	29.5	17.7	47.8	14.1	40.4
Change Period (Y+Rc), s	6.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	14.0	39.0	21.0	24.0	16.0	39.0	21.0	24.0
Max Q Clear Time (g_c+I1), s	14.3	32.3	23.0	22.1	13.5	45.8	9.8	24.2
Green Ext Time (p_c), s	0.0	5.3	0.0	1.3	0.2	0.0	0.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	61.9
HCM 6th LOS	E

Notes

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

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1446	80	61	1849	110	60	20	45	80	30	365
Future Volume (veh/h)	60	1446	80	61	1849	110	60	20	45	80	30	365
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	1572	50	66	2010	83	65	22	-4	87	33	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	83	3400	108	85	2382	1041	83	28	97	116	44	140
Arrive On Green	0.09	1.00	1.00	0.05	0.67	0.67	0.06	0.06	0.00	0.09	0.09	0.09
Sat Flow, veh/h	1781	5080	162	1781	3554	1552	1347	456	1585	1309	496	1580
Grp Volume(v), veh/h	65	1053	569	66	2010	83	87	0	-4	120	0	50
Grp Sat Flow(s),veh/h/ln	1781	1702	1837	1781	1777	1552	1803	0	1585	1805	0	1580
Q Serve(g_s), s	4.3	0.0	0.0	4.4	51.5	2.2	5.7	0.0	0.0	7.8	0.0	3.6
Cycle Q Clear(g_c), s	4.3	0.0	0.0	4.4	51.5	2.2	5.7	0.0	0.0	7.8	0.0	3.6
Prop In Lane	1.00		0.09	1.00		1.00	0.75		1.00	0.72		1.00
Lane Grp Cap(c), veh/h	83	2279	1230	85	2382	1041	111	0	97	159	0	140
V/C Ratio(X)	0.78	0.46	0.46	0.78	0.84	0.08	0.79	0.00	-0.04	0.75	0.00	0.36
Avail Cap(c_a), veh/h	238	2279	1230	238	2382	1041	240	0	211	466	0	408
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)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.8	0.0	0.0	56.5	15.0	6.9	55.5	0.0	0.0	53.4	0.0	51.5
Incr Delay (d2), s/veh	5.9	0.7	1.3	5.6	3.0	0.0	4.6	0.0	0.0	2.7	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(50%),veh/ln	1.9	0.2	0.4	2.0	17.2	0.6	2.8	0.0	0.0	3.7	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.7	0.7	1.3	62.1	18.0	6.9	60.2	0.0	0.0	56.1	0.0	52.1
LnGrp LOS	E	A	A	E	B	A	E	A	A	E	A	D
Approach Vol, veh/h		1687			2159			83			170	
Approach Delay, s/veh		3.1			18.9			63.1			54.9	
Approach LOS		A			B			E			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.7	84.3		14.6	9.6	84.4		11.4
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0
Max Green Setting (Gmax), s	16.0	39.0		31.0	16.0	39.0		16.0
Max Q Clear Time (g_c+I1), s	6.4	2.0		9.8	6.3	53.5		7.7
Green Ext Time (p_c), s	0.0	15.9		0.5	0.0	0.0		0.1

Intersection Summary	
HCM 6th Ctrl Delay	14.8
HCM 6th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	1476	55	91	1900	7	5	0	72	0	1	100
Future Vol, veh/h	40	1476	55	91	1900	7	5	0	72	0	1	100
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	150	-	100	175	-	-	-	-	125	-	-	25
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	43	1604	60	99	2065	8	5	0	78	0	1	109

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2073	0	0	1664	0	0	2921	3961	802	3155	4017	1037
Stage 1	-	-	-	-	-	-	1690	1690	-	2267	2267	-
Stage 2	-	-	-	-	-	-	1231	2271	-	888	1750	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	265	-	-	383	-	-	7	3	327	4	3	228
Stage 1	-	-	-	-	-	-	97	148	-	41	75	-
Stage 2	-	-	-	-	-	-	188	75	-	305	138	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	265	-	-	383	-	-	~ 2	2	327	2	2	228
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 2	2	-	2	2	-
Stage 1	-	-	-	-	-	-	81	124	-	34	56	-
Stage 2	-	-	-	-	-	-	72	56	-	194	116	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.8	260	57.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	2	327	265	-	-	383	-	-	2	228
HCM Lane V/C Ratio	2.717	0.239	0.164	-	-	0.258	-	-	0.543	0.477
HCM Control Delay (s)	$ 3724.5	19.4	21.2	-	-	17.6	-	-	$ 2373.7	34.4
HCM Lane LOS	F	C	C	-	-	C	-	-	F	D
HCM 95th %tile Q(veh)	1.7	0.9	0.6	-	-	1	-	-	0.6	2.4

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1480	8	5	1940	85	25	2	9	50	1	50
Future Volume (veh/h)	60	1480	8	5	1940	85	25	2	9	50	1	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	1609	9	5	2109	91	27	2	10	54	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	2783	16	2	2514	108	47	3	17	79	37	37
Arrive On Green	0.04	0.77	0.75	0.00	0.72	0.71	0.04	0.04	0.04	0.04	0.04	0.05
Sat Flow, veh/h	1781	3623	20	1781	3468	148	1179	87	437	1781	834	834
Grp Volume(v), veh/h	65	789	829	5	1072	1128	39	0	0	54	0	2
Grp Sat Flow(s),veh/h/ln	1781	1777	1866	1781	1777	1839	1703	0	0	1781	0	1668
Q Serve(g_s), s	3.8	19.3	19.4	0.1	43.6	45.6	2.3	0.0	0.0	3.1	0.0	0.1
Cycle Q Clear(g_c), s	3.8	19.3	19.4	0.1	43.6	45.6	2.3	0.0	0.0	3.1	0.0	0.1
Prop In Lane	1.00		0.01	1.00		0.08	0.69		0.26	1.00		0.50
Lane Grp Cap(c), veh/h	67	1365	1433	2	1288	1333	68	0	0	79	0	74
V/C Ratio(X)	0.97	0.58	0.58	2.93	0.83	0.85	0.58	0.00	0.00	0.68	0.00	0.03
Avail Cap(c_a), veh/h	137	1651	1734	137	1566	1621	416	0	0	436	0	408
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.1	5.0	5.1	52.1	10.0	10.3	49.2	0.0	0.0	49.1	0.0	47.6
Incr Delay (d2), s/veh	24.7	0.4	0.4	980.6	3.4	3.7	2.9	0.0	0.0	3.8	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(50%),veh/ln	2.1	4.0	4.2	0.5	11.9	13.1	1.1	0.0	0.0	1.5	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.8	5.4	5.4	1032.8	13.3	14.0	52.0	0.0	0.0	52.9	0.0	47.6
LnGrp LOS	E	A	A	F	B	B	D	A	A	D	A	D
Approach Vol, veh/h		1683			2205			39			56	
Approach Delay, s/veh		8.1			16.0			52.0			52.7	
Approach LOS		A			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.9	79.6		8.6	3.4	84.1		8.1
Change Period (Y+Rc), s	3.0	6.0		3.5	3.0	6.0		3.5
Max Green Setting (Gmax), s	9.0	89.9		26.0	9.0	94.9		26.0
Max Q Clear Time (g_c+I1), s	5.8	47.6		5.1	2.1	21.4		4.3
Green Ext Time (p_c), s	0.0	26.0		0.1	0.0	15.4		0.1

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	1248	141	141	1653	195	215	170	115	210	185	45
Future Volume (veh/h)	69	1248	141	141	1653	195	215	170	115	210	185	45
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		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	73	1328	94	150	1759	169	205	215	0	210	215	4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	77	1733	773	164	1905	831	244	256		249	262	219
Arrive On Green	0.04	0.48	0.48	0.09	0.53	0.53	0.14	0.14	0.00	0.14	0.14	0.14
Sat Flow, veh/h	1795	3582	1598	1795	3582	1562	1795	1885	1598	1795	1885	1576
Grp Volume(v), veh/h	73	1328	94	150	1759	169	205	215	0	210	215	4
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1562	1795	1885	1598	1795	1885	1576
Q Serve(g_s), s	4.3	32.3	3.4	8.8	48.0	6.0	11.8	11.8	0.0	12.1	11.8	0.2
Cycle Q Clear(g_c), s	4.3	32.3	3.4	8.8	48.0	6.0	11.8	11.8	0.0	12.1	11.8	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	77	1733	773	164	1905	831	244	256		249	262	219
V/C Ratio(X)	0.94	0.77	0.12	0.92	0.92	0.20	0.84	0.84		0.84	0.82	0.02
Avail Cap(c_a), veh/h	135	2009	896	203	2279	994	497	522		558	586	489
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.7	22.5	15.0	47.9	22.9	13.1	44.8	44.8	0.0	44.6	44.5	39.5
Incr Delay (d2), s/veh	28.1	1.3	0.0	33.3	5.7	0.0	3.0	2.8	0.0	3.0	2.5	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(50%),veh/ln	2.4	12.1	1.1	5.3	18.8	1.9	5.3	5.6	0.0	5.5	5.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.8	23.8	15.1	81.2	28.6	13.1	47.8	47.6	0.0	47.6	46.9	39.5
LnGrp LOS	E	C	B	F	C	B	D	D		D	D	D
Approach Vol, veh/h		1495			2078			420	A		429	
Approach Delay, s/veh		25.9			31.1			47.7			47.2	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.7	55.4		18.7	8.6	60.5		18.4
Change Period (Y+Rc), s	3.0	6.0		4.4	3.0	6.0		4.4
Max Green Setting (Gmax), s	13.0	57.6		32.6	9.0	65.6		29.0
Max Q Clear Time (g_c+I1), s	10.8	34.3		14.1	6.3	50.0		13.8
Green Ext Time (p_c), s	0.0	3.0		0.2	0.0	4.5		0.2

Intersection Summary	
HCM 6th Ctrl Delay	32.5
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	161	1115	75	255	100	1332	450	45	95	710	261
Future Volume (veh/h)	141	161	1115	75	255	100	1332	450	45	95	710	261
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	157	179	0	83	283	0	1480	500	0	106	789	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	171	568		90	381		1485	779		422	841	
Arrive On Green	0.10	0.16	0.00	0.05	0.11	0.00	0.41	0.41	0.00	0.23	0.23	0.00
Sat Flow, veh/h	1795	3582	1598	1795	3582	1598	3591	1885	1598	1795	3582	1598
Grp Volume(v), veh/h	157	179	0	83	283	0	1480	500	0	106	789	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1598	1795	1885	1598	1795	1791	1598
Q Serve(g_s), s	9.7	5.0	0.0	5.2	8.6	0.0	46.0	23.7	0.0	5.4	24.2	0.0
Cycle Q Clear(g_c), s	9.7	5.0	0.0	5.2	8.6	0.0	46.0	23.7	0.0	5.4	24.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	171	568		90	381		1485	779		422	841	
V/C Ratio(X)	0.92	0.32		0.92	0.74		1.00	0.64		0.25	0.94	
Avail Cap(c_a), veh/h	385	854		224	669		1485	779		422	841	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.2	41.7	0.0	53.0	48.5	0.0	32.8	26.2	0.0	34.8	42.0	0.0
Incr Delay (d2), s/veh	7.8	0.1	0.0	13.4	1.1	0.0	22.5	1.4	0.0	0.1	17.6	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(50%),veh/ln	4.6	2.1	0.0	2.6	3.8	0.0	23.4	10.4	0.0	2.3	12.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.0	41.8	0.0	66.3	49.6	0.0	55.3	27.6	0.0	34.9	59.6	0.0
LnGrp LOS	E	D		E	D		E	C		C	E	
Approach Vol, veh/h		336	A		366	A		1980	A		895	A
Approach Delay, s/veh		49.4			53.4			48.3			56.7	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	21.7		30.3	14.7	16.7		50.3
Change Period (Y+Rc), s	3.0	5.7		5.3	3.0	* 5.7		5.3
Max Green Setting (Gmax), s	15.0	25.0		25.0	25.0	* 20		45.0
Max Q Clear Time (g_c+I1), s	7.2	7.0		26.2	11.7	10.6		48.0
Green Ext Time (p_c), s	0.0	0.3		0.0	0.0	0.4		0.0

Intersection Summary	
HCM 6th Ctrl Delay	51.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	15	165	25	6	45	146	1601	75	210	1164	35
Future Volume (veh/h)	130	15	165	25	6	45	146	1601	75	210	1164	35
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		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	0	0	27	7	-5	159	1740	42	228	1265	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	325	0	144	81	21	90	187	1957	594	572	3135	947
Arrive On Green	0.09	0.00	0.00	0.06	0.06	0.00	0.10	0.38	0.38	0.64	1.00	1.00
Sat Flow, veh/h	3563	0	1585	1429	370	1585	1781	5106	1550	1781	5106	1542
Grp Volume(v), veh/h	152	0	0	34	0	-5	159	1740	42	228	1265	17
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1799	0	1585	1781	1702	1550	1781	1702	1542
Q Serve(g_s), s	4.9	0.0	0.0	2.2	0.0	0.0	10.5	38.3	2.1	7.4	0.0	0.0
Cycle Q Clear(g_c), s	4.9	0.0	0.0	2.2	0.0	0.0	10.5	38.3	2.1	7.4	0.0	0.0
Prop In Lane	1.00		1.00	0.79		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	325	0	144	102	0	90	187	1957	594	572	3135	947
V/C Ratio(X)	0.47	0.00	0.00	0.33	0.00	-0.06	0.85	0.89	0.07	0.40	0.40	0.02
Avail Cap(c_a), veh/h	623	0	277	315	0	277	312	1957	594	572	3135	947
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	0.0	0.0	54.4	0.0	0.0	52.8	34.6	23.5	15.9	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.7	0.0	0.0	5.1	6.5	0.2	0.2	0.2	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	2.2	0.0	0.0	1.0	0.0	0.0	4.8	16.1	0.8	2.5	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.2	0.0	0.0	55.1	0.0	0.0	57.8	41.1	23.7	16.0	0.2	0.0
LnGrp LOS	D	A	A	E	A	A	E	D	C	B	A	A
Approach Vol, veh/h		152			29			1941			1510	
Approach Delay, s/veh		52.2			64.6			42.1			2.6	
Approach LOS		D			E			D			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	44.3	50.0		14.9	16.6	77.7		10.8
Change Period (Y+Rc), s	5.7	* 5.7		4.0	4.0	5.7		4.0
Max Green Setting (Gmax), s	16.6	* 44		21.0	21.0	39.3		21.0
Max Q Clear Time (g_c+I1), s	19.4	40.3		6.9	12.5	2.0		4.2
Green Ext Time (p_c), s	0.2	3.8		0.2	0.1	21.4		0.1

Intersection Summary	
HCM 6th Ctrl Delay	26.3
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	300	90	65	550	320	294	1301	75	180	919	210
Future Volume (veh/h)	187	300	90	65	550	320	294	1301	75	180	919	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	203	326	0	71	598	0	320	1414	0	196	999	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	229	811		261	622		377	2418		259	2170	
Arrive On Green	0.13	0.23	0.00	0.08	0.17	0.00	0.11	0.47	0.00	0.07	0.43	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	203	326	0	71	598	0	320	1414	0	196	999	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	13.4	9.4	0.0	2.3	20.0	0.0	10.9	24.2	0.0	6.7	16.8	0.0
Cycle Q Clear(g_c), s	13.4	9.4	0.0	2.3	20.0	0.0	10.9	24.2	0.0	6.7	16.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	229	811		261	622		377	2418		259	2170	
V/C Ratio(X)	0.89	0.40		0.27	0.96		0.85	0.58		0.76	0.46	
Avail Cap(c_a), veh/h	238	811		461	622		461	2418		749	2170	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.4	39.3	0.0	52.4	49.1	0.0	52.5	23.0	0.0	54.4	24.7	0.0
Incr Delay (d2), s/veh	28.6	0.6	0.0	0.2	26.9	0.0	10.1	0.5	0.0	1.7	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	4.1	0.0	1.0	11.1	0.0	5.1	9.2	0.0	2.9	6.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.0	39.9	0.0	52.6	76.0	0.0	62.6	23.5	0.0	56.2	25.4	0.0
LnGrp LOS	E	D		D	E		E	C		E	C	
Approach Vol, veh/h		529	A		669	A		1734	A		1195	A
Approach Delay, s/veh		55.3			73.6			30.7			30.4	
Approach LOS		E			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	60.8	13.1	31.4	18.8	55.0	19.4	25.0
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	5.7
Max Green Setting (Gmax), s	26.0	39.3	16.0	19.3	16.0	* 49	16.0	19.3
Max Q Clear Time (g_c+I1), s	8.7	26.2	4.3	11.4	12.9	18.8	15.4	22.0
Green Ext Time (p_c), s	0.3	9.7	0.1	1.7	0.2	12.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	40.7
HCM 6th LOS	D

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	660	815	42	115	70
Future Vol, veh/h	30	660	815	42	115	70
Conflicting Peds, #/hr	6	0	0	6	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	37	805	994	51	140	85

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1051	0	-	0	1478	503
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	478	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	664	-	-	-	~ 118	517
Stage 1	-	-	-	-	319	-
Stage 2	-	-	-	-	592	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	660	-	-	-	~ 110	514
Mov Cap-2 Maneuver	-	-	-	-	221	-
Stage 1	-	-	-	-	299	-
Stage 2	-	-	-	-	588	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	33.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	660	-	-	-	221	514
HCM Lane V/C Ratio	0.055	-	-	-	0.635	0.166
HCM Control Delay (s)	10.8	-	-	-	45.9	13.4
HCM Lane LOS	B	-	-	-	E	B
HCM 95th %tile Q(veh)	0.2	-	-	-	3.8	0.6

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	220	0	131	6	1671	140	117	1774	0
Future Volume (veh/h)	0	0	0	220	0	131	6	1671	140	117	1774	0
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1885	0	1885	1870	1885	1885	1885	1885	0
Adj Flow Rate, veh/h				244	0	32	7	1857	139	130	1971	0
Peak Hour Factor				0.90	0.92	0.90	0.92	0.90	0.90	0.90	0.90	0.92
Percent Heavy Veh, %				1	0	1	2	1	1	1	1	0
Cap, veh/h				299	0	266	13	2137	953	162	2435	0
Arrive On Green				0.17	0.00	0.17	0.01	0.60	0.60	0.09	0.68	0.00
Sat Flow, veh/h				1795	0	1598	1781	3582	1598	1795	3676	0
Grp Volume(v), veh/h				244	0	32	7	1857	139	130	1971	0
Grp Sat Flow(s),veh/h/ln				1795	0	1598	1781	1791	1598	1795	1791	0
Q Serve(g_s), s				10.8	0.0	1.4	0.3	35.6	3.2	5.8	32.2	0.0
Cycle Q Clear(g_c), s				10.8	0.0	1.4	0.3	35.6	3.2	5.8	32.2	0.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				299	0	266	13	2137	953	162	2435	0
V/C Ratio(X)				0.81	0.00	0.12	0.55	0.87	0.15	0.80	0.81	0.00
Avail Cap(c_a), veh/h				656	0	584	174	2226	993	175	2435	0
HCM Platoon Ratio				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	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				33.0	0.0	29.1	40.6	13.9	7.3	36.6	9.4	0.0
Incr Delay (d2), s/veh				6.4	0.0	0.2	12.8	3.9	0.1	19.3	2.1	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
%ile BackOfQ(50%),veh/ln				5.1	0.0	0.5	0.2	12.5	0.9	3.3	9.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				39.4	0.0	29.3	53.4	17.8	7.4	55.9	11.5	0.0
LnGrp LOS				D	A	C	D	B	A	E	B	A
Approach Vol, veh/h					276			2003			2101	
Approach Delay, s/veh					38.2			17.2			14.2	
Approach LOS					D			B			B	

Timer - Assigned Phs	1	2		5	6	8
Phs Duration (G+Y+Rc), s	11.4	53.0		4.6	59.8	17.7
Change Period (Y+Rc), s	4.0	5.7		4.0	* 5.7	4.0
Max Green Setting (Gmax), s	8.0	49.3		8.0	* 52	30.0
Max Q Clear Time (g_c+I1), s	7.8	37.6		2.3	34.2	12.8
Green Ext Time (p_c), s	0.0	9.6		0.0	13.6	1.0

Intersection Summary	
HCM 6th Ctrl Delay	17.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	2	130	0	1	2	255	1641	0	2	1784	210
Future Volume (veh/h)	155	2	130	0	1	2	255	1641	0	2	1784	210
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	172	2	3	0	1	-4	283	1823	0	2	1982	186
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	205	2	185	2	0	360	300	2657	0	37	2133	928
Arrive On Green	0.12	0.12	0.12	0.00	0.00	0.00	0.17	0.74	0.00	0.02	0.60	0.60
Sat Flow, veh/h	1776	21	1598	1795	1885	0	1795	3676	0	1795	3582	1559
Grp Volume(v), veh/h	174	0	3	0	-3	-3	283	1823	0	2	1982	186
Grp Sat Flow(s),veh/h/ln	1796	0	1598	1795	1885	1598	1795	1791	0	1795	1791	1559
Q Serve(g_s), s	9.3	0.0	0.2	0.0	0.0	0.0	15.3	26.3	0.0	0.1	49.2	5.4
Cycle Q Clear(g_c), s	9.3	0.0	0.2	0.0	0.0	0.0	15.3	26.3	0.0	0.1	49.2	5.4
Prop In Lane	0.99		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	208	0	185	2	0	0	300	2657	0	37	2133	928
V/C Ratio(X)	0.84	0.00	0.02	0.00	0.00	0.00	0.94	0.69	0.00	0.05	0.93	0.20
Avail Cap(c_a), veh/h	220	0	195	613	0	0	329	2974	0	146	2390	1041
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	0.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.5	0.0	38.5	0.0	0.0	0.0	40.4	6.7	0.0	47.1	18.0	9.1
Incr Delay (d2), s/veh	21.5	0.0	0.0	0.0	0.0	0.0	32.8	0.4	0.0	0.2	6.4	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	5.3	0.0	0.1	0.0	0.0	0.0	9.1	6.2	0.0	0.0	19.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.0	0.0	38.5	0.0	0.0	0.0	73.3	7.1	0.0	47.4	24.3	9.2
LnGrp LOS	E	A	D	A	A	A	E	A	A	D	C	A
Approach Vol, veh/h		177			-6			2106			2170	
Approach Delay, s/veh		63.5			0.0			16.0			23.1	
Approach LOS		E			A			B			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	76.8		15.3	20.4	62.4		0.0
Change Period (Y+Rc), s	3.0	5.7		4.1	3.0	5.7		3.5
Max Green Setting (Gmax), s	9.0	79.8		11.9	19.0	63.8		34.0
Max Q Clear Time (g_c+I1), s	2.1	28.3		11.3	17.3	51.2		0.0
Green Ext Time (p_c), s	0.0	5.4		0.0	0.1	5.5		0.0

Intersection Summary	
HCM 6th Ctrl Delay	21.4
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	555	1696	320	434	1530	242	495	1150	265	254	1060	215
Future Volume (veh/h)	555	1696	320	434	1530	242	495	1150	265	254	1060	215
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	590	1804	245	462	1628	0	527	1223	0	270	1128	68
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	557	1784	553	480	1670		488	1635		317	1383	408
Arrive On Green	0.16	0.35	0.35	0.14	0.32	0.00	0.14	0.32	0.00	0.09	0.27	0.26
Sat Flow, veh/h	3483	5147	1596	3483	5147	1598	3483	5147	1598	3483	5147	1596
Grp Volume(v), veh/h	590	1804	245	462	1628	0	527	1223	0	270	1128	68
Grp Sat Flow(s),veh/h/ln	1742	1716	1596	1742	1716	1598	1742	1716	1598	1742	1716	1596
Q Serve(g_s), s	24.0	52.0	11.8	19.8	46.9	0.0	21.0	31.9	0.0	11.5	30.8	5.0
Cycle Q Clear(g_c), s	24.0	52.0	11.8	19.8	46.9	0.0	21.0	31.9	0.0	11.5	30.8	5.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	557	1784	553	480	1670		488	1635		317	1383	408
V/C Ratio(X)	1.06	1.01	0.44	0.96	0.97		1.08	0.75		0.85	0.82	0.17
Avail Cap(c_a), veh/h	557	1784	553	480	1670		488	1635		418	1475	436
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.0	49.0	16.6	64.3	50.1	0.0	64.5	45.8	0.0	67.2	51.4	43.4
Incr Delay (d2), s/veh	54.6	24.1	2.6	31.3	16.8	0.0	64.3	2.1	0.0	9.8	3.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.6	25.5	4.6	10.7	22.1	0.0	13.5	13.6	0.0	5.5	13.4	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	117.6	73.1	19.2	95.5	66.8	0.0	128.8	47.9	0.0	77.0	55.1	43.7
LnGrp LOS	F	F	B	F	E		F	D		E	E	D
Approach Vol, veh/h		2639			2090	A		1750	A		1466	
Approach Delay, s/veh		78.0			73.2			72.2			58.6	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.7	56.0	25.0	44.3	28.0	52.7	17.7	51.7
Change Period (Y+Rc), s	6.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	16.0	50.0	21.0	41.0	24.0	44.0	18.0	44.0
Max Q Clear Time (g_c+I1), s	21.8	54.0	23.0	32.8	26.0	48.9	13.5	33.9
Green Ext Time (p_c), s	0.0	0.0	0.0	5.5	0.0	0.0	0.2	6.4

Intersection Summary	
HCM 6th Ctrl Delay	71.9
HCM 6th LOS	E

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	1934	25	91	1665	95	130	40	111	111	45	310
Future Volume (veh/h)	90	1934	25	91	1665	95	130	40	111	111	45	310
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		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	96	2057	12	97	1771	71	138	43	32	118	48	110
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	116	3212	19	118	2183	954	157	49	181	137	56	169
Arrive On Green	0.13	1.00	1.00	0.07	0.61	0.61	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1795	5280	31	1795	3582	1565	1385	431	1598	1294	526	1598
Grp Volume(v), veh/h	96	1336	733	97	1771	71	181	0	32	166	0	110
Grp Sat Flow(s),veh/h/ln	1795	1716	1880	1795	1791	1565	1816	0	1598	1820	0	1598
Q Serve(g_s), s	7.8	0.0	0.0	8.0	57.3	2.8	14.7	0.0	2.7	13.5	0.0	9.9
Cycle Q Clear(g_c), s	7.8	0.0	0.0	8.0	57.3	2.8	14.7	0.0	2.7	13.5	0.0	9.9
Prop In Lane	1.00		0.02	1.00		1.00	0.76		1.00	0.71		1.00
Lane Grp Cap(c), veh/h	116	2087	1143	118	2183	954	206	0	181	193	0	169
V/C Ratio(X)	0.83	0.64	0.64	0.82	0.81	0.07	0.88	0.00	0.18	0.86	0.00	0.65
Avail Cap(c_a), veh/h	251	2087	1143	251	2183	954	254	0	224	255	0	224
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)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	64.5	0.0	0.0	69.2	22.6	12.0	65.5	0.0	60.2	66.0	0.0	64.4
Incr Delay (d2), s/veh	5.5	1.5	2.8	5.2	3.4	0.2	21.5	0.0	0.2	16.5	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.4	0.9	3.7	22.5	1.0	8.1	0.0	1.1	7.2	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.0	1.5	2.8	74.4	26.0	12.1	87.0	0.0	60.3	82.5	0.0	66.0
LnGrp LOS	E	A	A	E	C	B	F	A	E	F	A	E
Approach Vol, veh/h		2165			1939			213			276	
Approach Delay, s/veh		5.0			27.9			83.0			75.9	
Approach LOS		A			C			F			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.9	95.2		19.9	13.7	95.4		21.0
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0
Max Green Setting (Gmax), s	21.0	69.0		21.0	21.0	69.0		21.0
Max Q Clear Time (g_c+I1), s	10.0	2.0		15.5	9.8	59.3		16.7
Green Ext Time (p_c), s	0.1	29.9		0.4	0.1	7.6		0.3

Intersection Summary	
HCM 6th Ctrl Delay	22.6
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	2046	70	46	1806	4	5	0	52	0	1	40
Future Vol, veh/h	46	2046	70	46	1806	4	5	0	52	0	1	40
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	150	-	100	175	-	-	-	-	125	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	49	2177	74	49	1921	4	5	0	55	0	1	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1925	0	0	2251	0	0	3334	4298	1089	3208	4370	963
Stage 1	-	-	-	-	-	-	2275	2275	-	2021	2021	-
Stage 2	-	-	-	-	-	-	1059	2023	-	1187	2349	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.52	6.52	6.92	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Follow-up Hdwy	2.21	-	-	2.21	-	-	3.51	4.01	3.31	3.51	4.01	3.31
Pot Cap-1 Maneuver	307	-	-	229	-	-	~ 3	2	212	4	2	257
Stage 1	-	-	-	-	-	-	41	75	-	60	102	-
Stage 2	-	-	-	-	-	-	242	102	-	202	69	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	307	-	-	229	-	-	-	1	212	2	~ 1	257
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	1	-	2	~ 1	-
Stage 1	-	-	-	-	-	-	34	63	-	50	80	-
Stage 2	-	-	-	-	-	-	157	80	-	125	58	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.6		141.6
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	212	307	-	-	229	-	-	1	257
HCM Lane V/C Ratio	-	0.261	0.159	-	-	0.214	-	-	1.064	0.166
HCM Control Delay (s)	-	27.9	18.9	-	-	24.9	-	-	$ 4932.2	21.8
HCM Lane LOS	-	D	C	-	-	C	-	-	F	C
HCM 95th %tile Q(veh)	-	1	0.6	-	-	0.8	-	-	0.6	0.6

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	2030	28	9	1800	20	17	0	6	30	1	35
Future Volume (veh/h)	34	2030	28	9	1800	20	17	0	6	30	1	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.95	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	36	2160	30	10	1915	20	18	0	6	32	1	-4
Peak Hour Factor	0.94	0.94	0.92	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	14	2645	37	2	2607	27	40	0	13	61	0	298
Arrive On Green	0.01	0.73	0.71	0.00	0.72	0.69	0.03	0.00	0.04	0.03	0.03	0.00
Sat Flow, veh/h	1795	3616	50	1795	3630	38	1288	0	429	1795	1885	0
Grp Volume(v), veh/h	36	1067	1123	10	943	992	24	0	0	32	-3	-3
Grp Sat Flow(s),veh/h/ln	1795	1791	1875	1795	1791	1877	1718	0	0	1795	1885	1598
Q Serve(g_s), s	0.6	30.3	30.8	0.1	24.0	24.3	1.1	0.0	0.0	1.3	0.0	0.0
Cycle Q Clear(g_c), s	0.6	30.3	30.8	0.1	24.0	24.3	1.1	0.0	0.0	1.3	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.02	0.75		0.25	1.00		0.00
Lane Grp Cap(c), veh/h	14	1310	1371	2	1286	1348	54	0	0	61	0	0
V/C Ratio(X)	2.53	0.81	0.82	4.27	0.73	0.74	0.45	0.00	0.00	0.52	0.00	0.00
Avail Cap(c_a), veh/h	187	1553	1626	187	1506	1579	571	0	0	597	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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	38.0	6.8	6.9	38.3	6.4	6.5	36.4	0.0	0.0	36.4	0.0	0.0
Incr Delay (d2), s/veh	707.0	3.0	3.0	1548.4	1.6	1.5	2.2	0.0	0.0	2.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	5.6	6.0	1.0	4.6	4.9	0.5	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	745.1	9.8	9.9	1586.7	8.0	8.0	38.6	0.0	0.0	39.0	0.0	0.0
LnGrp LOS	F	A	A	F	A	A	D	A	A	D	A	A
Approach Vol, veh/h		2226			1945			24			26	
Approach Delay, s/veh		21.7			16.1			38.6			47.9	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.6	59.1		6.6	3.6	60.1		6.4
Change Period (Y+Rc), s	3.0	6.0		3.5	3.0	6.0		3.5
Max Green Setting (Gmax), s	9.0	62.5		26.0	9.0	64.5		26.0
Max Q Clear Time (g_c+I1), s	2.6	26.3		3.3	2.1	32.8		3.1
Green Ext Time (p_c), s	0.0	18.7		0.0	0.0	21.3		0.0

Intersection Summary		
HCM 6th Ctrl Delay		19.4
HCM 6th LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	1655	261	145	1518	230	176	135	130	210	190	65
Future Volume (veh/h)	74	1655	261	145	1518	230	176	135	130	210	190	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	76	1706	190	149	1565	190	160	168	0	206	210	3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	81	1856	781	163	2019	900	200	210		244	256	217
Arrive On Green	0.04	0.51	0.50	0.09	0.56	0.56	0.11	0.11	0.00	0.13	0.13	0.13
Sat Flow, veh/h	1810	3610	1577	1810	3610	1609	1810	1900	1610	1810	1900	1610
Grp Volume(v), veh/h	76	1706	190	149	1565	190	160	168	0	206	210	3
Grp Sat Flow(s),veh/h/ln	1810	1805	1577	1810	1805	1609	1810	1900	1610	1810	1900	1610
Q Serve(g_s), s	4.4	46.2	7.3	8.7	35.8	6.3	9.2	9.2	0.0	11.8	11.4	0.2
Cycle Q Clear(g_c), s	4.4	46.2	7.3	8.7	35.8	6.3	9.2	9.2	0.0	11.8	11.4	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	81	1856	781	163	2019	900	200	210		244	256	217
V/C Ratio(X)	0.94	0.92	0.24	0.92	0.78	0.21	0.80	0.80		0.84	0.82	0.01
Avail Cap(c_a), veh/h	153	2550	1084	205	2652	1182	501	526		300	315	267
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.6	23.8	15.4	47.9	18.2	11.7	46.1	46.1	0.0	44.8	44.7	39.8
Incr Delay (d2), s/veh	16.4	3.9	0.1	32.3	0.8	0.0	2.8	2.7	0.0	14.1	10.9	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(50%),veh/ln	2.3	17.7	2.4	5.2	12.9	2.0	4.2	4.4	0.0	6.2	6.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.0	27.6	15.4	80.2	19.0	11.7	48.9	48.8	0.0	58.9	55.6	39.8
LnGrp LOS	E	C	B	F	B	B	D	D		E	E	D
Approach Vol, veh/h		1972			1904			328	A		419	
Approach Delay, s/veh		28.0			23.0			48.9			57.1	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.6	58.6		18.3	8.8	63.4		15.7
Change Period (Y+Rc), s	3.0	6.0		4.4	3.0	6.0		4.4
Max Green Setting (Gmax), s	13.6	73.0		17.2	10.0	76.0		29.0
Max Q Clear Time (g_c+I1), s	10.7	48.2		13.8	6.4	37.8		11.2
Green Ext Time (p_c), s	0.0	4.4		0.1	0.0	4.2		0.1

Intersection Summary	
HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	305	1163	60	291	115	1185	765	80	125	515	206
Future Volume (veh/h)	216	305	1163	60	291	115	1185	765	80	125	515	206
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	225	318	0	62	303	0	1234	797	0	130	536	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	240	786		64	410		1502	789		326	651	
Arrive On Green	0.13	0.22	0.00	0.04	0.11	0.00	0.42	0.42	0.00	0.18	0.18	0.00
Sat Flow, veh/h	1795	3582	1598	1795	3582	1598	3591	1885	1598	1795	3582	1598
Grp Volume(v), veh/h	225	318	0	62	303	0	1234	797	0	130	536	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1598	1795	1885	1598	1795	1791	1598
Q Serve(g_s), s	13.7	8.4	0.0	3.8	9.1	0.0	33.7	46.3	0.0	7.1	15.9	0.0
Cycle Q Clear(g_c), s	13.7	8.4	0.0	3.8	9.1	0.0	33.7	46.3	0.0	7.1	15.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	240	786		64	410		1502	789		326	651	
V/C Ratio(X)	0.94	0.40		0.96	0.74		0.82	1.01		0.40	0.82	
Avail Cap(c_a), veh/h	389	864		227	677		1502	789		427	851	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.5	37.0	0.0	53.3	47.4	0.0	28.5	32.2	0.0	39.9	43.6	0.0
Incr Delay (d2), s/veh	16.1	0.1	0.0	24.3	1.0	0.0	3.5	34.6	0.0	0.3	3.9	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(50%),veh/ln	6.9	3.5	0.0	2.1	4.0	0.0	14.4	27.3	0.0	3.0	7.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.6	37.1	0.0	77.6	48.4	0.0	32.1	66.8	0.0	40.2	47.5	0.0
LnGrp LOS	E	D		E	D		C	F		D	D	
Approach Vol, veh/h		543	A		365	A		2031	A		666	A
Approach Delay, s/veh		48.1			53.3			45.7			46.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	28.3		24.1	18.8	17.5		50.3
Change Period (Y+Rc), s	3.0	5.7		5.3	3.0	* 5.7		5.3
Max Green Setting (Gmax), s	15.0	25.0		25.0	25.0	* 20		45.0
Max Q Clear Time (g_c+I1), s	5.8	10.4		17.9	15.7	11.1		48.3
Green Ext Time (p_c), s	0.0	0.5		0.8	0.1	0.5		0.0

Intersection Summary	
HCM 6th Ctrl Delay	46.9
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	15	265	75	15	100	185	1504	50	120	1512	65
Future Volume (veh/h)	190	15	265	75	15	100	185	1504	50	120	1512	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	213	0	13	80	16	-6	197	1600	25	128	1609	30
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	358	0	156	131	26	139	225	1973	607	507	2854	883
Arrive On Green	0.10	0.00	0.10	0.09	0.09	0.00	0.13	0.38	0.38	0.28	0.55	0.55
Sat Flow, veh/h	3591	0	1569	1508	302	1598	1795	5147	1583	1795	5147	1593
Grp Volume(v), veh/h	213	0	13	96	0	-6	197	1600	25	128	1609	30
Grp Sat Flow(s),veh/h/ln	1795	0	1569	1810	0	1598	1795	1716	1583	1795	1716	1593
Q Serve(g_s), s	6.8	0.0	0.9	6.1	0.0	0.0	12.9	33.4	1.2	6.6	24.3	1.0
Cycle Q Clear(g_c), s	6.8	0.0	0.9	6.1	0.0	0.0	12.9	33.4	1.2	6.6	24.3	1.0
Prop In Lane	1.00		1.00	0.83		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	358	0	156	158	0	139	225	1973	607	507	2854	883
V/C Ratio(X)	0.59	0.00	0.08	0.61	0.00	-0.04	0.88	0.81	0.04	0.25	0.56	0.03
Avail Cap(c_a), veh/h	628	0	275	317	0	280	314	1973	607	507	2854	883
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	49.0	52.8	0.0	0.0	51.6	33.1	23.2	33.3	17.3	12.1
Incr Delay (d2), s/veh	0.6	0.0	0.1	1.4	0.0	0.0	14.1	3.8	0.1	0.1	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(50%),veh/ln	3.1	0.0	0.4	2.9	0.0	0.0	6.5	13.8	0.5	2.8	8.9	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.3	0.0	49.1	54.2	0.0	0.0	65.6	36.9	23.3	33.4	17.8	12.2
LnGrp LOS	D	A	D	D	A	A	E	D	C	C	B	B
Approach Vol, veh/h		226			90			1822			1767	
Approach Delay, s/veh		52.1			57.8			39.8			18.8	
Approach LOS		D			E			D			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	39.6	50.0		16.0	19.0	70.5		14.5
Change Period (Y+Rc), s	5.7	* 5.7		4.0	4.0	5.7		4.0
Max Green Setting (Gmax), s	16.0	* 44		21.0	21.0	39.3		21.0
Max Q Clear Time (g_c+I1), s	19.6	35.4		8.8	14.9	26.3		8.1
Green Ext Time (p_c), s	0.1	7.9		0.3	0.1	11.3		0.2

Intersection Summary	
HCM 6th Ctrl Delay	31.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	257	570	270	75	430	240	280	1144	70	245	1272	280
Future Volume (veh/h)	257	570	270	75	430	240	280	1144	70	245	1272	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	273	606	0	80	457	0	298	1217	0	261	1353	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	301	903		270	580		357	1881		324	1758	
Arrive On Green	0.17	0.25	0.00	0.08	0.16	0.00	0.10	0.37	0.00	0.09	0.34	0.00
Sat Flow, veh/h	1795	3582	1598	3483	3582	1598	3483	5147	1598	3483	5147	1598
Grp Volume(v), veh/h	273	606	0	80	457	0	298	1217	0	261	1353	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1742	1791	1598	1742	1716	1598	1742	1716	1598
Q Serve(g_s), s	17.9	18.3	0.0	2.6	14.7	0.0	10.1	23.6	0.0	8.8	28.2	0.0
Cycle Q Clear(g_c), s	17.9	18.3	0.0	2.6	14.7	0.0	10.1	23.6	0.0	8.8	28.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	301	903		270	580		357	1881		324	1758	
V/C Ratio(X)	0.91	0.67		0.30	0.79		0.84	0.65		0.81	0.77	
Avail Cap(c_a), veh/h	389	903		610	627		464	1881		610	1758	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.0	40.4	0.0	52.3	48.3	0.0	52.9	31.6	0.0	53.4	35.3	0.0
Incr Delay (d2), s/veh	18.3	2.4	0.0	0.2	7.1	0.0	7.9	1.0	0.0	1.8	3.3	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(50%),veh/ln	9.4	8.2	0.0	1.1	7.1	0.0	4.7	9.5	0.0	3.8	11.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.3	42.8	0.0	52.5	55.4	0.0	60.7	32.6	0.0	55.2	38.6	0.0
LnGrp LOS	E	D		D	E		E	C		E	D	
Approach Vol, veh/h		879	A		537	A		1515	A		1614	A
Approach Delay, s/veh		50.4			55.0			38.1			41.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	47.8	13.3	34.2	18.0	45.0	24.1	23.4
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	5.7
Max Green Setting (Gmax), s	21.0	34.3	21.0	24.3	16.0	* 39	26.0	19.3
Max Q Clear Time (g_c+I1), s	10.8	25.6	4.6	20.3	12.1	30.2	19.9	16.7
Green Ext Time (p_c), s	0.3	6.2	0.1	1.9	0.2	6.9	0.2	1.0

Intersection Summary	
HCM 6th Ctrl Delay	43.6
HCM 6th LOS	D

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	755	655	27	66	60
Future Vol, veh/h	45	755	655	27	66	60
Conflicting Peds, #/hr	1	0	0	1	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	50	839	728	30	73	67

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	759	0	-	0	1252	365
Stage 1	-	-	-	-	729	-
Stage 2	-	-	-	-	523	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	862	-	-	-	167	638
Stage 1	-	-	-	-	444	-
Stage 2	-	-	-	-	565	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	861	-	-	-	157	637
Mov Cap-2 Maneuver	-	-	-	-	281	-
Stage 1	-	-	-	-	418	-
Stage 2	-	-	-	-	564	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	17.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	861	-	-	-	281	637
HCM Lane V/C Ratio	0.058	-	-	-	0.261	0.105
HCM Control Delay (s)	9.4	-	-	-	22.3	11.3
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	105	0	80	15	1904	105	85	1662	0
Future Volume (veh/h)	0	0	0	105	0	80	15	1904	105	85	1662	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		0.98	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
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1885	0	1885	1885	1885	1885	1885	1885	0
Adj Flow Rate, veh/h				109	0	9	16	1983	100	89	1731	0
Peak Hour Factor				0.96	0.92	0.96	0.96	0.96	0.96	0.96	0.96	0.92
Percent Heavy Veh, %				1	0	1	1	1	1	1	1	0
Cap, veh/h				150	0	134	27	2445	1067	115	2619	0
Arrive On Green				0.08	0.00	0.08	0.02	0.68	0.68	0.06	0.73	0.00
Sat Flow, veh/h				1795	0	1598	1795	3582	1562	1795	3676	0
Grp Volume(v), veh/h				109	0	9	16	1983	100	89	1731	0
Grp Sat Flow(s),veh/h/ln				1795	0	1598	1795	1791	1562	1795	1791	0
Q Serve(g_s), s				4.2	0.0	0.4	0.6	27.8	1.5	3.5	17.8	0.0
Cycle Q Clear(g_c), s				4.2	0.0	0.4	0.6	27.8	1.5	3.5	17.8	0.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				150	0	134	27	2445	1067	115	2619	0
V/C Ratio(X)				0.73	0.00	0.07	0.58	0.81	0.09	0.78	0.66	0.00
Avail Cap(c_a), veh/h				762	0	678	203	2685	1171	203	2736	0
HCM Platoon Ratio				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	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				31.6	0.0	29.8	34.6	8.0	3.8	32.6	4.9	0.0
Incr Delay (d2), s/veh				7.7	0.0	0.3	7.1	1.9	0.0	4.2	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
%ile BackOfQ(50%),veh/ln				2.1	0.0	0.1	0.3	7.1	0.3	1.5	3.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				39.3	0.0	30.1	41.7	9.8	3.8	36.8	5.5	0.0
LnGrp LOS				D	A	C	D	A	A	D	A	A
Approach Vol, veh/h					118			2099			1820	
Approach Delay, s/veh					38.6			9.8			7.0	
Approach LOS					D			A			A	

Timer - Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	8.5	52.3			5.1	55.7		9.9				
Change Period (Y+Rc), s	4.0	5.7			4.0	* 5.7		4.0				
Max Green Setting (Gmax), s	8.0	51.3			8.0	* 52		30.0				
Max Q Clear Time (g_c+I1), s	5.5	29.8			2.6	19.8		6.2				
Green Ext Time (p_c), s	0.0	16.7			0.0	17.3		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			9.4									
HCM 6th LOS			A									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	1	340	0	0	1	267	1894	0	17	1612	115
Future Volume (veh/h)	115	1	340	0	0	1	267	1894	0	17	1612	115
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	120	1	21	0	0	-4	278	1973	0	18	1679	84
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	164	1	147	3	0	360	306	2454	0	57	1957	854
Arrive On Green	0.09	0.09	0.09	0.00	0.00	0.00	0.17	0.69	0.00	0.03	0.55	0.55
Sat Flow, veh/h	1781	15	1598	1795	1885	0	1795	3676	0	1795	3582	1562
Grp Volume(v), veh/h	121	0	21	0	-4	-4	278	1973	0	18	1679	84
Grp Sat Flow(s),veh/h/ln	1796	0	1598	1795	1885	1598	1795	1791	0	1795	1791	1562
Q Serve(g_s), s	4.1	0.0	0.8	0.0	0.0	0.0	9.6	24.3	0.0	0.6	25.2	1.6
Cycle Q Clear(g_c), s	4.1	0.0	0.8	0.0	0.0	0.0	9.6	24.3	0.0	0.6	25.2	1.6
Prop In Lane	0.99		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	165	0	147	3	0	0	306	2454	0	57	1957	854
V/C Ratio(X)	0.73	0.00	0.14	0.00	0.00	0.00	0.91	0.80	0.00	0.32	0.86	0.10
Avail Cap(c_a), veh/h	309	0	274	957	0	0	571	4713	0	229	3687	1608
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	0.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.8	0.0	26.3	0.0	0.0	0.0	25.6	6.9	0.0	29.8	12.2	6.8
Incr Delay (d2), s/veh	2.3	0.0	0.2	0.0	0.0	0.0	4.2	0.2	0.0	1.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.3	0.0	0.0	0.0	3.9	3.8	0.0	0.3	7.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	0.0	26.4	0.0	0.0	0.0	29.8	7.2	0.0	30.9	12.6	6.9
LnGrp LOS	C	A	C	A	A	A	C	A	A	C	B	A
Approach Vol, veh/h		142			-8			2251			1781	
Approach Delay, s/veh		29.6			0.0			10.0			12.5	
Approach LOS		C			A			A			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	47.1		9.8	14.7	38.3		0.0
Change Period (Y+Rc), s	3.0	5.7		4.1	3.0	5.7		3.5
Max Green Setting (Gmax), s	9.0	81.0		10.7	21.0	63.0		34.0
Max Q Clear Time (g_c+I1), s	2.6	26.3		6.1	11.6	27.2		0.0
Green Ext Time (p_c), s	0.0	6.3		0.1	0.3	5.5		0.0

Intersection Summary	
HCM 6th Ctrl Delay	11.7
HCM 6th LOS	B

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Woodgrove Way / Quail Oaks Dr & Douglas Blvd
Scenario	Cumulative Plus WHII

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Yield*	*Free*	*Free*	*Yield*	*Free*	*Free*
AM Peak Hour Volume	5	0	72	0	1	100	40	1476	55	91	1900	7
AM Peak Hour Delay (s)	3724.5	3724.5	19.4	2373.7	2373.7	34.4	21.2	0	0	17.6	0	0
PM Peak Hour Volume	5	0	52	0	1	40	46	2046	70	46	1806	4
PM Peak Hour Delay (s)	10000		27.9	4932.2	4932.2	21.8	18.9	0	0	24.9	0	0

AM Delay	**91.5**
AM LOS	**F**

PM Delay	**311.9**
PM LOS	**F**

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Woodgrove Way / Quail Oaks Dr & Douglas Blvd
Scenario	Cumulative Plus WHII

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Yield*	*Free*	*Free*	*Yield*	*Free*	*Free*
AM Peak Hour Volume	5	0	72	0	1	100	40	1476	55	91	1900	7
AM Peak Hour Delay (s)	600	0	19.4	0	600	34.4	21.2	0	0	17.6	0	0
PM Peak Hour Volume	5	0	52	0	1	40	46	2046	70	46	1806	4
PM Peak Hour Delay (s)	600	0	27.9	0	600	21.8	18.9	0	0	24.9	0	0

AM Delay	**35.2**
AM LOS	**D**

PM Delay	**41.8**
PM LOS	**E**

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	10. Eureka Rd & Greyhawk Dr
Scenario	Cumulative Plus WHII

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control				*Stop*		*Stop*	*Yield*	*Free*			*Free*	*Free*
AM Peak Hour Volume				115		70	30	660			815	42
AM Peak Hour Delay (s)				45.9		13.4	10.8	0			0	0
PM Peak Hour Volume				66		60	45	755			655	27
PM Peak Hour Delay (s)				22.3		11.3	9.4	0			0	0

AM Delay	**30.4**
AM LOS	**D**

PM Delay	**15.0**
PM LOS	**C**

Appendix I:
Cumulative Plus Whitehawk I & II Conditions – Technical Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	310	1306	225	341	1907	120	560	1030	157	213	825	290
Future Volume (veh/h)	310	1306	225	341	1907	120	560	1030	157	213	825	290
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	337	1420	66	371	2073	0	609	1120	0	232	897	168
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	394	1745	534	475	1865		605	1544		294	1085	308
Arrive On Green	0.11	0.34	0.34	0.14	0.37	0.00	0.23	0.40	0.00	0.08	0.21	0.20
Sat Flow, veh/h	3456	5106	1564	3456	5106	1585	3456	5106	1585	3456	5106	1575
Grp Volume(v), veh/h	337	1420	66	371	2073	0	609	1120	0	232	897	168
Grp Sat Flow(s),veh/h/ln	1728	1702	1564	1728	1702	1585	1728	1702	1585	1728	1702	1575
Q Serve(g_s), s	11.5	30.4	2.0	12.4	43.8	0.0	21.0	22.2	0.0	7.9	20.1	11.5
Cycle Q Clear(g_c), s	11.5	30.4	2.0	12.4	43.8	0.0	21.0	22.2	0.0	7.9	20.1	11.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	394	1745	534	475	1865		605	1544		294	1085	308
V/C Ratio(X)	0.86	0.81	0.12	0.78	1.11		1.01	0.73		0.79	0.83	0.54
Avail Cap(c_a), veh/h	461	1745	534	475	1865		605	1544		605	1106	315
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.2	36.0	9.2	50.0	38.1	0.0	46.0	31.7	0.0	53.9	45.1	43.4
Incr Delay (d2), s/veh	11.7	4.3	0.5	7.5	58.4	0.0	38.3	1.8	0.0	1.8	5.5	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	12.8	1.3	5.7	27.3	0.0	11.4	8.3	0.0	3.4	8.8	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.9	40.3	9.7	57.4	96.4	0.0	84.4	33.5	0.0	55.7	50.6	46.0
LnGrp LOS	E	D	A	E	F		F	C		E	D	D
Approach Vol, veh/h		1823			2444	A		1729	A		1297	
Approach Delay, s/veh		43.6			90.5			51.4			50.9	
Approach LOS		D			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.5	45.0	25.0	29.5	17.7	47.8	14.2	40.3
Change Period (Y+Rc), s	6.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	14.0	39.0	21.0	24.0	16.0	39.0	21.0	24.0
Max Q Clear Time (g_c+I1), s	14.4	32.4	23.0	22.1	13.5	45.8	9.9	24.2
Green Ext Time (p_c), s	0.0	5.2	0.0	1.3	0.2	0.0	0.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	62.5
HCM 6th LOS	E

Notes

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

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1450	80	61	1860	110	60	20	45	80	30	365
Future Volume (veh/h)	60	1450	80	61	1860	110	60	20	45	80	30	365
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	1576	50	66	2022	83	65	22	-4	87	33	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	83	3400	108	85	2382	1041	83	28	97	116	44	140
Arrive On Green	0.09	1.00	1.00	0.05	0.67	0.67	0.06	0.06	0.00	0.09	0.09	0.09
Sat Flow, veh/h	1781	5080	161	1781	3554	1552	1347	456	1585	1309	496	1580
Grp Volume(v), veh/h	65	1056	570	66	2022	83	87	0	-4	120	0	50
Grp Sat Flow(s),veh/h/ln	1781	1702	1837	1781	1777	1552	1803	0	1585	1805	0	1580
Q Serve(g_s), s	4.3	0.0	0.0	4.4	52.2	2.2	5.7	0.0	0.0	7.8	0.0	3.6
Cycle Q Clear(g_c), s	4.3	0.0	0.0	4.4	52.2	2.2	5.7	0.0	0.0	7.8	0.0	3.6
Prop In Lane	1.00		0.09	1.00		1.00	0.75		1.00	0.72		1.00
Lane Grp Cap(c), veh/h	83	2279	1230	85	2382	1041	111	0	97	159	0	140
V/C Ratio(X)	0.78	0.46	0.46	0.78	0.85	0.08	0.79	0.00	-0.04	0.75	0.00	0.36
Avail Cap(c_a), veh/h	238	2279	1230	238	2382	1041	240	0	211	466	0	408
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)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.8	0.0	0.0	56.5	15.1	6.9	55.5	0.0	0.0	53.4	0.0	51.5
Incr Delay (d2), s/veh	5.9	0.7	1.3	5.6	3.1	0.0	4.6	0.0	0.0	2.7	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(50%),veh/ln	1.9	0.2	0.4	2.0	17.4	0.6	2.8	0.0	0.0	3.7	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.7	0.7	1.3	62.1	18.2	6.9	60.2	0.0	0.0	56.1	0.0	52.1
LnGrp LOS	E	A	A	E	B	A	E	A	A	E	A	D
Approach Vol, veh/h		1691			2171			83			170	
Approach Delay, s/veh		3.1			19.1			63.1			54.9	
Approach LOS		A			B			E			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.7	84.3		14.6	9.6	84.4		11.4
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0
Max Green Setting (Gmax), s	16.0	39.0		31.0	16.0	39.0		16.0
Max Q Clear Time (g_c+I1), s	6.4	2.0		9.8	6.3	54.2		7.7
Green Ext Time (p_c), s	0.0	15.9		0.5	0.0	0.0		0.1

Intersection Summary	
HCM 6th Ctrl Delay	14.9
HCM 6th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	12.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	1480	55	96	1911	7	5	0	73	0	1	100
Future Vol, veh/h	40	1480	55	96	1911	7	5	0	73	0	1	100
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	150	-	100	175	-	-	-	-	125	-	-	25
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	43	1609	60	104	2077	8	5	0	79	0	1	109

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2085	0	0	1669	0	0	2942	3988	805	3180	4044	1043
Stage 1	-	-	-	-	-	-	1695	1695	-	2289	2289	-
Stage 2	-	-	-	-	-	-	1247	2293	-	891	1755	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	262	-	-	381	-	-	7	3	325	4	3	226
Stage 1	-	-	-	-	-	-	96	147	-	40	73	-
Stage 2	-	-	-	-	-	-	184	73	-	304	137	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	262	-	-	381	-	-	~ 1	2	325	2	2	226
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 1	2	-	2	2	-
Stage 1	-	-	-	-	-	-	80	123	-	33	53	-
Stage 2	-	-	-	-	-	-	68	53	-	192	115	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.9	$ 514.1	58.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1	325	262	-	-	381	-	-	2	226
HCM Lane V/C Ratio	5.435	0.244	0.166	-	-	0.274	-	-	0.543	0.481
HCM Control Delay (s)	$ 7733.3	19.6	21.5	-	-	18	-	-	$ 2373.7	34.9
HCM Lane LOS	F	C	C	-	-	C	-	-	F	D
HCM 95th %tile Q(veh)	1.7	0.9	0.6	-	-	1.1	-	-	0.6	2.4

Notes

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1549	7	0	2032	0	20
Future Vol, veh/h	1549	7	0	2032	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1684	8	0	2209	0	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	846
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	306
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	306
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	306	-	-	-
HCM Lane V/C Ratio	0.071	-	-	-
HCM Control Delay (s)	17.7	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	1485	8	5	1942	85	25	2	9	50	1	50
Future Volume (veh/h)	75	1485	8	5	1942	85	25	2	9	50	1	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	82	1614	9	5	2111	91	27	2	10	54	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	88	2800	16	7	2489	106	52	4	19	79	41	41
Arrive On Green	0.05	0.77	0.75	0.00	0.72	0.70	0.04	0.04	0.04	0.04	0.05	0.04
Sat Flow, veh/h	1781	3623	20	1781	3468	148	1179	87	437	1781	832	832
Grp Volume(v), veh/h	82	791	832	5	1073	1129	39	0	0	54	0	2
Grp Sat Flow(s),veh/h/ln	1781	1777	1866	1781	1777	1839	1703	0	0	1781	0	1664
Q Serve(g_s), s	4.9	19.7	19.7	0.3	46.4	48.5	2.4	0.0	0.0	3.2	0.0	0.1
Cycle Q Clear(g_c), s	4.9	19.7	19.7	0.3	46.4	48.5	2.4	0.0	0.0	3.2	0.0	0.1
Prop In Lane	1.00		0.01	1.00		0.08	0.69		0.26	1.00		0.50
Lane Grp Cap(c), veh/h	88	1373	1442	7	1275	1320	76	0	0	79	0	82
V/C Ratio(X)	0.93	0.58	0.58	0.73	0.84	0.86	0.52	0.00	0.00	0.68	0.00	0.02
Avail Cap(c_a), veh/h	132	1596	1677	149	1514	1567	411	0	0	421	0	401
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.1	5.0	5.0	53.7	10.8	11.2	50.4	0.0	0.0	50.8	0.0	48.9
Incr Delay (d2), s/veh	36.9	0.4	0.4	41.3	3.9	4.3	2.0	0.0	0.0	3.8	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	3.0	4.1	4.4	0.2	13.4	14.7	1.1	0.0	0.0	1.5	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.9	5.4	5.4	95.0	14.7	15.5	52.4	0.0	0.0	54.6	0.0	49.0
LnGrp LOS	F	A	A	F	B	B	D	A	A	D	A	D
Approach Vol, veh/h		1705			2207			39			56	
Approach Delay, s/veh		9.4			15.3			52.4			54.4	
Approach LOS		A			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.4	81.4		8.8	3.4	87.4		8.3
Change Period (Y+Rc), s	3.0	6.0		3.5	3.0	6.0		3.5
Max Green Setting (Gmax), s	9.0	89.9		26.0	9.0	94.9		26.0
Max Q Clear Time (g_c+I1), s	6.9	50.5		5.2	2.3	21.7		4.4
Green Ext Time (p_c), s	0.0	24.9		0.1	0.0	15.6		0.1

Intersection Summary			
HCM 6th Ctrl Delay			13.7
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	1252	142	141	1655	195	215	170	115	210	185	45
Future Volume (veh/h)	69	1252	142	141	1655	195	215	170	115	210	185	45
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		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	73	1332	95	150	1761	169	205	215	0	210	215	4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	77	1734	743	164	1906	831	244	256		249	261	219
Arrive On Green	0.04	0.48	0.47	0.09	0.53	0.53	0.14	0.14	0.00	0.14	0.14	0.14
Sat Flow, veh/h	1795	3582	1598	1795	3582	1562	1795	1885	1598	1795	1885	1576
Grp Volume(v), veh/h	73	1332	95	150	1761	169	205	215	0	210	215	4
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1562	1795	1885	1598	1795	1885	1576
Q Serve(g_s), s	4.3	32.5	3.6	8.8	48.2	6.0	11.9	11.8	0.0	12.1	11.8	0.2
Cycle Q Clear(g_c), s	4.3	32.5	3.6	8.8	48.2	6.0	11.9	11.8	0.0	12.1	11.8	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	77	1734	743	164	1906	831	244	256		249	261	219
V/C Ratio(X)	0.94	0.77	0.13	0.92	0.92	0.20	0.84	0.84		0.84	0.82	0.02
Avail Cap(c_a), veh/h	135	2005	864	202	2274	992	496	521		556	584	488
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	22.6	16.2	48.0	22.9	13.1	44.9	44.9	0.0	44.7	44.6	39.6
Incr Delay (d2), s/veh	28.3	1.3	0.0	33.4	5.7	0.0	3.0	2.8	0.0	3.0	2.5	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(50%),veh/ln	2.5	12.2	1.2	5.3	19.0	1.9	5.3	5.6	0.0	5.5	5.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.1	23.9	16.2	81.4	28.7	13.1	47.9	47.7	0.0	47.7	47.0	39.6
LnGrp LOS	E	C	B	F	C	B	D	D		D	D	D
Approach Vol, veh/h		1500			2080			420	A		429	
Approach Delay, s/veh		26.1			31.2			47.8			47.3	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.7	55.5		18.8	8.6	60.7		18.5
Change Period (Y+Rc), s	3.0	6.0		4.4	3.0	6.0		4.4
Max Green Setting (Gmax), s	13.0	57.6		32.6	9.0	65.6		29.0
Max Q Clear Time (g_c+I1), s	10.3	34.5		14.1	6.3	50.2		13.9
Green Ext Time (p_c), s	0.0	3.0		0.2	0.0	4.5		0.2

Intersection Summary	
HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	161	1118	75	255	100	1333	450	45	95	710	262
Future Volume (veh/h)	142	161	1118	75	255	100	1333	450	45	95	710	262
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	158	179	0	83	283	0	1481	500	0	106	789	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	172	570		90	381		1484	779		421	841	
Arrive On Green	0.10	0.16	0.00	0.05	0.11	0.00	0.41	0.41	0.00	0.23	0.23	0.00
Sat Flow, veh/h	1795	3582	1598	1795	3582	1598	3591	1885	1598	1795	3582	1598
Grp Volume(v), veh/h	158	179	0	83	283	0	1481	500	0	106	789	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1598	1795	1885	1598	1795	1791	1598
Q Serve(g_s), s	9.8	5.0	0.0	5.2	8.6	0.0	46.2	23.7	0.0	5.4	24.2	0.0
Cycle Q Clear(g_c), s	9.8	5.0	0.0	5.2	8.6	0.0	46.2	23.7	0.0	5.4	24.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	172	570		90	381		1484	779		421	841	
V/C Ratio(X)	0.92	0.31		0.92	0.74		1.00	0.64		0.25	0.94	
Avail Cap(c_a), veh/h	385	853		224	668		1484	779		421	841	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.2	41.7	0.0	53.0	48.6	0.0	32.8	26.3	0.0	34.9	42.1	0.0
Incr Delay (d2), s/veh	7.8	0.1	0.0	13.4	1.1	0.0	22.9	1.4	0.0	0.1	17.7	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	4.6	2.1	0.0	2.6	3.8	0.0	23.5	10.5	0.0	2.3	12.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.0	41.8	0.0	66.4	49.7	0.0	55.7	27.7	0.0	35.0	59.8	0.0
LnGrp LOS	E	D		E	D		E	C		C	E	
Approach Vol, veh/h		337	A		366	A		1981	A		895	A
Approach Delay, s/veh		49.4			53.4			48.6			56.8	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	21.8		30.3	14.7	16.7		50.3
Change Period (Y+Rc), s	3.0	5.7		5.3	3.0	* 5.7		5.3
Max Green Setting (Gmax), s	15.0	25.0		25.0	25.0	* 20		45.0
Max Q Clear Time (g_c+I1), s	7.2	7.0		26.2	11.8	10.6		48.2
Green Ext Time (p_c), s	0.0	0.3		0.0	0.0	0.4		0.0

Intersection Summary	
HCM 6th Ctrl Delay	51.3
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	15	165	25	6	45	146	1602	75	110	1166	35
Future Volume (veh/h)	130	15	165	25	6	45	146	1602	75	110	1166	35
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		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	0	0	27	7	-5	159	1741	42	120	1267	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	325	0	144	81	21	90	187	1957	594	572	3135	947
Arrive On Green	0.09	0.00	0.00	0.06	0.06	0.00	0.10	0.38	0.38	0.64	1.00	1.00
Sat Flow, veh/h	3563	0	1585	1429	370	1585	1781	5106	1550	1781	5106	1542
Grp Volume(v), veh/h	152	0	0	34	0	-5	159	1741	42	120	1267	17
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1799	0	1585	1781	1702	1550	1781	1702	1542
Q Serve(g_s), s	4.9	0.0	0.0	2.2	0.0	0.0	10.5	38.3	2.1	3.3	0.0	0.0
Cycle Q Clear(g_c), s	4.9	0.0	0.0	2.2	0.0	0.0	10.5	38.3	2.1	3.3	0.0	0.0
Prop In Lane	1.00		1.00	0.79		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	325	0	144	102	0	90	187	1957	594	572	3135	947
V/C Ratio(X)	0.47	0.00	0.00	0.33	0.00	-0.06	0.85	0.89	0.07	0.21	0.40	0.02
Avail Cap(c_a), veh/h	623	0	277	315	0	277	312	1957	594	572	3135	947
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	0.0	0.0	54.4	0.0	0.0	52.8	34.6	23.5	15.2	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.7	0.0	0.0	5.1	6.5	0.2	0.1	0.2	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	2.2	0.0	0.0	1.0	0.0	0.0	4.8	16.1	0.8	1.3	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.2	0.0	0.0	55.1	0.0	0.0	57.8	41.2	23.7	15.2	0.2	0.0
LnGrp LOS	D	A	A	E	A	A	E	D	C	B	A	A
Approach Vol, veh/h		152			29			1942			1404	
Approach Delay, s/veh		52.2			64.6			42.2			1.5	
Approach LOS		D			E			D			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.3	50.0		14.9	16.6	77.7		10.8
Change Period (Y+Rc), s	5.7	* 5.7		4.0	4.0	5.7		4.0
Max Green Setting (Gmax), s	16.6	* 44		21.0	21.0	39.3		21.0
Max Q Clear Time (g_c+I1), s	15.3	40.3		6.9	12.5	2.0		4.2
Green Ext Time (p_c), s	0.1	3.8		0.2	0.1	21.4		0.1

Intersection Summary	
HCM 6th Ctrl Delay	26.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	300	90	65	550	320	294	1302	75	180	921	210
Future Volume (veh/h)	187	300	90	65	550	320	294	1302	75	180	921	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	203	326	0	71	598	0	320	1415	0	196	1001	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	229	811		261	622		377	2418		259	2170	
Arrive On Green	0.13	0.23	0.00	0.08	0.17	0.00	0.11	0.47	0.00	0.07	0.43	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	203	326	0	71	598	0	320	1415	0	196	1001	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	13.4	9.4	0.0	2.3	20.0	0.0	10.9	24.2	0.0	6.7	16.8	0.0
Cycle Q Clear(g_c), s	13.4	9.4	0.0	2.3	20.0	0.0	10.9	24.2	0.0	6.7	16.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	229	811		261	622		377	2418		259	2170	
V/C Ratio(X)	0.89	0.40		0.27	0.96		0.85	0.59		0.76	0.46	
Avail Cap(c_a), veh/h	238	811		461	622		461	2418		749	2170	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.4	39.3	0.0	52.4	49.1	0.0	52.5	23.0	0.0	54.4	24.7	0.0
Incr Delay (d2), s/veh	28.6	0.6	0.0	0.2	26.9	0.0	10.1	0.5	0.0	1.7	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	4.1	0.0	1.0	11.1	0.0	5.1	9.2	0.0	2.9	6.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.0	39.9	0.0	52.6	76.0	0.0	62.6	23.5	0.0	56.2	25.4	0.0
LnGrp LOS	E	D		D	E		E	C		E	C	
Approach Vol, veh/h		529	A		669	A		1735	A		1197	A
Approach Delay, s/veh		55.3			73.6			30.7			30.4	
Approach LOS		E			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	60.8	13.1	31.4	18.8	55.0	19.4	25.0
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	5.7
Max Green Setting (Gmax), s	26.0	39.3	16.0	19.3	16.0	* 49	16.0	19.3
Max Q Clear Time (g_c+I1), s	8.7	26.2	4.3	11.4	12.9	18.8	15.4	22.0
Green Ext Time (p_c), s	0.3	9.7	0.1	1.7	0.2	12.1	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	40.7
HCM 6th LOS	D

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	660	815	43	118	70
Future Vol, veh/h	30	660	815	43	118	70
Conflicting Peds, #/hr	6	0	0	6	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	37	805	994	52	144	85

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1052	0	-	0	1478	503
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	478	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	663	-	-	-	~ 118	517
Stage 1	-	-	-	-	319	-
Stage 2	-	-	-	-	592	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	659	-	-	-	~ 110	514
Mov Cap-2 Maneuver	-	-	-	-	221	-
Stage 1	-	-	-	-	299	-
Stage 2	-	-	-	-	588	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	34.7
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	659	-	-	-	221	514
HCM Lane V/C Ratio	0.056	-	-	-	0.651	0.166
HCM Control Delay (s)	10.8	-	-	-	47.4	13.4
HCM Lane LOS	B	-	-	-	E	B
HCM 95th %tile Q(veh)	0.2	-	-	-	4	0.6

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	220	0	131	6	1672	140	118	1776	0
Future Volume (veh/h)	0	0	0	220	0	131	6	1672	140	118	1776	0
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1885	0	1885	1870	1885	1885	1885	1885	0
Adj Flow Rate, veh/h				244	0	32	7	1858	139	131	1973	0
Peak Hour Factor				0.90	0.92	0.90	0.92	0.90	0.90	0.90	0.90	0.92
Percent Heavy Veh, %				1	0	1	2	1	1	1	1	0
Cap, veh/h				299	0	266	13	2135	952	164	2436	0
Arrive On Green				0.17	0.00	0.17	0.01	0.60	0.60	0.09	0.68	0.00
Sat Flow, veh/h				1795	0	1598	1781	3582	1598	1795	3676	0
Grp Volume(v), veh/h				244	0	32	7	1858	139	131	1973	0
Grp Sat Flow(s),veh/h/ln				1795	0	1598	1781	1791	1598	1795	1791	0
Q Serve(g_s), s				10.8	0.0	1.4	0.3	35.8	3.2	5.9	32.2	0.0
Cycle Q Clear(g_c), s				10.8	0.0	1.4	0.3	35.8	3.2	5.9	32.2	0.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				299	0	266	13	2135	952	164	2436	0
V/C Ratio(X)				0.82	0.00	0.12	0.55	0.87	0.15	0.80	0.81	0.00
Avail Cap(c_a), veh/h				655	0	583	173	2223	991	175	2436	0
HCM Platoon Ratio				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	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				33.0	0.0	29.1	40.7	13.9	7.3	36.6	9.4	0.0
Incr Delay (d2), s/veh				6.4	0.0	0.2	12.8	4.0	0.1	19.6	2.2	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
%ile BackOfQ(50%),veh/ln				5.1	0.0	0.5	0.2	12.5	0.9	3.4	9.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				39.4	0.0	29.4	53.5	17.9	7.4	56.2	11.5	0.0
LnGrp LOS				D	A	C	D	B	A	E	B	A
Approach Vol, veh/h					276			2004			2104	
Approach Delay, s/veh					38.3			17.3			14.3	
Approach LOS					D			B			B	

Timer - Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	11.5	53.0			4.6	59.9		17.7				
Change Period (Y+Rc), s	4.0	5.7			4.0	* 5.7		4.0				
Max Green Setting (Gmax), s	8.0	49.3			8.0	* 52		30.0				
Max Q Clear Time (g_c+I1), s	7.9	37.8			2.3	34.2		12.8				
Green Ext Time (p_c), s	0.0	9.5			0.0	13.5		1.0				

Intersection Summary	
HCM 6th Ctrl Delay	17.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	2	130	0	1	2	255	1642	0	2	1786	210
Future Volume (veh/h)	155	2	130	0	1	2	255	1642	0	2	1786	210
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	172	2	3	0	1	-4	283	1824	0	2	1984	186
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	205	2	185	2	0	360	299	2658	0	37	2134	929
Arrive On Green	0.12	0.12	0.12	0.00	0.00	0.00	0.17	0.74	0.00	0.02	0.60	0.60
Sat Flow, veh/h	1776	21	1598	1795	1885	0	1795	3676	0	1795	3582	1559
Grp Volume(v), veh/h	174	0	3	0	-3	-3	283	1824	0	2	1984	186
Grp Sat Flow(s),veh/h/ln	1796	0	1598	1795	1885	1598	1795	1791	0	1795	1791	1559
Q Serve(g_s), s	9.3	0.0	0.2	0.0	0.0	0.0	15.3	26.3	0.0	0.1	49.4	5.4
Cycle Q Clear(g_c), s	9.3	0.0	0.2	0.0	0.0	0.0	15.3	26.3	0.0	0.1	49.4	5.4
Prop In Lane	0.99		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	207	0	185	2	0	0	299	2658	0	37	2134	929
V/C Ratio(X)	0.84	0.00	0.02	0.00	0.00	0.00	0.94	0.69	0.00	0.05	0.93	0.20
Avail Cap(c_a), veh/h	219	0	195	612	0	0	329	2969	0	146	2386	1039
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	0.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	0.0	38.5	0.0	0.0	0.0	40.5	6.7	0.0	47.2	18.0	9.1
Incr Delay (d2), s/veh	21.6	0.0	0.0	0.0	0.0	0.0	33.0	0.4	0.0	0.2	6.4	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	5.3	0.0	0.1	0.0	0.0	0.0	9.1	6.2	0.0	0.0	19.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.2	0.0	38.6	0.0	0.0	0.0	73.5	7.1	0.0	47.5	24.4	9.2
LnGrp LOS	E	A	D	A	A	A	E	A	A	D	C	A
Approach Vol, veh/h		177			-6			2107			2172	
Approach Delay, s/veh		63.7			0.0			16.0			23.2	
Approach LOS		E			A			B			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	77.0		15.4	20.4	62.6		0.0
Change Period (Y+Rc), s	3.0	5.7		4.1	3.0	5.7		3.5
Max Green Setting (Gmax), s	9.0	79.8		11.9	19.0	63.8		34.0
Max Q Clear Time (g_c+I1), s	2.1	28.3		11.3	17.3	51.4		0.0
Green Ext Time (p_c), s	0.0	5.4		0.0	0.1	5.5		0.0

Intersection Summary	
HCM 6th Ctrl Delay	21.4
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	555	1703	320	436	1534	243	495	1150	267	256	1060	215
Future Volume (veh/h)	555	1703	320	436	1534	243	495	1150	267	256	1060	215
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	590	1812	245	464	1632	0	527	1223	0	272	1128	68
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	557	1784	553	480	1670		488	1632		319	1383	408
Arrive On Green	0.16	0.35	0.35	0.14	0.32	0.00	0.14	0.32	0.00	0.09	0.27	0.26
Sat Flow, veh/h	3483	5147	1596	3483	5147	1598	3483	5147	1598	3483	5147	1596
Grp Volume(v), veh/h	590	1812	245	464	1632	0	527	1223	0	272	1128	68
Grp Sat Flow(s),veh/h/ln	1742	1716	1596	1742	1716	1598	1742	1716	1598	1742	1716	1596
Q Serve(g_s), s	24.0	52.0	11.8	19.9	47.0	0.0	21.0	31.9	0.0	11.5	30.8	5.0
Cycle Q Clear(g_c), s	24.0	52.0	11.8	19.9	47.0	0.0	21.0	31.9	0.0	11.5	30.8	5.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	557	1784	553	480	1670		488	1632		319	1383	408
V/C Ratio(X)	1.06	1.02	0.44	0.97	0.98		1.08	0.75		0.85	0.82	0.17
Avail Cap(c_a), veh/h	557	1784	553	480	1670		488	1632		418	1475	436
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.0	49.0	16.6	64.3	50.1	0.0	64.5	45.9	0.0	67.1	51.4	43.4
Incr Delay (d2), s/veh	54.6	25.3	2.6	32.2	17.2	0.0	64.3	2.1	0.0	10.1	3.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.6	25.7	4.6	10.8	22.3	0.0	13.5	13.6	0.0	5.5	13.4	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	117.6	74.3	19.2	96.6	67.3	0.0	128.8	48.0	0.0	77.2	55.1	43.7
LnGrp LOS	F	F	B	F	E		F	D		E	E	D
Approach Vol, veh/h		2647			2096	A		1750	A		1468	
Approach Delay, s/veh		78.8			73.8			72.3			58.7	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.7	56.0	25.0	44.3	28.0	52.7	17.8	51.6
Change Period (Y+Rc), s	6.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	16.0	50.0	21.0	41.0	24.0	44.0	18.0	44.0
Max Q Clear Time (g_c+I1), s	21.9	54.0	23.0	32.8	26.0	49.0	13.5	33.9
Green Ext Time (p_c), s	0.0	0.0	0.0	5.5	0.0	0.0	0.2	6.4

Intersection Summary	
HCM 6th Ctrl Delay	72.3
HCM 6th LOS	E

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	1945	25	91	1672	95	130	40	112	111	45	310
Future Volume (veh/h)	90	1945	25	91	1672	95	130	40	112	111	45	310
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		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	96	2069	12	97	1779	71	138	43	33	118	48	110
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	116	3212	19	118	2183	954	157	49	181	137	56	169
Arrive On Green	0.13	1.00	1.00	0.07	0.61	0.61	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1795	5280	31	1795	3582	1565	1385	431	1598	1294	526	1598
Grp Volume(v), veh/h	96	1344	737	97	1779	71	181	0	33	166	0	110
Grp Sat Flow(s),veh/h/ln	1795	1716	1880	1795	1791	1565	1816	0	1598	1820	0	1598
Q Serve(g_s), s	7.8	0.0	0.0	8.0	57.8	2.8	14.7	0.0	2.8	13.5	0.0	9.9
Cycle Q Clear(g_c), s	7.8	0.0	0.0	8.0	57.8	2.8	14.7	0.0	2.8	13.5	0.0	9.9
Prop In Lane	1.00		0.02	1.00		1.00	0.76		1.00	0.71		1.00
Lane Grp Cap(c), veh/h	116	2087	1143	118	2183	954	206	0	181	193	0	169
V/C Ratio(X)	0.83	0.64	0.64	0.82	0.81	0.07	0.88	0.00	0.18	0.86	0.00	0.65
Avail Cap(c_a), veh/h	251	2087	1143	251	2183	954	254	0	224	255	0	224
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)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	64.5	0.0	0.0	69.2	22.7	12.0	65.5	0.0	60.2	66.0	0.0	64.4
Incr Delay (d2), s/veh	5.5	1.5	2.8	5.2	3.5	0.2	21.5	0.0	0.2	16.5	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.4	0.9	3.7	22.7	1.0	8.1	0.0	1.2	7.2	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.0	1.5	2.8	74.4	26.2	12.1	87.0	0.0	60.4	82.5	0.0	66.0
LnGrp LOS	E	A	A	E	C	B	F	A	E	F	A	E
Approach Vol, veh/h		2177			1947			214			276	
Approach Delay, s/veh		5.0			28.1			82.9			75.9	
Approach LOS		A			C			F			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.9	95.2		19.9	13.7	95.4		21.0
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0
Max Green Setting (Gmax), s	21.0	69.0		21.0	21.0	69.0		21.0
Max Q Clear Time (g_c+I1), s	10.0	2.0		15.5	9.8	59.8		16.7
Green Ext Time (p_c), s	0.1	30.3		0.4	0.1	7.3		0.3

Intersection Summary	
HCM 6th Ctrl Delay	22.6
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	2058	70	52	1813	4	5	0	53	0	1	40
Future Vol, veh/h	46	2058	70	52	1813	4	5	0	53	0	1	40
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	150	-	100	175	-	-	-	-	125	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	49	2189	74	55	1929	4	5	0	56	0	1	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1933	0	0	2263	0	0	3362	4330	1095	3234	4402	967
Stage 1	-	-	-	-	-	-	2287	2287	-	2041	2041	-
Stage 2	-	-	-	-	-	-	1075	2043	-	1193	2361	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.52	6.52	6.92	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Follow-up Hdwy	2.21	-	-	2.21	-	-	3.51	4.01	3.31	3.51	4.01	3.31
Pot Cap-1 Maneuver	305	-	-	226	-	-	~ 3	2	210	4	2	256
Stage 1	-	-	-	-	-	-	41	74	-	59	100	-
Stage 2	-	-	-	-	-	-	236	99	-	200	68	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	305	-	-	226	-	-	-	1	210	2	~ 1	256
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	1	-	2	~ 1	-
Stage 1	-	-	-	-	-	-	34	62	-	50	76	-
Stage 2	-	-	-	-	-	-	147	75	-	123	57	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.7		141.6
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	210	305	-	-	226	-	-	1	256
HCM Lane V/C Ratio	-	0.268	0.16	-	-	0.245	-	-	1.064	0.166
HCM Control Delay (s)	-	28.3	19	-	-	26	-	-	$ 4932.2	21.8
HCM Lane LOS	-	D	C	-	-	D	-	-	F	C
HCM 95th %tile Q(veh)	-	1	0.6	-	-	0.9	-	-	0.6	0.6

Notes

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2098	18	0	1869	0	11
Future Vol, veh/h	2098	18	0	1869	0	11
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	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2232	19	0	1988	0	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1126
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	199
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	199
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	24.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	199	-	-	-
HCM Lane V/C Ratio	0.059	-	-	-
HCM Control Delay (s)	24.2	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	2033	28	9	1805	20	17	0	6	30	1	35
Future Volume (veh/h)	42	2033	28	9	1805	20	17	0	6	30	1	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.95	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	45	2163	30	10	1920	20	18	0	6	32	1	-4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	20	2646	37	2	2597	27	40	0	13	61	0	298
Arrive On Green	0.01	0.73	0.71	0.00	0.72	0.69	0.03	0.00	0.04	0.03	0.03	0.00
Sat Flow, veh/h	1795	3616	50	1795	3630	38	1288	0	429	1795	1885	0
Grp Volume(v), veh/h	45	1068	1125	10	945	995	24	0	0	32	-3	-3
Grp Sat Flow(s),veh/h/ln	1795	1791	1875	1795	1791	1877	1718	0	0	1795	1885	1598
Q Serve(g_s), s	0.9	30.5	30.9	0.1	24.4	24.7	1.1	0.0	0.0	1.3	0.0	0.0
Cycle Q Clear(g_c), s	0.9	30.5	30.9	0.1	24.4	24.7	1.1	0.0	0.0	1.3	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.02	0.75		0.25	1.00		0.00
Lane Grp Cap(c), veh/h	20	1311	1372	2	1281	1343	54	0	0	61	0	0
V/C Ratio(X)	2.26	0.82	0.82	4.28	0.74	0.74	0.45	0.00	0.00	0.52	0.00	0.00
Avail Cap(c_a), veh/h	187	1551	1623	187	1504	1576	570	0	0	596	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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	38.0	6.8	6.9	38.4	6.6	6.6	36.5	0.0	0.0	36.5	0.0	0.0
Incr Delay (d2), s/veh	580.1	3.0	3.0	1551.4	1.6	1.6	2.2	0.0	0.0	2.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	5.6	6.0	1.0	4.7	5.0	0.5	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	618.1	9.8	9.9	1589.8	8.2	8.2	38.7	0.0	0.0	39.0	0.0	0.0
LnGrp LOS	F	A	A	F	A	A	D	A	A	D	A	A
Approach Vol, veh/h		2238			1950			24			26	
Approach Delay, s/veh		22.1			16.3			38.7			48.0	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.9	58.9		6.6	3.6	60.2		6.4
Change Period (Y+Rc), s	3.0	6.0		3.5	3.0	6.0		3.5
Max Green Setting (Gmax), s	9.0	62.5		26.0	9.0	64.5		26.0
Max Q Clear Time (g_c+I1), s	2.9	26.7		3.3	2.1	32.9		3.1
Green Ext Time (p_c), s	0.0	18.7		0.0	0.0	21.3		0.0

Intersection Summary		
HCM 6th Ctrl Delay		19.7
HCM 6th LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	1658	261	145	1522	230	177	135	130	210	190	65
Future Volume (veh/h)	74	1658	261	145	1522	230	177	135	130	210	190	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	76	1709	190	149	1569	190	160	169	0	206	210	3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	81	1858	782	163	2021	901	200	210		244	256	217
Arrive On Green	0.04	0.51	0.50	0.09	0.56	0.56	0.11	0.11	0.00	0.13	0.13	0.13
Sat Flow, veh/h	1810	3610	1577	1810	3610	1609	1810	1900	1610	1810	1900	1610
Grp Volume(v), veh/h	76	1709	190	149	1569	190	160	169	0	206	210	3
Grp Sat Flow(s),veh/h/ln	1810	1805	1577	1810	1805	1609	1810	1900	1610	1810	1900	1610
Q Serve(g_s), s	4.5	46.6	7.4	8.7	36.1	6.3	9.2	9.3	0.0	11.9	11.5	0.2
Cycle Q Clear(g_c), s	4.5	46.6	7.4	8.7	36.1	6.3	9.2	9.3	0.0	11.9	11.5	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	81	1858	782	163	2021	901	200	210		244	256	217
V/C Ratio(X)	0.93	0.92	0.24	0.92	0.78	0.21	0.80	0.80		0.85	0.82	0.01
Avail Cap(c_a), veh/h	153	2536	1078	203	2637	1175	498	523		298	313	265
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	23.9	15.4	48.2	18.3	11.7	46.3	46.3	0.0	45.1	44.9	40.0
Incr Delay (d2), s/veh	16.3	4.0	0.1	32.7	0.8	0.0	2.8	2.7	0.0	14.4	11.1	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	2.3	17.9	2.4	5.2	13.1	2.0	4.2	4.4	0.0	6.2	6.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.1	27.9	15.5	80.9	19.1	11.8	49.1	49.1	0.0	59.5	56.1	40.1
LnGrp LOS	E	C	B	F	B	B	D	D		E	E	D
Approach Vol, veh/h		1975			1908			329	A		419	
Approach Delay, s/veh		28.2			23.2			49.1			57.6	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.6	59.0		18.4	8.8	63.8		15.8
Change Period (Y+Rc), s	3.0	6.0		4.4	3.0	6.0		4.4
Max Green Setting (Gmax), s	13.0	73.0		17.2	10.0	76.0		29.0
Max Q Clear Time (g_c+I1), s	10.7	48.6		13.9	6.5	38.1		11.3
Green Ext Time (p_c), s	0.0	4.4		0.1	0.0	4.2		0.1

Intersection Summary	
HCM 6th Ctrl Delay	30.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	217	305	1164	60	291	115	1187	765	80	125	515	207
Future Volume (veh/h)	217	305	1164	60	291	115	1187	765	80	125	515	207
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	226	318	0	62	303	0	1236	797	0	130	536	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	241	788		64	410		1501	788		326	651	
Arrive On Green	0.13	0.22	0.00	0.04	0.11	0.00	0.42	0.42	0.00	0.18	0.18	0.00
Sat Flow, veh/h	1795	3582	1598	1795	3582	1598	3591	1885	1598	1795	3582	1598
Grp Volume(v), veh/h	226	318	0	62	303	0	1236	797	0	130	536	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1598	1795	1885	1598	1795	1791	1598
Q Serve(g_s), s	13.8	8.4	0.0	3.8	9.1	0.0	33.8	46.3	0.0	7.1	15.9	0.0
Cycle Q Clear(g_c), s	13.8	8.4	0.0	3.8	9.1	0.0	33.8	46.3	0.0	7.1	15.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	241	788		64	410		1501	788		326	651	
V/C Ratio(X)	0.94	0.40		0.96	0.74		0.82	1.01		0.40	0.82	
Avail Cap(c_a), veh/h	389	864		227	676		1501	788		426	851	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.5	37.0	0.0	53.3	47.4	0.0	28.6	32.2	0.0	40.0	43.6	0.0
Incr Delay (d2), s/veh	16.4	0.1	0.0	24.3	1.0	0.0	3.6	34.9	0.0	0.3	3.9	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(50%),veh/ln	7.0	3.5	0.0	2.1	4.0	0.0	14.5	27.4	0.0	3.1	7.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.9	37.1	0.0	77.6	48.4	0.0	32.2	67.1	0.0	40.3	47.6	0.0
LnGrp LOS	E	D		E	D		C	F		D	D	
Approach Vol, veh/h		544	A		365	A		2033	A		666	A
Approach Delay, s/veh		48.2			53.4			45.9			46.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	28.4		24.1	18.9	17.5		50.3
Change Period (Y+Rc), s	3.0	5.7		5.3	3.0	* 5.7		5.3
Max Green Setting (Gmax), s	15.0	25.0		25.0	25.0	* 20		45.0
Max Q Clear Time (g_c+I1), s	5.8	10.4		17.9	15.8	11.1		48.3
Green Ext Time (p_c), s	0.0	0.5		0.8	0.1	0.5		0.0

Intersection Summary	
HCM 6th Ctrl Delay	47.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	15	265	75	15	100	185	1506	50	120	1513	65
Future Volume (veh/h)	190	15	265	75	15	100	185	1506	50	120	1513	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	213	0	13	80	16	-6	197	1602	25	128	1610	30
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	358	0	156	131	26	139	225	1973	607	507	2854	883
Arrive On Green	0.10	0.00	0.10	0.09	0.09	0.00	0.13	0.38	0.38	0.28	0.55	0.55
Sat Flow, veh/h	3591	0	1569	1508	302	1598	1795	5147	1583	1795	5147	1593
Grp Volume(v), veh/h	213	0	13	96	0	-6	197	1602	25	128	1610	30
Grp Sat Flow(s),veh/h/ln	1795	0	1569	1810	0	1598	1795	1716	1583	1795	1716	1593
Q Serve(g_s), s	6.8	0.0	0.9	6.1	0.0	0.0	12.9	33.4	1.2	6.6	24.3	1.0
Cycle Q Clear(g_c), s	6.8	0.0	0.9	6.1	0.0	0.0	12.9	33.4	1.2	6.6	24.3	1.0
Prop In Lane	1.00		1.00	0.83		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	358	0	156	158	0	139	225	1973	607	507	2854	883
V/C Ratio(X)	0.59	0.00	0.08	0.61	0.00	-0.04	0.88	0.81	0.04	0.25	0.56	0.03
Avail Cap(c_a), veh/h	628	0	275	317	0	280	314	1973	607	507	2854	883
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	49.0	52.8	0.0	0.0	51.6	33.1	23.2	33.3	17.3	12.1
Incr Delay (d2), s/veh	0.6	0.0	0.1	1.4	0.0	0.0	14.1	3.8	0.1	0.1	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(50%),veh/ln	3.1	0.0	0.4	2.9	0.0	0.0	6.5	13.9	0.5	2.8	9.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.3	0.0	49.1	54.2	0.0	0.0	65.6	36.9	23.3	33.4	17.8	12.2
LnGrp LOS	D	A	D	D	A	A	E	D	C	C	B	B
Approach Vol, veh/h		226			90			1824			1768	
Approach Delay, s/veh		52.1			57.8			39.8			18.8	
Approach LOS		D			E			D			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	39.6	50.0		16.0	19.0	70.5		14.5
Change Period (Y+Rc), s	5.7	* 5.7		4.0	4.0	5.7		4.0
Max Green Setting (Gmax), s	16.3	* 44		21.0	21.0	39.3		21.0
Max Q Clear Time (g_c+I1), s	19.6	35.4		8.8	14.9	26.3		8.1
Green Ext Time (p_c), s	0.1	7.9		0.3	0.1	11.2		0.2

Intersection Summary	
HCM 6th Ctrl Delay	31.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	257	570	270	75	430	240	280	1146	70	245	1273	280
Future Volume (veh/h)	257	570	270	75	430	240	280	1146	70	245	1273	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	273	606	0	80	457	0	298	1219	0	261	1354	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	301	903		270	580		357	1881		324	1758	
Arrive On Green	0.17	0.25	0.00	0.08	0.16	0.00	0.10	0.37	0.00	0.09	0.34	0.00
Sat Flow, veh/h	1795	3582	1598	3483	3582	1598	3483	5147	1598	3483	5147	1598
Grp Volume(v), veh/h	273	606	0	80	457	0	298	1219	0	261	1354	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1742	1791	1598	1742	1716	1598	1742	1716	1598
Q Serve(g_s), s	17.9	18.3	0.0	2.6	14.7	0.0	10.1	23.6	0.0	8.8	28.2	0.0
Cycle Q Clear(g_c), s	17.9	18.3	0.0	2.6	14.7	0.0	10.1	23.6	0.0	8.8	28.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	301	903		270	580		357	1881		324	1758	
V/C Ratio(X)	0.91	0.67		0.30	0.79		0.84	0.65		0.81	0.77	
Avail Cap(c_a), veh/h	389	903		610	627		464	1881		610	1758	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.0	40.4	0.0	52.3	48.3	0.0	52.9	31.7	0.0	53.4	35.3	0.0
Incr Delay (d2), s/veh	18.3	2.4	0.0	0.2	7.1	0.0	7.9	1.0	0.0	1.8	3.3	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(50%),veh/ln	9.4	8.2	0.0	1.1	7.1	0.0	4.7	9.5	0.0	3.8	11.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.3	42.8	0.0	52.5	55.4	0.0	60.7	32.6	0.0	55.2	38.6	0.0
LnGrp LOS	E	D		D	E		E	C		E	D	
Approach Vol, veh/h		879	A		537	A		1517	A		1615	A
Approach Delay, s/veh		50.4			55.0			38.2			41.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	47.8	13.3	34.2	18.0	45.0	24.1	23.4
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	5.7
Max Green Setting (Gmax), s	21.0	34.3	21.0	24.3	16.0	* 39	26.0	19.3
Max Q Clear Time (g_c+I1), s	10.8	25.6	4.6	20.3	12.1	30.2	19.9	16.7
Green Ext Time (p_c), s	0.3	6.2	0.1	1.9	0.2	6.9	0.2	1.0

Intersection Summary	
HCM 6th Ctrl Delay	43.6
HCM 6th LOS	D

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	755	655	28	67	60
Future Vol, veh/h	45	755	655	28	67	60
Conflicting Peds, #/hr	1	0	0	1	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	50	839	728	31	74	67

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	760	0	-	0	1252	365
Stage 1	-	-	-	-	729	-
Stage 2	-	-	-	-	523	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	861	-	-	-	167	638
Stage 1	-	-	-	-	444	-
Stage 2	-	-	-	-	565	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	860	-	-	-	157	637
Mov Cap-2 Maneuver	-	-	-	-	281	-
Stage 1	-	-	-	-	418	-
Stage 2	-	-	-	-	564	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	17.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	860	-	-	-	281	637
HCM Lane V/C Ratio	0.058	-	-	-	0.265	0.105
HCM Control Delay (s)	9.4	-	-	-	22.4	11.3
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	105	0	80	15	1906	105	85	1663	0
Future Volume (veh/h)	0	0	0	105	0	80	15	1906	105	85	1663	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		0.98	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
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1885	0	1885	1885	1885	1885	1885	1885	0
Adj Flow Rate, veh/h				109	0	9	16	1985	100	89	1732	0
Peak Hour Factor				0.96	0.92	0.96	0.96	0.96	0.96	0.96	0.96	0.92
Percent Heavy Veh, %				1	0	1	1	1	1	1	1	0
Cap, veh/h				150	0	134	27	2446	1067	115	2620	0
Arrive On Green				0.08	0.00	0.08	0.02	0.68	0.68	0.06	0.73	0.00
Sat Flow, veh/h				1795	0	1598	1795	3582	1562	1795	3676	0
Grp Volume(v), veh/h				109	0	9	16	1985	100	89	1732	0
Grp Sat Flow(s),veh/h/ln				1795	0	1598	1795	1791	1562	1795	1791	0
Q Serve(g_s), s				4.2	0.0	0.4	0.6	27.9	1.5	3.5	17.8	0.0
Cycle Q Clear(g_c), s				4.2	0.0	0.4	0.6	27.9	1.5	3.5	17.8	0.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h				150	0	134	27	2446	1067	115	2620	0
V/C Ratio(X)				0.73	0.00	0.07	0.58	0.81	0.09	0.78	0.66	0.00
Avail Cap(c_a), veh/h				761	0	677	203	2683	1170	203	2734	0
HCM Platoon Ratio				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	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				31.6	0.0	29.9	34.6	8.0	3.8	32.6	4.9	0.0
Incr Delay (d2), s/veh				7.8	0.0	0.3	7.1	1.9	0.0	4.2	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
%ile BackOfQ(50%),veh/ln				2.1	0.0	0.1	0.3	7.1	0.3	1.5	3.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				39.4	0.0	30.1	41.7	9.9	3.8	36.8	5.5	0.0
LnGrp LOS				D	A	C	D	A	A	D	A	A
Approach Vol, veh/h					118			2101			1821	
Approach Delay, s/veh					38.7			9.8			7.0	
Approach LOS					D			A			A	

Timer - Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	8.5	52.3			5.1	55.7		9.9				
Change Period (Y+Rc), s	4.0	5.7			4.0	* 5.7		4.0				
Max Green Setting (Gmax), s	8.0	51.3			8.0	* 52		30.0				
Max Q Clear Time (g_c+I1), s	5.5	29.9			2.6	19.8		6.2				
Green Ext Time (p_c), s	0.0	16.7			0.0	17.3		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			9.4									
HCM 6th LOS			A									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	1	340	0	0	1	267	1896	0	17	1613	115
Future Volume (veh/h)	115	1	340	0	0	1	267	1896	0	17	1613	115
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	120	1	21	0	0	-4	278	1975	0	18	1680	84
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	164	1	147	3	0	360	306	2455	0	57	1958	854
Arrive On Green	0.09	0.09	0.09	0.00	0.00	0.00	0.17	0.69	0.00	0.03	0.55	0.55
Sat Flow, veh/h	1781	15	1598	1795	1885	0	1795	3676	0	1795	3582	1562
Grp Volume(v), veh/h	121	0	21	0	-4	-4	278	1975	0	18	1680	84
Grp Sat Flow(s),veh/h/ln	1796	0	1598	1795	1885	1598	1795	1791	0	1795	1791	1562
Q Serve(g_s), s	4.1	0.0	0.8	0.0	0.0	0.0	9.6	24.3	0.0	0.6	25.2	1.6
Cycle Q Clear(g_c), s	4.1	0.0	0.8	0.0	0.0	0.0	9.6	24.3	0.0	0.6	25.2	1.6
Prop In Lane	0.99		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	165	0	147	3	0	0	306	2455	0	57	1958	854
V/C Ratio(X)	0.73	0.00	0.14	0.00	0.00	0.00	0.91	0.80	0.00	0.32	0.86	0.10
Avail Cap(c_a), veh/h	308	0	274	956	0	0	571	4708	0	228	3683	1607
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	0.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.8	0.0	26.3	0.0	0.0	0.0	25.6	6.9	0.0	29.8	12.2	6.8
Incr Delay (d2), s/veh	2.3	0.0	0.2	0.0	0.0	0.0	4.2	0.2	0.0	1.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.3	0.0	0.0	0.0	3.9	3.8	0.0	0.3	7.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	0.0	26.4	0.0	0.0	0.0	29.8	7.2	0.0	31.0	12.6	6.9
LnGrp LOS	C	A	C	A	A	A	C	A	A	C	B	A
Approach Vol, veh/h		142			-8			2253			1782	
Approach Delay, s/veh		29.6			0.0			10.0			12.5	
Approach LOS		C			A			A			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	47.1		9.8	14.7	38.4		0.0
Change Period (Y+Rc), s	3.0	5.7		4.1	3.0	5.7		3.5
Max Green Setting (Gmax), s	9.0	81.0		10.7	21.0	63.0		34.0
Max Q Clear Time (g_c+I1), s	2.6	26.3		6.1	11.6	27.2		0.0
Green Ext Time (p_c), s	0.0	6.3		0.1	0.3	5.5		0.0

Intersection Summary	
HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Woodgrove Way / Quail Oaks Dr & Douglas Blvd
Scenario	Cumulative Plus WHI & WHII

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Yield*	*Free*	*Free*	*Yield*	*Free*	*Free*
AM Peak Hour Volume	5	0	73	0	1	100	40	1480	55	96	1911	7
AM Peak Hour Delay (s)	7733.3	7733.3	19.6	2373.7	2373.7	34.9	21.5	0	0	18.0	0	0
PM Peak Hour Volume	5	0	53	0	1	40	46	2058	70	52	1813	4
PM Peak Hour Delay (s)	10000	0	28.3	4932.2	4932.2	21.8	19.0	0	0	26.0	0	0

AM Delay	**154.1**
AM LOS	**F**

PM Delay	**302.2**
PM LOS	**F**

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Woodgrove Way / Quail Oaks Dr & Douglas Blvd
Scenario	Cumulative Plus WHI & WHII

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Yield*	*Free*	*Free*	*Yield*	*Free*	*Free*
AM Peak Hour Volume	5	0	73	0	1	100	40	1480	55	96	1911	7
AM Peak Hour Delay (s)	600	0	19.6	0	600	34.9	21.5	0	0	18.0	0	0
PM Peak Hour Volume	5	0	53	0	1	40	46	2058	70	52	1813	4
PM Peak Hour Delay (s)	600	0	28.3	0	600	21.8	19.0	0	0	26.0	0	0

AM Delay	**35.3**
AM LOS	**D**

PM Delay	**41.6**
PM LOS	**E**

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Woodgrove Way / Quail Oaks Dr & Douglas Blvd
Scenario	Cumulative Plus WHI & WHII - Mitigation

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Stop*	*Yield*	*Free*	*Free*	*Yield*	*Free*	*Free*
AM Peak Hour Volume	0	0	78	0	0	101	40	1480	55	96	1911	7
AM Peak Hour Delay (s)	0	0	19.9	0	0	35.1	21.5	0	0	18.0	0	0
PM Peak Hour Volume	5	0	53	0	1	40	46	2058	70	52	1813	4
PM Peak Hour Delay (s)	10000	0	28.3	4932.2	4932.2	21.8	19.0	0	0	26.0	0	0

AM Delay	**24.4**
AM LOS	**C**

PM Delay	**302.2**
PM LOS	**F**

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	10. Eureka Rd & Greyhawk Dr
Scenario	Cumulative Plus WHI & WHII

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control				*Stop*		*Stop*	*Yield*	*Free*			*Free*	*Free*
AM Peak Hour Volume				118		70	30	660			815	43
AM Peak Hour Delay (s)				47.4		13.4	10.8	0			0	0
PM Peak Hour Volume				67		60	45	755			655	28
PM Peak Hour Delay (s)				22.4		11.3	9.4	0			0	0

AM Delay	**31.4**
AM LOS	**D**

PM Delay	**15.1**
PM LOS	**C**