APPENDIX K

TRAFFIC REPORT

KART Transit Center

Draft Transportation Impact Assessment

Prepared for:
Kings County Area Public Transit Agency
UltraSystems Environmental

September 2019

WC19-3602

FEHR PEERS

Table of Contents

Appendices

List of Figures

List of Tables

Executive Summary

This study presents the analysis and findings of the Transportation Impact Assessment (TIA) prepared for the KART Transit Center relocation ("project") in Hanford, California.

Project Description and Analysis Parameters

Kings Area Rural Transit (KART) operates an existing 1.1-acre KART Transit Center at 504 W 7th Street, in Downtown Hanford. The existing Transit Center serves as a transfer point for eleven local routes and five regional routes and is located adjacent to the Hanford Amtrak station (HNF) and an at-grade railroad crossing. Existing area constraints limit KART service to one-hour headways for each route. As the existing transit center is not able to serve the expansion and improvement plans of KART, a new site has been identified that would allow KART to increase service frequency to provide 30-minute headways for each fixed route to better serve the transit needs of the community.

The proposed 4-acre transit center site is located about six blocks or half a mile from the existing transit center between E 8th Street and E 7th Street, and N Harris Street and N Brown Street, as shown on **Figure 1** and **Figure 2**. The new transit station would replace existing commercial buildings, including a car stereo store, a sign shop, an addiction treatment center, and a vacant building.

This evaluation considers the effects of the project on the study area roadway facilities, as determined by measuring the effect project traffic would have on intersections in the vicinity of the site for typical weekday morning and evening peak hour scenarios. Route relocation and service expansion were considered in the assessment, based on KARTs overall service plans. Conditions were evaluated under Existing and Cumulative conditions, both without and with the Project.

Off-Site Findings

No significant off-site intersection impacts were identified with construction of the project in the existing and cumulative conditions. Several measures were recommended to mitigate the project's potential impacts to pedestrians and transit riders:

- Maintain pedestrian connections around the project site during the construction of the project. Pedestrian detours should consider safe crossing locations.
- Provide ultimate sidewalk and intersection crossing treatments consistent with City requirements.
- Install wayfinding along the path of travel between the transit center and the Amtrak station.

1. Introduction

This report presents the analysis results and findings of the Transportation Impact Assessment (TIA) prepared for the KART Transit Center relocation (project). This chapter discusses the analysis methods, criteria used to identify significant impacts, and report organization.

TIA Purpose

The purpose of this TIA is to evaluate the transportation impacts of the proposed KART Transit Center relocation. The existing 1.1-acre KART Transit Center at 504 W 7th Street, adjacent to the Hanford Amtrak station, is proposed to be relocated approximately six blocks east to an approximately 4-acre project site, generally between E 7th Street and E 8th Street, and N Harris Street and N Brown Street, as shown on **Figure** 1 and **Figure 2.** The relocated transit center would replace existing commercial buildings, including a car stereo store, a sign shop, an addiction treatment center, and a vacant building. With the relocated Transit Center, service headways for fixed-route service are planned to decrease from a typical one hour to 30 minutes.

This study addresses the project's impacts on the transportation system under existing and cumulative scenarios.

Report Organization

This report is divided into five chapters as described below:

- ***Chapter 1 – Introduction*** discusses the purpose and organization of this report.
- ***Chapter 2 – Existing Conditions*** describes the transportation system in the project vicinity, including the surrounding roadway network, peak period intersection turning movement volumes, existing bicycle, pedestrian, and transit facilities, and intersection operations.
- ***Chapter 3 – Project Characteristics*** presents the project description, and trip generation, distribution, and assignment.
- ***Chapter 4 – Existing with Project Traffic Conditions*** addresses the existing condition with the project and discusses traffic impacts.
- ***Chapter 5 – Cumulative Traffic Conditions*** addresses future conditions, both without and with the project and discusses traffic impacts. An assessment based upon the CEQA transportation checklist is also presented.

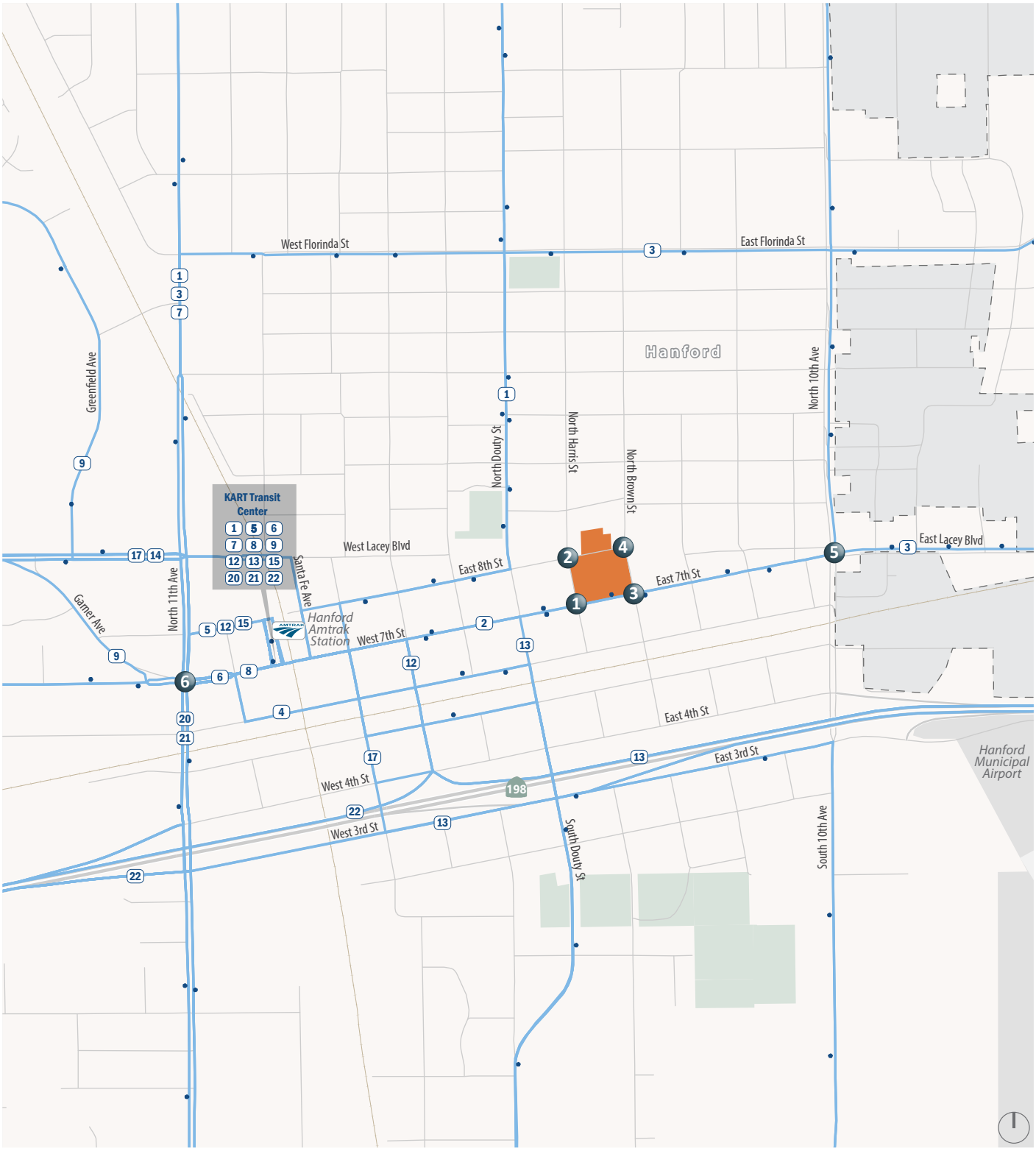
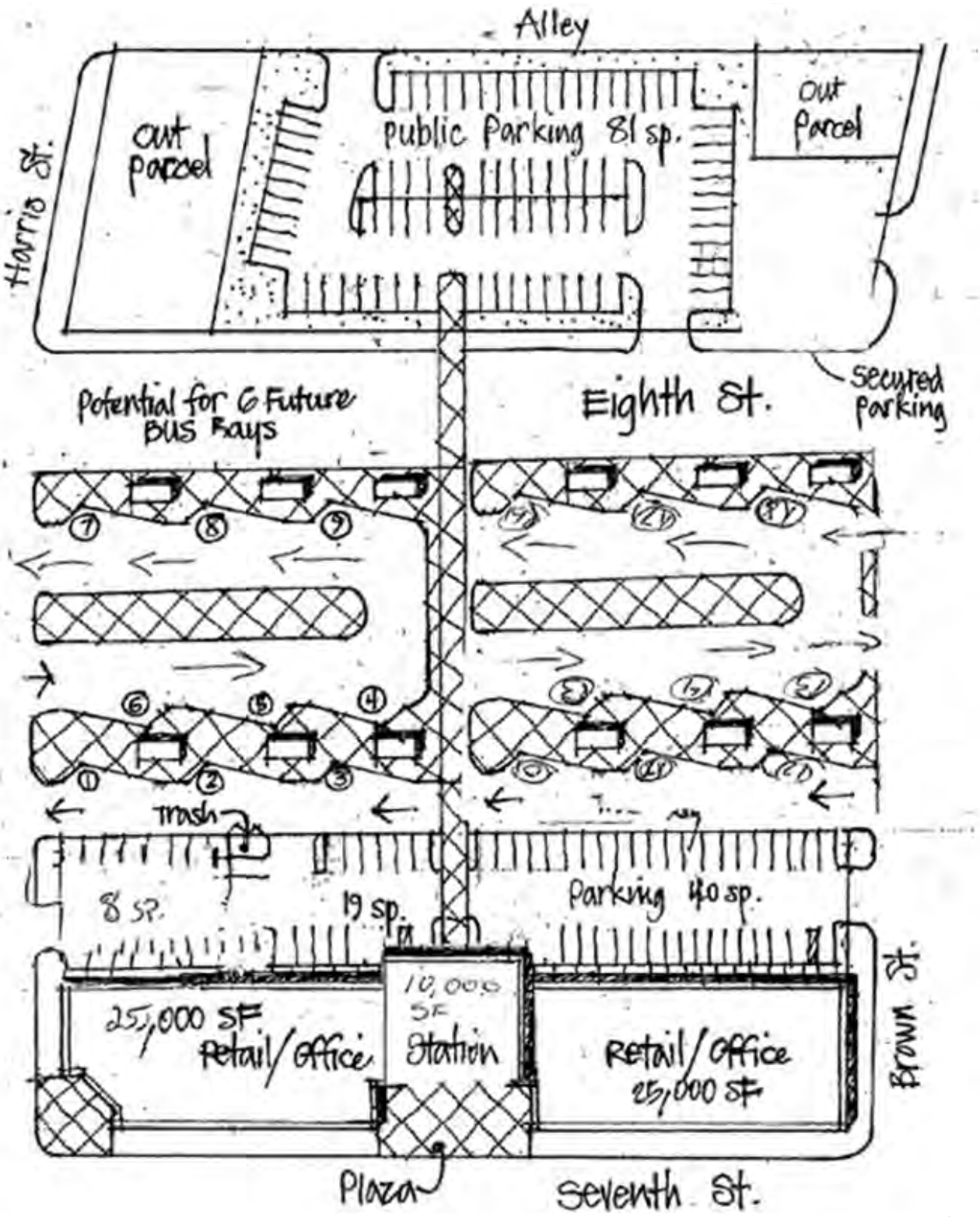


Figure 1

Project Site Vicinity and Study Intersection Locations

WC19-3602_1_StudyArea



Site Plan Sources:
UltraSystems
Kings County Area Public Transit Agency, July 26, 2018

Figure 2

Conceptual Project Site Plan

Study Locations, Analysis Scenarios and Analysis Methods

Project impacts to the study area roadway facilities were identified by estimating the effect of project traffic during the weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak periods, when commute traffic is typically the highest. The study intersections were selected based on a review of the City of Hanford's General Plan and the amount of vehicle traffic that could be added from the project to the intersections in the vicinity of the relocated transit center. The study intersections are listed below and shown on **Figure 1**.

1. North Harris Street at East 7th Street
2. North Harris Street at East 8th Street
3. North Brown Street at East 7th Street
4. North Brown Street at East 8th Street
5. East Lacey Boulevard at North 10th Avenue
6. West 7th Street at North 11th Avenue

The operations of roadway facilities are described with the term "level of service" (LOS). LOS is a qualitative description of traffic flow from a vehicle driver's perspective based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service, ranging from LOS A (free-flow conditions) to LOS F (over capacity conditions), are defined. LOS E corresponds to operations "at capacity." When volumes exceed capacity, stop-and-go conditions result, and operations are designated LOS F.

Different methods are used to assess signalized and unsignalized (stop-controlled) intersections.

Signalized Intersections

Operations of signalized intersections were evaluated using the method from the Transportation Research Board's 2010 Highway Capacity Manual (HCM 2010), which uses various intersection characteristics (such as traffic volumes, lane geometry, and signal phasing) to estimate the average control delay experienced by motorists traveling through an intersection. Control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. **Table 1** summarizes the relationship between average delay per vehicle and LOS for signalized intersections. This method evaluates each intersection in isolation and the effects of vehicle queue spillback are not considered in the analysis results.

Table 1: Signalized Intersection LOS Criteria

Level of Service	Description	Delay in Seconds
A	Progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	< 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity (V/C) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0

Source: *Highway Capacity Manual*, 2010.

Unsignalized Intersections

Operations at unsignalized intersections were evaluated using the method from the HCM 2010. With this method, operations are defined by the average control delay per vehicle (measured in seconds) for each movement that must yield the right-of-way. At two-way or side street-controlled intersections, the control delay (and LOS) is calculated for each controlled movement, the left-turn movement from the major street, and the entire intersection. For controlled approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. The delays for the entire intersection and for the movement or approach with the highest delay are reported. **Table 2** summarizes the relationship between delay and LOS for unsignalized intersections.

Table 2: Unsignalized Intersection LOS Criteria

Level of Service	Description	Delay in Seconds
A	Little or no delays	< 10.0
B	Short traffic delays	> 10.0 to 15.0
C	Average traffic delays	> 15.0 to 25.0
D	Long traffic delays	> 25.0 to 35.0
E	Very long traffic delays	> 35.0 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 50.0

Source: *Highway Capacity Manual*, 2010.

Vehicle Miles of Travel

In response to Senate Bill 743 (SB 743), the Office of Planning and Research (OPR) has updated the California Environmental Quality Act (CEQA) guidelines to include new transportation-related evaluation metrics. Draft guidelines were developed in August 2014, with final guidelines published in November 2017 incorporating public comments from the August 2014 and January 2016 guidelines. In December 2018 the California Natural Resources Agency certified and adopted the CEQA Guidelines update package along with an updated Technical Advisory related to Evaluating Transportation Impacts in CEQA (December 2018). Full compliance with the guidelines is expected by July 2020, after which vehicle-delay based level of service calculations cannot be the sole metric used to evaluate a project's impacts to the transportation system, and instead a vehicle miles of travel (VMT) metric is to be evaluated.

Transit projects are generally considered to have a less than significant impact on VMT, as the provision of transit services helps to reduce reliance on private vehicles and supports the State's goal of reducing greenhouse gas emissions. As transit projects are generally considered to have a less than significant impact on VMT, and neither Kings County nor the City of Hanford has adopted thresholds related to vehicle miles traveled, no VMT assessment was conducted for this project.

Regulatory Setting

The project would have a significant impact on the environment if it would cause an increase in traffic which is substantial in relation to the traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, or delay and congestion at intersections), or change the condition of an existing street (e.g., street closures, changing direction of travel) in a manner that would

substantially impact access or traffic load and capacity of the street system. Significance criteria are used to determine whether a project impact is considered significant and therefore requires mitigation.

Per the General Plan, the City of Hanford strives to maintain LOS C operations for vehicles. In the developed areas of Hanford, there may be constrained rights-of-way and trade-offs between various travel modes that may need to be considered if the vehicle level of service is projected to fall below LOS C, in which case LOS D may be considered acceptable.

The following thresholds of significance were developed based on City of Hanford policies, as well as the CEQA Checklist criteria as shown below. Would the project:

A. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit roadway, bicycle and pedestrian facilities?

Roadway System - The project could create a significant impact related to intersection operations if the following criteria are met

1. Would the operations of a study intersection decline from LOS C (an average delay of 35 seconds for signalized intersections) or better to LOS D, E or F, based on the HCM LOS method, with the addition of Project traffic?

2. Would the Project deteriorate already unacceptable operations at a signalized intersection by adding traffic?

3. Would the operations of an unsignalized study intersection decline from acceptable to unacceptable with the addition of Project traffic, and would the installation of a traffic signal based on the *Manual on Uniform Traffic Control Devices* (MUTCD) Peak Hour Signal Warrant (Warrant 3), be warranted?

Transit System - The project would create a significant impact related to transit service if the following criteria are met:

1. The project interferes with existing transit facilities or precludes the construction of planned transit facilities[1].

2. A project or project-related mitigation conflicts with transit policies adopted by the City of Hanford, Kings County, or KART for their respective facilities in the study area.

[1] This includes disruptions caused by proposed-project driveways on transit streets and impacts to transit stops/shelters; and impacts to transit operations from traffic improvements proposed or resulting from a project.

Bicycle System - The project would create a significant impact related to the bicycle system if any of the following criteria are met:

1. Disrupt existing bicycle facilities; or
2. Interfere with planned bicycle facilities; or
3. Create inconsistencies with adopted bicycle system plans, guidelines, policies, or standards[2].

Pedestrian System - The project would create a significant impact related to the pedestrian system if any of the following criteria are met:

1. Disrupt existing pedestrian facilities; or
2. Interfere with planned pedestrian facilities; or
3. Create inconsistencies with adopted pedestrian system plans, guidelines, policies, or standards.[2]

B. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)[3]?

C. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

D. Result in inadequate emergency access?

[2] Based on the *City of Hanford 2014 General Plan* and *The Kings County 2018 County Regional Transportation*

[3] This section of the CEQA Guidelines relates to the evaluation of vehicle miles traveled (VMT). As neither the City of Hanford or Kings County has adopted VMT guidelines, compliance with this section of the CEQA guidelines is not required until July 2020, and transit projects are presumed to have less-than-significant impacts related to VMT, no assessment of VMT was conducted.

2. Existing Conditions

This chapter describes the existing transportation conditions in the study area, including the roadway network, and transit, pedestrian, and bicycle facilities in the vicinity of the project site.

Roadway System

The project site is located in the City of Hanford, the County seat of Kings County, approximately 30 miles southeast of the City of Fresno and 20 miles west of the City of Visalia. The immediate area surrounding the project site is primarily residential with supporting institutional, recreational, and commercial uses in proximity. Outside of the developed area, land uses are primarily agricultural with large distances between communities.

Regional access to the site is provided by State Route (SR) 198 and SR 43. The following discusses the roadways that would provide access to the site and are most likely to experience direct impacts, if any, from the proposed project.

SR 198 is a four-lane, east-west freeway that runs through the center of Hanford. There are westbound on- and off-ramps southwest of the project site at West 4th Street at Redington Street, and southeast of the project site at 10th Ave. and E 4th St. There is an eastbound off-ramp on West 3rd Street west of South Douty Street and an on-ramp on East 3rd Street east of South Douty Street. State Route 198 is a major transportation route connecting to the neighboring town of Lemoore, as well as connecting Interstate 5 to State Route 99.

SR 43 is a north-south, two-lane highway that runs along the eastern side of Hanford. Access to the project from the highway is provided via an interchange at SR 198 and an exit at Lacey Blvd north of the interchange. SR 43 is a major transportation route to Fresno and Yosemite National Park to the north and Corcoran and Bakersfield to the south.

North Harris Street is a two-lane, north-south collector located west of the project site. North of the project site, North Harris Street serves institutional land uses including a Social Security Administration office, a WIC office, the Kings County Public Library, and the House of Hope. Diagonal parking is provided on the east side of the street while parallel parking is provided on the west side of the street. North Harris Street serves residential land uses further north of the project site. South of the project site, industrial land uses are located on the east side of the street, including an auto-repair shop, with a movie theater on the west side of the street. On-street, parallel parking is provided on both sides of the street. Sidewalks are also provided on North Harris Street around the project vicinity.

North Brown Street is a two-lane, north-south collector located east of the project site. North Brown Street primarily serves residential land uses north of the project site and commercial/industrial uses south of the project site, including auto-repair shops, a garden shop, and an equipment rental center. Sidewalks are provided on North Brown Street around the project vicinity.

East 7th Street is an east-west collector that extends west from Mall Drive to 10th Avenue. Around the project site, East 7th Street features two-lanes, diagonal parking on both sides of the street, and sidewalks. The street serves many commercial land uses including financial institutions, restaurants, entertainment, and grocers. East 7th Street connects the project site with regional routes such as 10th Avenue, 11th Avenue, and SR 43. With the proposed KART transit center relocation, East 7th Street would become a high-frequency transit corridor.

East 8th Street is an east-west local road, with the segment within this study area extending from east of the existing Amtrak station to North Brown Street. The roadway features one travel lane in each direction with on-street parking and sidewalks along the corridor. In addition to serving the Amtrak station and the proposed project site, East 8th Street also serves Civic land uses, including Civic Center Park and the Hanford Chamber of Commerce.

10th Avenue is a four-lane, north-south arterial that provides regional access to the project site via East 7th Street and serves the Kings County Fairgrounds, SR 198, SR 43, many commercial land uses, and residential subdivisions. Sidewalks and limited on-street parking are provided along 10th Avenue.

11th Avenue is a four-lane, north-south local arterial serving the project site via East 7th Street. The roadway runs the length of the City of Hanford and beyond, serving retail centers and residential land uses. Sidewalks and limited on-street parking are provided on 11th Avenue.

Pedestrian and Bicycle Facilities

Pedestrian Facilities

Pedestrian facilities include sidewalks and crosswalks. In the immediate project vicinity at the signalized intersection of East 7th Street at North Street Harris, a four-way crosswalk is provided but no pedestrian signal. At the unsignalized intersection of East 7th Street at North Brown Street, a four-way crosswalk is provided. Crosswalks are not provided at the intersections of East 8th Street at North Harris Street and East 8th Street at North Brown Street.

Bicycle Facilities

Bicycle facilities include the following general types:

- Class I: Shared Use Path – These facilities provide a completely separate right-of-way and are designated for the exclusive use of bicycles and pedestrians with vehicle cross-flow minimized.
- Class II: Bicycle Lane – Bicycle lanes provide a restricted right-of-way and are designated for the use of bicycles for one-way travel with a striped lane on a street or highway. Bicycle lanes are generally a minimum of five feet wide. Vehicle/pedestrian cross-flow is permitted.
- Class III: Bicycle Route with Sharrows – These bikeways provide right-of-way designated by signs or pavement markings for shared use with motor vehicles. These include sharrows or "shared-lane markings" to highlight the presence of bicyclists.
- Class IV: Buffered Bicycle Lanes – Bicycle lanes that include a physically separated lane for increased comfort and protection of cyclists. Can be physically separated by a barrier, such as planters or on-street parking, grade-separated from the roadway, or a painted buffer area.

Douty Street and 10th Avenue are designated Class III bicycle facilities, located west and east of the project site, respectively. There are no existing or planned bicycle facilities along the project frontage.

Transit Service

Transit service in the area is primarily provided by Kings Area Rural Transit (KART) and Amtrak, with existing transit routes in the area shown on **Figure 1**, along with the transit stops in the immediate vicinity of the project site.

Kings Area Rural Transit provides local and regional fixed route, flex route, and paratransit transit service connecting Hanford with Kings County and surrounding counties such as Fresno and Tulare. KART currently provides 11 local fixed-route buses, 5 regional fixed-routes, along with flex route and paratransit vehicles that provide vital connections to housing, jobs, institutions, recreational, and commercial activities. The existing transit center's adjacency to the Amtrak station and the at-grade crossing limits KART service to one-hour headways for each route. **Table 3** lists each route, along with corresponding service locations and headways.

Amtrak provides transregional transportation connections between Hanford and northern and southern California. The Amtrak San Joaquins Line runs from the San Francisco Bay Area and Sacramento to Bakersfield, with a stop at the Hanford Amtrak Station. Five "Amtrak Thruway Service" bus lines also serve the Hanford Amtrak Station, including destinations of Visalia, Santa Maria, Bakersfield, Los Angeles, and Bakersfield. The Amtrak San Joaquins Line runs on two-hour headways, with seven trains each way per day. The number of thruway bases varies from one to three each weekday, depending on the destination.

Table 3. Existing KART Routes and Headways

Route	Route Type	Hours of Operations	Service Locations	Headways
1	Local Loop	Monday – Friday: 6:30 AM – 7:00 PM Saturday: 9:30 AM – 5:00 PM	KART Transit Center – N Douty St. – Fargo Ave.	1-hour
2	Local Loop	Monday – Friday: 7:00 AM – 6:30 PM Saturday: 10:00 AM – 4:30 PM	KART Transit Center – 7th St. – 10th Ave. – Fargo Ave. – N Douty St.	1-hour
3	Local Loop	Monday – Friday: 7:30 AM – 7:00 PM Saturday: 9:30 AM – 5:00 PM	KART Transit Center – N 11th Ave. – Florinda St. – 10th Ave. – Lacey Blvd. – 7th St.	1-hour
4	Local Loop	Monday – Friday: 6:30 AM – 7:00 PM Saturday: 9:30 AM – 5:00 PM	KART Transit Center – S Douty – 10th Ave.	1-hour
5	Local Loop	Monday – Friday: 6:30 AM – 7:00 PM Saturday: 9:30 AM – 5:00 PM	KART Transit Center – S 11th Ave. – Hume Ave. – Hanford Armona	1-hour
6	Local Loop	Monday – Friday: 6:45 AM – 9:45 PM Saturday: 9:45 AM – 5:15 PM	KART Transit Center – Government Center – Centennial Plaza – Hanford Mall – 7th St.	30-minutes
7	Local Loop	Monday – Friday: 7:00 AM – 6:30 PM Saturday: 10:00 AM – 4:30 PM	KART Transit Center – N 11th Ave. – W Grangeville Blvd. – Centennial Dr. – W Lacey Blvd.	1-hour
8	Local Loop	Monday – Friday: 7:00 AM – 6:30 PM Saturday: 10:00 AM – 4:30 PM	KART Transit Center – S 11th Ave. – Hanford Armona - Houston Ave. – S 10th Ave.	1-hour
9	Local Loop	Monday – Friday: 7:00 AM – 6:30 PM Saturday: 10:00 AM – 4:30 PM	KART Transit Center – W 7th St. – Hanford Mall – W Lacey Blvd. – Centennial Dr.	1-hour
12	Regional	Monday – Friday: 6:15 AM – 6:40 PM Saturday: 8:45 AM – 4:30 PM	KART Transit Center – Lemoore – West Hills College – Stratford – Kettleman City – Avenal	4 Peak Period Trips
13	Regional Loop	Monday – Friday: 6:40 AM – 5:10 PM	KART Transit Center – State Prison	1 AM peak and 1 PM peak
14	Regional Loop	Monday – Friday: 8:55 AM – 2:55 PM	KART Transit Center – Hardwick – Laton	1 AM peak and 1 PM peak
15	Regional Loop	Monday – Friday: 7:00 AM – 5:40 PM	KART Transit Center – Visalia	1 AM peak 1 midday 1 PM peak
17	Regional	Monday – Friday: 9:00 AM – 2:30 PM	KART Transit Center – Fresno	1 AM peak and 1 midday
20	Local	Monday – Friday: 5:50 AM – 10:45 PM	KART Transit Center – Armona – Lemoore – West Hills College	30-minutes
21	Local Loop	Monday – Friday: 9:05 AM – 5:30 PM	KART Transit Center – Lemoore – Naval Air Station	2 AM peak and 2 PM peak

Source: Kings Area Rural Transit, 2019

Existing Traffic Counts

Weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak period intersection turning movement counts were conducted on July 23, 2019 at the study intersections, in addition to separate counts of pedestrians, bicycles and heavy vehicles. The peak hour volumes (7:45 AM to 8:45 AM and 4:30 PM to 5:30 PM) are presented on **Figure 3** along with the existing lane configuration and traffic control. Traffic count worksheets are provided in **Appendix A**.

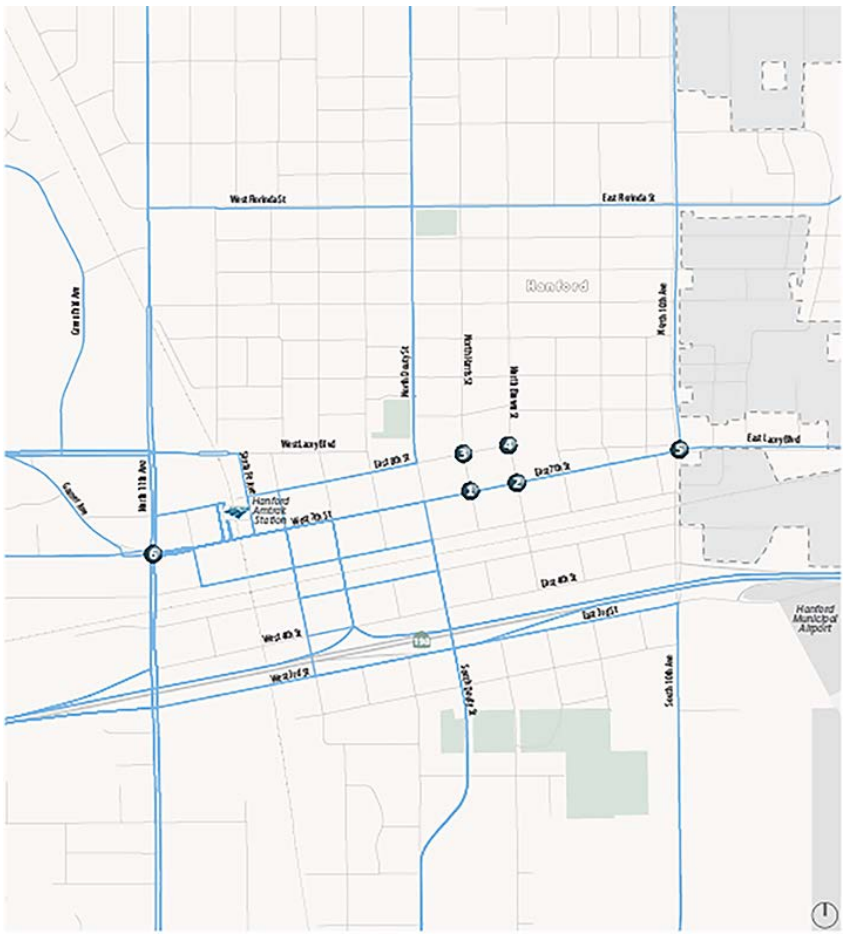
In addition, counts were conducted at the existing KART transit center driveways to document the existing levels of activity in the area that would shift to the new transit center as part of the proposed project. **Table 4** shows bicycle and pedestrian volumes at each of the study intersections and the existing KART Transit Center driveway.

Table 4: Peak-Hour Bicycle and Pedestrian Volumes

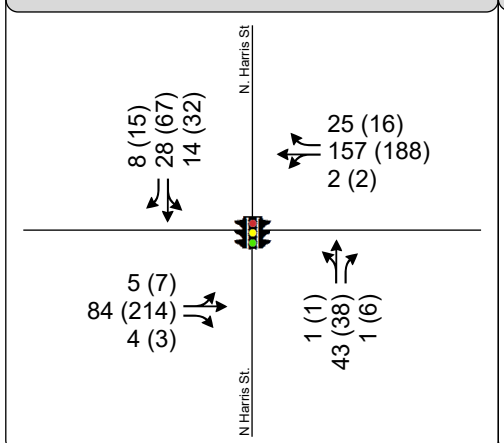
Intersection	AM Peak-Hour Bicycle Volumes	AM Peak-Hour Pedestrian Volumes	PM Peak-Hour Bicycle Volumes	PM Peak-Hour Pedestrian Volumes
1. North Harris Street at East 7th Street	2	6	2	8
2. North Harris Street at East 8th Street	1	4	4	7
3. North Brown Street at East 7th Street	6	6	3	8
4. North Brown Street at East 8th Street	2	1	1	0
5. East Lacey Boulevard at North 10th Avenue	3	4	11	5
6. West 7th Street at North 11th Avenue	15	23	6	24
KART South Driveway	12	10	7	22
KART North Driveway	0	3	4	5

Source: *Fehr & Peers, 2019*

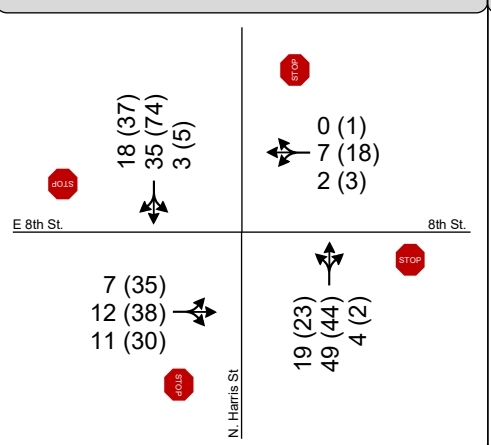
Source: path:



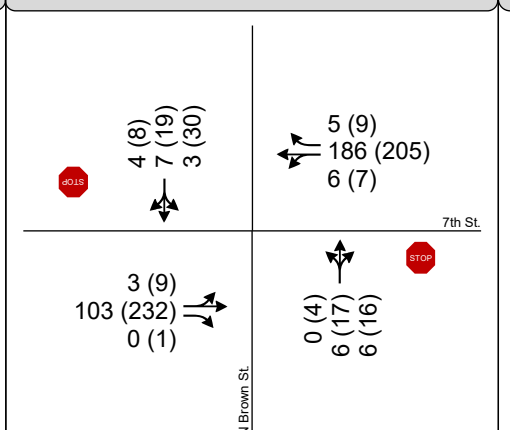
1. N. Harris St/7th St.



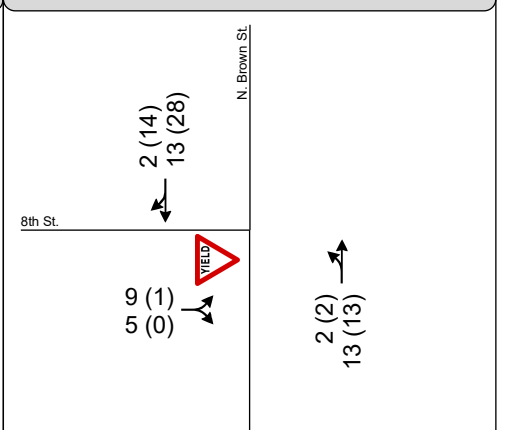
2. N. Harris St/8th St.



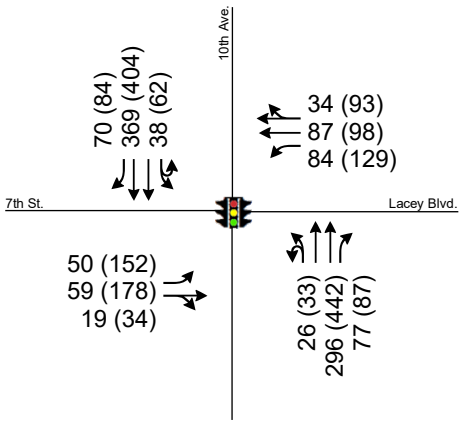
3. N Brown St./7th St.



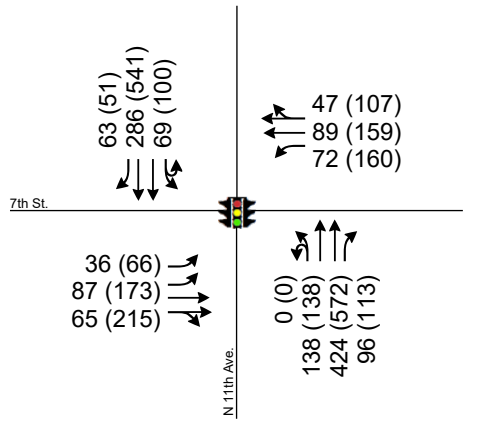
4. N. Brown St./8th St.



5. 10th Ave./7th St./Lacey Blvd.



6. N 11th Ave. /7th St.



XX (YY) AM (PM) Peak Hour Tra˜c Volumes Lane Conÿguration Signalized Stop Sign Yield Sign

Project Site Study Intersection

Figure 3

Peak Hour Traffic Volumes and Lane Configurations - Existing

Existing Operations

Intersection Levels of Service

Existing operations were evaluated using the methodology described in Chapter 1. The results are summarized in **Table 5** based on the HCM 2010 method unless otherwise specified. Observed peak hour factors[4] were used at all intersections, and truck, pedestrian and bicycle activity were factored into the analysis.

Table 5: Existing Conditions - Peak Hour Intersection Levels of Service

Intersection	Control	Peak Hour	Existing Conditions	
			Delay (in seconds)[1,2,3]	LOS
1. North Harris Street at East 7th Street	Signalized	AM PM	7 9	A A
2. North Harris Street at East 8th Street	AWSC	AM PM	7 8	A A
3. North Brown Street at East 7th Street	SSSC	AM PM	1 (11) 3 (14)	A (B) A (B)
4. North Brown Street at East 8th Street	Side-street Yield	AM PM	3 (9) 0 (9)	A (A) A (A)
5. East Lacey Boulevard at North 10th Avenue	Signalized	AM PM	15 17	B B
6. West 7th Street at North 11th Avenue	Signalized	AM PM	18 26	B C

Source: Fehr & Peers, 2019.
Notes: **Bold** indicates operations below the local LOS standard for acceptable operations (below LOS C).
1. AWSC = All-way Stop Controlled; SSSC = Side-street Stop Controlled
2. Intersection 4 was evaluated using the HCM 2000 methodology.
3. For side-street stop-controlled intersections, delay is presented for intersection average (worst movement).

4 The relationship between the peak 15-minute flow rate and the full hourly volume is given by the peak-hour factor (PHF) based on the following equation: PHF=Hourly volume/(4* volume during the peak 15 minutes of flow). The analysis of level of service is based on peak rates of flow occurring within the peak hour because substantial short-term fluctuations typically occur during an hour.

The City of Hanford strives to maintain LOS C or better operations at intersection. Study intersections currently operate at overall acceptable service levels in accordance with benchmarks set by the City of Hanford during both the weekday morning and weekday evening peak hours. Detailed intersection LOS calculation worksheets are provided in **Appendix B**.

3. Project Characteristics

This chapter provides an overview of the proposed project components and addresses the proposed project trip generation, trip distribution, and trip assignment characteristics, allowing for an evaluation of project impacts on the surrounding roadway network. The amount of traffic associated with the project was estimated using a three-step process:

1. **Trip Generation** – The *amount* of vehicle traffic entering/exiting the site was estimated.
2. **Trip Distribution** – The *direction* trips would use to approach and depart the area was projected.
3. **Trip Assignment** – Trips were then *assigned* to specific roadway segments and intersection turning movements.

Project Description

Kings Area Rural Transit (KART) operates an existing 1.1-acre KART Transit Center at 504 West 7th Street, adjacent to the Hanford Amtrak station (HNF) in Downtown Hanford. The existing transit center serves as a transfer point for eleven local and five regional routes. The existing transit center's adjacency to the Amtrak station and the at-grade crossing limits KART service to one-hour headways for each route, with the existing transit center not able to accommodate the expansion and improvement plans of KART to better serve the transit needs of the community. A new site has been identified that would allow KART to increase service frequency to provide 30-minute headways for each fixed route.

The proposed transit center site is approximately 4-acres located about six blocks or half a mile from the existing transit center between East 8th Street and East 7th Street, and North Harris Street and North Brown Street, as shown previously on **Figures 1** and **2**. The new transit station would replace existing commercial buildings, including a car stereo store, a sign shop, an addiction treatment center, and a vacant building.

The project would construct an approximately 19,000 square-feet, three-story building. The first floor would be used as a waiting area as well as provide space for training and meetings. The second floor would house KART offices. The third story would be leasable office space. The on-site parking, located just south of East 8th Street, would consist of 21 sawtooth bus bays and 61 parking spaces, including 17 standard staff parking spaces, 2 ADA staff parking spaces, 8 secure employee spaces, 26 standard public parking spaces, 4 ADA public parking spaces, 2 electric bus charging spaces, and 2 electric vehicle charging spaces. North of E 8th Street, the proposed project would provide 84 total public park-and-ride parking spaces, including 79 standard public parking spaces and 5 ADA public parking spaces. Driveway access to the on-site bus bays

and parking spaces will be provided via North Harris Street and North Brown Street. Driveway access to the off-site park-and-ride spaces would be provided from East 8th Street

Project Trip Generation

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the surrounding roadway system. Project trip generation estimates for the one-hour peak period during the weekday morning and evening commute when traffic volumes on the adjacent streets are typically the highest. Project trip generation was estimated using rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition) and driveway count data from the existing KART Transit Center.

For the transit center, driveway counts at the existing facility were conducted on July 23, 2019. The existing facility generates approximately 10 morning peak hour vehicle trips (not including buses), and 27 evening peak hour vehicle trips, which includes a mixture of passengers using the park and ride facilities, as well as employees of the existing facility. 19 buses enter and exit the facility during the morning peak hour and 18 buses enter and exit the facility during the PM peak hour.

ITE 10th Edition Trip Generation Rates for general office uses were used to estimate the potential trip generation of the 6,900 square feet waiting and meeting area on the first floor, the 5,516 square foot KART offices on the second floor, and 6,557 square feet leasable office space on the third floor. On a day with a large event in the meeting room, the trip generation could be slightly higher, but the use of the ITE trip generation for office uses provides a typical day estimate of activities. Vehicle trip generation for existing uses on the site was estimated based on the ITE trip generation rate for similar uses, supplemented by a check of operating hours and existing traffic volumes in the area.

With the project, KART plans to increase service by decreasing headways. Assuming that the headways for each route are halved, the number of buses accessing the relocated transit center could double. The number of riders using the park-and-ride facilities could also increase.

Combined, the project is expected to generate 760 daily, 82 morning peak-hour vehicle trips (including buses) and 99 evening peak hour trips, as shown in **Table 6**, considering the trip generation of existing uses that would be removed with the project. Some of these trips would be relocated trips from the existing KART transit center.

Trip Distribution & Assignment

Project trip distribution refers to the directions of approach and departure that vehicles would take to access and leave the site. Estimates of project trip distribution were developed based on existing travel patterns

in the area derived from counts and the location of complementary land uses, as well as the existing transit route patterns in the area. The resulting trip distribution percentages are shown on **Figure 4**.

Project trips were assigned to the roadway network based on the general directions of approach and departure shown on Figure 4. The project trip assignment is shown on **Figure 5**.

Table 6: Project Trip Generation

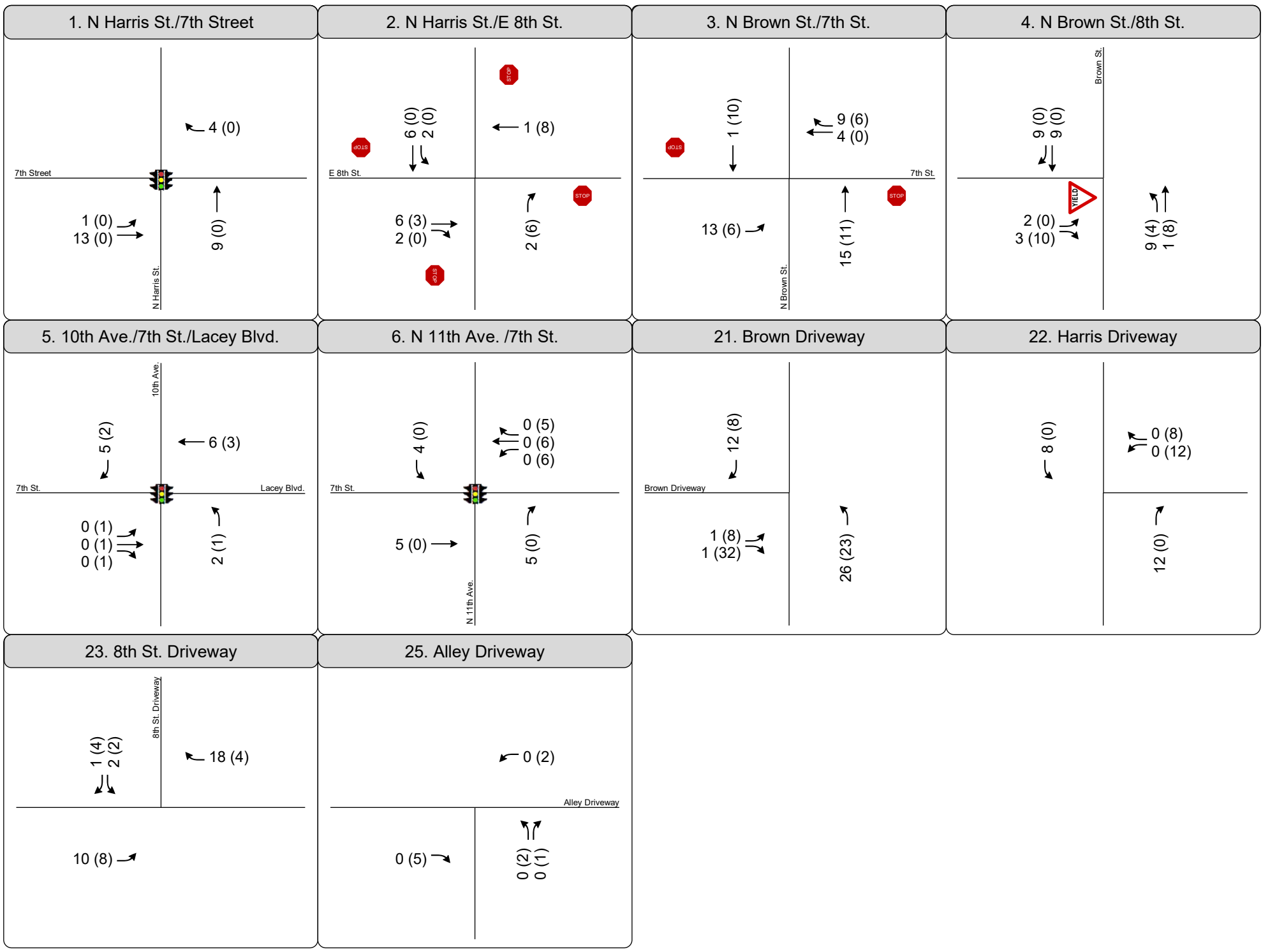
Use	New, Relocated, Eliminated Trips	Size	Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
				In	Out	Total	In	Out	Total
Waiting/Meeting/ Training Area[1]	New	6,900 Square-feet	70	7	1	8	1	7	8
KART Office[1]	New & Relocated	5,516 Square-feet	50	5	1	6	1	5	6
Leasable Office[1]	New	6,557 Square-feet	60	7	1	8	1	7	8
Addiction Center[2]	Eliminated	5,500 Square-feet	-210	-16	-4	-20	-5	-13	-18
Sign Shop[3]	Eliminated	3,900 Square-feet	-150	-2	-2	-4	-5	-6	-11
Car Stereo Store[4]	Eliminated	1,700 Square-feet	-60	-2	0	-2	-3	-3	-6
Bus Passengers[5]	Relocated	Driveway	70	5	0	10	20	0	20
Bus Passengers[5]	New	Driveway	70	5	0	10	20	0	20
Buses[6]	Relocated	Driveway	386	19	19	38	18	18	36
Buses[6]	New	Driveway	386	19	19	38	18	18	36
Project Trip Generation:			672	47	35	82	66	33	99

1. ITE land use category 710– General Office Building:
2. ITE land use category 630 – Clinic
3. ITE Land Use 820 – Shopping Center and Land Use 867 – Office Supply Store
4. ITE Land Use 820 – Shopping Center
5. Based on Driveway counts collected in July 2019 for morning and evening peak hours
6. Based existing KART Bus Routes and projected headways with the project

Source: *Trip Generation Manual* (10th Edition), ITE; Fehr & Peers.

Figure 4

Project Trip Distribution



XX (YY) AM (PM) Peak Hour Tra˜c Volumes Lane Conÿguration Signalized Stop Sign Yield Sign

Project Site Study Intersection

Figure 5

Peak Hour Traffic Volumes and Lane Configurations - Project Trip Assignment

4. Existing with Project Conditions

This chapter evaluates potential off-site traffic impacts under Existing with Project conditions.

Existing with Project Traffic Volumes and Roadway Improvements

Project-only traffic volumes were added to the existing peak hour traffic volumes to estimate Existing with Project peak hour intersection turning movement volumes, as shown on **Figure 6.**

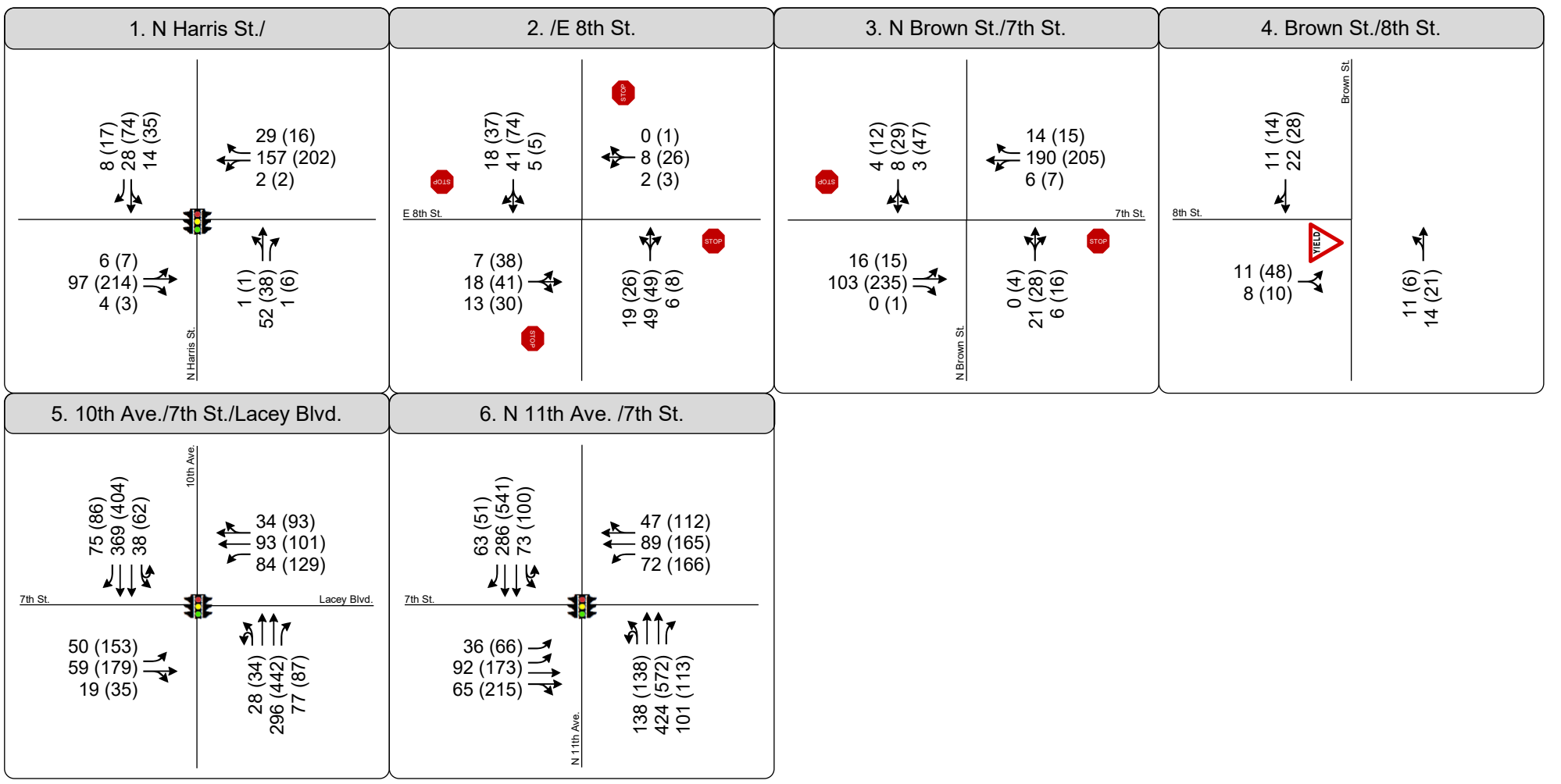
Traffic signal timings, peak hour factors and heavy vehicle percentages at the study intersections were left unchanged from existing conditions. Lane configurations that form the basis for the Existing with Project analysis are also presented on **Figure 6**.

Analysis of Existing with Project Conditions

Intersection Levels of Service

Existing with Project conditions were evaluated using the same methods described in Chapter 1, with the analysis results are presented in **Table 7.** Table 7 also includes the operations results for the Existing without Project conditions for comparison purposes. In the existing condition, all study intersections operate at LOS C or better. The addition of project traffic would not result in any study intersection degrading to an unacceptable service level.

Detailed intersection LOS calculation worksheets are provided in **Appendix B**.



XX (YY) AM (PM) Peak Hour Tra˜c Volumes Lane Conÿguration Signalized Stop Sign Yield Sign

Project Site Study Intersection

Figure 6

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project

Table 7: Existing with Project Conditions - Peak Hour Intersection Levels of Service

Intersection	Control[1]	Peak Hour	Existing Conditions		Existing with Project Conditions	
			Delay[2,3,4]	LOS	Delay[2,3,4]	LOS
1. North Harris Street at East 7th Street	Signalized	AM PM	7 9	A A	7 8	A A
2. North Harris Street at East 8th Street	AWSC	AM PM	7 8	A A	7 8	A A
3. North Brown Street at East 7th Street	SSSC	AM PM	1 (11) 3 (14)	A (B) A (B)	2 (11) 3 (15)	A (B) A (C)
4. North Brown Street at East 8th Street	Side-street Yield	AM PM	3 (9) 0 (9)	A (A) A (A)	3 (9) 2 (9)	A (A) A (A)
5. East Lacey Boulevard at North 10th Avenue	Signalized	AM PM	15 17	B B	15 17	B B
6. West 7th Street at North 11th Avenue	Signalized	AM PM	18 26	B C	18 26	B C

Notes: **Bold** indicates operations below the local LOS standard for acceptable operations (below LOS D).

1. AWSC = All-way Stop Controlled; SSSC = Side-street Stop Controlled
2. Delay presented in seconds
3. Intersection 4 are evaluated using the HCM 2000 methodology.
4. For side-street stop-controlled intersections, delay is presented for intersection average (worst movement).

Source: Fehr & Peers, 2019.

5. Cumulative Conditions

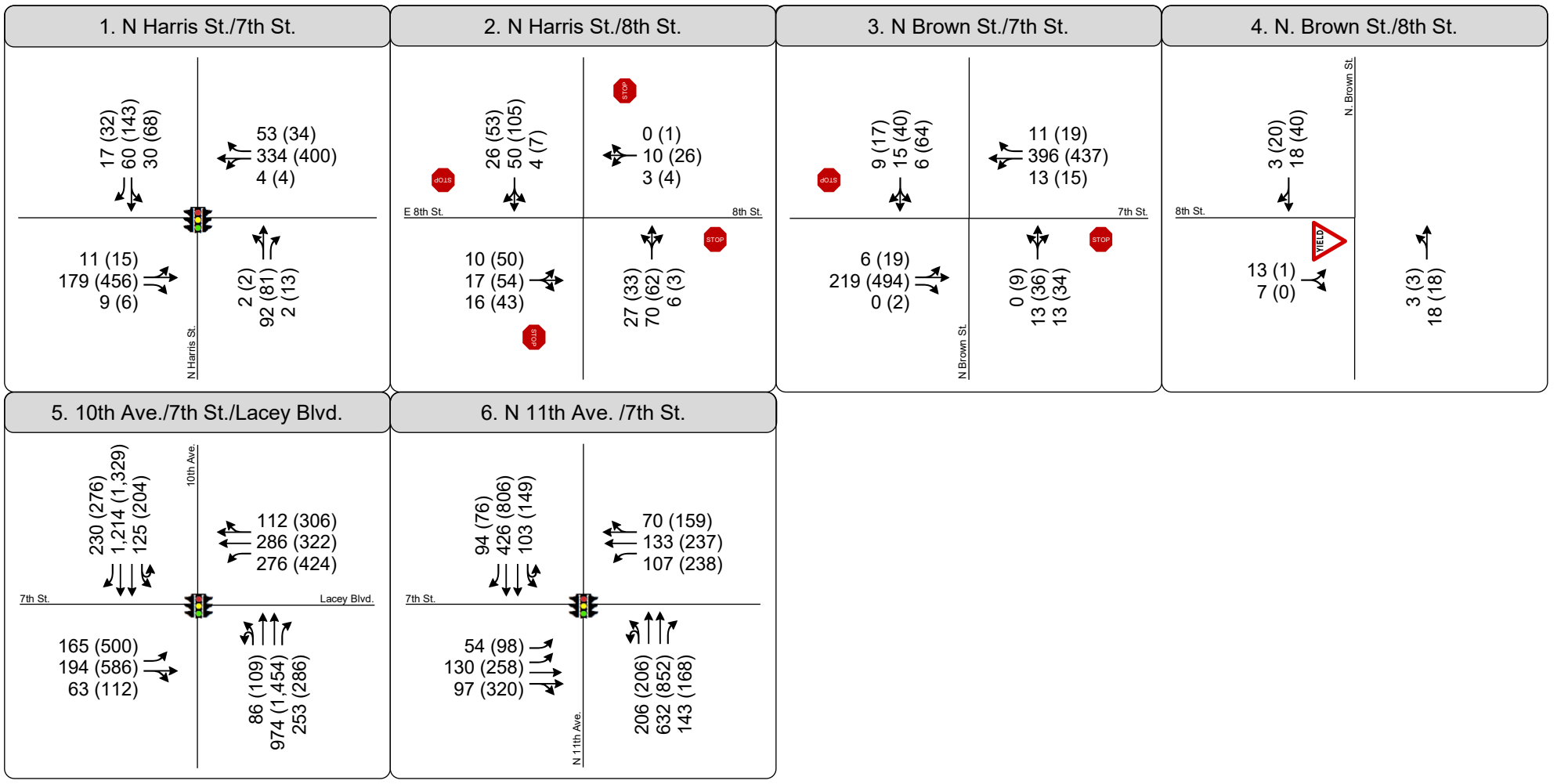
This chapter presents the results of the level of service calculations under cumulative conditions without and with the project.

Cumulative Intersection Volumes and Roadway Improvements

Cumulative forecasts were developed using city-wide employment and population growth trends based on forecasts from the Kings County Travel Demand Model. An overall growth rate from 2019 to 2042 was calculated by reviewing the expected growth in employment and population, the sum of which is expected to increase by approximately 37 percent between 2019 and 2042, or an annual growth rate of about 1.3 percent. The growth rates forecasted in the Kings County Travel Demand Model consider the planned completion of the California High Speed Rail and Cross-valley Corridor, which will run just east of Hanford, and the expansion of the Lemoore Naval Air Station, which is located west of Hanford.

The growth rate was applied to the existing intersection turning movement volumes to estimate Cumulative without Project traffic forecasts, as presented on **Figure 7**. Project-only traffic volumes were added to the cumulative without project peak hour traffic volumes (Figure 7) to estimate Cumulative with Project peak hour intersection turning movement volumes, presented on **Figure 8**. The resulting cumulative forecast are an estimate of conditions in 2042 with the project. The project is expected to result in the ability for KART to increase transit service in Hanford and to other communities. As such, the project is expected to remove private vehicles from the roadway as additional transit options are provided, resulting in a beneficial regional effect.

The forecasting described above does not take into consideration some foreseeable travel changes, including increased use of transportation network companies, such as Uber and Lyft, nor the potential for autonomous vehicles. Although the technology for autonomous vehicles is expected to be available over the planning horizon, the Federal and State legal and policy frameworks are uncertain. Initial modeling of an autonomous future indicates that with automated and connected vehicles, the capacity of the existing transportation system would increase as vehicles can travel closer together; however, these efficiencies are only realized when a high percentage of vehicles on the roadway are automated and connected. There is also the potential for vehicle travel to increase with zero-occupant vehicles on the roadway, off-setting any potential capacity benefits. Although the future baseline is uncertain, the project's incremental effect on that future baseline is expected to be similar to the analysis results presented below.

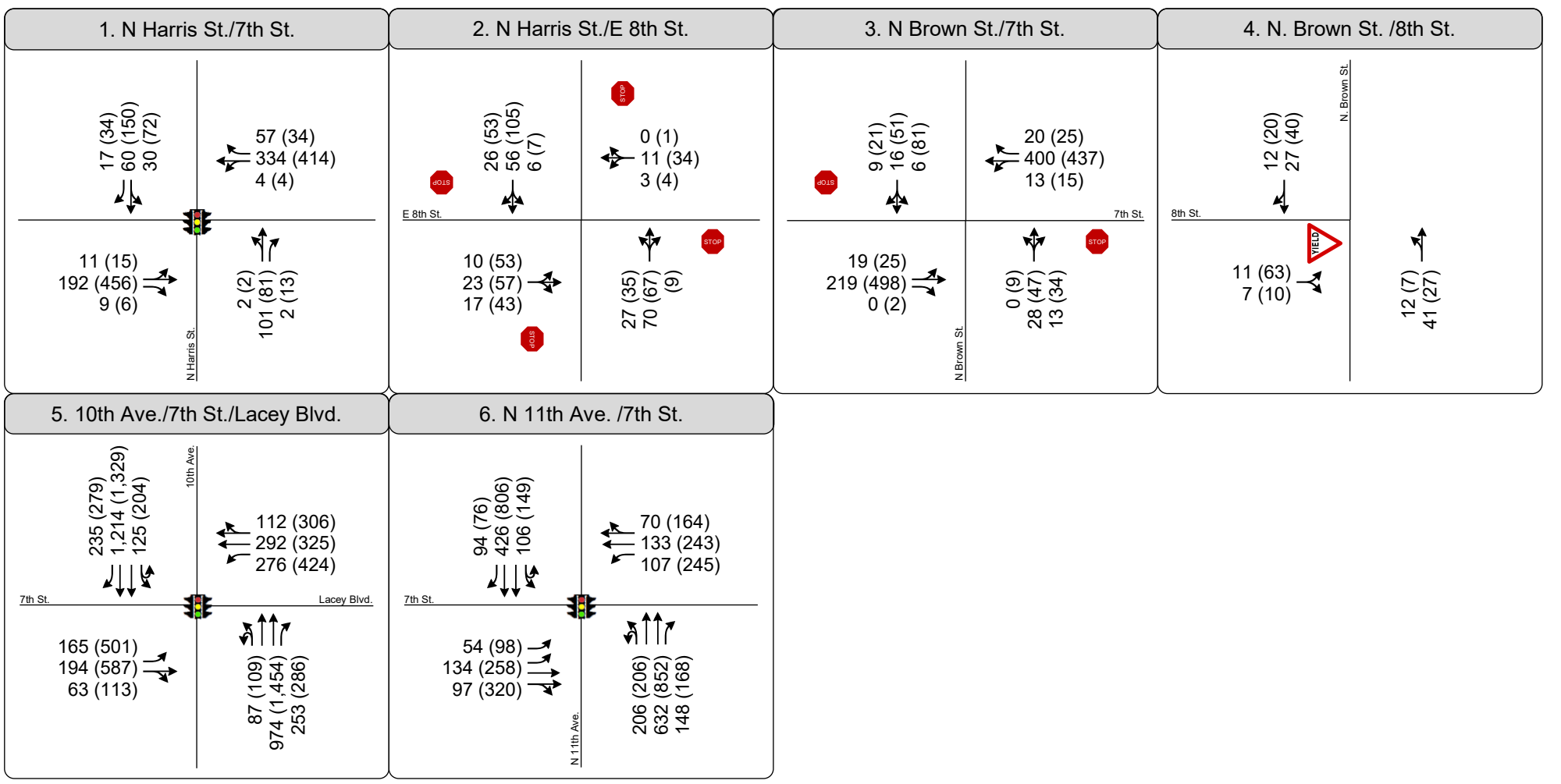


XX (YY) AM (PM) Peak Hour Traffic Volumes Lane Configuration Signalized Stop Sign Yield Sign

Project Site Study Intersection

Figure 7

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



XX (YY) AM (PM) Peak Hour Tra˜c Volumes Lane Conÿguration Signalized Stop Sign Yield Sign

Project Site Study Intersection

Figure 8

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project

Analysis of Cumulative Conditions

Intersection Level of Service

Existing peak hour factors and heavy vehicle percentages at the study intersections remain unchanged from the existing condition for the assessment of Cumulative conditions. Traffic signal timings were optimized at intersections to better accommodate changed travel demand in the future. **Table 8** presents the Cumulative without and with Project intersection level of service results. In the cumulative condition, the intersection of West 7th Street at North 11th Avenue is projected to degrade to a LOS D. While the project would add traffic to the intersection it is not expected to change the overall delay. All other intersections would continue to operate at acceptable service levels with the addition of project traffic. Detailed intersection LOS calculation worksheets are provided in **Appendix B**.

Table 8: Cumulative Conditions - Peak Hour Intersection Levels of Service

Intersection	Control	Peak Hour	Cumulative Conditions		Cumulative Plus Project Conditions	
			Delay[1,2,3]	LOS	Delay[1,2,3]	LOS
1. North Harris Street at East 7th Street	Signalized	AM PM	8 10	A A	8 8	A A
2. North Harris Street at East 8th Street	AWSC	AM PM	8 8	A A	8 8	A A
3. North Brown Street at East 7th Street	SSSC	AM PM	1 (12) 3 (19)	A (B) A (C)	1 (12) 1 (21)	A (B) A (C)
4. North Brown Street at East 8th Street	Side-Street Yield	AM PM	2 (8) 0 (9)	A (A) A (A)	3 (9) 2 (9)	A (A) A (A)
5. East Lacey Boulevard at North 10th Avenue	Signalized	AM PM	16 22	B C	16 22	B C
6. West 7th Street at North 11th Avenue	Signalized	AM PM	19 **36**	B **D**	25 **36**	C **D**

Notes: **Bold** indicates operations below the local LOS standard for acceptable operations (below LOS C).
1. AWSC = All-way Stop Controlled; SSSC = Side-street Stop Controlled
2. Intersection 4 was evaluated using the HCM 2000 methodology.
3. For side-street stop-controlled intersections, delay is presented for intersection average (worst movement).

Source: Fehr & Peers, 2019.

Cumulative Conditions Impacts

The project could potentially result in one off-site impact in the cumulative condition. The West 7th Street at North 11th Avenue intersection is projected to operate at a deficient LOS D during the evening peak hour

prior to the addition of project traffic in the cumulative condition. The project would add traffic but would not increase overall vehicle delay. This intersection has generally been built to its ultimate right-of-way and no additional physical improvements are planned. Widening beyond the existing cross–section could result in secondary impacts to pedestrians and bicyclists. As this intersection is in the downtown area where LOS D may be considered acceptable for vehicles if other improvements would degrade mobility for other travel modes.

CEQA Checklist Review

This section provides a summary of the potential project impacts related to vehicles, bicycles, pedestrians, and transit as compared to the significance criteria outlined in Chapter 1, and summarized for each topic area, as presented in **Table 9**.

Table 9: CEQA Checklist Review

Significance Criteria	Discussion	Mitigation
The project could create a significant impact related to intersection operations if the following criteria are met:		
Would the operations of a study intersection decline from LOS C (an average delay of 35 seconds for signalized intersections) or better to LOS D, E or F, based on the HCM LOS method, with the addition of Project traffic?	In the existing condition, all signalized study intersections operate within acceptable delay ranges and the addition of project traffic would not result in LOS D, E or F conditions. In the Cumulative condition, all study intersection except one would operate at an acceptable level of service. The addition of project traffic would not result in acceptable operations degrading to unacceptable levels.	Impact would be less than significant and no mitigation is required because the project would not result in a signalized study intersection degrading from LOS C to LOS D or worse.
Would the Project deteriorate already unacceptable operations at a signalized intersection by adding traffic?	The West 7th Street at North 11th Avenue intersection is projected to operate at a deficient LOS D during the evening peak hour prior to the addition of project traffic in the cumulative condition. The project would add traffic but would not increase overall vehicle delay.	This intersection has generally been built to its ultimate right-of-way and no additional physical improvements are planned. Widening beyond the existing cross–section could result in secondary impacts to pedestrians and bicyclists. As this intersection is in the downtown area where LOS D may be considered acceptable for vehicles if other improvements would degrade mobility for other travel modes, and

Table 9: CEQA Checklist Review

Significance Criteria	Discussion	Mitigation
		the project does not increase average delay when LOS D conditions are projected, this impact is considered less-than-significant.
Would the operations of an unsignalized study intersection decline from acceptable to unacceptable with the addition of Project traffic, and would the installation of a traffic signal based on the *Manual on Uniform Traffic Control Devices* (MUTCD) Peak Hour Signal Warrant (Warrant 3), be warranted?	Peak hour signal warrants would not be met at any of the unsignalized study intersections prior to the addition of project traffic. The project would not result in peak hour signal warrants being met. Additionally, all unsignalized study intersections would operate at an acceptable service level prior to the addition of project traffic, and would continue to do so with the addition of project traffic.	Impact would be less than significant and no mitigation is required because the project would not result in an unsignalized study intersection meeting signal warrants.
A pedestrian impact is considered significant if the project would:		
Disrupt existing pedestrian facilities	Sidewalks are provided along all existing roadway segments that bound the project parcels. During the construction phase, there is the potential for existing pedestrian facilities to be disrupted. Preparation of a construction management plan would reduce the potential for disruptions to existing pedestrian facilities during the project construction phase ***(Impact 1)***. Mitigation measures proposed as mitigation for project impacts were reviewed for their potential impact to pedestrians. No widening of intersections beyond their existing cross section is proposed.	***Mitigation Measure 1:*** As part of the construction management plan, maintain pedestrian connections around the project site. Pedestrian detours should consider safe crossing locations.
Interfere with planned pedestrian facilities	A detailed project site plan has not yet been developed. It is expected that the project would maintain existing sidewalks where appropriate and construct new sidewalks along the project frontage to meet City standards. Insufficient details are	***Mitigation Measure 2:*** As the final site plan is developed by KART, sidewalk and intersection crossing design treatments consistent with City requirements should be provided that consider the expected pedestrian flows around the project site and to

Table 9: CEQA Checklist Review

Significance Criteria	Discussion	Mitigation
	provided to review potential pedestrian crossing locations ***(Impact 2)***.	connecting streets. These plans should be submitted to the City of Hanford for review. Implementation of this measure would reduce the impact to a ***less-than-significant*** level.
Create inconsistencies with adopted pedestrian system plans, guidelines, policies, or standards	Sidewalks along the project boundary and through the project site would be constructed to current City standards.	Impact would be less than significant and no mitigation is required because the project would be constructed to meet current City standards related to pedestrian facilities.
A bicycle impact is considered significant if the project would:		
Disrupt existing bicycle facilities	No designated bicycle facilities are provided within the project vicinity. Mitigation measures proposed as mitigation for project impacts were reviewed for their potential impact to bicyclists. No intersection widening beyond the already planned cross-sections are proposed as project mitigation where bicycle facilities are provided and no bicycle facilities would be removed as part of project mitigation.	Impact would be less than significant and no mitigation is required because the project would not disrupt existing bicycle facilities during the construction phase and project mitigation would not change any existing bicycle facilities.
Interfere with planned bicycle facilities	No bicycle facilities are planned along the project frontage; therefore, implementation of the project would not interfere with planned bicycle facilities.	Impact would be less than significant and no mitigation is required because the project would not preclude the construction of bicycle facilities as identified in the City of Hanford Pedestrian and Bicycle Master Plan.
Create inconsistencies with adopted bicycle system plans, guidelines, policies, or standards	A detailed site plan has not yet been developed. As part of the final site plan, bicycle parking locations should be identified. Additionally, to facilitate bicycle access to the transit center, potential non-motorized connections between the transit center and planned bicycle facilities should be considered.	Impact would be less than significant and no mitigation is required because the project would be constructed to meet current City standards related to bicycle facilities.

Table 9: CEQA Checklist Review

Significance Criteria	Discussion	Mitigation
A transit impact is considered significant if the project would:		
Result in development that is inaccessible to transit riders	The project would relocate the transit center from its existing location adjacent to the Amtrak station to a new location approximately 6 blocks away. This could result in transit riders experiencing difficulty transferring between the Amtrak Station and KART. KART plans to provide service between the Amtrak Station and the KART transit center on hourly headways. As Amtrak trains depart the station each hour, depending on direction, the connecting service would be timed to connect with trains; however, depending on the actual arrival of trains, the connection may not serve all passenger needs. Additionally, some riders may prefer to walk between the Amtrak Station and the Transit Center. **(Impact 3)**	***Mitigation Measure 3:*** As part of the project, install pedestrian wayfinding along the path of travel between the transit center and the Amtrak station.
Generate transit demand that cannot be met by existing or planned transit in the area.	The project would allow for an expansion of transit service in Hanford and surrounding community.	Impact would be less than significant and no mitigation is required because the project would expand transit opportunities in Hanford and surrounding communities.
Other Transportation Effects not addressed in other Chapters		
An impact could occur if the project conflicts or is inconsistent with CEQA Guidelines section 15064.3, subdivision (b)	This section of the CEQA guidelines relates to the assessment of vehicle miles traveled generated by the project. Transit projects such as the project are considered to have a less-than-significant impact on VMT and therefore, no analysis is required.	None required.
An impact could occur if the project substantially increases traffic hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses	The project would be designed to meet current City design standards.	Impact would be less than significant and no mitigation is required because the project would be constructed to meet current City standards related to geometric design, and the project would not introduce incompatible uses.

Table 9: CEQA Checklist Review

Significance Criteria	Discussion	Mitigation
An impact could occur if the project results in inadequate emergency access	Access to the site is provided from multiple roadways. Should one roadway be blocked, there are other potential access routes. Additionally, the project provides sufficient on-site space to accommodate the projected level of transit vehicle activities, such that transit vehicles would not spillback from project driveways, potentially affecting through travel on the adjacent streets. The project also relocates an existing use away from an at-grade railroad crossing, reducing the level of vehicle and pedestrian activity around an active railroad crossing, reducing future conflicts.	Impact would be less than significant and no mitigation is required because the project would provide sufficient access for emergency vehicles.

Source: Fehr & Peers, 2019.

Appendix A: Traffic Counts

Prepared by National Data & Surveying Services

Harris St & 7th St

Peak Hour Turning Movement Count

ID: 19-02056-001
City: Hanford

Day: Tuesday
Date: 07/23/2019

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

SOUTHBOUND (Harris St)

AM	8	28	14	0	73	AM
NOON	0	0	0	0	0	NOON
PM	15	67	32	1	62	PM

EASTBOUND (7th St)

AM	NOON	PM	
166	0	204	
0	0	0	0
5	0	7	0
84	0	214	1
4	0	3	1
AM	NOON	PM	

WESTBOUND (7th St)

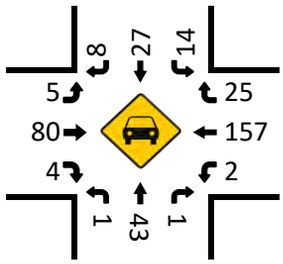
	PM	NOON	AM
1	16	0	25
1	188	0	157
0	2	0	2
0	0	0	0
	252	0	99
	PM	NOON	AM

NORTHBOUND (Harris St)

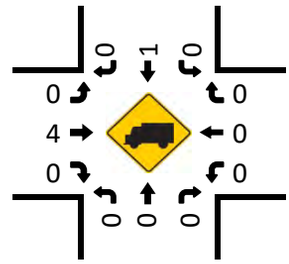
PM	72	0	1	38	6	PM
NOON	0	0	0	0	0	NOON
AM	34	0	1	43	1	AM

CONTROL			
Signalized			
TEV	372 AM	0 NOON	590 PM
PHF	0.85		0.83

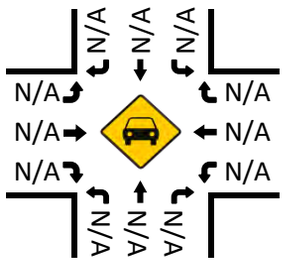
Cars (AM)



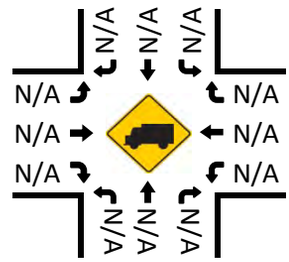
HT (AM)



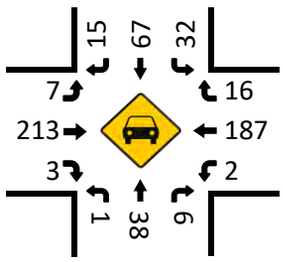
Cars (NOON)



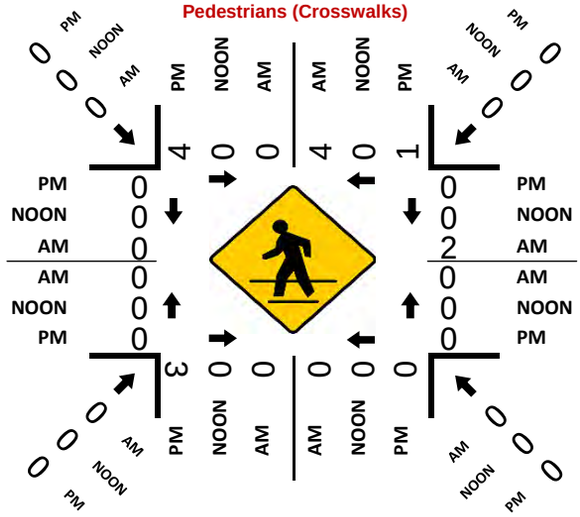
HT (NOON)



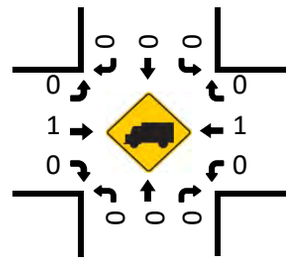
Cars (PM)



Pedestrians (Crosswalks)



HT (PM)



Prepared by National Data & Surveying Services

Harris St & 8th St

Peak Hour Turning Movement Count

ID: 19-02056-002
City: Hanford

Day: Tuesday
Date: 07/23/2019

PEAK HOURS		COUNT PERIODS
07:45 AM - 08:45 AM	AM	07:00 AM - 09:00 AM
NONE	NOON	NONE
04:00 PM - 05:00 PM	PM	04:00 PM - 06:00 PM

Harris St — SOUTHBOUND

	Right	Thru	Left	U-Turn	Departure
AM	18	35	3	0	56
NOON	0	0	0	0	0
PM	37	74	5	0	80
Lanes	0	1	0	0	

8th St — EASTBOUND

	Lanes	AM	NOON	PM
Departure		44	0	78
U-Turn	0	0	0	0
Left	0	7	0	35
Thru	1	12	0	38
Right	0	11	0	30

8th St — WESTBOUND

	Lanes	PM	NOON	AM
Right	0	1	0	0
Thru	1	18	0	7
Left	0	3	0	2
U-Turn	0	0	0	0
Departure		45	0	19

Harris St — NORTHBOUND

	Departure	U-Turn	Left	Thru	Right
Lanes		0	0	1	0
PM	107	0	23	44	2
NOON	0	0	0	0	0
AM	48	0	19	49	4

CONTROL

4-Way Stop

	AM	NOON	PM
TEV	167	0	310
PHF	0.77		0.81

Cars and Heavy Trucks

	SB Right	SB Thru	SB Left	EB Left	EB Thru	EB Right	WB Right	WB Thru	WB Left	NB Left	NB Thru	NB Right
Cars (AM)	18	35	3	7	12	11	0	7	1	19	49	4
HT (AM)	0	0	0	0	0	0	0	0	1	0	0	0
Cars (NOON)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HT (NOON)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cars (PM)	37	74	5	35	38	30	1	18	3	23	44	2
HT (PM)	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg (west half)	0	0	2
North leg (east half)	1	0	1
West leg (north half)	1	0	1
West leg (south half)	0	0	0
East leg (north half)	1	0	2
East leg (south half)	1	0	1
South leg (west half)	0	0	0
South leg (east half)	0	0	0
Northwest diagonal	0	0	0
Northeast diagonal	0	0	0
Southwest diagonal	0	0	0
Southeast diagonal	0	0	0

Prepared by National Data & Surveying Services

Brown St & 7th St

Peak Hour Turning Movement Count

ID: 19-02056-003
City: Hanford

Day: Tuesday
Date: 07/23/2019

PEAK HOURS		COUNT PERIODS
AM	08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:15 PM - 05:15 PM	04:00 PM - 06:00 PM

Brown St — SOUTHBOUND

	Right	Through	Left	U-Turn	Exit
AM	4	7	3	0	14
NOON	0	0	0	0	0
PM	8	19	30	0	35
(red)	0	1	0	0	

7th St — EASTBOUND

	AM	NOON	PM	(red)
Exit	190	0	217	
U-Turn	0	0	0	0
Left	3	0	9	0
Through	103	0	232	1
Right	0	0	1	1

7th St — WESTBOUND

	(red)	PM	NOON	AM
Right	1	9	0	5
Through	1	205	0	186
Left	0	7	0	6
U-Turn	0	0	0	0
Exit		278	0	112

Brown St — NORTHBOUND

	Exit	U-Turn	Left	Through	Right
(red)		0	0	1	0
PM	27	0	4	17	16
NOON	0	0	0	0	0
AM	13	0	0	6	6

CONTROL

2-Way Stop (NB/SB)

	AM	NOON	PM
TEV	329	0	557
PHF	0.82		0.80

Cars (AM)

	Left	Through	Right
SB	3	6	4
EB	3	99	0
WB	6	184	5
NB	0	6	6

HT (AM)

	Left	Through	Right
SB	0	1	0
EB	0	4	0
WB	0	2	0
NB	0	0	0

Cars (NOON)

	Left	Through	Right
SB	N/A	N/A	N/A
EB	N/A	N/A	N/A
WB	N/A	N/A	N/A
NB	N/A	N/A	N/A

HT (NOON)

	Left	Through	Right
SB	N/A	N/A	N/A
EB	N/A	N/A	N/A
WB	N/A	N/A	N/A
NB	N/A	N/A	N/A

Cars (PM)

	Left	Through	Right
SB	29	19	8
EB	9	232	1
WB	7	204	9
NB	4	16	16

HT (PM)

	Left	Through	Right
SB	1	0	0
EB	0	0	0
WB	0	1	0
NB	0	1	0

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North (west half)	0	0	3
North (east half)	5	0	3
West (north half)	1	0	0
West (south half)	0	0	0
East (north half)	0	0	0
East (south half)	0	0	0
South (west half)	0	0	1
South (east half)	0	0	1
NW diagonal	0	0	0
NE diagonal	0	0	0
SW diagonal	0	0	0
SE diagonal	0	0	0

Prepared by National Data & Surveying Services

Brown St & 8th St

Peak Hour Turning Movement Count

ID: 19-02056-004
City: Hanford

Day: Tuesday
Date: 07/23/2019

	PEAK HOURS	COUNT PERIODS
AM	07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

Brown St — SOUTHBOUND

	Right	Through	Left	U-Turn	Departing (NB)
AM	2	13	0	0	22
NOON	0	0	0	0	0
PM	14	28	0	0	46
(red)	0	1	0	0	

8th St — EASTBOUND

	AM	NOON	PM	(red)
Departing (WB)	4	0	20	
U-Turn	0	0	0	0
Left	9	0	19	0
Through	0	0	0	1
Right	5	0	25	0

8th St — WESTBOUND

	(red)	PM	NOON	AM
U-Turn	0	0	0	0
Through	0	0	0	0
Left	0	0	0	0
Right	0	0	0	0
Departing (EB)		0	0	0

Brown St — NORTHBOUND

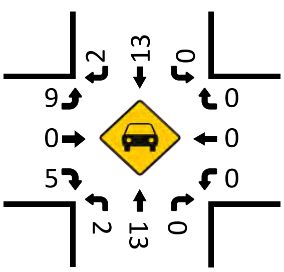
	Departing (SB)	U-Turn	Left	Through	Right
(red)		0	0	1	0
PM	53	0	6	27	0
NOON	0	0	0	0	0
AM	18	0	2	13	0

CONTROL

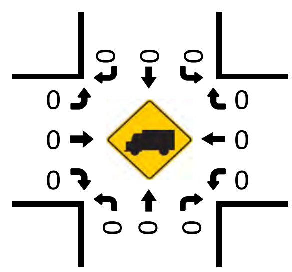
1-Way Yield (EB)

	AM	NOON	PM
TEV	44	0	119
PHF	0.85		0.93

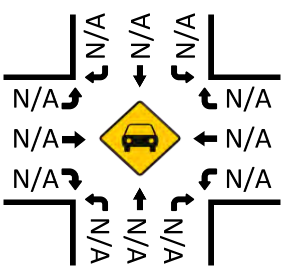
Cars (AM)



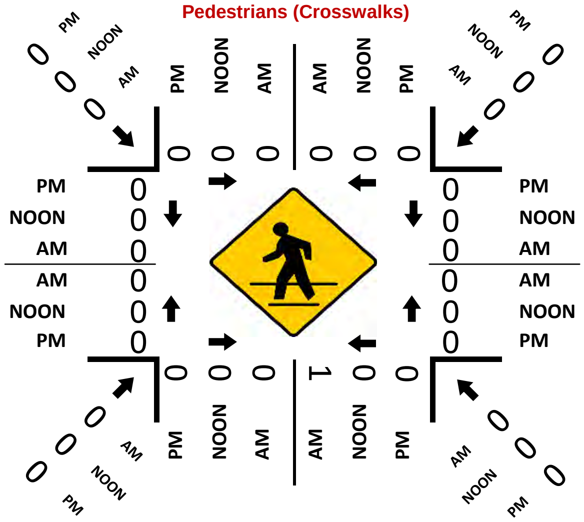
HT (AM)



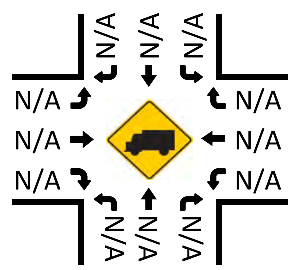
Cars (NOON)



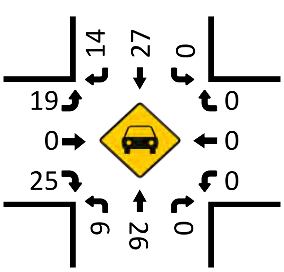
Pedestrians (Crosswalks)



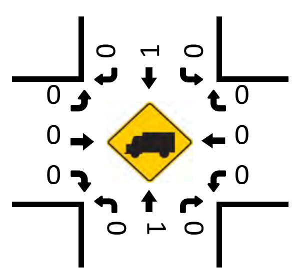
HT (NOON)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

10th Ave & Lacey Blvd

Peak Hour Turning Movement Count

ID: 19-02056-005
City: Hanford

Day: Tuesday
Date: 07/23/2019

PEAK HOURS		COUNT PERIODS
AM	07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

10th Ave – SOUTHBOUND

	Right	Thru	Left	U-Turn	Exiting (northbound)
AM	70	369	38	6	386
NOON	0	0	0	0	0
PM	84	404	62	8	695
Lanes	1	2	1	0	

Lacey Blvd – EASTBOUND

	AM	NOON	PM	Lanes
Exiting (westbound)	183	0	215	
U-Turn	0	0	0	0
Left	50	0	152	1
Thru	59	0	178	1.5
Right	19	0	34	0.5

Lacey Blvd – WESTBOUND

	PM	NOON	AM	Lanes
Left	93	0	34	0
Thru	98	0	87	2
Right	129	0	84	1
U-Turn	0	0	0	0
Exiting (eastbound)	327	0	174	

10th Ave – NORTHBOUND

	Exiting (southbound)	U-Turn	Left	Thru	Right
Lanes		0	1	2	1
PM	571	4	33	442	87
NOON	0	0	0	0	0
AM	474	2	26	296	77

CONTROL

Signalized

	AM	NOON	PM
TEV	1217	0	1808
PHF	0.93		0.86

Cars (AM)

Approach	Left	Thru	Right
Southbound	37	352	68
Eastbound	48	58	17
Westbound	84	86	30
Northbound	26	287	75

HT (AM)

Approach	Left	Thru	Right
Southbound	1	17	2
Eastbound	2	1	2
Westbound	0	1	4
Northbound	0	9	2

Cars (NOON)

Approach	Left	Thru	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

HT (NOON)

Approach	Left	Thru	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Cars (PM)

Approach	Left	Thru	Right
Southbound	60	400	82
Eastbound	151	176	34
Westbound	127	98	93
Northbound	32	435	87

HT (PM)

Approach	Left	Thru	Right
Southbound	2	4	2
Eastbound	1	2	0
Westbound	2	0	0
Northbound	1	7	0

Pedestrians (Crosswalks)

Crosswalk	Direction	AM	NOON	PM
North leg	Eastbound	0	0	1
North leg	Westbound	1	0	1
South leg	Eastbound	1	0	1
South leg	Westbound	0	0	1
West leg	Southbound	0	0	1
West leg	Northbound	0	0	0
East leg	Southbound	1	0	0
East leg	Northbound	1	0	0
Diagonal (NW to SE)		0	0	0
Diagonal (NE to SW)		0	0	0
Diagonal (SW to NE)		0	0	0
Diagonal (SE to NW)		0	0	0

Prepared by National Data & Surveying Services

11th Ave & 7th St

Peak Hour Turning Movement Count

ID: 19-02056-006
City: Hanford

Day: Tuesday
Date: 07/23/2019

PEAK HOURS

AM	07:45 AM - 08:45 AM
NOON	NONE
PM	04:15 PM - 05:15 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

11th Ave — SOUTHBOUND

AM	63	286	69	1	508	AM
NOON	0	0	0	0	0	NOON
PM	51	541	100	9	754	PM
	1	2	1	0		

7th St — EASTBOUND

AM	NOON	PM		
290	0	348		
0	0	0	0	
36	0	66	2	
87	0	173	1.5	
65	0	215	0.5	
AM	NOON	PM		

CONTROL

Signalized

TEV	1486 AM	0 NOON	2430 PM
PHF	0.88		0.91

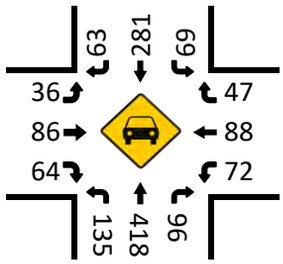
7th St — WESTBOUND

PM	NOON	AM	
107	0	47	0.5
159	0	89	1.5
160	0	72	1
0	0	0	0
386	0	252	
PM	NOON	AM	

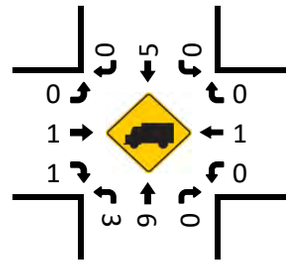
11th Ave — NORTHBOUND

PM	942	26	138	572	113	PM
NOON	0	0	0	0	0	NOON
AM	436	13	138	424	96	AM
		0	1	2	1	

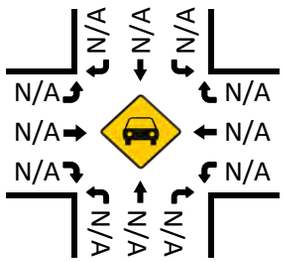
Cars (AM)



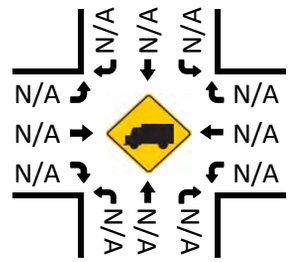
HT (AM)



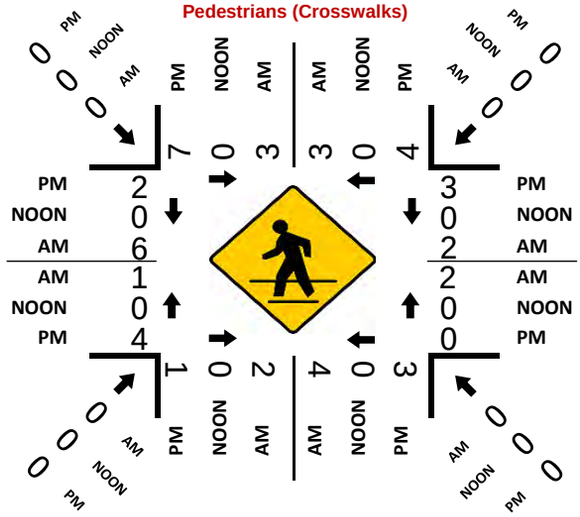
Cars (NOON)



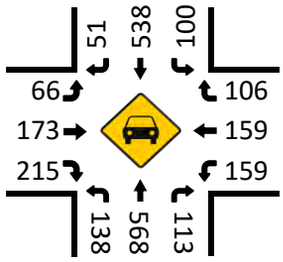
HT (NOON)



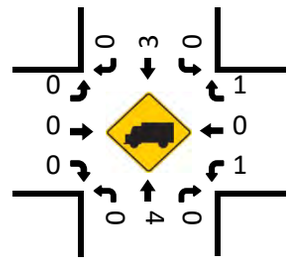
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Kart West Dwy & 7th St

Peak Hour Turning Movement Count

ID: 19-02056-007
City: Hanford

Day: Tuesday
Date: 07/23/2019

PEAK HOURS

AM	08:00 AM - 09:00 AM
NOON	NONE
PM	04:15 PM - 05:15 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Kart West Dwy — SOUTHBOUND

AM	0	0	0	0	14	AM
NOON	0	0	0	0	0	NOON
PM	1	0	1	0	22	PM

7th St — EASTBOUND

AM	NOON	PM	
226	0	407	
1	0	0	0
6	0	8	0
216	0	351	2
0	0	0	0
AM	NOON	PM	

7th St — WESTBOUND

PM	NOON	AM	
14	0	8	0
406	0	223	2
0	0	2	0
0	0	0	0
352	0	216	
PM	NOON	AM	

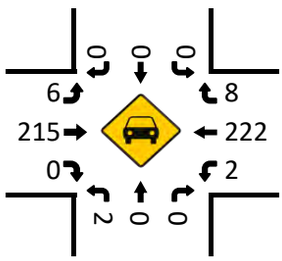
CONTROL: No Control

	AM	NOON	PM
TEV	458	0	781
PHF	0.86		0.96

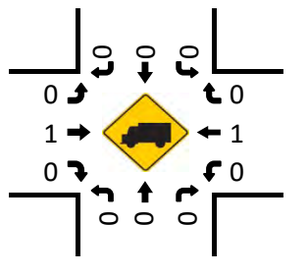
Kart West Dwy — NORTHBOUND

PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	2	0	2	0	0	AM

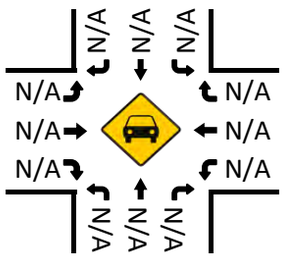
Cars (AM)



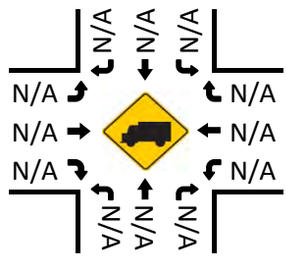
HT (AM)



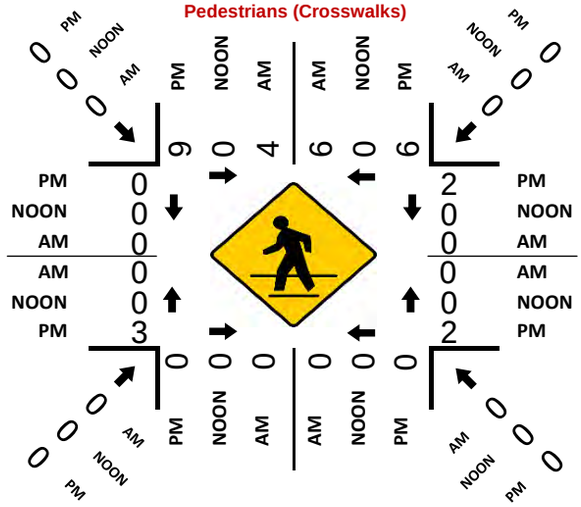
Cars (NOON)



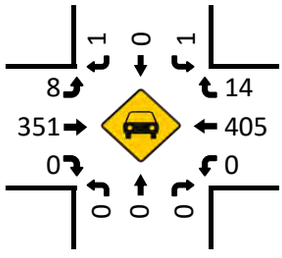
HT (NOON)



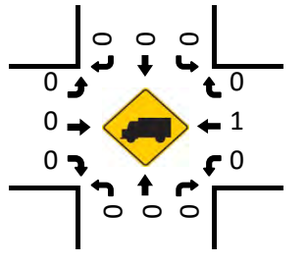
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Kart East Dwy & 8th St

Peak Hour Turning Movement Count

ID: 19-02056-008
City: Hanford

Day: Tuesday
Date: 07/23/2019

PEAK HOURS	
AM	07:45 AM - 08:45 AM
NOON	NONE
PM	04:00 PM - 05:00 PM

COUNT PERIODS	
AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Kart East Dwy — SOUTHBOUND

AM	0	0	0	0	1	AM
NOON	0	0	0	0	0	NOON
PM	0	4	0	0	1	PM

8th St — EASTBOUND

AM	NOON	PM		
1	0	2	⇦	
1	0	2	↶	0
1	0	1	↱	0
0	0	0	→	1
15	0	19	↴	0
AM	NOON	PM		

CONTROL

No Control

TEV	17 AM	0 NOON	26 PM
PHF	0.85		0.54

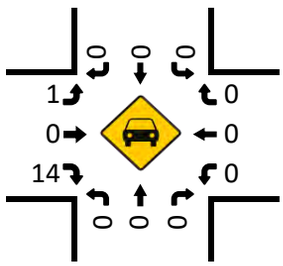
8th St — WESTBOUND

	0	1	0	0
0	↰	0	0	0
0	←	0	0	0
0	↰	0	0	0
0	↰	0	0	0
⇨		0	0	0
		PM	NOON	AM

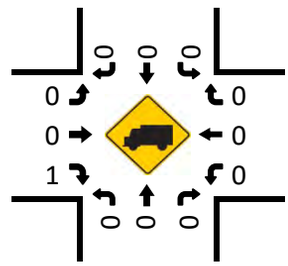
	0	0	0	0
PM	23	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	15	0	0	0	0	AM

Kart East Dwy — NORTHBOUND

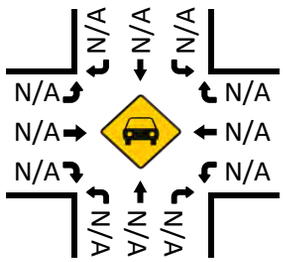
Cars (AM)



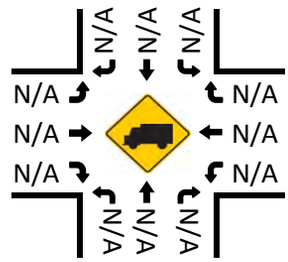
HT (AM)



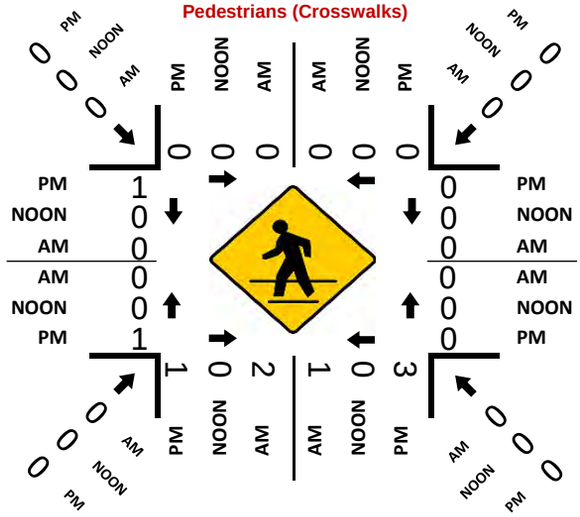
Cars (NOON)



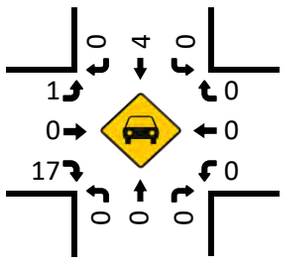
HT (NOON)



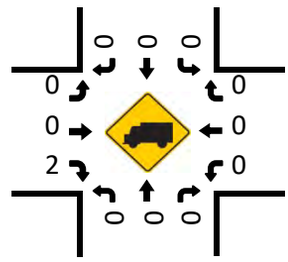
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)

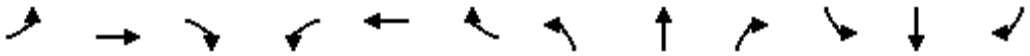


Appendix B: LOS Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	84	4	2	157	25	1	43	1	14	28	8
Future Volume (veh/h)	5	84	4	2	157	25	1	43	1	14	28	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1900	1899	1900	1900	1851	1863
Adj Flow Rate, veh/h	5	91	4	2	171	27	1	47	1	15	30	9
Adj No. of Lanes	0	1	1	0	1	1	0	1	1	0	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	0	0	0	0	4	4	2
Cap, veh/h	97	931	806	83	950	805	84	587	501	231	404	491
Arrive On Green	0.51	0.51	0.51	0.51	0.51	0.51	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	26	1822	1577	4	1858	1574	8	1888	1610	400	1298	1578
Grp Volume(v), veh/h	96	0	4	173	0	27	48	0	1	45	0	9
Grp Sat Flow(s),veh/h/ln	1848	0	1577	1862	0	1574	1896	0	1610	1698	0	1578
Q Serve(g_s), s	0.0	0.0	0.1	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.2
Cycle Q Clear(g_c), s	1.2	0.0	0.1	2.3	0.0	0.4	0.8	0.0	0.0	0.8	0.0	0.2
Prop In Lane	0.05		1.00	0.01		1.00	0.02		1.00	0.33		1.00
Lane Grp Cap(c), veh/h	1029	0	806	1032	0	805	672	0	501	635	0	491
V/C Ratio(X)	0.09	0.00	0.00	0.17	0.00	0.03	0.07	0.00	0.00	0.07	0.00	0.02
Avail Cap(c_a), veh/h	1029	0	806	1032	0	805	672	0	501	635	0	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.7	0.0	5.4	5.9	0.0	5.5	11.0	0.0	10.7	10.9	0.0	10.7
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.4	0.0	0.1	0.2	0.0	0.0	0.2	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	0.7	0.0	0.0	1.3	0.0	0.2	0.5	0.0	0.0	0.4	0.0	0.1
LnGrp Delay(d),s/veh	5.9	0.0	5.4	6.3	0.0	5.5	11.2	0.0	10.7	11.2	0.0	10.8
LnGrp LOS	A		A	A		A	B		B	B		B
Approach Vol, veh/h		100			200			49			54	
Approach Delay, s/veh		5.8			6.2			11.2			11.1	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		18.0		27.0		18.0		27.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		13.5		22.5		13.5		22.5
Max Q Clear Time (g_c+I1), s		2.8		3.2		2.8		4.3
Green Ext Time (p_c), s		0.1		0.4		0.1		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	7.4
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	7	12	11	2	7	0	19	49	4	3	35	18
Future Volume (vph)	7	12	11	2	7	0	19	49	4	3	35	18
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
Hourly flow rate (vph)	8	13	12	2	8	0	21	53	4	3	38	20

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	33	10	78	61
Volume Left (vph)	8	2	21	3
Volume Right (vph)	12	0	4	20
Hadj (s)	-0.17	0.21	0.02	-0.19
Departure Headway (s)	4.0	4.4	4.1	3.9
Degree Utilization, x	0.04	0.01	0.09	0.07
Capacity (veh/h)	859	782	862	910
Control Delay (s)	7.2	7.5	7.5	7.2
Approach Delay (s)	7.2	7.5	7.5	7.2
Approach LOS	A	A	A	A

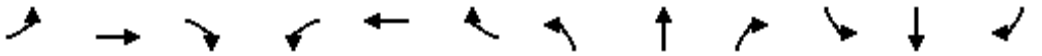
Intersection Summary				
Delay	7.3			
Level of Service	A			
Intersection Capacity Utilization	20.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	12	11	2	7	0	19	49	4	3	35	18
Future Vol, veh/h	7	12	11	2	7	0	19	49	4	3	35	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	50	0	0	0	0	0	0	0	0
Mvmt Flow	8	13	12	2	8	0	21	53	4	3	38	20
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.2	8.2	7.5	7.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	23%	22%	5%
Vol Thru, %	68%	40%	78%	62%
Vol Right, %	6%	37%	0%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	72	30	9	56
LT Vol	19	7	2	3
Through Vol	49	12	7	35
RT Vol	4	11	0	18
Lane Flow Rate	78	33	10	61
Geometry Grp	1	1	1	1
Degree of Util (X)	0.088	0.036	0.014	0.065
Departure Headway (Hd)	4.04	3.975	5.063	3.851
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	885	893	702	926
Service Time	2.073	2.035	3.126	1.89
HCM Lane V/C Ratio	0.088	0.037	0.014	0.066
HCM Control Delay	7.5	7.2	8.2	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.1	0	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	103	0	6	186	5	0	6	6	3	7	4
Future Volume (Veh/h)	3	103	0	6	186	5	0	6	6	3	7	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			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
Hourly flow rate (vph)	3	112	0	7	202	5	0	7	7	3	8	4
Pedestrians		1									5	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		3.5									3.5	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		464										
pX, platoon unblocked												
vC, conflicting volume	212			112			343	344	112	350	339	208
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	212			112			343	344	112	350	339	208
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.1	3.3
p0 queue free %	100			100			100	99	99	99	99	100
cM capacity (veh/h)	1364			1490			599	575	947	591	557	833

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	115	0	209	5	14	15
Volume Left	3	0	7	0	0	3
Volume Right	0	0	0	5	7	4
cSH	1364	1700	1490	1700	716	619
Volume to Capacity	0.00	0.00	0.00	0.00	0.02	0.02
Queue Length 95th (ft)	0	0	0	0	1	2
Control Delay (s)	0.2	0.0	0.3	0.0	10.1	11.0
Lane LOS	A		A		B	B
Approach Delay (s)	0.2		0.3		10.1	11.0
Approach LOS					B	B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	25.0%	ICU Level of Service	A
Analysis Period (min)	15		

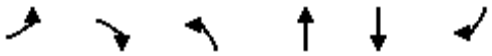
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	103	0	6	186	5	0	6	6	3	7	4
Future Vol, veh/h	3	103	0	6	186	5	0	6	6	3	7	4
Conflicting Peds, #/hr	5	0	0	0	0	5	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	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, %	0	4	0	0	1	0	0	0	0	0	14	0
Mvmt Flow	3	112	0	7	202	5	0	7	7	3	8	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	212	0	0	112	0	0	344	344	112	346	339	208
Stage 1	-	-	-	-	-	-	118	118	-	221	221	-
Stage 2	-	-	-	-	-	-	226	226	-	125	118	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.64	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.64	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4.126	3.3
Pot Cap-1 Maneuver	1370	-	-	1490	-	-	614	582	947	612	563	837
Stage 1	-	-	-	-	-	-	891	802	-	786	699	-
Stage 2	-	-	-	-	-	-	781	721	-	884	775	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1363	-	-	1490	-	-	600	575	947	597	556	832
Mov Cap-2 Maneuver	-	-	-	-	-	-	600	575	-	597	556	-
Stage 1	-	-	-	-	-	-	889	800	-	780	692	-
Stage 2	-	-	-	-	-	-	764	714	-	869	773	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	10.1	10.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	716	1363	-	-	1490	-	-	624
HCM Lane V/C Ratio	0.018	0.002	-	-	0.004	-	-	0.024
HCM Control Delay (s)	10.1	7.6	0	-	7.4	0	-	10.9
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	5	2	13	13	2
Future Volume (Veh/h)	9	5	2	13	13	2
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	5	2	14	14	2
Pedestrians	1			1		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	3.5			3.5		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	34	17	17			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	34	17	17			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	982	1066	1612			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	15	16	16
Volume Left	10	2	0
Volume Right	5	0	2
cSH	1009	1612	1700
Volume to Capacity	0.01	0.00	0.01
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.6	0.9	0.0
Lane LOS	A	A	
Approach Delay (s)	8.6	0.9	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	13.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	59	19	84	87	34	26	296	77	38	369	70
Future Volume (veh/h)	50	59	19	84	87	34	26	296	77	38	369	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1900	1849	1900	1900	1825	1900	1900	1845	1845	1863	1810	1845
Adj Flow Rate, veh/h	53	62	20	88	92	36	27	312	81	40	388	74
Adj No. of Lanes	1	1	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	1	1	0	3	3	2	5	3
Cap, veh/h	240	187	60	240	344	128	240	731	326	236	717	319
Arrive On Green	0.13	0.14	0.13	0.13	0.14	0.13	0.13	0.21	0.21	0.13	0.21	0.21
Sat Flow, veh/h	1810	1340	432	1810	2465	914	1810	3505	1560	1774	3438	1530
Grp Volume(v), veh/h	53	0	82	88	63	65	27	312	81	40	388	74
Grp Sat Flow(s),veh/h/ln	1810	0	1772	1810	1734	1645	1810	1752	1560	1774	1719	1530
Q Serve(g_s), s	1.1	0.0	1.7	1.8	1.3	1.5	0.5	3.2	1.8	0.8	4.2	1.7
Cycle Q Clear(g_c), s	1.1	0.0	1.7	1.8	1.3	1.5	0.5	3.2	1.8	0.8	4.2	1.7
Prop In Lane	1.00		0.24	1.00		0.56	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	240	0	247	240	242	229	240	731	326	236	717	319
V/C Ratio(X)	0.22	0.00	0.33	0.37	0.26	0.28	0.11	0.43	0.25	0.17	0.54	0.23
Avail Cap(c_a), veh/h	917	0	1262	917	1235	1171	917	2411	1074	899	2365	1053
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.0	0.0	16.1	16.4	15.9	16.1	15.8	14.2	13.7	15.9	14.6	13.6
Incr Delay (d2), s/veh	0.2	0.0	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.9	0.9	0.7	0.7	0.3	1.5	0.8	0.4	2.0	0.7
LnGrp Delay(d),s/veh	16.2	0.0	16.4	16.7	16.1	16.3	15.9	14.4	13.8	16.1	14.9	13.8
LnGrp LOS	B		B	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h		135			216			420			502	
Approach Delay, s/veh		16.3			16.4			14.4			14.8	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	12.6	9.5	9.8	9.5	12.6	9.5	9.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	20.5	28.0	20.5	29.0	20.5	28.0	20.5	29.0
Max Q Clear Time (g_c+I1), s	2.8	5.2	3.8	3.7	2.5	6.2	3.1	3.5
Green Ext Time (p_c), s	0.0	1.3	0.0	0.2	0.0	1.6	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	15.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	87	65	72	89	47	138	424	96	69	286	63
Future Volume (veh/h)	36	87	65	72	89	47	138	424	96	69	286	63
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1900	1873	1900	1900	1888	1900	1863	1881	1900	1900	1776	1900
Adj Flow Rate, veh/h	38	92	68	76	94	49	145	446	101	73	301	66
Adj No. of Lanes	2	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	1	1	0	1	1	2	1	0	0	7	0
Cap, veh/h	106	256	171	112	368	178	197	1834	815	108	1558	735
Arrive On Green	0.03	0.13	0.12	0.06	0.16	0.15	0.11	0.51	0.51	0.06	0.46	0.46
Sat Flow, veh/h	3510	2015	1345	1810	2319	1122	1774	3574	1588	1810	3374	1591
Grp Volume(v), veh/h	38	80	80	76	71	72	145	446	101	73	301	66
Grp Sat Flow(s),veh/h/ln	1755	1780	1580	1810	1793	1648	1774	1787	1588	1810	1687	1591
Q Serve(g_s), s	0.7	2.8	3.1	2.8	2.3	2.6	5.3	4.7	2.2	2.7	3.5	1.6
Cycle Q Clear(g_c), s	0.7	2.8	3.1	2.8	2.3	2.6	5.3	4.7	2.2	2.7	3.5	1.6
Prop In Lane	1.00		0.85	1.00		0.68	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	106	226	201	112	285	262	197	1834	815	108	1558	735
V/C Ratio(X)	0.36	0.35	0.40	0.68	0.25	0.28	0.74	0.24	0.12	0.68	0.19	0.09
Avail Cap(c_a), veh/h	1098	822	730	566	828	761	555	1834	815	566	1558	735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.9	26.8	27.1	30.8	24.7	25.0	28.9	9.1	8.5	30.9	10.7	10.1
Incr Delay (d2), s/veh	0.8	0.9	1.3	2.7	0.5	0.6	2.0	0.3	0.3	2.7	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.4	1.4	1.5	1.2	1.2	2.7	2.4	1.0	1.4	1.7	0.7
LnGrp Delay(d),s/veh	32.7	27.7	28.4	33.5	25.2	25.6	30.9	9.4	8.8	33.7	11.0	10.4
LnGrp LOS	C	C	C	C	C	C	C	A	A	C	B	B
Approach Vol, veh/h		198			219			692			440	
Approach Delay, s/veh		29.0			28.2			13.8			14.6	
Approach LOS		C			C			B			B	

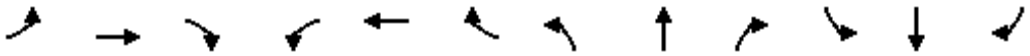
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	38.4	8.2	12.5	11.5	35.0	6.0	14.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	20.5	30.5	20.5	30.5	20.5	30.5	20.5	30.5
Max Q Clear Time (g_c+I1), s	4.7	6.7	4.8	5.1	7.3	5.5	2.7	4.6
Green Ext Time (p_c), s	0.1	3.2	0.1	0.8	0.1	2.1	0.0	0.7

Intersection Summary			
HCM 2010 Ctrl Delay		18.0	
HCM 2010 LOS		B	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	214	3	2	188	16	1	38	6	32	67	15
Future Volume (veh/h)	7	214	3	2	188	16	1	38	6	32	67	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1882	1900	1900	1881	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	8	233	3	2	204	17	1	41	7	35	73	16
Adj No. of Lanes	0	1	1	0	1	1	0	1	1	0	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, %	1	1	0	1	1	0	0	0	0	0	0	0
Cap, veh/h	83	862	731	75	872	731	77	706	604	256	490	604
Arrive On Green	0.46	0.46	0.46	0.46	0.46	0.46	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	17	1855	1573	3	1876	1573	8	1889	1615	428	1310	1615
Grp Volume(v), veh/h	241	0	3	206	0	17	42	0	7	108	0	16
Grp Sat Flow(s),veh/h/ln	1872	0	1573	1879	0	1573	1897	0	1615	1738	0	1615
Q Serve(g_s), s	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.3
Cycle Q Clear(g_c), s	3.9	0.0	0.1	3.3	0.0	0.3	0.7	0.0	0.1	1.9	0.0	0.3
Prop In Lane	0.03		1.00	0.01		1.00	0.02		1.00	0.32		1.00
Lane Grp Cap(c), veh/h	945	0	731	947	0	731	783	0	604	746	0	604
V/C Ratio(X)	0.26	0.00	0.00	0.22	0.00	0.02	0.05	0.00	0.01	0.14	0.00	0.03
Avail Cap(c_a), veh/h	945	0	731	947	0	731	783	0	604	746	0	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.1	0.0	7.1	8.0	0.0	7.2	9.9	0.0	9.7	10.3	0.0	9.8
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.5	0.0	0.1	0.1	0.0	0.0	0.4	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	2.2	0.0	0.0	1.8	0.0	0.1	0.4	0.0	0.1	1.0	0.0	0.2
LnGrp Delay(d),s/veh	8.8	0.0	7.1	8.5	0.0	7.2	10.1	0.0	9.8	10.7	0.0	9.9
LnGrp LOS	A		A	A		A	B		A	B		A
Approach Vol, veh/h		244			223			49			124	
Approach Delay, s/veh		8.8			8.4			10.0			10.6	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		22.5		27.0		22.5		27.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		18.0		22.5		18.0		22.5
Max Q Clear Time (g_c+I1), s		2.7		5.9		3.9		5.3
Green Ext Time (p_c), s		0.1		1.2		0.5		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	35	38	30	3	18	1	23	44	2	5	74	37
Future Volume (vph)	35	38	30	3	18	1	23	44	2	5	74	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	41	33	3	20	1	25	48	2	5	80	40

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	112	24	75	125
Volume Left (vph)	38	3	25	5
Volume Right (vph)	33	1	2	40
Hadj (s)	-0.11	0.01	0.12	-0.18
Departure Headway (s)	4.3	4.5	4.5	4.1
Degree Utilization, x	0.13	0.03	0.09	0.14
Capacity (veh/h)	805	750	772	844
Control Delay (s)	7.9	7.6	7.9	7.8
Approach Delay (s)	7.9	7.6	7.9	7.8
Approach LOS	A	A	A	A

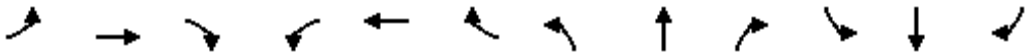
Intersection Summary				
Delay	7.8			
Level of Service	A			
Intersection Capacity Utilization	29.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	38	30	3	18	1	23	44	2	5	74	37
Future Vol, veh/h	35	38	30	3	18	1	23	44	2	5	74	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	1	0	0	6	0	3	0	0
Mvmt Flow	38	41	33	3	20	1	25	48	2	5	80	40
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.9	7.6	7.8	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	34%	14%	4%
Vol Thru, %	64%	37%	82%	64%
Vol Right, %	3%	29%	5%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	69	103	22	116
LT Vol	23	35	3	5
Through Vol	44	38	18	74
RT Vol	2	30	1	37
Lane Flow Rate	75	112	24	126
Geometry Grp	1	1	1	1
Degree of Util (X)	0.092	0.133	0.03	0.146
Departure Headway (Hd)	4.395	4.264	4.466	4.165
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	820	843	803	866
Service Time	2.399	2.278	2.483	2.168
HCM Lane V/C Ratio	0.091	0.133	0.03	0.145
HCM Control Delay	7.8	7.9	7.6	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.5	0.1	0.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	232	1	7	205	9	4	17	16	30	19	8
Future Volume (Veh/h)	9	232	1	7	205	9	4	17	16	30	19	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			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
Hourly flow rate (vph)	10	252	1	8	223	10	4	18	17	33	21	9
Pedestrians		1			3						3	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		464										
pX, platoon unblocked				0.99			0.99	0.99	0.99	0.99	0.99	
vC, conflicting volume	236			253			532	524	255	543	515	227
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	236			236			518	511	238	530	502	227
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			99	96	98	92	95	99
cM capacity (veh/h)	1339			1325			438	455	793	426	461	814

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	262	1	231	10	39	63
Volume Left	10	0	8	0	4	33
Volume Right	0	1	0	10	17	9
cSH	1339	1700	1325	1700	556	469
Volume to Capacity	0.01	0.00	0.01	0.01	0.07	0.13
Queue Length 95th (ft)	1	0	0	0	6	12
Control Delay (s)	0.4	0.0	0.3	0.0	12.0	13.9
Lane LOS	A		A		B	B
Approach Delay (s)	0.4		0.3		12.0	13.9
Approach LOS					B	B

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	36.1%	ICU Level of Service		A
Analysis Period (min)	15			

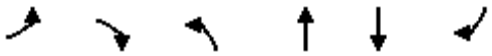
Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	232	1	7	205	9	4	17	16	30	19	8
Future Vol, veh/h	9	232	1	7	205	9	4	17	16	30	19	8
Conflicting Peds, #/hr	3	0	0	0	0	3	1	0	3	3	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	10	252	1	8	223	10	4	18	17	33	21	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	236	0	0	253	0	0	532	524	255	535	515	227
Stage 1	-	-	-	-	-	-	272	272	-	242	242	-
Stage 2	-	-	-	-	-	-	260	252	-	293	273	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1343	-	-	1324	-	-	461	461	789	459	466	817
Stage 1	-	-	-	-	-	-	738	688	-	766	709	-
Stage 2	-	-	-	-	-	-	749	702	-	719	688	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1339	-	-	1324	-	-	435	452	787	427	457	814
Mov Cap-2 Maneuver	-	-	-	-	-	-	435	452	-	427	457	-
Stage 1	-	-	-	-	-	-	731	682	-	757	702	-
Stage 2	-	-	-	-	-	-	713	695	-	676	682	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	12	13.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	551	1339	-	-	1324	-	-	469
HCM Lane V/C Ratio	0.073	0.007	-	-	0.006	-	-	0.132
HCM Control Delay (s)	12	7.7	0	-	7.7	0	-	13.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.5



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	0	2	13	28	14
Future Volume (Veh/h)	1	0	2	13	28	14
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	0	2	14	30	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	56	38	45			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	56	38	45			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	956	1040	1576			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	1	16	45
Volume Left	1	2	0
Volume Right	0	0	15
cSH	956	1576	1700
Volume to Capacity	0.00	0.00	0.03
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.8	0.9	0.0
Lane LOS	A	A	
Approach Delay (s)	8.8	0.9	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	178	34	129	98	93	33	442	87	62	404	84
Future Volume (veh/h)	152	178	34	129	98	93	33	442	87	62	404	84
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1863	1853	1900	1863	1900	1900	1845	1863	1900	1845	1881	1863
Adj Flow Rate, veh/h	160	187	36	136	103	98	35	465	92	65	425	88
Adj No. of Lanes	1	1	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	3	3	2	0	0	3	2	0	3	1	2
Cap, veh/h	248	293	56	225	332	283	206	781	345	206	789	341
Arrive On Green	0.14	0.19	0.18	0.13	0.18	0.17	0.12	0.22	0.22	0.12	0.22	0.22
Sat Flow, veh/h	1774	1506	290	1774	1829	1562	1757	3539	1565	1757	3574	1546
Grp Volume(v), veh/h	160	0	223	136	101	100	35	465	92	65	425	88
Grp Sat Flow(s),veh/h/ln	1774	0	1796	1774	1805	1586	1757	1770	1565	1757	1787	1546
Q Serve(g_s), s	4.0	0.0	5.4	3.4	2.3	2.6	0.8	5.5	2.3	1.6	4.9	2.2
Cycle Q Clear(g_c), s	4.0	0.0	5.4	3.4	2.3	2.6	0.8	5.5	2.3	1.6	4.9	2.2
Prop In Lane	1.00		0.16	1.00		0.98	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	248	0	349	225	327	288	206	781	345	206	789	341
V/C Ratio(X)	0.65	0.00	0.64	0.61	0.31	0.35	0.17	0.60	0.27	0.32	0.54	0.26
Avail Cap(c_a), veh/h	794	0	1129	794	1135	997	786	2150	951	786	2171	939
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.1	0.0	17.4	19.4	16.7	17.0	18.7	16.4	15.1	19.0	16.2	15.1
Incr Delay (d2), s/veh	1.1	0.0	0.7	1.0	0.2	0.3	0.1	0.3	0.2	0.3	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	2.7	1.7	1.1	1.2	0.4	2.7	1.0	0.8	2.4	1.0
LnGrp Delay(d),s/veh	20.1	0.0	18.2	20.4	16.9	17.3	18.8	16.7	15.3	19.3	16.4	15.3
LnGrp LOS	C		B	C	B	B	B	B	B	B	B	B
Approach Vol, veh/h		383			337			592			578	
Approach Delay, s/veh		19.0			18.4			16.6			16.5	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	14.4	9.9	13.1	9.5	14.4	10.6	12.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	20.5	28.0	20.5	29.0	20.5	28.0	20.5	29.0
Max Q Clear Time (g_c+I1), s	13.6	7.5	5.4	7.4	2.8	6.9	6.0	4.6
Green Ext Time (p_c), s	0.0	2.0	0.0	0.7	0.0	1.8	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	17.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	173	215	160	159	107	138	572	113	100	541	51
Future Volume (veh/h)	66	173	215	160	159	107	138	572	113	100	541	51
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	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	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1890	1900	1900	1889	1900	1900	1863	1900	1900	1881	1900
Adj Flow Rate, veh/h	69	182	226	168	167	113	145	602	119	105	569	54
Adj No. of Lanes	2	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	0	0	1	1	0	2	0	0	1	0
Cap, veh/h	143	388	336	216	614	389	191	1394	625	146	1317	592
Arrive On Green	0.04	0.22	0.21	0.12	0.29	0.29	0.11	0.39	0.39	0.08	0.37	0.37
Sat Flow, veh/h	3442	1795	1556	1810	2087	1323	1810	3539	1587	1810	3574	1607
Grp Volume(v), veh/h	69	182	226	168	142	138	145	602	119	105	569	54
Grp Sat Flow(s),veh/h/ln	1721	1795	1556	1810	1794	1616	1810	1770	1587	1810	1787	1607
Q Serve(g_s), s	1.6	7.4	11.2	7.6	5.1	5.6	6.6	10.5	4.1	4.8	10.1	1.8
Cycle Q Clear(g_c), s	1.6	7.4	11.2	7.6	5.1	5.6	6.6	10.5	4.1	4.8	10.1	1.8
Prop In Lane	1.00		1.00	1.00		0.82	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	143	388	336	216	528	475	191	1394	625	146	1317	592
V/C Ratio(X)	0.48	0.47	0.67	0.78	0.27	0.29	0.76	0.43	0.19	0.72	0.43	0.09
Avail Cap(c_a), veh/h	859	661	573	452	661	595	452	1394	625	452	1317	592
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	28.8	30.5	36.0	22.8	23.1	36.6	18.6	16.7	37.8	20.0	17.4
Incr Delay (d2), s/veh	0.9	0.9	2.3	2.3	0.3	0.3	2.3	1.0	0.7	2.5	1.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.8	5.1	3.9	2.6	2.5	3.4	5.3	1.9	2.5	5.2	0.9
LnGrp Delay(d),s/veh	40.4	29.6	32.8	38.2	23.0	23.4	38.9	19.6	17.4	40.3	21.0	17.7
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	C	B
Approach Vol, veh/h		477			448			866			728	
Approach Delay, s/veh		32.7			28.9			22.5			23.5	
Approach LOS		C			C			C			C	

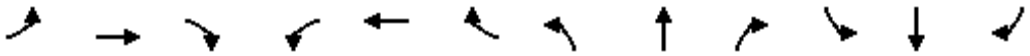
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	37.1	14.0	22.2	12.9	35.0	7.5	28.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	20.5	30.5	20.5	30.5	20.5	30.5	20.5	30.5
Max Q Clear Time (g_c+I1), s	13.8	12.5	9.6	13.2	8.6	12.1	3.6	7.6
Green Ext Time (p_c), s	0.1	4.1	0.2	2.3	0.1	3.7	0.1	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	25.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	92	4	2	157	26	1	45	1	14	28	8
Future Volume (veh/h)	5	92	4	2	157	26	1	45	1	14	28	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1900	1899	1900	1900	1851	1863
Adj Flow Rate, veh/h	5	100	4	2	171	28	1	49	1	15	30	9
Adj No. of Lanes	0	1	1	0	1	1	0	1	1	0	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	0	0	0	0	4	4	2
Cap, veh/h	95	934	806	83	950	805	84	587	501	231	404	491
Arrive On Green	0.51	0.51	0.51	0.51	0.51	0.51	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	22	1828	1577	4	1858	1574	8	1888	1610	400	1297	1578
Grp Volume(v), veh/h	105	0	4	173	0	28	50	0	1	45	0	9
Grp Sat Flow(s),veh/h/ln	1850	0	1577	1862	0	1574	1896	0	1610	1697	0	1578
Q Serve(g_s), s	0.0	0.0	0.1	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.2
Cycle Q Clear(g_c), s	1.3	0.0	0.1	2.3	0.0	0.4	0.8	0.0	0.0	0.8	0.0	0.2
Prop In Lane	0.05		1.00	0.01		1.00	0.02		1.00	0.33		1.00
Lane Grp Cap(c), veh/h	1029	0	806	1032	0	805	672	0	501	635	0	491
V/C Ratio(X)	0.10	0.00	0.00	0.17	0.00	0.03	0.07	0.00	0.00	0.07	0.00	0.02
Avail Cap(c_a), veh/h	1029	0	806	1032	0	805	672	0	501	635	0	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.7	0.0	5.4	5.9	0.0	5.5	11.0	0.0	10.7	10.9	0.0	10.7
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.4	0.0	0.1	0.2	0.0	0.0	0.2	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	0.7	0.0	0.0	1.3	0.0	0.2	0.5	0.0	0.0	0.4	0.0	0.1
LnGrp Delay(d),s/veh	5.9	0.0	5.4	6.3	0.0	5.6	11.2	0.0	10.7	11.2	0.0	10.8
LnGrp LOS	A		A	A		A	B		B	B		B
Approach Vol, veh/h		109			201			51			54	
Approach Delay, s/veh		5.9			6.2			11.2			11.1	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		18.0		27.0		18.0		27.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		13.5		22.5		13.5		22.5
Max Q Clear Time (g_c+I1), s		2.8		3.3		2.8		4.3
Green Ext Time (p_c), s		0.1		0.5		0.1		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	7.4
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	7	12	11	2	2	0	19	50	4	3	36	18
Future Volume (vph)	7	12	11	2	2	0	19	50	4	3	36	18
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
Hourly flow rate (vph)	8	13	12	2	2	0	21	54	4	3	39	20

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	33	4	79	62
Volume Left (vph)	8	2	21	3
Volume Right (vph)	12	0	4	20
Hadj (s)	-0.17	0.53	0.02	-0.18
Departure Headway (s)	4.0	4.8	4.1	3.9
Degree Utilization, x	0.04	0.01	0.09	0.07
Capacity (veh/h)	859	731	866	913
Control Delay (s)	7.2	7.8	7.5	7.1
Approach Delay (s)	7.2	7.8	7.5	7.1
Approach LOS	A	A	A	A

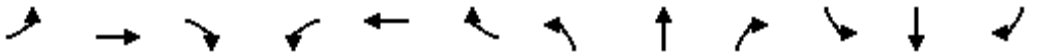
Intersection Summary				
Delay	7.3			
Level of Service	A			
Intersection Capacity Utilization	20.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	12	11	2	2	0	19	50	4	3	36	18
Future Vol, veh/h	7	12	11	2	2	0	19	50	4	3	36	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	50	0	0	0	0	0	0	0	0
Mvmt Flow	8	13	12	2	2	0	21	54	4	3	39	20
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.2	8.2	7.5	7.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	23%	50%	5%
Vol Thru, %	68%	40%	50%	63%
Vol Right, %	5%	37%	0%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	73	30	4	57
LT Vol	19	7	2	3
Through Vol	50	12	2	36
RT Vol	4	11	0	18
Lane Flow Rate	79	33	4	62
Geometry Grp	1	1	1	1
Degree of Util (X)	0.089	0.036	0.006	0.066
Departure Headway (Hd)	4.03	3.974	5.122	3.846
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	889	893	694	929
Service Time	2.058	2.031	3.185	1.879
HCM Lane V/C Ratio	0.089	0.037	0.006	0.067
HCM Control Delay	7.5	7.2	8.2	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.1	0	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	103	0	6	187	14	0	15	6	3	8	4
Future Volume (Veh/h)	11	103	0	6	187	14	0	15	6	3	8	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			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
Hourly flow rate (vph)	12	112	0	7	203	15	0	16	7	3	9	4
Pedestrians		1									5	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		3.5									3.5	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		464										
pX, platoon unblocked												
vC, conflicting volume	223			112			362	373	112	373	358	209
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	223			112			362	373	112	373	358	209
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.1	3.3
p0 queue free %	99			100			100	97	99	99	98	100
cM capacity (veh/h)	1351			1490			578	550	947	560	540	832

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	124	0	210	15	23	16
Volume Left	12	0	7	0	0	3
Volume Right	0	0	0	15	7	4
cSH	1351	1700	1490	1700	631	596
Volume to Capacity	0.01	0.00	0.00	0.01	0.04	0.03
Queue Length 95th (ft)	1	0	0	0	3	2
Control Delay (s)	0.8	0.0	0.3	0.0	10.9	11.2
Lane LOS	A		A		B	B
Approach Delay (s)	0.8		0.3		10.9	11.2
Approach LOS					B	B

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	25.1%	ICU Level of Service		A
Analysis Period (min)	15			

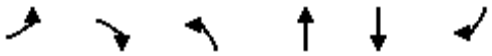
Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	103	0	6	187	14	0	15	6	3	8	4
Future Vol, veh/h	11	103	0	6	187	14	0	15	6	3	8	4
Conflicting Peds, #/hr	5	0	0	0	0	5	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	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, %	0	4	0	0	1	0	0	0	0	0	14	0
Mvmt Flow	12	112	0	7	203	15	0	16	7	3	9	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	223	0	0	112	0	0	368	373	112	370	358	209
Stage 1	-	-	-	-	-	-	136	136	-	222	222	-
Stage 2	-	-	-	-	-	-	232	237	-	148	136	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.64	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.64	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4.126	3.3
Pot Cap-1 Maneuver	1358	-	-	1490	-	-	592	561	947	590	550	836
Stage 1	-	-	-	-	-	-	872	788	-	785	698	-
Stage 2	-	-	-	-	-	-	775	713	-	859	761	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1352	-	-	1490	-	-	575	550	947	564	540	831
Mov Cap-2 Maneuver	-	-	-	-	-	-	575	550	-	564	540	-
Stage 1	-	-	-	-	-	-	864	781	-	774	691	-
Stage 2	-	-	-	-	-	-	757	706	-	828	754	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.2	11	11.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	625	1352	-	-	1490	-	-	601
HCM Lane V/C Ratio	0.037	0.009	-	-	0.004	-	-	0.027
HCM Control Delay (s)	11	7.7	0	-	7.4	0	-	11.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	8	2	14	22	2
Future Volume (Veh/h)	11	8	2	14	22	2
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	9	2	15	24	2
Pedestrians	1			1		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	3.5			3.5		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	45	27	27			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	45	27	27			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	100			
cM capacity (veh/h)	968	1052	1598			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	21	17	26
Volume Left	12	2	0
Volume Right	9	0	2
cSH	1003	1598	1700
Volume to Capacity	0.02	0.00	0.02
Queue Length 95th (ft)	2	0	0
Control Delay (s)	8.7	0.9	0.0
Lane LOS	A	A	
Approach Delay (s)	8.7	0.9	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	13.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	59	19	84	92	34	27	296	77	38	369	74
Future Volume (veh/h)	50	59	19	84	92	34	27	296	77	38	369	74
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1900	1849	1900	1900	1827	1900	1900	1845	1845	1863	1810	1845
Adj Flow Rate, veh/h	53	62	20	88	97	36	28	312	81	40	388	78
Adj No. of Lanes	1	1	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	1	1	0	3	3	2	5	3
Cap, veh/h	240	187	60	240	349	123	240	732	326	236	718	319
Arrive On Green	0.13	0.14	0.13	0.13	0.14	0.13	0.13	0.21	0.21	0.13	0.21	0.21
Sat Flow, veh/h	1810	1340	432	1810	2505	884	1810	3505	1560	1774	3438	1530
Grp Volume(v), veh/h	53	0	82	88	66	67	28	312	81	40	388	78
Grp Sat Flow(s),veh/h/ln	1810	0	1772	1810	1736	1653	1810	1752	1560	1774	1719	1530
Q Serve(g_s), s	1.1	0.0	1.7	1.8	1.4	1.5	0.6	3.2	1.8	0.8	4.2	1.8
Cycle Q Clear(g_c), s	1.1	0.0	1.7	1.8	1.4	1.5	0.6	3.2	1.8	0.8	4.2	1.8
Prop In Lane	1.00		0.24	1.00		0.53	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	240	0	247	240	242	231	240	732	326	236	718	319
V/C Ratio(X)	0.22	0.00	0.33	0.37	0.27	0.29	0.12	0.43	0.25	0.17	0.54	0.24
Avail Cap(c_a), veh/h	917	0	1262	917	1236	1177	917	2411	1073	899	2365	1053
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.1	0.0	16.1	16.4	15.9	16.1	15.8	14.2	13.7	15.9	14.6	13.7
Incr Delay (d2), s/veh	0.2	0.0	0.3	0.3	0.2	0.3	0.1	0.1	0.1	0.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.9	0.9	0.7	0.7	0.3	1.5	0.8	0.4	2.0	0.7
LnGrp Delay(d),s/veh	16.2	0.0	16.4	16.7	16.2	16.4	15.9	14.4	13.8	16.1	14.9	13.8
LnGrp LOS	B		B	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h		135			221			421			506	
Approach Delay, s/veh		16.3			16.4			14.4			14.8	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	12.6	9.5	9.8	9.5	12.6	9.5	9.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	20.5	28.0	20.5	29.0	20.5	28.0	20.5	29.0
Max Q Clear Time (g_c+I1), s	2.8	5.2	3.8	3.7	2.6	6.2	3.1	3.5
Green Ext Time (p_c), s	0.0	1.3	0.0	0.2	0.0	1.6	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	15.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	90	65	72	89	47	138	424	99	71	286	63
Future Volume (veh/h)	36	90	65	72	89	47	138	424	99	71	286	63
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1900	1873	1900	1900	1888	1900	1863	1881	1900	1900	1776	1900
Adj Flow Rate, veh/h	38	95	68	76	94	49	145	446	104	75	301	66
Adj No. of Lanes	2	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	1	1	0	1	1	2	1	0	0	7	0
Cap, veh/h	106	261	169	112	370	179	197	1827	811	111	1556	734
Arrive On Green	0.03	0.13	0.12	0.06	0.16	0.15	0.11	0.51	0.51	0.06	0.46	0.46
Sat Flow, veh/h	3510	2040	1325	1810	2319	1122	1774	3574	1588	1810	3374	1591
Grp Volume(v), veh/h	38	82	81	76	71	72	145	446	104	75	301	66
Grp Sat Flow(s),veh/h/ln	1755	1780	1585	1810	1793	1648	1774	1787	1588	1810	1687	1591
Q Serve(g_s), s	0.7	2.8	3.2	2.8	2.3	2.6	5.3	4.7	2.3	2.7	3.5	1.6
Cycle Q Clear(g_c), s	0.7	2.8	3.2	2.8	2.3	2.6	5.3	4.7	2.3	2.7	3.5	1.6
Prop In Lane	1.00		0.84	1.00		0.68	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	106	227	203	112	286	263	197	1827	811	111	1556	734
V/C Ratio(X)	0.36	0.36	0.40	0.68	0.25	0.27	0.74	0.24	0.13	0.68	0.19	0.09
Avail Cap(c_a), veh/h	1097	821	731	565	827	760	554	1827	811	565	1556	734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	26.8	27.1	30.9	24.7	25.0	28.9	9.2	8.6	30.9	10.7	10.2
Incr Delay (d2), s/veh	0.8	1.0	1.3	2.7	0.4	0.6	2.0	0.3	0.3	2.7	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.4	1.5	1.5	1.2	1.2	2.7	2.4	1.1	1.4	1.7	0.7
LnGrp Delay(d),s/veh	32.7	27.7	28.4	33.5	25.2	25.5	30.9	9.5	8.9	33.6	11.0	10.4
LnGrp LOS	C	C	C	C	C	C	C	A	A	C	B	B
Approach Vol, veh/h		201			219			695			442	
Approach Delay, s/veh		29.0			28.2			13.9			14.7	
Approach LOS		C			C			B			B	

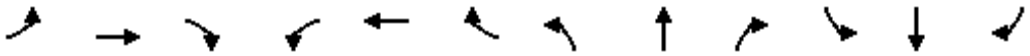
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	38.4	8.2	12.6	11.5	35.0	6.0	14.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	20.5	30.5	20.5	30.5	20.5	30.5	20.5	30.5
Max Q Clear Time (g_c+I1), s	4.7	6.7	4.8	5.2	7.3	5.5	2.7	4.6
Green Ext Time (p_c), s	0.1	3.2	0.1	0.9	0.1	2.1	0.0	0.7

Intersection Summary			
HCM 2010 Ctrl Delay		18.1	
HCM 2010 LOS		B	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	214	3	2	188	16	1	38	6	33	69	15
Future Volume (veh/h)	7	214	3	2	188	16	1	38	6	33	69	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1900	1899	1900	1900	1850	1863
Adj Flow Rate, veh/h	8	233	3	2	204	17	1	41	7	36	75	16
Adj No. of Lanes	0	1	1	0	1	1	0	1	1	0	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	0	0	0	0	4	4	2
Cap, veh/h	91	939	806	82	950	805	85	587	501	226	410	491
Arrive On Green	0.51	0.51	0.51	0.51	0.51	0.51	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	16	1837	1577	3	1858	1574	10	1885	1610	385	1318	1578
Grp Volume(v), veh/h	241	0	3	206	0	17	42	0	7	111	0	16
Grp Sat Flow(s),veh/h/ln	1853	0	1577	1861	0	1574	1895	0	1610	1703	0	1578
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.3
Cycle Q Clear(g_c), s	3.3	0.0	0.0	2.7	0.0	0.2	0.7	0.0	0.1	2.0	0.0	0.3
Prop In Lane	0.03		1.00	0.01		1.00	0.02		1.00	0.32		1.00
Lane Grp Cap(c), veh/h	1030	0	806	1032	0	805	671	0	501	636	0	491
V/C Ratio(X)	0.23	0.00	0.00	0.20	0.00	0.02	0.06	0.00	0.01	0.17	0.00	0.03
Avail Cap(c_a), veh/h	1030	0	806	1032	0	805	671	0	501	636	0	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.2	0.0	5.4	6.0	0.0	5.4	10.9	0.0	10.7	11.4	0.0	10.8
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.4	0.0	0.0	0.2	0.0	0.1	0.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.0	1.5	0.0	0.1	0.4	0.0	0.1	1.1	0.0	0.2
LnGrp Delay(d),s/veh	6.7	0.0	5.4	6.5	0.0	5.5	11.1	0.0	10.8	12.0	0.0	10.9
LnGrp LOS	A		A	A		A	B		B	B		B
Approach Vol, veh/h		244			223			49			127	
Approach Delay, s/veh		6.7			6.4			11.1			11.8	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		18.0		27.0		18.0		27.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		13.5		22.5		13.5		22.5
Max Q Clear Time (g_c+I1), s		2.7		5.3		4.0		4.7
Green Ext Time (p_c), s		0.1		1.2		0.4		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	7.9
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	35	38	30	3	18	1	24	45	2	5	74	37
Future Volume (vph)	35	38	30	3	18	1	24	45	2	5	74	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	41	33	3	20	1	26	49	2	5	80	40

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	112	24	77	125
Volume Left (vph)	38	3	26	5
Volume Right (vph)	33	1	2	40
Hadj (s)	-0.11	0.11	0.05	-0.18
Departure Headway (s)	4.3	4.6	4.4	4.1
Degree Utilization, x	0.13	0.03	0.09	0.14
Capacity (veh/h)	804	735	783	843
Control Delay (s)	7.9	7.7	7.8	7.8
Approach Delay (s)	7.9	7.7	7.8	7.8
Approach LOS	A	A	A	A

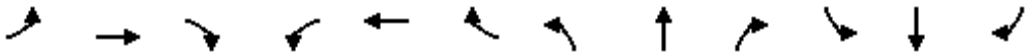
Intersection Summary				
Delay	7.8			
Level of Service	A			
Intersection Capacity Utilization	29.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	38	30	3	18	1	24	45	2	5	74	37
Future Vol, veh/h	35	38	30	3	18	1	24	45	2	5	74	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	50	0	0	0	0	0	0	0	0
Mvmt Flow	38	41	33	3	20	1	26	49	2	5	80	40
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.9	8.5	7.9	7.8
HCM LOS	A	A	A	A

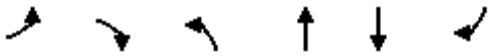
Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	34%	34%	14%	4%
Vol Thru, %	63%	37%	82%	64%
Vol Right, %	3%	29%	5%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	71	103	22	116
LT Vol	24	35	3	5
Through Vol	45	38	18	74
RT Vol	2	30	1	37
Lane Flow Rate	77	112	24	126
Geometry Grp	1	1	1	1
Degree of Util (X)	0.094	0.133	0.035	0.144
Departure Headway (Hd)	4.397	4.274	5.324	4.118
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	818	842	675	874
Service Time	2.408	2.283	3.338	2.128
HCM Lane V/C Ratio	0.094	0.133	0.036	0.144
HCM Control Delay	7.9	7.9	8.5	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.5	0.1	0.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	233	1	7	205	16	4	29	16	35	22	9
Future Volume (Veh/h)	16	233	1	7	205	16	4	29	16	35	22	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			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
Hourly flow rate (vph)	17	253	1	8	223	17	4	32	17	38	24	10
Pedestrians		1									5	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		3.5									3.5	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		464										
pX, platoon unblocked												
vC, conflicting volume	245			254			549	548	253	564	532	229
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	245			254			549	548	253	564	532	229
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.1	3.3
p0 queue free %	99			99			99	93	98	90	94	99
cM capacity (veh/h)	1327			1323			417	436	791	397	427	811

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	270	1	231	17	53	72
Volume Left	17	0	8	0	4	38
Volume Right	0	1	0	17	17	10
cSH	1327	1700	1323	1700	507	438
Volume to Capacity	0.01	0.00	0.01	0.01	0.10	0.16
Queue Length 95th (ft)	1	0	0	0	9	15
Control Delay (s)	0.6	0.0	0.3	0.0	12.9	14.8
Lane LOS	A		A		B	B
Approach Delay (s)	0.6		0.3		12.9	14.8
Approach LOS					B	B

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	15	4	17	28	14
Future Volume (Veh/h)	2	15	4	17	28	14
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	16	4	18	30	15
Pedestrians	1			1		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	3.5			3.5		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	64	40	46			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	64	40	46			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	100			
cM capacity (veh/h)	943	1036	1573			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	18	22	45
Volume Left	2	4	0
Volume Right	16	0	15
cSH	1025	1573	1700
Volume to Capacity	0.02	0.00	0.03
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.6	1.3	0.0
Lane LOS	A	A	
Approach Delay (s)	8.6	1.3	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	178	34	129	101	93	34	442	87	62	404	86
Future Volume (veh/h)	152	178	34	129	101	93	34	442	87	62	404	86
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1900	1854	1900	1900	1788	1900	1900	1845	1845	1863	1810	1845
Adj Flow Rate, veh/h	160	187	36	136	106	98	36	465	92	65	425	91
Adj No. of Lanes	1	1	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	1	1	0	3	3	2	5	3
Cap, veh/h	250	286	55	227	308	257	214	780	347	210	765	341
Arrive On Green	0.14	0.19	0.18	0.13	0.18	0.17	0.12	0.22	0.22	0.12	0.22	0.22
Sat Flow, veh/h	1810	1511	291	1810	1744	1456	1810	3505	1561	1774	3438	1531
Grp Volume(v), veh/h	160	0	223	136	103	101	36	465	92	65	425	91
Grp Sat Flow(s),veh/h/ln	1810	0	1802	1810	1698	1502	1810	1752	1561	1774	1719	1531
Q Serve(g_s), s	3.9	0.0	5.3	3.3	2.5	2.8	0.8	5.5	2.3	1.6	5.1	2.3
Cycle Q Clear(g_c), s	3.9	0.0	5.3	3.3	2.5	2.8	0.8	5.5	2.3	1.6	5.1	2.3
Prop In Lane	1.00		0.16	1.00		0.97	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	250	0	341	227	300	265	214	780	347	210	765	341
V/C Ratio(X)	0.64	0.00	0.65	0.60	0.34	0.38	0.17	0.60	0.26	0.31	0.56	0.27
Avail Cap(c_a), veh/h	817	0	1143	817	1078	953	817	2148	957	801	2107	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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	0.0	17.5	19.2	16.8	17.1	18.4	16.2	14.9	18.8	16.0	14.9
Incr Delay (d2), s/veh	1.0	0.0	0.8	0.9	0.3	0.3	0.1	0.3	0.1	0.3	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	2.7	1.7	1.2	1.2	0.4	2.7	1.0	0.8	2.4	1.0
LnGrp Delay(d),s/veh	19.9	0.0	18.3	20.2	17.0	17.5	18.6	16.5	15.1	19.1	16.3	15.1
LnGrp LOS	B		B	C	B	B	B	B	B	B	B	B
Approach Vol, veh/h		383			340			593			581	
Approach Delay, s/veh		19.0			18.4			16.4			16.4	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	14.3	9.8	12.8	9.5	14.3	10.4	12.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	20.5	28.0	20.5	29.0	20.5	28.0	20.5	29.0
Max Q Clear Time (g_c+I1), s	3.6	7.5	5.3	7.3	2.8	7.1	5.9	4.8
Green Ext Time (p_c), s	0.0	2.0	0.0	0.7	0.0	1.8	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	17.3
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	173	215	166	165	107	138	572	113	100	541	51
Future Volume (veh/h)	66	173	215	166	165	107	138	572	113	100	541	51
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1900	1871	1900	1900	1889	1900	1863	1881	1900	1900	1776	1900
Adj Flow Rate, veh/h	69	182	226	175	174	113	145	602	119	105	569	54
Adj No. of Lanes	2	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	1	1	0	1	1	2	1	0	0	7	0
Cap, veh/h	144	368	321	224	615	376	190	1420	630	146	1250	589
Arrive On Green	0.04	0.21	0.20	0.12	0.29	0.28	0.11	0.40	0.40	0.08	0.37	0.37
Sat Flow, veh/h	3510	1777	1550	1810	2122	1297	1774	3574	1585	1810	3374	1590
Grp Volume(v), veh/h	69	182	226	175	145	142	145	602	119	105	569	54
Grp Sat Flow(s),veh/h/ln	1755	1777	1550	1810	1794	1625	1774	1787	1585	1810	1687	1590
Q Serve(g_s), s	1.6	7.6	11.3	7.8	5.2	5.7	6.6	10.2	4.1	4.7	10.7	1.9
Cycle Q Clear(g_c), s	1.6	7.6	11.3	7.8	5.2	5.7	6.6	10.2	4.1	4.7	10.7	1.9
Prop In Lane	1.00		1.00	1.00		0.80	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	368	321	224	520	471	190	1420	630	146	1250	589
V/C Ratio(X)	0.48	0.49	0.70	0.78	0.28	0.30	0.76	0.42	0.19	0.72	0.46	0.09
Avail Cap(c_a), veh/h	881	659	574	454	665	602	445	1420	630	454	1250	589
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	29.3	31.0	35.6	23.0	23.3	36.3	18.3	16.4	37.5	19.9	17.2
Incr Delay (d2), s/veh	0.9	1.0	2.8	2.3	0.3	0.4	2.4	0.9	0.7	2.5	1.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.8	5.1	4.1	2.6	2.6	3.4	5.2	1.9	2.5	5.2	0.9
LnGrp Delay(d),s/veh	40.1	30.3	33.8	37.8	23.3	23.6	38.7	19.2	17.1	40.0	21.1	17.5
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	C	B
Approach Vol, veh/h		477			462			866			728	
Approach Delay, s/veh		33.4			28.9			22.2			23.6	
Approach LOS		C			C			C			C	

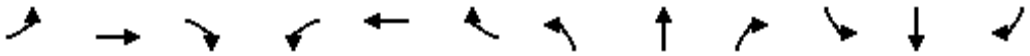
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	37.2	14.3	21.3	13.0	35.0	7.4	28.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	20.5	30.5	20.5	30.5	20.5	30.5	20.5	30.5
Max Q Clear Time (g_c+I1), s	6.7	12.2	9.8	13.3	8.6	12.7	3.6	7.7
Green Ext Time (p_c), s	0.1	4.2	0.2	2.2	0.1	3.7	0.1	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	25.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	114	4	2	217	35	1	63	1	24	38	8
Future Volume (veh/h)	5	114	4	2	217	35	1	63	1	24	38	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1900	1899	1900	1900	1855	1863
Adj Flow Rate, veh/h	5	124	4	2	236	38	1	68	1	26	41	9
Adj No. of Lanes	0	1	1	0	1	1	0	1	1	0	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	0	0	0	0	4	4	2
Cap, veh/h	91	939	806	82	950	805	83	588	501	262	364	491
Arrive On Green	0.51	0.51	0.51	0.51	0.51	0.51	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	15	1837	1577	3	1859	1574	6	1891	1610	486	1170	1578
Grp Volume(v), veh/h	129	0	4	238	0	38	69	0	1	67	0	9
Grp Sat Flow(s),veh/h/ln	1852	0	1577	1862	0	1574	1897	0	1610	1656	0	1578
Q Serve(g_s), s	0.0	0.0	0.1	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.2
Cycle Q Clear(g_c), s	1.6	0.0	0.1	3.2	0.0	0.5	1.2	0.0	0.0	1.2	0.0	0.2
Prop In Lane	0.04		1.00	0.01		1.00	0.01		1.00	0.39		1.00
Lane Grp Cap(c), veh/h	1030	0	806	1032	0	805	671	0	501	626	0	491
V/C Ratio(X)	0.13	0.00	0.00	0.23	0.00	0.05	0.10	0.00	0.00	0.11	0.00	0.02
Avail Cap(c_a), veh/h	1030	0	806	1032	0	805	671	0	501	626	0	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.8	0.0	5.4	6.2	0.0	5.5	11.1	0.0	10.7	11.1	0.0	10.7
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.5	0.0	0.1	0.3	0.0	0.0	0.3	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	0.9	0.0	0.0	1.8	0.0	0.3	0.7	0.0	0.0	0.7	0.0	0.1
LnGrp Delay(d),s/veh	6.0	0.0	5.4	6.7	0.0	5.6	11.4	0.0	10.7	11.4	0.0	10.8
LnGrp LOS	A		A	A		A	B		B	B		B
Approach Vol, veh/h		133			276			70			76	
Approach Delay, s/veh		6.0			6.5			11.4			11.3	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		18.0		27.0		18.0		27.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		13.5		22.5		13.5		22.5
Max Q Clear Time (g_c+I1), s		3.2		3.6		3.2		5.2
Green Ext Time (p_c), s		0.2		0.6		0.2		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	7.7
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	7	12	11	2	7	0	29	69	4	3	45	28
Future Volume (vph)	7	12	11	2	7	0	29	69	4	3	45	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	13	12	2	8	0	32	75	4	3	49	30

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	33	10	111	82
Volume Left (vph)	8	2	32	3
Volume Right (vph)	12	0	4	30
Hadj (s)	-0.17	0.21	0.04	-0.21
Departure Headway (s)	4.1	4.6	4.1	3.9
Degree Utilization, x	0.04	0.01	0.13	0.09
Capacity (veh/h)	825	753	855	907
Control Delay (s)	7.3	7.6	7.7	7.3
Approach Delay (s)	7.3	7.6	7.7	7.3
Approach LOS	A	A	A	A

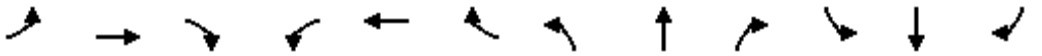
Intersection Summary				
Delay	7.5			
Level of Service	A			
Intersection Capacity Utilization	22.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	12	11	2	7	0	29	69	4	3	45	28
Future Vol, veh/h	7	12	11	2	7	0	29	69	4	3	45	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	50	0	0	0	0	0	0	0	0
Mvmt Flow	8	13	12	2	8	0	32	75	4	3	49	30
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.3	8.3	7.7	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	23%	22%	4%
Vol Thru, %	68%	40%	78%	59%
Vol Right, %	4%	37%	0%	37%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	102	30	9	76
LT Vol	29	7	2	3
Through Vol	69	12	7	45
RT Vol	4	11	0	28
Lane Flow Rate	111	33	10	83
Geometry Grp	1	1	1	1
Degree of Util (X)	0.125	0.037	0.014	0.088
Departure Headway (Hd)	4.07	4.066	5.156	3.845
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	878	868	687	926
Service Time	2.108	2.149	3.243	1.893
HCM Lane V/C Ratio	0.126	0.038	0.015	0.09
HCM Control Delay	7.7	7.3	8.3	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.1	0	0.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	143	0	6	256	5	0	6	6	3	7	4
Future Volume (Veh/h)	3	143	0	6	256	5	0	6	6	3	7	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			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
Hourly flow rate (vph)	3	155	0	7	278	5	0	7	7	3	8	4
Pedestrians		1									5	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		3.5									3.5	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		464										
pX, platoon unblocked												
vC, conflicting volume	288			155			462	463	155	468	458	284
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	288			155			462	463	155	468	458	284
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.1	3.3
p0 queue free %	100			100			100	99	99	99	98	99
cM capacity (veh/h)	1279			1438			499	493	896	492	476	755

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	158	0	285	5	14	15
Volume Left	3	0	7	0	0	3
Volume Right	0	0	0	5	7	4
cSH	1279	1700	1438	1700	636	532
Volume to Capacity	0.00	0.00	0.00	0.00	0.02	0.03
Queue Length 95th (ft)	0	0	0	0	2	2
Control Delay (s)	0.2	0.0	0.2	0.0	10.8	12.0
Lane LOS	A		A		B	B
Approach Delay (s)	0.2		0.2		10.8	12.0
Approach LOS					B	B

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	28.6%	ICU Level of Service		A
Analysis Period (min)	15			

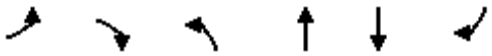
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	143	0	6	256	5	0	6	6	3	7	4
Future Vol, veh/h	3	143	0	6	256	5	0	6	6	3	7	4
Conflicting Peds, #/hr	5	0	0	0	0	5	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	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, %	0	4	0	0	1	0	0	0	0	0	14	0
Mvmt Flow	3	155	0	7	278	5	0	7	7	3	8	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	288	0	0	155	0	0	463	463	155	465	458	284
Stage 1	-	-	-	-	-	-	161	161	-	297	297	-
Stage 2	-	-	-	-	-	-	302	302	-	168	161	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.64	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.64	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4.126	3.3
Pot Cap-1 Maneuver	1286	-	-	1438	-	-	513	499	896	511	482	760
Stage 1	-	-	-	-	-	-	846	769	-	716	646	-
Stage 2	-	-	-	-	-	-	712	668	-	839	742	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1280	-	-	1438	-	-	500	492	896	496	475	756
Mov Cap-2 Maneuver	-	-	-	-	-	-	500	492	-	496	475	-
Stage 1	-	-	-	-	-	-	843	767	-	710	639	-
Stage 2	-	-	-	-	-	-	695	661	-	823	740	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	10.8	11.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	635	1280	-	-	1438	-	-	537
HCM Lane V/C Ratio	0.021	0.003	-	-	0.005	-	-	0.028
HCM Control Delay (s)	10.8	7.8	0	-	7.5	0	-	11.9
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	5	2	13	13	2
Future Volume (Veh/h)	0	5	2	13	13	2
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	5	2	14	14	2
Pedestrians	1			1		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	3.5			3.5		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	34	17	17			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	34	17	17			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	982	1066	1612			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	5	16	16
Volume Left	0	2	0
Volume Right	5	0	2
cSH	1066	1612	1700
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.4	0.9	0.0
Lane LOS	A	A	
Approach Delay (s)	8.4	0.9	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	13.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	79	29	114	117	44	36	406	107	48	509	100
Future Volume (veh/h)	70	79	29	114	117	44	36	406	107	48	509	100
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1900	1848	1900	1900	1827	1900	1900	1845	1845	1863	1810	1845
Adj Flow Rate, veh/h	74	83	31	120	123	46	38	427	113	51	536	105
Adj No. of Lanes	1	1	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	1	1	0	3	3	2	5	3
Cap, veh/h	226	169	63	226	329	117	226	891	397	222	874	389
Arrive On Green	0.13	0.13	0.12	0.13	0.13	0.12	0.13	0.25	0.25	0.13	0.25	0.25
Sat Flow, veh/h	1810	1283	479	1810	2496	891	1810	3505	1562	1774	3438	1531
Grp Volume(v), veh/h	74	0	114	120	84	85	38	427	113	51	536	105
Grp Sat Flow(s),veh/h/ln	1810	0	1762	1810	1736	1651	1810	1752	1562	1774	1719	1531
Q Serve(g_s), s	1.6	0.0	2.6	2.7	1.9	2.1	0.8	4.6	2.6	1.1	6.1	2.4
Cycle Q Clear(g_c), s	1.6	0.0	2.6	2.7	1.9	2.1	0.8	4.6	2.6	1.1	6.1	2.4
Prop In Lane	1.00		0.27	1.00		0.54	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	226	0	232	226	229	218	226	891	397	222	874	389
V/C Ratio(X)	0.33	0.00	0.49	0.53	0.37	0.39	0.17	0.48	0.28	0.23	0.61	0.27
Avail Cap(c_a), veh/h	226	0	1182	226	1164	1107	226	2271	1012	222	2228	992
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.6	0.0	17.8	18.0	17.4	17.6	17.2	13.9	13.2	17.3	14.5	13.1
Incr Delay (d2), s/veh	0.3	0.0	0.6	1.2	0.4	0.4	0.1	0.1	0.1	0.2	0.3	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	0.8	0.0	1.3	1.4	1.0	1.0	0.4	2.2	1.1	0.6	2.9	1.0
LnGrp Delay(d),s/veh	17.9	0.0	18.4	19.2	17.8	18.0	17.3	14.1	13.3	17.5	14.7	13.3
LnGrp LOS	B		B	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h		188			289			578			692	
Approach Delay, s/veh		18.2			18.5			14.1			14.7	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	15.2	9.5	9.8	9.5	15.2	9.5	9.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	28.0	5.0	29.0	5.0	28.0	5.0	29.0
Max Q Clear Time (g_c+I1), s	3.1	6.6	4.7	4.6	2.8	8.1	3.6	4.1
Green Ext Time (p_c), s	0.0	1.8	0.0	0.3	0.0	2.3	0.0	0.5

Intersection Summary		
HCM 2010 Ctrl Delay		15.5
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	117	85	102	119	67	188	584	136	99	396	83
Future Volume (veh/h)	46	117	85	102	119	67	188	584	136	99	396	83
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1900	1873	1900	1900	1888	1900	1863	1881	1900	1900	1776	1900
Adj Flow Rate, veh/h	48	123	89	107	125	71	198	615	143	104	417	87
Adj No. of Lanes	2	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	1	1	0	1	1	2	1	0	0	7	0
Cap, veh/h	196	283	188	153	378	200	260	1461	648	151	1166	549
Arrive On Green	0.06	0.14	0.13	0.08	0.17	0.16	0.15	0.41	0.41	0.08	0.35	0.35
Sat Flow, veh/h	3510	2022	1342	1810	2242	1187	1774	3574	1586	1810	3374	1589
Grp Volume(v), veh/h	48	107	105	107	98	98	198	615	143	104	417	87
Grp Sat Flow(s),veh/h/ln	1755	1780	1584	1810	1794	1636	1774	1787	1586	1810	1687	1589
Q Serve(g_s), s	0.7	3.1	3.5	3.2	2.7	3.0	6.1	6.9	3.3	3.2	5.2	2.1
Cycle Q Clear(g_c), s	0.7	3.1	3.5	3.2	2.7	3.0	6.1	6.9	3.3	3.2	5.2	2.1
Prop In Lane	1.00		0.85	1.00		0.73	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	196	249	222	153	303	276	260	1461	648	151	1166	549
V/C Ratio(X)	0.25	0.43	0.47	0.70	0.32	0.35	0.76	0.42	0.22	0.69	0.36	0.16
Avail Cap(c_a), veh/h	342	583	519	192	604	551	314	1461	648	305	1166	549
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	22.2	22.6	25.1	20.6	20.9	23.1	11.9	10.8	25.2	13.8	12.8
Incr Delay (d2), s/veh	0.6	1.2	1.6	7.9	0.6	0.8	8.6	0.9	0.8	5.5	0.9	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	0.4	1.6	1.6	1.9	1.4	1.4	3.6	3.6	1.6	1.8	2.6	1.0
LnGrp Delay(d),s/veh	26.2	23.4	24.1	33.0	21.2	21.7	31.8	12.8	11.6	30.7	14.6	13.4
LnGrp LOS	C	C	C	C	C	C	C	B	B	C	B	B
Approach Vol, veh/h		260			303			956			608	
Approach Delay, s/veh		24.2			25.5			16.6			17.2	
Approach LOS		C			C			B			B	

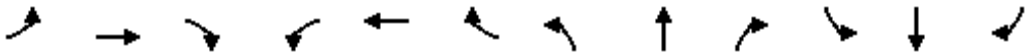
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	27.1	8.8	11.9	12.3	23.5	7.1	13.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	4.2	19.5	5.5	18.0	9.5	19.0	5.0	18.5
Max Q Clear Time (g_c+I1), s	5.2	8.9	5.2	5.5	8.1	7.2	2.7	5.0
Green Ext Time (p_c), s	0.1	3.3	0.0	0.9	0.1	2.3	0.0	0.8

Intersection Summary		
HCM 2010 Ctrl Delay		19.0
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	294	3	2	258	26	1	48	6	42	87	25
Future Volume (veh/h)	7	294	3	2	258	26	1	48	6	42	87	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1882	1900	1900	1881	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	8	320	3	2	280	28	1	52	7	46	95	27
Adj No. of Lanes	0	1	1	0	1	1	0	1	1	0	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, %	1	1	0	1	1	0	0	0	0	0	0	0
Cap, veh/h	80	864	731	74	872	731	76	707	604	257	486	604
Arrive On Green	0.46	0.46	0.46	0.46	0.46	0.46	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	12	1860	1573	2	1877	1573	6	1891	1615	430	1301	1615
Grp Volume(v), veh/h	328	0	3	282	0	28	53	0	7	141	0	27
Grp Sat Flow(s),veh/h/ln	1872	0	1573	1880	0	1573	1897	0	1615	1732	0	1615
Q Serve(g_s), s	0.0	0.0	0.1	0.0	0.0	0.5	0.0	0.0	0.1	0.0	0.0	0.5
Cycle Q Clear(g_c), s	5.6	0.0	0.1	4.7	0.0	0.5	0.9	0.0	0.1	2.5	0.0	0.5
Prop In Lane	0.02		1.00	0.01		1.00	0.02		1.00	0.33		1.00
Lane Grp Cap(c), veh/h	945	0	731	947	0	731	783	0	604	744	0	604
V/C Ratio(X)	0.35	0.00	0.00	0.30	0.00	0.04	0.07	0.00	0.01	0.19	0.00	0.04
Avail Cap(c_a), veh/h	945	0	731	947	0	731	783	0	604	744	0	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.6	0.0	7.1	8.3	0.0	7.2	10.0	0.0	9.7	10.5	0.0	9.9
Incr Delay (d2), s/veh	1.0	0.0	0.0	0.8	0.0	0.1	0.2	0.0	0.0	0.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	2.6	0.0	0.2	0.5	0.0	0.1	1.4	0.0	0.3
LnGrp Delay(d),s/veh	9.6	0.0	7.1	9.1	0.0	7.3	10.2	0.0	9.8	11.1	0.0	10.0
LnGrp LOS	A		A	A		A	B		A	B		B
Approach Vol, veh/h		331			310			60			168	
Approach Delay, s/veh		9.6			9.0			10.1			10.9	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		22.5		27.0		22.5		27.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		18.0		22.5		18.0		22.5
Max Q Clear Time (g_c+I1), s		2.9		7.6		4.5		6.7
Green Ext Time (p_c), s		0.2		1.7		0.7		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	9.7
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	45	48	40	3	28	1	33	64	2	5	104	47
Future Volume (vph)	45	48	40	3	28	1	33	64	2	5	104	47
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
Hourly flow rate (vph)	49	52	43	3	30	1	36	70	2	5	113	51

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	144	34	108	169
Volume Left (vph)	49	3	36	5
Volume Right (vph)	43	1	2	51
Hadj (s)	-0.11	0.02	0.12	-0.17
Departure Headway (s)	4.5	4.7	4.6	4.3
Degree Utilization, x	0.18	0.04	0.14	0.20
Capacity (veh/h)	752	700	737	796
Control Delay (s)	8.4	8.0	8.4	8.4
Approach Delay (s)	8.4	8.0	8.4	8.4
Approach LOS	A	A	A	A

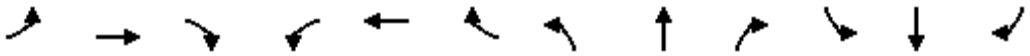
Intersection Summary				
Delay	8.4			
Level of Service	A			
Intersection Capacity Utilization	38.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	48	40	3	28	1	33	64	2	5	104	47
Future Vol, veh/h	45	48	40	3	28	1	33	64	2	5	104	47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	1	0	0	6	0	3	0	0
Mvmt Flow	49	52	43	3	30	1	36	70	2	5	113	51
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.5	7.9	8.3	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	34%	9%	3%
Vol Thru, %	65%	36%	88%	67%
Vol Right, %	2%	30%	3%	30%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	99	133	32	156
LT Vol	33	45	3	5
Through Vol	64	48	28	104
RT Vol	2	40	1	47
Lane Flow Rate	108	145	35	170
Geometry Grp	1	1	1	1
Degree of Util (X)	0.136	0.179	0.045	0.203
Departure Headway (Hd)	4.555	4.456	4.699	4.316
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	788	807	762	833
Service Time	2.579	2.477	2.726	2.337
HCM Lane V/C Ratio	0.137	0.18	0.046	0.204
HCM Control Delay	8.3	8.5	7.9	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.6	0.1	0.8



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	322	1	7	285	9	4	27	26	40	29	8
Future Volume (Veh/h)	9	322	1	7	285	9	4	27	26	40	29	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			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
Hourly flow rate (vph)	10	350	1	8	310	10	4	29	28	43	32	9
Pedestrians		1			3						3	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		464										
pX, platoon unblocked				0.92			0.92	0.92	0.92	0.92	0.92	
vC, conflicting volume	323			351			722	709	353	744	700	314
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	323			257			659	644	259	683	635	314
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			99	92	96	86	91	99
cM capacity (veh/h)	1245			1220			319	358	723	299	362	728

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	360	1	318	10	61	84
Volume Left	10	0	8	0	4	43
Volume Right	0	1	0	10	28	9
cSH	1245	1700	1220	1700	461	344
Volume to Capacity	0.01	0.00	0.01	0.01	0.13	0.24
Queue Length 95th (ft)	1	0	0	0	11	24
Control Delay (s)	0.3	0.0	0.3	0.0	14.0	18.8
Lane LOS	A		A		B	C
Approach Delay (s)	0.3		0.3		14.0	18.8
Approach LOS					B	C

Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	41.8%	ICU Level of Service		A
Analysis Period (min)	15			

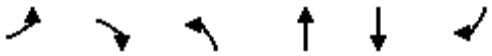
Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	322	1	7	285	9	4	27	26	40	29	8
Future Vol, veh/h	9	322	1	7	285	9	4	27	26	40	29	8
Conflicting Peds, #/hr	3	0	0	0	0	3	1	0	3	3	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	10	350	1	8	310	10	4	29	28	43	32	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	323	0	0	351	0	0	723	709	353	731	700	314
Stage 1	-	-	-	-	-	-	370	370	-	329	329	-
Stage 2	-	-	-	-	-	-	353	339	-	402	371	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1248	-	-	1219	-	-	344	362	695	340	366	731
Stage 1	-	-	-	-	-	-	654	624	-	688	650	-
Stage 2	-	-	-	-	-	-	668	643	-	629	623	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1244	-	-	1219	-	-	312	354	693	300	358	728
Mov Cap-2 Maneuver	-	-	-	-	-	-	312	354	-	300	358	-
Stage 1	-	-	-	-	-	-	647	618	-	679	643	-
Stage 2	-	-	-	-	-	-	622	636	-	567	617	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	14.3	18.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	450	1244	-	-	1219	-	-	342
HCM Lane V/C Ratio	0.138	0.008	-	-	0.006	-	-	0.245
HCM Control Delay (s)	14.3	7.9	0	-	8	0	-	18.9
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.9



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	0	2	13	38	24
Future Volume (Veh/h)	1	0	2	13	38	24
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	0	2	14	41	26
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	72	54	67			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	72	54	67			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	936	1019	1547			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	1	16	67
Volume Left	1	2	0
Volume Right	0	0	26
cSH	936	1547	1700
Volume to Capacity	0.00	0.00	0.04
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.9	0.9	0.0
Lane LOS	A	A	
Approach Delay (s)	8.9	0.9	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	13.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	248	44	179	138	123	43	602	117	82	554	114
Future Volume (veh/h)	212	248	44	179	138	123	43	602	117	82	554	114
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1863	1853	1900	1863	1900	1900	1845	1863	1900	1845	1881	1863
Adj Flow Rate, veh/h	223	261	46	188	145	129	45	634	123	86	583	120
Adj No. of Lanes	1	1	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	3	3	2	0	0	3	2	0	3	1	2
Cap, veh/h	290	349	62	257	391	320	166	910	403	166	919	398
Arrive On Green	0.16	0.23	0.22	0.14	0.21	0.20	0.09	0.26	0.26	0.09	0.26	0.26
Sat Flow, veh/h	1774	1530	270	1774	1870	1530	1757	3539	1567	1757	3574	1546
Grp Volume(v), veh/h	223	0	307	188	140	134	45	634	123	86	583	120
Grp Sat Flow(s),veh/h/ln	1774	0	1800	1774	1805	1595	1757	1770	1567	1757	1787	1546
Q Serve(g_s), s	7.0	0.0	9.2	5.9	3.8	4.3	1.4	9.4	3.7	2.7	8.4	3.6
Cycle Q Clear(g_c), s	7.0	0.0	9.2	5.9	3.8	4.3	1.4	9.4	3.7	2.7	8.4	3.6
Prop In Lane	1.00		0.15	1.00		0.96	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	290	0	411	257	378	334	166	910	403	166	919	398
V/C Ratio(X)	0.77	0.00	0.75	0.73	0.37	0.40	0.27	0.70	0.31	0.52	0.63	0.30
Avail Cap(c_a), veh/h	305	0	920	299	917	810	166	1767	782	166	1784	772
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	0.0	20.9	23.8	19.7	20.0	24.4	19.5	17.4	25.0	19.2	17.4
Incr Delay (d2), s/veh	9.5	0.0	1.0	5.8	0.2	0.3	0.3	0.4	0.2	1.3	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	4.6	3.3	1.9	1.9	0.7	4.6	1.6	1.4	4.2	1.6
LnGrp Delay(d),s/veh	32.8	0.0	21.9	29.6	19.9	20.3	24.8	19.9	17.6	26.3	19.4	17.5
LnGrp LOS	C		C	C	B	C	C	B	B	C	B	B
Approach Vol, veh/h		530			462			802			789	
Approach Delay, s/veh		26.5			24.0			19.8			19.9	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	18.9	12.4	17.2	9.5	18.9	13.5	16.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	28.5	9.3	29.2	5.0	28.5	9.5	29.0
Max Q Clear Time (g_c+I1), s	11.7	11.4	7.9	11.2	3.4	10.4	9.0	6.3
Green Ext Time (p_c), s	0.0	2.7	0.0	1.0	0.0	2.5	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	21.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	233	295	220	219	147	188	782	153	140	741	71
Future Volume (veh/h)	86	233	295	220	219	147	188	782	153	140	741	71
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1863	1889	1900	1900	1889	1900	1900	1863	1900	1900	1881	1900
Adj Flow Rate, veh/h	91	245	311	232	231	155	198	823	161	147	780	75
Adj No. of Lanes	2	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	0	0	1	1	0	2	0	0	1	0
Cap, veh/h	170	452	393	252	710	455	218	1158	519	174	1082	486
Arrive On Green	0.05	0.25	0.25	0.14	0.34	0.34	0.12	0.33	0.33	0.10	0.30	0.30
Sat Flow, veh/h	3442	1795	1560	1810	2079	1332	1810	3539	1586	1810	3574	1605
Grp Volume(v), veh/h	91	245	311	232	198	188	198	823	161	147	780	75
Grp Sat Flow(s),veh/h/ln	1721	1795	1560	1810	1794	1617	1810	1770	1586	1810	1787	1605
Q Serve(g_s), s	2.2	10.2	16.1	10.9	7.0	7.5	9.3	17.6	6.6	6.9	16.8	2.9
Cycle Q Clear(g_c), s	2.2	10.2	16.1	10.9	7.0	7.5	9.3	17.6	6.6	6.9	16.8	2.9
Prop In Lane	1.00		1.00	1.00		0.82	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	170	452	393	252	613	552	218	1158	519	174	1082	486
V/C Ratio(X)	0.54	0.54	0.79	0.92	0.32	0.34	0.91	0.71	0.31	0.84	0.72	0.15
Avail Cap(c_a), veh/h	228	531	461	252	662	596	218	1158	519	174	1082	486
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	27.9	30.4	36.6	21.0	21.3	37.4	25.4	21.7	38.3	26.8	22.0
Incr Delay (d2), s/veh	1.0	1.0	7.9	35.6	0.3	0.4	35.9	3.7	1.6	28.3	4.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	5.2	7.8	7.9	3.5	3.4	6.8	9.2	3.1	4.8	8.9	1.4
LnGrp Delay(d),s/veh	41.0	29.0	38.3	72.2	21.3	21.7	73.3	29.1	23.3	66.6	31.0	22.7
LnGrp LOS	D	C	D	E	C	C	E	C	C	E	C	C
Approach Vol, veh/h		647			618			1182			1002	
Approach Delay, s/veh		35.1			40.5			35.7			35.6	
Approach LOS		D			D			D			D	

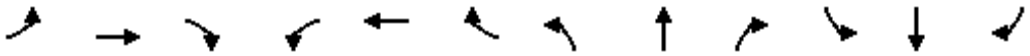
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	32.2	16.0	25.7	14.4	30.1	8.3	33.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.8	27.7	11.5	25.0	9.9	25.6	5.2	31.3
Max Q Clear Time (g_c+I1), s	9.2	19.6	12.9	18.1	11.3	18.8	4.2	9.5
Green Ext Time (p_c), s	0.0	3.7	0.0	1.9	0.0	3.0	0.0	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	36.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	122	4	2	217	36	1	65	1	24	38	8
Future Volume (veh/h)	5	122	4	2	217	36	1	65	1	24	38	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1900	1899	1900	1900	1855	1863
Adj Flow Rate, veh/h	5	133	4	2	236	39	1	71	1	26	41	9
Adj No. of Lanes	0	1	1	0	1	1	0	1	1	0	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	0	0	0	0	4	4	2
Cap, veh/h	90	939	806	82	950	805	83	589	501	262	364	491
Arrive On Green	0.51	0.51	0.51	0.51	0.51	0.51	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	14	1838	1577	3	1859	1574	6	1892	1610	485	1169	1578
Grp Volume(v), veh/h	138	0	4	238	0	39	72	0	1	67	0	9
Grp Sat Flow(s),veh/h/ln	1853	0	1577	1862	0	1574	1897	0	1610	1655	0	1578
Q Serve(g_s), s	0.0	0.0	0.1	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.2
Cycle Q Clear(g_c), s	1.8	0.0	0.1	3.2	0.0	0.6	1.2	0.0	0.0	1.2	0.0	0.2
Prop In Lane	0.04		1.00	0.01		1.00	0.01		1.00	0.39		1.00
Lane Grp Cap(c), veh/h	1030	0	806	1032	0	805	671	0	501	626	0	491
V/C Ratio(X)	0.13	0.00	0.00	0.23	0.00	0.05	0.11	0.00	0.00	0.11	0.00	0.02
Avail Cap(c_a), veh/h	1030	0	806	1032	0	805	671	0	501	626	0	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.8	0.0	5.4	6.2	0.0	5.5	11.1	0.0	10.7	11.1	0.0	10.7
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.5	0.0	0.1	0.3	0.0	0.0	0.3	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	1.0	0.0	0.0	1.8	0.0	0.3	0.7	0.0	0.0	0.7	0.0	0.1
LnGrp Delay(d),s/veh	6.1	0.0	5.4	6.7	0.0	5.6	11.4	0.0	10.7	11.4	0.0	10.8
LnGrp LOS	A		A	A		A	B		B	B		B
Approach Vol, veh/h		142			277			73			76	
Approach Delay, s/veh		6.1			6.5			11.4			11.3	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		18.0		27.0		18.0		27.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		13.5		22.5		13.5		22.5
Max Q Clear Time (g_c+I1), s		3.2		3.8		3.2		5.2
Green Ext Time (p_c), s		0.2		0.6		0.2		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	7.7
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	7	12	11	2	7	0	29	70	4	3	46	28
Future Volume (vph)	7	12	11	2	7	0	29	70	4	3	46	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	13	12	2	8	0	32	76	4	3	50	30

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	33	10	112	83
Volume Left (vph)	8	2	32	3
Volume Right (vph)	12	0	4	30
Hadj (s)	-0.17	0.21	0.04	-0.21
Departure Headway (s)	4.2	4.6	4.1	3.9
Degree Utilization, x	0.04	0.01	0.13	0.09
Capacity (veh/h)	823	742	855	906
Control Delay (s)	7.3	7.6	7.7	7.3
Approach Delay (s)	7.3	7.6	7.7	7.3
Approach LOS	A	A	A	A

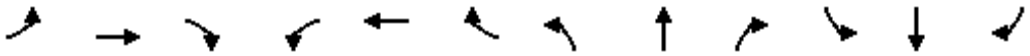
Intersection Summary				
Delay	7.5			
Level of Service	A			
Intersection Capacity Utilization	22.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	12	11	2	7	0	29	70	4	3	46	28
Future Vol, veh/h	7	12	11	2	7	0	29	70	4	3	46	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	50	0	0	0	0	0	0	0	0
Mvmt Flow	8	13	12	2	8	0	32	76	4	3	50	30
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.3	8.3	7.7	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	23%	22%	4%
Vol Thru, %	68%	40%	78%	60%
Vol Right, %	4%	37%	0%	36%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	103	30	9	77
LT Vol	29	7	2	3
Through Vol	70	12	7	46
RT Vol	4	11	0	28
Lane Flow Rate	112	33	10	84
Geometry Grp	1	1	1	1
Degree of Util (X)	0.127	0.037	0.014	0.089
Departure Headway (Hd)	4.07	4.07	5.16	3.848
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	878	867	686	925
Service Time	2.109	2.155	3.248	1.897
HCM Lane V/C Ratio	0.128	0.038	0.015	0.091
HCM Control Delay	7.7	7.3	8.3	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.1	0	0.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	143	0	6	257	14	0	15	6	3	8	4
Future Volume (Veh/h)	11	143	0	6	257	14	0	15	6	3	8	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			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
Hourly flow rate (vph)	12	155	0	7	279	15	0	16	7	3	9	4
Pedestrians		1									5	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		3.5									3.5	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		464										
pX, platoon unblocked												
vC, conflicting volume	299			155			482	492	155	492	477	285
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	299			155			482	492	155	492	477	285
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.1	3.3
p0 queue free %	99			100			100	97	99	99	98	99
cM capacity (veh/h)	1268			1438			481	471	896	465	461	754

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	167	0	286	15	23	16
Volume Left	12	0	7	0	0	3
Volume Right	0	0	0	15	7	4
cSH	1268	1700	1438	1700	551	512
Volume to Capacity	0.01	0.00	0.00	0.01	0.04	0.03
Queue Length 95th (ft)	1	0	0	0	3	2
Control Delay (s)	0.6	0.0	0.2	0.0	11.8	12.3
Lane LOS	A		A		B	B
Approach Delay (s)	0.6		0.2		11.8	12.3
Approach LOS					B	B

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	28.7%	ICU Level of Service		A
Analysis Period (min)	15			

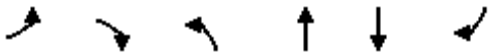
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	143	0	6	257	14	0	15	6	3	8	4
Future Vol, veh/h	11	143	0	6	257	14	0	15	6	3	8	4
Conflicting Peds, #/hr	5	0	0	0	0	5	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	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, %	0	4	0	0	1	0	0	0	0	0	14	0
Mvmt Flow	12	155	0	7	279	15	0	16	7	3	9	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	299	0	0	155	0	0	487	492	155	489	477	285
Stage 1	-	-	-	-	-	-	179	179	-	298	298	-
Stage 2	-	-	-	-	-	-	308	313	-	191	179	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.64	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.64	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4.126	3.3
Pot Cap-1 Maneuver	1274	-	-	1438	-	-	494	481	896	493	470	759
Stage 1	-	-	-	-	-	-	827	755	-	715	646	-
Stage 2	-	-	-	-	-	-	706	661	-	815	729	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1268	-	-	1438	-	-	478	471	896	468	460	755
Mov Cap-2 Maneuver	-	-	-	-	-	-	478	471	-	468	460	-
Stage 1	-	-	-	-	-	-	819	747	-	704	639	-
Stage 2	-	-	-	-	-	-	688	654	-	783	722	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.2	11.9	12.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	545	1268	-	-	1438	-	-	515
HCM Lane V/C Ratio	0.042	0.009	-	-	0.005	-	-	0.032
HCM Control Delay (s)	11.9	7.9	0	-	7.5	0	-	12.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	7	2	14	22	2
Future Volume (Veh/h)	11	7	2	14	22	2
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	8	2	15	24	2
Pedestrians	1			1		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	3.5			3.5		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	45	27	27			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	45	27	27			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	100			
cM capacity (veh/h)	968	1052	1598			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	20	17	26
Volume Left	12	2	0
Volume Right	8	0	2
cSH	1000	1598	1700
Volume to Capacity	0.02	0.00	0.02
Queue Length 95th (ft)	2	0	0
Control Delay (s)	8.7	0.9	0.0
Lane LOS	A	A	
Approach Delay (s)	8.7	0.9	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	13.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	79	29	114	122	44	37	406	107	48	509	104
Future Volume (veh/h)	70	79	29	114	122	44	37	406	107	48	509	104
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1900	1848	1900	1900	1829	1900	1900	1845	1845	1863	1810	1845
Adj Flow Rate, veh/h	74	83	31	120	128	46	39	427	113	51	536	109
Adj No. of Lanes	1	1	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	1	1	0	3	3	2	5	3
Cap, veh/h	226	169	63	226	333	114	226	892	397	222	875	390
Arrive On Green	0.13	0.13	0.12	0.13	0.13	0.12	0.13	0.25	0.25	0.13	0.25	0.25
Sat Flow, veh/h	1810	1283	479	1810	2526	868	1810	3505	1562	1774	3438	1531
Grp Volume(v), veh/h	74	0	114	120	86	88	39	427	113	51	536	109
Grp Sat Flow(s),veh/h/ln	1810	0	1762	1810	1737	1657	1810	1752	1562	1774	1719	1531
Q Serve(g_s), s	1.6	0.0	2.6	2.7	2.0	2.1	0.8	4.6	2.6	1.1	6.1	2.5
Cycle Q Clear(g_c), s	1.6	0.0	2.6	2.7	2.0	2.1	0.8	4.6	2.6	1.1	6.1	2.5
Prop In Lane	1.00		0.27	1.00		0.52	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	226	0	232	226	229	218	226	892	397	222	875	390
V/C Ratio(X)	0.33	0.00	0.49	0.53	0.38	0.40	0.17	0.48	0.28	0.23	0.61	0.28
Avail Cap(c_a), veh/h	226	0	1182	226	1165	1111	226	2271	1012	222	2227	992
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.6	0.0	17.8	18.0	17.4	17.6	17.2	13.9	13.2	17.3	14.5	13.2
Incr Delay (d2), s/veh	0.3	0.0	0.6	1.2	0.4	0.4	0.1	0.1	0.1	0.2	0.3	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	0.8	0.0	1.3	1.4	1.0	1.0	0.4	2.2	1.1	0.6	2.9	1.1
LnGrp Delay(d),s/veh	17.9	0.0	18.4	19.2	17.8	18.1	17.3	14.1	13.3	17.5	14.7	13.3
LnGrp LOS	B		B	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h		188			294			579			696	
Approach Delay, s/veh		18.2			18.5			14.1			14.7	
Approach LOS		B			B			B			B	

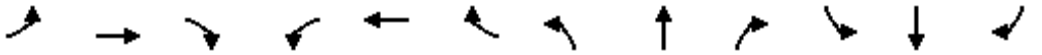
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	15.2	9.5	9.8	9.5	15.2	9.5	9.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	28.0	5.0	29.0	5.0	28.0	5.0	29.0
Max Q Clear Time (g_c+I1), s	3.1	6.6	4.7	4.6	2.8	8.1	3.6	4.1
Green Ext Time (p_c), s	0.0	1.8	0.0	0.3	0.0	2.3	0.0	0.5

Intersection Summary		
HCM 2010 Ctrl Delay	15.5	
HCM 2010 LOS	B	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	120	85	102	119	67	188	584	139	101	396	83
Future Volume (veh/h)	46	120	85	102	119	67	188	584	139	101	396	83
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1900	1874	1900	1900	1888	1900	1863	1881	1900	1900	1776	1900
Adj Flow Rate, veh/h	48	126	89	107	125	71	198	615	146	106	417	87
Adj No. of Lanes	2	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	1	1	0	1	1	2	1	0	0	7	0
Cap, veh/h	122	299	195	113	391	207	222	1635	726	150	1400	660
Arrive On Green	0.03	0.15	0.14	0.06	0.17	0.17	0.13	0.46	0.46	0.08	0.41	0.41
Sat Flow, veh/h	3510	2042	1327	1810	2243	1187	1774	3574	1587	1810	3374	1590
Grp Volume(v), veh/h	48	108	107	107	98	98	198	615	146	106	417	87
Grp Sat Flow(s),veh/h/ln	1755	1780	1589	1810	1794	1637	1774	1787	1587	1810	1687	1590
Q Serve(g_s), s	0.9	3.5	3.9	3.8	3.1	3.4	7.0	7.2	3.5	3.6	5.3	2.2
Cycle Q Clear(g_c), s	0.9	3.5	3.9	3.8	3.1	3.4	7.0	7.2	3.5	3.6	5.3	2.2
Prop In Lane	1.00		0.83	1.00		0.73	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	122	261	233	113	313	286	222	1635	726	150	1400	660
V/C Ratio(X)	0.39	0.42	0.46	0.94	0.31	0.34	0.89	0.38	0.20	0.71	0.30	0.13
Avail Cap(c_a), veh/h	203	711	635	113	725	661	222	1635	726	164	1400	660
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.2	24.8	25.1	29.8	23.0	23.3	27.5	11.4	10.4	28.5	12.5	11.6
Incr Delay (d2), s/veh	0.8	1.1	1.4	66.2	0.6	0.7	32.0	0.7	0.6	9.4	0.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.8	1.8	3.9	1.5	1.6	5.4	3.7	1.7	2.2	2.5	1.0
LnGrp Delay(d),s/veh	30.9	25.8	26.5	96.1	23.6	24.0	59.5	12.0	11.0	38.0	13.0	12.0
LnGrp LOS	C	C	C	F	C	C	E	B	B	D	B	B
Approach Vol, veh/h		263			303			959			610	
Approach Delay, s/veh		27.0			49.3			21.7			17.2	
Approach LOS		C			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	33.2	8.0	13.4	12.0	30.5	6.2	15.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.3	28.2	3.5	25.0	7.5	26.0	3.2	25.3
Max Q Clear Time (g_c+I1), s	5.6	9.2	5.8	5.9	9.0	7.3	2.9	5.4
Green Ext Time (p_c), s	0.0	4.4	0.0	1.1	0.0	2.8	0.0	1.0

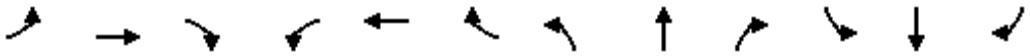
Intersection Summary		
HCM 2010 Ctrl Delay		25.0
HCM 2010 LOS		C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	294	3	2	258	26	1	48	6	43	89	25
Future Volume (veh/h)	7	294	3	2	258	26	1	48	6	43	89	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1900	1899	1900	1900	1850	1863
Adj Flow Rate, veh/h	8	320	3	2	280	28	1	52	7	47	97	27
Adj No. of Lanes	0	1	1	0	1	1	0	1	1	0	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	0	0	0	0	4	4	2
Cap, veh/h	88	942	806	82	950	805	84	587	501	227	408	491
Arrive On Green	0.51	0.51	0.51	0.51	0.51	0.51	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	12	1842	1577	2	1859	1574	8	1888	1610	387	1310	1578
Grp Volume(v), veh/h	328	0	3	282	0	28	53	0	7	144	0	27
Grp Sat Flow(s),veh/h/ln	1854	0	1577	1861	0	1574	1896	0	1610	1697	0	1578
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.0	0.5
Cycle Q Clear(g_c), s	4.7	0.0	0.0	3.9	0.0	0.4	0.9	0.0	0.1	2.6	0.0	0.5
Prop In Lane	0.02		1.00	0.01		1.00	0.02		1.00	0.33		1.00
Lane Grp Cap(c), veh/h	1030	0	806	1032	0	805	671	0	501	634	0	491
V/C Ratio(X)	0.32	0.00	0.00	0.27	0.00	0.03	0.08	0.00	0.01	0.23	0.00	0.05
Avail Cap(c_a), veh/h	1030	0	806	1032	0	805	671	0	501	634	0	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.5	0.0	5.4	6.3	0.0	5.5	11.0	0.0	10.7	11.6	0.0	10.9
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.7	0.0	0.1	0.2	0.0	0.1	0.8	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	2.6	0.0	0.0	2.1	0.0	0.2	0.5	0.0	0.1	1.5	0.0	0.3
LnGrp Delay(d),s/veh	7.3	0.0	5.4	7.0	0.0	5.6	11.2	0.0	10.8	12.4	0.0	11.1
LnGrp LOS	A		A	A		A	B		B	B		B
Approach Vol, veh/h		331			310			60			171	
Approach Delay, s/veh		7.3			6.9			11.2			12.2	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		18.0		27.0		18.0		27.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		13.5		22.5		13.5		22.5
Max Q Clear Time (g_c+I1), s		2.9		6.7		4.6		5.9
Green Ext Time (p_c), s		0.1		1.7		0.5		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	8.4
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	45	48	40	3	28	1	33	64	2	5	104	47
Future Volume (vph)	45	48	40	3	28	1	33	64	2	5	104	47
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
Hourly flow rate (vph)	49	52	43	3	30	1	36	70	2	5	113	51

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	144	34	108	169
Volume Left (vph)	49	3	36	5
Volume Right (vph)	43	1	2	51
Hadj (s)	-0.11	0.07	0.06	-0.18
Departure Headway (s)	4.5	4.8	4.6	4.3
Degree Utilization, x	0.18	0.05	0.14	0.20
Capacity (veh/h)	752	693	747	797
Control Delay (s)	8.4	8.0	8.3	8.3
Approach Delay (s)	8.4	8.0	8.3	8.3
Approach LOS	A	A	A	A

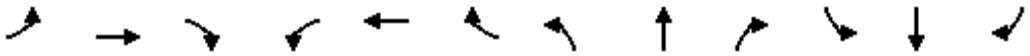
Intersection Summary				
Delay	8.3			
Level of Service	A			
Intersection Capacity Utilization	38.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	48	40	3	28	1	33	64	2	5	104	47
Future Vol, veh/h	45	48	40	3	28	1	33	64	2	5	104	47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	50	0	0	0	0	0	0	0	0
Mvmt Flow	49	52	43	3	30	1	36	70	2	5	113	51
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.5	8.9	8.3	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	34%	9%	3%
Vol Thru, %	65%	36%	88%	67%
Vol Right, %	2%	30%	3%	30%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	99	133	32	156
LT Vol	33	45	3	5
Through Vol	64	48	28	104
RT Vol	2	40	1	47
Lane Flow Rate	108	145	35	170
Geometry Grp	1	1	1	1
Degree of Util (X)	0.137	0.179	0.054	0.202
Departure Headway (Hd)	4.57	4.46	5.549	4.282
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	786	805	646	839
Service Time	2.595	2.486	3.582	2.304
HCM Lane V/C Ratio	0.137	0.18	0.054	0.203
HCM Control Delay	8.3	8.5	8.9	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.6	0.2	0.8



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	323	1	7	285	16	4	39	26	45	32	9
Future Volume (Veh/h)	16	323	1	7	285	16	4	39	26	45	32	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			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
Hourly flow rate (vph)	17	351	1	8	310	17	4	42	28	49	35	10
Pedestrians		1									5	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		3.5									3.5	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		464										
pX, platoon unblocked				0.95			0.95	0.95	0.95	0.95	0.95	
vC, conflicting volume	332			352			740	733	351	765	717	316
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	332			285			695	688	284	722	671	316
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.6	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.1	3.3
p0 queue free %	99			99			99	88	96	82	90	99
cM capacity (veh/h)	1233			1218			302	342	718	277	334	725

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	368	1	318	17	74	94
Volume Left	17	0	8	0	4	49
Volume Right	0	1	0	17	28	10
cSH	1233	1700	1218	1700	423	318
Volume to Capacity	0.01	0.00	0.01	0.01	0.17	0.30
Queue Length 95th (ft)	1	0	0	0	16	30
Control Delay (s)	0.5	0.0	0.3	0.0	15.3	21.0
Lane LOS	A		A		C	C
Approach Delay (s)	0.5		0.2		15.3	21.0
Approach LOS					C	C

Intersection Summary				
Average Delay	3.9			
Intersection Capacity Utilization	48.2%	ICU Level of Service		A
Analysis Period (min)	15			

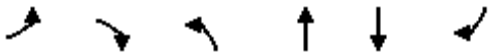
Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	323	1	7	285	16	4	39	26	45	32	9
Future Vol, veh/h	16	323	1	7	285	16	4	39	26	45	32	9
Conflicting Peds, #/hr	5	0	0	0	0	5	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	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, %	0	4	0	0	1	0	0	0	0	0	14	0
Mvmt Flow	17	351	1	8	310	17	4	42	28	49	35	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	332	0	0	352	0	0	743	733	351	752	717	316
Stage 1	-	-	-	-	-	-	385	385	-	331	331	-
Stage 2	-	-	-	-	-	-	358	348	-	421	386	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.64	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.64	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4.126	3.3
Pot Cap-1 Maneuver	1239	-	-	1218	-	-	334	350	697	329	341	729
Stage 1	-	-	-	-	-	-	642	614	-	687	624	-
Stage 2	-	-	-	-	-	-	664	638	-	614	590	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1233	-	-	1218	-	-	297	340	697	279	331	725
Mov Cap-2 Maneuver	-	-	-	-	-	-	297	340	-	279	331	-
Stage 1	-	-	-	-	-	-	631	604	-	672	616	-
Stage 2	-	-	-	-	-	-	613	630	-	538	580	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.2	15.5	21
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	417	1233	-	-	1218	-	-	318
HCM Lane V/C Ratio	0.18	0.014	-	-	0.006	-	-	0.294
HCM Control Delay (s)	15.5	8	0	-	8	0	-	21
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	1.2



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	15	4	17	38	24
Future Volume (Veh/h)	0	15	4	17	38	24
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	16	4	18	41	26
Pedestrians	1			1		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	3.5			3.5		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	81	56	68			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	81	56	68			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	100			
cM capacity (veh/h)	923	1014	1545			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	16	22	67
Volume Left	0	4	0
Volume Right	16	0	26
cSH	1014	1545	1700
Volume to Capacity	0.02	0.00	0.04
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.6	1.3	0.0
Lane LOS	A	A	
Approach Delay (s)	8.6	1.3	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	248	44	179	141	123	44	602	117	82	554	117
Future Volume (veh/h)	212	248	44	179	141	123	44	602	117	82	554	117
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1900	1855	1900	1900	1790	1900	1900	1845	1845	1863	1810	1845
Adj Flow Rate, veh/h	223	261	46	188	148	129	46	634	123	86	583	123
Adj No. of Lanes	1	1	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	1	1	0	3	3	2	5	3
Cap, veh/h	292	344	61	259	366	295	173	909	405	170	892	397
Arrive On Green	0.16	0.22	0.22	0.14	0.21	0.20	0.10	0.26	0.26	0.10	0.26	0.26
Sat Flow, veh/h	1810	1536	271	1810	1779	1432	1810	3505	1562	1774	3438	1531
Grp Volume(v), veh/h	223	0	307	188	141	136	46	634	123	86	583	123
Grp Sat Flow(s),veh/h/ln	1810	0	1806	1810	1701	1511	1810	1752	1562	1774	1719	1531
Q Serve(g_s), s	6.8	0.0	9.1	5.7	4.1	4.6	1.4	9.4	3.6	2.7	8.7	3.7
Cycle Q Clear(g_c), s	6.8	0.0	9.1	5.7	4.1	4.6	1.4	9.4	3.6	2.7	8.7	3.7
Prop In Lane	1.00		0.15	1.00		0.95	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	292	0	405	259	350	311	173	909	405	170	892	397
V/C Ratio(X)	0.76	0.00	0.76	0.73	0.40	0.44	0.27	0.70	0.30	0.51	0.65	0.31
Avail Cap(c_a), veh/h	314	0	929	311	872	774	173	1766	787	170	1732	772
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.1	0.0	20.9	23.6	19.8	20.2	24.2	19.3	17.1	24.7	19.0	17.2
Incr Delay (d2), s/veh	8.6	0.0	1.1	4.8	0.3	0.4	0.3	0.4	0.2	1.0	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	4.6	3.2	1.9	1.9	0.7	4.5	1.6	1.3	4.2	1.6
LnGrp Delay(d),s/veh	31.6	0.0	22.0	28.4	20.1	20.5	24.5	19.6	17.3	25.8	19.3	17.3
LnGrp LOS	C		C	C	C	C	C	B	B	C	B	B
Approach Vol, veh/h		530			465			803			792	
Approach Delay, s/veh		26.1			23.6			19.6			19.7	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	18.9	12.2	16.9	9.5	18.9	13.3	15.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	28.5	9.4	29.1	5.0	28.5	9.5	29.0
Max Q Clear Time (g_c+I1), s	4.7	11.4	7.7	11.1	3.4	10.7	8.8	6.6
Green Ext Time (p_c), s	0.0	2.7	0.0	1.0	0.0	2.5	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	21.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	233	295	226	225	147	188	782	153	140	741	71
Future Volume (veh/h)	86	233	295	226	225	147	188	782	153	140	741	71
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	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
Adj Sat Flow, veh/h/ln	1900	1871	1900	1900	1889	1900	1863	1881	1900	1900	1776	1900
Adj Flow Rate, veh/h	91	245	311	238	237	155	198	823	161	147	780	75
Adj No. of Lanes	2	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	1	1	0	1	1	2	1	0	0	7	0
Cap, veh/h	172	441	385	260	719	450	219	1132	501	191	1007	474
Arrive On Green	0.05	0.25	0.24	0.14	0.34	0.34	0.12	0.32	0.32	0.11	0.30	0.30
Sat Flow, veh/h	3510	1777	1554	1810	2102	1316	1774	3574	1583	1810	3374	1588
Grp Volume(v), veh/h	91	245	311	238	201	191	198	823	161	147	780	75
Grp Sat Flow(s),veh/h/ln	1755	1777	1554	1810	1794	1624	1774	1787	1583	1810	1687	1588
Q Serve(g_s), s	2.2	10.3	16.2	11.1	7.1	7.6	9.4	17.5	6.6	6.8	18.1	3.0
Cycle Q Clear(g_c), s	2.2	10.3	16.2	11.1	7.1	7.6	9.4	17.5	6.6	6.8	18.1	3.0
Prop In Lane	1.00		1.00	1.00		0.81	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	172	441	385	260	614	556	219	1132	501	191	1007	474
V/C Ratio(X)	0.53	0.56	0.81	0.92	0.33	0.34	0.90	0.73	0.32	0.77	0.77	0.16
Avail Cap(c_a), veh/h	233	528	462	260	672	608	219	1132	501	224	1007	474
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	28.1	30.6	36.2	20.9	21.2	37.1	26.0	22.3	37.3	27.4	22.1
Incr Delay (d2), s/veh	0.9	1.1	8.7	34.0	0.3	0.4	34.9	4.1	1.7	10.6	5.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	5.2	7.9	8.0	3.6	3.4	6.7	9.2	3.1	4.0	9.3	1.4
LnGrp Delay(d),s/veh	40.7	29.2	39.3	70.2	21.2	21.6	71.9	30.1	24.0	48.0	33.2	22.9
LnGrp LOS	D	C	D	E	C	C	E	C	C	D	C	C
Approach Vol, veh/h		647			630			1182			1002	
Approach Delay, s/veh		35.7			39.8			36.3			34.6	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	31.2	16.3	25.3	14.6	29.6	8.2	33.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	25.1	11.8	25.0	10.1	25.1	5.2	31.6
Max Q Clear Time (g_c+I1), s	9.8	19.5	13.1	18.2	11.4	20.1	4.2	9.6
Green Ext Time (p_c), s	0.0	2.8	0.0	1.9	0.0	2.4	0.0	2.3

Intersection Summary			
HCM 2010 Ctrl Delay		36.3	
HCM 2010 LOS		D	